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1 * THIS IS A COPYRIGHTED PROGRAM. COPYRIGHT 1972 BY VARIAN DATA MACHINE 60 000001
2 * 60 000002
3 * V.D.M. PART NO. 92L0605-059A 60 000003
4 * 60 000004
5 * 60 000005
6 * 60 000006
7 * 60 000007
8 * 60 000008
9 * 60 000009
10 * TITLE V$LPD24 60 000010
11 * THIS IS A COPYRIGHTED PROGRAM. 60 000011
12 *** MDS DATA PRODUCTS LINE PRINTER DRIVER *** 2410 60 000012
13 * LPL$ IS ONE OF THE OPERATIONAL ROUTINES. 60 000013
14 * IT IS TRANSFERRED TO BY I/OCS WHENEVER: 60 000014
15 * 60 000015
16 * 1) A REQUEST IS PENDING, AND 60 000016
17 * 2) LCK$ RETURNS WITH THE A REGISTER > 0, AND 60 000017
18 * 3) A FUNCTION CALL WAS MADE TO SPACE PAPER. 60 000018
19 * 60 000019
20 * ENTER WITH X=WORD 0 OF DST 60 000020
21 * 60 000021
22 N SET 18 60 000022
23 N SET 16 60 000023
24 * THIS ROUTINE RETURN VIA LCK$ 60 000024
25 * 60 000025
26 LPL$ BSS 0 60 000026
27 LDR CNT,X GET CHANNEL SELECTION 60 000027
28 AND B7 MASK CHANNEL SELECTED 60 000028
29 AND CMK2 DR PAPER FEED COMMAND BIT 7 ALSO 60 000029
30 CALL LPP PERFORM SLEN COMMAND 60 000030
31 * 60 000031
32 STA PEP,X SET PEP OFF 60 000032
33 JNP LCP1 EXIT BUSY 60 000033
34 * LCK1 IS THE NEXT CORE LOCATION 60 000034
35 * 60 000035
36 CJEC 60 000036
37 * LCK$ SUBROUTINE IS CALLED BY I/OCS FROM TWO PLACES. 60 000037
38 * SCAN AND THE I/O STATUS CHECK. 60 000038
39 * 60 000039
40 * LCK$ PERFORMS TWO MAJOR FUNCTIONS: 60 000040
41 * 1) IT PREVENTS I/OCS FROM CALLING LPL$ OR LUR$ 60 000041
42 * IF THE LINE PRINTER IS BUSY. 60 000042
43 * 60 000043
44 * 2) IT GENERATES THE PSEUDO I/O STATUS WORD WHEN 60 000044
45 * NECESSARY AND STORES IT INTO THE DST 60 000045
46 * LCK$ IS CALLED BY I/OCS WITH X=ADDR. OF THE DST. 60 000046
47 * 60 000047
48 * LCK$ RETURNS INDICATING ONE OF THE FOLLOWING: 60 000048
49 * 60 000049
50 * A < 0 A LARGE AMOUNT OF TIME WAS SPENT,SCAN ALL DEVICES AGAIN. 60 000050
51 * A = 0 THE LINE PRINTER IS NOT READY. 60 000051
52 * A > 0 THE LINE PRINTER IS AVAILABLE FOR USE. 60 000052
53 * 60 000053
54 * 60 000054
55 LCK1 T2A SET BUSY FLAG. 60 000055
56 JNP* LCK$ EXIT 60 000056
57 * 60 000057
58 LCK$ RES 0 60 000058
59 LDR DEV,X GET UP COMMANDS WITH DEVICE ADDR 60 000059
60 AND DEV,X 60 000060
61 LDR CB2 60 000061
62 STA DEV,X 60 000062
63 STA LCP1 60 000063
64 LDR UNST,X 60 000064
65 AND DEV,X 60 000065
66 STA +1 60 000066
67 SEN 000+LCK3 SEND LINE PRINTER READY. 60 000067
68 * 60 000068
69 LDR RES,X 60 000069
70 JAN LCK1 60 000070
71 * 60 000071
72 * 60 000072
73 * ENTER WHEN LINE PRINTER READY. 60 000073
74 LCK3 T2A 60 000074
75 STA DELY GET DELY TO 0 60 000075
76 LDR STATY SET STATUS TO READY-NORMAL. 60 000076
77 STA STATY 60 000077
78 JNP* LCK$ EXIT WITH A REGISTER GREATER THAN 0. 60 000078
79 * 60 000079
80 * LUR$ IS ONE OF THE OPERATIONAL ROUTINES AND IS 60 000080
81 * TRANSFERRED TO BY I/OCS WHENEVER: 60 000081
82 * 60 000082
83 * 1) A REQUEST IS PENDING, AND 60 000083
84 * 2) LCK$ RETURNS TO I/OCS WITH THE A REGISTER > 0, AND 60 000084
85 * 3) THE OPERATION CODE IS: 60 000085
86 * 60 000086

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ADDRESS	HEX	ASCII	CODE	MNEMONIC	OPERATION	ADDRESS	HEX
87	*		CODE	MNEMONIC	OPERATION	00	00087
88	*		0002	HALF	WRITE ALPHANUMERIC RECORD	00	00088
89	*					00	00089
90	*					00	00090
91	*					00	00091
92	*					00	00092
93	*					00	00093
94	*					00	00094
95	*					00	00095
96	*					00	00096
97	*					00	00097
98	*					00	00098
99	*					00	00099
100	*					00	00100
101	*					00	00101
102	*					00	00102
103	*					00	00103
104	*					00	00104
105	*					00	00105
106	*					00	00106
107	*					00	00107
108	*					00	00108
109	*					00	00109
110	*					00	00110
111	*					00	00111
112	*					00	00112
113	*					00	00113
114	*					00	00114
115	*					00	00115
116	*					00	00116
117	*					00	00117
118	*					00	00118
119	*					00	00119
120	*					00	00120
121	*					00	00121
122	*					00	00122
123	*					00	00123
124	*					00	00124
125	*					00	00125
126	*					00	00126
127	*					00	00127
128	*					00	00128
129	*					00	00129
130	*					00	00130
131	*					00	00131
132	*					00	00132
133	*					00	00133
134	*					00	00134
135	*					00	00135
136	*					00	00136
137	*					00	00137
138	*					00	00138
139	*					00	00139
140	*					00	00140
141	*					00	00141
142	*					00	00142
143	*					00	00143
144	*					00	00144
145	*					00	00145
146	*					00	00146
147	*					00	00147
148	*					00	00148
149	*					00	00149
150	*					00	00150
151	*					00	00151
152	*					00	00152
153	*					00	00153
154	*					00	00154
155	*					00	00155
156	*					00	00156
157	*					00	00157
158	*					00	00158
159	*					00	00159
160	*					00	00160
161	*					00	00161
162	*					00	00162

E.2\*\*\*\*\*  
E.2\*\*\*\*\*



000000	A	163	ACNT	EQU	0					00	00163
000001	A	164	STAT	EQU	1					00	00164
000004	A	165	REQ	EQU	4					00	00165
000005	A	166	CNT	EQU	5					00	00166
000006	A	167	LDC	EQU	6					00	00167
000023	A	168	URDY	EQU	19					00	00168
000024	A	169	BRDY	EQU	20					00	00169
000025	A	170	DAR	EQU	21					00	00170
000027	A	171	DEV	EQU	23					00	00171
		172		NAME		LCK\$,LWR\$,LPL\$				00	00172
		173		EXT		IDA\$,IOOK				00	00173
		174		END						00	00174

ENTRY NAMES

000011 R LCK\$ 000000 R LPL\$ 000043 R LWR\$

EXTERNAL NAMES

000031 E IDA\$ 000053 E IOOK

SYMBOLS

000000	A	ACNT	000155	R	ALG	000002	A	B	000024	A	BRDY
000156	R	CHAR	000005	A	CNT	000150	R	D321	000147	R	D7
000152	R	DELY	000027	A	DEV	000160	R	DMAX	000157	R	EADR
000031	E	IDA\$	000053	E	IOOK	000011	R	LCK\$	000007	R	LCK1
000035	R	LCK3	000006	A	LDC	000137	R	LPB	000144	R	LPB1
000140	R	LPB2	000000	R	LPL\$	000043	R	LWR\$	000113	R	LWR1
000064	R	LWRA	000073	R	LWRB	000076	R	LWRC	000020	A	N
000025	A	DAR	000004	A	REQ	000151	R	SMK2	000001	A	STAT
000154	R	STRDY	000023	A	URDY	000001	A	X			

0 ERRORS ASSEMBLY COMPLETE

163	ACNT	125									
157	ALG	97	101								
162	B	111									
169	BRDY	58									
158	CHAR	131	135								
166	CNT	27	109	120	122	124					
150	D321	140									
149	D7	29									
155	DELY	71	75								
171	DEV	59	62	65							
160	DMAX	121									
159	EADR	127	138								
0	IDA\$	70	173								
0	IOOK	98	102	173							
57	LCK3	56	73	143	172						
55	LCK1	69	72	99	123						
74	LCK3	67									
167	LDC	107	116	126	128						
144	LPB	30	132	136	141	148					
147	LPB1	63	145								
145	LPB2	61									
26	LPL\$	172									
97	LWR\$	172									
129	LWR1	139									
111	LWRA	116									
115	LWRB	113									
117	LWRC	114									
22	N	133									
170	DAR	61									
165	REQ	32	68	106							
151	SMK2	29									
164	STAT	77	104								
156	STRDY	76	103								
168	URDY	64									
0	V\$LPD2	10									
161	X	27	32	58	59	61	62	64	65	68	
		77	104	106	107	109	118	120	122	124	
		125	126	128	129						



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1 * THIS IS A COPYRIGHTED PROGRAM. COPYRIGHT 1972 BY VARIAN DATA MACHINE 00 00001
2 * 00 00002
3 * V.D.M. PART NO. 92L0705-010A 00 00003
4 * 00 00004
5 * 00 00005
6 * RELEASED 02-22-72 00 00006
7 * 00 00007
8 * VSDASSGN 00 00008
9 * 00 00009
10 * TITLE VSDASSGN 00 00010
11 ***** 00 00011
12 **** TIDB SETUP **** 00 00012
13 * 00 00013
14 ***** 00 00014
000000 A 16 TBTRD EQU 0 TASK THREAD 00 00016
000001 A 17 TBST EQU 1 TASK STATUS 00 00017
000002 A 18 TBPL EQU 2 STATUS CNT. (BITS15-6), PRIORITY LEVEL(5-0 00 00018
000003 A 19 TBEVNT EQU 3 INTERRUPT EVENT 00 00019
000004 A 20 TBRSA EQU 4 A REENRANT AND SUSPEND STACK 00 00020
000005 A 21 TBRSB EQU 5 B REENRANT AND SUSPEND STACK 00 00021
000006 A 22 TBRSX EQU 6 X REENRANT AND SUSPEND STACK 00 00022
000007 A 23 TBRSP EQU 7 DF/P REENRANT AND SUSPEND STACK 00 00023
000010 A 24 TBRSTS EQU 8 TEMP. STG. REENRANT AND SUSPEND STACK 00 00024
000011 A 25 TBENTY EQU 9 TASK ENTRY LOCATION 00 00025
000012 A 26 TBTMS EQU 10 TIME COUNTER - CLOCK RESOLUTION IN 5MS INC 00 00026
000013 A 27 TBTMIN EQU 11 TIME COUNTER - CLOCK MINUTE INCREMENTS 00 00027
000014 A 28 TBISA EQU 12 A INTERRUPT STACK 00 00028
000015 A 29 TBISB EQU 13 B INTERRUPT STACK 00 00029
000016 A 30 TBISX EQU 14 X INTERRUPT STACK 00 00030
000017 A 31 TBISP EQU 15 DF/P INTERRUPT STACK 00 00031
000020 A 32 TBISRS EQU 16 REENT. STACK INTERRUPT STACK 00 00032
000021 A 33 TBID EQU 17 BLK ALLOC(15-10), I/O THR(9-5), I/O ACT(4-0) 00 00033
000022 A 34 TBKN1 EQU 18 TASK NAME 00 00034
000023 A 35 TBKN2 EQU 19 TASK NAME 00 00035
000024 A 36 TBKN3 EQU 20 TASK NAME 00 00036
000025 A 37 TBTLC EQU 21 1ST LOC. OF TASK ALLOCATABLE 00 00037
000026 A 38 TBCPTH EQU 22 BACKGROUND TASK QUEUE 00 00038
000027 A 39 TBATSK EQU 23 TIDB LOC. OF ACTIVATING TASK 00 00039
000030 A 40 TBRSE EQU 24 TASK ERROR CODE 00 00040
41 * EJEC 00 00041
42 ***** 00 00042
43 * 00 00043
44 **** TASK STATUS DESCRIPTION (BIT SET WORD 1) **** 00 00044
45 * 00 00045
46 ***** 00 00046
000017 A 48 TBS15 EQU 15 INTERRUPT SUSPEND 00 00048
000016 A 50 TBS14 EQU 14 TASK SUSPEND 00 00050
000015 A 51 TBS13 EQU 13 TASK ABORT 00 00051
000014 A 52 TBS12 EQU 12 TASK EXIT 00 00052
000013 A 54 TBS11 EQU 11 TIDB CORE RESIDENT 00 00054
000012 A 55 TBS10 EQU 10 CORE RESIDENT TASK 00 00055
000011 A 56 TBS9 EQU 9 FOREGROUND TASK 00 00056
000010 A 58 TBS8 EQU 8 TASK PROTECTED 00 00058
000007 A 59 TBS7 EQU 7 TASK SCHEDULED BY TIME DELAY 00 00059
000006 A 60 TBS6 EQU 6 TIME DELAY ACTIVE 00 00060
000005 A 62 TBS5 EQU 5 TASK WAITING TO BE LOADED 00 00062
000004 A 63 TBS4 EQU 4 TASK ERROR 00 00063
000003 A 64 TBS3 EQU 3 TASK INTERRUPT EXPECTED 00 00064
000002 A 66 TBS2 EQU 2 OVERLAY TASK 00 00066
000001 A 67 TBS1 EQU 1 UPON TERMINATION ACTIVATE TASK SCHED TASK 00 00067
000000 A 68 TBS0 EQU 0 TASK SEARCH-ALLOCATED-LOADED 00 00069
69 * EJEC 00 00069
70 ***** 00 00070
71 * 00 00071
72 **** TASK STATUS DESCRIPTION (BIT SET WORD 2) **** 00 00072
73 * 00 00073
74 ***** 00 00074
76 * BIT 15 - TASK OPENED 00 00076
78 * BIT 14 - UNUSED 00 00078
79 * BIT 13 - OVERLAY LOAD 00 00079
80 * BIT 12 - TASK WAITING FOR BACKGROUND TASK I/O TO COMPLETE 00 00080
81 * TASK LOCKED-OUT UNTIL BG I/O COMPLETE OR BIT 11 00 00081
82 * IS SET (ALLOCATABLE SPACE AVAILABLE) 00 00082
84 * BIT 11 - DEFINES THAT ALLOCATABLE SPACE IS AVAILABLE, TRY 00 00084
85 * ALLOCATING TASK AGAIN. OVERRIDES BIT 12 SET OR 00 00085
86 * BIT 5 IN STATUS WORD. 00 00086
87 * BIT 10 - BACKGROUND TASK BEING WRITTEN ON CHECKPOINT FILE. 00 00087
88 * BIT 9 - TASK WAITING FOR A TIDB TO COME AVAILABLE FOR 00 00088
89 * SCHEDULING. 00 00089
91 * BIT 8 TO 6 - UNUSED 00 00091
92 * EJEC 00 00092
93 ***** 00 00093
94 * 00 00094
95 **** JOB PROCESSOR LOW CORE EQUATES **** 00 00095
96 * 00 00096
97 ***** 00 00097
000050 A 99 LCJP EQU 050 JCP NAME 00 00100
000050 A 100 V$JNAM EQU LCJP LINE COUNT 00 00101
000054 A 101 V$LCNT EQU LCJP+4 JCP FLAGS 00 00102
000055 A 102 V$JCFG EQU LCJP+5 BIT 2-0 = LOAD AND GO FLAGS 00 00103
103 * BIT 3 = DUMP FLAG 1=DUMP, 0=NO DUMP 00 00104
104 * BIT 4 = DUMP FLAG IF LOAD AND GO 00 00105
105 *

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106	*			BIT 9-5 = UNUSED	00	00106	
107	*			BIT 15-10 = BG EXTRA CORE BLOCKS TO ALLOC	00	00107	
000056	A	109	V\$BIC1 EQU	LCJP+6	BIC INTERRUPT ADDRESS TABLE (10 WORDS)	00	00109
000070	A	110	V\$DATE EQU	LCJP+16	JCP DATE RECORD	00	00110
000074	A	111	V\$PLCT EQU	LCJP+20	PERMINATE LINE COUNT	00	00111
000075	A	112	V\$BGLB EQU	LCJP+21	JCP LIB KEY AND LU NO. (BACKGROUND LIB)	00	00112
000076	A	113	V\$CRDM EQU	LCJP+22	CARD KEYPUNCH TYPE, 0=026, 1=029	00	00113
		114	*		BIT 0 = SYSTEM NOMINAL KEYPUNCH MODE.	00	00114
		115	*		BIT 9 = CURRENT JOB KEYPUNCH MODE.	00	00115
000077	A	116	V\$JCTM EQU	LCJP+23	TEMP. STORAGE FOR /MEM BLOCK	00	00116
		117	EJEC			00	00117
		118	*****			00	00118
		119	*			00	00119
		120	***	LOW CORE DESCRIPTION		00	00120
		121	*			00	00121
		122	*****			00	00122
000300	A	124	LC EQU	0300	CURRENT TASK TIDB LOCATION	00	00124
000300	A	125	V\$CTL EQU	LC	CURRENT PRIORITY LEVEL	00	00125
000301	A	126	V\$CPL EQU	LC+1	CURRENT REENRANT STACK POINTER	00	00126
000302	A	127	V\$CRS EQU	LC+2	POINTER TO HIGHEST PRIORITY TIDB	00	00127
000303	A	128	V\$TB EQU	LC+3	POINTER TO UNUSED TASK TIDB	00	00128
000304	A	129	V\$UTB EQU	LC+4	POINTER TO NEXT ENTRY IN REENRANT STACK	00	00129
000305	A	130	V\$PTVB EQU	LC+5	FIRST LOC. OF REENRANT STACK	00	00130
000306	A	131	V\$FLRS EQU	LC+6	LAST LOC. OF REENRANT STACK+1	00	00131
000307	A	132	V\$LRSK EQU	LC+7	CHECKPOINT FLAG 1=ON, 0=OFF	00	00132
000310	A	133	V\$CKPT EQU	LC+8	LOC. OF TIDB FOR DPCOM TASK	00	00133
000311	A	134	V\$OPCL EQU	LC+9	LOC. OF TIDB FOR SYSTEM SAL TASK	00	00134
000312	A	135	V\$LSAL EQU	LC+10	LOC. OF TIDB FOR SYSTEM ERROR TASK	00	00135
000313	A	136	V\$LER EQU	LC+11	LOC. OF TIDB FOR JOB CONTROL PROCESSOR TAS	00	00136
000314	A	137	V\$TJCP EQU	LC+12	LOC. OF CURRENT ACTIVE BACKGROUND TSK TIDB	00	00137
000315	A	138	V\$BTB EQU	LC+13	LOC. OF 1ST UNPROTECTED WORD	00	00138
000316	A	139	V\$LUP EQU	LC+14	LOC. OF LAST UNPROTECTED WORD	00	00139
000317	A	140	V\$LLUP EQU	LC+15	INTERRUPT MASK (8 WORDS)	00	00140
000320	A	141	V\$IM EQU	LC+16	MEMORY PROTECT MASK (4 WORDS)	00	00141
000330	A	142	V\$MPM EQU	LC+24	CORE ALLOCATION MASK (4 WORDS)	00	00142
000334	A	143	V\$CAM EQU	LC+28	UNUSED	00	00143
		144	*			00	00144
000341	A	145	V\$CRDR EQU	LC+33	CORE RESIDENT DIRECTORY LOCATION	00	00145
000342	A	146	V\$TEGT EQU	LC+34	TOP OF THREAD OF BG TSK WAITING TO BE ALLO	00	00146
000343	A	147	V\$TMS EQU	LC+35	TIME OF DAY IN 5 MILLISECOND INCREMENTS	00	00147
000344	A	148	V\$TMN EQU	LC+36	TIME OF DAY IN MINUTE INCREMENTS	00	00148
000345	A	149	V\$LUNT EQU	LC+37	ADDR. OF LOGICAL UNIT NAME TABLE	00	00149
000346	A	150	V\$OPCF EQU	LC+38	DPCOM LOCKOUT FLAG	00	00150
000347	A	151	V\$FGLB EQU	LC+39	KEY AND LU NO. FOR FOREGROUND LIB	00	00151
000350	A	152	V\$FREE EQU	LC+40	FREE RUNNING COUNTER INCR. IN MICROSECONDS	00	00152
000351	A	153	V\$CTMS EQU	LC+41	CLOCK RESOLUTION IN 5 MILLISECOND INCR.	00	00153
000352	A	154	V\$SCV EQU	LC+42	CLOCK SELECTED COUNT VALUE (1 TO 4095)	00	00154
000353	A	155	V\$CKE EQU	LC+43	BASIC CLOCK INTERRUPT RATE IN MICROSECONDS	00	00155
000354	A	156	V\$CRM EQU	LC+44	CLOCK RESOLUTION INCR. FOR 1 MINUTE.	00	00156
000355	A	157	V\$DSTB EQU	LC+45	BASE ADDR. FOR DST BLOCK	00	00157
000356	A	158	V\$LIT EQU	LC+46	LAST LOCATION OF BACKGROUND LITERAL TABLE	00	00158
		159	*		UNUSED	00	00159
000360	A	160	V\$CTAD EQU	LC+48	BASE ADDR. FOR CONTROLLER ADDR. TABLE	00	00160
000361	A	161	V\$SCTL EQU	LC+49	CURRENT CONTROLLER IN SCAN	00	00161
000362	A	162	V\$NCTR EQU	LC+50	NO. OF CONTROLLERS	00	00162
000363	A	163	V\$PIMN EQU	LC+51	EXTERNAL DEVICE ADDRESS TABLE FOR PINS	00	00163
		164	*		(8 WORDS DEFINED IN PIN NO ORDER)	00	00164
		165	*		UNUSED	00	00165
		166	*		UNUSED	00	00166
000375	A	167	V\$SLFG EQU	LC+61	SAL TASK BUSY FLAG 1=BUSY, 0=NOT BUSY	00	00167
000376	A	168	V\$ERFG EQU	LC+62	ERROR TASK BUSY FLAG 1=BUSY, 0=NOT BUSY	00	00168
000377	A	169	V\$JOP EQU	LC+63	JOP OPERATING FLAG	00	00169
000400	A	170	V\$LUT1 EQU	LC+64	START LUN ADDR FOR JOP/DPCOM ASSIGNABLE	00	00170
000401	A	171	V\$LUT2 EQU	LC+65	START LUN ADDR FOR UNASSIGNABLE	00	00171
000402	A	172	V\$LUT3 EQU	LC+66	START LUN ADDR FOR DPCOM ASSIGNABLE	00	00172
000403	A	173	V\$1MIN EQU	LC+67	32767 - (63000/(5*V\$CTMS)) + 1	00	00173
		174	*		UNUSED	00	00174
		175	*		UNUSED	00	00175
		176	*		UNUSED	00	00176
		177	*		UNUSED	00	00177
000410	A	178	V\$IDA EQU	LC+72	I/O ALGORITHM	00	00178
000411	A	179	V\$CKIT EQU	LC+73	CLOCK INT. IN PIM BEFORE LOCKOUT FLAG.	00	00179
000412	A	180	V\$JCB EQU	LC+74	ALL SYSTEM BACKGROUND PROGRAMS AND JOP USE	00	00180
		181	*		THIS SYSTEM BUFFER TO READ DIRECTIVES AND	00	00181
		182	*		SOURCE RECORDS IN.	00	00182
000413	A	183	V\$DCB EQU	LC+75	DPCOM WILL READ OPERATOR KEY-IN REQUESTS	00	00183
		184	*		IN THIS BUFFER. IF JOP IS SET NOT ACTIVE	00	00184
		185	*		AND A 1 DIRECTIVE IS INPUTED, DPCOM	00	00185
		186	*		WILL MOVE THE DIRECTIVE TO V\$JCB BEFORE	00	00186
		187	*		SCHEDULING JOP.	00	00187
000414	A	188	V\$BYN EQU	LC+76	BOTTOM OF VORTEX NUCLEUS	00	00188
000415	A	189	V\$BFC EQU	LC+77	TOP OF FG VOR. AREA/BOTTOM OF FG BLK COMM.	00	00189
000416	A	190	V\$TFC EQU	LC+78	TOP OF FG BLK COMM/TOP OF VORTEX CORE.	00	00190
		191	*		UNUSED	00	00191
		192	EJEC			00	00192
		193	*****			00	00193
		194	*			00	00194
		195	***	MASK TABLE DESCRIPTION		00	00195
		196	*			00	00196
		197	*****			00	00197
000420	A	199	MT SET	0420	ZERO WORD	00	00199
000420	A	200	ZERO EQU	MT	BIT MASK CONTENTS 000001	00	00200
000421	A	201	BSO EQU	MT+1		00	00201



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000422 A 202 BS1 EQU MT+2 000002 00 00202
000423 A 203 BS2 EQU MT+3 000004 00 00203
000424 A 204 BS3 EQU MT+4 000010 00 00204
000425 A 205 BS4 EQU MT+5 000020 00 00205
000426 A 206 BS5 EQU MT+6 000040 00 00206
000427 A 207 BS6 EQU MT+7 000100 00 00207
000430 A 208 BS7 EQU MT+8 000200 00 00208
000431 A 209 BS8 EQU MT+9 000400 00 00209
000432 A 210 BS9 EQU MT+10 001000 00 00210
000433 A 211 BS10 EQU MT+11 002000 00 00211
000434 A 212 BS11 EQU MT+12 004000 00 00212
000435 A 213 BS12 EQU MT+13 010000 00 00213
000436 A 214 BS13 EQU MT+14 020000 00 00214
000437 A 215 BS14 EQU MT+15 040000 00 00215
000440 A 216 BS15 EQU MT+16 0100000 00 00216
000441 A 217 BR0 EQU MT+17 BIT MASK CONTENTS 0177776 00 00217
000442 A 218 BR1 EQU MT+18 0177775 00 00218
000443 A 219 BR2 EQU MT+19 0177773 00 00219
000444 A 220 BR3 EQU MT+20 0177767 00 00220
000445 A 221 BR4 EQU MT+21 0177757 00 00221
000446 A 222 BR5 EQU MT+22 0177737 00 00222
000447 A 223 BR6 EQU MT+23 0177677 00 00223
000450 A 224 BR7 EQU MT+24 0177577 00 00224
000451 A 225 BR8 EQU MT+25 0177377 00 00225
000452 A 226 BR9 EQU MT+26 0176777 00 00226
000453 A 227 BR10 EQU MT+27 0175777 00 00227
000454 A 228 BR11 EQU MT+28 0173777 00 00228
000455 A 229 BR12 EQU MT+29 0167777 00 00229
000456 A 230 BR13 EQU MT+30 0157777 00 00230
000457 A 231 BR14 EQU MT+31 0137777 00 00231
000460 A 232 BR15 EQU MT+32 0077777 00 00232
000461 A 233 NEG EQU MT+33 SET ALL BITS 00 00233
000462 A 234 LHW EQU MT+34 LEFT HALF WORD MASK 0177400 00 00234
000463 A 235 RHW EQU MT+35 RIGHT HALF WORD MASK 0377 00 00235
000421 A 236 ONE EQU MT+1 CONTAINS NUMBER 1 00 00236
000422 A 237 TWO EQU MT+2 CONTAINS NUMBER 2 00 00237
000464 A 238 THREE EQU MT+36 CONTAINS NUMBER 3 00 00238
000423 A 239 FOUR EQU MT+3 CONTAINS NUMBER 4 00 00239
000465 A 240 FIVE EQU MT+37 CONTAINS NUMBER 5 00 00240
000466 A 241 SIX EQU MT+38 CONTAINS NUMBER 6 00 00241
000467 A 242 SEVEN EQU MT+39 CONTAINS NUMBER 7 00 00242
000424 A 243 EIGHT EQU MT+4 CONTAINS NUMBER 8 00 00243
000470 A 244 NINE EQU MT+40 CONTAINS NUMBER 9 00 00244
000471 A 245 TEN EQU MT+41 CONTAINS NUMBER 10 00 00245
000421 A 246 BM1 EQU MT+1 BIT MASK WORD 00001 00 00246
000464 A 247 BM3 EQU MT+36 BIT MASK WORD 00003 00 00247
000467 A 248 BM7 EQU MT+39 BIT MASK WORD 00007 00 00248
000472 A 249 BM17 EQU MT+42 BIT MASK WORD 00017 00 00249
000473 A 250 BM37 EQU MT+43 BIT MASK WORD 00037 00 00250
000474 A 251 BM77 EQU MT+44 BIT MASK WORD 00077 00 00251
000475 A 252 BM177 EQU MT+45 BIT MASK WORD 00177 00 00252
000463 A 253 BM377 EQU MT+35 BIT MASK WORD 00377 00 00253
000476 A 254 BM777 EQU MT+46 BIT MASK WORD 00777 00 00254
000477 A 255 BM1777 EQU MT+47 BIT MASK WORD 01777 00 00255
256 EJECT 00 00256
257 ***** 00 00257
258 * 00 00258
259 ***** BIT TEST BIT DESIGNATION ***** 00 00259
260 * 00 00260
261 ***** 00 00261
000040 A 263 RA0 EQU 040 BT JUMPS WHEN A REGISTER IS 0 00 00263
000000 A 264 RA1 EQU 000 BT JUMPS WHEN A REGISTER IS 1 00 00264
000060 A 265 RB0 EQU 060 BT JUMPS WHEN B REGISTER IS 0 00 00265
000020 A 266 RB1 EQU 020 BT JUMPS WHEN B REGISTER IS 1 00 00266
268 ***** 00 00268
269 * 00 00269
270 ** THE BIT CHECKED 00 00270
271 * 00 00271
272 ***** 00 00272
000000 A 274 B0 EQU 0 00 00274
000001 A 275 B1 EQU 1 00 00275
000002 A 276 B2 EQU 2 00 00276
000003 A 277 B3 EQU 3 00 00277
000004 A 278 B4 EQU 4 00 00278
000005 A 279 B5 EQU 5 00 00279
000006 A 280 B6 EQU 6 00 00280
000007 A 281 B7 EQU 7 00 00281
000010 A 282 B8 EQU 8 00 00282
000011 A 283 B9 EQU 9 00 00283
000012 A 284 B10 EQU 10 00 00284
000013 A 285 B11 EQU 11 00 00285
000014 A 286 B12 EQU 12 00 00286
000015 A 287 B13 EQU 13 00 00287
000016 A 288 B14 EQU 14 00 00288
000017 A 289 B15 EQU 15 00 00289
290 EJECT 00 00290
291 ***** 00 00291
292 * 00 00292
293 ***** DEVICE AND FUNCTION CODES ***** 00 00293
294 * 00 00294
295 ***** 00 00295
297 ***** REAL TIME CLOCK ***** 00 00297
000047 A 298 CLOCK EQU 047 DEVICE NUMBER 047 00 00298

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000747 A 299 * 00 00299
000147 A 300 DISCLK EQU 0700+CLOCK DISABLE CLOCK 00 00300
000147 A 301 ENACKL EQU 0100+CLOCK ENABLE CLOCK 00 00301
303 * 00 00303
304 **** PIM *** 00 00304
000044 A 305 APIM EQU 044 ALL PIMS DEVICE NUMBER 00 00305
000040 A 306 PIM1 EQU 040 00 00306
000041 A 307 PIM2 EQU 041 00 00307
000042 A 308 PIM3 EQU 042 00 00308
000043 A 309 PIM4 EQU 043 00 00309
000040 A 310 PIM5 EQU 040 00 00310
000040 A 311 PIM6 EQU 040 00 00311
000040 A 312 PIM7 EQU 040 00 00312
000040 A 313 PIM8 EQU 040 00 00313
314 * 00 00314
000444 A 315 DISPIM EQU 0400+APIM 00 00315
000244 A 316 ENAPIM EQU 0200+APIM 00 00316
318 **** MEMORY PROTECT *** 00 00318
000045 A 319 MP EQU 045 DEVICE ADDRESS 045 00 00319
000745 A 320 DISMP EQU 0700+MP DISABLE MEMORY PROTECT 00 00320
000645 A 321 ENAMP EQU 0600+MP ENABLE MEMORY PROTECT 00 00321
000045 A 322 MPMR0 EQU 0000+MP SELECT MASK REGISTER 0 00 00322
000145 A 323 MPMR1 EQU 0100+MP SELECT MASK REGISTER 1 00 00323
000245 A 324 MPMR2 EQU 0200+MP SELECT MASK REGISTER 2 00 00324
000345 A 325 MPMR3 EQU 0300+MP SELECT MASK REGISTER 3 00 00325
326 * 00 00326
327 * 00 00327
328 * NAME DASSGN 00 00328
329 * EXT DSERR 00 00329
330 * EXT DSCLR 00 00330
331 * EXT DDUNT CHARACTER POINTER 00 00331
332 * EXT DSERR00 00 00332
000001 A 333 X EQU 1 00 00333
000002 A 334 B EQU 2 00 00334
000040 A 335 BTA0 EQU 040 A REG., BIT =0 00 00335
336 * 00 00336
337 * ASSIGN 00 00337
338 * 00 00338
339 * ;ASSIGN, LU NAME=DEVICE NAME MULTIPLE ASSIGNMENTS SEPARATED 00 00339
340 * LU NUMBER=DEVICE NAME BY COMMAS. 00 00340
341 * LU NAME=LU NAME 00 00341
342 * 00 00342
343 * 00 00343
000000 000000 R 344 DASSGN EQU * ENTER TO PROCESS ASSIGN REQUESTS. 00 00344
000000 003012 A 345 TAB 00 00345
000001 140464 A 346 SUB THREE A= NO. OF CHARACTERS IN FIRST ITEM. 00 00346
000002 001002 A 347 JAP DASN10 ASSUME LU NUMBER IF GTR THAN 2 00 00347
000003 000014 R 00 00348
000004 005321 A 348 DECR 001 00 00349
000005 001010 A 349 JAZ DASN10 1 CHAR. LU NUMBER 00 00350
000006 000014 R 00 00351
000007 002000 A 350 CALL DFLUN COMPARE LU NAME IN DC BUFFER WITH LUNT 00 00352
000010 000376 R 00 00353
000011 001016 A 351 JANZ DASN2 A=0 MEANS NO MATCH FOUND 00 00354
000012 000017 R 00 00355
000013 000013 R 352 DASN20 EQU * ASSUME L1 = LU NUMBER 00 00356
000013 020422 A 353 LDB FIVE SET FOR 2 CHARS. 00 00357
000014 000014 R 354 DASN10 EQU * L1 = LOGICAL UNIT NUMBER. 00 00358
000014 005024 A 355 TEX 00 00359
000015 002000 A 356 CALL DNUM CONVERT ASC TO BINARY. 00 00360
000016 000413 R 00 00361
000017 054266 A 357 DASN2 STA DASTOR SAVE LOGICAL UNIT NUMBER, L1 00 00362
000020 020465 A 358 LDB FIVE 00 00363
000021 002000 A 359 CALL DANI GET D1 TO BE ASSIGNED TO L1 00 00364
000022 000506 R 00 00365
000023 140423 A 360 SUB FOUR A= NO. OF CHARACTERS IN ITEM 00 00366
000024 001010 A 361 JAZ DASN24 ASSUME DEVICE NAME 00 00367
000025 000177 R 00 00368
000026 001002 A 362 JAP DASN18 ERROR. DCA4 MESSAGE. 00 00369
000027 000246 R 00 00370
000030 005111 A 363 IAR 00 00371
000031 001010 A 364 JAZ DASN30 3 CHARS. ASSUME LOGICAL UNIT NUMBER. 00 00372
000032 000251 R 00 00373
000033 005111 A 365 IAR 00 00374
000034 030421 A 366 LDX ONE SET FOR 1 CHAR. LU NUMBER 00 00375
000035 001016 A 367 JANZ DASN31+1 JMP FOR 1 CHAR. LU NUMBER 00 00376
000036 000270 R 00 00377
000037 002000 A 368 CALL DFLUN FIND LOGICAL UNIT NAME. 00 00378
000040 000376 R 00 00379
000041 001010 A 369 JAZ DASN40 NO NAME IN LUNT, CM IF LU NO OR DEV. NAME 00 00380
000042 000274 R 00 00381
370 * 00 00382
371 * DUNDT/DLUNST 00 00383
372 * 00 00384
373 * FIND/STORE DST ENTRY 00 00385
374 * 00 00386
375 * DLUNDT IS ENTERED TO FIND THE DST ENTRY ASSIGNED TO A LOGICAL 00 00387
376 * UNIT. 00 00388
377 * DLUNST 00 00389
378 * DLUNST IS ENTERED TO STORE THE DST ENTRY NUMBER TO THE 00 00390
379 * ASSIGNED LOGICAL UNIT IN THE LUNT 00 00391
000043 000043 R 380 DLUNDT EQU * ENTER WITH A=LUN 00 00392
000043 007400 A 381 ROP 00 00393

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000044	005311	A	382	DAR						00	00382
000045	054330	A	383	STA	DFLUN	LUN 1-100,VALUE 0-99				00	00383
000046	006020	A	384	LDBI	V\$LUT1					00	00384
000047	000400	A									
000050	006140	A	385	SUBI	100					00	00385
000051	000144	A									
000052	001004	A	386	JAN	DLUN14	LESS THAN 101				00	00386
000053	000070	R									
000054	054321	A	387	STA	DFLUN	LUN 101-179,VALUE 0-79				00	00387
000055	006140	A	388	SUBI	79					00	00388
000056	000117	A									
000057	001004	A	389	JAN	DNUMY	LESS THAN 180. ERROR,NOT UNASSIGNABLE.				00	00389
000060	000500	R									
000061	054314	A	390	STA	DFLUN	LUN 180-255,0-75				00	00390
000062	006140	A	391	SUBI	76					00	00391
000063	000114	A									
000064	001002	A	392	JAP	DASN18	ERROR				00	00392
000065	000246	R									
000066	005122	A	393	DLUN12	IBR	LUN 180-255				00	00393
000067	005122	A	394	IBR		LUN 100-179				00	00394
000070	026000	A	395	DLUN14	LDB	LUN LESS THAN 101				00	00395
000071	014304	A	396	LDA	0,B					00	00396
000072	146000	A	397	SUB	0,B	NO. OF ENTRIES IN THIS BLOCK				00	00397
000073	001002	A	398	JAP	DASN18	ERROR				00	00398
000074	000246	R									
000075	005021	A	399	TBA						00	00399
000076	124277	A	400	ADD	DFLUN					00	00400
000077	005012	A	401	TAB		B=LUN ENTRY ADDR-1				00	00401
000100	016001	A	402	LDA	1,B	GET LUN				00	00402
000101	001007	A	403	JDFN	DLUN20	GET BYTE				00	00403
000102	000154	R									
000103	064272	A	404	STB	DFLUN	LUN ENTRY ADDR-1.				00	00404
000104	005014	A	405	TAX						00	00405
000105	005021	A	406	TBA						00	00406
000106	140400	A	407	SUB	V\$LUT1	CHECK IF DC TO BE REASSIGNED.				00	00407
000107	001016	A	408	JANZ	DASN8	NO.				00	00408
000110	000142	R									
000111	024175	A	409	LDB	DSTBT	YES.GET DST FOR DEVICE TO BE ASSIGNED.				00	00409
000112	016001	A	410	LDA	DSNAME,B	CHECK IF CT OR TY				00	00410
000113	006130	A	411	ERRI	0141724	CT				00	00411
000114	141724	A									
000115	001010	A	412	JAZ	DLUN15					00	00412
000116	000124	R									
000117	016001	A	413	LDA	DSNAME,B					00	00413
000120	006130	A	414	ERRI	0152331					00	00414
000121	152331	A									
000122	001016	A	415	JANZ	DNUMY	ERROR.NOT CT OR TY				00	00415
000123	000500	R									
000124	005041	A	416	DLUN15	TXA					00	00416
000125	150463	A	417	ANA	RHW	OLD DC				00	00417
000126	005312	A	418	DECR	012	B=DST ENTRY-1				00	00418
000127	010355	A	419	LDA	V\$DSTB	DETERMINE DST ADDR.				00	00419
000130	160464	A	420	MUL	THREE					00	00420
000131	000002	A	421	DSOPCM	EQU	2				00	00421
000132	016002	A	422	LDA	DSOPCM,B					00	00422
000133	006453	A	423	BT	BTA0+11,DASN8	JMP IF NOT DC DEVICE				00	00423
000134	000142	R									
000135	130434	A	424	ERA	BS11	OTHERWISE RESET DC DEVICE FLAG TO NEW				00	00424
000136	056002	A	425	STA	DSOPCM,B	ASSIGNMENT				00	00425
000137	024150	A	426	LDB	DSTBT	DST ADDR FOR NEW DC DEVICE				00	00426
000138	016002	A	427	LDA	DSOPCM,B					00	00427
000140	110434	A	428	ORA	BS11					00	00428
000141	056002	A	429	STA	DSOPCM,B					00	00429
000142	024233	A	430	DASN8	DFLUN	LUN ENTRY ADDR-1				00	00430
000143	005041	A	431	TXA						00	00431
000144	150463	A	432	ANA	LHW	STORE NEW LUN ASSIGNMENT.				00	00432
000145	114077	A	433	ORA	DSNR98					00	00433
000146	056001	A	434	STA	1,B					00	00434
000147	020423	A	435	LDB	FOUR					00	00435
000150	002000	A	436	CALL	DSNI	GET NEXT ITEM FROM BUFFER				00	00436
000151	000506	R									
000152	001000	A	437	JMP	DASSGN	DO NEXT ASSIGNMENT PAIRS				00	00437
000153	000000	R									
000154	150463	A	438	DLUN20	ANA	RHW	CURRENT ASSIGNMENT			00	00438
000155	054067	A	439	STA	DSNR98					00	00439
000156	005312	A	440	DECR	012	B= DST ENTRY				00	00440
000157	010355	A	441	LDA	V\$DSTB	GET DST BASE ADDR				00	00441
000160	160464	A	442	MUL	THREE	B= DST ADDR				00	00442
000161	000000	A	443	DSDASS	EQU	0				00	00443
000162	064125	A	444	STB	DSTBT	SAVE DST ADDR.				00	00444
000163	026000	A	445	DASN6	DSDASS,B					00	00445
000164	010424	A	446	LDA	EIGHT					00	00446
000165	006436	A	447	BT	020+14,DSERR	UNASSIGNABLE,DC10 MSG				00	00447
000166	000000	E									
000167	006437	A	448	BT	020+15,DSERR	DEVICE DOWN,DC10 MSG				00	00448
000170	000170	R	449	DASN7	EQU	*				00	00449
000171	014115	A	450	LDA	DASTOR	A= LU NO. FOR L1				00	00450
000172	000171	R	451	DLUNST	EQU	*				00	00451
000173	007401	A	452	SDF		SET DLUNST INDICATOR				00	00452
000174	001000	A	453	JMP	DLUNDT+1					00	00453
000175	000044	R									
000176	006010	A	454	DASN22	LDAI	0130260	ASSUME ALPHA. SET 00 AS LAST			00	00454



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000175 130260 A
000176 055001 A
000177 R
455 STA 1,X 2 CHAR. OF DEVICE NAME
456 DASN24 EQU * ASSUME D1= DEVICE NAME
457 * DNSRCH
458 *
459 * SEARCH DST FOR DEVICE NAME SUBROUTINE
460 *
461 * DNSRCH SEARCHES THE DST TABLE FOR A MATCHING 4 ASCII CHAR.
462 * DEVICE NAME SPECIFIED IN CALLER BUFFER.
000177 R
000177 020413 A
000200 016000 A
000201 054041 A
000202 026001 A
000203 004450 A
000204 150467 A
000205 004252 A
000206 054035 A
000207 004450 A
000210 150463 A
000211 006140 A
000212 000260 A
000213 004244 A
000214 114027 A
000215 054026 A
000216 020355 A
000217 005101 A
000220 054024 A
000221 016001 A
000222 001010 A
000223 000246 R
000224 134010 A
000225 001016 A
000226 000235 R
000227 016000 A
000230 134013 A
000231 006150 A
000232 017760 A
000233 001010 A
000234 000161 R
000235 005122 A
000236 005122 A
000237 005122 A
000240 044004 A
000241 001000 A
000242 000221 R
000243 000000 A
000244 000000 A
000245 000000 A
000246 010423 A
000247 001000 A
000250 000000 E
000251 000251 R
000251 030413 A
000252 015001 A
000253 004350 A
000254 006130 A
000255 000315 A
000256 125000 A
000257 006140 A
000260 142325 A
000261 001016 A
000262 000267 R
000263 006057 A
000264 000245 R
000265 001000 A
000266 000170 R
000267 000267 R
000267 030464 A
000270 002000 A
000271 000415 R
000272 000272 R
000273 000043 R
000274 000274 R
000274 030413 A
000275 015000 A
000276 004350 A
000277 006140 A
000300 000272 A
000301 001000 R
000302 000174 A
000303 030422 A
000304 001000 R
000305 000270 R
000306 000000 A
521 DASTOR DATA 0
522 EQU
523 *
524 *
525 * OLDST, DSTBT
526 *
527 * LOAD/STORE 1 CHARACTER IN BUFFER SUBROUTINE.
528 *

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529 **** ENTER VIA JPM DLDBT (TO LOAD A CHAR.) 00 00527
530 * DATA LOCATION OF BUFFER ADDR * 2 FOR CHAR N/N+1 00 00528
531 * SWITCH 00 00529
532 * EXIT WITH A REG= ASCII CHARACTER = B REG. X= UNCHANGED 00 00530
533 * BUFFER ADDRESS INCREMENTED TO NEXT CHAR. 00 00531
534 * 00 00532
535 **** ENTER VIA JPM DSTBT (TO STORE A CHAR.) 00 00533
536 * DATA LOCATION OF BUFFER ADDR *2,BIT 0=0 CHAR N 00 00534
537 * BIT 0=1 CHAR N+1 00 00535
538 * A REG = ASCII CHARACTER TO STORE 00 00536
539 * 00 00537
540 * EXIT WITH A,B DESTROYED. X REG UNCHANGED. 00 00538
541 * 00 00539
542 * 00 00540
000307 000000 A 543 DSTBT ENTR ENTER HERE TO STORE A BYTE 00 00541
000310 150463 A 544 DSTBA ANA BM377 EXTRACT BYTE TO STORE 00 00542
000311 054063 A 545 STA DBYTX+1 00 00543
000312 044061 A 546 INR DBYTX SET FLAG TO STORE CHAR. 00 00544
000313 006017 A 547 LDAE DSTBT SET RETURN ADDR. 00 00545
000314 000307 R 548 STA DLDBT 00 00546
000315 054053 A 549 * NOW COMMON PROCESSING 00 00547
000316 074057 A 550 DFLUN SAVE X 00 00548
000317 034051 A 551 LDX DLDBT CALL SEQ ADDR 00 00549
000320 035000 A 552 LDX 0,1 GET LOC OF BUFFER ADDR. 00 00550
000321 025000 A 553 LDB 0,1 NOW BUFFER ADDR * 2 FOR CHAR N/N+1 FLAG 00 00551
000322 005021 A 554 TBA 00 00552
000323 005111 A 555 IAR 00 00553
000324 055000 A 556 STA 0,1 INCREMENT BUFFER ADDR FOR NEXT CHAR. 00 00554
000325 044043 A 557 INR DLDBT NOW RETURN ADDR 00 00555
000326 005001 A 558 TZA 00 00556
000327 004477 A 559 LLRL 31 00 00557
000330 007401 A 560 SDF SET FOR CHAR N+1 00 00558
000331 001004 A 561 JAN DBYTA NEG IF CHAR N+1 00 00559
000332 000334 R 562 RDF 00 00560
000333 007400 A 563 DBYTA LDA 0,2 RESET FOR CHAR N 00 00561
000334 016000 A 564 LDX DBYTX GET WORD 00 00562
000335 034036 A 565 JXZ DBYTC LOAD/STORE INDICATOR 00 00563
000336 001040 A 566 JDF DBYTB JMP IF LOW ORDER BYTE. STORE BYTE 00 00564
000337 000362 R 567 LRLA 8 HIGH ORDER BYTE. 00 00565
000338 007401 A 568 JMP DBYTB+1 00 00566
000339 007401 A 569 DBYTB SDF RESET LOW ORDER SWITCH 00 00567
000340 006150 A 570 ANAI 0177400 00 00568
000341 177400 A 571 DBYTB SDF 00 00569
000342 114024 A 572 JDF DBYTG JUMP IF LOW ORDER 00 00570
000343 001001 A 573 LRLA 8 ROTATE BYTE BACK TO HIGH ORDER 00 00571
000344 000346 R 574 DBYTG STA 0,2 STORE BYTE 00 00572
000345 007401 A 575 LDA DBYTX+1 00 00573
000346 005002 A 576 TZA 00 00574
000347 064014 A 577 STB DBYTX RESET STORE BYTE FLAG. 00 00575
000348 001000 A 578 JMP DBYTB 00 00576
000349 000367 R 579 DBYTC JDF DBYTD JMP FOR CHAR. N+1 00 00577
000350 001001 A 580 LRLA 8 00 00578
000351 000365 R 581 DBYTD ANA BM377 EXTRACT BYTE 00 00579
000352 004250 A 582 DBYTD TAB EXIT WITH BYTE IN A,B 00 00580
000353 150463 A 583 DBYTF LDX DFLUN 00 00581
000354 005012 A 584 JMP * EXIT 00 00582
000355 034006 A 585 DLDBT EQU *-1 ENTER HERE TO LOAD A BYTE FROM BUFFER 00 00583
000356 001000 A 586 JMP DLDBA 00 00584
000357 000370 R 587 DBYTX DATA 0,0 00 00585
000358 000371 R 588 EJEC 00 00586
000359 001000 A 589 * 00 00587
000360 000371 R 590 * 00 00588
000361 001000 A 591 * 00 00589
000362 000371 R 592 * 00 00590
000363 001000 A 593 * FIND LU NAME SUBROUTINE. 00 00591
000364 000371 R 594 * 00 00592
000365 001000 A 595 * DFLUN COMPARES THE 2-CHARACTER ALPHA-NUKERIC NAME IN DTEMP 00 00593
000366 000371 R 596 * WITH THE LEGAL LOGICAL UNIT NAMES IN LUNT. IF A COMPARISON 00 00594
000367 000371 R 597 * CANNOT BE MADE, DSERR00 IS CALLED TO OUTPUT THE 0004 ERROR 00 00595
000368 000371 R 598 * MESSAGE OR RETURN IS TO CALLER IF OVERFLOW INDICATOR ON. 00 00596
000369 000371 R 599 * ENTER VIA JPM DFLUN DFL ON=RETURN CALLER ON NO-MATC 00 00597
000370 000371 R 600 * DFL OFF= ERROR ROUT. ON ERROR. 00 00598
000371 000371 R 601 * EXIT WITH A = LOGICAL UNIT NUMBER,BINARY. 00 00599
000372 001000 A 602 * A = 0 FOR NO COMPARISON AND RETURN TO 00 00600
000373 000316 R 603 * CALLER REQUESTED. 00 00601
000374 000000 A 604 * 00 00602
000375 000000 A 605 * IF A MATCH UP IS FOUND,BUT THE LOGICAL UNIT IS UNASSIGNABLE 00 00603
606 * (LOGICAL UNIT NUMBER =101-179),EXIT IS TO DSERR TO OUTPUT 00 00604
607 * THE 0008 ERROR MESSAGE. 00 00605
608 * 00 00606
000376 000000 A 609 DFLUN ENTR 00 00607
    
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000377 030345 A 610          LDX      V$LUNT      LUNT ADDR          00 00608
000400 015000 A 611 DFLUN2 LDA      0,X      COMPARE LU NAME IN V$DCB AND LUNT 00 00609
000401 001010 A 612          JAZ      DFLUN4+1    0 =END OF LUNT,ERROR.    00 00610
000402 000413 R
000403 137413 A 613          ERA*     V$DCB      MATCH-UP          00 00611
000404 001010 A 614          JAZ      DFLUN4      TRY NEXT ENTRY IN LUNT 00 00612
000405 000412 R
000406 005144 A 615          IXR
000407 005144 A 616          IXR
000410 001000 A 617          JMP      DFLUN2
000411 000400 R
000412 015001 A 618 DFLUN4 LDA      1,X      RETURN          00 00616
000413 001000 A 619          JMP*    DFLUN
000414 100376 R
620          EJEC
621 *
622 *
623 *          DNUM***
624 *          DECIMAL ASCII INTEGER TO BINARY CONVERSION
625 *
626 *          THE DECIMAL INTEGER MUST BE POSITIVE AND IN THE RANGE
627 *          0000-9999. IF NOT A DECIMAL INTEGER EXIT IS TO OSER00 TO
628 *          OUTPUT THE DC02 ERROR MESSAGE.
629 *
630 *          EXIT WITH A= BINARY NO.      X UNCHANGED
631 *          B DESTROYED
632 *
000415 000000 A 633 DNUM  ENTR
000416 005002 A 634          TZB
000417 064063 A 635          STB      DNUMZ
000420 010413 A 636          LDA      V$DCB      GET BUFFER ADDR.
000421 004241 A 637          LRLA     1
000422 054062 A 638          STA      DNUMZ+2    BUFFER*2
000423 002000 A 639 DNUMA  CALL     CLDBT,DNUMZ+2  GET ASCII CHAR. FROM BUFFER 00 00637
000424 000371 R
000425 000503 R
000426 005012 A 640          TAB
000427 144172 A 641          SUB      OSBLK
000430 001016 A 642          JANZ   DNUMG
000431 000435 R
000432 014050 A 643          LDA      DNUMZ      BLANK
000433 001000 A 644          JMP      CNUMH
000434 000435 R
000435 140425 A 645 DNUMG  SUB      BS4          =023, NOW 0260
000436 001004 A 646          JAN      DNUME      ERROR, LESS THAN 0
000437 000443 R
000440 140471 A 647          SUB      TEN
000441 001004 A 648          JAN      DNUMF      OK
000442 000446 R
000443 010422 A 649 DNUME  LDA      TWO
000444 001000 A 650          JMP      OSER00      ERROR, DC02
000445 000250 E
000446 005021 A 651 DNUMF  TBA
000447 150472 A 652          ANA      BM17
000450 054033 A 653          STA      DNUMZ+1    MASK OUT BCD
000451 014031 A 654          LDA      DNUMZ
000452 004244 A 655 DNUMK  LRLA     4          GET PREVIOUS DIGITS
000453 124030 A 656          ADD     DNUMZ+1    LRLA 3/LRLA 4 CONVERT TO BCD OR PACK OCTAL
000454 054026 A 657          STA      DNUMZ      DIGIT JUST CONVERTED
000455 005344 A 658 DNUMH  BXR
000456 001046 A 659          JXNZ   DNUMA      X=0, ALL DIGITS CONVERTED
000457 000423 R
000460 000460 R
660 DNUMB  EQU      *
661 *
662 *          POSITIVE DECIMAL 4-BIT BCD TO BINARY CONVERSION.
663 *
000460 030423 A 663 DDTB  EQU      *
000461 005012 A 664          LDX      BS2          =4 , LOOP COUNT
000462 005001 A 665          TAB
000463 054017 A 666          TZA
000464 005001 A 667 DDTBA  STA      DNUMZ
000465 004444 A 668          TZA
000466 124014 A 669          LLRL   4          NOW BCD
000467 054013 A 670          ADD     DNUMZ
000470 005344 A 671          STA      DNUMZ
000471 001040 A 672          BXR
000472 100413 R 673          JXZ*   DNUM      ALL DIGITS DONE.
000473 004242 A 674          LRLA     2
000474 124006 A 675          ADD     DNUMZ
000475 004241 A 676          LRLA     1
000476 001000 A 677          JMP      DDTBA
000477 000463 R
000500 005302 A 678 DDTBC  EQU      *-1
000501 001000 A 679 DNUMY  DECR
000502 000153 R 680          JMP      DASN6+1    B=-1
000503 000000 A 681 DNUMZ  DATA  0,0,0      DC10 MSG.
000504 000000 A
000505 000000 A
682          EJEC
683 *
684 *
685 *          DDMI
    
```



```

686 *
687 *   GET NEXT ITEM SUBROUTINE
688 *
689 *   DGN1 SCANS THE VARIABLE FIELD OF THE INPUT BUFFER, V$OPBF,
690 *   AND STORES A VARIABLE INTO A BUFFER SPECIFIED IN THE CALLING
691 *   SEQUENCE, A COMMA, PERIOD, EQUAL SIGN, MAX. COUNT TERMINATES
692 *   SCAN. BLANKS ARE IGNORED.
693 *
694 *   EXIT WITH A REG = COUNT OF CHARACTERS STORED IN BUFFER.
695 *
696 *
697 *
000506 000000 A 698 DGN1 ENTR
000507 064102 A 699 STB DGNIZ+1
000510 000510 R 700 EQU *
000511 010413 A 701 LDA V$OCB GET OC BUFFER ADDR.
000512 004241 A 702 LRLA 1
000513 054104 A 703 STA DSCNZ BUFFER*2
000514 054075 A 704 STA DGNIZ
000515 015000 A 705 LDX DSCNA+2
000516 144100 A 706 LDA 0,X
000517 005014 A 707 SUB DSCNZ
000520 144077 A 708 TAX
000521 001002 A 709 SUB DSS0 CHECK IF 80 CHAR.
000522 000000 E 710 JAP DSCLR YES.
000523 002000 A 711 DSCNA CALL DLDBT,DCOUNT LOAD A CHAR
000524 000371 R
000525 000000 E
000526 134073 A 712 ERA DSBLK =0240
000527 001010 A 713 JAZ DSCNB
000530 000613 R
000531 005021 A 714 TBA
000532 134071 A 715 ERA DSCOM
000533 001010 A 716 JAZ DSCNB COMMA
000534 000613 R
000535 005021 A 717 TBA
000536 134064 A 718 ERA DSEQ
000537 001010 A 719 JAZ DSCNB EQUAL SIGN
000540 000613 R
000541 005021 A 720 TBA
000542 134056 A 721 ERA DSPER PERIOD
000543 001010 A 722 JAZ DSCLR
000544 000522 E
000545 024006 A 723 LDB DGNIE+2 DCOUNT ADDR.
000546 016000 A 724 LDA 0,B RESTORE TO NON BLANK POINTER
000547 005311 A 725 DAR
000550 056000 A 726 STA 0,B
000551 034040 A 727 LDX DGNIZ+1
000552 000552 R 728 DGNIA EQU SCAN FOR 1ST NON-BLANK CHARACTER
000553 000371 R 729 DGNIE CALL DLDBT,DCOUNT LOAD A CHARACTER FROM V$OPBF
000554 000525 E
000555 134044 A 730 ERA DSBLK =0240
000556 001010 A 731 JAZ DGNID BLANK
000557 000603 R
000560 005021 A 732 TBA
000561 134042 A 733 ERA DSCOM COMMA
000562 001010 A 734 JAZ DGNID
000563 000603 R
000564 005021 A 735 TBA
000565 134035 A 736 ERA DSEQ EQUAL SIGN
000566 001010 A 737 JAZ DGNID
000567 000603 R
000570 005021 A 738 TBA
000571 134027 A 739 ERA DSPER PERIOD
000572 001010 A 740 JAZ DGNID
000573 000603 R
000574 005021 A 741 TBA
000575 002000 A 742 CALL DSTBT,DGNIZ STORE CHAR
000576 000307 R
000577 000611 R
000600 005344 A 743 DXR
000601 001046 A 744 JXNZ DGNIE GET NEXT
000602 000552 R
000603 005041 A 745 DGNID TXA
000604 005211 A 746 CPA
000605 005111 A 747 IAR
000606 124003 A 748 ADD DGNIZ+1
000607 000607 R 749 DGNIX EQU *
000610 001000 A 750 JMP* DGN1 NOW EXIT
000611 000000 A 751 DGNIZ DATA 0,0
000612 000000 A 752 DSCNX EQU * RESTORE X
000613 000613 R 753 * ENTER FOR BLANK CHAR
000614 005144 A 754 DSCNB IXR
000615 005041 A 755 TXA
000616 001000 A 756 JMP DSCNA-3
000617 000000 A 757 DSCNZ DATA 0
000620 000120 A 758 DSS0 DATA 80
000621 000256 A 759 DSPER DATA 0256 PERIOD
    
```







298	CLOCK	300	301							
443	DSDASS	445								
763	DSNAME	410	413							
421	DSOPCM	422	425	427	429					
243	EIGHT	446								
240	FIVE	358								
239	FOUR	360	435	496						
124	LC	125	126	127	128	129	130	131	132	133
		134	135	136	137	138	139	140	141	142
		143	145	146	147	148	149	150	151	152
		153	154	155	156	157	158	160	161	162
		163	167	168	169	170	171	172	173	178
		179	180	183	188	189	190			
99	LCJP	100	101	102	109	110	111	112	113	116
234	LHW	432								
319	MP	320	321	322	323	324	325			
199	MT	200	201	202	203	204	205	206	207	208
		209	210	211	212	213	214	215	216	217
		218	219	220	221	222	223	224	225	226
		227	228	229	230	231	232	233	234	235
		236	237	238	239	240	241	242	243	244
		245	246	247	248	249	250	251	252	253
		254	255							
354	DASN10	347	349							
496	DASN18	362	392	398	482					
357	DASN2	351								
434	DASN22	518								
456	DASN24	361								
498	DASN30	364								
508	DASN31	367	505	520						
513	DASN40	369								
445	DASN6	488	680							
449	DASN7	507								
430	DASN8	408	423							
344	DASSGN	328	437	764						
521	DASTOR	357	450							
563	DBYTA	561								
569	DBYTB	566	568							
579	DBYTC	565								
581	DBYTD	579								
583	DBYTF	578								
574	DBYTG	572								
587	DBYTX	545	546	564	571	575	577			
0	DCDUMT	331	711	729						
667	DDTBA	677								
609	DFLUN	350	368	383	387	390	396	400	404	430
		550	583	619						
611	DFLUN2	617								
618	DFLUN4	612	614							
698	DGNI	359	436	750						
745	DGNIID	731	734	737	740					
729	DGNIIE	723	744							
751	DGNIIZ	699	704	727	742	748				
549	DLDBA	586								
585	DLDBT	548	551	557	639	711	729			
395	DLUN14	386								
416	DLUN15	412								
438	DLUN20	403								
380	DLUNDT	453	512							
236	DNE	366								
481	DNSR4	493								
489	DNSR5	484								
495	DNSR98	433	439	480	492	506				
494	DNSR99	466	471	476	477	483	486			
633	DNUM	356	510	673						
639	DNUMA	659								
649	DNUME	646								
651	DNUMF	648								
645	DNUMG	642								
658	DNUMH	644								
679	DNUMY	389	415							
681	DNUMZ	635	638	639	643	653	654	656	657	667
		670	671	675						
758	DS80	709								
760	DSBLK	641	712	730						
0	DSCLR	330	710	722						
711	DSCNA	705	756							
754	DSCNB	713	716	719						
757	DSCNZ	703	707							
762	DSCDM	715	733							
761	DSEQ	718	736							
0	DSERO0	332	497	650						
0	DSERR	329	447	448						
759	DSPER	721	739							
543	DSTBT	409	426	444	547	742				
235	RHW	417	438	473						
242	SEVEN	469								
245	TEN	647								
238	THREE	346	420	442	509					
237	TWO	353	519	649						
157	V\$DSTB	419	441	478						
149	V\$LUNT	610								
170	V\$LUT1	384	407							



E.2 VORTEX LISTING

V\$DASSGN

PROGRAM PAGE 12

LISTING PAGE ( 535)

0	V\$DASS	10							
183	V\$DCB	464	499	514	613	636	701		
333	X	455	500	503	515	611	618	706	



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1 * THIS IS A COPYRIGHTED PROGRAM. COPYRIGHT 1972 BY VARIAN DATA MACHINE 03 00001
2 * 03 00002
3 * V.D.M. PART NO. 92L0705-013C 03 00003
4 * 03 00004
5 * 03 00005
6 * 03 00006
7 * 03 00007
8 * 03 00008
9 * 03 00009
10 * TITLE VSDABORT 03 00010
11 ***** 03 00011
12 **** TIDB SETUP **** 03 00012
13 * 03 00013
14 ***** 03 00014
000000 A 16 TBTRD EQU 0 TASK THREAD 03 00016
000001 A 17 TBST EQU 1 TASK STATUS 03 00017
000002 A 18 TBPL EQU 2 STATUS CONT. (BITS15-6), PRIORITY LEVEL(5-0 03 00018
000003 A 19 TBEVNT EQU 3 INTERRUPT EVENT 03 00019
000004 A 20 TBRSA EQU 4 A REENRANT AND SUSPEND STACK 03 00020
000005 A 21 TBRSE EQU 5 B REENRANT AND SUSPEND STACK 03 00021
000006 A 22 TBRSP EQU 6 X REENRANT AND SUSPEND STACK 03 00022
000007 A 23 TBRST EQU 7 DF/P REENRANT AND SUSPEND STACK 03 00023
000010 A 24 TBRSTS EQU 8 TEMP. STG. REENRANT AND SUSPEND STACK 03 00024
000011 A 25 TBENTY EQU 9 TASK ENTRY LOCATION 03 00025
000012 A 26 TBTMS EQU 10 TIME COUNTER - CLOCK RESOLUTION IN 5MS INC 03 00026
000013 A 27 TBTMIN EQU 11 TIME COUNTER - CLOCK MINUTE INCREMENTS 03 00027
000014 A 28 TBISA EQU 12 A INTERRUPT STACK 03 00028
000015 A 29 TBISB EQU 13 B INTERRUPT STACK 03 00029
000016 A 30 TBISX EQU 14 X INTERRUPT STACK 03 00030
000017 A 31 TBISP EQU 15 DF/P INTERRUPT STACK 03 00031
000020 A 32 TBISRS EQU 16 REENT. STACK INTERRUPT STACK 03 00032
000021 A 33 TBID EQU 17 BLK ALLOC(15-10), I/O THR(9-5), I/O ACT(4-0) 03 00033
000022 A 34 TBKN1 EQU 18 TASK NAME 03 00034
000023 A 35 TBKN2 EQU 19 TASK NAME 03 00035
000024 A 36 TBKN3 EQU 20 TASK NAME 03 00036
000025 A 37 TBTLC EQU 21 1ST LOC. OF TASK ALLOCATABLE 03 00037
000026 A 38 TBCPTH EQU 22 BACKGROUND TASK QUEUE 03 00038
000027 A 39 TBATSK EQU 23 TIDB LOC. OF ACTIVATING TASK 03 00039
000030 A 40 TERSE EQU 24 TASK ERROR CODE 03 00040
41 * EJECT 03 00041
42 ***** 03 00042
43 * 03 00043
44 **** TASK STATUS DESCRIPTION (BIT SET WORD 1) **** 03 00044
45 * 03 00045
46 ***** 03 00046
000017 A 48 TBS15 EQU 15 INTERRUPT SUSPEND 03 00048
000016 A 50 TBS14 EQU 14 TASK SUSPEND 03 00050
000015 A 51 TBS13 EQU 13 TASK ABORT 03 00051
000014 A 52 TBS12 EQU 12 TASK EXIT 03 00052
000013 A 54 TBS11 EQU 11 TIDB CORE RESIDENT 03 00054
000012 A 55 TBS10 EQU 10 CORE RESIDENT TASK 03 00055
000011 A 56 TBS9 EQU 9 FOREGROUND TASK 03 00056
000010 A 58 TBS8 EQU 8 TASK PROTECTED 03 00058
000007 A 59 TBS7 EQU 7 TASK SCHEDULED BY TIME DELAY 03 00059
000006 A 60 TBS6 EQU 6 TIME DELAY ACTIVE 03 00060
000005 A 62 TBS5 EQU 5 TASK WAITING TO BE LOADED 03 00062
000004 A 63 TBS4 EQU 4 TASK ERROR 03 00063
000003 A 64 TBS3 EQU 3 TASK INTERRUPT EXPECTED 03 00064
000002 A 66 TBS2 EQU 2 OVERLAY TASK 03 00066
000001 A 67 TBS1 EQU 1 UPON TERMINATION ACTIVATE TASK SCHED TASK 03 00067
000000 A 68 TBS0 EQU 0 TASK SEARCH-ALLOCATED-LOADED 03 00068
69 * EJECT 03 00069
70 ***** 03 00070
71 * 03 00071
72 **** TASK STATUS DESCRIPTION (BIT SET WORD 2) **** 03 00072
73 * 03 00073
74 ***** 03 00074
76 * BIT 15 - TASK OPENED 03 00076
78 * BIT 14 - UNUSED 03 00078
79 * BIT 13 - OVERLAY LOAD 03 00079
80 * BIT 12 - TASK WAITING FOR BACKGROUND TASK I/O TO COMPLETE 03 00080
81 * TASK LOCKED-OUT UNTIL BG I/O COMPLETE OR BIT 11 03 00081
82 * IS SET (ALLOCATABLE SPACE AVAILABLE) 03 00082
84 * BIT 11 - DEFINES THAT ALLOCATABLE SPACE IS AVAILABLE, TRY 03 00084
85 * ALLOCATING TASK AGAIN. OVERRIDES BIT 12 SET OR 03 00085
86 * BIT 5 IN STATUS WORD. 03 00086
87 * BIT 10 - BACKGROUND TASK BEING WRITTEN ON CHECKPOINT FILE. 03 00087
88 * BIT 9 - TASK WAITING FOR A TIDB TO COME AVAILABLE FOR 03 00088
89 * SCHEDULING. 03 00089
91 * BIT 8 TO 6 - UNUSED 03 00091
92 * EJECT 03 00092
93 ***** 03 00093
94 * 03 00094
95 **** JOB PROCESSOR LOW CORE EQUATES **** 03 00095
96 * 03 00096
97 ***** 03 00097
000050 A 99 LCJP EQU 050 JCP NAME 03 00099
000050 A 100 V$JNAM EQU LCJP LINE COUNT 03 00100
000054 A 101 V$LCNT EQU LCJP+4 JCP FLAGS 03 00101
000055 A 102 V$JCFG EQU LCJP+5 JCP FLAGS 03 00102
103 * BIT 2-0 = LOAD AND GO FLAGS 03 00103
104 * BIT 3 = DUMP FLAG 1=DUMP, 0=NO DUMP 03 00104
105 * BIT 4 = DUMP FLAG IF LOAD AND GO 03 00105

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106 * BIT 9-5 = UNUSED 03 00106
107 * BIT 15-10 = BG EXTRA CORE BLOCKS TO ALLOC 02 00107
000056 A 109 V$BIC1 EQU LCJP+6 BIC INTERRUPT ADDRESS TABLE (10 WORDS) 03 00109
000070 A 110 V$DATE EQU LCJP+10 JCP DATE RECORD 03 00110
000074 A 111 V$PLCT EQU LCJP+20 PERMINATE LINE COUNT 03 00111
000075 A 112 V$BGLB EQU LCJP+21 JCP LIB KEY AND LU NO. (BACKGROUND LIB) 03 00112
000076 A 113 V$CRDM EQU LCJP+22 CARD KEYPUNCH TYPE, 0=026, 1=029 03 00113
114 * BIT 0 = SYSTEM NOMINAL KEYPUNCH MODE. 03 00114
115 * BIT 9 = CURRENT JOB KEYPUNCH MODE. 03 00115
000077 A 116 V$JCTM EQU LCJP+23 TEMP. STORAGE FOR /MEM BLOCK 03 00116
117 * EJECT 03 00117
118 ***** 03 00118
119 * 03 00119
120 *** LOW CORE DESCRIPTION *** 03 00120
121 * 03 00121
122 ***** 03 00122
000300 A 124 LC EQU 0300 CURRENT TASK TIDB LOCATION 03 00124
000300 A 125 V$CTL EQU LC CURRENT PRIORITY LEVEL 03 00125
000301 A 126 V$CPL EQU LC+1 CURRENT REENRANT STACK POINTER 03 00126
000302 A 127 V$CRS EQU LC+2 POINTER TO HIGHEST PRIORITY TIDB 03 00127
000303 A 128 V$TB EQU LC+3 POINTER TO UNUSED TASK TIDB 03 00128
000304 A 129 V$UTB EQU LC+4 POINTER TO NEXT ENTRY IN REENRANT STACK 03 00129
000305 A 130 V$PTVB EQU LC+5 FIRST LOC. OF REENRANT STACK 03 00130
000306 A 131 V$FLRS EQU LC+6 LAST LOC. OF REENRANT STACK+1 03 00132
000307 A 132 V$LRSK EQU LC+7 CHECKPOINT FLAG 1=ON, 0=OFF 03 00133
000310 A 133 V$CKPT EQU LC+8 LOC. OF TIDB FOR DPCOM TASK 03 00134
000311 A 134 V$OPCL EQU LC+9 LOC. OF TIDB FOR SYSTEM SAL TASK 03 00135
000312 A 135 V$LSAL EQU LC+10 LOC. OF TIDB FOR SYSTEM ERROR TASK 03 00136
000313 A 136 V$LER EQU LC+11 LOC. OF TIDB FOR JOB CONTROL PROCESSOR TAS 03 00137
000314 A 137 V$TJCP EQU LC+12 LOC. OF CURRENT ACTIVE BACKGROUND TSK TIDB 03 00138
000315 A 138 V$BTB EQU LC+13 LOC. OF 1ST UNPROTECTED WORD 03 00139
000316 A 139 V$LUP EQU LC+14 LOC. OF LAST UNPROTECTED WORD 03 00140
000317 A 140 V$LLUP EQU LC+15 INTERRUPT MASK (8 WORDS) 03 00141
000320 A 141 V$IM EQU LC+16 MEMORY PROTECT MASK (4 WORDS) 02 00142
000330 A 142 V$MPM EQU LC+24 CORE ALLOCATION MASK (4 WORDS) 03 00143
000334 A 143 V$CAM EQU LC+28 UNUSED 03 00144
144 * EQU LC+32 UNUSED 03 00144
000341 A 145 V$CRDR EQU LC+33 CORE RESIDENT DIRECTORY LOCATION 03 00145
000342 A 146 V$TEGT EQU LC+34 TOP OF THREAD OF BG TSK WAITING TO BE ALLO 03 00146
000343 A 147 V$TMS EQU LC+35 TIME OF DAY IN 5 MILLISECOND INCREMENTS 02 00147
000344 A 148 V$TMN EQU LC+36 TIME OF DAY IN MINUTE INCREMENTS 03 00148
000345 A 149 V$LUNT EQU LC+37 ADDR. OF LOGICAL UNIT NAME TABLE 03 00149
000346 A 150 V$DPCF EQU LC+38 DPCOM LOCKOUT FLAG 03 00150
000347 A 151 V$FGLB EQU LC+39 KEY AND LU NO. FOR FOREGROUND LIB 03 00151
000350 A 152 V$FREE EQU LC+40 FREE RUNNING COUNTER INCR. IN MICROSECONDS 03 00152
000351 A 153 V$CTMS EQU LC+41 CLOCK RESOLUTION IN 5 MILLISECOND INCR. 03 00153
000352 A 154 V$SCV EQU LC+42 CLOCK SELECTED COUNT VALUE (1 TO 4095) 03 00154
000353 A 155 V$CKB EQU LC+43 BASIC CLOCK INTERRUPT RATE IN MICROSECONDS 03 00155
000354 A 156 V$CRM EQU LC+44 CLOCK RESOLUTION INCR. FOR 1 MINUTE. 03 00156
000355 A 157 V$DSTB EQU LC+45 BASE ADDR. FOR DST BLOCK 03 00157
000356 A 158 V$LIT EQU LC+46 LAST LOCATION OF BACKGROUND LITERAL TABLE 03 00158
159 * EQU LC+47 UNUSED 03 00159
000360 A 160 V$CTAD EQU LC+48 BASE ADDR. FOR CONTROLLER ADDR. TABLE 03 00160
000361 A 161 V$SCTL EQU LC+49 CURRENT CONTROLLER IN SCAN 03 00161
000362 A 162 V$NCTR EQU LC+50 NO. OF CONTROLLERS 03 00162
000363 A 163 V$PIMN EQU LC+51 EXTERNAL DEVICE ADDRESS TABLE FOR PIMS 03 00163
164 * EQU LC+52 UNUSED (8 WORDS DEFINED IN PIM NO ORDER) 03 00164
165 * EQU LC+59 UNUSED 03 00165
166 * EQU LC+60 UNUSED 03 00166
000375 A 167 V$SLFG EQU LC+61 SAL TASK BUSY FLAG 1=BUSY, 0=NOT BUSY 03 00167
000376 A 168 V$ERFG EQU LC+62 ERROR TASK BUSY FLAG 1=BUSY, 0=NOT BUSY 03 00168
000377 A 169 V$JOP EQU LC+63 JCP OPERATING FLAG 03 00169
000400 A 170 V$LUT1 EQU LC+64 START LUN ADDR FOR JCP/DPCOM ASSIGNABLE 03 00170
000401 A 171 V$LUT2 EQU LC+65 START LUN ADDR FOR UNASSIGNABLE 03 00171
000402 A 172 V$LUT3 EQU LC+66 START LUN ADDR FOR DPCOM ASSIGNABLE 03 00172
000403 A 173 V$IMIN EQU LC+67 32767 - (60900/(5*V$CTMS)) + 1 03 00173
174 * EQU LC+68 UNUSED 03 00174
175 * EQU LC+69 UNUSED 03 00175
176 * EQU LC+70 UNUSED 03 00176
177 * EQU LC+71 UNUSED 03 00177
000410 A 178 V$IDA EQU LC+72 I/O ALGORITHM 03 00178
000411 A 179 V$CKIT EQU LC+73 CLOCK INT. IN PIM BEFORE LOCKOUT FLAG. 03 00179
000412 A 180 V$JCB EQU LC+74 ALL SYSTEM BACKGROUND PROGRAMS AND JCP USE 03 00180
181 * EQU LC+75 THIS SYSTEM BUFFER TO READ DIRECTIVES AND 03 00181
182 * EQU LC+75 SOURCE RECORDS IN. 03 00182
000413 A 183 V$DCB EQU LC+75 DPCOM WILL READ OPERATOR KEY-IN REQUESTS 03 00183
184 * EQU LC+75 IN THIS BUFFER. IF JCP IS SET NOT ACTIVE 03 00184
185 * EQU LC+75 AND A 1 DIRECTIVE IS INPUTED, DPCOM 03 00185
186 * EQU LC+75 WILL MOVE THE DIRECTIVE TO V$JCB BEFORE 03 00186
187 * EQU LC+75 SCHEDULING JCP. 03 00187
000414 A 188 V$BVN EQU LC+76 BOTTOM OF VORTEX NUCLEUS 03 00188
000415 A 189 V$BFC EQU LC+77 TOP OF FG RES. AREA/BOTTOM OF FG BLK COMM. 03 00189
000416 A 190 V$TFC EQU LC+78 TOP OF FG BLK COMM/TOP OF VORTEX CORE. 03 00190
191 * EQU LC+79 UNUSED 03 00191
192 * EQU LC+79 EJECT 03 00192
193 ***** 03 00193
194 * 03 00194
195 *** MASK TABLE DESCRIPTION *** 03 00195
196 * 03 00196
197 ***** 03 00197
000420 A 199 MT SET 0420 03 00199
000420 A 200 ZERO EQU MT ZERO WORD 03 00200
000421 A 201 BSO EQU MT+1 BIT MASK CONTENTS 000001 03 00201

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000422 A 202 BS1 EQU MT+2 000002 03 00202
000423 A 203 BS2 EQU MT+3 000004 03 00203
000424 A 204 BS3 EQU MT+4 000010 03 00204
000425 A 205 BS4 EQU MT+5 000020 03 00205
000426 A 206 BS5 EQU MT+6 000040 03 00206
000427 A 207 BS6 EQU MT+7 000100 03 00207
000430 A 208 BS7 EQU MT+8 000200 03 00208
000431 A 209 BS8 EQU MT+9 000400 03 00209
000432 A 210 BS9 EQU MT+10 001000 03 00210
000433 A 211 BS10 EQU MT+11 002000 03 00211
000434 A 212 BS11 EQU MT+12 004000 03 00212
000435 A 213 BS12 EQU MT+13 010000 03 00213
000436 A 214 BS13 EQU MT+14 020000 03 00214
000437 A 215 BS14 EQU MT+15 040000 03 00215
000440 A 216 BS15 EQU MT+16 0100000 03 00216
000441 A 217 BR0 EQU MT+17 BIT MASK CONTENTS 0177776 03 00217
000442 A 218 BR1 EQU MT+18 0177775 03 00218
000443 A 219 BR2 EQU MT+19 0177773 03 00219
000444 A 220 BR3 EQU MT+20 0177767 03 00220
000445 A 221 BR4 EQU MT+21 0177757 03 00221
000446 A 222 BR5 EQU MT+22 0177737 03 00222
000447 A 223 BR6 EQU MT+23 0177677 03 00223
000450 A 224 BR7 EQU MT+24 0177577 03 00224
000451 A 225 BR8 EQU MT+25 0177377 03 00225
000452 A 226 BR9 EQU MT+26 0176777 03 00226
000453 A 227 BR10 EQU MT+27 0175777 03 00227
000454 A 228 BR11 EQU MT+28 0173777 03 00228
000455 A 229 BR12 EQU MT+29 0167777 03 00229
000456 A 230 BR13 EQU MT+30 0157777 03 00230
000457 A 231 BR14 EQU MT+31 0137777 03 00231
000460 A 232 BR15 EQU MT+32 0077777 03 00232
000461 A 233 NEG EQU MT+33 SET ALL BITS 03 00233
000462 A 234 LHW EQU MT+34 LEFT HALF WORD MASK 0177400 03 00234
000463 A 235 RHW EQU MT+35 RIGHT HALF WORD MASK 0377 03 00235
000421 A 236 ONE EQU MT+1 CONTAINS NUMBER 1 03 00236
000422 A 237 TWO EQU MT+2 CONTAINS NUMBER 2 03 00237
000464 A 238 THREE EQU MT+36 CONTAINS NUMBER 3 03 00238
000423 A 239 FOUR EQU MT+3 CONTAINS NUMBER 4 03 00239
000465 A 240 FIVE EQU MT+37 CONTAINS NUMBER 5 03 00240
000466 A 241 SIX EQU MT+38 CONTAINS NUMBER 6 03 00241
000467 A 242 SEVEN EQU MT+39 CONTAINS NUMBER 7 03 00242
000424 A 243 EIGHT EQU MT+4 CONTAINS NUMBER 8 03 00243
000470 A 244 NINE EQU MT+40 CONTAINS NUMBER 9 03 00244
000471 A 245 TEN EQU MT+41 CONTAINS NUMBER 10 03 00245
000421 A 246 BM1 EQU MT+1 BIT MASK WORD 00001 03 00246
000464 A 247 BM3 EQU MT+36 BIT MASK WORD 00003 03 00247
000467 A 248 BM7 EQU MT+39 BIT MASK WORD 00007 03 00248
000472 A 249 BM17 EQU MT+42 BIT MASK WORD 00017 03 00249
000473 A 250 BM37 EQU MT+43 BIT MASK WORD 00037 03 00250
000474 A 251 BM77 EQU MT+44 BIT MASK WORD 00077 03 00251
000475 A 252 BM177 EQU MT+45 BIT MASK WORD 00177 03 00252
000463 A 253 BM377 EQU MT+35 BIT MASK WORD 00377 03 00253
000476 A 254 BM777 EQU MT+46 BIT MASK WORD 00777 03 00254
000477 A 255 BM1777 EQU MT+47 BIT MASK WORD 01777 03 00255
2556 EJEC 03 00256
2557 ***** 03 00257
2558 * 03 00258
2559 **** BIT TEST BIT DESIGNATION *** 03 00259
2560 * 03 00260
2561 ***** 03 00261
000040 A 263 RA0 EQU 040 BT JUMPS WHEN A REGISTER IS 0 03 00263
000000 A 264 RA1 EQU 000 BT JUMPS WHEN A REGISTER IS 1 03 00264
000060 A 265 RB0 EQU 060 BT JUMPS WHEN B REGISTER IS 0 03 00265
000020 A 266 RB1 EQU 020 BT JUMPS WHEN B REGISTER IS 1 03 00266
2668 ***** 03 00268
2669 * 03 00269
2670 ** THE BIT CHECKED 03 00270
2671 * 03 00271
2672 ***** 03 00272
000000 A 274 B0 EQU 0 03 00274
000001 A 275 B1 EQU 1 03 00275
000002 A 276 B2 EQU 2 03 00276
000003 A 277 B3 EQU 3 03 00277
000004 A 278 B4 EQU 4 03 00278
000005 A 279 B5 EQU 5 03 00279
000006 A 280 B6 EQU 6 03 00280
000007 A 281 B7 EQU 7 03 00281
000010 A 282 B8 EQU 8 03 00282
000011 A 283 B9 EQU 9 03 00283
000012 A 284 B10 EQU 10 03 00284
000013 A 285 B11 EQU 11 03 00285
000014 A 286 B12 EQU 12 03 00286
000015 A 287 B13 EQU 13 03 00287
000016 A 288 B14 EQU 14 03 00288
000017 A 289 B15 EQU 15 03 00289
290 EJEC 03 00290
291 ***** 03 00291
292 * 03 00292
293 **** DEVICE AND FUNCTION CODES *** 03 00293
294 * 03 00294
295 ***** 03 00295
297 **** REAL TIME CLOCK *** 03 00297
000047 A 298 CLOCK EQU 047 DEVICE NUMBER 047 03 00298

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000747	A	299	*						03	00299
000147	A	300	DISCLK	EQU	0700+CLOCK	DISABLE CLOCK			03	00300
	A	301	ENACKL	EQU	0100+CLOCK	ENABLE CLOCK			03	00301
		303	*						03	00303
		304	****	PIM				***	03	00304
000044	A	305	APIM	EQU	044	ALL PIMS DEVICE NUMBER			03	00305
000040	A	306	PIM1	EQU	040				03	00306
000041	A	307	PIM2	EQU	041				03	00307
000042	A	308	PIM3	EQU	042				03	00308
000043	A	309	PIM4	EQU	043				03	00309
000040	A	310	PIM5	EQU	040				03	00310
000040	A	311	PIM6	EQU	040				03	00311
000040	A	312	PIM7	EQU	040				03	00312
000040	A	313	PIM8	EQU	040				03	00313
		314	*						03	00314
000444	A	315	DISPIM	EQU	0400+APIM				03	00315
000244	A	316	ENAPIM	EQU	0200+APIM				03	00316
		318	****	MEMORY PROTECT				***	03	00318
000045	A	319	MP	EQU	045	DEVICE ADDRESS 045			03	00319
000745	A	320	DISMP	EQU	0700+MP	DISABLE MEMORY PROTECT			03	00320
000645	A	321	ENAMP	EQU	0600+MP	ENABLE MEMORY PROTECT			03	00321
000045	A	322	MPMR0	EQU	0000+MP	SELECT MASK REGISTER 0			03	00322
000145	A	323	MPMR1	EQU	0100+MP	SELECT MASK REGISTER 1			03	00323
000245	A	324	MPMR2	EQU	0200+MP	SELECT MASK REGISTER 2			03	00324
000345	A	325	MPMR3	EQU	0300+MP	SELECT MASK REGISTER 3			03	00325
		326		EJEC					03	00326
		327	*						03	00327
		328	*	DABORT, DRESUME, DATTCH					03	00328
		329	*						03	00329
		330		NAME	DABORT				03	00330
		331		EXT	DSCLR				03	00331
		332		EXT	DSERR				03	00332
		333		EXT	DSER00				03	00333
		334		EXT	DCOUNT				03	00334
000002	A	335	B	EQU	2				03	00335
000001	A	336	X	EQU	1				03	00336
000040	A	337	BTAD	EQU	040	A REG. BIT =0			03	00337
000000	R	338	DABORT	EQU	*	ENTER TO PROCESS ABORT REQUEST			03	00338
000060	A	339	BTB0	EQU	060	B REG, BIT=0			03	00339
000020	A	340	BTB1	EQU	020	B REG, BIT=1			03	00340
000000	A	341	TAX			SAVE NUMBER OF CHARACTERS IN TASK NAME			03	00341
000001	A	342	SUB		SEVEN	TASK NAME GREATER THAN 6 CHARACTERS NOT			03	00342
		343	*			LEGAL			03	00343
000002	A	344	JAN		DABT2	JUMP IF SIX OR LESS CHARACTERS			03	00344
000003	R									
000004	A	345	JMP		DAT40	ILLEGAL TASK NAME-JUMP TO PRINT DC04			03	00345
000005	R									
000006	A	346	*			ERROR MESSAGE-INVALID OPCOM PARAMETER			03	00346
000007	A	347	DABT2	TXA		RECOVER NUMBER OF CHARACTERS IN TASK NAME			03	00347
000010	R	348		BT	BTB0+4, DATTCH	BIT=0, ATTACH REQUEST			03	00348
000011	A	349	LDX		BS8	=0400			03	00349
000012	A	350	BT		BTB1, DABT1	RESUME REQUEST			03	00350
000013	R									
000014	A	351	LDXI		0500	ABORT REQUEST			03	00351
000015	A									
000016	A	352	DABT1	STX	DABRQT+2				03	00352
000017	A	353		JSR	DTKNAM, B	TRANSFER TASK NAME TO RESUME REQ.			03	00353
000020	R									
000021	R	354		DATA	DABRQT+3				03	00354
000022	A	355		LDAI	'VS'	CHECK IF OPCOM TASK			03	00355
000023	A									
000024	A	356		ERA	DABRQT+3				03	00356
000025	A	357		ADDI	'OP'				03	00357
000026	A									
000027	A	358		ERA	DABRQT+4				03	00358
000030	A	359		ADDI	'CM'				03	00359
000031	A									
000032	A	360		ERA	DABRQT+5				03	00360
000033	A	361		JAZ	DABT4	ERROR, OPCOM TASK			03	00361
000034	R									
000035	A	362	DABRQT	ABORT	'TA', 'SK', '12'	MOD. FOR ABORT, RESUME REQUESTS			03	00362
000036	A									
000037	A									
000040	A									
000041	A									
000042	A									
000043	A	363		JMP	DSCLR	NOW CLEAR BUFFER AND EXIT.			03	00363
000044	E									
		364		EJEC					03	00364
		365		EXT	V\$TBSR				03	00365
		366	*		DATTCH				03	00366
		367	*						03	00367
		368	*		ATTACH, TASK NAME, PIM	LINE NO., EVENT WORD, ENABLE MASK IND.			03	00368
		369	*						03	00369
		370	*						03	00370
000045	R	371	DATTCH	EQU	*	PROCESS ATTACH REQUEST.			03	00371
000046	R	372		JSR	DTKNAM, B				03	00372
000047	R									
000047	R	373		DATA	DATNAM	TRANSFER NAME IN BUFFER			03	00373
000050	R	374		LDB	V\$CTL	TIDB			03	00374
000051	A	375		LDAI	DATNAM				03	00375



000052	000210	R							
000053	006505	A	376	JSR	V\$TBSR,X	SEARCH TIDB THREAD		03	00376
000054	000000	E							
000055	001004	A	377	JAN	DAT40	ERROR IF NEGATIVE,SEARCH UNSUCCESSFUL.		03	00377
000056	000604	R							
000057	054125	A	378	STA	DATSAV	SAVE TIDB ADDR.		03	00378
000060	020422	A	379	LDB	TWO			03	00379
000061	002000	A	380	CALL	DGNI	GET PIM LINE NO.		03	00380
000062	000256	R							
000063	030413	A	381	LDX	V\$DCB			03	00381
000064	015000	A	382	LDA	0,X			03	00382
000065	150463	A	383	ANA	RHW	GET LINE NO.		03	00383
000066	144114	A	384	SUB	DZER	=0260		03	00384
000067	054116	A	385	STA	DATSAV+1	SAVE LINE NO.		03	00385
000070	140424	A	386	SUB	EIGHT			03	00386
000071	001002	A	387	JAP	DNUME	ERRDR GTR THAN 7		03	00387
000072	000600	R							
000073	015000	A	388	LDA	0,X			03	00388
000074	004350	A	389	LSRA	8	GET PIM NO.		03	00389
000075	144105	A	390	SUB	DZER	=0260		03	00390
000076	005012	A	391	TAB				C.1	03 00391
000077	140424	A	392	SUB	EIGHT			C.1	03 00392
000100	001002	A	393	JAP	DNUME	ERROR IF GREATER THAN 7		C.1	03 00393
000101	000600	R							
000102	010427	A	394	LDA	BS6	0100		03	00394
000103	001020	A	395	JBZ	DAT07			03	00395
000104	000111	R							
000105	005322	A	396	DBR				03	00396
000106	120425	A	397	ADD	BS4	020		03	00397
000107	001000	A	398	JMP	DAT05			03	00398
000110	000103	R							
000111	000111	R	399	DAT07	EQU	*		03	00399
000111	124074	A	400	ADD	DATSAV+1	ADD LINE NO.		03	00400
000112	124073	A	401	ADD	DATSAV+1			03	00401
000113	005012	A	402	TAB		INTERRUPT TRAP LOCATION		03	00402
000114	016000	A	403	LDA	0,B			03	00403
000115	130433	A	404	ERA	BS10	02000		03	00404
000116	001016	A	405	JANZ	DAT40	IGNORE IF NOT JMPM		03	00405
000117	000604	R							
000120	036001	A	406	LDX	1,B	GET LINE HANDLER ADDR.		03	00406
000121	020424	A	407	DAT10	LDB	EIGHT		03	00407
000122	002000	A	408	CALL	DGNI	NOW GET INTERRUPT EVENT WORD		03	00408
000123	000256	R							
000124	002000	A	409	CALL	DCTNUM			03	00409
000125	000550	R							
000126	055000	A	410	STA	3,X	STORE EVENT WORD IN LINE HANDLER.		03	00410
000127	014055	A	411	LDA	DATSAV	GET TIDB ADDR AND STORE IN		03	00411
000130	055004	A	412	STA	4,X	LINE HANDLER.		03	00412
000131	024054	A	413	LDB	DATSAV+1	GET LINE NO. 0-7		03	00413
000132	010421	A	414	LDA	DNE			03	00414
000133	001020	A	415	DAT15	JBZ	DAT20		03	00415
000134	000141	R							
000135	005322	A	416	DBR		SET UP PIM LINE MASK		03	00416
000136	004241	A	417	LRLA	1			03	00417
000137	001000	A	418	JMP	DAT15			03	00418
000140	000133	R							
000141	054044	A	419	DAT20	STA	DATSAV+1	SAVE MASK.	03	00419
000142	020421	A	420	LDB	DNE			03	00420
000143	002000	A	421	CALL	DGNI	NOW GET ENABLE/DISABLE PIM MASK		03	00421
000144	000256	R							
000145	001010	A	422	JAZ	DAT22-1	NONE.DEFAULT IS TO ENABLE		03	00422
000146	000157	R							
000147	030413	A	423	LDX	V\$DCB			03	00423
000150	015000	A	424	LDA	0,X	GET CHARACTER		03	00424
000151	004350	A	425	LSRA	3			03	00425
000152	005012	A	426	TAB				03	00426
000153	134039	A	427	ERA	DCHARE	CHAR. E		03	00427
000154	007400	A	428	RDF				03	00428
000155	001010	A	429	JANZ	DAT22	DISABLE		03	00429
000156	000160	R							
000157	007401	A	430	SDF		ENABLE		03	00430
000160	000160	R	431	DAT22	EQU	*		03	00431
000160	024026	A	432	LDB	DATSAV+2	GET PIM NO. 0-7		03	00432
000161	016363	A	433	LDA	V\$PIMN,B	GET PIM DEVICE ADDR.		03	00433
000162	114007	A	434	ORA	DAT25	=0103100		03	00434
000163	054006	A	435	STA	DAT25	BUILD OUTPUT PIM MASK INSTRUCTION.		03	00435
000164	016320	A	436	LDA	V\$IM,B	GET MASK		03	00436
000165	114020	A	437	ORA	DATSAV+1	GET LINE MASK.		03	00437
000166	001007	A	438	JDFN	*+3	EXECUTE IF ENABLE		03	00438
000167	000171	R							
000170	134015	A	439	ERA	DATSAV+1			03	00439
000171	056320	A	440	STA	V\$IM,B			03	00440
000172	103100	A	441	DAT25	OR	0	OUTPUT PIM MASK	03	00441
000173	024011	A	442	LDB	DATSAV	GET TASK TIDB ADDR		03	00442
000174	016001	A	443	LDA	TEST,B			03	00443
000175	110424	A	444	ORA	BS0	SET INTERRUPT EXPECT BIT		03	00444
000176	056001	A	445	STA	TEST,B			03	00445
000177	005001	A	446	TZA		CLEAR EVENT WORD		03	00446
000200	056003	A	447	STA	TRVNT,B			03	00447
000201	001000	A	448	JMP	OSCLR	NOW CLEAR V\$UPBF AND EXIT.		03	00448
000202	000044	E							
000203	000260	A	449	DZER	DATA	0260		03	00449
000204	000305	A	450	DCHARE	DATA	0305	ASCII CHAR.E	03	00450



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000205 000000 A 451 DATSAV DATA 0,0,0 TEMP. STORAGE 03 00451
000206 000000 A
000207 000000 A
000210 000000 A 452 DATNAM DATA 0,0,0 NAME BUFFER 03 00452
000211 000000 A
000212 000000 A
453 EJEC 03 00453
454 * 03 00454
455 * DTKNAM 03 00455
456 * 03 00456
457 * GET AND STORE TASK NAME 03 00457
458 * 03 00458
459 * DTKNAM IS ENTERED TO STORE THE TASK NAME FROM DC BUFFER INTO 03 00459
460 * THE USER SPECIFIED BUFFER. THE NAME MUST CONTAIN AT LEAST 03 00460
461 * 1 CHARACTER BUT NOT MORE THAN 6 TRAILING BLANKS WILL BE STORED. 03 00461
462 * 03 00462
463 * ENTER VIA JSR DTKNAM 03 00463
464 * DATA BUFFER ADDR. TO STORE NAME 03 00464
465 * 03 00465
466 * WITH A= CHARACTER COUNT 03 00466
467 * 03 00467
468 * EXIT A=B=X DESTROYED. 03 00468
469 * 03 00469
470 * ERROR EXIT TO DSER00 03 00470
471 * 03 00471
472 * 03 00472
473 * 03 00473
474 * 03 00474
475 DTKNAM EQU * 03 00475
476 STB DTKNM6+1 03 00476
477 LDB 0,B BUFFER ADDR 03 00477
478 STB DTKNM3+1 03 00478
479 STB DTKNM8+1 STORE BUFFER ADDR. 03 00479
480 LDB V$DCB 03 00480
481 STB DTKNM2+1 03 00481
482 INR DTKNM6+1 SET UP EXIT ADDR. 03 00482
483 TAB 03 00483
484 TZX 03 00484
485 DTKNM2 LDABE *,X MODIFIED TO DC BUFFER ADDR. 03 00485
486 DTKNM3 STAE *,X STORE NAME FROM DTEMP TO CALLER BUFFER. 03 00486
487 TBA 03 00487
488 SUB THREE 03 00488
489 JAN DTKNM4 2 OR LESS CHARS. 03 00489
490 DBR 03 00490
491 DFCR 022 B= NO. OF CHAR. 03 00491
492 IXR 03 00492
493 JMP DTKNM2 PROCESS NEXT 2 CHARS. 03 00493
494 DTKNM4 SRE TWO,7,040 CHECK IF X=3 03 00494
495 JMP *,4 03 00495
496 DTKNM6 JMP * YES. EXIT 03 00496
497 IXR 03 00497
498 LDAB 0120240 03 00498
499 DTKNM8 STAE *,X STORE TRAILING BLANKS 03 00499
500 JMP DTKNM4 03 00500
501 EJEC 03 00501
502 * 03 00502
503 * DGN1 03 00503
504 * 03 00504
505 * GET NEXT ITEM SUBROUTINE 03 00505
506 DGN1 ENR 03 00506
507 STX DGNIX+1 03 00507
508 LDB V$DCB BUFFER ADDR. 03 00508
509 LRLA 1 *2 03 00509
510 STA DGNIZ 03 00510
511 STB DGNIZ+1 03 00511
512 TBX 03 00512
513 DGNIA CALL DSCN SCAN FOR 1ST NON-BLANK CHARACTER 03 00513
514 SUB DS80 03 00514
515 JAF DGNID ALL ITEMS COMPLETED 03 00515
516 DGNIE CALL DLDBT,DCOUNT LOAD A CHARACTER FROM V$DDBF 03 00516
517 ERA DSBLK =0240 03 00517
518 JAZ DGNIA JMP IF BLANK 03 00518
519 TBA 03 00519
520 ERA DSCDM COMMA 03 00520
521 JAZ DGNID 03 00521
522 TBA 03 00522
523 ERA DSER EQUAL SIGN 03 00523

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000306	001010	A	524	JAZ	DGNID			03	00524
000307	000325	R							
000310	005021	A	525	TBA				03	00525
000311	134321	A	526	ERA	DSPER	PERIOD		03	00526
000312	001010	A	527	JAZ	DGNIG			03	00527
000313	000372	R							
000314	005021	A	528	TBA				03	00528
000315	002000	A	529	CALL	DSTBT,DGNIZ	STORE CHAR		03	00529
000316	000461	R							
000317	000401	R							
000320	005344	A	530	DXR				03	00530
000321	001040	A	531	JXZ	DGNIF	JMP IF MAX CHARS STORED		03	00531
000322	000347	R							
000323	001000	A	532	JMP	DGNIE			03	00532
000324	000272	R							
000325	005041	A	533	DGNID	TXA			03	00533
000326	005211	A	534	CPA				03	00534
000327	005111	A	535	IAR				03	00535
000330	124051	A	536	ADD	DGNIZ+1			03	00536
000331	006440	A	537	BT	DTA0,DGNIX	CHECK FOR ODD CHAR.		03	00537
000332	000343	R							
000333	005014	A	538	TAX		YES. STORE ASCII BLANK		03	00538
000334	024044	A	539	LDB	DGNIZ	GET BUFFER ADDR.		03	00539
000335	004141	A	540	LSRB	1			03	00540
000336	016000	A	541	LDA	0,B	GET LAST STORED CHAR.		03	00541
000337	150462	A	542	ANA	LHW			03	00542
000340	114273	A	543	ORA	D\$BLK	OR ASCII BLANK		03	00543
000341	056000	A	544	STA	0,B			03	00544
000342	005041	A	545	TXA				03	00545
000343	006030	A	546	DGNIX	L\$XI	*		03	00546
000344	000343	R							
000345	001000	A	547	JMP*	DGNI	NOW EXIT		03	00547
000346	100256	R							
000347	002000	A	548	DGNIF	CALL	D\$CN	SPACE TO NEXT ITEM	03	00548
000350	000403	R							
000351	144260	A	549	SUB	D\$80			03	00549
000352	001002	A	550	JAP	DGNID	ALL DONE		03	00550
000353	000325	R							
000354	002000	A	551	CALL	DLDBT,DCDUNT			03	00551
000355	000543	R							
000356	000274	E							
000357	134256	A	552	ERA	D\$COM	COMMA		03	00552
000360	001010	A	553	JAZ	DGNID			03	00553
000361	000325	R							
000362	005021	A	554	TBA				03	00554
000363	134251	A	555	ERA	D\$EQ	EQUAL SIGN		03	00555
000364	001010	A	556	JAZ	DGNID			03	00556
000365	000325	R							
000366	005021	A	557	TBA				03	00557
000367	134243	A	558	ERA	D\$PER	PERIOD		03	00558
000370	001016	A	559	JANZ	DGNIF			03	00559
000371	000347	R							
000372	010413	A	560	DGNIG	LDA	V\$DCB	V\$DPBF ADDR	03	00560
000373	004241	A	561	LRLA	1			03	00561
000374	124235	A	562	ADD	D\$80			03	00562
000375	024062	A	563	LDB	D\$CADR	DCOUNT ADDR.		03	00563
000376	056000	A	564	STA	0,B			03	00564
000377	001000	A	565	JMP	DGNID			03	00565
000400	000325	R							
000401	000000	A	566	DGNIZ	DATA	0,0		03	00566
000402	000000	A							
			567	EJEC				03	00567
			568	*				03	00568
			569	*				03	00569
			570	*	D\$CN			03	00570
			571	*				03	00571
			572	*	SCAN VARIABLE FIELD SUBROUTINE			03	00572
			573	*				03	00573
			574	*	D\$CN SCANS THE VARIABLE FIELD OF THE INPUT BUFFER,V\$DPBF,			03	00574
			575	*	FOR A NON-BLANK CHARACTER.IT EXITS WITH THE CHARACTER			03	00575
			576	*	POSITION IN A. IF A PERIOD IS ENCOUNTERED THE VARIABLE			03	00576
			577	*	LIST IS CONSIDERED TERMINATED AND CHAR. POSITION 72 IS			03	00577
			578	*	PLACED IN A. ALSO LOC DCOUNT CONTAINS CHARACTER POSITION.			03	00578
			579	*				03	00579
			580	*				03	00580
000403	000000	A	581	D\$CN	ENTR			03	00581
000404	074032	A	582	STX	D\$CNX+1			03	00582
000405	010413	A	583	LDA	V\$DCB	GET DC BUFFER ADDR.		03	00583
000406	004241	A	584	LRLA	1			03	00584
000407	054047	A	585	STA	D\$CNZ	BUFFER*2		03	00585
000410	024047	A	586	LDB	D\$CADR			03	00586
000411	016000	A	587	LDA	0,B	GET ADDR IN DCOUNT		03	00587
000412	144044	A	588	SUB	D\$CNZ			03	00588
000413	005014	A	589	TAX				03	00589
000414	144215	A	590	SUB	D\$80	CHECK IF 80 CHAR.		03	00590
000415	001002	A	591	JAP	D\$CNC	YES,		03	00591
000416	000435	R							
000417	002000	A	592	D\$CNA	CALL	DLDBT,DCOUNT	LOAD A CHAR	03	00592
000420	000543	R							
000421	000356	E							
000422	134211	A	593	ERA	D\$BLK	=0240		03	00593
000423	001010	A	594	JAZ	D\$CNB			03	00594
000424	000442	R							







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000532 000540 R
000533 001001 A 676 OBYTC JOF OBYTD JMP FOR CHAR. N+1 03 00676
000534 000536 R
000535 004250 A 677 LRLA 8 03 00677
000536 150463 A 678 OBYTD ANA BM377 EXTRACT BYTE 03 00678
000537 005012 A 679 TAB * EXIT WITH BYTE IN A,B 03 00679
000540 006030 A 680 OBYTF LDXI * 03 00680
000541 000540 R
000542 001000 A 681 JMP * EXIT 03 00681
000543 000542 R
000544 000543 R 682 OLDBT EQU *-1 ENTER HERE TO LOAD A BYTE FROM BUFFER 03 00682
000544 001000 A 683 JMP OLDBA 03 00683
000545 000470 R
000546 000000 A 684 OBYTX DATA 0,0 03 00684
000547 000000 A
685 EJEK 03 00685
686 * 03 00686
687 * OCTNUM*** 03 00687
688 * OCTAL ASCII INTEGER TO BINARY CONVERSION 03 00688
689 * IF IT IS NOT AN OCTAL INTEGER THE DC02 ERROR MESSAGE 03 00689
690 * IS OUTPUT. 03 00690
691 * 03 00691
000550 000000 A 692 OCTNUM ENTR ENTER FOR OCTAL CONVERSION 03 00692
000551 074052 A 693 STX DNUMX+1 SAVE X 03 00693
000552 005014 A 694 TAX CHARACTER COUNT NOW IN X 03 00694
000553 005002 A 695 TZX 03 00695
000554 054052 A 696 STB DNUMZ 03 00696
000555 010413 A 697 LDA VSOCE GET BUFFER ADDR. 03 00697
000556 004241 A 698 LRLA 1 03 00698
000557 034051 A 699 STA DNUMZ+2 BUFFER*2 03 00699
000560 002000 A 700 ONUMA CALL OLDBT,DNUMZ+2 GET ASCII CHAR. FROM BUFFER 03 00700
000561 000543 R
000562 000631 R
000563 005012 A 701 TAB SAVE CHARACTER 03 00701
000564 144047 A 702 SUB DSBLK =0240 03 00702
000565 001016 A 703 JANZ ONUMG 03 00703
000566 000572 R
000567 014037 A 704 LDA ONUMZ BLANK 03 00704
000570 001000 A 705 JMP ONUMH 03 00705
000571 000620 R
000572 140425 A 706 ONUMG SUB 884 =020 0260 E.2***** 03 00707
000573 001004 A 707 JAN ONUME ERROR, LESS THAN 0 03 00707
000574 000600 R
000575 140424 A 708 SUB EIGHT 03 00708
000576 001004 A 709 JAN ONUMF DK 03 00709
000577 000611 R
000600 010422 A 710 ONUME LDA TWO ERROR 03 00710
000601 001010 A 711 DATA 01010 = JAZ INSTR., SKIP NEXT WORD 03 00711
000602 010463 A 712 DTKNM9 LDA THREE 03 00712
000603 001010 A 713 DATA 01010 = JAZ INSTR., SKIP NEXT WORD 03 00713
000604 010423 A 714 DAT40 LDA FOUR DC04 MSG. 03 00714
000605 001010 A 715 DATA 01010 = JAZ INSTR., SKIP NEXT WORD 03 00715
000606 010465 A 716 DABT4 LDA FIVE DC05 ERROR MSG 03 00716
000607 001000 A 717 JMP DSER00 03 00717
000610 000000 E
000611 005021 A 718 ONUMF TBA 03 00718
000612 150472 A 719 ANA BM17 MASK OUT BCD 03 00719
000613 054014 A 720 STA DNUMZ+1 03 00720
000614 014012 A 721 LDA DNUMZ GET PREVIOUS DIGITS 03 00721
000615 004243 A 722 ONUMK LRLA 3 03 00722
000616 124011 A 723 ADD DNUMZ+1 DIGIT JUST CONVERTED 03 00723
000617 054007 A 724 STA DNUMZ 03 00724
000620 005344 A 725 ONUMH DXR 03 00725
000621 001046 A 726 JXNZ ONUMA X=0 IF ALL DIGITS CONVERTED. 03 00726
000622 000560 R
000623 006030 A 727 ONUMX LDXI * RESTORE X 03 00727
000624 000623 R
000625 001000 A 728 JMP* OCTNUM 03 00728
000626 100550 R
000627 000000 A 729 ONUMZ DATA 0,0,0 03 00729
000630 000000 A
000631 000000 A
000632 000120 A 730 DS80 DATA 80 03 00730
000633 000256 A 731 DSFER DATA 0256 PERIOD 03 00731
000634 000240 A 732 DSBLK DATA 0240 BLANK 03 00732
000635 000275 A 733 DSEQ DATA 0275 EQUAL SIGN 03 00733
000636 000254 A 734 DSCOM DATA 0254 COMMA 03 00734
000000 R 735 END DABORT 03 00735

```

ENTRY NAMES

```

000000 R DABORT
EXTERNAL NAMES
000460 E DCOUNT 000202 E DSCLR 000610 E DSER00 000000 E DSERR
000000 E V$EXEC 000054 E V$TBSR

```

SYMBOLS

```

000044 A APIM 000002 A B 000000 A B0 000001 A B1
000012 A B10 000013 A B11 000014 A B12 000015 A B13
000016 A B14 000017 A B15 000018 A B16 000019 A B17
000004 A B4 000005 A B5 000006 A B6 000007 A B7
000010 A B8 000011 A B9 000012 A BM1 000472 A BM17
000475 A BM177 000477 A BM1777 000484 A BM3 000473 A BM37
000463 A BM377 000467 A BM7 000474 A BM77 000476 A BM777
000441 A BR0 000442 A BR1 000453 A BR10 000454 A BR11
000455 A BR12 000456 A BR13 000457 A BR14 000460 A BR15

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000443 A BR2      000444 A BR3      000445 A BR4      000446 A BR5
000447 A BR6      000450 A BR7      000451 A BR8      000452 A BR9
000421 A BS0       000422 A BS1       000433 A BS10      000434 A BS11
000435 A BS12      000436 A BS13      000437 A BS14      000440 A BS15
000423 A BS2       000424 A BS3       000425 A BS4       000426 A BS5
000427 A BS6       000430 A BS7       000431 A BS8       000432 A BS9
000040 A BTA0      000060 A BTB0      000020 A BTB1      000047 A CLOCK
000747 A DISCLK    000745 A DISMP     000444 A DISPIM    000424 A EIGHT
000147 A ENACLK    000645 A ENAMP     000244 A ENAPIM    000465 A FIVE
000423 A FOUR     000300 A LC        000050 A LCJP      000462 A LHW
000045 A MP        000045 A MPMR0     000145 A MPMR1     000245 A MPMR2
000345 A MPMR3     000420 A MT        000461 A NEG       000470 A NINE
000000 R DABORT    000035 R DABRQT    000016 R DABT1     000006 R DABT2
000606 R DABT4    000103 R DAT05     000111 R DAT07     000121 R DAT10
000133 R DAT15    000141 R DAT20     000160 R DAT22     000172 R DAT25
000604 R DAT40    000210 R DATNAM    000205 R DATSAV    000045 R DATTCB
000506 R DBYTA    000517 R DBYTB     000533 R DBYTC     000536 R DBYTD
000540 R DBYTF    000525 R DBYTG     000546 R DBYTX     000204 R DCHARE
000460 E DCCUNT  000550 R DCTNUM    000256 R DGN1      000265 R DGNIA
000325 R DGNID    000272 R DGNIE     000347 R DGNIF     000372 R DGNIG
000343 R DGNIX    000401 R DGNIZ     000470 R DLDBA     000543 R DLDBT
000421 A DNE     000560 R DNUMA     000600 R DNUME     000611 R DNUMF
000572 R DNUMG    000620 R DNUMH     000615 R DNUMK     000623 R DNUMX
000627 R DNUMZ    000632 R DS80      000634 R DSBLK     000460 R DSCADR
000202 E DSCLR   000403 R DSCH      000417 R DSCNA     000442 R DSCNB
000435 R DSCNC   000451 R DSCND     000436 R DSCNX     000457 R DSCNZ
000636 R DSCDM    000635 R DSEQ      000610 E DSERO0   000000 E DSERR
000633 R DSDPER   000462 R DSTBA     000461 R DSTBT     000213 R DTKNAM
000224 R DTKNM2   000226 R DTKNM3    000241 R DTKNM4    000245 R DTKNM6
000252 R DTKNM3  000602 R DTKNM9    000203 R DZER      000040 A PIM1
000041 A PIM2    000042 A PIM3      000043 A PIM4      000040 A PIM5
000040 A PIM6    000040 A PIM7      000040 A PIM8      000040 A PIM9
000000 A RA1      000060 A RBO       000020 A RB1       000463 A RHW
000467 A SEVEN    000466 A SIX       000027 A TBATSK    000026 A TBCPTH
000011 A TBENTY    000003 A TBEVNT    000021 A TBID      000014 A TBISA
000015 A TBISB    000017 A TBISP     000020 A TBISRS    000016 A TBISX
000022 A TBKN1    000023 A TBKN2     000024 A TBKN3     000002 A TBPL
000004 A TBRSA    000005 A TBRSE     000030 A TBRSE     000007 A TBRSP
000010 A TBRSTS   000006 A TBRSX     000000 A TBS0      000001 A TBS1
000012 A TBS10   000013 A TBS11     000014 A TBS12     000015 A TBS13
000016 A TBS14   000017 A TBS15     000002 A TBS2      000003 A TBS3
000004 A TBS4    000005 A TBS5      000006 A TBS6      000007 A TBS7
000010 A TBS8    000011 A TBS9      000001 A TBST      000025 A TBTLC
000013 A TBTMIN   000012 A TBTMS     000000 A TBTRD     000471 A TEN
000464 A THREE    000422 A TWO       000403 A VS1MIN    000415 A V$BFC
000075 A V$BGLB   000056 A V$BIC1    000315 A V$BTB     000414 A V$BVN
000334 A V$CAM    000353 A V$CKB     000411 A V$CKIT    000310 A V$CKPT
000301 A V$CPL    000076 A V$CRDM    000341 A V$CRDR    000354 A V$CRM
000302 A V$CRS    000360 A V$CTAD    000300 A V$CTL     000351 A V$CTMS
000070 A V$DATE   000355 A V$DSTB    000376 A V$ERFG    000000 E V$EXEC
000347 A V$FGLB   000306 A V$FLRS    000350 A V$FREE    000320 A V$IM
000410 A V$IDA    000412 A V$JCB     000055 A V$JCFG    000077 A V$JCTM
000050 A V$JHAM   000377 A V$JOP     000054 A V$LCNT    000313 A V$LER
000356 A V$LIT   000317 A V$LLUP    000307 A V$LRSK    000312 A V$LSAL
000345 A V$LUNT   000316 A V$LUP     000400 A V$LUT1    000401 A V$LUT2
000402 A V$LUT3   000330 A V$MPM     000362 A V$NCTR    000413 A V$OCR
000346 A V$OPCF   000311 A V$OPCL    000363 A V$PIMN    000074 A V$PLCT
000305 A V$PTVB   000361 A V$SCTL    000352 A V$SCV     000375 A V$SLFG
000303 A V$TB     000342 A V$TEGT    000054 E V$TBRP   000416 A V$TFC
000314 A V$TJCP  000344 A V$TMN     000343 A V$TMS     000304 A V$UTB
000001 A X        000420 A ZERO
0 ERRORS ASSEMBLY COMPLETE
    
```

305	APIM	315	316							
335	B	353	372	403	406	433	436	440	443	445
		447	477	541	544	564	587	599	601	614
249	BM17	719								
253	BM377	641	678							
211	BS10	404								
204	BS3	444								
205	BS4	397	706							
207	BS6	394								
209	BS8	349								
337	BTA0	537								
339	BTB0	348								
340	BTB1	350								
298	CLOCK	300	301							
243	EIGHT	386	392	407	708					
240	FIVE	716								
239	FOUR	714								
124	LC	125	126	127	128	129	130	131	132	133
		134	135	136	137	138	139	140	141	142
		143	145	146	147	148	149	150	151	152
		153	154	155	156	157	158	160	161	162
		163	167	168	169	170	171	172	173	178
		179	180	180	188	189	190			
99	LCJP	100	101	102	109	110	111	112	113	116
234	LHW	542	667							
319	MP	320	321	322	323	324	325			
199	MT	200	201	202	203	204	205	206	207	208
		209	210	211	212	213	214	215	216	217
		218	219	220	221	222	223	224	225	226



		227	228	229	230	231	232	233	234	235
		236	237	238	239	240	241	242	243	244
		245	246	247	248	249	250	251	252	253
		254	255							
338	DABORT	330	735							
362	DABRQT	352	354	356	358	360				
352	DABT1	350								
347	DABT2	344								
716	DABT4	361								
395	DAT05	398								
399	DAT07	395								
415	DAT15	418								
419	DAT20	415								
431	DAT22	422	429							
441	DAT25	434	435							
714	DAT40	345	377	405						
452	DATNAM	373	375							
451	DATSAV	378	385	400	401	411	413	419	432	437
		439	442							
371	DATTCH	348								
660	DBYTA	658								
666	DBYTB	663	665							
676	DBYTC	662								
678	DBYTD	676								
680	DBYTF	647	675							
671	DBYTG	669								
684	DBYTX	642	643	661	668	672	674			
450	DCHARE	427								
0	DCCOUNT	334	516	551	592	618				
692	DCTNUM	409	728							
506	DGNI	380	408	421	547					
513	DGNIA	518								
533	DGNID	515	521	524	550	553	556	565		
516	DGNIE	532								
548	DGNIF	531	559							
560	DGNIG	527								
546	DGNIX	507	537							
566	DGNIZ	510	511	529	536	539				
646	DLDBA	683								
682	DLDBT	516	551	592	645	648	654	700		
236	DNE	414	420							
700	DNUMA	726								
710	DNUME	387	393	707						
718	DNUMF	709								
706	DNUMG	703								
725	DNUMH	705								
727	DNUMX	693								
729	DNUMZ	696	699	700	704	720	721	723	724	
730	DS80	514	549	562	590	608	613	615		
732	DSBLK	517	543	593	702					
618	DSCADR	563	586	597						
0	DSCCLR	331	363	448						
581	DSCN	513	548	604						
592	DSCNA	609								
606	DSCNB	594								
602	DSCNC	591	610							
612	DSCND	598								
603	DSCNX	582	616							
617	DSCNZ	585	588	612						
734	DSCOM	520	532							
733	DSEQ	523	555							
0	DSERO0	333	717							
0	DSERR	332								
731	DSPER	526	558	596						
640	DSTBT	529	644							
475	DTKNAM	353	372							
485	DTKNM2	481	493							
486	DTKNM3	478								
494	DTKNM4	489	500							
496	DTKNM6	476	482							
499	DTKNM8	479								
449	DZER	384	390							
235	RHW	383								
242	SEVEN	342								
19	TBEVNT	447								
17	TBST	443	445							
238	THREE	488	712							
237	TWO	379	494	710						
125	V\$CTL	374								
141	V\$IM	436	440							
0	V\$DABD	10								
183	V\$DCB	381	423	480	508	560	583	697		
163	V\$PIH	433								
0	V\$TBSR	365	376							
336	X	376	382	388	410	412	424	485	486	499



```

1 * THIS IS A COPYRIGHTED PROGRAM. COPYRIGHT 1972 BY VARIAN DATA MACHINE 01 00001
2 * 01 00002
3 * V.D.M. PART NO. 92L0705-014B 01 00003
4 * 01 00004
5 * 01 00005
6 * RELEASED 07/13/73 01 00006
7 * 01 00007
8 * V$OTIME 01 00008
9 * 01 00009
10 * TITLE V$OTIME 01 00010
11 ***** 01 00011
12 **** TIDB SETUP **** 01 00012
13 * 01 00013
14 ***** 01 00014
16 TBTRD EQU 0 TASK THREAD 01 00016
17 TBST EQU 1 TASK STATUS 01 00017
18 TBPL EQU 2 STATUS CNT. (BITS15-6),PRIORITY LEVEL(5-0 01 00018
19 TBEVNT EQU 3 INTERRUPT EVENT 01 00019
20 TERSA EQU 4 A REENRANT AND SUSPEND STACK 01 00020
21 TBRSE EQU 5 B REENRANT AND SUSPEND STACK 01 00021
22 TBRXS EQU 6 X REENRANT AND SUSPEND STACK 01 00022
23 TBRSP EQU 7 DF/P REENRANT AND SUSPEND STACK 01 00023
24 TBRSTS EQU 8 TEMP. STG. REENRANT AND SUSPEND STACK 01 00024
25 TBENTY EQU 9 TASK ENTRY LOCATION 01 00025
26 TBTMS EQU 10 TIME COUNTER - CLOCK RESOLUTION IN SMS INC 01 00026
27 TBTMIN EQU 11 TIME COUNTER - CLOCK MINUTE INCREMENTS 01 00027
28 TBISA EQU 12 A INTERRUPT STACK 01 00028
29 TBISB EQU 13 B INTERRUPT STACK 01 00029
30 TBISX EQU 14 X INTERRUPT STACK 01 00030
31 TBISP EQU 15 DF/P INTERRUPT STACK 01 00031
32 TBISRS EQU 16 REENT. STACK INTERRUPT STACK 01 00032
33 TBID EQU 17 BLK ALLOC(15-10),I/O THR(9-5),I/O ACT(4-0) 01 00033
34 TBKN1 EQU 18 TASK NAME 01 00034
35 TBKN2 EQU 19 TASK NAME 01 00035
36 TBKN3 EQU 20 TASK NAME 01 00036
37 TBTLC EQU 21 1ST LOC. OF TASK ALLOCATABLE 01 00037
38 TBCPTH EQU 22 BACKGROUND TASK QUEUE 01 00038
39 TBATSK EQU 23 TIDB LOC. OF ACTIVATING TASK 01 00039
40 TBRSE EQU 24 TASK ERROR CODE 01 00040
41 EJEC 01 00041
42 ***** 01 00042
43 * 01 00043
44 **** TASK STATUS DESCRIPTION (BIT SET WORD 1) **** 01 00044
45 * 01 00045
46 ***** 01 00046
48 TBS15 EQU 15 INTERRUPT SUSPEND 01 00048
49 TBS14 EQU 14 TASK SUSPEND 01 00049
50 TBS13 EQU 13 TASK ABORT 01 00050
51 TBS12 EQU 12 TASK EXIT 01 00051
52 TBS11 EQU 11 TIDB CORE RESIDENT 01 00052
53 TBS10 EQU 10 CORE RESIDENT TASK 01 00053
54 TBS9 EQU 9 FOREGROUND TASK 01 00054
55 TBS8 EQU 8 TASK PROTECTED 01 00055
56 TBS7 EQU 7 TASK SCHEDULED BY TIME DELAY 01 00056
57 TBS6 EQU 6 TIME DELAY ACTIVE 01 00057
58 TBS5 EQU 5 TASK WAITING TO BE LOADED 01 00058
59 TBS4 EQU 4 TASK ERROR 01 00059
60 TBS3 EQU 3 TASK INTERRUPT EXPECTED 01 00060
61 TBS2 EQU 2 OVERLAY TASK 01 00061
62 TBS1 EQU 1 UPON TERMINATION ACTIVATE TASK SCHED TASK 01 00062
63 TBS0 EQU 0 TASK SEARCH-ALLOCATED-LOADED 01 00063
64 EJEC 01 00064
65 ***** 01 00065
66 * 01 00066
67 *** TASK STATUS DESCRIPTION (BIT SET WORD 2) *** 01 00067
68 * 01 00068
69 ***** 01 00069
70 * 01 00070
71 * 01 00071
72 *** TASK STATUS DESCRIPTION (BIT SET WORD 2) *** 01 00072
73 * 01 00073
74 ***** 01 00074
76 * BIT 15 - TASK OPENED 01 00076
77 * BIT 14 - UNUSED 01 00077
78 * BIT 13 - OVERLAY LOAD 01 00078
79 * BIT 12 - TASK WAITING FOR BACKGROUND TASK I/O TO COMPLETE 01 00079
80 * TASK LOCKED-OUT UNTIL BG I/O COMPLETE OR BIT 11 01 00080
81 * IS SET (ALLOCATABLE SPACE AVAILABLE) 01 00081
82 * BIT 11 - DEFINES THAT ALLOCATABLE SPACE IS AVAILABLE, TRY 01 00082
83 * ALLOCATING TASK AGAIN. OVERRIDES BIT 12 SET OR 01 00083
84 * BIT 5 IN STATUS WORD. 01 00084
85 * BIT 10 - BACKGROUND TASK BEING WRITTEN ON CHECKPOINT FILE. 01 00085
86 * BIT 9 - TASK WAITING FOR A TIDB TO COME AVAILABLE FOR 01 00086
87 * SCHEDULING. 01 00087
88 * BIT 8 TO 6 - UNUSED 01 00088
89 * 01 00089
90 * 01 00090
91 * 01 00091
92 * 01 00092
93 ***** 01 00093
94 * 01 00094
95 *** JOB PROCESSOR LOW CORE COUNTS - ** 01 00095
96 * 01 00096
97 ***** 01 00097
99 LCJP EQU 050 JCP NAME 01 00099
100 V$JNAM EQU LCJP JCP NAME 01 00100
101 V$LCNT EQU LCJP+4 LINE COUNT 01 00101
102 V$JCFG EQU LCJP+5 JCP FLAGS 01 00102
103 * BIT 0-0 = LOAD AND GO FLAGS 01 00103
104 * BIT 3 = DUMP FLAG 1=DUMP, 0=NO DUMP 01 00104
105 * BIT 4 = DUMP FLAG IF LOAD AND GO 01 00105

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106	*			BIT 9-5 = UNUSED	01	00106	
107	*			BIT 15-10 = BG EXTRA CORE BLOCKS TO ALLOC	01	00107	
000056	A	109	V\$BIC1 EQU	LCJP+6	BIC INTERRUPT ADDRESS TABLE (10 WORDS)	01	00109
000070	A	110	V\$DATE EQU	LCJP+16	JCP DATE RECORD	01	00110
000074	A	111	V\$PLCT EQU	LCJP+20	PERMUNATE LINE COUNT	01	00111
000075	A	112	V\$BGLB EQU	LCJP+21	JCP LIB KEY AND LU NO. (BACKGROUND LIB)	01	00112
000076	A	113	V\$CRDM EQU	LCJP+22	CARD KEYPUNCH TYPE, 0=026, 1=029	01	00113
		114	*		BIT 0 = SYSTEM NOMINAL KEYPUNCH MODE.	01	00114
		115	*		BIT 9 = CURRENT JOB KEYPUNCH MODE.	01	00115
000077	A	116	V\$JCTM EQU	LCJP+23	TEMP. STORAGE FOR /MEM BLOCK	01	00116
		117	EJEC			01	00117
		118	*****			01	00118
		119	*			01	00119
		120	****	LOW CORE DESCRIPTION		01	00120
		121	*			01	00121
		122	*****			01	00122
000300	A	124	LC EQU	0300		01	00124
000300	A	125	V\$CTL EQU	LC	CURRENT TASK TIDB LOCATION	01	00125
000301	A	126	V\$CPL EQU	LC+1	CURRENT PRIORITY LEVEL	01	00126
000302	A	127	V\$CRS EQU	LC+2	CURRENT REENRANT STACK POINTER	01	00127
000303	A	128	V\$TB EQU	LC+3	POINTER TO HIGHEST PRIORITY TIDB	01	00128
000304	A	129	V\$UTB EQU	LC+4	POINTER TO UNUSED TASK TIDB	01	00129
000305	A	130	V\$PTVB EQU	LC+5	POINTER TO NEXT ENTRY IN REENRANT STACK	01	00130
000306	A	131	V\$FLRS EQU	LC+6	FIRST LOC. OF REENRANT STACK	01	00131
000307	A	132	V\$LRSK EQU	LC+7	LAST LOC. OF REENRANT STACK+1	01	00132
000310	A	133	V\$CKPT EQU	LC+8	CHECKPOINT FLAG 1=ON, 0=OFF	01	00133
000311	A	134	V\$OPCL EQU	LC+9	LOC. OF TIDB FOR OPCOM TASK	01	00134
000312	A	135	V\$LSAL EQU	LC+10	LOC. OF TIDB FOR SYSTEM SAL TASK	01	00135
000313	A	136	V\$LER EQU	LC+11	LOC. OF TIDB FOR SYSTEM ERROR TASK	01	00136
000314	A	137	V\$TJCP EQU	LC+12	LOC. OF TIDB FOR JOB CONTROL PROCESSOR TAS	01	00137
000315	A	138	V\$BTB EQU	LC+13	LOC. OF CURRENT ACTIVE BACKGROUND TSK TIDB	01	00138
000316	A	139	V\$LUP EQU	LC+14	LOC. OF 1ST UNPROTECTED WORD	01	00139
000317	A	140	V\$LLUP EQU	LC+15	LOC. OF LAST UNPROTECTED WORD	01	00140
000320	A	141	V\$IM EQU	LC+16	INTERRUPT MASK (8 WORDS)	01	00141
000330	A	142	V\$MPM EQU	LC+24	MEMORY PROTECT MASK (4 WORDS)	01	00142
000334	A	143	V\$CAM EQU	LC+28	CORE ALLOCATION MASK (4 WORDS)	01	00143
		144	*		UNUSED	01	00144
000341	A	145	V\$CRDR EQU	LC+33	CORE RESIDENT DIRECTORY LOCATION	01	00145
000342	A	146	V\$TBGT EQU	LC+34	TOP OF THREAD OF BG TSK WAITING TO BE ALLO	01	00146
000343	A	147	V\$TMS EQU	LC+35	TIME OF DAY IN 5 MILLISECOND INCREMENTS	01	00147
000344	A	148	V\$TMN EQU	LC+36	TIME OF DAY IN MINUTE INCREMENTS	01	00148
000345	A	149	V\$LUNT EQU	LC+37	ADDR. OF LOGICAL UNIT NAME TABLE	01	00149
000346	A	150	V\$OPCF EQU	LC+38	OPCOM LOCKOUT FLAG	01	00150
000347	A	151	V\$FGLB EQU	LC+39	KEY AND LU NO. FOR FOREGROUND LIB	01	00151
000350	A	152	V\$FREE EQU	LC+40	FREE RUNNING COUNTER INCR. IN MICROSECONDS	01	00152
000351	A	153	V\$CTMS EQU	LC+41	CLOCK RESOLUTION IN 5 MILLISECOND INCR.	01	00153
000352	A	154	V\$SCV EQU	LC+42	CLOCK SELECTED COUNT VALUE (1 TO 4095)	01	00154
000353	A	155	V\$CKB EQU	LC+43	BASIC CLOCK INTERRUPT RATE IN MICROSECONDS	01	00155
000354	A	156	V\$CRM EQU	LC+44	CLOCK RESOLUTION INCR. FOR 1 MINUTE.	01	00156
000355	A	157	V\$DSTB EQU	LC+45	BASE ADDR. FOR DST BLOCK	01	00157
000356	A	158	V\$LIT EQU	LC+46	LAST LOCATION OF BACKGROUND LITERAL TABLE	01	00158
		159	*		UNUSED	01	00159
000360	A	160	V\$CTAD EQU	LC+48	BASE ADDR. FOR CONTROLLER ADDR. TABLE	01	00160
000361	A	161	V\$SCTL EQU	LC+49	CURRENT CONTROLLER IN SCAN	01	00161
000362	A	162	V\$NCTR EQU	LC+50	NO. OF CONTROLLERS	01	00162
000363	A	163	V\$PIMN EQU	LC+51	EXTERNAL DEVICE ADDRESS TABLE FOR PIMS	01	00163
		164	*		(8 WORDS DEFINED IN PIM NO ORDER)	01	00164
		165	*		UNUSED	01	00165
		166	*		UNUSED	01	00166
000373	A	167	V\$SLFG EQU	LC+61	SAL TASK BUSY FLAG 1=BUSY, 0=NOT BUSY	01	00167
000376	A	168	V\$ERFG EQU	LC+62	ERROR TASK BUSY FLAG 1=BUSY, 0=NOT BUSY	01	00168
000377	A	169	V\$JOP EQU	LC+63	JCP OPERATING FLAG	01	00169
000400	A	170	V\$LUT1 EQU	LC+64	START LUN ADDR FOR JCP/OPCOM ASSIGNABLE	01	00170
000401	A	171	V\$LUT2 EQU	LC+65	START LUN ADDR FOR UNASSIGNABLE	01	00171
000402	A	172	V\$LUT3 EQU	LC+66	START LUN ADDR FOR OPCOM ASSIGNABLE	01	00172
000403	A	173	V\$1MIN EQU	LC+67	32767 - (60000/(5*V\$CTMS)) + 1	01	00173
		174	*		UNUSED	01	00174
		175	*		UNUSED	01	00175
		176	*		UNUSED	01	00176
		177	*		UNUSED	01	00177
000410	A	178	V\$IDA EQU	LC+72	I/O ALGORITHM	01	00178
000411	A	179	V\$CKIT EQU	LC+73	CLOCK INT. IN PIM BEFORE LOCKOUT FLAG.	01	00179
000412	A	180	V\$JCB EQU	LC+74	ALL SYSTEM BACKGROUND PROGRAMS AND JCP USE	01	00180
		181	*		THIS SYSTEM BUFFER TO READ DIRECTIVES AND	01	00181
		182	*		SOURCE RECORDS IN.	01	00182
000413	A	183	V\$OCB EQU	LC+75	OPCOM WILL READ OPERATOR KEY-IN REQUESTS	01	00183
		184	*		IN THIS BUFFER. IF JCP IS SET NOT ACTIVE	01	00184
		185	*		AND A 1 DIRECTIVE IS INPUTED, OPCOM	01	00185
		186	*		WILL MOVE THE DIRECTIVE TO V\$JCB BEFORE	01	00186
		187	*		SCHEDULING JCP.	01	00187
000414	A	188	V\$BYN EQU	LC+76	BOTTOM OF VORTEX NUCLEUS	01	00188
000415	A	189	V\$BFC EQU	LC+77	TOP OF FG RES. AREA/BOTTOM OF FG BLK COMM.	01	00189
000416	A	190	V\$TFC EQU	LC+78	TOP OF FG BLK COMMON/TOP OF VORTEX CORE.	01	00190
		191	*		UNUSED	01	00191
		192	EJEC			01	00192
		193	*****			01	00193
		194	*			01	00194
		195	****	MASK TABLE DESCRIPTION		01	00195
		196	*			01	00196
		197	*****			01	00197
000420	A	199	MT SET	0420		01	00199
000420	A	200	ZERD EQU	MT	ZERO WORD	01	00200
000421	A	201	BSO EQU	MT+1	BIT MASK CONTENTS 000001	01	00201



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000422 A 202 BS1 EQU MT+2 000002 01 00202
000423 A 203 BS2 EQU MT+3 000004 01 00203
000424 A 204 BS3 EQU MT+4 000010 01 00204
000425 A 205 BS4 EQU MT+5 000020 01 00205
000426 A 206 BS5 EQU MT+6 000040 01 00206
000427 A 207 BS6 EQU MT+7 000100 01 00207
000430 A 208 BS7 EQU MT+8 000200 01 00208
000431 A 209 BS8 EQU MT+9 000400 01 00209
000432 A 210 BS9 EQU MT+10 001000 01 00210
000433 A 211 BS10 EQU MT+11 002000 01 00211
000434 A 212 BS11 EQU MT+12 004000 01 00212
000435 A 213 BS12 EQU MT+13 010000 01 00213
000436 A 214 BS13 EQU MT+14 020000 01 00214
000437 A 215 BS14 EQU MT+15 040000 01 00215
000440 A 216 BS15 EQU MT+16 0100000 01 00216
000441 A 217 BR0 EQU MT+17 BIT MASK CONTENTS 0177776 01 00217
000442 A 218 BR1 EQU MT+18 0177775 01 00218
000443 A 219 BR2 EQU MT+19 0177773 01 00219
000444 A 220 BR3 EQU MT+20 0177767 01 00220
000445 A 221 BR4 EQU MT+21 0177757 01 00221
000446 A 222 BR5 EQU MT+22 0177737 01 00222
000447 A 223 BR6 EQU MT+23 0177677 01 00223
000450 A 224 BR7 EQU MT+24 0177577 01 00224
000451 A 225 BR8 EQU MT+25 0177377 01 00225
000452 A 226 BR9 EQU MT+26 0176777 01 00226
000453 A 227 BR10 EQU MT+27 0175777 01 00227
000454 A 228 BR11 EQU MT+28 0173777 01 00228
000455 A 229 BR12 EQU MT+29 0167777 01 00229
000456 A 230 BR13 EQU MT+30 0157777 01 00230
000457 A 231 BR14 EQU MT+31 0137777 01 00231
000460 A 232 BR15 EQU MT+32 0077777 01 00232
000461 A 233 NEG EQU MT+33 SET ALL BITS 01 00233
000462 A 234 LHW EQU MT+34 LEFT HALF WORD MASK 0177400 01 00234
000463 A 235 RHW EQU MT+35 RIGHT HALF WORD MASK 0377 01 00235
000421 A 236 ONE EQU MT+1 CONTAINS NUMBER 1 01 00236
000422 A 237 TWO EQU MT+2 CONTAINS NUMBER 2 01 00237
000464 A 238 THREE EQU MT+36 CONTAINS NUMBER 3 01 00238
000423 A 239 FOUR EQU MT+3 CONTAINS NUMBER 4 01 00239
000465 A 240 FIVE EQU MT+37 CONTAINS NUMBER 5 01 00240
000466 A 241 SIX EQU MT+38 CONTAINS NUMBER 6 01 00241
000467 A 242 SEVEN EQU MT+39 CONTAINS NUMBER 7 01 00242
000424 A 243 EIGHT EQU MT+4 CONTAINS NUMBER 8 01 00243
000470 A 244 NINE EQU MT+40 CONTAINS NUMBER 9 01 00244
000471 A 245 TEN EQU MT+41 CONTAINS NUMBER 10 01 00245
000421 A 246 BM1 EQU MT+1 BIT MASK WORD 00001 01 00246
000464 A 247 BM3 EQU MT+36 BIT MASK WORD 00003 01 00247
000467 A 248 BM7 EQU MT+39 BIT MASK WORD 00007 01 00248
000472 A 249 BM17 EQU MT+42 BIT MASK WORD 00017 01 00249
000473 A 250 BM37 EQU MT+43 BIT MASK WORD 00037 01 00250
000474 A 251 BM77 EQU MT+44 BIT MASK WORD 00077 01 00251
000475 A 252 BM177 EQU MT+45 BIT MASK WORD 00177 01 00252
000463 A 253 BM377 EQU MT+35 BIT MASK WORD 00377 01 00253
000476 A 254 BM777 EQU MT+46 BIT MASK WORD 00777 01 00254
000477 A 255 BM1777 EQU MT+47 BIT MASK WORD 01777 01 00255
256 EJEC 01 00256
257 ***** 01 00257
258 * 01 00258
259 *** BIT TEST BIT DESIGNATION *** 01 00259
260 * 01 00260
261 ***** 01 00261
000040 A 263 RA0 EQU 040 BT JUMPS WHEN A REGISTER IS 0 01 00263
000000 A 264 RA1 EQU 000 BT JUMPS WHEN A REGISTER IS 1 01 00264
000060 A 265 RBC EQU 060 BT JUMPS WHEN B REGISTER IS 0 01 00265
000020 A 266 RB1 EQU 020 BT JUMPS WHEN B REGISTER IS 1 01 00266
268 ***** 01 00268
269 * 01 00269
270 ** THE BIT CHECKED 01 00270
271 * 01 00271
272 ***** 01 00272
000000 A 274 B0 EQU 0 01 00274
000001 A 275 B1 EQU 1 01 00275
000002 A 276 B2 EQU 2 01 00276
000003 A 277 B3 EQU 3 01 00277
000004 A 278 B4 EQU 4 01 00278
000005 A 279 B5 EQU 5 01 00279
000006 A 280 B6 EQU 6 01 00280
000007 A 281 B7 EQU 7 01 00281
000010 A 282 B8 EQU 8 01 00282
000011 A 283 B9 EQU 9 01 00283
000012 A 284 B10 EQU 10 01 00284
000013 A 285 B11 EQU 11 01 00285
000014 A 286 B12 EQU 12 01 00286
000015 A 287 B13 EQU 13 01 00287
000016 A 288 B14 EQU 14 01 00288
000017 A 289 B15 EQU 15 01 00289
290 EJEC 01 00290
291 ***** 01 00291
292 * 01 00292
293 *** DEVICE AND FUNCTION CODES *** 01 00293
294 * 01 00294
295 ***** 01 00295
297 *** REAL TIME CLOCK *** 01 00297
000047 A 298 CLOCK EQU 047 DEVICE NUMBER 047 01 00298

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000747 A 299 *
000147 A 300 DISCLK EQU 0700+CLOCK DISABLE CLOCK
000147 A 301 ENACKL EQU 0100+CLOCK ENABLE CLOCK
303 *
304 **** PIM ***
000044 A 305 APIM EQU 044 ALL PIMS DEVICE NUMBER
000040 A 306 PIM1 EQU 040
000041 A 307 PIM2 EQU 041
000042 A 308 PIM3 EQU 042
000043 A 309 PIM4 EQU 043
000040 A 310 PIM5 EQU 040
000040 A 311 PIM6 EQU 040
000040 A 312 PIM7 EQU 040
000040 A 313 PIM8 EQU 040
314 *
000444 A 315 DISPIM EQU 0400+APIM
000244 A 316 ENAPIM EQU 0200+APIM
318 **** MEMORY PROTECT ***
000045 A 319 MP EQU 045 DEVICE ADDRESS 045
000745 A 320 DISMP EQU 0700+MP DISABLE MEMORY PROTECT
000645 A 321 ENAMP EQU 0600+MP ENABLE MEMORY PROTECT
000045 A 322 MPMR0 EQU 0000+MP SELECT MASK REGISTER 0
000145 A 323 MPMR1 EQU 0100+MP SELECT MASK REGISTER 1
000245 A 324 MPMR2 EQU 0200+MP SELECT MASK REGISTER 2
000345 A 325 MPMR3 EQU 0300+MP SELECT MASK REGISTER 3
326 EJEC
327 *
328 *
329 * TIME
330 *
331 * ;TIME, TIME OF DAY TO ENTER TIME
332 *
333 * OR ;TIME TO DISPLAY TIME
334 *
335 *
336 *
000001 A 337 X EQU 1
000002 A 338 B EQU 2
339 EXT 0COUNT
340 EXT 0SERR
341 EXT 0SCLR
000060 A 342 BTB0 EQU 060 B REG,BIT=0
000020 A 343 BTB1 EQU 020 B REG,BIT=1
344 NAME 0TIME
000000 R 345 0TIME EQU * PROCESS TIME REQUEST
000000 006460 A 346 BT BTB0,0DEVDN
000001 000257 R
000002 006424 A 347 BT BTB1*4,0DEVUP
000003 000174 R
000004 006470 A 348 BT BTB0+8,0DATE
000005 000101 R
000006 001010 A 349 JAZ 0TDSPLY ENTER WITH A= NO. OF CHARACTERS.
000007 000042 R
000010 140463 A 350 SUB FIVE A=0 MEANS TO DISPLAY TIME
000011 001002 A 351 JAP 0NUM ERROR
000012 000606 R
000013 010422 A 352 LDA TWO
000014 002000 A 353 CALL 0NUM CONVERT HOURS TO BINARY
000015 000555 R
000016 005014 A 354 TAX RETURN A= BINARY
000017 006140 A 355 SUBI 24
000020 000030 A
000021 001002 A 356 JAP 0NUM GTR THAN 24
000022 000606 R
000023 020413 A 357 LDB V$OCB
000024 016001 A 358 LDA 1,B
000025 056000 A 359 STA 0,B STORE MINUTES IN TOP OF BUFFER
000026 010422 A 360 LDA TWO NOW GET MINUTES
000027 002000 A 361 CALL 0NUM A=MIN.
000030 000555 R
000031 144012 A 362 SUB 0TDS1+1
000032 001002 A 363 JAP 0NUM GTR THAN 59
000033 000606 R
000034 124007 A 364 ADD 0TDS1+1
000035 005042 A 365 TXE B=HOURS
000036 164005 A 366 MUL 0TDS1+1 =60
000037 060344 A 367 STB V$TMN B= TIME IN MINUTES
000040 001000 A 368 0TMEND JMP 0SCLR CLEAR BUFFER AND EXIT
000041 000000 E
000042 000042 R 369 0TDSPLY EQU * ENTER FOR DISPLAY TIME REQUEST
000042 020344 A 370 LDB V$TMN GET CURRENT TIME.
000043 006170 A 371 0TDS1 DIVI 60 B= HOURS , A= MINUTES.
000044 000074 A
000045 030413 A 372 LDX V$OCB
000046 065000 A 373 STB 0,X SAVE
000047 002000 A 374 CALL 0ITA CONVERT BINARY TO ASCII
000050 000413 R
000051 005021 A 375 TBA
000052 114006 A 376 0RA 0TDS2+1 SET BLANK IF ONLY 1 DIGIT
000053 054022 A 377 STA 0DISP+2 SET MINUTES IN TIME MSG
000054 015000 A 378 LDA 0,X GET HOURS
000055 002000 A 379 CALL 0ETA CONVERT TO ASCII
000056 000413 R

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000057 005021 A 380 TBA
000060 006110 A 381 DTDS2 DRAI 0130260 SET ASCII 00 IF HOUR 0
000061 130260 A
000062 054012 A 382 STA DTDISP+1
000063 006010 A 383 LDRAI DTDCB DCB ADDR.
000064 000070 R
000065 005002 A 384 TZB
000066 001000 A 385 JMP OPMSG OUTPUT MSG AND EXIT
000067 000377 R
386 DTDCB DCB 6,DTDISP-1,0 DCB 5 WORDS+PRINT CONTROL WORD
000070 000006 A
000071 000073 R
000072 000000 A
000073 120240 A 387 DATA *
000074 000074 R 388 DTDISP EQU * PRINT CONTROL=BLANK,PRINT ONLY
000074 152240 A 389 DATA *T* TIME DISPLAY MSG
000075 144310 A 390 DATA *HH* T HMM HRS
000076 146710 A 391 DATA *MM*
000077 120310 A 392 DATA *H*
000100 151323 A 393 DATA *RS*
394 EJECT
395 *
396 *
397 * DATE
398 *
399 * ;DATE,MM/DD/YY
400 *
401 *
402 ODATE EQU * PROCESS DATE REQUEST.
000101 000101 R 403 SUB NINE ENTER WITH A= NUMBER OF DIGITS
000102 140470 A 404 JAP DNUM ERROR, TOO MANY
000103 000600 R
000104 030413 A 405 LDX V$DCB
000105 015000 A 406 LDA 0,X
000106 054050 A 407 STA DDATE+1
000107 010422 A 408 LDA TWO
000110 002000 A 409 CALL DNUM
000111 000555 R
000112 144021 A 410 SUB DDATE+1 RETURN A=BINARY
000113 005002 A 411 TZB INIT FLAG FOR AMERICAN DATE-MM/DD/YY
000114 064050 A 412 STB EDATE
000115 001004 A 413 JAN DDATE2 JUMP IF MONTH FIRST
000116 000124 R
000117 144026 A 414 SUB DDATE+1 CHECK IF LESS THAN 31 DAYS
000120 001002 A 415 JAP DNUM ERROR
000121 000600 R
000122 020421 A 416 LDB ONE
000123 064047 A 417 STB EDATE SET FLAG TO DENOTE DAYS FIRST-DD/MM/YY
000124 000124 R 418 DDATE2 EQU *
000124 015001 A 419 LDA 1,X
000125 025002 A 420 LDB 2,X
000126 004450 A 421 LLRL 8
000127 055000 A 422 STA 0,X
000130 010422 A 423 LDA TWO
000131 002000 A 424 CALL DNUM CONVERT DAY TO BINARY
000132 000555 R
000133 006140 A 425 DDATE4 SUBI 13 CHECK TO SEE IF IN BOUNDS FOR MONTHS
000134 000015 A
000135 001004 A 426 JAN DDATE3 OK
000136 000151 R
000137 005002 A 427 TZB
000140 004460 A 428 LLRL 16
000141 134031 A 429 ERA EDATE CHECK TO SEE IF DATE FLAG SET
000142 001016 A 430 JANZ DNUM ERROR (EDATE=1)
000143 000600 R
000144 004460 A 431 LLRL 16
000145 006140 A 432 DDATE5 SUBI 19
000146 000023 A
000147 001002 A 433 JAP DNUM ERROR-OUT OF RANGE FOR DAYS
000150 000600 R
000151 000151 R 434 DDATE3 EQU *
000151 015003 A 435 LDB 3,X GET YEAR
000152 055000 A 436 STA 0,X
000153 010422 A 437 LDA TWO
000154 002000 A 438 CALL DNUM CONVERT YEAR
000155 000555 R
000156 006010 A 439 DDATE1 LDRAI * SET DATE IN V$DATE
000157 000156 R
000160 050070 A 440 STA V$DATE ASCII CHARACTERS
000161 015001 A 441 LDA 1,X
000162 050071 A 442 STA V$DATE+1
000163 015002 A 443 LDB 2,X
000164 050072 A 444 STA V$DATE+2
000165 015003 A 445 LDA 3,X
000166 050073 A 446 STA V$DATE+3
000167 001000 A 447 JMP DDCLR
000170 000041 R
000171 000172 R 448 DDATE9 DATA *+1
000172 000000 A 449 DATA 0
000173 000000 A 450 EDATE DATA 0
451 EJECT
452 *
453 *

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454 *      ODEVUP
455 *
456 *      ;DEVUP, DEVICE NAME
457 *
458 *
000000 A 459 DSDVDN EQU 0
000174 R 460 ODEVUP EQU * PROCESS DEVICE UP REQUEST
000174 020440 A 461 LDB BS15
000175 064060 A 462 STB ODEV99 SET DEVUP INDICATOR
000176 140422 A 463 SUB TWO
000177 001016 A 464 JANZ ODEV2
000200 000205 R
000201 030413 A 465 LDX V#DCB
000202 006010 A 466 LDAI 0130260 ASSUME 00 FOR LAST 2 CHAR. OF DEVICE NAME
000203 130260 A
000204 055001 A 467 STA 1,X
000205 006506 A 468 ODEV2 JSR DMSRCH,B
000206 000500 R
000207 001010 A 469 JAZ ODEV10 ERROR. NOT IN DST TABLE
000210 000250 R
000211 005012 A 470 TAB
000212 014043 A 471 LDA ODEV99
000213 001004 A 472 JAN ODEV6 SKIP DC AND SYSTEM DEVICE CHECK
000214 000237 R
000215 005021 A 473 TBA
000216 030400 A 474 LDX V$LUT1
000217 135001 A 475 ERA 1,X
000220 150463 A 476 ANA RHW DC DEVICE. ERROR.
000221 001010 A 477 JAZ ODEV12
000222 000253 R
000223 030401 A 478 LDX V$LUT2 START ADDR FOR UNASSIGNABLE BLOCK
000224 074003 A 479 STX ODEV4+1
000225 035000 A 480 LDX 0,X NO. OF ENTRIES IN BLOCK
000226 005021 A 481 TBA DST ENTRY NO.
000227 006135 A 482 ODEV4 ERAE V$LUT2,X V$LUT2 CONTENT
000230 000401 A
000231 150463 A 483 ANA RHW
000232 001010 A 484 JAZ ODEV12 ERROR
000233 000253 R
000234 005344 A 485 DXR
000235 001046 A 486 JXNZ ODEV4-1 DO NEXT IF NOT DONE
000236 000226 R
000237 010355 A 487 ODEV6 LDA V#DSTB
000240 005322 A 488 DBR
000241 160464 A 489 MUL THREE B= DST ENTRY ADDR.
000242 016000 A 490 LDA DSDVDN,B
000243 110440 A 491 DRA BS15 SET UP
000244 134011 A 492 ERA ODEV99 O=DEVVDN,100000=DEVUP
000245 056000 A 493 STA DSDVDN,B
000246 001000 A 494 JMP DSCLR
000247 000170 E
000250 010423 A 495 ODEV10 LDA FOUR
000251 001000 A 496 JMP DSERR SET DC04
000252 000000 E
000253 010466 A 497 ODEV12 LDA SIX OUTPUT DC06 MSG.
000254 001000 A 498 JMP DSERR
000255 000252 E
000256 000000 A 499 ODEV99 DATA 0 DEVICE UP/DOWN INDICATOR.
500 EJEK
501 *
502 *
503 *      ODEVVDN
504 *
505 *      ;DEVVDN, DEVICE NAME
506 *
507 *
000257 000257 R 508 ODEVVDN EQU * DEVICE DOWN PROCESSOR.
000260 001000 A 509 TZB SET DEVICE DOWN INDICATOR
000261 000175 R 510 JMP ODEVUP+1 COMMON PROCESSING.
511 EJEK
512 *
513 *      ODTB
514 *
515 *      POSITIVE DECIMAL 4-BIT BCD TO BINARY CONVERSION.
516 *
517 *      ENTER WITH DECIMAL BCD INTEGER,0000-9999 IN A REG.
518 *
519 *      EXIT WITH BINARY IN A, X REG, IS UNCHANGED.
520 *
000262 000000 A 521 ODTB ENTR
000263 074021 A 522 STX ODTBB+1
000264 030423 A 523 LDX BS2 =4 ,LOOP COUNT
000265 005012 A 524 TAB
000266 005001 A 525 TZA
000267 054020 A 526 ODTBA STA ODTBC
000270 005001 A 527 TZA
000271 004444 A 528 LLRL 4 NOW BCD
000272 124015 A 529 ADD ODTBC
000273 054014 A 530 STA ODTBC
000274 005344 A 531 DXR
000275 001040 A 532 JXZ ODTBB ALL DIGITS DONE
000276 000304 R
    
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Address	Hex	Op	Time	Label	Code	Comment	Line	Page
000277	004242	A	533	LRLA	2		01	00534
000300	124007	A	534	ADD	ODTEC		01	00535
000301	004241	A	535	LRLA	1		01	00536
000302	001000	A	536	JMP	ODTBA		01	00537
000303	000267	R						
000304	006030	A	537	ODTBB	LDXI	* RESTORE X	01	00538
000305	000304	R						
000306	001000	A	538	JMP*	ODTB	RETURN	01	00539
000307	100262	R						
000310	000000	A	539	ODTBC	DATA	0	01	00540
			540	EJEC			01	00541
			541	*			01	00542
			542	*			01	00543
			543	*	OLDBT,OSTBT		01	00544
			544	*			01	00545
			545	*	LOAD/STORE 1 CHARACTER IN BUFFER SUBROUTINE.		01	00546
			546	*			01	00547
			547	****	ENTER VIA JMPM OLDBT (TO LOAD A CHAR.)		01	00548
			548	*	DATA LOCATION OF BUFFER ADDR * 2 FOR CHAR N/N+1		01	00549
			549	*	SWITCH		01	00550
			550	*	EXIT WITH A REG= ASCII CHARACTER = B REG. X= UNCHANGED		01	00551
			551	*	BUFFER ADDRESS INCREMENTED TO NEXT CHAR.		01	00552
			552	*			01	00553
			553	****	ENTER VIA JMPM OSTBT (TO STORE A CHAR.)		01	00554
			554	*	DATA LOCATION OF BUFFER ADDR *2, BIT 0=0 CHAR N		01	00555
			555	*	BIT 0=1 CHAR N+1		01	00556
			556	*	A REG = ASCII CHARACTER TO STORE		01	00557
			557	*			01	00558
			558	*	EXIT WITH A,B DESTROYED. X REG UNCHANGED.		01	00559
			559	*			01	00560
			560	*			01	00561
000311	000000	A	561	OSTBT	ENTR	ENTER HERE TO STORE A BYTE	01	00562
000312	150463	A	562	OSTBA	ANA	BM377 EXTRACT BYTE TO STORE	01	00563
000313	054062	A	563	STA	OBYTX+1		01	00564
000314	044060	A	564	INR	OBYTX	SET FLAG TO STORE CHAR.	01	00565
000315	006017	A	565	LDAB	OSTBT	SET RETURN ADDR.	01	00566
000316	000311	R						
000317	054052	A	566	OLDBT	STA	OLDBT	01	00567
			567	OLDBA	EQU	* NOW COMMON PROCESSING	01	00568
000320	074047	A	568	STX	OBYTF+1	SAVE X	01	00569
000321	034050	A	569	LDX	OLDBT	CALL SEQ ADDR	01	00570
000322	035000	A	570	LDX	0,1	GET LOC OF BUFFER ADDR.	01	00571
000323	025000	A	571	LDB	0,1	NOW BUFFER ADDR * 2 FOR CHAR N/N+1 FLAG	01	00572
000324	005121	A	572	INCR	021	TBA IAR	E.2	****
000325	055000	A	573	STA	0,1	INCREMENT BUFFER ADDR FOR NEXT CHAR.	01	00575
000326	044043	A	574	INR	OLDBT	NOW RETURN ADDR	01	00576
000327	005001	A	575	TZA			01	00577
000330	004477	A	576	LRLA	31		01	00578
000331	007401	A	577	SDF		SET FOR CHAR N+1	01	00579
000332	001004	A	578	JAN	OBYTA	NEG IF CHAR N+1	01	00580
000333	000335	R						
000334	007400	A	579	ROF		RESET FOR CHAR N	01	00581
000335	016000	A	580	OBYTA	LDA	0,2 GET WORD	01	00582
000336	034036	A	581	LDX	OBYTX	LOAD/STORE INDICATOR	01	00583
000337	001040	A	582	JXZ	OBYTC	JMP IF LOAD BYTE	01	00584
000340	000362	R						
000341	001001	A	583	JDF	OBYTB	JMP IF LOW ORDER BYTE. STORE BYTE	01	00585
000342	000346	R						
000343	004250	A	584	LRLA	8	HIGH ORDER BYTE.	01	00586
000344	001000	A	585	JMP	OBYTB+1		01	00587
000345	000347	R						
000346	007401	A	586	OBYTB	SDF	RESET LOW ORDER SWITCH	01	00588
000347	150463	A	587	ANA	LHW		E.2	****
000350	114025	A	588	ORA	OBYTX+1	SET BYTE IN WORD	01	00590
000351	001001	A	589	JDF	OBYTG	JUMP IF LOW ORDER	01	00591
000352	000354	R						
000353	004250	A	590	LRLA	8	ROTATE BYTE BACK TO HIGH ORDER	01	00592
000354	056000	A	591	OBYTG	STA	0,2 STORE BYTE	01	00593
000355	014020	A	592	LDA	OBYTX+1		01	00594
000356	005002	A	593	TZE			01	00595
000357	064015	A	594	STB	OBYTX	RESET STORE BYTE FLAG.	01	00596
000360	001000	A	595	JMP	OBYTF		01	00597
000361	000367	R						
000362	001001	A	596	OBYTC	JDF	OBYTD	01	00598
000363	000365	R						
000364	004250	A	597	LRLA	8		01	00599
000365	150463	A	598	OBYTD	ANA	BM377 EXTRACT BYTE	01	00600
000366	005012	A	599	TAB		EXIT WITH BYTE IN A,B	01	00601
000367	006030	A	600	OBYTF	LDXI	*	01	00602
000370	000367	R						
000371	001000	A	601	JMP	*	EXIT	01	00603
000372	000371	R						
			602	OLDBT	EQU	*-1	01	00604
			603	JMP	OLDBA	ENTER HERE TO LOAD A BYTE FROM BUFFER	01	00605
000374	000320	R						
000375	000000	A	604	OBYTX	DATA	0,0	01	00606
000376	000000	A		EJEC			01	00607
			606	*			01	00608
			607	*			01	00609
			608	*	OPMSG		01	00610
			609	*			01	00611
			610	*	OUTPUT MESSAGE ROUTINE		01	00612



```

611 *
612 *      DPMSG IS CALLED TO OUTPUT A MESSAGE TO THE DPCOM DEVICE.
613 *      FOR ONE MESSAGE OUTPUT
614 *      ENTER VIA JMP DPMSG WITH THE A REG = DCB ADDRESS.
615 *      B=0.
616 *      DPMSG WILL CALL EXIT UPON RETURN FROM V#IOC AND UPON CLEAR
617 *      DPCOM BUFFER, V#OPBF.
618 *
619 *      FOR MULTIPLE MESSAGES AND RETURN TO CALLER FOLLOWING EACH
620 *      ENTER VIA JSR DPMSG,B
621 *      WITH A = DCB ADDR.
622 *
623 *
000377 000377 R 624 DPMSG EQU *
000377 054004 A 625 STA OUTMSG+4 A= DCB ADDR
626 OUTMSG WRITE *,1,0,0 WAIT,WRITE,LUN=DC

000400 006505 A
000401 000404 A
000402 100000 A
000403 000401 A
000404 000400 R
000405 000000 A
000406 000000 A
000407 001020 A 627 JBZ DSCLR ONE MSG ONLY
000410 000247 A 628 IJMP 0,B RETURN TO CALLER FOR NEXT MESSAGE
000411 006706 A
000412 000000 A

629 EJEC
630 *
631 *      DBTA
632 *
633 *      BINARY TO ASCII CONVERSION.
634 *
635 *      CONVERTS A BINARY INTEGER 0-9999 TO FOUR ASCII CHARACTERS.
636 *      ENTER WITH INTEGER IN A REGISTER,VIA JMPM DBTA.
637 *
638 *      EXIT WITH ASCII CHARACTERS IN A,B. LEADING ZEROS
639 *      ARE SUPPRESSED.
640 *
641 *      A,B DESTROYED, X UNCHANGED.
642 *
643 *
644 *
000413 000000 A 645 DBTA ENTR
000414 074035 A 646 STX DBTZ+1 SAVE X
000415 005012 A 647 TAB
000416 005001 A 648 TZA
000417 006170 A 649 DIVI 1000
000420 001750 A
000421 004050 A 650 LRLB 8 A=REMAINDER,B=QUOTIENT
000422 064005 A 651 STB DBTC+1 1ST CHAR.
000423 005012 A 652 TAB
000424 005001 A 653 TZA
000425 006170 A 654 DIVI 100 FIND HUNDREDS DIGIT
000426 000144 A
000427 006030 A 655 DBTC LDXI *
000430 000427 R
000431 005064 A 656 MERG 064 B OR X TO X ,CHAR 1,2
000432 005012 A 657 TAB
000433 005001 A 658 TZA
000434 170471 A 659 DIV TEN A=REMAINDER, B=QUOTIENT
000435 004050 A 660 LRLB 8 POSITION CHAR 3.
000436 005032 A 661 MERG 032 A OR B TO B, CHARS. 3,4
000437 005041 A 662 TXA GET CHAR 1,2
000440 001010 A 663 JAZ DBTG BOTH CHARS 1,2 ARE ZEROS.
000441 000460 R
000442 150462 A 664 ANA LHW CHECK CHAR 1 FOR ZERO
000443 001016 A 665 JANZ DBTE NO
000444 000455 R
000445 014027 A 666 LDA DBBZ YES,SUPPRESS LEADING ZERO,=0120260
000446 005051 A 667 DBTD MERG 051 X OR A TO A, CHAR 1,2
000447 034027 A 668 LDX DB2ZE =0130260
000450 005062 A 669 MERG 062 X OR B TO B, CHAR 3,4
000451 006030 A 670 DBTZ LDXI * RESTORE X
000452 000451 R
000453 001000 A 671 JMP* DBTA EXIT
000454 100413 R

000455 014021 A 672 * ENTER FOR NO LEADING ZEROS.
000456 001000 A 673 DBTE LDA DB2ZE =0130260
000457 000446 R 674 JMP DBTD

675 * ENTER FOR LEADING ZEROS CHARACTERS 1,2
676 DBTG LLRL 8 CHECK CHAR 3
677 JANZ DBTI NOT ZERO.

678 DBTF LLRL 8 SUPPRESS CHAR 3. MOVE CHAR 4.
679 JRA DBPZ =0120260
000463 004450 A 680 TAB B REG. = CHAR 3,4
000464 114010 A 681 DBTH LDA DB2BLK =0130240, SUPPRESS CHARS 1,2
000465 005012 A 682 JMP DBTZ
000466 014007 A
000467 001000 A
000470 000451 R

000471 114002 A 683 * ENTER CHAR 3 IS NOT ZERO.
684 DBTI ORA DBZERO CHAR 3 IN A

```

01 00613  
01 00614  
01 00615  
01 00616  
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01 00650  
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01 00658  
01 00659  
01 00660  
E.2\*\*\*  
01 00662  
01 00663  
01 00664  
01 00665  
  
01 00666  
01 00667  
  
01 00668  
01 00669  
01 00670  
01 00671  
01 00672  
  
01 00673  
  
01 00674  
01 00675  
01 00676  
  
01 00677  
01 00678  
01 00679  
  
01 00680  
01 00681  
01 00682  
01 00683  
01 00684  
  
01 00685  
01 00686



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000472 001000 A 685 JMP DBTF 01 00687
000473 000463 R
000474 000260 A 686 DBZERO DATA 0260 01 00688
000475 120260 A 687 DBBZ DATA 0120260 01 00689
000476 130240 A 688 DB2BLK DATA 0130240 01 00690
000477 130260 A 689 DB2ZE DATA 0130260 01 00691
690 EJEC 01 00692
691 * DNSRCH 01 00693
692 * 01 00694
693 * SEARCH DST FOR DEVICE NAME SUBROUTINE 01 00695
694 * 01 00696
695 * DNSRCH SEARCHES THE DST TABLE FOR A MATCHING 4 ASCII CHAR. 01 00697
696 * DEVICE NAME SPECIFIED IN CALLER BUFFER. 01 00698
697 * 01 00699
698 * ENTER VIA JSR DNSRCH,B 01 00700
699 * 01 00701
700 * EXIT WITH A=DST ENTRY NO. B=DST ADDR.,X=UNCHANGED 01 00702
701 * 01 00703
702 * IF SEARCH IS UNSUCCESSFUL,EXIT WITH A=0 01 00704
703 * 01 00705
704 * 01 00706
705 * 01 00707
706 * 01 00708
000500 000500 R 707 DNSRCH EQU * 01 00709
000501 064051 A 708 STB DNSR99-1 RETURN ADDR 01 00710
000502 020413 A 709 LDB V#OCB 01 00711
000503 054047 A 710 LDA 0,B SAVE 1ST 2 CHARS. 01 00712
000504 026001 A 711 STA DNSR99 01 00713
000505 004450 A 712 LDB 1,B GET NEXT 2 CHARS. 01 00714
000506 150467 A 713 LLRL 8 01 00715
000507 004252 A 714 ANA SEVEN 3RD CHAR 01 00716
000510 054043 A 715 LRLA 10 01 00717
000511 004450 A 716 STA DNSR99+1 01 00718
000512 150463 A 717 LLRL 8 4TH CHAR. 01 00719
000513 006140 A 718 ANA RHW 01 00720
000514 000260 A 719 SUBI 0260 01 00721
000515 004244 A 720 LRLA 4 01 00722
000516 114035 A 721 ORA DNSR99+1 01 00723
000517 054034 A 722 STA DNSR99+1 STORE CHARACTERS 3,4 01 00724
000520 020355 A 723 LDB V#DSTB DST BASE ADDR 01 00725
000521 010421 A 724 LDA ONE 01 00726
000522 054025 A 725 STA DNSR98+1 SET DST ENTRY NO. TO ONE. 01 00727
000523 016001 A 726 DNSR4 LDA 1,B COMPARE DSNAME WITH FIRST 2 CHARS. 01 00728
000524 001010 A 727 JAZ# DNSR99-1 END OF DST TABLE. EXIT 01 00729
000525 100532 F
000526 134024 A 728 ERA DNSR99 01 00730
000527 001010 A 729 JAZ DNSR6 MATCH. COMPARE NEXT 2 CHARS. 01 00731
000530 000537 R
000531 005122 A 730 DNSR5 IER 01 00732
000532 005122 A 731 IER 01 00733
000533 005122 A 732 IER 01 00734
000534 044013 A 733 INR DNSR98+1 INCREMENT ENTRY NO. 01 00735
000535 001000 A 734 JMP DNSR4 01 00736
000536 000523 R
000537 016000 A 735 DNSR6 LDA 0,B NOW COMPARE NEXT 2 CHARS. 01 00737
000540 134013 A 736 ERA DNSR99+1 01 00738
000541 006150 A 737 ANAI 017760 01 00739
000542 017760 A
000543 001010 A 738 JAZ DNSR98 COMPARE. DST FOUND. 01 00740
000544 000547 R
000545 001000 A 739 JMP DNSR5 TRY NEXT ENTRY 01 00741
000546 000531 R
000547 006010 A 740 DNSR98 LDAI * A= DST ENTRY NO. 01 00742
000550 000547 R
000551 001000 A 741 JMP * NOW RETURN 01 00743
000552 000551 R
000553 000000 A 742 DNSR99 DATA 0,0 01 00744
000554 000000 A
743 EJEC 01 00745
744 * 01 00746
745 * 01 00747
746 * DNUM*** 01 00748
747 * DECIMAL ASCII INTEGER TO BINARY CONVERSION 01 00749
748 * 01 00750
749 * THE DECIMAL INTEGER MUST BE POSITIVE AND IN THE RANGE 01 00751
750 * 0000-9999. IF NOT A DECIMAL INTEGER EXIT IS TO DSE000 TO 01 00752
751 * OUTPUT THE DC02 ERROR MESSAGE. 01 00753
000555 000000 A 752 DNUM ENIR 01 00754
000556 074047 A 753 STX DNUMX+1 SAVE X 01 00755
000557 005014 A 754 TAX CHARACTER COUNT NOW IN X 01 00756
000560 005002 A 755 TZR 01 00757
000561 054047 A 756 STB DNUMZ 01 00758
000562 010413 A 757 LDA V#OCB 01 00759
000563 004241 A 758 LRLA 1 01 00760
000564 054046 A 759 STA DNUMZ+2 BUFFER*2 01 00761
000565 002000 A 760 DNUMA CALL OLDBT,DNUMZ+2 GET ASCII CHAR. FROM BUFFER 01 00762
000566 000372 R
000567 000630 R
000570 005012 A 761 TAB SAVE CHARACTER 01 00763
000571 006140 A 762 SUBI 0240 01 00764
000572 000240 A
000573 001010 A 763 JANZ DNUMG 01 00765

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730	DNSR5	739								
735	DNSR6	729								
740	DNSR98	725	733	738						
742	DNSR99	708	711	716	721	722	727	728	736	
707	DNSRCH	468								
752	ONUM	353	361	409	424	438	784			
760	ONUMA	780								
770	ONUME	351	356	363	404	415	430	433	767	
772	ONUMF	769								
766	ONUMG	763								
779	ONUMH	765								
783	ONUMX	753								
785	ONUMZ	756	759	760	764	774	775	777	778	
624	OPMSG	385								
0	OSCLR	341	368	447	494	627				
0	OSERR	340	496	498	771					
561	OSTBT	565								
386	OTDCB	383								
388	OTDISP	377	382	386						
371	OTDS1	362	364	366						
381	OTDS2	376								
369	OTDSPY	349								
345	OTIME	344	786							
626	OUTMSG	625								
235	RHW	476	483	718						
242	SEVEN	714								
241	SIX	497								
245	TEN	659	768							
238	THREE	489								
237	TWO	352	360	408	423	437	463	770		
110	V\$DATE	440	442	444	446					
157	V\$DSTB	487	723							
170	V\$LUT1	474								
171	V\$LUT2	478	482							
183	V\$DCB	357	372	405	465	709	757			
0	V\$DTIM	10								
148	V\$TMN	367	370							
337	X	373	378	406	419	420	422	435	436	441
		443	445	467	475	480	482			







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94 F      FORM      1,3,4,8
95        F          P(1),P(2),P(3),P(4)
96        DATA     P(5),0,0
97        EMAC
98 STAT    MAC
99        EXT        INTRST
100       JMPM      INTRST
101       DATA     P(1),P(2),P(3),P(4),P(5)
102       EMAC
103       EJEC
104 *****
000000 001000 A 105       JMP        EXC10          THIS IS RE-ENTRY POINT AFTER MANUAL STOP
000001 000673 R
106 *****
107       EJEC
108 *        THIS IS SOME INITIALIZATION NEEDED AFTER LOADING IN ORDER TO *
109 *        SET UP FCBS AND DCBS FOR THE LOGICAL UNITS ST,PI,LD,AND BI *
110 *        DEPENDING UPON WHETHER THEY ARE ON A RMD OR NON-RMD DEVICE. *
111 *
112 *                IF ON A RMD THE GLOBAL FCB WILL BE USED
113 *                IF ON A NON-RMD A LOCAL DCB WILL BE USED
114 *
000002 002000 A 116 MIUTIL CALL    RMD,2          CHECK IF SI IS ON AN RMD
000003 004273 R
000004 000002 A
000005 001010 A 117        JAZ      SIRMD          YES
000006 000030 R
000007 002000 A 118 SMPI  CALL    RMD,4          CHECK IF PI IS ON A RMD
000010 004273 R
000011 000004 A
000012 001010 A 119        JAZ      PIRMD          YES
000013 000047 R
000014 002000 A 120 SMLD  CALL    RMD,5          CHECK IF LD IS ON A RMD
000015 004273 R
000016 000005 A
000017 001010 A 121        JAZ      LDRMD          YES
000020 000066 R
000021 002000 A 122 SMBI  CALL    RMD,6          CHECK IF BI IS ON A RMD
000022 004273 R
000023 000006 A
000024 001010 A 123        JAZ      BIRMD          YES
000025 000103 R
000026 001000 A 124        JMP      EXC          BEGIN SIMULATOR EXEC
000027 000476 R
125       EJEC
126       EXT      SIFCB
127       EXT      PIFCB
128       EXT      LDFCB
129       EXT      BIFCB
130       EXT      $SYST
131 *
132 SIRMD  OPEN    SIFCB,2,0,0
000030 002000 A
000031 000000 E
000032 100000 A
000033 003002 A
000034 000000 E
000035 000000 A
000036 000000 A
000037 014070 A 133       LDA      FCBSI
000040 006057 A 134       STAE     SIIN1+4        STORE GLOBAL FCB IN READ REQUEST
000041 004411 R
000042 005301 A 135       DECR     01
000043 006057 A 136       STAE     SIFLG          SET SI ON RMD FLAG
000044 004456 R
000045 001000 A 137       JMP      SMPI
000046 000007 R
138 PIRMD  OPEN    PIFCB,4,0,0
000047 002000 A
000050 000031 E
000051 100000 A
000052 003004 A
000053 000000 E
000054 000000 A
000055 000000 A
000056 014052 A 139       LDA      FCBPI
000057 006057 A 140       STAE     PIIN2+4        STORE GLOBAL FCB IN READ REQUEST
000060 004521 R
000061 005301 A 141       DECR     01
000062 006057 A 142       STAE     PIFLG          SET PI ON RMD FLAG
000063 004547 R
000064 001000 A 143       JMP      SMLD
000065 000014 R
144 LDRMD  OPEN    LDFCB,5,0,0
000066 002000 A
000067 000050 E
000070 100000 A
000071 003003 A
000072 000000 E
000073 000000 A
000074 000000 A
000075 014034 A 145       LDA      FCBLO
000076 006057 A 146       STAE     LD1+4          STORE GLOBAL FCB IN READ REQUEST

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000077	004716	R								
000100	005301	A	147	DECR	01				02	00147
000101	006057	A	148	STAE	LBFLG		SET LD ON RMD FLAG		02	00148
000102	004773	A								
000103	001000	A	149	JMP	SMSI				02	00149
000104	000001	R								
			150	BIRMD	OPEN	BIFCB,6,0,0			02	00150
000105	002000	A								
000106	000007	A								
000107	100000	A								
000110	000000	A								
000111	000000	A								
000112	000000	A								
000113	000000	A								
000114	014010	A	151	LDA	FCBBI				02	00151
000115	006057	A	152	STAE	LREAD+4		STORE GLOBAL FCB IN READ REQUEST		02	00152
000116	001000	A								
000117	006010	A	153	LDAI	120				02	00153
000120	000170	A								
000121	006057	A	154	STAE	BIRLK+1		SET WORD COUNT TO 120		02	00154
000122	001060	A								
000123	005301	A	155	DECR	01				02	00155
000124	006057	A	156	STAE	BIFLG		SET RI ON RMD FLAG		02	00156
000125	004040	A								
000126	001000	A	157	JMP	EXC		BEGIN STIMULATOR EXEC		02	00157
000127	000476	A								
			158	*					02	00158
000130	000003	E	159	FCBSI	DATA	SIFCB			02	00159
000131	000003	E	160	FCBPI	DATA	RIFCB			02	00160
000132	000007	E	161	FCBLD	DATA	LBFCB			02	00161
000133	000111	E	162	FCBBI	DATA	BIFCB			02	00162
000134	000000	E	163	SYST	DATA	SSYST			02	00163
			164	EJEC					02	00164
			165	*					02	00165
			166	*					02	00166
			167	*					02	00167
			168	*	NAME:	COMMON DATA AREA			02	00168
			169	*					02	00169
			170	*	NOTE:	THE FOLLOWING ARE THE BUFFERS, TABLES AND FLAGS			02	00170
			171	*		WHICH ARE SHARED BY THE COMPONENTS OF THIS PROGRAM			02	00171
			172	*					02	00172
			173	*					02	00173
			174	*					02	00174
			175	FIELDS	BSS	25	THE 25 MICRO FIELDS		02	00175
			176	*					02	00176
000166	000000	A	177	DEBUG	DATA	0	IF NON-NEGATIVE, DEBUG CONFIGURATION		02	00177
000167	000000	A	178	WORD	DATA	0	CONTAINS CURRENT CONTROL STORE WORD NO.		02	00178
000170	000000	A	179	WORD2	DATA	0			02	00179
000171	000000	A	180	STORE	DATA	0	CONTAINS CURRENT CONTROL STORE SPEC,		02	00180
000172	000000	A	181	PAGE	DATA	0	CONTAINS CURRENT WCS PAGE NUMBER		02	00181
000173	000000	A	182	MBUF	DATA	0,0,0,0	BUFFER FOR WCS I/O		02	00182
000174	000000	A								
000175	000000	A								
000176	000000	A								
000177	177777	A	183	HLTADR	DATA	-1	HALT ADDR OR -1 IF NO HALT ADDR	C.1	02	00183
			184	*					02	00184
			185	*					02	00185
			186	*	PRINT OUTPUT BUFFER				02	00186
000200	120240	A	187	DATA	0120240				02	00187
000201		A	188	BSSI	26		INPUT BUFFER		02	00188
000245	120240	A	189	BUFR	DATA	0120240			02	00189
000246		A	190	BSS	120				02	00190
			191	*					02	00191
000436	000000	A	192	TRACE	DATA	0	DOING TRACE FLAG		02	00192
			193	*					02	00193
			194	*	INPUT HEX DIGIT STRING				02	00194
000437	000000	A	195	DATA	0	DIGITS 1-4			02	00195
000440	000000	A	196	DATA	0	DIGITS 5-8			02	00196
000441	000000	A	197	DATA	0	DIGITS 9-12			02	00197
000442	000000	A	198	DATA	0	DIGITS 13-16			02	00198
			199	*					02	00199
			200	*					02	00200
			201	*					02	00201
			202	*	EJEC				02	00202
			203	*					02	00203
			204	*	INPUT PROCESSING COMMAND TABLE				02	00204
			205	*					02	00205
000443	000330	A	206	COMM	DATA	0001	X - EXECUTE MICROINSTRUCTIONS		02	00206
000444	000330	A	207	DATA	0004		D - DUMP WCS TO LD		02	00207
000445	000330	A	208	DATA	0005		E - EXAMINE / CHANGE WCS WORDS		02	00208
000446	000330	A	209	DATA	0010		H - ENABLE CONTROL SYSTEM		02	00209
000447	000330	A	210	DATA	0011		I - INITIALIZE WCS		02	00210
000450	000330	A	211	DATA	0014		L - LOAD CONTROL STORE		02	00211
000451	000330	A	212	DATA	0015		M - SELECT INPUT MEDIA		02	00212
000452	000330	A	213	DATA	0021		P - PAGE SELECT		02	00213
000453	000330	A	214	DATA	0022		R - RETURN TO OPERATING SYSTEM		02	00214
000454	000330	A	215	DATA	0027		S - SET MICRO EXECUTION ADDRESS		02	00215
000455	000330	A	216	DATA	0028		T - TRACE		02	00216
000456	000330	A	217	DATA	0029		B - BRANCH TO WCS		02	00217
000457	000330	A	218	DATA	0037		H - SET HALT ADDR	C.1	02	00218
000458	177777	A	219	DATA	0		END OF COMM BUFFER		02	00219
			220	*					02	00220
000461	000330	R	221	COMM1	DATA	0100	X - EXECUTE MICROINSTRUCTIONS		02	00221
000462	001000	R	222	DATA	0100		D - DUMP WCS TO LD		02	00222



000463	001436	R	223	DATA	EDRM	E - EXAMINE/CHANGE WCS WORD	02	00223	
000464	003512	R	224	DATA	ENABLE	N- ENABLE CONTROL STORE	02	00224	
000465	003426	R	225	DATA	INITW	I- INITIALIZE WCS COMMAND	02	00225	
000466	001006	R	226	DATA	LDRM	L LOAD CONTROL STORE	02	00226	
000467	003143	R	227	DATA	CHME	M SELECT INPUT MEDIA	02	00227	
000470	000745	R	228	DATA	PSEL	P PAGE SELECT	02	00228	
000471	002341	R	229	DATA	E170	R RETURN TO OPERATING SYSTEM	02	00229	
000472	003171	R	230	DATA	E130	G - SET EXECUTION ADDRESS	02	00230	
000473	003446	R	231	DATA	E140	T TRACE	02	00231	
000474	003643	R	232	DATA	BRANCH	B - BRANCH TO WCS	02	00232	
000475	003571	R	233	DATA	SETHLT	H- SET HALT ADDR	C.1	02 00233	
			234	EJEC				02 00234	
			235	*****					02 00235
			236	*				02 00236	
			237	*				02 00237	
			238	*	NAME:	INITIALIZATION COMPONENT		02 00238	
			239	*				02 00239	
			240	*				02 00240	
			241	*****					02 00241
000476			242	EXC	BSS	0		02 00242	
000476	002000	A	243	CALL	TPFRM	TOP OF FORM		02 00243	
000477	005052	R							
000500	002000	A	244	CALL	SIDUT,13,EXC2M	OUTPUT PROGRAM IDENTIFICATION		02 00244	
000501	004553	R							
000502	000015	A							
000503	000542	R							
000504	002000	A	245	CALL	SIDUT,2,SEM1	OUTPUT A CR/LF		02 00245	
000505	004553	R							
000506	000002	A							
000507	000557	R							
000510	002000	A	246	CALL	SIDUT,13,SEM3	ASK IF DEBUG CONFIG		02 00246	
000511	004553	R							
000512	000015	A							
000513	000574	R							
000514	002000	A	247	CALL	SIIN	INPUT THE RESPONSE		02 00247	
000515	004341	R							
000516	002000	A	248	CALL	FETCH	GET THE RESPONSE		02 00248	
000517	005224	R							
000520	006140	A	249	SUBI	'Y'			02 00249	
000521	000331	A							
000522	006057	A	250	STAE	DEBUG	SAVE IT		02 00250	
000523	000166	R							
			251	EJEC				02 00251	
			252	*****					02 00252
			253	*				02 00253	
			254	*				02 00254	
			255	*	NAME:	SET WCS DEVICE ADDRESS		02 00255	
			256	*				02 00256	
			257	*	PURPOSE:	1.) INPUT THE WCS DEVICE ADDRESS FROM THE USER;		02 00257	
			258	*		2.) CHECK IT'S VALIDITY!		02 00258	
			259	*		3.) MODIFY THE UTILITY I/O SECTION FOR THE DEVICE		02 00259	
			260	*		ADDRESS.		02 00260	
			261	*				02 00261	
			262	*				02 00262	
			263	*				02 00263	
			264	*				02 00264	
			265	*****					02 00265
			266	*				02 00266	
000524	002000	A	267	SE10	CALL	SIDUT,2,SEM1	OUTPUT A CR/LF	02 00267	
000525	004553	R							
000526	000002	A							
000527	000557	R							
			268	*				02 00268	
			269	*	NOTE:	THIS SECTION IS NOT USED UNDER VORTEX SINCE THE DEVICE	C.1	02 00269	
			270	*		ADDRESS IS SPECIFIED AT SYSGEN TIME.	C.1	02 00270	
			271	*			C.1	02 00271	
			272	*			C.1	02 00272	
			273	*	IFT	VORTEX	C.1	02 00273	
			317	SKP24	GOTO	SKP24,	C.1	02 00317	
			318		CONT		C.1	02 00318	
			319		EJEC			02 00319	
000530	006010	A			LDAI	1		02 00320	
000531	000001	A							
000532	006057	R	320	STAE	PAGE	DEFAULT TO PAGE 1		02 00320	
000533	000172	R							
000534	006010	A	321	LDAI	-1			02 00321	
000535	177777	A							
000536	006057	A	322	STAE	TRACE	SET TRACE MODE		02 00322	
000537	000436	R							
000540	001000	A	323	JMP	EXC10	PROCESS OPERATOR INPUT		02 00323	
000541	000673	R							
			324	EJEC				02 00324	
			325	*				02 00325	
			326	*	DATA AREA			02 00326	
			327	*				02 00327	
000542	120240	A	328	EXC2M	DATA	' VARIAN 73 MICRO UTILITY '		02 00328	
000543	153301	A							
000544	151311	A							
000545	140716	A							
000546	120267	A							
000547	131640	A							
000550	146711	A							
000551	141722	A							
000552	147640	A							



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000553 152724 A
000554 144714 A
000555 144724 A
000556 154640 A
000557 120240 A 329 SEM1 DATA * * 02 00329
000560 120240 A
000561 120240 A 330 SEM2 DATA * EVEN WCS DEV ADDR ? * 02 00330
000562 142726 A
000563 142716 A
000564 120327 A
000565 141723 A
000566 120304 A
000567 142726 A
000570 120301 A
000571 142304 A
000572 151240 A
000573 137640 A
000574 120240 A 331 SEM3 DATA * DEBUG CONFIG ? (Y OR N)* 02 00331
000575 142305 A
000576 141325 A
000577 143640 A
000600 141717 A
000601 147306 A
000602 144707 A
000603 120277 A
000604 120250 A
000605 154640 A
000606 147722 A
000607 120316 A
000610 124640 A

332 EJEC 02 00332
333 ***** 02 00333
334 * 02 00334
335 * 02 00335
336 * NAME: WCS I/O INTERFACE * 02 00336
337 * * 02 00337
338 * PURPOSE: PROVIDES THE INTERFACE FOR ALL WCS I/O ACTIVITY * 02 00338
339 * OF THE UTILITY. THIS ALLOWS REMOVAL OF * 02 00339
340 * I/O INSTRUCTIONS FROM THE REST OF THE PROGRAM. * 02 00340
341 * SIMPLIFIES SUCH THINGS AS ADJUSTING FOR VARIABLE * 02 00341
342 * DEVICE ADDRESSES. * 02 00342
343 * * 02 00343
344 * CALL: 1) THE SINGLE WORD I/O INSTRUCTIONS ARE DIRECTLY * 02 00344
345 * EXECUTED BY AN 'XEC' COMMAND. * 02 00345
346 * * 02 00346
347 * 2) THE DOUBLE WORD INSTRUCTIONS ARE EXECUTED * 02 00347
348 * INDIRECTLY BY CALLING THE APPROPRIATE SUBROUTINE; * 02 00348
349 * ON RETURN: A REG NEG = SENSE FALSE * 02 00349
350 * A REG POS = SENSE TRUE * 02 00350
351 * C.1 02 00351
352 * NOTE: UNDER VORTEX AND VORTEX II, THESE I/O INSTRUCTIONS ARE * 02 00352
353 * EXECUTED BY CALLING REENTRANT SUBROUTINE V$WCS * 02 00353
354 * C.1 02 00354
355 * * 02 00355
356 * * 02 00356
357 ***** 02 00357
358 * 02 00358
359 EXC0 EXC 0070 INIT WCS 02 00359
360 EXC1 EXC 0170 ENABLE RUN FREE 02 00360
361 EXC2 EXC 0270 STEP CCS 02 00361
362 EXC3 EXC 0370 INIT FOR BIC LOAD 02 00362
363 EXC4 EXC 0470 UNUSED 02 00363
364 EXC5 EXC 0570 UNUSED 02 00364
365 EXC6 EXC 0670 UNUSED 02 00365
366 EXC7 EXC 0770 RESET STACK 02 00366
367 * 02 00367
368 CIA1 CIA 071 INPUT DATA WORD FROM WCS 02 00368
369 DARX DAR 070 OUTPUT FUNCTION WORD TO WCS 02 00369
370 DARY DAR 071 OUTPUT DATA WORD TO WCS 02 00370
371 * 02 00371
372 SEN0 DATA 0 SENSE WCS BUSY 02 00372
373 IFT VORTEX C.1 02 00373
374 GOTO SKP20; C.1 02 00374
380 SKP20 CONT C.1 02 00380
381 IFF VORTEX C.1 02 00381
382 GOTO SKP21; C.1 02 00382
383 LDAI 05000 EXECUTE A NO-OP TO GET STATUS BACK C.1 02 00383
384 ALOC V$WCS C.1 02 00384
385 JMP* SEN0 RETURN WCS BUSY STATUS C.1 02 00385
386 SKP21 CONT C.1 02 00386
387 * 02 00387
388 SEN1 DATA 0 SENSE STACK EMPTY 02 00388
389 LDAI -1 SET SENSE TO FALSE 02 00389
390 SEN 0170,#+4 02 00390
391 JMP* SEN1 FALSE 02 00391
000611 100070 A
000612 100170 A
000613 100270 A
000614 100370 A
000615 100470 A
000616 100570 A
000617 100670 A
000620 100770 A
000621 102571 A
000622 103170 A
000623 103171 A
000624 000000 A
000625 006010 A
000626 005000 A
000627 006505 A
000630 000406 A
000631 000600 A
000632 000000 A
000633 001000 A
000634 100624 R
000635 000000 A
000636 006010 A
000637 177777 A
000640 101170 A
000641 000644 R
000642 001000 A

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000643	100635	R							
000644	005001	A	392	TZA		TRUE		02	00392
000645	001000	A	393	JMP*	SEN1			02	00393
000646	100635	R							
			394	*				02	00394
000647	000000	A	395	SEN2	DATA	0	SENSE STACK FULL	02	00395
000650	006010	A	396		LDAI	-1	SET FALSE	02	00396
000651	177777	A							
000652	101270	A	397		SEN	0270,#+4		02	00397
000653	000656	R							
000654	001000	A	398		JMP*	SEN2	IF FALSE	02	00398
000655	100647	R							
000656	005001	A	399		TZA		IF TRUE	02	00399
000657	001000	A	400		JMP*	SEN2		02	00400
000660	100647	R							
			401	*				02	00401
000661	000000	A	402	SEN3	DATA	0	SENSE BIC LOAD ACTIVE	02	00402
			403		IFT	VORTEX		C.1	02 00403
			404		GOTO	SKP22,		C.1	02 00404
			410	SKP22	CONT			C.1	02 00410
			411		IFF	VORTEX		C.1	02 00411
			412		GOTO	SKP23,		C.1	02 00412
000662	006010	A	413		LDAI	05000	EXECUTE A NO-OP TO GET WCS STATUS	C.1	02 00413
000663	005000	A							
			414		ALOC	V\$WCS		C.1	02 00414
000664	006505	A							
000665	000406	A							
000666	000600	A							
000667	000632	E							
000670	005021	A	415	TBA			RETURN BIC ACTIVE STATUS	C.1	02 00415
000671	001000	A	416		JMP*	SEN3		C.1	02 00416
000672	100661	R							
			417	SKP23	CONT			C.1	02 00417
			418		EJEC			02	00418
			419	*		PROCESS OPERATOR INPUT		02	00419
			420	*				02	00420
			421	*				02	00421
000673	002000	A	422	EXC10	CALL	SIOUT,3,EXC4M	OUTPUT PROMPT CHARACTERS	02	00422
000674	004553	R							
000675	000003	A							
000676	000737	R							
000677	002000	A	423		CALL	SIIN	INPUT EXECUTIVE COMMAND	02	00423
000700	004341	R							
000701	002000	A	424	EX10E	JMPM	FETCH	FETCH FIRST CHAR FROM INPUT BUFFER	02	00424
000702	005224	R							
000703	001010	A	425		JAZ	EXC90		02	00425
000704	000731	R							
000705	054022	A	426		STA	EXC19	SAVE CHAR	02	00426
000706	024017	A	427		LDB	EXC17	ADDR OF INPUT CHAR LIST	02	00427
000707	034017	A	428		LDX	EXC18	CORRESPONDING ROUTINE ADDRESSES	02	00428
			429	*				02	00429
000710	016000	A	430	EXC12	LDA	0,2	LEGAL INPUT CHAR	02	00430
000711	001004	A	431		JAN	EXC90	JUMP IF AT END OF TABLE	02	00431
000712	000731	R							
000713	144014	A	432		SUB	EXC19	LESS INPUT CHAR	02	00432
000714	001010	A	433		JAZ	EXC14	JUMP IF FOUND INPUT	02	00433
000715	000722	R							
000716	005144	A	434		IXR			02	00434
000717	005122	A	435		IBR			02	00435
000720	001000	A	436		JMP	EXC12	CHECK NEXT CHAR	02	00436
000721	000710	R							
			437	*				02	00437
000722	015000	A	438	EXC14	LDA	0,1	ROUTINE ADDR	02	00438
000723	054001	A	439		STA	EXC16	SAVE FOR JUMP	02	00439
000724	001000	A	440		JMP	*	CALL ROUTINE	02	00440
000725	000724	R							
			441	EXC16	BES	0	ROUTINE ADDR	02	00441
			442	*				02	00442
000726	000443	R	443	EXC17	DATA	COMM	ADDR OF LEGAL INPUT CHAR LIST	02	00443
000727	000461	R	444	EXC18	DATA	COMM1	ROUTINE ADDRESSES	02	00444
000730	000000	A	445	EXC19	DATA	0	INPUT CHAR	02	00445
			446	*				02	00446
			447	*		INVALID INPUT		02	00447
			448	*				02	00448
000731	002000	A	449	EXC90	CALL	SIOUT,3,EXC92	OUTPUT ERROR MESSAGE	02	00449
000732	004553	R							
000733	000003	A							
000734	000742	R							
000735	001000	A	450		JMP	CHMR	RESET MEDIA BEFORE GET NEXT INPUT	02	00450
000736	003164	R							
			451	*				02	00451
000737	120240	A	452	EXC4M	DATA	' MU**'	PROMPT MESSAGE	02	00452
000740	146725	A							
000741	125252	A							
000742	120240	A	453	EXC92	DATA	' MU01'	ERROR MESSAGE : INVALID INPUT	02	00453
000743	146725	A							
000744	130261	A							
			454		EJEC			02	00454
			455	*		THIS ROUTINE HANDLES THE PAGE SELECT COMMAND (P)		02	00455
			456	*				02	00456
			457	*				02	00457
			458	*				02	00458
000745	002000	A	459	PSEL	JMPM	FETCHA	GET PAGE NUMBER	02	00459



000746	005234	R							
000747	001010	A	460	JAZ	EXC90				02 00460
000750	000731	R							
000751	002000	A	461	CALL	CONV	CONVERT HEX ASCII TO BINARY			02 00461
000752	005357	R							
000753	001004	A	462	JAN	PGNOK	ERROR EXIT			02 00462
000754	000774	R							
			463 *			PAGE NUMBER MUST BE LESS THAN 16 AND GREATER THAN ZERO			02 00463
000755	001010	A	464	JAZ	PGNOK	IF ZERO, NO GOOD			02 00464
000756	000774	R							
000757	005012	A	465	TAB					02 00465
000760	006140	A	466	SUBI	16				02 00466
000761	000020	A							
000762	001002	A	467	JAP	PGNOK	IF MORE THAN 15, NO GOOD			02 00467
000763	000774	R							
000764	064015	A	468	STB	PAG5	SAVE PAGE SPEC TEMP.			02 00468
000765	002000	A	469	CALL	ENDCOM	CHECK IF END OF COMMAND			02 00469
000766	004173	R							
000767	024012	A	470	LDB	PAG5	IF SO, RESET PAGE NUMBER			02 00470
000770	006067	A	471	STBE	PAGE				02 00471
000771	000172	R							
000772	001000	A	472	JMP	EXC10				02 00472
000773	000673	R							
			473 *						02 00473
			474 *			FOLLOWING REPORTS ILLEGAL PAGE NUMBER			02 00474
			475 *						02 00475
000774	002000	A	476	PGNOK	CALL	SIDUT,3,PAG6			02 00476
000775	004553	R							
000776	000003	A							
000777	001003	R							
001000	001000	A	477	JMP	EXC10				02 00477
001001	000673	R							
			478 *						02 00478
			479 *						02 00479
001002	000000	A	480	PAG5	DATA	0	TEMP STORAGE OF PAGE NUMBER		02 00480
001003	120240	A	481	PAG6	DATA	' MU04'	ERROR MESSAGE, ILLEGAL PAGE NUMBER		02 00481
001004	146725	A							
001005	130264	A							
			482			EJEC			02 00482
			483 *						02 00483
			484 *			LOAD CONTROL STORE			02 00484
			485 *			ENTERED VIA THE L COMMAND			02 00485
			486 *						02 00486
			487 *						02 00487
001006			488	LDRM	BSS	0			02 00488
001006	002000	A	488	CALL	ICS		INTERPRET CS SPECIFICATION		02 00488
001007	004027	R							
001010	006017	A	489	LDRE	SSYST		SYSTEM FLAG		02 00489
001011	000134	E							
001012	001004	A	490	JAN	LMDS		JUMP IF MDS		02 00490
001013	001031	R							
001014	006017	A	491	LDRE	BIFLG				02 00491
001015	004340	R							
001016	001002	A	492	JAP	LMDS		JUMP IF ON NONE RMD		02 00492
001017	001031	R							
001020	006010	A	493	LDRI	120				02 00493
001021	000170	A							
001022	006057	A	494	STAE	BIFCB		PUT RECORD LENGTH IN GLOBAL FCB		02 00494
001023	000133	E							
001024	006010	A	495	LDRI	BUFR+1		PUT BUFFER ADDRESS IN GLOBAL FCB		02 00495
001025	000246	R							
001026	006030	A	496	LDXI	BIFCB				02 00496
001027	001023	E							
001030	055001	A	497	STA	1.1				02 00497
001031	005001	A	498	LMDS	TZA				02 00498
001032	054047	A	499	STA	RCN		ZERO RECORD NUMBER		02 00499
			500 *						02 00500
			501 *				THE READ FCB/DCB AND WORD COUNT ARE SET AT INITIALIZATION		02 00501
			502 *						02 00502
			503	LREAD	READ	BIDCB,6,0,1	READ A RECORD		02 00503
001033	002000	A							
001034	000106	E							
001035	100000	A							
001036	010000	A							
001037	001362	R							
001040	000000	A							
001041	000000	A							
			504	STAT		LREAD,ERR,EOF,DEDD,*			C.1 02 00504
001042	002000	A							
001043	000000	E							
001044	001033	R							
001045	001273	R							
001046	001301	R							
001047	001307	R							
001050	001042	R							
001051	005001	A	505	LREAD1	TZA				02 00505
001052	054330	A	506	STA	WDCT		ZERO WORD COUNT		02 00506
001053	054320	A	507	STA	OKSM		CLEAR CHECKSUM SUPPRESS FLAG		02 00507
001054	054320	A	508	STA	FREC		CLEAR FIRST RECORD FLAG		02 00508
001055	054322	A	509	STA	LREC		CLEAR LAST RECORD FLAG		02 00509
001056	034310	A	510	LDB	BIBUF		ADDR OF BI INPUT BUFFER		02 00510
001057	015000	A	511	LDB	0.1		GET WORD ZERO		02 00511
001060	005010	A	512	TAB					02 00512
001061	154310	A	513	ANA	BIT15		GET BIT 15		02 00513



001062	001010	A	514	JAZ	*+3	JUMP IF NOT SET	02	00514	
001063	001065	R							
001064	044307	A	515	INR	CKSM	SET CHECKSUM SUPPRESS	02	00515	
001065	005021	A	516	TBA			02	00516	
001066	154302	A	517	ANA	BIT12	GET BIT 12	02	00517	
001067	001010	A	518	JAZ	*+4	JUMP IF NOT SET	02	00518	
001070	001073	R							
001071	001000	A	519	JMP	*+3		02	00519	
001072	001074	R							
001073	044301	A	520	INR	FREC	SET FIRST RECORD FLAG	02	00520	
001074	005021	A	521	TBA			02	00521	
001075	154272	A	522	ANA	BIT11	GET BIT 11	02	00522	
001076	001010	A	523	JAZ	*+4	JUMP IF NOT SET	02	00523	
001077	001102	R							
001100	001000	A	524	JMP	*+3		02	00524	
001101	001103	R							
001102	044275	A	525	INR	LREC	SET LAST RECORD FLAG	02	00525	
001103	005021	A	526	TBA			02	00526	
001104	006150	A	527	ANA	0377	GET RECORD NUMBER	02	00527	
001105	000377	A							
001106	144273	A	528	SUB	RCN	SUB EXPECTED RECORD NUMBER	02	00528	
001107	001010	A	529	JAZ	*+4		02	00529	
001110	001113	R							
001111	001000	A	530	JMP	SEQR	SEQUENCE ERROR	02	00530	
001112	001315	R							
001113	014260	A	531	LDA	CKSM	CHECKSUM SUPPRESS FLAG	02	00531	
001114	001010	A	532	JAZ	*+4	FLAG SET	02	00532	
001115	001120	R							
001116	001000	A	533	JMP	LDFR	YES-DO NOT DO CHECKSUM	02	00533	
001117	001122	R							
001120	002000	A	534	CALL	CKSUM	PERFORM CHECKSUM	02	00534	
001121	001333	R							
001122	014252	A	535	LDFR	LDA	FREC	FIRST RECORD FLAG	02	00535
001123	001010	A	536	JAZ	LDBP		02	00536	
001124	001133	R							
001125	014241	A	537	LDA	RIBUF	BUFFER ADDR	02	00537	
001126	006120	A	538	ADDI	11	PLUS 11	02	00538	
001127	000013	A							
001130	054242	A	539	STA	BUFPTR	MOVED PAST HEADER BLOCK	02	00539	
001131	001000	A	540	JMP	LDWD		02	00540	
001132	001137	R							
001133	014233	A	541	LDBP	LDA	BIBUF		02	00541
001134	006120	A	542	ADDI	2		02	00542	
001135	000002	A							
001136	054234	A	543	STA	BUFPTR	SET BUFFER POINTER	02	00543	
001137	014233	A	544	LDBP	LDA	BUFPTR		02	00544
001140	144226	A	545	SUB	BIBUF		02	00545	
001141	006140	A	546	SUBI	60		02	00546	
001142	000074	A							
001143	001002	A	547	JAP	LDNR	RECORD COMPLETE ?	02	00547	
001144	001225	R							
001145	034225	A	548	LDX	BUFPTR		02	00548	
001146	015000	A	549	LDA	0+1	GET WORD	02	00549	
001147	005012	A	550	TAB			02	00550	
001150	004355	A	551	LSRA	13	GET CODE	02	00551	
001151	001010	A	552	JAZ	*+4		02	00552	
001152	001155	R							
001153	001000	A	553	JMP	*+5		02	00553	
001154	001160	R							
001155	044215	A	554	INR	BUFPTR	IGNORE THIS WORD	02	00554	
001156	001000	A	555	JMP	LDWD		02	00555	
001157	001137	R							
001160	005311	A	556	DAR			02	00556	
001161	001010	A	557	JAZ	LDORG	SET ORG ADDRESS	02	00557	
001162	001216	R							
001163	005311	A	558	DAR			02	00558	
001164	001010	A	559	JAZ	LDST		02	00559	
001165	001170	R							
001166	001000	A	560	JMP	LDCDE	LOADER CODE ERROR	02	00560	
001167	001323	R							
001170		A	561	LDST	BSS	0	02	00561	
001170	044202	A	562	INR	BUFPTR		02	00562	
001171	005021	A	563	TBA			02	00563	
001172	154206	A	564	ANA	LSB13	GET 13 LSBS (INST COUNT)	02	00564	
001173	005111	A	565	IAR		PLUS ONE AS COUNT IS ACTUAL MINUS ONE	02	00565	
001174	004202	A	566	ASLA	2	TIMES 4 (FOUR 16 BIT WORDS PER MICRO)	02	00566	
001175	054004	A	567	STA	NMIC+2	SET COUNT FOR MOVE	02	00567	
001176	014174	A	568	LDA	BUFPTR		02	00568	
001177	054003	A	569	STA	NMIC+3		02	00569	
001200	002000	A	570	NMIC	CALL	MOVMM,4,0	02	00570	
001201	006451	R							
001202	000004	A							
001203	000000	A							
001204	006017	A	571	LDAE	NMIC+2	COUNT	02	00571	
001205	001202	R							
001206	124164	A	572	ADD	BUFPTR		02	00572	
001207	054163	A	573	STA	BUFPTR	UPDATE BUFFER POINTER	02	00573	
001210	006017	A	574	LDAE	NMIC+2		02	00574	
001211	001202	R							
001212	124163	A	575	ADD	LDADR		02	00575	
001213	054162	A	576	STA	LDADR	UPDATE LOAD ADDRESS POINTER	02	00576	
001214	001000	A	577	JMP	LDWD		02	00577	
001215	001137	R							



001216	005021	A	578	*					02	00578
001217	154161	A	579	LDRG	TBA				02	00579
001220	006057	A	580		ANA	LSB13	GET ORG ADDR		02	00580
001221	000167	R	581		STAE	WORD			02	00581
001222	044150	A	582		INR	BUFPTR			02	00582
001223	001000	A	583		JMP	LDWD			02	00583
001224	001137	R								
001225	006017	A	584	LDR	LDAE	BIFLG	BI ON RMD FLAG		02	00584
001226	004340	R								
001227	001010	A	585		JAZ	LDRNS	JUMP IF NOT SET		02	00585
001230	001261	R								
001231	006027	A	586		LDBE	SYST	SYSTEM FLAG		02	00586
001232	000134	R								
001233	016000	A	587		LDA	0,2			02	00587
001234	001004	A	588		JAN	LDRNS	MDS SYSTEM		02	00588
001235	001261	R								
001236	014134	A	589		LDA	BUFPTR			02	00589
001237	144123	A	590		SUB	BIDCB+1	BUFFER ADDR		02	00590
001240	006140	A	591		SUBI	120	RECORD LENGTH ON RMD		02	00591
001241	000170	A								
001242	001002	R	592		JAP	LDRNR	JUMP IF 120 WORDS READ		02	00592
001243	001256	R								
001244	014122	A	593		LDA	BIBUF			02	00593
001245	006120	A	594		ADDI	60			02	00594
001246	000074	A								
001247	054117	A	595		STA	BIBUF	SET FOR NEXT 60 WORD BLOCK		02	00595
001250	044131	A	596		INR	RCN	ADVANCE RECORD NUMBER		02	00596
001251	014126	A	597		LDA	LREC	LAST RECORD FLAG		02	00597
001252	001010	A	598		JAZ	LREAD1	JUMP IF NOT LAST RECORD		02	00598
001253	001051	R								
001254	001000	A	599		JMP	LDCM	LOAD COMPLETE		02	00599
001255	001265	R								
001256	014104	A	600	LDRNR	LDA	BIDCB+1	BUFFER ADDR		02	00600
001257	054107	A	601		STA	BIBUF	RESET BUFFER ADDRESS		02	00601
001260	054112	A	602		STA	BUFPTR			02	00602
001261	044120	A	603	LDRNS	INR	RCN	ADVANCE RECORD NUMBER		02	00603
001262	014115	A	604		LDA	LREC	LAST RECORD FLAG		02	00604
001263	001010	A	605		JAZ	LREAD	JUMP IF NOT SET		02	00605
001264	001033	R								
001265	001265	R	606	LDCM	EQU	*			02	00606
001265	002000	A	607		CALL	SIDUT,8,LDCM	OUTPUT LOAD COMPLETE		02	00607
001266	004553	R								
001267	000010	A								
001270	001420	R								
001271	001000	A	608		JMP	EXC10	RETURN		02	00608
001272	000673	R								
001273	002000	A	609	*						
001274	004553	R	610	ERR	CALL	SIDUT,3,ERDR	OUTPUT ERROR		02	00610
001275	000000	A								
001276	001430	R								
001277	001050	A	611		JMP	EXC10			02	00611
001300	000673	R								
001301	002000	A	612	EDP	CALL	SIDUT,3,EDFE	OUTPUT ERROR		02	00612
001302	004553	R								
001303	000000	A								
001304	001407	R								
001305	001000	A	613		JMP	EXC10			02	00613
001306	000673	R								
001307	002000	A	614	BEOD	CALL	SIDUT,3,HOPE	OUTPUT ERROR		02	00614
001310	004553	R								
001311	000000	A								
001312	001412	R								
001313	001000	A	615		JMP	EXC10			02	00615
001314	000673	R								
001315	002000	A	616	SEQR	CALL	SIDUT,3,SEGE	OUTPUT ERROR		02	00616
001316	004553	R								
001317	000000	A								
001320	001433	R								
001321	001000	A	617		JMP	EXC10			02	00617
001322	000673	R								
001323	002000	A	618	LDCDE	CALL	SIDUT,3,LDCDE	OUTPUT ERROR		02	00618
001324	004553	R								
001325	000000	A								
001326	001410	R								
001327	001000	A	619		JMP	EXC10			02	00619
001330	000673	R								
			621	*					02	00621
			622	*					02	00622
			623	*					02	00623
			624	*					02	00624
001331	002000	A	625		CALL	CKSUM			02	00625
001332	001333	R								
			626	*					02	00626
			627	*					02	00627
001333	000000	A	628	CKSUM	ENTR				02	00628
001334	006010	A	629		LDAT	BUFP+1			02	00629
001335	000240	R								
001336	124027	A	630		ADD	BIFLK+1	RECORD LENGTH		02	00630
001337	054026	A	631		STA	CKSU2			02	00631
001340	005002	A	632		TBR				02	00632
001341	005021	A	633	CKSU1	TBR				02	00633



001342	135000	A	634	ERA	0,1			02	00634
001343	005012	A	635	TAB		SAVE ACCUM VALUE		02	00635
001344	005143	A	636	INCR	045	A=X=X+1		02	00636
001345	006140	A	637	SUBI	0			02	00637
001346	000000	A							
001346			638	CKSU2	BES	0		02	00638
001347	001004	A	639	JAN	CKSU1	JUMP IF NOT AT END OF RECORD		02	00639
001350	001341	R							
001351	005021	A	640	TEA				02	00640
001352	001010	A	641	JAZ*	CKSUM	RETURN IF CHECKSUM OK		02	00641
001353	101333	R							
001354	002000	A	642	CALL	SIDUT,3,CKSU	OUTPUT ERROR		02	00642
001355	004553	R							
001356	000000	A							
001357	001404	A							
001360	001000	A	643	JMP	EXC10	RETURN		02	00643
001361	000673	R							
			644 *					02	00644
			645 *	DATA	BLOCKS AND TEMPORARY STORAGE			02	00645
			646 *					02	00646
			647	BIDCB	DCB	60,BUFR+1,0	LOCAL DCB FOR BI	02	00647
001362	000074	A							
001363	000246	R							
001364	000000	A							
			648	EXT	BIFCB			02	00648
001365	001027	E	649	DIBLK	DATA	BIFCB	FCB/DCB ADDR, SET BY INITIALIZATION	02	00649
001366	000074	A	650		DATA	60	RECORD LENGTH, SET BY INITIALIZATION	02	00650
001367	000246	R	651	BIBUF	DATA	BUFR+1	POINTER TO BUFFER	02	00651
001370	004000	A	652	BIT11	DATA	04000	BIT 11 MASK	02	00652
001371	010000	A	653	BIT12	DATA	010000	BIT 12 MASK	02	00653
001372	100000	A	654	BIT15	DATA	0100000	BIT 15 MASK	02	00654
001373	000246	R	655	BUFPTR	DATA	BUFR+1	BUFFER POINTER	02	00655
001374	000000	A	656	CKSM	DATA	0	CHECKSUM FLAG	02	00656
001375	000000	A	657	FREC	DATA	0	FIRST RECORD FLAG	02	00657
001376	000000	A	658	LOADR	DATA	0	LOAD ADDR	02	00658
001377	000000	A	659	LDPT	DATA	0	BASE ADDR	02	00659
001400	000000	A	660	LREC	DATA	0	LAST RECORD FLAG	02	00660
001401	017777	A	661	LSB13	DATA	017777	ADDR BITS	02	00661
001402	000000	A	662	RCN	DATA	0	CURRENT EXPECTED RECORD NUMBER	02	00662
001403	000000	A	663	WDCT	DATA	0	WORD COUNT	02	00663
001404	120240	A	664	CKSU	DATA	' MU12'	CHECKSUM ERROR	02	00664
001405	146725	A							
001406	130662	A							
001407	120240	A	665	EDFE	DATA	' MU08'	EOF ENCOUNTERED	02	00665
001410	146725	A							
001411	130270	A							
001412	120240	A	666	HOPE	DATA	' MU09'	END OF DEVICE	02	00666
001413	146725	A							
001414	130271	A							
001415	120240	A	667	LCDE	DATA	' MU11'	LOADER CODE	02	00667
001416	146725	A							
001417	130661	A							
001420	120240	A	668	LDCM	DATA	' LOAD COMPLETE '		02	00668
001421	146017	A							
001422	140704	A							
001423	120303	A							
001424	147715	A							
001425	150014	A							
001426	142724	A							
001427	142640	A							
001430	120240	A	669	RDER	DATA	' MU07'	READ ERROR	02	00669
001431	146725	A							
001432	130267	A							
001433	120240	A	670	SEGE	DATA	' MU10'	SEQUENCE ERROR	02	00670
001434	146725	A							
001435	130660	A							
			671	EJEC				02	00671
			672 *					02	00672
			673 *					02	00673
			674 *	FOLLOWING CHANGES/DISPLAYS WCS WORDS				02	00674
			675 *	CALLED BY AN 'E' COMMAND				02	00675
			676 *					02	00676
001436			676	EDRM	BSS	0		02	00676
001436	002000	A	677	CALL	ICB	GET CR SPECIFICATION		02	00677
001437	004027	R							
001440	002000	A	678	E110L	CALL	RWCS	READ THE WORD	02	00678
001441	003674	R							
001442	002000	A	679	JMPN	PBUF	SETUP PRINTER BUFFER		02	00679
001443	005007	R							
001444	006027	A	680	LDDE	MBUF			02	00680
001445	000173	A							
001446	006030	A	681	LDXI	BUFR+1			02	00681
001447	000246	R							
001450	002000	A	682	JMPN	0H	CONVERT HEX TO ASCII		02	00682
001451	006235	R							
001452	006017	A	683	LDDE	STORE			02	00683
001453	000171	R							
001454	001004	A	684	JAN	E112			02	00684
001455	001500	R							
			685 *					02	00685
001456	006027	A	686	LDDE	MBUF+1			02	00686
001457	000174	R							
001460	002000	A	687	JMPN	0H	CONVERT DATA TO ASCII		02	00687
001461	006235	R							



001462	006027	A	688 *					02	00688
001463	000175	R	689	LDBE	MBUF+2			02	00689
001464	002000	A	690	JMPM	OH	CONVERT DATA TO ASCII		02	00690
001465	006235	R							
			691 *					02	00691
001466	006027	A	692	LDBE	MBUF+3			02	00692
001467	000176	R							
001470	002000	A	693	JMPM	OH	CONVERT DATA TO ASCII		02	00693
001471	006235	R							
			694 *					02	00694
001472	002000	A	695	CALL	SIDOUT,11,BUFR	OUTPUT THE 64 BIT MICRO		02	00695
001473	004553	R							
001474	000013	A							
001475	000245	R							
001476	001000	A	696	JMP	E113			02	00696
001477	001504	R							
			697 *					02	00697
001500	002000	A	698	E112	CALL	SIDOUT,4,BUFR	OUTPUT THE 16 BIT MICRO	02	00698
001501	004553	R							
001502	000004	A							
001503	000245	R							
001504	002000	A	699	E113	CALL	INH	GET CHANGE VALUE	02	00699
001505	005520	R							
001506	001040	A	700	JXZ	EXC10			02	00700
001507	000673	R							
001510	074057	A	701	STX	E118	LAST INPUT CHAR		02	00701
001511	001020	A	702	JBZ	E115	JUMP IF NO CHANGE VALUE INPUT		02	00702
001512	001532	R							
001513	002000	A	703	CALL	MOVW	MOVE MICRO TO OUTPUT BUFFER		02	00703
001514	006367	R							
001515	000004	A	704	DATA	4	WORD COUNT		02	00704
001516	000437	R	705	DATA	V	FROM ADDR		02	00705
001517	000173	R	706	DATA	MBUF	TO ADDR		02	00706
001520	006017	A	707	LDAE	STORE	16 BIT MICRO?		02	00707
001521	000171	R							
001522	001002	A	708	JAP	E114	NO		02	00708
001523	001530	R							
001524	006017	A	709	LDAE	MBUF+3	SET FOR SHORT MICRO		02	00709
001525	000176	R							
001526	006057	A	710	STAE	MBUF			02	00710
001527	000173	R							
001530	002000	A	711	E114	CALL	WACS	CHANGE THE MICRO	02	00711
001531	004004	R							
			712 *					02	00712
001532	014035	A	713	E115	LDA	E118	LAST INPUT CHAR	02	00713
001533	006140	A	714	SUBI	0254	COMMA		02	00714
001534	000254	A							
001535	001010	A	715	JAZ	*+4	YES - DISPLAY NEXT WORD		02	00715
001536	001541	R							
001537	001000	A	716	JMP	EXC10	NO - RETURN TO EXEC		02	00716
001540	000673	R							
	001541	R	717	E114A	EOU	*		F	*****
001541	006047	A	718	INRE	WORD	ON TO NEXT WORD		02	00717
001542	000167	R							
001543	006017	A	719	LDAE	WORD			02	00718
001544	000167	R							
001545	006147	A	720	SUBE	WORD2	ANY MORE?		02	00719
001546	000170	R							
001547	005311	A	721	DAR				02	00720
001550	001002	A	722	JAP	EXC10	RETURN - AT END OF BUFFER		02	00721
001551	000673	R							
001552	002000	A	723	JMPM	PBUF	INITIALIZE LD BUFFER		02	00722
001553	005007	R							
001554	006030	A	724	LDXI	BUFR+1	BUFFER ADDR		02	00723
001555	000246	R							
001556	006027	A	725	LDBE	WORD	GET ADDR		02	00724
001557	000167	R							
001560	002000	A	726	JMPM	OH	CONVERT TO ASCII		02	00725
001561	006235	R							
001562	002000	A	727	CALL	SIDOUT,4,BUFR	OUTPUT TO SD		02	00726
001563	004553	R							
001564	000004	A							
001565	000245	R							
001566	001000	A	728	JMP	E110L	OUTPUT CONTENTS OF WORD		02	00727
001567	001446	R							
			729 *					02	00728
001570	000000	A	730	E118	DATA	0		02	00729
			731	EJEC				02	00730
			732 *					02	00731
			733 *					02	00732
			734 *					02	00733
			735	E150	BSS	0		02	00734
001571	002000	A	736	CALL	ICS	GET CONTROL STORE SPEC		02	00735
001572	004027	R							
001573	006017	A	737	LDAE	STORE	DUMPING CCS?		02	00736
001574	000171	R							
001575	001034	A	738	JAN	E155	NO, SD 16 BIT MICROS		02	00737
001576	002155	R							
001577	002000	A	739	E152	CALL	TPERM	TOP OF FORM	02	00738
001600	005052	R							
001601	006030	A	740	LIST1	LAXI	LISTC+6	LOC TO STORE ADDRESS	02	00739
001602	002146	R							



001603	006027	A	741	LD BE	WORD	GET CURRENT WORD NUMBER	02	00740
001604	000167	R						
001605	002000	A	742	CALL	OH	CONVERT TO ASCII	02	00741
001606	006235	R						
001607	006027	A	743	LD BE	PAGE	GET PAGE NUMBER	02	00742
001610	000172	R						
001611	006030	A	744	LD XI	LISTC+11		02	00743
001612	002153	R						
001613	002000	A	745	CALL	OH	CONVERT TO HEX	02	00744
001614	006235	R						
001615	006010	A	746	LD AI	'E'		02	00745
001616	142640	A						
001617	054333	A	747	STA	LISTC+11	REPLACE TOP ZEROS	02	00746
001620	002000	A	748	CALL	LDOUT,13,LISTC		02	00747
001621	004661	R						
001622	000015	A						
001623	002140	R						
001624	002000	A	749	JMP M	SPAC	SPACE LD	02	00748
001625	005041	R						
001626	002000	A	750	CALL	RWCS	READ THE CCS WORD	02	00749
001627	003674	R						
			751	*			02	00750
			752	*			02	00751
			753	*			02	00752
			754	*			02	00753
			755	*			02	00754
001630				FELD	BSS	0		
001630	006030	A		LD XI	FIELDS	PLACE TO PUT FIRST FIELD	02	00755
001631	000135	R						
001632	006027	A	756	LD BE	MBUF	GET FIRST 16 BITS	02	00755
001633	000173	R						
001634	005001	A	757	TZA			02	00756
001635	004444	A	758	LLRL	4		02	00757
001636	055000	A	759	STA	XTS,1	TS FIELD	02	00758
			760	*			02	00759
001637	005001	A	761	TZA			02	00760
001640	004444	A	762	LLRL	5		02	00761
001641	055001	A	763	STA	XAF,1	AF FIELD	02	00762
			764	*			02	00763
001642	005001	A	765	TZA			02	00764
001643	004444	A	766	LLRL	4		02	00765
001644	055002	A	767	STA	XMS,1	MS FIELD	02	00766
			768	*			02	00767
001645	005001	A	769	TZA			02	00768
001646	004441	A	770	LLRL	1		02	00769
001647	055003	A	771	STA	XMT,1	MT FIELD	02	00770
			772	*			02	00771
001650	005001	A	773	TZA			02	00772
001651	004442	A	774	LLRL	2		02	00773
			775	*			02	00774
001652	006027	A	776	LD BE	MBUF+1	GET SECOND 16 BITS	02	00775
001653	000174	R						
			777	*			02	00776
001654	004442	A	778	LLRL	2		02	00777
001655	055004	A	779	STA	XFS,1	FS FIELD	02	00778
			780	*			02	00779
001656	005001	A	781	TZA			02	00780
001657	004442	A	782	LLRL	2		02	00781
001660	055005	A	783	STA	XT,1	T - TEST CONTROL	02	00782
			784	*			02	00783
001661	005001	A	785	TZA			02	00784
001662	004442	A	786	LLRL	2		02	00785
001663	055006	A	787	STA	XS,1	S - SPECIAL CONTROL	02	00786
			788	*			02	00787
001664	005001	A	789	TZA			02	00788
001665	004444	A	790	LLRL	4		02	00789
001666	055007	A	791	STA	XG,1	G - GENERAL CONTROL	02	00790
			792	*			02	00791
001667	005001	A	793	TZA			02	00792
001670	004441	A	794	LLRL	1		02	00793
001671	055010	A	795	STA	XM,1	M - FILE ADDR EXTRACTOR MASK	02	00794
			796	*			02	00795
001672	005001	A	797	TZA			02	00796
001673	004442	A	798	LLRL	2		02	00797
001674	055011	A	799	STA	XAB,1	AB - FILE ADDR LOAD CONTROL	02	00798
			800	*			02	00799
001675	005001	A	801	TZA			02	00800
001676	004443	A	802	LLRL	3		02	00801
			803	*			02	00802
001677	006027	A	804	LD BE	MBUF+2	GET THIRD 16 BITS	02	00803
001700	000175	R						
			805	*			02	00804
001701	004441	A	806	LLRL	1		02	00805
001702	055012	A	807	STA	XIMC,1	IMC - I/O AND MEMORY CONTROL	02	00806
			808	*			02	00807
001703	005001	A	809	TZA			02	00808
001704	004442	A	810	LLRL	2		02	00809
001705	055013	A	811	STA	XLB,1	LB - LATCH B CONTROL	02	00810
			812	*			02	00811
001706	005001	A	813	TZA			02	00812
001707	004442	A	814	LLRL	2		02	00813
001710	055014	A	815	STA	XLA,1	LA - LATCH A CONTROL	02	00814
			816	*			02	00815
001711	005001	A	817	TZA			02	00816
001712	004443	A	818	LLRL	3		02	00817



001713	055015	A	819	STA	XR,1	R - REGISTER CONTROL	02	00819
			820	*			02	00819
001714	005001	A	821	TZA			02	00820
001715	004444	A	822	LLRL	4		02	00821
001716	055016	A	823	STA	XF,1	F - ADDER FUNCTION	02	00822
			824	*			02	00823
001717	005001	A	825	TZA			02	00824
001720	004441	A	826	LLRL	1		02	00825
001721	055017	A	827	STA	XMD,1	MD - ARITHMETIC/LOGICAL	02	00826
			828	*			02	00827
001722	005001	A	829	TZA			02	00828
001723	004442	A	830	LLRL	2		02	00829
001724	055020	A	831	STA	XC,1	C - CARRY	02	00830
			832	*			02	00831
001725	005001	A	833	TZA			02	00832
001726	004441	A	834	LLRL	1		02	00833
001727	055021	A	835	STA	XW,1	W - WRITE FILE	02	00834
			836	*			02	00835
			837	*			02	00836
001730	006027	A	838	LDDE	MBUF+3	GET LAST 16 BITS	02	00837
001731	000176	R						
			839	*			02	00838
001732	005001	A	840	TZA			02	00839
001733	004441	A	841	LLRL	1		02	00840
001734	055022	A	842	STA	XDS,1	DP REG SHIFT CONTROL	02	00841
			843	*			02	00842
001735	005001	A	844	TZA			02	00843
001736	004441	A	845	LLRL	1		02	00844
001737	055023	A	846	STA	XV,1	DP REG SHIFT GATING CONTROL	02	00845
			847	*			02	00846
001740	005001	A	848	TZA			02	00847
001741	004441	A	849	LLRL	1		02	00848
001742	055024	A	850	STA	XY,1	QS CONTROL BIT	02	00849
			851	*			02	00850
001743	005001	A	852	TZA			02	00851
001744	004442	A	853	LLRL	2		02	00852
001745	055025	A	854	STA	XX,1	DP REG LONG SHIFTING END-AROUND CONTROL	02	00853
			855	*			02	00854
001746	005001	A	856	TZA			02	00855
001747	004443	A	857	LLRL	3		02	00856
001750	055026	A	858	STA	XTC,1	TC - TEST CONTROL	02	00857
			859	*			02	00858
001751	005001	A	860	TZA			02	00859
001752	004444	A	861	LLRL	4		02	00860
001753	055027	A	862	STA	XB,1	B FIELD	02	00861
			863	*			02	00862
001754	005001	A	864	TZA			02	00863
001755	004444	A	865	LLRL	4		02	00864
001756	055030	A	866	STA	XA,1	AA FIELD	02	00865
001757	002000	A	867	CALL	LDOUT,27,LISTA	OUTPUT HEADER	02	00866
001760	004661	R						
001761	000033	A						
001762	002054	R						
001763	006010	A	868	LDAI	FIELDS	ADDR OF FIRST FIELD	02	00867
001764	000135	R						
001765	054065	A	869	STA	LIST9		02	00868
001766	006010	A	870	LDAI	12	FIELD CONVERSION COUNT	02	00869
001767	000014	A						
001770	054061	A	871	STA	LIST8		02	00870
001771	002000	A	872	JMPM	LIST3	OUTPUT DATA TO LD	02	00871
001772	002024	R						
			873	*			02	00872
001773	002000	A	874	JMPM	SPAC	SPACE LD	02	00873
001774	005041	R						
001775	002000	A	875	CALL	LDOUT,25,LISTB	OUTPUT HEADER	02	00874
001776	004661	R						
001777	000031	A						
002000	002107	R						
002001	006010	A	876	LDAI	11	FIELD COUNT	02	00875
002002	000013	A						
002003	054046	A	877	STA	LIST8		02	00876
002004	002000	A	878	JMPM	LIST3	OUTPUT DATA TO LD	02	00877
002005	002024	R						
002006	002000	A	879	CALL	SPAC	SPACE THE LD DEVICE	02	00878
002007	005041	R						
			880	*			02	00879
			881	*			02	00880
			882	*			02	00881
			883	*			02	00882
			884	*			02	00883
002010	006017	A	884	LDDE	WORD		02	00884
002011	000167	R						
002012	006147	A	885	SUSE	WORD2		02	00885
002013	000170	R						
002014	001002	A	886	JAP	EXC10	IF NO MORE, RETURN TO EXEC	02	00886
002015	000673	R						
002016	001400	A	887	JSS3	EXC10	IF SSS,ABORT DUMP	C.1 02	00887
002017	000673	R						
002020	006047	A	888	INRE	WORD	ELSE, DUMP NEXT ONE	02	00888
002021	000167	R						
002022	001600	A	889	JMP	LIST1		02	00889
002023	001601	R						
			890	*			02	00890
002024	000000	A	891	EJEC	LIST3	ENTR	02	00891



002025	002000	A	892	JMPM	PRUF	SETUP LD BUFFER		02	00891
002026	005007	R							
002027	034021	A	893	LDX	LIST7	BUFFER ADDR		02	00892
			894	*				02	00893
002030	024022	A	895	LIST4	LDB	LIST9	ADDR OF NEXT ROM FIELD	02	00894
002031	026000	A	896		LDB	0,2	NEXT ROM FIELD	02	00895
002032	002000	A	897		JMPM	DHA	CONVERT TO ASCII	02	00896
002033	006301	R							
002034	005144	A	898		IXR		SPACE AFTER DATA	02	00897
002035	044015	A	899		INR	LIST9	STEP TO NEXT FIELD	02	00898
002036	014013	A	900		LDA	LIST8	FIELD COUNT	02	00899
002037	005311	A	901		DAR			02	00900
002040	054011	A	902		STA	LIST8	DECREMENTED COUNT	02	00901
002041	001002	A	903		JAP	LIST4	LOOP IF NOT COMPLETE	02	00902
002042	002030	R							
002043	002000	A	904	CALL	LOOUT,27,BUFR	OUTPUT DATA TO LD		02	00903
002044	004661	R							
002045	000033	A							
002046	000245	R							
002047	001000	A	905	JMP*	LIST3	RETURN		02	00904
002050	102024	R							
			906	*				02	00905
002051	000247	R	907	LIST7	DATA	BUFR+2	OUTPUT BUFFER ADDRESS	02	00906
002052	000000	A	908	LIST8	DATA	0	ROM FIELD CONVERSION COUNT	02	00907
002053	000000	A	909	LIST9	DATA	0	ADDR OF ROM FIELD TO CONVERT	02	00908
002054	120240	A	910	LISTA	DATA	' TS AF MS MT FS TF SF'		02	00909
002055	120240	A							
002056	152323	A							
002057	120240	A							
002060	140706	A							
002061	120240	A							
002062	146723	A							
002063	120240	A							
002064	146724	A							
002065	120240	A							
002066	143323	A							
002067	120240	A							
002070	152306	A							
002071	120240	A							
002072	151706	A							
002073	120240	A	911	DATA	' GF MR AB IM LB LA'			02	00910
002074	143706	A							
002075	120240	A							
002076	146722	A							
002077	120240	A							
002100	140702	A							
002101	120240	A							
002102	144715	A							
002103	120240	A							
002104	146302	A							
002105	120240	A							
002106	146301	A							
002107	120240	A	912	LISTB	DATA	' RF FF MF CF WR SC'		02	00911
002110	120240	A							
002111	151306	A							
002112	120240	A							
002113	143306	A							
002114	120240	A							
002115	146706	A							
002116	120240	A							
002117	141706	A							
002120	120240	A							
002121	153722	A							
002122	120240	A							
002123	151703	A							
002124	120240	A	913	DATA	' VF WF XF SH BB AA'			02	00912
002125	153306	A							
002126	120240	A							
002127	153706	A							
002130	120240	A							
002131	154306	A							
002132	120240	A							
002133	151710	A							
002134	120240	A							
002135	141302	A							
002136	120240	A							
002137	140701	A							
002140	120240	A	914	LISTC	DATA	' CCS LDC DDDD PAGE DD'		02	00913
002141	141703	A							
002142	151640	A							
002143	146317	A							
002144	141640	A							
002145	120240	A							
002146	142304	A							
002147	142304	A							
002150	120240	A							
002151	120320	A							
002152	140707	A							
002153	142640	A							
002154	142304	A							
			915		EJEC			02	00914
002155	002000	A	916	E155	CALL	TPERM	TOP OF FORM	02	00915
002156	005052	R							



002157	006017	A	917	LDAE	STORE		02	00916	
002160	000171	R							
002161	004355	A	918	LSRA	13		02	00917	
002162	006140	A	919	SUBI	7		02	00918	
002163	000007	A							
002164	006030	A	920	LDXI	IDHDR+7	CHOOSE I/O CS HEADER	02	00919	
002165	002313	R							
002166	001010	A	921	JAZ	*+9	IF O.K. STICK WITH IT	02	00920	
002167	002177	R							
002170	005111	A	922	IAR		ELSE, SEE IF DECODE A OR B	02	00921	
002171	006030	A	923	LDXI	DBHDR+7		02	00922	
002172	002335	R							
002173	001010	A	924	JAZ	*+4		02	00923	
002174	002177	R							
002175	006030	A	925	LDXI	DAHDR+7		02	00924	
002176	002324	R							
002177	006027	A	926	LDRE	PAGE	GET PAGE NUMBER	02	00925	
002200	000172	R							
002201	002000	A	927	CALL	OH	PUT IN HEADER MESSAGE	02	00926	
002202	006235	R							
002203	005041	A	928	TXA			02	00927	
002204	006140	A	929	SUBI	2		02	00928	
002205	000002	A							
002206	005014	A	930	TAX			02	00929	
002207	006020	A	931	LDBI	.	ONLY NEED TWO DIGITS	02	00930	
002210	120240	A							
002211	065000	A	932	STB	0,X		02	00931	
002212	006140	A	933	SUBI	7		02	00932	
002213	000007	A							
002214	054003	A	934	STA	*+4		02	00933	
002215	002000	A	935	CALL	LOOUT,9,0	OUTPUT THE HEADER	02	00934	
002216	004661	R							
002217	000011	A							
002220	000000	A							
002221	002000	A	936	CALL	SPAC	SPACE THE LD	02	00935	
002222	005041	R							
002223	002000	A	937 E156	CALL	PBUF	INITIALIZE THE OUTPUT BUFFER	02	00936	
002224	005007	R							
002225	006030	A	938	LDXI	BUFR+1	INIT BUFFER ADDRESS	02	00937	
002226	000246	R							
002227	006027	A	939	LDBE	WORD	GET ADDRESS	02	00938	
002230	000167	R							
002231	002000	A	940	CALL	OH	CONVERT TO HEX	02	00939	
002232	006235	R							
002233	005144	A	941	IXR		SPACE BETWEEN SECTIONS	02	00940	
002234	006010	A	942	LDAI	7		02	00941	
002235	000007	A							
002236	054100	A	943	STA	E155X		02	00942	
002237	074100	A	944	STX	E155Y	SAVE BUFFER LOCATION	02	00943	
002240	002000	A	945 E157	CALL	RWCS	READ NEXT WCS WORD	02	00944	
002241	003674	R							
002242	034075	A	946	LDX	E155Y	RESTORE BUFFER POINTER	02	00945	
002243	006027	A	947	LDBE	MBUF	GET MICRO	02	00946	
002244	000173	R							
002245	002000	A	948	CALL	OH	PUT IN HEX	02	00947	
002246	006235	R							
002247	005144	A	949	IXR			02	00948	
002250	074067	A	950	STX	E155Y	SAVE BUFFER LOCATION	02	00949	
002251	006017	A	951	LDAE	WORD		02	00950	
002252	000167	R							
002253	006147	A	952	SUBE	WORD2	DUMPED ALL?	02	00951	
002254	000170	R							
002255	001002	A	953	JAP	E158	YES	02	00952	
002256	002276	R							
002257	006047	A	954	INRE	WORD	NO, SO ON TO DUMP NEXT WORD	02	00953	
002260	000167	R							
			955 *						
002261	014055	A	956	LDA	E155X	TIME FOR NEW LINE?	02	00954	
002262	005311	A	957	BAR			02	00955	
002263	054053	A	958	STA	E155X		02	00956	
002264	001002	A	959	JAP	E157	NO	02	00957	
002265	002240	R							
002266	002000	A	960	CALL	LOOUT,30,BUFR	YES	02	00959	
002267	004661	R							
002270	000036	A							
002271	000245	R							
002272	001400	A	961	JSS3	EXC10	IF SS3,ABDRT DUMP	0.1	02	00960
002273	000673	R							
002274	001000	A	962	JMP	E156		02	00961	
002275	002223	R							
			963 *						
002276	002000	A	964 E158	CALL	LOOUT,30,BUFR	OUTPUT WHAT REMAINS	02	00962	
002277	004661	R					02	00963	
002300	000036	A							
002301	000245	R							
002302	001000	A	965	JMP	EXC10		02	00964	
002303	000673	R							
			966 *						
002304	120240	A	967	IDHDR	DATA	* I/O CS, PAGE *	02	00965	
002305	144657	A					02	00966	
002306	147643	A							
002307	141723	A							
002310	126240	A							



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002311 150301 A
002312 143705 A
002313 120240 A
002314 120240 A
002315 120240 A 968 DAHDR DATA DCS A , PAGE 02 00967
002316 142303 A
002317 151640 A
002320 140640 A
002321 126240 A
002322 150301 A
002323 143705 A
002324 120240 A
002325 120240 A
002326 120240 A 969 DBHDR DATA DCS B , PAGE 02 00968
002327 142303 A
002330 151640 A
002331 141240 A
002332 126240 A
002333 150301 A
002334 143705 A
002335 120240 A
002336 120240 A
002337 000000 A 970 E155X DATA 0 02 00969
002340 000000 A 971 E155Y DATA 0 02 00970
972 EJEC 02 00971
973 * 02 00972
974 * RETURN TO OPERATING SYSTEM 02 00973
975 * 02 00974
976 E170 BSS 0 02 00975
977 CALL ENDCOM 02 00976
002341 002000 A
002342 004173 R
002343 006017 R 978 E175 LDAE LOFLG LD ON RMD? 02 00977
002344 004776 R
002345 001002 A 979 JAP E177 NO 02 00978
002346 002356 R
980 CLOSE LOFCB,5,0,1 IF IT IS, CLOSE AND UPDATE 02 00979
002347 002000 A
002350 001034 E
002351 100000 A
002352 013405 A
002353 000132 E
002354 000000 A
002355 000000 A
002356 000000 A
981 E177 BSS 0 02 00980
982 IFF VORTEX 02 00981
983 EXT EXIT 02 00982
984 IFF VORTEX C.1 02 00983
985 CALL EXIT 02 00984
986 IFF VORTEX C.1 02 00985
987 GOTO SKP7, C.1 02 00986
988 * 02 00987
989 * 02 00988
990 * WCS SAVE ROUTINE 02 00989
991 * ***** 02 00990
992 * 02 00991
993 * 02 00992
994 * TRANSFERS CONTENTS OF WCS TO DISK FILE 'WCSIMG' (WHICH RESIDES 02 00993
995 * ON THE DM PARTITION) 02 00994
996 * 02 00995
997 * 02 00996
998 EXT VSWCS WCS REENRANT SUBROUTINE ENTRY POINTS C.1 02 00997
999 EXT VSWCSI C.1 02 00998
1000 EXT VSWCSO C.1 02 00999
1001 EXT VSWCSF C.1 02 01000
1002 EXT VSWCSE C.1 02 01001
000001 A 1003 DC EQU 1 02 01002
000150 A 1004 DM EQU 104 02 01003
1005 * 02 01004
1006 * 02 01005
1007 * FILE IS FIRST OPENED ; IF NOT FOUND, SAVE OPERATION 02 01006
1008 * IS ABORTED 02 01007
1009 * 02 01008
002356 002000 A 1010 IDRQ1 OPEN IMGFCB,DM,1,0 OPEN AND REWIND FILE WCSIMG 02 01009
002357 002350 E
002360 100000 A
002361 103150 A
002362 003063 R
002363 000000 A
002364 000000 A
1011 STAT IDRQ1,DPNERR,*+7,*+7,* LOOP TILL DONE 02 01010
002365 002000 A
002366 001043 E
002367 002356 R
002370 002551 R
002371 002374 R
002372 002374 R
002373 002365 R
002374 002374 R
1012 WCSS10 BSS 0 02 01011
1013 * 02 01012
1014 * INITIALIZE WCS IN PREPARATION FOR DATA TRANSFER 02 01013
1015 * 02 01014
002374 006017 A 1016 LDAE CXCO INSTR TO INIT WCS 02 01015

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002375	000611	R							
			1017	ALOC	V\$WCSE	EXECUTE IT			02 01016
002376	006505	A							
002377	000406	A							
002400	000600	A							
002401	000000	E							
			1018	*					02 01017
			1019	*					02 01018
			1020	*					02 01019
			1021	*					02 01020
002402	006010	A		LDAI	01000				
002403	001000	A							
002404	054265	A	1022	STA	WCSPAG				02 01021
002405	006010	A	1023	LDAI	120				02 01022
002406	000170	A							
002407	054263	A	1024	STA	BUFCNT	INIT CNT OF FREE WORDS IN THE BUFFER			02 01023
			1025	*					02 01024
			1026	*					02 01025
			1027	*					02 01026
			1028	*					02 01027
			1029	*					02 01028
			1030	*					02 01029
			1031	*					02 01030
002410			1031	WCSR20	BSS	0			02 01031
002410	006010	A	1032	LDAI	0060000	CHOOSE CCS FOR DATA TRANSFER			02 01032
002411	060000	A							
002412	114257	A	1033	DRA	WCSPAG	ON THIS PAGE			02 01032
			1034	ALOC	V\$WCSE	OUTPUT ADDRESS SELECTING FUNC WORD TO WCS			02 01033
002413	006505	A							
002414	000406	A							
002415	000600	A							
002416	000000	E							
002417	006010	A	1035	LDAI	512*4	TRANSFER 512 64 BIT WORDS			02 01034
002420	004000	A							
002421	054252	A	1036	STA	TRNCNT				02 01035
002422	002000	A	1037	CALL	WSAVE				02 01036
002423	002610	R							
			1038	*					02 01037
			1039	*					02 01038
			1040	*					02 01039
002424	006010	A	1041	LDAI	0120000	COMPUTE FUNC WORD			02 01040
002425	120000	A							
002426	114243	A	1042	DRA	WCSPAG				02 01041
			1043	ALOC	V\$WCSE	OUTPUT ADDRESS SELECTING FUNC WORD TO WCS			02 01042
002427	006505	A							
002430	000406	A							
002431	000600	A							
002432	002416	E							
			1044	*					02 01043
			1045	*					02 01044
			1046	*					02 01045
002433	006010	A	1047	LDAI	16	TRANSFER 16 WORDS			02 01046
002434	000020	A							
002435	054236	A	1048	STA	TRNCNT				02 01047
002436	002000	A	1049	CALL	WSAVE				02 01048
002437	002610	R							
			1050	*					02 01049
			1051	*					02 01050
			1052	*					02 01051
002440	006010	A	1053	LDAI	0140000	GET FUNC WORD			02 01052
002441	140000	A							
002442	114227	A	1054	DRA	WCSPAG				02 01053
			1055	ALOC	V\$WCSE	OUTPUT ADDRESS SELECTING FUNC WORD TO WCS			02 01054
002443	006505	A							
002444	000406	A							
002445	000600	A							
002446	002432	E							
			1056	*					02 01055
			1057	*					02 01056
			1058	*					02 01057
002447	006010	A	1059	LDAI	16	TRANSFER 16 WORDS			02 01058
002450	000020	A							
002451	054222	A	1060	STA	TRNCNT				02 01059
002452	002000	A	1061	CALL	WSAVE				02 01060
002453	002610	R							
			1062	*					02 01061
			1063	*					02 01062
			1064	*					02 01063
002454	006010	A	1065	LDAI	0160000	GET FUNC WORD			02 01064
002455	160000	A							
002456	114213	A	1066	DRA	WCSPAG				02 01065
			1067	ALOC	V\$WCSE	OUTPUT ADDRESS SELECTING FUNC WORD TO WCS			02 01066
002457	006505	A							
002460	000406	A							
002461	000600	A							
002462	002446	E							
			1068	*					02 01067
			1069	*					02 01068
			1070	*					02 01069
002463	006010	A	1071	LDAI	256	TRANSFER 256 WORDS			02 01070
002464	000400	A							
002465	054206	A	1072	STA	TRNCNT				02 01071
002466	002000	A	1073	CALL	WSAVE				02 01072
002467	002610	R							
			1074	*					02 01073



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1075 IDRQ2 WRITE IMGFCB,DM,1,0 WRITE LAST RECORD OF THE PAGE 02 01074
002470 002000 A
002471 002357 E
002472 100000 A
002473 100550 A
002474 003065 R
002475 000000 A
002476 000000 A
1076 STAT IDRQ2,ABORT,*+7,ABORT,* LOOP TILL DONE 02 01075
002477 002000 A
002500 002366 E
002501 002470 R
002502 002567 R
002503 002506 R
002504 002567 R
002505 002477 R
1077 *
1078 * TOTAL PAGE TRANSFERED SO INCREMENT PAGE# 02 01076
1079 * 02 01077
002506 014163 A 1080 LDA WCSPAG 02 01078
002507 006120 A 1081 ADDI 01000 02 01079
002510 001000 A 1082 STA WCSPAG 02 01081
002511 054163 A 1083 * 02 01082
1084 * IF END OF DISK FILE, ALL DONE. 02 01083
1085 * OTHERWISE, ANOTHER PAGE TO TRANSFER 02 01084
1086 * 02 01085
002512 006030 A 1087 LDXI IMGFCB 02 01086
002513 003065 R
002514 015003 A 1088 LDA 3,X GET CURRENT RECORD # IN FILE 02 01087
002515 125005 A 1089 ADD 5,X ADD BEGIN FILE ADDR 02 01088
002516 145006 A 1090 SUB 6,X SUBTRACT END ADDR PLUS ONE 02 01089
002517 001004 A 1091 JAN WCSR20 IF NOT AT END OF FILE, BACK TO LOAD 02 01090
002520 002410 R
1092 * 02 01091
1093 * WHEN ALL DONE, SUCCESS MESSAGE OUTPUT AND FILE CLOSED 02 01092
1094 * 02 01093
002521 002000 A 1095 WRITE M3DCB,DC,0,1 OUTPUT OPERATION COMPLETE 02 01094
002522 002471 E
002523 100000 A
002524 010401 A
002525 003105 R
002526 000000 A
002527 000000 A
1096 WRITE M3DCB,LD,0,1 02 01095
002530 002000 A
002531 002522 E
002532 100000 A
002533 010405 A
002534 003105 R
002535 000000 A
002536 000000 A
1097 * 02 01096
1098 * CLOSE IMGFCB,DM,0,0 CLOSE THE FILE 02 01097
002537 002000 A
002540 002531 E
002541 100000 A
002542 003550 A
002543 003065 R
002544 000000 A
002545 000000 A
1099 EXIT 02 01098
002546 006505 A
002547 000406 A
002550 000200 A
1100 EJEC 02 01099
1101 * 02 01100
1102 * IF OPEN ON FILE WCSING FAILS, FOLLOWING REPORTS IT 02 01101
1103 * 02 01102
002551 1104 DPNERR BSS 0 02 01103
1105 WRITE M2DCB,DC,0,1 TELL OPERATOR FILE NOT FOUND 02 01104
002551 002000 A
002552 002540 E
002553 100000 A
002554 010401 A
002555 003102 R
002556 000000 A
002557 000000 A
1106 WRITE M2DCB,LD,0,1 LIST ON LD ALSO 02 01105
002560 002000 A
002561 002552 E
002562 100000 A
002563 010405 A
002564 003102 R
002565 000000 A
002566 000000 A
002567 1107 ABORT BSS 0 02 01106
1108 IDRQ3 WRITE M1DCB,DC,0,1 LET OPERATOR KNOW OPERATION ABORTED 02 01107
002567 002000 A
002570 002561 E
002571 100000 A
002572 010401 A

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002573 003077 R
002574 000000 A
002575 000000 A
1109 WRITE MIDCB,LD,0,1 LIST IT ON LD ALSO 02 01108
002576 002000 A
002577 002570 E
002600 100000 A
002601 010400 A
002602 003077 R
002603 000000 A
002604 000000 A
1110 EXIT ALL DONE 02 01109
002605 006505 A
002606 000406 A
002607 000200 A
1111 *
1112 * FOLLOWING SUBROUTINE TRANSFERS BLOCK OF WORDS FROM 02 01110
1113 * WCS TO DISK FILE 02 01111
1114 *
1115 WSAVE DATA 0 02 01112
002610 000000 A 1115 LDA BUFCNT SEE IF ANY WORDS LEFT IN BUFFER 02 01114
002611 014061 A 1116 JANZ W10 IF SO, SKIP READING ANOTHER RECORD 02 01115
002612 001016 A 1117
002613 002635 R 1118 IORQ4 WRITE IMGFCB,DM,1,0 OTHERWISE, DUMP BUFFER TO DISK 02 01117
002614 002000 A
002615 002577 E
002616 100000 A
002617 100550 A
002620 003065 R
002621 000000 A
002622 000000 A
1119 STAT IORQ4,ABORT,*+7,ABORT,* LOOP TILL DONE 02 01118
002623 002000 A
002624 002500 E
002625 002614 R
002626 002567 R
002627 002632 R
002630 002567 R
002631 002623 R
002632 006010 A 1120 LDAI 120 02 01119
002633 000170 A
002634 054036 A 1121 STA BUFCNT INIT DATA WORD COUNT 02 01120
1122 *
002635 144036 A 1123 SUB TRNCNT ENOUGH IN BUFFER TO COMPLETE TRANSFER?? 02 01121
002636 001002 A 1124 W10 JAP W50 IF SO, TRANSFER LAST THEN DONE 02 01122
002637 002655 R
002640 024032 A 1125 LDB BUFCNT IF NOT, TRANSFER WHATS THERE 02 01124
002641 006010 A 1126 LDAI IMGBUF+120 GET ADDR OF DATA IN BUFFER 02 01125
002642 003065 R
002643 144027 A 1127 SUB BUFCNT 02 01126
1128 ALDC V$WCSI TRANSFER DATA FROM WCS TO BUFFER 02 01127
002644 006505 A
002645 000406 A
002646 000600 A
002647 000000 E
002650 014023 A 1129 LDA TRNCNT UPDATE COUNT OF WORDS TO TRANSFER 02 01128
002651 144021 A 1130 SUB BUFCNT 02 01129
002652 054021 A 1131 STA TRNCNT 02 01130
002653 001000 A 1132 JMP IORQ4 LOOP BACK TO REFILL BUFFER 02 01131
002654 002614 R
1133 *
1134 * NEXT COMPLETES TRANSFERS BY INPUTTING REMAINING DATA 02 01132
1135 * NEEDED TO FILL THE BUFFER 02 01133
1136 *
002655 024016 A 1137 W50 LDB TRNCNT TRANSFER REMAINING NUMBER OF WORDS 02 01134
002656 006010 A 1138 LDAI IMGBUF+120 GET ADDR OF DATA IN BUFFER 02 01135
002657 003065 R
002660 144012 A 1139 SUB BUFCNT 02 01136
1140 ALDC V$WCSI TRANSFER DATA FROM WCS TO BUFFER 02 01137
002661 006505 A
002662 000406 A
002663 000600 A
002664 002647 E
002665 014005 A 1141 LDA BUFCNT UPDATE COUNT OF BUFFER WORDS 02 01140
002666 144005 A 1142 SUB TRNCNT 02 01141
002667 054003 A 1143 STA BUFCNT 02 01142
002670 001000 A 1144 JMP* WSAVE 02 01143
002671 102610 R
1145 EJEC
002672 000000 A 1146 WCSPAG DATA 0 WCS PAGE # 02 01144
002673 000000 A 1147 BUFCNT DATA 0 # OF WORDS LEFT IN DISK BUFFER 02 01145
002674 000000 A 1148 TRNCNT DATA 0 # OF WORDS TO BE TRANSFERED TO/FROM WCS 02 01146
002675 1149 IMGBUF BSS 120 02 01147
1150 IMGFCB FCB 120,IMGBUF,3,'D','WC','SI','MG' 02 01148
003065 000170 A
003066 002675 R
003067 001704 A
003070 000000 A
003071 000000 A
003072 000000 A
003073 000000 A
003074 153703 A
003075 151711 A

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003076	146707	A	1151	M1DCB	DCB	9,M1		02	01150
003077	000011	A							
003100	003110	R							
003101	000000	A	1152	M2DCB	DCB	12,M2		02	01151
003102	000014	A							
003103	003121	R							
003104	000000	A	1153	M3DCB	DCB	6,M3		02	01152
003105	000006	A							
003106	003135	R							
003107	000000	A							
003110	120240	A	1154	M1	DATA	' WCS SAVE ABORTED' *		02	01153
003111	153703	A							
003112	151640	A							
003113	151701	A							
003114	153305	A							
003115	120301	A							
003116	141317	A							
003117	151324	A							
003120	142704	A							
003121	120240	A	1155	M2	DATA	' FILE WCSING NOT FOUND'		02	01154
003122	143311	A							
003123	146305	A							
003124	120327	A							
003125	141723	A							
003126	144715	A							
003127	143640	A							
003130	147317	A							
003131	152240	A							
003132	143317	A							
003133	152716	A							
003134	142240	A							
003135	120240	A	1156	M3	DATA	' WCS SAVED'		02	01155
003136	153703	A							
003137	151640	A							
003140	151701	A							
003141	153305	A							
003142	142240	A							
			1157		EJEC			02	01156
			1158	SKP7	CONT			C.1	02 01157
			1159		EJEC			02	01158
			1160	*	THIS ROUTINE HANDLES THE SELECT INPUT MEDIA COMMAND (M)			02	01159
			1161	*				02	01160
			1162	*	'MR' SELECTS SI TO BE THE INPUT MEDIA			02	01161
			1163	*	'MS' SELECTS PI TO BE THE INPUT MEDIA			02	01162
			1164	*				02	01163
			1165	*	CALLING SEQUENCE			02	01164
			1166	*				02	01165
			1167	*	JMP CHME			02	01166
			1168	*	RETURN DESIRED INPUT MEDIA SELECTED			02	01167
			1169	*				02	01168
003143	002000	A	1170	CHME	JMPH	FETCHA	GET SELECTOR INDICATOR	02	01169
003144	005234	R							
003145	001010	A	1171		JAZ	EXC90		02	01170
003146	000731	R							
003147	006140	A	1172		SUBI	0322	R ?	02	01171
003150	000322	A							
003151	001010	A	1173		JAZ	CHMR		02	01172
003152	003164	R							
003153	005311	A	1174		DAR		S ?	02	01173
003154	001010	A	1175		JAZ	CHMS		02	01174
003155	003160	R							
003156	001000	A	1176		JMP	EXC90	INVALID INPUT	02	01175
003157	000731	R							
003160	005301	A	1177	CHMS	DECR	01		02	01176
003161	054006	A	1178		STA	MEDIA	SET TO PI INPUT	02	01177
003162	001000	A	1179		JMP	EXC10		02	01178
003163	000673	R							
003164	005001	A	1180	CHMR	TZA			02	01179
003165	054002	A	1181		STA	MEDIA	SET TO SI INPUT	02	01180
003166	001000	A	1182		JMP	EXC10		02	01181
003167	000673	R							
003170	000000	A	1183	MEDIA	DATA	0		02	01182
			1184		EJEC			02	01183
			1185	*				02	01184
			1186	*				02	01185
			1187	*	FOLLOWING SETS MICRO EXECUTION ADDR			02	01186
			1188	*				02	01187
			1189	*				02	01188
003171			1190	E130	BSS	0		02	01189
003171	006017	A	1191		LDAE	DEBUG	IN DEBUG CONFIGURATION?	02	01190
003172	000166	R							
003173	001010	A	1192		JAZ	*+4	YES	02	01191
003174	003177	R							
003175	001000	A	1193		JMP	EXC90	NO	02	01192
003176	000731	R							
003177	002000	A	1194		CALL	INA,'N'	GET THE ADDRESS	02	01193
003200	005417	R							
003201	147240	A							
003202	054056	A	1195		STA	E130X	SAVE IT	02	01194
003203	006140	A	1196		SUBI	512	T00 BIG?	02	01195



003204	001000	A							
003205	001002	A	1197	JAP	EXC90	YES		02	01196
003206	000731	R							
003207	002000	A	1198	CALL	SEN3	BIC LOAD ACTIVE ?		02	01197
003210	000661	R							
003211	001004	A	1199	JAN	E130B	IF NOT, CONTINUE		02	01198
003212	003221	R							
003213	002000	A	1200	CALL	SIDUT,3,WBM2	ELSE, REPORT PROBLEM		02	01199
003214	004553	R							
003215	000003	A							
003216	004001	R							
003217	001000	A	1201	JMP	EXC10	ABORT BACK TO EXECUTIVE		02	01200
003220	000673	R							
			1202	IFT	VORTEX			C.1	02 01201
			1203	GOTO	SKP1,			C.1	02 01202
			1213	SKP1	CBNT			C.1	02 01214
			1216	IFT	VORTEX			C.1	02 01215
			1217	GOTO	SKP2,			C.1	02 01216
			1218	BSS	0			C.1	02 01217
003221			1219	E130B	LDAA	EXC2	GET 'STEP WCS' I/O INSTR	C.1	02 01218
003222	000613	R							
			1220	ALOC	V\$WCSE	EXECUTE IT		C.1	02 01219
003223	006505	A							
003224	000406	A							
003225	000600	A							
003226	002401	E							
003227	006010	A	1221	LDAA	0100000	GET FUNC WORD TO SELECT WCS ADDR		C.1	02 01220
003230	100000	A							
			1222	ALOC	V\$WCSE	OUTPUT IT TO WCS		C.1	02 01221
003231	006505	A							
003232	000406	A							
003233	000600	A							
003234	002462	E							
003235	006017	A	1223	LDAA	PAGE	GET EFFECTIVE ADDRESS		C.1	02 01222
003236	000172	R							
003237	004251	A	1224	LRLA	9	PAGE		C.1	02 01223
003240	114020	A	1225	ORA	E130X	WORD		C.1	02 01224
			1226	ALOC	V\$WCSE	OUTPUT IT TO WCS TO SELECT ADDR		C.1	02 01225
003241	006505	A							
003242	000406	A							
003243	000600	A							
003244	003234	E							
003245	006017	A	1227	LDAA	EXC2			C.1	02 01226
003246	000613	R							
			1228	ALOC	V\$WCSE	EXECUTE IT		C.1	02 01227
003247	006505	A							
003250	000406	A							
003251	000600	A							
003252	003226	E							
			1229	SKP2	CBNT			C.1	02 01228
			1230	*				C.1	02 01229
003253	006017	A	1231	LDAA	TRACE	TRACE ON?		02	01230
003254	000436	R							
003255	002002	A	1232	JAPM	TMAO	IF SO, OUTPUT NEXT ADDR		02	01231
003256	004206	R							
003257	001000	A	1233	JMP	EXC10	DONE		02	01232
003260	000673	R							
			1234	*				02	01233
003261	000000	A	1235	E130X	DATA	0	TEMP STORAGE FOR EXECUTION ADDR	02	01234
			1236		EJEC			02	01235
			1237	*				02	01236
			1238	*				02	01237
			1239	*	FOLLOWING HANDLES THE EXECUTION OF MICROS			02	01238
			1240	*				02	01239
			1241	*				02	01240
			1242	*				02	01241
003262			1243	S100	BSS	0		02	01242
003262	006017	A		LDAA	DEBUG	IN DEBUG CONFIGURATION?		02	01242
003263	000166	R							
003264	001010	A	1244	JAZ	*+4	YES		02	01243
003265	003270	R							
003266	001000	A	1245	JMP	EXC90	NO		02	01244
003267	000731	R							
003270	002000	A	1246	CALL	FETCHA	MORE CHARACTERS ?		02	01245
003271	005234	R							
003272	001010	A	1247	JAZ	S100A	NO		02	01246
003273	003332	R							
003274	006140	A	1248	SUBT	' '			02	01247
003275	000240	A							
003276	001010	A	1249	JAZ	S100A	NO		02	01248
003277	003332	R							
003300	002000	A	1250	CALL	FETCH	YES, SO RESET BACK TO BEGINING		02	01249
003301	005224	R							
			1251	*				02	01250
003302	002000	A	1252	CALL	INA,'N'	GET THE EXECUTION COUNT		02	01251
003303	005417	R							
003304	147240	A							
003305	054060	A	1253	STA	S100X	SAVE IT		02	01252
003306	001010	A	1254	JAZ	*+4	IF FREE RUN, HANDLE SPECIAL		02	01253
003307	003312	R							
003310	001000	A	1255	JMP	S100B	ELSE, STEP THE APPROPRIATE NO. OF TIMES		02	01254
003311	003333	R							
			1256	*				02	01255
003312	006017	A	1257	LDAA	TRACE	TRACE ON?		02	01256



003313	000436	R								
003314	001002	A	1258	JAP	S100B		IF SO, DO INDEFINITE SINGLE STEPS		02	01257
003315	003335	R								
003316	006017	A	1259	LDAE	HLTADR		HALT SET?		C.1	02 01258
003317	000177	R								
003320	001002	A	1260	JAP	S100B		IF SO, SINGLE STEP TO HALT		C.1	02 01259
003321	003335	R								
			1261	IFF	VORTEX				C.1	02 01260
			1262	XEC	EXC1		OTHERWISE, FREE RUN		02	01261
			1263	IFF	VORTEX				C.1	02 01262
			1264	GOTO	SKP3,				C.1	02 01263
003322	006017	A	1265	LDAE	EXC1		GET 'ENABLE FREE RUN' EXC INSTR		C.1	02 01264
003323	000612	R								
			1266	ALOC	V\$WCSE		EXECUTE IT		C.1	02 01265
003324	006505	A								
003325	000406	A								
003326	000600	A								
003327	003252	E								
			1267	SKP3	CONT				C.1	02 01266
003330	001000	A	1268	JMP	EXC10		BACK FOR NEXT DIRECTIVE		02	01267
003331	000673	R								
			1269	*					02	01268
			1270	*					02	01269
003332	006010	A	1271	S100A	LDAI	1	SET DEFAULT EXECUTION COUNT TO 1		02	01270
003333	000001	A								
003334	054031	A								
			1272	STA	S100X				02	01271
			1273	*					02	01272
			1274	IFF	VORTEX				C.1	02 01273
			1275	S100B	XEC	EXC2	STEP THE CCS		02	01274
			1276	IFF	VORTEX				C.1	02 01275
			1277	GOTO	SKP4,				C.1	02 01276
003335			1278	S100B	BSS	0			C.1	02 01277
003335	006017	A	1279	LDAE	EXC2		GET 'STEP WCS' EXC INSTR		C.1	02 01278
003336	000613	R								
			1280	ALOC	V\$WCSE		EXECUTE IT		C.1	02 01279
003337	006505	A								
003340	000406	A								
003341	000600	A								
003342	003327	E								
			1281	SKP4	CONT				C.1	02 01280
			1282	*					C.1	02 01281
003343	006017	A	1283	LDAE	TRACE		TRACE ON ?		02	01282
003344	000436	R								
003345	002002	A	1284	JAPM	TMAD		IF SO, TRACE THE ADDRESS		02	01283
003346	004206	R								
003347	006017	A	1285	LDAE	HLTADR		HALT SET?		C.1	02 01284
003350	000177	R								
003351	002002	A	1286	JAPM	HLTCHK		IF SO, WATCH FOR IT		C.1	02 01285
003352	003367	R								
003353	001400	A	1287	JSS3	EXC10		IF SS3, ABORT SINGLE STEP		C.1	02 01286
003354	000673	R								
003355	014010	A	1288	LDA	S100X		FREE RUN?		02	01287
003356	001010	A	1289	JAZ	S100B		IF SO, KEEP STEPIING		02	01288
003357	003335	R								
003360	005311	A	1290	DAR			ELSE, CHECK IF EXECUTED ENOUGH		02	01289
003361	001010	A	1291	JAZ	EXC10		IF SO, ALL DONE		02	01290
003362	000673	R								
003363	054002	A	1292	STA	S100X		ELSE, STEP AGAIN		02	01291
003364	001000	A	1293	JMP	S100B				02	01292
003365	003335	R								
			1294	*					02	01293
003366	000000	A	1295	S100X	DATA	0	SAVES EXECUTION COUNT		02	01294
			1296		EJEC				02	01295
			1297	*					C.1	02 01296
			1298	*			FOLLOWING CHECKS TO SEE IF HALT ADDRESS REACHED		C.1	02 01297
			1299	*			IF NOT, RETURNS TO CALLER		C.1	02 01298
			1300	*			IF REACHED, OUTPUTS HALT MESSAGE AND RETURNS TO		C.1	02 01299
			1301	*			DIRECTIVE INPUT STAGE		C.1	02 01300
			1302	*					C.1	02 01301
003367	000000	A	1303	HLTCHK	DATA	0			C.1	02 01302
003370	006010	A	1304	LDAI	0100000		SELECT WCS ADDRESS REG		C.1	02 01303
003371	100000	A								
			1305	IFT	VORTEX				C.1	02 01304
			1306	GOTO	SKP25,				C.1	02 01305
			1310	SKP25	CONT				02	01309
			1311	IFF	VORTEX				C.1	02 01310
			1312	GOTO	SKP26,				C.1	02 01311
			1313	ALOC	V\$WCSE		OUTPUT FUNC WORD TO WCS TO DO IT		C.1	02 01312
003372	006505	A								
003373	000406	A								
003374	000600	A								
003375	003244	E								
003376	006010	A	1314	LDAI	TEMP		PREPARE TO INPUT WCS ADDR		02	01313
003377	003425	R								
003400	006020	A	1315	LDBI	1		ONE WORD DATA TRANSFER		02	01314
003401	000001	A								
			1316	ALOC	V\$WCSE		INPUT IT TO BUFFER 'TEMP'		C.1	02 01315
003402	006505	A								
003403	000406	A								
003404	000600	A								
003405	002664	E								
003406	014016	A	1317	LDA	TEMP		GET IT		C.1	02 01316
			1318	SKP26	CONT				C.1	02 01317



E.2 VORTEX LISTING

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003407	006147	A	1319	SUBE	HLTADR	AT HALT ??	C.1 02 01318
003410	000177	R					
003411	001010	A	1320	JAZ	*+4	IF SO, OUT MESSAGE	C.1 02 01319
003412	003415	R					
003413	001000	A	1321	JMP*	HLTCHK	ELSE, RETURN TO CALLER	C.1 02 01320
003414	103367	R					
			1322	*			C.1 02 01321
			1323	*			C.1 02 01322
003415	006017	A	1324	LDAE	TRACE	MESSAGE ALREADY OUTPUT BY TRACE ??	C.1 02 01323
003416	000436	R					
003417	001002	A	1325	JAP	EXC10	IF SO, ALL DONE	C.1 02 01324
003420	000673	R					
003421	002000	A	1326	JMPM	TMAD	OTHERWISE, OUTPUT MESSAGE	C.1 02 01325
003422	004206	R					
003423	001000	A	1327	JMP	EXC10	BACK FOR DIRECTIVE INPUT	C.1 02 01326
003424	000673	R					
			1328	*			02 01327
003425	000000	A	1329	TEMP	DATA 0		02 01328
			1330	EJEC			C.1 02 01329
			1331	*			02 01330
			1332	*			02 01331
			1333	*			02 01332
			1334	*			02 01333
			1335	*			02 01334
			1336	*			02 01335
003426			1337	INITW	BSS 0		02 01336
003426	006017	A		LDAE	DEBUG	IN DEBUG CONFIGURATION?	
003427	000166	R					
003430	001010	A	1338	JAZ	*+4	YES	02 01337
003431	003434	R					
003432	001000	A	1339	JMP	EXC90	NO	02 01338
003433	000731	R					
003434	002000	A	1340	CALL	ENDCOM	VERIFY NO MORE CHARACTERS	02 01339
003435	004173	R					
			1341	IFF	VORTEX		C.1 02 01340
			1342	XEC	EXC0	INITIALIZE WCS	02 01341
			1343	IFF	VORTEX		C.1 02 01342
			1344	GOTO	SKP5,		C.1 02 01343
003436	006017	A	1345	LDAE	EXC0	GET 'INIT WCS' EXC INSTR	C.1 02 01344
003437	000611	R					
			1346	ALDC	V\$WCSE	EXECUTE IT	C.1 02 01345
003440	006505	A					
003441	000406	A					
003442	000600	A					
003443	003342	E					
			1347	SKP5	CONT		C.1 02 01346
003444	001000	A	1348	JMP	EXC10		02 01347
003445	000673	R					
			1349	EJEC			02 01348
			1350	*			02 01349
			1351	*			02 01350
			1352	*			02 01351
			1353	*			02 01352
			1354	*			02 01353
			1355	*			02 01354
003446			1356	E140	BSS 0		02 01355
003446	006017	A		LDAE	DEBUG	IN DEBUG CONFIGURATION?	
003447	000166	R					
003450	001010	A	1357	JAZ	*+4	YES	02 01356
003451	003454	R					
003452	001000	A	1358	JMP	EXC90	NO	02 01357
003453	000731	R					
003454	002000	A	1359	CALL	FETCHA	GET NEXT CHAR	02 01358
003455	005234	R					
003456	004003	A	1360	STA	E140X+1	SAVE IT	02 01359
003457	002000	A	1361	CALL	ENDCOM	CONFIRM END OF COMMAND	02 01360
003460	004173	R					
003461	006010	A	1362	E140X	LDAI 0	RESTORE THE CHAR	02 01361
003462	000000	A					
003463	005012	A	1363	TAB			02 01362
003464	006140	A	1364	SUBI	'R'	AN 'R' ?	02 01363
003465	000322	A					
003466	001010	A	1365	JAZ	E140R	YES	02 01364
003467	003477	R					
003470	005021	A	1366	TBA			02 01365
003471	006140	A	1367	SUBI	'S'	AN 'S' ?	02 01366
003472	000323	A					
003473	001010	A	1368	JAZ	E140S	YES	02 01367
003474	003505	R					
003475	001000	A	1369	JMP	EXC90	NO, SO ILLEGAL	02 01368
003476	000731	R					
			1370	*			02 01369
003477	006010	A	1371	E140R	LDAI -1		02 01370
003500	177777	A					
003501	006057	A	1372	STAE	TRACE	RESET TRACE	02 01371
003502	000436	R					
003503	001000	A	1373	JMP	EXC10		02 01372
003504	000673	R					
			1374	*			02 01373
003505	005001	A	1375	E140S	TZA		02 01374
003506	006057	A	1376	STAE	TRACE	SET TRACE	02 01375
003507	000436	R					
003510	001000	A	1377	JMP	EXC10		02 01376
003511	000673	R					
			1378	EJEC			02 01377



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1379 *
1380 *
1381 * FOLLOWING HANDLES THE ENABLE CONTROL STORE COMMAND
1382 *
1383 *
003512 1384 ENABLE BSS 0
003512 006017 A 1385 LDAE DEBUG IN DEBUG CONFIGURATION?
003513 000166 R
003514 001010 A 1386 JAZ *+4 YES
003515 003520 R
003516 001000 A 1387 JMP EXC90 NO
003517 000731 R
003520 002000 A 1388 CALL FETCHA GET CS SPEC
003521 005234 R
003522 054003 A 1389 STA ENXX+1 SAVE IT
003523 002000 A 1390 CALL ENDCOM VERIFY END OF COMMAND
003524 004173 R
003525 006010 A 1391 ENXX LDAI 0 RESTORE THE CS SPEC
003526 000000 A
003527 005012 A 1392 TAB
003530 006140 A 1393 SUBI 'D' DECODE ?
003531 000304 A
003532 001010 A 1394 JAZ ENDEC YES
003533 003543 R
003534 005021 A 1395 TBA
003535 006140 A 1396 SUBI 'I' I/O ?
003536 000311 A
003537 001010 A 1397 JAZ ENID YES
003540 003556 R
003541 001000 A 1398 JMP EXC90 ELSE ILLEGAL
003542 000731 R

1399 *
1400 *
003543 006017 A 1401 ENDEC LDAE PAGE ENABLE DCS ON THIS PAGE
003544 000172 R
003545 004251 A 1402 LRLA 9
003546 006110 A 1403 DRAI 020000
003547 020000 A

1404 IFT VORTEX C.1 02 01403
1405 GOTO SKP6, C.1 02 01404
1408 SKP6 CONT C.1 02 01407
1409 IFT VORTEX C.1 02 01408
1410 ALOC V$WCSF OUTPUT THE FUNC WORD TO WCS C.1 02 01409

003550 006505 A
003551 000406 A
003552 000600 A
003553 003375 E
003554 001000 A 1411 JMP EXC10 ALL DONE
003555 000673 R

1412 *
1413 *
003556 006017 A 1414 ENID LDAE PAGE ENABLE I/O CS ON THIS PAGE
003557 000172 R
003560 004251 A 1415 LRLA 9
003561 006110 A 1416 DRAI 020200
003562 020200 A

1417 IFT VORTEX C.1 02 01416
1418 GOTO SKP8, C.1 02 01417
1421 SKP8 CONT C.1 02 01420
1422 IFT VORTEX C.1 02 01421
1423 ALOC V$WCSF OUTPUT THE FUNC WORD TO WCS C.1 02 01422

003563 006505 A
003564 000406 A
003565 000600 A
003566 003553 E
003567 001000 A 1424 JMP EXC10 ALL DONE
003570 000673 R

1425 EJEC
1426 *
1427 * FOLLOWING HANDLES THE 'H' DIRECTIVE
1428 * SETS OR REMOVES HALT ADDRESS
1429 *
003571 1430 SETHLT BSS 0
003571 006017 A 1431 LDAE DEBUG DEBUG CONFIG ?
003572 000166 R
003573 001010 A 1432 JAZ *+4 IF SO, PROCESS DIRECTIVE
003574 003577 R
003575 001000 A 1433 JMP EXC90 IF NOT, REPORT AN ERROR
003576 000731 R

1434 *
1435 *
003577 002000 A 1436 CALL FETCHA ANY MORE CHARACTERS ??
003600 005234 R
003601 001010 A 1437 JAZ SETH1 IF NOT, REMOVE HALT ADDR
003602 003635 R
003603 006140 A 1438 SUBI ' '
003604 000240 A
003605 001010 A 1439 JAZ SETH1 IF BLANK, REMOVE HALT ALSO
003606 003635 R
003607 002000 A 1440 CALL FETCH ELSE, RESET POINTER
003610 005224 R
003611 002000 A 1441 CALL INA, 'N' GET THE HALT ADDRESS
003612 005417 R

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003613 147240 A
003614 006057 A 1442 STAE S100X SAVE IT C.1 02 01441
003615 003366 R
003616 006140 A 1443 SUBI 512 TOO BIG ?? C.1 02 01442
003617 001000 A
003620 001004 A 1444 JAN *+4 NO C.1 02 01443
003621 003624 R
003622 001000 A 1445 JMP EXC90 YES, REPORT IT C.1 02 01444
003623 000731 R
1446 * C.1 02 01445
1447 * C.1 02 01446
003624 006017 A 1448 LDAE PAGE GET THE PAGE NUMBER C.1 02 01447
003625 000172 R
003626 004251 A 1449 LRLA 9 GET INTO POSITION C.1 02 01448
003627 006117 A 1450 ORAE S100X ADD WORD NUMBER C.1 02 01449
003630 003366 R
003631 006057 A 1451 STAE HLTADR SAVE AS HALT ADDRESS C.1 02 01450
003632 000177 R
003633 001000 A 1452 JMP EXC10 DONE C.1 02 01451
003634 000673 R
1453 * C.1 02 01452
1454 * C.1 02 01453
1455 * C.1 02 01454
003635 006010 A 1456 SETH1 LDAI -1 C.1 02 01455
003636 177777 A
003637 006057 A 1457 STAE HLTADR RESET HALT ADDR C.1 02 01456
003640 000177 R
003641 001000 A 1458 JMP EXC10 C.1 02 01457
003642 000673 R
1459 * C.1 02 01458
1460 * 02 01459
1461 * 02 01460
1462 * FOLLOWING HANDLES 'B' COMMAND 02 01461
1463 * IF PARAMETERS IN ORDER, DOES AN I/O BRANCH TO WCS 02 01462
1464 * 02 01463
1465 * 02 01464
1466 * 02 01465
003643 1466 BRANCH BSS 0 02 01466
003643 006017 A 1467 LDAE DEBUG DEBUG CONFIG ? 02 01467
003644 000166 R
003645 001010 A 1468 JAZ *+4 YES 02 01467
003646 003651 R
003647 001000 A 1469 JMP EXC90 NO, SO REPORT AN ERROR 02 01468
003650 000731 R
003651 002000 A 1470 CALL INA, 'N' GET THE TARGET ADDR 02 01469
003652 005417 R
003653 147240 A
003654 054010 A 1471 STA BT111+1 SAVE IT 02 01470
003655 006140 A 1472 SUBI 512 TOO BIG ? 02 01471
003656 001000 A
003657 001002 A 1473 JAP EXC90 YES 02 01472
003660 000731 R
003661 006017 A 1474 LDAE PAGE GET EFFECTIVE ADDR 02 01473
003662 000172 R
003663 004251 A 1475 LRLA 9 PAGE 02 01474
003664 006110 A 1476 BT111 ORAI 0 WORD 02 01475
003665 000000 A
1477 * IFT VORTEX C.1 02 01476
1478 * GOTO SKP10, C.1 02 01477
1481 * SKP10 CONT C.1 02 01480
1482 * IFT VORTEX C.1 02 01481
1483 * ALDC V$WCSF OUTPUT THE FUNC WORD TO WCS C.1 02 01482
003666 006505 A
003667 000406 A
003670 000600 A
003671 003566 E
003672 001000 A 1484 JMP EXC10 DONE HERE 02 01483
003673 000673 R
1485 * EJEC 02 01484
1486 * ***** 02 01485
1487 * 02 01486
1488 * 02 01487
1489 * NAME: READ A WCS WORD 02 01488
1490 * 02 01489
1491 * PURPOSE: TO TRANSFER A WORD FROM WCS TO THE INPUT BUFFER 02 01490
1492 * 02 01491
1493 * TABLES: PAGE, STORE, AND WORD SPECIFY THE CONTROL STORE ADDRESS; 02 01492
1494 * 02 01493
1495 * MBUF - RECEIVES MICRO BEING READ 02 01494
1496 * 02 01495
1497 * CALL: JMPM RWCS 02 01496
1498 * 02 01497
1499 * 02 01498
1500 * 02 01499
1501 * 02 01500
1502 * ***** 02 01501
1503 * 02 01502
003674 000000 A 1504 RWCS DATA 0 02 01503
003675 002000 A 1505 CALL RW50 SELECT EFFECTIVE WCS ADDR 02 01504
003676 003717 R
1506 * IFT VORTEX C.1 02 01505
1507 * GOTO SKP12, C.1 02 01506
1518 * SKP12 CONT C.1 02 01517
1519 * IFF VORTEX C.1 02 01518

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003677	006020	A	1520	GOTO	SKP13,				C.1	02	01519
003700	000001	A	1521	LDBI	1	SET TRANSFER COUNT TO	1		C.1	02	01520
003701	006017	A	1522	LDAE	STORE				C.1	02	01521
003702	000171	R									
003703	001004	A	1523	JAN	*+4	IF 64 BIT MICROWORD,			C.1	02	01522
003704	003707	R									
003705	006020	A	1524	LDBI	4	CHANGE IT TO	4		C.1	02	01523
003706	000004	A									
003707	006010	A	1525	LDAI	MBUF	BUFFER ADDR					02 01524
003710	000173	R									
			1526	ALOC	V\$WCSI	FILL BUFFER WITH DATA FROM WCS			C.1	02	01525
003711	006505	A									
003712	000406	A									
003713	000600	A									
003714	003405	E									
			1527	SKP13	CONT				C.1	02	01526
003715	001000	A	1528	JMP*	RWCS	ALL DONE					02 01527
003716	103674	R									
			1529	*							02 01528
			1530	*							02 01529
			1531	*							02 01530
003717	000000	A	1532	RW50	DATA	0	THIS IS COMMON SUBR TO SELECT WCS ADDR				02 01531
003720	002000	A	1533	CALL	SENS	BIC ACTIVE ?					02 01532
003721	000661	R									
003722	001002	A	1534	JAP	RW55	IF SO, CHECK IT OUT					02 01533
003723	003743	R									
003724	006017	A	1535	RW52	LDAE	PAGE	GET THE EFFECTIVE ADDR				02 01534
003725	000172	R									
003726	004251	A	1536	LRLA	9	GET PAGE NUMBER					02 01535
003727	006117	A	1537	DRAE	STORE	ADD CONTROL STORE SPEC					02 01536
003730	000171	R									
003731	006117	A	1538	DRAE	WORD	ADD WORD NUMBER					02 01537
003732	000167	R									
			1539	IFT	VORTEX				C.1	02	01538
			1540	GOTO	SKP14,				C.1	02	01539
			1544	SKP14	CONT				C.1	02	01543
			1545	IFT	VORTEX						02 01544
			1546	ALOC	V\$WCSF	OUTPUT FUNC WORD AND CHECK STATUS			C.1	02	01545
003733	006505	A									
003734	000406	A									
003735	000600	A									
003736	003671	E									
003737	001002	A	1547	JAP	RW57	IF SO, REPORT ERROR					02 01546
003740	003756	R									
003741	001000	A	1548	JMP*	RW50	ELSE, DONE HERE					02 01547
003742	103717	R									
			1549	*							02 01548
			1550	*							02 01549
003743	006030	A	1551	RW55	LDXI	01000	DO TIME DELAY TO WAIT ON BUSY				02 01550
003744	001000	A									
003745	005344	A	1552	DXR		DO A TIME DELAY					02 01551
003746	001040	A	1553	JXZ	*+4						02 01552
003747	003752	R									
003750	001000	A	1554	JMP	*-3						02 01553
003751	003745	R									
003752	002000	A	1555	CALL	SENS	BIC STILL ACTIVE?					02 01554
003753	000661	R									
003754	001004	A	1556	JAN	RW52	IF NOT BUSY, GO SELECT EFFEC. ADDR.					02 01555
003755	003724	R									
			1557	*							02 01556
			1558	*	OTHERWISE, REPORT ERROR						02 01557
			1559	*							02 01558
003756	002000	A	1560	RW57	CALL	SENS	BIC ACTIVE?				02 01559
003757	000661	R									
003760	001002	A	1561	JAP	RW59	IF SO, SPECIAL MESSAGE					02 01560
003761	003770	R									
003762	002000	A	1562	CALL	SIDUT,3,WBM1	OUTPUT ERROR MESSAGE					02 01561
003763	004553	R									
003764	000003	A									
003765	003776	R									
003766	001000	A	1563	JMP	EXC10	BACK TO EXEC					02 01562
003767	000673	R									
			1564	*							02 01563
003770			1565	RW59	BSS	0	REPORT BIC BUSY				02 01564
003770	002000	A	1566	CALL	SIDUT,3,WBM2	OUTPUT ERROR MESSAGE					02 01565
003771	004553	R									
003772	000003	A									
003773	004001	R									
003774	001000	A	1567	JMP	EXC10	BACK TO EXEC					02 01566
003775	000673	R									
			1568	*							02 01567
003776	120240	A	1569	WBM1	DATA	' MU05'	REPORT WCS BUSY				02 01568
003777	146725	A									
004000	130263	A									
004001	120240	A	1570	WBM2	DATA	' MU06'	REPORT BIC LOAD ACTIVE				02 01569
004002	146725	A									
004003	130266	A									
			1571	EJEC							02 01570
			1572	*	*****						02 01571
			1573	*							02 01572
			1574	*							02 01573
			1575	*	NAME: WRITE A WORD INTO WCS						02 01574



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1576 *
1577 *
1578 * PURPOSE: TO TRANSFER THE CONTENTS OF THE OUTPUT BUFFER TO
1579 * THE SPECIFIED LOCATION IN WCS *
1580 * TABLES: PAGE, STORE, AND WORD SPECIFY THE CONTROL STORE ADDRESS; *
1581 * MBUF - CONTAINS MICRO TO BE OUTPUT *
1582 * CALL: JMPM WPCS *
1583 *
1584 *
1585 *
1586 *
1587 *
1588 *
1589 *
1590 *
004004 000000 A 1591 WPCS DATA 0
004005 002000 A 1592 CALL RW50 SELECT EFFECTIVE WCS ADDR
004006 003717 R
1593 IFT VORTEX C.1 02 01592
1594 GOTO SKP16; C.1 02 01593
1605 SKP16 CONT C.1 02 01604
1606 IFF VORTEX C.1 02 01605
1607 GOTO SKP17; C.1 02 01606
1608 LDBI 1 SET WORD COUNT TO 1 C.1 02 01607
004007 006020 A
004010 000001 A
004011 006017 A 1609 LDAE STORE C.1 02 01608
004012 000171 R
004013 001004 A 1610 JAN *+4 C.1 02 01609
004014 004017 R
004015 006020 A 1611 LDBI 4 IF 64 BIT MICRO, CHANGE IT TO 4 C.1 02 01610
004016 000004 A
004017 006010 A 1612 LDAI MBUF BUFFER ADDR C.1 02 01611
004020 000173 R 1613 ALDC V$WCSO DUMP BUFFER TO WCS C.1 02 01612
004021 006505 A
004022 000406 A
004023 000600 A
004024 000000 E
1614 SKP17 CONT C.1 02 01612
004025 001000 A 1615 JMP* WPCS ALL DONE 02 01614
004026 104004 R
1616 EJEC 02 01615
1617 * 02 01616
1618 * 02 01617
1619 * FOLLOWING INTERPRETS CS SPECIFICATION 02 01618
1620 * 02 01619
1621 * 02 01620
004027 000000 A 1622 ICS DATA 0
004030 002000 A 1623 CALL FETCHA GET FIRST CHAR 02 01622
004031 005234 R
004032 005012 A 1624 TAB 02 01623
004033 006140 A 1625 SUBI 'C' CENTRAL? 02 01624
004034 000303 A
004035 001010 A 1626 JAZ ICSC YES 02 01625
004036 004071 R
004037 005021 A 1627 TBA 02 01626
004040 006140 A 1628 SUBI 'I' I/O CS ? 02 01627
004041 000311 A
004042 001010 A 1629 JAZ ICSDI YES 02 01628
004043 004103 R
004044 005021 A 1630 TBA 02 01629
004045 006140 A 1631 SUBI 'D' DECODE? 02 01630
004046 000304 A
004047 001010 A 1632 JAZ *+4 YES 02 01631
004050 004053 R
004051 001000 A 1633 JMP EXC90 IF NOT, ILLEGAL 02 01632
004052 000731 R
004053 002000 A 1634 CALL FETCHA GET NEXT CHAR 02 01633
004054 005234 R
004055 005012 A 1635 TAB 02 01634
004056 006140 A 1636 SUBI 'A' DCSA ? 02 01635
004057 000301 A
004060 001010 A 1637 JAZ ICSDA YES 02 01636
004061 004115 R
004062 005021 A 1638 TBA 02 01637
004063 006140 A 1639 SUBI 'B' DCSB? 02 01638
004064 000302 A
004065 001010 A 1640 JAZ ICSDB YES 02 01639
004066 004123 R
004067 001000 A 1641 JMP EXC90 IF NOT, ILLEGAL 02 01640
004070 000731 R
1642 * 02 01641
1643 * 02 01642
004071 006010 A 1644 ICSC LDAI 060000 SET FOR CENTRAL CONTROL STORE 02 01643
004072 060000 A
004073 006057 A 1645 STAE STORE 02 01644
004074 000171 R
004075 006010 A 1646 LDAI 511 02 01645
004076 000777 A
004077 006057 A 1647 STAE WORD2 SET LAST ADDR 02 01646
004100 000170 R
004101 001000 A 1648 JMP ICS110 02 01647
004102 004135 R

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004103	006010	A	1649	*					02	01648
004104	160000	A	1650	ICSID	LDAI	0160000	SET FOR I/O CS		02	01649
004105	006057	A	1651		STAE	STORE			02	01650
004106	000171	R								
004107	006010	A	1652		LDAI	255			02	01651
004110	000377	A								
004111	006057	A	1653		STAE	WORD2	SET LAST ADDR		02	01652
004112	000170	R								
004113	001000	A	1654		JMP	ICS110			02	01653
004114	004135	R								
004115	006010	A	1655	ICSDB	LDAI	0120000	CHOOSE DCSA		02	01654
004116	120000	A								
004117	006057	A	1656		STAE	STORE			02	01655
004120	000171	R								
004121	001000	A	1657		JMP	ICSDB1			02	01656
004122	004127	R								
			1658	*					02	01657
			1659	*					02	01658
004123	006010	A	1660	ICSDB	LDAI	0140000	CHOOSE DCSB		02	01659
004124	140000	A								
004125	006057	A	1661		STAE	STORE			02	01660
004126	000171	R								
004127	006010	A	1662	ICSDB1	LDAI	15			02	01661
004130	000017	A								
004131	006057	A	1663		STAE	WORD2	SET LAST ADDR		02	01662
004132	000170	R								
004133	001000	A	1664		JMP	ICS110			02	01663
004134	004135	R								
			1665	*					02	01664
			1666	*					02	01665
004135	002000	A	1667	ICS110	CALL	INA,'N'	GET FIRST NUMBER		02	01666
004136	005417	R								
004137	147240	A								
004140	006057	A	1668		STAE	WORD	SAVE IT		02	01667
004141	000167	R								
004142	006147	A	1669		SUBE	WORD2	LEGAL CONSIDERING CS SIZE?		02	01668
004143	000170	R								
004144	005311	A	1670		DAR				02	01669
004145	001002	A	1671		JAP	EXC90	NO		02	01670
004146	000731	R								
004147	002000	A	1672		CALL	INA,'N'	YES, SO GET SECOND NUMBER		02	01671
004150	005417	R								
004151	147240	A								
004152	001010	A	1673		JAZ*	ICS	IF ZERO, TAKE DEFAULT FOR SECOND WORD		02	01672
004153	104027	R								
004154	005012	A	1674		TAB				02	01673
004155	006147	A	1675		SUBE	WORD2	LEGAL CONSIDERING CS?		02	01674
004156	000170	R								
004157	005311	A	1676		DAR				02	01675
004160	001002	A	1677		JAP	EXC90	NO		02	01676
004161	000731	R								
004162	005021	A	1678		TBA				02	01677
004163	006147	A	1679		SUBE	WORD	LEGAL CONSIDERING FIRST NUMBER?		02	01678
004164	000167	R								
004165	001004	A	1680		JAN	EXC90	NO		02	01679
004166	000731	R								
004167	006067	A	1681		STBE	WORD2	LEGAL, SO SAVE IT		02	01680
004170	000170	R								
004171	001000	A	1682		JMP*	ICS			02	01681
004172	104027	R								
			1683		EJEC				02	01682
			1684	*					02	01683
			1685	*					02	01684
			1686	*					02	01685
			1687	*					02	01686
			1688	*					02	01687
			1689	*					02	01688
			1690	*					02	01689
004173	000000	A	1691	ENDCOM	DATA	0			02	01690
004174	002000	A	1692		CALL	FETCHA	GET NEXT CHAR		02	01691
004175	005234	R								
004176	001010	A	1693		JAZ*	ENDCOM			02	01692
004177	104173	R								
004200	006140	A	1694		SUBI	' '	A BLANK?		02	01693
004201	000240	A								
004202	001010	A	1695		JAZ*	ENDCOM	YES		02	01694
004203	104173	R								
004204	001000	A	1696		JMP	EXC90	NO		02	01695
004205	000731	R								
			1697		EJEC				02	01696
			1698	*					02	01697
			1699	*					02	01698
			1700	*					02	01699
			1701	*					02	01700
			1702	*					02	01701
			1703	*					02	01702
004206	000000	A	1704	TMAD	DATA	0			02	01703
004207	006010	A	1705		LDAI	0100000	SELECT WCS ADDR REG		02	01704
004210	100000	A								
			1706		IFT	VORTEX			C.1	02 01705
			1707		GOTO	SKP18,			02	01706
			1713	SKP18	CONT				C.1	02 01712



Address	Hex	Mode	Label	Instruction	Comment	Page	Line	Address
1714			IFF	VORTEX		C.1	02	01713
1715			GOTO	SKP19,			02	01714
1716			ALOC	V\$WCSF	OUTPUT FUNC WORD TO WCS		02	01715
004211	006505	A						
004212	000406	A						
004213	000600	A						
004214	003736	E						
004215	006020	A	1717	LDBI	1 INPUT WCS ADDR (1 WORD)	C.1	02	01716
004216	000001	A						
004217	006010	A	1718	LDAI	TMADX BUFFER ADDR	C.1	02	01717
004220	004266	R	1719	ALOC	V\$WCSI INPUT THE WCS ADDR TO THE BUFFER	C.1	02	01718
004221	006505	A						
004222	000406	A						
004223	000600	A						
004224	003714	E						
004225	006017	A	1720	LDAE	TMADX	C.1	02	01719
004226	004266	R						
004227	006150	A	1721	CONT	SKP19	C.1	02	01720
004230	017000	A	1722	ANAI	017000 GET PAGE #		02	01721
004231	001110	A	1723	JIF	0110, TMAD IF PAGE=0, AND SS1 SET, SUPPRESS TRACE	C.1	02	01722
004232	004206	R						
004233	004243	A	1724	LRLA	3		02	01723
004234	005012	A	1725	TAB			02	01724
004235	002000	A	1726	CALL	DH2 IN HEX		02	01725
004236	006262	R						
004237	006110	A	1727	DRAI	0120000 PUT A BLANK ON ITS LEFT		02	01726
004240	120000	A						
004241	054025	A	1728	STA	TMADY SAVE IT		02	01727
004242	014023	A	1729	LDA	TMADY GET WORD NUMBER		02	01728
004243	006150	A	1730	ANAI	0777		02	01729
004244	000777	A						
004245	005012	A	1731	TAB			02	01730
004246	006030	A	1732	LDXI	TMADY+1		02	01731
004247	004270	R						
004250	002000	A	1733	CALL	DH PUT IN HEX		02	01732
004251	006235	R						
004252	014015	A	1734	LDA	TMADY+1		02	01733
004253	006150	A	1735	ANAI	0377 PUT IN A DASH AS A SEPERATOR		02	01734
004254	000377	A						
004255	006110	A	1736	DRAI	0126400		02	01735
004256	126400	A						
004257	054010	A	1737	STA	TMADY+1		02	01736
004260	002000	A	1738	*			02	01737
004261	004553	R	1739	CALL	SIOUT,3, TMADY OUTPUT THE ADDR SPEC		02	01738
004262	000003	A						
004263	004267	R						
004264	001000	A	1740	JMP*	TMAD DONE HERE		02	01739
004265	104206	R						
004266	000000	A	1741	*			02	01740
004267	000000	A	1742	TMADX	DATA 0 TEMP STORAGE OF ADDR		02	01741
004270	000000	A	1743	*			02	01742
004271	000000	A	1744	TMADY	DATA 0,0,0,0		02	01743
004272	000000	A						
1745			EJEC				02	01744
1746	*						02	01745
1747	*						02	01746
1748	*						02	01747
1749	*						02	01748
1750	*						02	01749
1751	*						02	01750
1752	*						02	01751
1753	*						02	01752
004273	000000	A	1754	RMD	ENTR		02	01753
004274	006027	A	1755	LDBE	RMD		02	01754
004275	004273	R						
004276	016000	A	1756	LDA	0,2 LUN PARAM OF CALL		02	01755
004277	054012	A	1757	STA	RMD1		02	01756
004300	006047	A	1758	INRE	RMD UPDATE RETURN ADDRESS		02	01757
004301	004273	R						
004302	006027	A	1759	LDBE	SYST		02	01758
004303	000134	R						
004304	016000	A	1760	LDA	0,2 SYSTEM FLAG		02	01759
004305	001004	A	1761	JAN*	RMD RETURN IF MDS SYSTEM		02	01760
004306	104273	R						
004307	024025	A	1762	LDB	V\$LUT1		02	01761
004310	016000	A	1763	LDA	0,2		02	01762
004311	006120	A	1764	ADDI	0		02	01763
004312	000000	A						
004312			1765	RMD1	BES 0 LUN		02	01764
004313	005014	A	1766	TAX			02	01765
004314	015000	A	1767	LDA	0,1 LUN ENTRY		02	01766
004315	154750	A	1768	ANA	RHLF		02	01767
004316	005311	A	1769	DAR			02	01768
004317	054017	A	1770	STA	RMDT		02	01769
004320	004201	A	1771	ASLA	1		02	01770
004321	124015	A	1772	ADD	RMDT		02	01771
004322	054014	A	1773	STA	RMDT		02	01772
004323	024012	A	1774	LDB	V\$DSTB		02	01773



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004324 016000 A 1775 LDA 0,2 02 01774
004325 124011 A 1776 ADD RMDT 02 01775
004326 005012 A 1777 TAB 02 01776
004327 016001 A 1778 LDA 1,2 FIRST WORD OF DST 02 01777
004330 004350 A 1779 LSRA 8 LEFT CHAR 02 01778
004331 006140 A 1780 SUBI 0304 D ? 02 01779
004332 000304 A 1781 JMP* RMD A REG ZERO IF ON RMD 02 01780
004333 001000 A 1781
004334 104273 R 1781
004335 000400 A 1782 V$LUT1 DATA 0400 LUT POINTER 02 01781
004336 000355 A 1783 V$DSTB DATA 0355 DST POINTER 02 01782
004337 000000 A 1784 RMDT DATA 0 TEMP STORE 02 01783
004340 000000 A 1785 BIFLG DATA 0 BI ON RMD FLAG, POS=NO, NEG=YES 02 01784
1786 EJECT 02 01785
1787 * 02 01786
1788 * THIS IS A SUBROUTINE TO READ AN RECORD FROM THE SI DEVICE 02 01787
1789 * 02 01788
1790 * CALLING SEQUENCE 02 01789
1791 * CALL SIIN 02 01790
1792 * RETURN A,B,X REGISTERS RESTORED 02 01791
1793 * 02 01792
004341 000000 A 1794 SIIN ENTR 02 01793
004342 006017 A 1795 LDAE MEDIA 02 01794
004343 003170 R 1795
004344 001010 A 1796 JAZ SIIN2 JUMP IF MEDIA = SI 02 01795
004345 004356 R 1796
004346 006017 A 1797 LDAE SIIN 02 01796
004347 004341 R 1797
004350 054111 A 1798 STA PIIN SET UP RETURN ADDRESS 02 01797
004351 001000 A 1799 JMP PIIN+1 GO TO READ FROM PI 02 01798
004352 004463 R 1799
004353 054103 A 1800 STA SIINA 02 01799
004354 064103 A 1801 STB SIINB 02 01800
004355 074103 A 1802 STX SIINX 02 01801
004356 006027 A 1803 SIIN2 LDDE SYST SYSTEM FLAG ADDR 02 01802
004357 000134 R 1803
004360 016000 A 1804 LDA 0,2 02 01803
004361 001004 A 1805 JAN SIIN3 JUMP IF MOS 02 01804
004362 004377 R 1805
004363 014072 A 1806 LDA SIFLG 02 01805
004364 001002 A 1807 JAP SIIN3 JUMP IF NON-RMD 02 01806
004365 004377 R 1807
004366 006010 A 1808 LDAI 36 02 01807
004367 000044 A 1808
004370 006057 A 1809 STAE SIFCB PUT IN RECORD LENGTH 02 01808
004371 000130 E 1809
004372 006010 A 1810 LDAI BUFI 02 01809
004373 000201 R 1810
004374 006030 A 1811 LDXI SIFCB PUT IN BUFFER ADDR 02 01810
004375 004371 E 1811
004376 055001 A 1812 STA 1,X 02 01811
004377 006010 A 1813 SIIN3 LDAI 0120240 BLANK-BLANK 02 01812
004400 120240 A 1813
004401 002000 A 1814 JMPM SAR INITIALIZE INPUT BUFFER TO BLANKS 02 01813
004402 005036 R 1814
004403 000044 A 1815 DATA 36 02 01814
004404 000200 R 1816 DATA BUFI-1 02 01815
1817 SIIN1 READ INDCB,SI,0,1 READ INPUT 02 01816
004405 002000 A 1817
004406 002615 E 1817
004407 100000 A 1817
004410 010002 A 1817
004411 004453 R 1817
004412 000000 A 1817
004413 000000 A 1817
1818 STAT SIINI,*+7,SIEOF,*+7,* 02 01817
004414 002000 A 1818
004415 002624 E 1818
004416 004405 R 1818
004417 004423 R 1818
004420 004442 R 1818
004421 004423 R 1818
004422 004414 R 1818
004423 002000 A 1819 JMPM SOELO SO EQUALS LD? 02 01818
004424 004640 R 1819
004425 001010 A 1820 JAZ SIEXX IF SO, NO LOGOUT CALL 02 01819
004426 004435 R 1820
004427 014023 A 1821 LDA INDCB REQUESTED WORD COUNT 02 01820
004430 054002 A 1822 STA SILO+2 OVERLAY WC OF STANDARD CALL 02 01821
004431 002000 A 1823 SILO CALL LOGOUT,36,BUFI-1 ECHO TO LOG FOR RECORD 02 01822
004432 004661 R 1823
004433 000044 A 1823
004434 000200 R 1823
004435 014021 A 1824 SIEXX LDA SIINA 02 01823
004436 024021 A 1825 LDB SIINB 02 01824
004437 034021 A 1826 LDX SIINX 02 01825
004440 001000 A 1827 RETU* SIIN RETURN 02 01826
004441 104341 R 1827
1828 * 02 01827
004442 002000 A 1829 SIEOF CALL SIOUT,3,SIEOFM REPORT EOF ON SI 02 01828
004443 004553 R 1829
004444 000003 A 1829
004445 004450 R 1829

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004446 001000 A 1830      JMP      E175      RETURN TO OPERATING SYSTEM          02 01829
004447 002343 R          SIEDFM DATA      ' MU03'      EOF ON SI ERROR MESSAGE          02 01830
004450 120240 A 1831      INDCB   DCB      36,BUFI,0          02 01831
004451 146725 A          SIFLG   DATA      0          SI ON RMD FLAG          02 01832
004452 130263 A          SIINA  DATA      0          A REG          02 01833
004453 000044 A 1833      SIINB  DATA      0          B REG          02 01834
004454 000201 R          SIINX  DATA      0          X REG          02 01835
004455 000000 A          EJECE          0          0          02 01836
004456 000000 A          *          *          *          *          *          02 01837
004457 000000 A          *          *          *          *          *          02 01838
004460 000000 A          *          *          *          *          *          02 01839
004461 000000 A          *          *          *          *          *          02 01840
1837      *          *          *          *          *          02 01841
1838      *          *          *          *          *          02 01842
1839      *          *          *          *          *          02 01843
1840      *          *          *          *          *          02 01844
1841      *          *          *          *          *          02 01845
1842      *          *          *          *          *          02 01846
1843      *          *          *          *          *          02 01847
1844      *          *          *          *          *          02 01848
1845      *          *          *          *          *          02 01849
1846      *          *          *          *          *          02 01850
1847      *          *          *          *          *          02 01851
1848      *          *          *          *          *          02 01852
1849      *          *          *          *          *          02 01853
1850      *          *          *          *          *          02 01854
1851      *          *          *          *          *          02 01855
1852      *          *          *          *          *          02 01856
1853      *          *          *          *          *          02 01857
1854      *          *          *          *          *          02 01858
1855      *          *          *          *          *          02 01859
1856      *          *          *          *          *          02 01860
1857      *          *          *          *          *          02 01861
1858      *          *          *          *          *          02 01862
1859      *          *          *          *          *          02 01863
1860      *          *          *          *          *          02 01864
1861      *          *          *          *          *          02 01865
1862      *          *          *          *          *          02 01866
1863      *          *          *          *          *          02 01867
1864      *          *          *          *          *          02 01868
1865      *          *          *          *          *          02 01869
1866      *          *          *          *          *          02 01870
1867      *          *          *          *          *          02 01871
1868      *          *          *          *          *          02 01872
1869      *          *          *          *          *          02 01873
1870      *          *          *          *          *          02 01874
1871      *          *          *          *          *          02 01875
1872      *          *          *          *          *          02 01876
1873      *          *          *          *          *          02 01877
1874      *          *          *          *          *          02 01878
1875      *          *          *          *          *          02 01879
1876      *          *          *          *          *          02 01880
1877      *          *          *          *          *          02 01881
1878      *          *          *          *          *          02 01882
1879      *          *          *          *          *          02 01883
1880      *          *          *          *          *          02 01884
1881      *          *          *          *          *          02 01885
1882      *          *          *          *          *          02 01886
1883      *          *          *          *          *          02 01887
1884      *          *          *          *          *          02 01888
1885      *          *          *          *          *          02 01889
1886      *          *          *          *          *          02 01890

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2000 * THIS ROUTINE WILL INITIALIZE THE LD OUTPUT BUFFER 02 01999
2001 * 02 02000
2002 * CALLING SEQUENCE 02 02001
2003 * JMPM PBUF 02 02002
2004 * 02 02003
2005 * RETURN 02 02004
2006 * 02 02005
005007 000000 A 2007 PBUF ENTR 02 02006
005010 006010 A 2008 LDAI 0120240 ASCII SPACES 02 02007
005011 120240 A 2009 JMPM SAR INITIALIZE BUFFER 02 02008
005012 002000 A 2010 DATA 36 WORD COUNT 02 02009
005013 005036 R 2011 DATA BUFR BUFFER ADDR 02 02010
005014 000044 A 2012 JMP* PBUF RETURN 02 02011
005015 000245 R
005016 001000 R
005017 105007 R
2013 * EJEC 02 02012
2014 * 02 02013
2015 * THIS IS A SUBROUTINE TO STORE THE A-REGISTER REPEATEDLY 02 02014
2016 * CALLING SEQUENCE 02 02015
2017 * JMPM SAR 02 02016
2018 * DATA COUNT 02 02017
2019 * DATA DATA-ADDRESS 02 02018
2020 * RETURN 02 02019
2021 * 02 02020
005020 034015 A 2022 SAR1 LDX SAR GET ADDRESS OF CALL 02 02021
005021 005012 A 2023 TAB PUT A-REG. INTO B-REG. 02 02022
005022 015000 A 2024 LDA 0,X GET COUNT 02 02023
005023 035001 A 2025 LDX 1,X GET DATA ADDRESS 02 02024
005024 005311 A 2026 SAR2 DAR DECREMENT COUNT 02 02025
005025 001004 A 2027 JAN SAR3 JUMP IF END OF COUNT 02 02026
005026 005033 R
005027 065000 A 2028 STB 0,X STORE 'A-REGISTER' 02 02027
005030 005144 A 2029 IXR INCREMENT DATA ADDRESS 02 02028
005031 001000 A 2030 JMP SAR2 KEEP TRYING 02 02029
005032 005024 R
2031 * 02 02030
005033 044002 A 2032 SAR3 INR SAR ADJUST 02 02031
005034 044001 A 2033 INR SAR RETURN ADDRESS 02 02032
005035 001000 A 2034 JMP 0 RETURN 02 02033
005036 000000 A
2035 * 02 02034
2036 * ENTRY POINT 02 02035
2037 * 02 02036
005036 001000 A 2038 SAR BES 0 ENTRY 02 02037
005037 005020 R 2039 JMP SAR1 02 02038
005040 005020 R
2040 * EJEC 02 02039
2041 * 02 02040
2042 * THIS ROUTINE WILL SPACE THE LD 02 02041
2043 * 02 02042
2044 * CALLING SEQUENCE 02 02043
2045 * JMPM SPAC 02 02044
2046 * 02 02045
2047 * RETURN 02 02046
2048 * 02 02047
005041 000000 A 2049 SPAC ENTR 02 02048
005042 002000 A 2050 CALL PBUF CLEAR OUTPUT BUFFER 02 02049
005043 005007 R
005044 002000 A 2051 CALL LDOUT,36,BUFR SPACE LD 02 02050
005045 004661 R
005046 000044 A
005047 000245 R
005050 001000 A 2052 JMP* SPAC RETURN 02 02051
005051 105041 R
2053 * 02 02052
2054 * EJEC 02 02053
2055 * 02 02054
2056 * THIS ROUTINE HANDLES TOP OF FORM AND STANDARD HEADER OUTPUT 02 02055
2057 * 02 02056
2058 * CALLING SEQUENCE 02 02057
2059 * CALL TPFM 02 02058
2060 * RETURN 02 02059
2061 * 02 02060
005052 000000 A 2062 TPFM ENTR 02 02061
2063 FUNC LODCB,LD,0 02 02062
005053 002000 A
005054 004713 E
005055 100000 A
005056 002405 A
005057 004773 R
005060 000000 A
005061 000000 A
005062 014123 A 2064 LDA PGND PAGE NUMBER 02 02063

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E.2 VORTEX LISTING

MIUTIL

PROGRAM PAGE 35

LISTING PAGE ( 593)

005074	002000	A	2072	JMPM	TPST	STORE				02	02071
005075	005211	R									
005076	024111	A	2073	LDB	JOB					02	02072
005077	026000	A	2074	LDB	0,2					02	02073
005100	036000	A	2075	LDB	0,2					02	02074
005101	006020	A	2076	LDBI	HDR+12	HEADER AREA				02	02075
005102	005161	R									
005103	002000	A	2077	JMPM	TPST	STORE				02	02076
005104	005211	R									
005105	006027	A	2078	LDBE	SYST					02	02077
005106	000134	R									
005107	016000	A	2079	LDA	0,2	SYSTEM FLAG				02	02078
005110	001010	A	2080	JAZ	*+6	VORTEX				02	02079
005111	005116	R									
005112	006030	A	2081	LDCI	TPMOS	MOS				02	02080
005113	005176	R									
005114	001000	A	2082	JMP	*+4					02	02081
005115	005120	R									
005116	006030	A	2083	LDCI	TPVOR	VORTEX				02	02082
005117	005202	R									
005120	006020	A	2084	LDBI	HDR+17	HEADER AREA				02	02083
005121	005166	R									
005122	002000	A	2085	JMPM	TPST	STORE				02	02084
005123	005211	R									
005124	006010	A	2086	LDAI	1					02	02085
005125	000001	A									
005126	006057	A	2087	STAE	LDLINE	RESET LINE NUMBER				02	02086
005127	005006	R									
005130	002000	A	2088	CALL	LOOUT,25,HDR	OUTPUT HEADER				02	02087
005131	004661	R									
005132	000031	A									
005133	005145	R									
005134	002000	A	2089	JMPM	PBUF	CLEAR OUTPUT BUFFER				02	02089
005135	005007	R									
005136	002000	A	2090	CALL	LOOUT,1,BUFR	SPACE LD				02	02089
005137	004661	R									
005140	000001	A									
005141	000245	R									
005142	044043	A	2091	INR	PGND	INCR PAGE NUMBER				02	02090
005143	001000	A	2092	RETU*	TPFRM					02	02091
005144	105052	R									
005145	120240	A	2093	HDR	DATA	' PAGE DDDD MM/DD/YY JOBNAME SYSTEM MIUTIL'				02	02092
005146	150301	A								02	02093
005147	143703	A									
005150	120240	A									
005151	142304	A									
005152	142304	A									
005153	120240	A									
005154	146715	A									
005155	127704	A									
005156	142257	A									
005157	154731	A									
005160	120240	A									
005161	145317	A									
005162	141316	A									
005163	140715	A									
005164	142640	A									
005165	120240	A									
005166	120323	A									
005167	154723	A									
005170	152305	A									
005171	146640	A									
005172	120240	A									
005173	146711	A									
005174	152724	A									
005175	144714	A									
005176	120240	A	2095	TPMOS	DATA	' MOS '				02	02094
005177	146717	A									
005200	151640	A									
005201	120240	A									
005202	120326	A	2096	TPVOR	DATA	' VORTEX '				02	02095
005203	147722	A									
005204	152305	A									
005205	154240	A									
005206	000000	A	2097	PGND	DATA	0				02	02096
			2098	EXT	\$DATE	CURRENT PAGE NUMBER				02	02097
			2099	EXT	\$JOB					02	02098
005207	100000	E	2100	DATE	DATA	(&DATE)*				02	02099
005210	100000	E	2101	JOB	DATA	(&JOB)*				02	02100
			2102	*TPST						02	02101
005211	000000	A	2103	ENTR						02	02102
005212	015000	A	2104	LDA	0,1	CHAR 1-2				02	02103
005213	056000	A	2105	STA	0,2					02	02104
005214	015001	A	2106	LDA	1,1	CHAR 3-4				02	02105
005215	056001	A	2107	STA	1,2					02	02106
005216	015002	A	2108	LDA	2,1	CHAR 5-6				02	02107
005217	056002	A	2109	STA	2,2					02	02108
005220	015003	A	2110	LDA	3,1	CHAR 7-8				02	02109
005221	056003	A	2111	STA	3,2					02	02110
005222	001000	A	2112	JMP*	TPST					02	02111
005223	105211	R									
			2113	EJEC						02	02112



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2114 ***** 02 02113
2115 * 02 02114
2116 *          FETCH 02 02115
2117 * 02 02116
2118 * 02 02117
2119 *          THIS IS A SUBROUTINE TO FETCH A CHAR FROM THE INPUT BUFFER 02 02118
2120 * 02 02119
2121 *          CALLING SEQUENCE 02 02120
2122 *          JMPM   FETCH      GET FIRST CHAR 02 02121
2123 *          OR 02 02122
2124 *          JMPM   FETCHA     GET CHAR THERE AFTER 02 02123
2125 *          RETURN: 02 02124
2126 *          CHAR IN A REG; B REG DESTROYED; X REG SAME 02 02125
2127 * 02 02126
2128 * ***** 02 02127
2129 * 02 02128
005224 000000 A 2130  FETCH  ENTR  02 02129
005225 006017 R 2131  LDAE   02 02130
005226 005224 R          02 02131
005227 054004 A 2132  STA   02 02131
005230 005002 A 2133  TZE   02 02132
005231 064031 A 2134  STB   02 02132
005232 001000 A 2135  JMP   02 02133
005233 005235 R          02 02134
005234 000000 A 2136  FETCHA ENTR  02 02135
005235 014025 A 2137  LDA   02 02135
005236 004341 A 2138  LSRA  1 02 02137
005237 054024 A 2139  STA   02 02138
005240 006010 A 2140  LDAI  BUFI 02 02139
005241 000201 R          02 02140
005242 124021 A 2141  ADD   02 02140
005243 005012 A 2142  TAB   02 02141
005244 026000 A 2143  LDB   0,2 02 02142
005245 014015 A 2144  LDA   02 02143
005246 154016 A 2145  ANA   BIT0 02 02144
005247 001010 A 2146  JAZ   02 02145
005250 005256 R          02 02146
005251 005021 A 2147  TBA   02 02146
005252 154013 A 2148  ANA   RHLF 02 02147
005253 044007 A 2149  INR   02 02148
005254 001000 A 2150  JMP*  02 02148
005255 105234 R          02 02149
005256 005021 A 2151  FETCHB TBA   02 02150
005257 004350 A 2152  LSRA  8 02 02151
005260 044002 A 2153  INR   02 02152
005261 001000 A 2154  JMP*  02 02153
005262 105234 R          02 02154
005263 000000 A 2155  CHAR  DATA 0 02 02154
005264 000000 A 2156  FWORD DATA 0 02 02155
005265 000001 A 2157  BIT0  DATA 01 02 02156
005266 000377 A 2158  RHLF  DATA 0377 02 02157
2159  EJEC 02 02158
2160 * 02 02159
2161 *          CONVERT CONTENTS OF A REG TO ASCII DEVIMAL 02 02160
2162 * 02 02161
2163 *          CALLING SEQUENCE 02 02162
2164 *          LDA   BINARY 02 02163
2165 *          CALL  BNASC 02 02164
2166 *          RETURN RESULTS IN A AND B 02 02165
2167 * 02 02166
005267 000000 A 2168  BNASC  ENTR  02 02167
005270 006030 A 2169  LDXI  TABL+8 02 02168
005271 005354 R          02 02169
005272 054052 A 2170  STA   02 02169
005273 005002 A 2171  TZE   02 02170
005274 014050 A 2172  LDA   02 02171
005275 145000 A 2173  GET   SUB 0,1 02 02172
005276 001004 A 2174  JAN   GET2 02 02173
005277 005303 R          02 02174
005300 005122 A 2175  IBR   02 02174
005301 001000 A 2176  JMP   GET 02 02175
005302 005275 R          02 02176
005303 125000 A 2177  GET2  ADD 0,1 02 02176
005304 054040 A 2178  STA   02 02177
005305 005021 A 2179  TBA   02 02178
005306 124047 A 2180  ADD   ZEROB 02 02179
005307 055001 A 2181  STA   1,1 02 02180
005310 005344 A 2182  DXR   02 02181
005311 005344 A 2183  DXR   02 02182
005312 005041 A 2184  TXA   02 02183
005313 006140 A 2185  SUBI  TABL 02 02184
005314 005344 R          02 02185
005315 001010 A 2186  JAZ   K+4 02 02185
005316 005321 R          02 02186
005317 001000 A 2187  JMP   GET-2 02 02186
005320 005273 R          02 02187
005321 014023 A 2188  LDA   02 02187
005322 124033 A 2189  ADD   ZEROB 02 02188
005323 054021 A 2190  STA   02 02189
005324 006030 A 2191  LDXI  PUT 02 02190
005325 005343 R          02 02191
005326 007401 A 2192  SOF   02 02191
005327 015002 A 2193  PUTLP LDA 2,1 02 02192
    
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005431	004350	A	2263	LSRA	8	MOVE CHARACTER DONE INTO LOWER BYTE	02	02262
005432	006140	A	2264	SUBI	0316	N	02	02263
005433	000316	A						
005434	001010	A	2265	JAZ	INA3	NO READ REQUESTED	02	02264
005435	005444	R						
005436	002000	A	2266	CALL	SIIN	INPUT VALUE	02	02265
005437	004341	R						
005440	002000	A	2267	CALL	FETCH	GET THE FIRST CHAR	02	02266
005441	005224	R						
005442	001000	A	2268	JMP	INA3+2		02	02267
005443	005446	R						
			2269	*				
005444	002000	A	2270	JMPM	FETCHA	GET CHARACTER	02	02268
005445	005234	R						
005446	001010	A	2271	JAZ	INA5		02	02270
005447	005413	R						
005450	034034	A	2272	STA	INAA	SAVE CHAR	02	02271
005451	006140	A	2273	SUBI	0240	BLANK	02	02272
005452	000240	A						
005453	001010	A	2274	JAZ	INA5	GET OUT	02	02273
005454	005413	R						
005455	006140	A	2275	SUBI	014	0254	02	02274
005456	000014	A						
005457	001010	A	2276	JAZ	INA5	COMMA	02	02275
005460	005413	R						
005461	014023	A	2277	LDA	INAA	INPUT CHAR	02	02276
005462	002000	A	2278	JMPM	CONV	CONVERT CHAR TO HEX	02	02277
005463	005357	R						
005464	001004	A	2279	JAN	INAB	JUMP IF NOT A HEX CHAR	02	02278
005465	005503	R						
005466	005014	A	2280	TAX			02	02279
005467	014017	A	2281	LDA	INAV	ACCUMULATED VALUE	02	02280
005470	005002	A	2282	TZB			02	02281
005471	004444	A	2283	LLRL	4		02	02282
005472	001020	A	2284	JBZ	*+4	JUMP IF NO OVERFLOW	02	02283
005473	005476	R						
005474	001000	A	2285	JMP	INAB	REJECT CHAR	02	02284
005475	005503	R						
005476	005051	A	2286	MERG	051	ADD NEW CHAR	02	02285
005477	054007	A	2287	STA	INAV	SAVE VALUE	02	02286
005500	044005	A	2288	INR	INAN	INCREMENT NUMBER OF DIGITS	02	02287
005501	001000	A	2289	JMP	INA3	KEEP TRYING	02	02288
005502	005444	R						
			2290	*				
			2291	*				
005503	001000	A	2292	JMP	INH8	INPUT ERROR	02	02289
005504	005640	R						
005505	000000	A	2293	INAA	DATA	LAST INPUT CHAR	02	02290
005506	000000	A	2294	INAN	DATA	NO OF CHARS INPUT	02	02291
005507	000000	A	2295	INAV	DATA	ACCUMULATED INPUT VALUE	02	02292
			2296	*				
			2297	*				
			2298	*				
			2299	*				
			2300	*				
			2301	*				
			2302	*				
			2303	*				
			2304	*				
			2305	*				
			2306	*				
			2307	*				
005510	002000	A	2308	JMPM	MOVW	MOVE INPUT TO V,V+1,V+2,V+3	02	02293
005511	006367	R						
005512	000004	A	2309	DATA	4	WORD COUNT	02	02294
005513	005654	R	2310	DATA	INHT	START LOCATION	02	02295
005514	000437	R	2311	DATA	V	END LOCATION	02	02296
			2312	*				
005515	024135	A	2313	LDB	INH8	GET DIGIT COUNT	02	02297
005516	034132	A	2314	LDB	INH8	LAST INPUT CHAR	02	02298
005517	001000	A	2315	JMP	0	RETURN	02	02299
005520	000000	A						
			2316	*				
			2317	*				
			2318	*				
005520			2319	INH	BES	0	02	02300
005521	005001	A	2320	TZA		INITIATE	02	02301
005522	054130	A	2321	STA	INH8	DIGIT COUNT	02	02302
005523	054130	A	2322	STA	INH8	CLEAR INPUT DATA STRING	02	02303
005524	054130	A	2323	STA	INH8+1		02	02304
005525	054130	A	2324	STA	INH8+2		02	02305
005526	054130	A	2325	STA	INH8+3		02	02306
			2326	*				
005527	002000	A	2327	CALL	SIIN	INPUT VALUE	02	02307
005530	004341	R						
005531	002000	A	2328	JMPM	FETCH	GET FIRST CHAR	02	02308
005532	005224	R						
005533	054115	A	2329	STA	INH8		F	*****
005534	006140	A	2330	SUBI	'='		F	*****
005535	000275	A						
005536	001010	A	2331	JAZ	INH6	IF ZERO BEFORE STORE FIELD VALUE	F	*****
005537	005627	R						
005540	006140	A	2332	SUBI	'+'-'='		F	*****



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005541 177756 A
005542 001010 A 2333 JAZ INH7 IF DO NOT ZERO BEFORE STORE FIELD VALUE F *****
005543 005636 R
005544 014104 A 2334 LDA INHA F *****
005545 001000 A 2335 JMP INH4 CONTINUE PROCESSING F *****
005546 005554 R
005547 002000 A 2336 INH3 JMPM FETCHA 02 02329
005550 005234 R
005551 034077 A 2337 STA INHA 02 02330
005552 001010 A 2338 JAZ INH5 CARRIAGE RETURN--RETURN TO EXEC 02 02331
005553 005510 R
005554 005554 R 2339 INH4 EQU * F *****
005554 006140 A 2340 SUBI 0240 BLANK 02 02332
005555 000240 A
005556 001010 A 2341 JAZ INH5 JUMP IF BLANK 02 02333
005557 005510 R
005560 006140 A 2342 SUBI 014 0254 02 02334
005561 000014 A
005562 001010 A 2343 JAZ INH5 JUMP IF COMMA 02 02335
005563 005510 R
005564 014064 A 2344 LDA INHA 02 02336
005565 002000 A 2345 JMPM CONV CONVERT CHAR TO HEX 02 02337
005566 005357 R
005567 001004 A 2346 JAN INH8 JUMP IF ILLEGAL 02 02338
005570 005640 R
005571 005014 A 2347 TAX 02 02339
2348 * 02 02340
2349 * ADD CHAR TO DATA STRING 02 02341
2350 * 02 02342
005572 024060 A 2351 INH2 LDB INHN GET COUNT 02 02343
005573 074056 A 2352 STX INHC SAVE DIGIT 02 02344
005574 014057 A 2353 LDA INHT CHARS 1-4 02 02345
005575 005002 A 2354 TZA 02 02346
005576 004444 A 2355 LLRL 4 SHIFT OUT MS CHAR 02 02347
005577 001020 A 2356 JNZ *+4 JUMP IF NO OVERFLOW 02 02348
005600 005600 R
005601 001000 A 2357 JMP INH8 16 CHARS ALREADY INPUT 02 02349
005602 005640 R
005603 014050 A 2358 LDA INHT CHARS 1-4 02 02350
005604 024050 A 2359 LDB INHT+1 CHARS 5-8 02 02351
005605 004444 A 2360 LLRL 4 02 02352
005606 054045 A 2361 STA INHT NEW CHARS 1-4 02 02353
005607 005001 A 2362 TZA 02 02354
005610 004454 A 2363 LLRL 12 02 02355
005611 024044 A 2364 LDB INHT+2 CHARS 9-12 02 02356
005612 004444 A 2365 LLRL 4 02 02357
005613 054041 A 2366 STA INHT+1 NEW CHARS 5-8 02 02358
005614 005001 A 2367 TZA 02 02359
005615 004454 A 2368 LLRL 12 02 02360
005616 024040 A 2369 LDB INHT+3 CHARS 13-16 02 02361
005617 004444 A 2370 LLPL 4 02 02362
005620 054035 A 2371 STA INHT+2 CHARS 9-12 02 02363
005621 014030 A 2372 LDA INHC INPUT DIGIT 02 02364
005622 005031 A 2373 MERG 031 ADD NEW DIGIT 02 02365
005623 054033 A 2374 STA INHT+3 CHARS 13-16 02 02366
2375 * 02 02367
005624 044026 A 2376 INR INHN INCREMENT COUNT 02 02368
005625 001000 A 2377 JMP INH3 KEEP TRYING 02 02369
005626 005547 R
005627 006020 A 2378 INH6 LDBI MSUF ROM WORD ADDR F *****
005630 000173 R
005631 005001 A 2379 TZA F *****
005632 056000 A 2380 STA 0,2 ZERO F *****
005633 056001 A 2381 STA 1,2 ENTIRE F *****
005634 056002 A 2382 STA 2,2 ROM F *****
005635 056003 A 2383 STA 3,2 WORD F *****
005636 001000 A 2384 INH7 JMP FLDCG PROCESS FIELD CHANGE DIRECTIVE F *****
005637 005660 R
2385 * 02 02370
005640 002000 A 2386 INH8 CALL CIBUT,3,INER OUTPUT ERROR 02 02371
005641 004553 R
005642 000003 A
005643 005646 R
005644 001000 A 2387 JMP EXC10 TRY AGAIN 02 02372
005645 000673 R
2388 * 02 02373
005646 120240 A 2389 INER DATA ' MU02' ILLEGAL HEX INPUT 02 02374
005647 146725 A
005650 130262 A
2390 * 02 02375
005651 000000 A 2391 INHA DATA 0 LAST INPUT CHAR 02 02376
005652 000000 A 2392 INHC DATA 0 LAST INPUT DIGIT 02 02377
005653 000000 A 2393 INHN DATA 0 02 02378
005654 2394 INHT BSS 4 INPUT STRING 02 02379
2395 * 02 02380
2396 * THIS IS A SUBROUTINE TO HANDLE THE CHANGE CENTRAL CONTROL F *****
2397 * STORE BY FIELD SPECIFICATION F *****
2398 * F *****
2399 * CALLING SEQUENCE F *****
2400 * JMP FLDCG F *****
2401 * F *****
2402 * RETURNS TO SIMULATOR EXEC FOR PROCESSING OF NEXT DIRECTIVE F *****
2403 * F *****

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006012	002000	R	2473	FLD40	EQU	*				F	*****
006012	002000	A	2474		JMPM	FETCHA		FETCH NEXT CHAR		F	*****
006013	005234	R									
006014	005012	A	2475		TAB					F	*****
006015	006140	A	2476		SUBI	.	.			F	*****
006016	000240	A									
006017	001010	A	2477		JAZ	E114A		IF DISPLAY NEXT WORD		F	*****
006020	001541	R									
006021	005021	A	2478		TBA					F	*****
006022	001000	A	2479		JMP	FLD05		CONTINUE DIRECTIVE PROCESSING		F	*****
006023	005662	R									
006024	006020	A	2480	FLD50A	EQU	*		SPECIAL PROCESSING FOR FS FIELD		F	*****
006025	000002	A	2481		LDBI	2		SET FOR FS FIELD ROTATE		F	*****
006026	001000	A	2482		JMP	FLD50B				F	*****
006027	006031	R									
006030	006030	R	2483	FLD50	EQU	*		SPECIAL PROCESSING FOR IM FIELD		F	*****
	005102	A	2484		INCR	02		SET FOR IM FIELD ROTATE		F	*****
	006031	R	2485	FLD50B	EQU	*				F	*****
006031	064010	A	2486		STB	FLD51		FIELD FLAG		F	*****
006032	005021	A	2487		TBA					F	*****
006033	006120	A	2488		ADDI	16		SET UP LLRL INST		F	*****
006034	000020	A									
006035	124024	A	2489		ADD	FLLRL				F	*****
006036	054012	A	2490		STA	FLD56		ROTATE INTO A REG LSBS		F	*****
006037	006010	A	2491		LDAI	16				F	*****
006040	000020	A									
006041	006140	A	2492		SUBI	0		SET UP RESTORE ROTATE		F	*****
006042	000000	A									
006042		A	2493	FLD51	BES	0				F	*****
006043	124016	A	2494		ADD	FLLRL		LLRL INST		F	*****
006044	054010	A	2495		STA	FLD57				F	*****
006045	034022	A	2496		LDB	FLD95		CCS WORD SUB ADDR		F	*****
006046	015000	A	2497		LDA	0,X		LSB PORTION		F	*****
006047	005344	A	2498		DXR			POINT TO NEXT HIGH ORDER BITS		F	*****
006050	025000	A	2499		LDB	0,X		MSB PORTION		F	*****
006051	004440	A	2500	FLD56	LLRL	0		POSITION FIELD INTO A REG LSBS		F	*****
006052	006150	A	2501		ANAI	0177760		MASK OUT FIELD		F	*****
006053	177760	A									
006054	124007	A	2502		APD	FLD91		CHANGE VALUE		F	*****
006055	004440	A	2503	FLD57	LLRL	0		RETURN FIELDS TO PROPER POSITION		F	*****
006056	063000	A	2504		STB	0,X				F	*****
006057	055001	A	2505		STA	1,X				F	*****
006060	001000	A	2506		JMP	FLD39		CONTINUE FIELD PROCESSING		F	*****
006061	006001	A									
006062	004440	A	2507	*						F	*****
006063	000000	A	2508	FLLRL	LLRL	0		LLRL INSTRUCTION BASE VALUE		F	*****
006064	000000	A	2509	FLD90	DATA	0		FIELD NAME		F	*****
006065	000000	A	2510	FLD91	DATA	0		NEW FIELD VALUE		F	*****
006066	000000	A	2511	FLD92	DATA	0		NAME TABLE POINTER		F	*****
006067	000000	A	2512	FLD93	DATA	0		TERM CHAR		F	*****
006070	000000	A	2513	FLD94	DATA	0				F	*****
006070	000000	A	2514	FLD95	DATA	0		ROM WORD SUBCOMP ADDR		F	*****
006071	002000	A	2515	*						F	*****
006072	004553	R	2516	FLD60	CALL	SIDUT,3,FLER1		OUTPUT FIELD NAME ERROR		F	*****
006073	000003	A									
006074	006105	R									
006075	001000	A	2517		JMP	EXC10		TRY AGAIN		F	*****
006076	000673	A									
006077	002000	A	2518	FLD65	CALL	SIDUT,3,FLER2		OUTPUT FIELD RANGE ERROR		F	*****
006100	004553	R									
006101	000003	A									
006102	006110	R									
006103	001000	A	2519		JMP	EXC10		TRY AGAIN		F	*****
006104	000673	A									
006105	120240	A	2520	FLER1	DATA	' MU16'				F	*****
006106	146725	A									
006107	130666	A									
006110	120240	A	2521	FLER2	DATA	' MU17'				F	*****
006111	146725	A									
006112	130666	A									
			2522	*						F	*****
			2523	*	FIELD NAME TABLE					F	*****
			2524	*	3 WORD ENTRY					F	*****
			2525	*	1=2 CHAR NAME					F	*****
			2526	*	2=FIELD SIZE					F	*****
			2527	*	3=LOW ORDER BIT POSITION					F	*****
			2528	*						F	*****
			2529	FLNAM	EQU	*				F	*****
006113	140701	A	2530		DATA	'AA',4,0				F	*****
006114	000004	A									
006115	000000	A									
006116	141302	A	2531		DATA	'BB',4,4				F	*****
006117	000004	A									
006120	000004	A									
006121	151710	A	2532		DATA	'SH',3,8				F	*****
006122	000000	A									
006123	000010	A									
006124	154306	A	2533		DATA	'XF',2,11				F	*****
006125	000002	A									
006126	000010	A									
006127	153766	A	2534		DATA	'WF',1,13				F	*****



006130	000001	A						
006131	000015	A						
006132	153306	A	2535	DATA	'VF',1,14		F	*****
006133	000001	A						
006134	000016	A						
006135	151703	A	2536	DATA	'SC',1,15		F	*****
006136	000001	A						
006137	000017	A						
006140	153722	A	2537	DATA	'WR',1,16		F	*****
006141	000001	A						
006142	000020	A						
006143	141706	A	2538	DATA	'CF',2,17		F	*****
006144	000002	A						
006145	000021	A						
006146	146706	A	2539	DATA	'MF',1,19		F	*****
006147	000001	A						
006150	000023	A						
006151	143306	A	2540	DATA	'FF',4,20		F	*****
006152	000004	A						
006153	000024	A						
006154	151306	A	2541	DATA	'RF',3,24		F	*****
006155	000003	A						
006156	000030	A						
006157	146301	A	2542	DATA	'LA',2,27		F	*****
006160	000002	A						
006161	000033	A						
006162	146302	A	2543	DATA	'LB',2,29		F	*****
006163	000002	A						
006164	000035	A						
006165	144715	A	2544	DATA	'IM',4,31		F	*****
006166	000004	A						
006167	000037	A						
006170	140702	A	2545	DATA	'AB',2,35		F	*****
006171	000002	A						
006172	000043	A						
006173	146722	A	2546	DATA	'MR',1,37		F	*****
006174	000001	A						
006175	000045	A						
006176	143706	A	2547	DATA	'GF',4,38		F	*****
006177	000004	A						
006200	000046	A						
006201	151706	A	2548	DATA	'SF',2,42		F	*****
006202	000002	A						
006203	000052	A						
006204	152306	A	2549	DATA	'TF',2,44		F	*****
006205	000002	A						
006206	000054	A						
006207	143323	A	2550	DATA	'FS',4,46		F	*****
006210	000004	A						
006211	000056	A						
006212	146724	A	2551	DATA	'MT',1,50		F	*****
006213	000001	A						
006214	000062	A						
006215	146723	A	2552	DATA	'MS',4,51		F	*****
006216	000004	A						
006217	000063	A						
006220	140706	A	2553	DATA	'AF',5,55		F	*****
006221	000005	A						
006222	000067	A						
006223	152323	A	2554	DATA	'TS',4,60		F	*****
006224	000004	A						
006225	000074	A						
006226	000000	A	2555	DATA	0	END OF TABLE	F	*****
			2556				F	*****
			2557	EQU	*	BIT MASK TABLE	F	*****
006227	000000	R	2558	FLMSK			F	*****
006230	000001	A	2559	DATA	0		F	*****
006231	000003	A	2560	DATA	01		F	*****
006232	000007	A	2561	DATA	03		F	*****
006233	000017	A	2562	DATA	07		F	*****
006234	000037	A	2563	DATA	017		F	*****
			2564	DATA	037		F	*****
			2565	EJEC				02 02380
			2566	*				02 02381
			2567	*				02 02382
			2568	*				02 02383
			2569	*				02 02384
			2570	*				02 02385
			2571	*				02 02386
			2572	*				02 02387
			2573	*				02 02388
			2574	*				02 02389
			2575	*				02 02390
			2576	*				02 02391
			2577	*				02 02392
			2578	*				02 02393
			2579	*				02 02394
006235	000000	A	2580	ENTRY POINT				02 02395
006236	002000	A	2581	ENTR				02 02396
006237	006262	R		JMPM	0H2	CONVERT FIRST CHAR		02 02397
006240	004250	A	2582	LRLA	8	SAVE		02 02398
006241	053000	A	2583	STA	0,1			02 02399
006242	002000	A		JMPM	0H2	CONVERT SECOND CHAR		
006243	006262	R						



Address	Hex	Mode	Label	Op	Description	Line	Page
006244	115000	A	2584	DRA	0,1	ADD TO FIRST CHAR	02 02400
006245	055000	A	2585	STA	0,1	STORE IN BUFFER	02 02401
006246	005144	A	2586	IXR			02 02402
006247	002000	A	2587	JMPM	DH2	CONVERT THIRD CHAR	02 02403
006250	006262	R					
006251	004250	A	2588	LRLA	8		02 02404
006252	055000	A	2589	STA	0,1		02 02405
006253	002000	A	2590	JMPM	DH2	CONVERT FOURTH CHAR	02 02406
006254	006262	R					
006255	115000	A	2591	DRA	0,1	ADD TO THIRD CHAR	02 02407
006256	055000	A	2592	STA	0,1	STORE IN BUFFER	02 02408
006257	005144	A	2593	IXR			02 02409
006260	001000	A	2594	JMP*	DH	RETURN	02 02410
006261	106235	R					
			2595 *				02 02411
006262	000000	A	2596	ENTR			02 02412
			DH2				
006263	005001	A	2597	TZA			02 02413
006264	004444	A	2598	LLRL	4	NEXT 4-BIT DIGIT	02 02414
006265	006140	A	2599	SUBI	012		02 02415
006266	000012	A					
006267	001004	A	2600	JAN	*+4	JUMP IF 0-9	02 02416
006270	006273	R					
006271	006120	A	2601	ADDI	07	A-F	02 02417
006272	000007	A					
006273	006120	A	2602	ADDI	012		02 02418
006274	000012	A					
006275	006120	A	2603	ADDI	0260	CONVERT TO ASCII	02 02419
006276	000260	A					
006277	001000	A	2604	JMP*	DH2	RETURN	02 02420
006300	106262	R					
			2605 *				02 02421
			2606	EJEC			02 02422
			2607 *				02 02423
			2608 *				02 02424
			2609 *				02 02425
			2610 *				02 02426
			2611 *				02 02427
			2612 *				02 02428
			2613 *				02 02429
			2614 *				02 02430
			2615 *				02 02431
			2616 *				02 02432
			2617 *				02 02433
			2618 *				02 02434
			2619	DHA			02 02435
006301	000000	A	2619	ENTR			02 02436
006302	004050	A	2620	LRLB	8	LEFT-JUSTIFY DIGITS	02 02437
006303	002000	A	2621	JMPM	DH2	CONVERT FIRST DIGIT	02 02438
006304	006262	R					
006305	004250	A	2622	LRLA	8	POSITION DIGIT	02 02439
006306	055000	A	2623	STA	0,1		02 02440
006307	002000	A	2624	JMPM	DH2	CONVERT SECOND DIGIT	02 02441
006310	006262	R					
006311	115000	A	2625	DRA	0,1	ADD TO FIRST	02 02442
006312	055000	A	2626	STA	0,1		02 02443
006313	005144	A	2627	IXR		STEP DATA STRING INDEX	02 02444
006314	001000	A	2628	JMP*	DHA	RETURN	02 02445
006315	106301	R					
			2629	EJEC			02 02446
			2630 *				02 02447
			2631 *				02 02448
			2632 *				02 02449
			2633 *				02 02450
			2634 *				02 02451
			2635 *				02 02452
			2636 *				02 02453
			2637 *				02 02454
			2638 *				02 02455
			2639 *				02 02456
			2640 *				02 02457
			2641	MOV1			02 02458
006316	034050	A	2641	LDX	MOVW		02 02459
006317	015001	A	2642	LDA	1,1	GET 'FROM' ADDRESS	02 02460
006320	145002	A	2643	SUB	2,1	SUBTRACT 'TO' ADDRESS	02 02461
006321	001004	A	2644	JAN	MOVW	JUMP IF REVERSE MOVE	02 02462
006322	006341	R					
			2645 *				02 02463
006323	025001	A	2646	LDB	1,1	GET 'FROM' ADDRESS	02 02464
006324	015000	A	2647	LDA	0,1	GET COUNT	02 02465
006325	035002	A	2648	LDX	2,1	GET 'TO' ADDRESS	02 02466
006326	005311	A	2649	DAR		DECREMENT COUNT	02 02467
006327	001004	A	2650	JAN	MOVE	JUMP IF END OF COUNT	02 02468
006330	006363	R					
006331	054040	A	2651	STA	MOVW		02 02469
006332	016000	A	2652	LDA	0,2		02 02470
006333	055000	A	2653	STA	0,1		02 02471
006334	005122	A	2654	IBR			02 02472
006335	005144	A	2655	IXR			02 02473
006336	014033	A	2656	LDA	MOVW	GET COUNT	02 02474
006337	001000	A	2657	JMP	MOV2	KEEP TRYING	02 02475
006340	006326	R					
			2658 *				02 02476
006341	015000	A	2659	MOV2			02 02477
006342	125001	A	2660	LDA	0,1	GET COUNT	02 02478
006343	005012	A	2661	ADD	1,1	ADD 'FROM' ADDRESS	02 02479
				TAB			02 02480



006344	015000	A	2662	LDA	0,1	GET COUNT	02	02478
006345	054024	A	2663	STA	MOV3	SAVE	02	02479
006346	125002	A	2664	ADD	2,1	ADD 'TO' ADDRESS	02	02480
006347	005014	A	2665	TAX			02	02481
006350	014021	A	2666	MOV3	MOV3		02	02482
006351	005311	A	2667	LDA	MOV3	DECREMENT COUNT	02	02483
006352	001004	A	2668	DAR		JUMP IF END OF COUNT	02	02484
006353	006363	R		JAN	MOVE			
006354	054015	A	2669	STA	MOV3		02	02485
006355	005322	A	2670	DBR			02	02486
006356	005344	A	2671	DXR			02	02487
006357	016000	A	2672	LDA	0,2		02	02488
006360	055000	A	2673	STA	0,1		02	02489
006361	001000	A	2674	JMP	MOV3	KEEP TRYING	02	02490
006362	006350	R						
			2675	*			02	02491
006363	044003	A	2676	MOV3	MOV3	ADJUST	02	02492
006364	044002	A	2677	INR	MOVH	RETURN	02	02493
006365	044001	A	2678	INR	MOVH	ADDRESS	02	02494
006366	001000	A	2679	JMP	0	RETURN	02	02495
006367	000000	A						
			2680	*			02	02496
			2681	*	ENTRY POINT		02	02497
			2682	*			02	02498
006370	001000	A	2683	MOVH	BES 0	ENTRY	02	02499
006371	006316	R	2684	JMP	MOV1		02	02500
006372	000000	A						
			2685	MOV3	DATA 0	TEMP STORAGE FOR MOVH	02	02501
			2686		EJEC		02	02502
			2687	*			02	02503
			2688	*	FOLLOWING TRANSFERS BLOCK OF WORDS FROM INPUT BUFFER TO WCS		02	02504
			2689	*			02	02505
			2690	*			02	02506
			2691	*	CALLING SEQUENCE:		02	02507
			2692	*	JMPM MOVH		02	02508
			2693	*	DATA COUNT OF 16 BIT WORDS		02	02509
			2694	*	DATA FROM ADDRESS		02	02510
			2695	*			02	02511
			2696	*			02	02512
006373	034053	A	2697	MMW1	LDA MOVH	GET COUNT	02	02513
006374	015000	A	2698	LDA	0,1	SAVE IT	02	02514
006375	054056	A	2699	STA	MMWX	GET FROM ADDR	02	02515
006376	015001	A	2700	LDA	1,1	SAVE IT	02	02516
006377	054055	A	2701	STA	MMWY	GET RETURN ADDR	02	02517
006400	044053	A	2702	INR	MOVH		02	02518
006401	044047	A	2703	INR	MOVH		02	02519
006402	014051	A	2704	MMW2	LDA MMWX	LOADED THEM ALL?	02	02520
006403	005311	A	2705	DAR		YES	02	02521
006404	001004	A	2706	JAN*	MOVH	NO	02	02522
006405	106451	R						
006406	054045	A	2707	STA	MMWX		02	02523
006407	006017	A	2708	LDAE*	MMWY	GET NEXT 16 BITS	02	02524
006410	106455	R						
006411	006057	A	2709	STAE	MBUF		02	02525
006412	000173	R						
006413	044041	A	2710	INR	MMWY		02	02526
006414	006017	A	2711	LDAE	STORE	16 BIT MICROS ?	02	02527
006415	000171	R						
006416	001004	A	2712	JAN	MMW3	YES	02	02528
006417	006443	R						
006420	006017	A	2713	LDAE*	MMWY	NO, SO GET 48 MORE BITS	02	02529
006421	106455	R						
006422	044032	A	2714	INR	MMWY		02	02530
006423	006057	A	2715	STAE	MBUF+1		02	02531
006424	000174	R						
006425	006017	A	2716	LDAE*	MMWY		02	02532
006426	106455	R						
006427	044025	A	2717	INR	MMWY		02	02533
006430	006057	A	2718	STAE	MBUF+2		02	02534
006431	000175	R						
006432	006017	A	2719	LDAE*	MMWY		02	02535
006433	106455	R						
006434	044020	A	2720	INR	MMWY		02	02536
006435	006057	A	2721	STAE	MBUF+3		02	02537
006436	000176	R						
006437	014014	A	2722	LDA	MMWX		02	02538
006440	006140	A	2723	SUBI	3		02	02539
006441	000003	A						
006442	054011	A	2724	STA	MMWX		02	02540
006443	002000	A	2725	MMW3	MMW3	WRITE THE MICRO TO WCS	02	02541
006444	004004	R						
006445	006047	A	2726	INRE	WORD	POINTER TO NEXT WCS LOCATION	02	02542
006446	000167	R						
006447	001000	A	2727	JMP	MMW2		02	02543
006450	006402	R						
			2728	*			02	02544
			2729	*	ENTRY POINT		02	02545
			2730	*			02	02546
006451	000000	A	2731	MOVH	DATA 0		02	02547
006452	001000	A	2732	JMP	MMW1		02	02548
006453	006373	R						
			2733	*			02	02549
			2734	*	DATA AREA		02	02550











665	EDFE	612								
610	ERR	504								
242	EXC	124	157							
359	EXC0	296	1016	1342	1345					
360	EXC1	1262	1265							
422	EXC10	105	323	472	477	608	611	613	615	617
		619	643	700	716	722	886	887	961	965
		1179	1182	1201	1233	1268	1287	1291	1325	1327
		1348	1373	1377	1411	1424	1452	1458	1484	1563
		1567								
430	EXC12	436								
438	EXC14	433								
441	EXC16	439								
443	EXC17	427								
444	EXC18	428								
445	EXC19	426	432							
361	EXC2	1204	1214	1219	1227	1275	1279			
328	EXC2M	244								
452	EXC4M	422								
449	EXC90	425	431	460	1171	1176	1193	1197	1245	1339
		1358	1369	1387	1398	1433	1445	1469	1473	1633
		1641	1671	1677	1680	1696				
453	EXC92	449								
0	EXIT	983	985							
162	FCBBI	151								
161	FCBLD	145								
160	FCBPI	139								
159	FCBSI	133								
0	FETCH	248	276	424	1250	1440				
0	FETCHA	281	459	1170	1246	1359	1388	1436	1623	1634
		1692								
175	FIELDS	755	868							
657	FREC	508	520	535						
0	HDR	2066	2067	2071	2076					
183	HLTADR	1259	1285	1319	1451	1457				
1303	HLTCHK	1286	1321							
666	HOPE	614								
1622	ICS	488	677	736	1673	1682				
1667	ICS110	1648	1654	1664						
1644	ICSC	1626								
1655	ICSDA	1637								
1660	ICSDB	1640								
1662	ICSDB1	1657								
1650	ICSID	1629								
1149	IMGBUF	1126	1138	1150						
1150	IMGFCB	1010	1075	1087	1098	1118				
0	INA	1194	1252	1441	1470	1667	1672			
1802	INDCB	1817	1821							
0	INH	699								
1336	INITW	225								
0	INTR	91	92							
0	INTRST	99	100							
957	IOHDR	920								
1010	IORQ1	1011								
1075	IORQ2	1076								
1118	IORQ4	1119	1132							
0	JOB	2073								
667	LCDE	618								
606	LDCM	599								
658	LDADR	575	576							
541	LDBP	536								
618	LDCDF	560								
668	LDCM	607								
535	LDFR	533								
584	LDNR	547								
579	LDORG	557								
407	LDRM	226								
600	LDRNR	592								
603	LDRNS	585	588							
561	LDST	559								
564	LDWD	540	555	577	583					
740	LIST1	889								
891	LIST3	872	878	905						
895	LIST4	903								
907	LIST7	893								
908	LIST8	871	877	900	902					
909	LIST9	860	895	899						
910	LISTA	867								
912	LISTB	875								
914	LISTC	740	744	747	748					
498	LMOS	490	492							
65	LO	1096	1106	1109	1969	2063				
1969	LO1	146	1961	1963	1970					
1982	LO2	1974								
1995	LO3	1976	1979							
1996	LO4	1977	1981							
1992	LOA	1951	1977	1981	1986					
1993	LOB	1952	1987							
1990	LOBCB	1956	1958	1964	1966	1969	2063			
0	LOFCB	128	144	161	980	1965	1967			
1991	LOFLG	148	978	1962						
1997	LOLINE	1971	1972							
1990	LOOUT	748	867	875	904	935	960	964	1823	1866



		1906	1954	1975	1980	1983	1985	1989	2051	
144	LORMD	121								
1994	LOX	1953	1988							
503	LREAD	152	504	605						
505	LREAD1	598								
660	LREC	509	525	597	604					
661	LSB13	564	580							
1937	LUT	1925								
90	M1	1151								
1151	M1DCB	1108	1109							
1155	M2	1152								
1132	M2DCB	1105	1106							
1156	M3	1153								
1153	M3DCB	1095	1096							
182	MEUF	680	686	689	692	706	709	710	756	776
		804	838	947	1509	1513	1515	1517	1525	1595
		1599	1601	1603	1612					
1183	MEDIA	1178	1181	1795						
116	MIUTIL	33	66							
0	MOVW	570								
0	MOVW	703	1977	1981						
570	NMIC	567	569	571	574					
369	DARX	1208	1213	1308	1407	1420	1480	1542	1709	
370	DARY	302	1596	1600	1602	1604				
1003	DC	1095	1105	1108						
0	DH	682	687	690	693	726	742	745	927	940
		948	1733							
0	DH2	1726								
0	DHA	897								
1004	DM	1010	1075	1098	1118					
1104	DPNERR	1011								
1914	DUUCB	1895	1897	1898	1902	1904				
0	P	82	82	82	82	85	85	85	85	88
		88	88	95	95	95	95	96	101	101
		101	101	101						
480	PAGE5	468	470							
481	PAGE6	476								
181	PAGE	320	471	743	926	1210	1223	1401	1414	1448
		1474	1535							
2007	PBUF	679	723	892	937	2012	2050			
0	PGND	2064								
476	PGNOK	462	464	467						
1872	PIDCB	1864								
0	PIFCB	127	138	160	1856	1858				
1873	PIFLG	142	1853							
1846	PIIN	1798	1799	1870						
1860	PIIN1	1852	1854							
1864	PIIN2	140	1865							
1874	PIINA	1847	1867							
1875	PIINB	1848	1868							
1876	PIINX	1849	1869							
138	PIRMD	119								
459	PSEL	228								
662	RCN	499	528	596	603					
669	RDER	610								
0	RHLF	1768								
1754	RMD	116	118	120	122	1755	1758	1761	1781	
1765	RMD1	1757								
1784	RMDT	1770	1772	1773	1776					
1532	RW50	1505	1548	1592						
1535	RW52	1556								
1551	RW55	1534								
1560	RW57	1547								
1565	RW59	1561								
1504	RWCS	678	750	945	1511	1528				
1242	S100	221								
1271	S100A	1247	1249							
1275	S100B	1255	1258	1260	1289	1293				
1295	S100X	1253	1272	1288	1292	1442	1450			
2038	SAR	1814	1861	2009	2022	2032	2033			
2022	SAR1	2039								
2026	SAR2	2030								
2032	SAR3	2027								
267	SE10	279	291							
296	SE20	284	287	290						
297	SE23	303								
329	SEM1	245	267							
330	SEM2	274								
331	SEM3	246								
372	SENO	306	307	377	379	385	1543			
388	SEN1	309	310	391	393					
395	SEN2	312	313	398	400					
402	SEN3	315	316	407	409	416	1198	1533	1555	1560
670	SEQE	616								
616	SEGER	530								
1456	SETH1	1437	1439							
1430	SETHLT	233								
62	SI	1817								
1829	SIEDF	1818								
1831	SIEDFM	1829								
1907	SIEX	1901								
1824	SIEXX	1820								
0	SIFCB	126	132	159	1809	1811				







E.2 VORTEX LISTING

MIUTIL

PROGRAM PAGE 50

LISTING PAGE ( 608 )

39	XFS	779
42	XG	791
45	XIMC	807
47	XLA	815
46	XLB	811
43	XM	795
50	XMD	827
37	XMS	767
38	XMT	771
53	XDS	842
48	XR	819
41	XS	787
40	XT	783
57	XTC	858
35	XTS	759
54	XV	846
52	XW	835
56	XX	854
55	XY	850



```

000001 A 1 VORTEX SET 1 PUT LAST FOR VORTEX V2 03 00001
2 *THIS IS A COPYRIGHTED PROGRAM. COPYRIGHT 1972 BY VARIAN DATA MACHIN V2 03 00002
3 * 03 00003
4 * V.D.M. PART NO. 92L0705-017D 03 00004
5 * 03 00005
6 * 03 00006
7 * 03 00007
8 * V$JCP 03 00008
9 * 03 00009
10 * 03 00010
11 * TITLE V$JCP 03 00011
12 ***** 03 00012
13 **** TIDB SETUP ***** 03 00013
14 * 03 00014
15 ***** 03 00015
17 TBTRD EQU 0 TASK THREAD 03 00017
18 TBST EQU 1 TASK STATUS 03 00018
19 TBPL EQU 2 STATUS CONT. (BITS15-6), PRIORITY LEVEL(5-0 03 00019
20 TBEVNT EQU 3 INTERRUPT EVENT 03 00020
21 TBRSA EQU 4 A REENTRANT AND SUSPEND STACK 03 00021
22 TBRSE EQU 5 B REENTRANT AND SUSPEND STACK 03 00022
23 TBRSX EQU 6 X REENTRANT AND SUSPEND STACK 03 00023
24 TBRSP EQU 7 DF/P REENTRANT AND SUSPEND STACK 03 00024
25 TBRSTS EQU 8 TEMP. STG. REENTRANT AND SUSPEND STACK 03 00025
26 TBENTY EQU 9 TASK ENTRY LOCATION 03 00026
27 TBTMS EQU 10 TIME COUNTER - CLOCK RESOLUTION IN 5MS INC 03 00027
28 TBTMIN EQU 11 TIME COUNTER - CLOCK MINUTE INCREMENTS 03 00028
29 TBISA EQU 12 A INTERRUPT STACK 03 00029
30 TBISB EQU 13 B INTERRUPT STACK 03 00030
31 TBISX EQU 14 X INTERRUPT STACK 03 00031
32 TBISP EQU 15 DF/P INTERRUPT STACK 03 00032
33 TBISRS EQU 16 REENT. STACK INTERRUPT STACK 03 00033
34 TBID EQU 17 BLK ALLOC(15-10), I/O THR(9-5), I/O ACT(4-0) 03 00034
35 TBKN1 EQU 18 TASK NAME 03 00035
36 TBKN2 EQU 19 TASK NAME 03 00036
37 TBKN3 EQU 20 TASK NAME 03 00037
38 TBTLC EQU 21 1ST LOC. OF TASK ALLOCATABLE 03 00038
39 TBCPTH EQU 22 BACKGROUND TASK QUEUE 03 00039
40 TBATSK EQU 23 TIDB LOC. OF ACTIVATING TASK 03 00040
41 TBRSE EQU 24 TASK ERROR CODE 03 00041
42 EJEC 03 00042
43 ***** 03 00043
44 * 03 00044
45 **** TASK STATUS DESCRIPTION (BIT SET WORD 1) *** 03 00045
46 * 03 00046
47 ***** 03 00047
49 TBS15 EQU 15 INTERRUPT SUSPEND 03 00049
51 TBS14 EQU 14 TASK SUSPEND 03 00051
52 TBS13 EQU 13 TASK ABORT 03 00052
53 TBS12 EQU 12 TASK EXIT 03 00053
55 TBS11 EQU 11 TIDB CORE RESIDENT 03 00055
56 TBS10 EQU 10 CORE RESIDENT TASK 03 00056
57 TBS9 EQU 9 FOREGROUND TASK 03 00057
59 TBS8 EQU 8 TASK PROTECTED 03 00059
60 TBS7 EQU 7 TASK SCHEDULED BY TIME DELAY 03 00060
61 TBS6 EQU 6 TIME DELAY ACTIVE 03 00061
63 TBS5 EQU 5 TASK WAITING TO BE LOADED 03 00063
64 TBS4 EQU 4 TASK ERROR 03 00064
65 TBS3 EQU 3 TASK INTERRUPT EXPECTED 03 00065
67 TBS2 EQU 2 OVERLAY TASK 03 00067
68 TBS1 EQU 1 UPON TERMINATION ACTIVATE TASK SCHED TASK 03 00068
69 TBS0 EQU 0 TASK SEARCH-ALLOCATED-LOADED 03 00069
70 EJEC 03 00070
71 ***** 03 00071
72 * 03 00072
73 **** TASK STATUS DESCRIPTION (BIT SET WORD 2) *** 03 00073
74 * 03 00074
75 ***** 03 00075
77 * BIT 15 - TASK OPENED 03 00077
79 * BIT 14 - UNUSED 03 00079
80 * BIT 13 - OVERLAY LOAD 03 00080
81 * BIT 12 - TASK WAITING FOR BACKGROUND TASK I/O TO COMPLETE 03 00081
82 * TASK LOCKED-OUT UNTIL BG I/O COMPLETE OR BIT 11 03 00082
83 * IS SET (ALLOCATABLE SPACE AVAILABLE) 03 00083
85 * BIT 11 - DEFINES THAT ALLOCATABLE SPACE IS AVAILABLE, TRY 03 00085
86 * ALLOCATING TASK AGAIN. OVERRIDES BIT 12 SET OR 03 00086
87 * BIT 5 IN STATUS WORD. 03 00087
89 * BIT 10 - BACKGROUND TASK BEING WRITTEN ON CHECKPOINT FILE. 03 00089
89 * BIT 9 - TASK WAITING FOR A TIDB TO COME AVAILABLE FOR 03 00089
90 * SCHEDULING. 03 00090
92 * BIT 8 TO 6 - UNUSED 03 00092
93 EJEC 03 00093
94 ***** 03 00094
95 * 03 00095
96 **** JOB PROCESSOR LOW CORE EQUATES ** 03 00096
97 * 03 00097
98 ***** 03 00098
000050 A 100 LCJP EQU 050 03 00100
000050 A 101 V$JNAM EQU LCJP JCP NAME 03 00101
000054 A 102 V$LCNT EQU LCJP+4 LINE COUNT 03 00102
000055 A 103 V$JCFG EQU LCJP+5 JCP FLAGS 03 00103
104 * BIT 2-0 = LOAD AND GO FLAGS 03 00104
105 * BIT 3 = DUMP FLAG 1=DUMP, 0=NO DUMP 03 00105

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106	*			BIT 4 = DUMP FLAG IF LOAD AND GO	03	00106
107	*			BIT 9-5 = UNUSED	03	00107
108	*			BIT 15-10 = BG EXTRA CORE BLOCKS TO ALLOC	03	00108
000056	A	110	V\$BIC1 EQU LCJP+6	BIC INTERRUPT ADDRESS TABLE (10 WORDS)	03	00110
000070	A	111	V\$DATE EQU LCJP+16	JCP DATE RECORD	03	00111
000074	A	112	V\$PLCT EQU LCJP+20	PERMUNATE LINE COUNT	03	00112
000075	A	113	V\$BGLB EQU LCJP+21	JCP LIB KEY AND LU NO. (BACKGROUND LIB)	03	00113
000046	A	114	V\$CRDM EQU LCJP-2	CARD KEYPUNCH TYPE. 0=026, 1=029	D.103	00114
		115	*	BIT 0 = SYSTEM NOMINAL KEYPUNCH MODE.	03	00115
		116	*	BIT 9 = CURRENT JOB KEYPUNCH MODE.	03	00116
000047	A	117	V\$JCTM EQU LCJP-1	TEMP. STORAGE FOR /MEM BLOCK	D.103	00117
		118	EJEC		03	00118
		119	*****	*****	03	00119
		120	*		03	00120
		121	****	LOW CORE DESCRIPTION	***	03 00121
		122	*		03	00122
		123	*****	*****	03	00123
000300	A	125	LC EQU 0300	CURRENT TASK TIDB LOCATION	03	00125
000300	A	126	V\$CTL EQU LC	CURRENT PRIORITY LEVEL	03	00126
000301	A	127	V\$CPL EQU LC+1	CURRENT REENRANT STACK POINTER	03	00127
000302	A	128	V\$CRS EQU LC+2	POINTER TO HIGHEST PRIORITY TIDB	03	00128
000303	A	129	V\$TB EQU LC+3	POINTER TO UNUSED TASK TIDB	03	00129
000304	A	130	V\$UTB EQU LC+4	POINTER TO NEXT ENTRY IN REENRANT STACK	03	00130
000305	A	131	V\$PTVB EQU LC+5	FIRST LOC. OF REENRANT STACK	03	00131
000306	A	132	V\$FLRS EQU LC+6	LAST LOC. OF REENRANT STACK+1	03	00132
000307	A	133	V\$LRSK EQU LC+7	CHECKPOINT FLAG 1=ON, 0=OFF	03	00133
000310	A	134	V\$CKPT EQU LC+8	LOC. OF TIDB FOR OPCOM TASK	03	00134
000311	A	135	V\$QPCL EQU LC+9	LOC. OF TIDB FOR SYSTEM SAL TASK	03	00135
000312	A	136	V\$LSAL EQU LC+10	LOC. OF TIDB FOR SYSTEM ERROR TASK	03	00136
000313	A	137	V\$LER EQU LC+11	LOC. OF TIDB FOR JOB CONTROL PROCESSOR TSK	03	00137
000314	A	138	V\$TJCP EQU LC+12	LOC. OF CURRENT ACTIVE BACKGROUND TSK TIDB	03	00138
000315	A	139	V\$BTB EQU LC+13	LOC. OF 1ST UNPROTECTED WORD	03	00139
000316	A	140	V\$SLUP EQU LC+14	LOC. OF LAST UNPROTECTED WORD	03	00140
000317	A	141	V\$LLUP EQU LC+15	INTERRUPT MASK (8 WORDS)	03	00141
000320	A	142	V\$IM EQU LC+16	MEMORY PROTECT MASK (4 WORDS)	03	00142
000330	A	143	V\$MPM EQU LC+24	CORE ALLOCATION MASK (4 WORDS)	03	00143
000334	A	144	V\$CAM EQU LC+28	UNUSED	03	00144
		145	* EQU LC+32	CORE RESIDENT DIRECTORY LOCATION	03	00145
000341	A	146	V\$CRDR EQU LC+33	TOP OF THREAD OF BG TSK WAITING TO BE ALLO	03	00146
000342	A	147	V\$TBGT EQU LC+34	TIME OF DAY IN 5 MILLISECOND INCREMENTS	03	00147
000343	A	148	V\$TMS EQU LC+35	TIME OF DAY IN MINUTE INCREMENTS	03	00148
000344	A	149	V\$TMM EQU LC+36	ADDR. OF LOGICAL UNIT NAME TABLE	03	00149
000345	A	150	V\$LUNT EQU LC+37	OPCOM LOCKOUT FLAG	03	00150
000346	A	151	V\$QPCF EQU LC+38	KEY AND LU NO. FOR FOREGROUND LIB	03	00151
000347	A	152	V\$FGLB EQU LC+39	FREE RUNNING COUNTER INCR. IN MICROSECONDS	03	00152
000350	A	153	V\$FREE EQU LC+40	CLOCK RESOLUTION IN 5 MILLISECOND INCR.	03	00153
000351	A	154	V\$CTMS EQU LC+41	CLOCK SELECTED COUNT VALUE (1 TO 4095)	03	00154
000352	A	155	V\$SCV EQU LC+42	BASIC CLOCK INTERRUPT RATE IN MICROSECONDS	03	00155
000353	A	156	V\$CKB EQU LC+43	CLOCK RESOLUTION INCR. FOR 1 MINUTE.	03	00156
000354	A	157	V\$CRM EQU LC+44	BASE ADDR. FOR DST BLOCK	03	00157
000355	A	158	V\$DSTB EQU LC+45	LAST LOCATION OF BACKGROUND LITERAL TABLE	03	00158
000356	A	159	V\$LIT EQU LC+46	UNUSED	03	00159
		160	* EQU LC+47	BASE ADDR. FOR CONTROLLER ADDR. TABLE	03	00160
000360	A	161	V\$CTAD EQU LC+48	CURRENT CONTROLLER IN SCAN	03	00161
000361	A	162	V\$SCTL EQU LC+49	NO. OF CONTROLLERS	03	00162
000362	A	163	V\$NCTR EQU LC+50	EXTERNAL DEVICE ADDRESS TABLE FOR PIMS	03	00163
000363	A	164	V\$PINN EQU LC+51	(8 WORDS DEFINED IN PIM NO ORDER)	03	00164
		165	* EQU LC+59	UNUSED	03	00165
		166	* EQU LC+60	UNUSED	03	00166
		167	* EQU LC+61	UNUSED	03	00167
000375	A	168	V\$SLFG EQU LC+62	SAL TASK BUSY FLAG 1=BUSY, 0=NOT BUSY	03	00168
000376	A	169	V\$ERFG EQU LC+63	ERROR TASK BUSY FLAG 1=BUSY, 0=NOT BUSY	03	00169
000377	A	170	V\$JOP EQU LC+64	JCP OPERATING FLAG	03	00170
000400	A	171	V\$LUT1 EQU LC+65	START LUN ADDR FOR JCP/OPCOM ASSIGNABLE	03	00171
000401	A	172	V\$LUT2 EQU LC+66	START LUN ADDR FOR UNASSIGNABLE	03	00172
000402	A	173	V\$LUT3 EQU LC+67	START LUN ADDR FOR OPCOM ASSIGNABLE	03	00173
000403	A	174	V\$IMIN EQU LC+68	32767 - (60000/(5*V\$CTMS)) + 1	03	00174
		175	* EQU LC+69	UNUSED	03	00175
		176	* EQU LC+70	UNUSED	03	00176
		177	* EQU LC+71	UNUSED	03	00177
		178	* EQU LC+72	UNUSED	03	00178
000410	A	179	V\$IDA EQU LC+73	I/O ALGORITHM	03	00179
000411	A	180	V\$CKIT EQU LC+74	CLOCK INT. IN PIM BEFORE LOCKOUT FLAG.	03	00180
000412	A	181	V\$JCB EQU LC+75	ALL SYSTEM BACKGROUND PROGRAMS AND JCP USE	03	00181
		182	*	THIS SYSTEM BUFFER TO READ DIRECTIVES AND	03	00182
		183	*	SOURCE RECORDS IN.	03	00183
000413	A	184	V\$DCB EQU LC+75	OPCOM WILL READ OPERATOR KEY-IN REQUESTS	03	00184
		185	*	IN THIS BUFFER. IF JCP IS SET NOT ACTIVE	03	00185
		186	*	AND A 1 DIRECTIVE IS INPUTED, OPCOM	03	00186
		187	*	WILL MOVE THE DIRECTIVE TO V\$JCB BEFORE	03	00187
		188	*	SCHEDULING JCP.	03	00188
000414	A	189	V\$BVN EQU LC+76	BOTTOM OF VORTEX NUCLEUS	03	00189
000415	A	190	V\$BFC EQU LC+77	TOP OF FG RES. AREA/BOTTOM OF FG BLK COMM.	03	00190
000416	A	191	V\$TFC EQU LC+78	TOP OF FG BLK COMMON/TOP OF VORTEX CORE.	03	00191
		192	* EQU LC+79	UNUSED	03	00192
		193	EJEC		03	00193
		194	*****	*****	03	00194
		195	*		03	00195
		196	****	MASK TABLE DESCRIPTION	***	03 00196
		197	*		03	00197
		198	*****	*****	03	00198
000420	A	200	NT SET 0420	ZERO WORD	03	00200
000420	A	201	ZERO EQU NT	ZERO WORD	03	00201



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000421 A 202 BS0 EQU MT+1 BIT MASK CONTENTS 000001 03 00202
000422 A 203 BS1 EQU MT+2 000002 03 00203
000423 A 204 BS2 EQU MT+3 000004 03 00204
000424 A 205 BS3 EQU MT+4 000010 03 00205
000425 A 206 BS4 EQU MT+5 000020 03 00206
000426 A 207 BS5 EQU MT+6 000040 03 00207
000427 A 208 BS6 EQU MT+7 000100 03 00208
000430 A 209 BS7 EQU MT+8 000200 03 00209
000431 A 210 BS8 EQU MT+9 000400 03 00210
000432 A 211 BS9 EQU MT+10 001000 03 00211
000433 A 212 BS10 EQU MT+11 002000 03 00212
000434 A 213 BS11 EQU MT+12 004000 03 00213
000435 A 214 BS12 EQU MT+13 010000 03 00214
000436 A 215 BS13 EQU MT+14 020000 03 00215
000437 A 216 BS14 EQU MT+15 040000 03 00216
000440 A 217 BS15 EQU MT+16 01000000 03 00217
000441 A 218 BR0 EQU MT+17 BIT MASK CONTENTS 0177776 03 00218
000442 A 219 BR1 EQU MT+18 0177775 03 00219
000443 A 220 BR2 EQU MT+19 0177773 03 00220
000444 A 221 BR3 EQU MT+20 0177767 03 00221
000445 A 222 BR4 EQU MT+21 0177757 03 00222
000446 A 223 BR5 EQU MT+22 0177737 03 00223
000447 A 224 BR6 EQU MT+23 0177677 03 00224
000450 A 225 BR7 EQU MT+24 0177577 03 00225
000451 A 226 BR8 EQU MT+25 0177377 03 00226
000452 A 227 BR9 EQU MT+26 0176777 03 00227
000453 A 228 BR10 EQU MT+27 0175777 03 00228
000454 A 229 BR11 EQU MT+28 0173777 03 00229
000455 A 230 BR12 EQU MT+29 0167777 03 00230
000456 A 231 BR13 EQU MT+30 0157777 03 00231
000457 A 232 BR14 EQU MT+31 0137777 03 00232
000460 A 233 BR15 EQU MT+32 0077777 03 00233
000461 A 234 NEG EQU MT+33 SET ALL BITS 03 00234
000462 A 235 LHM EQU MT+34 LEFT HALF WORD MASK 0177400 03 00235
000463 A 236 RHM EQU MT+35 RIGHT HALF WORD MASK 0377 03 00236
000421 A 237 ONE EQU MT+1 CONTAINS NUMBER 1 03 00237
000422 A 238 TWO EQU MT+2 CONTAINS NUMBER 2 03 00238
000464 A 239 THREE EQU MT+36 CONTAINS NUMBER 3 03 00239
000423 A 240 FOUR EQU MT+3 CONTAINS NUMBER 4 03 00240
000465 A 241 FIVE EQU MT+37 CONTAINS NUMBER 5 03 00241
000466 A 242 SIX EQU MT+38 CONTAINS NUMBER 6 03 00242
000467 A 243 SEVEN EQU MT+39 CONTAINS NUMBER 7 03 00243
000424 A 244 EIGHT EQU MT+4 CONTAINS NUMBER 8 03 00244
000470 A 245 NINE EQU MT+40 CONTAINS NUMBER 9 03 00245
000471 A 246 TEN EQU MT+41 CONTAINS NUMBER 10 03 00246
000421 A 247 BM1 EQU MT+1 BIT MASK WORD 000001 03 00247
000464 A 248 BM3 EQU MT+36 BIT MASK WORD 000003 03 00248
000467 A 249 BM7 EQU MT+39 BIT MASK WORD 000007 03 00249
000472 A 250 BM17 EQU MT+42 BIT MASK WORD 000017 03 00250
000473 A 251 BM37 EQU MT+43 BIT MASK WORD 000037 03 00251
000474 A 252 BM77 EQU MT+44 BIT MASK WORD 000077 03 00252
000475 A 253 BM177 EQU MT+45 BIT MASK WORD 000177 03 00253
000463 A 254 BM377 EQU MT+35 BIT MASK WORD 00377 03 00254
000476 A 255 BM777 EQU MT+46 BIT MASK WORD 00777 03 00255
000477 A 256 BM1777 EQU MT+47 BIT MASK WORD 01777 03 00256
257 EJECT 03 00257
258 ***** 03 00258
259 * 03 00259
260 *** BIT TEST BIT DESIGNATION *** 03 00260
261 * 03 00261
262 ***** 03 00262
000040 A 264 RA0 EQU 040 BT JUMPS WHEN A REGISTER IS 0 03 00264
000000 A 265 RA1 EQU 000 BT JUMPS WHEN A REGISTER IS 1 03 00265
000060 A 266 RB0 EQU 060 BT JUMPS WHEN B REGISTER IS 0 03 00266
000020 A 267 RB1 EQU 020 BT JUMPS WHEN B REGISTER IS 1 03 00267
268 ***** 03 00268
270 * 03 00270
271 ** THE BIT CHECKED 03 00271
272 * 03 00272
273 ***** 03 00273
000000 A 275 B0 EQU 0 03 00275
000001 A 276 B1 EQU 1 03 00276
000002 A 277 B2 EQU 2 03 00277
000003 A 278 B3 EQU 3 03 00278
000004 A 279 B4 EQU 4 03 00279
000005 A 280 B5 EQU 5 03 00280
000006 A 281 B6 EQU 6 03 00281
000007 A 282 B7 EQU 7 03 00282
000010 A 283 B8 EQU 8 03 00283
000011 A 284 B9 EQU 9 03 00284
000012 A 285 B10 EQU 10 03 00285
000013 A 286 B11 EQU 11 03 00286
000014 A 287 B12 EQU 12 03 00287
000015 A 288 B13 EQU 13 03 00288
000016 A 289 B14 EQU 14 03 00289
000017 A 290 B15 EQU 15 03 00290
291 EJECT 03 00291
292 ***** 03 00292
293 * 03 00293
294 *** DEVICE AND FUNCTION CODES *** 03 00294
295 * 03 00295
296 ***** 03 00296
298 *** REAL TIME CLOCK *** 03 00298

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000047	A	299	CLOCK	EQU	047	DEVICE NUMBER '047	03	00299
		300	*				03	00300
000747	A	301	DISCLK	EQU	0700+CLOCK	DISABLE CLOCK	03	00301
000147	A	302	ENACLK	EQU	0100+CLOCK	ENABLE CLOCK	03	00302
		304	*				03	00304
		305	****	PIM			***	03 00305
000044	A	306	APIM	EQU	044	ALL PIMS DEVICE NUMBER	03	00306
000040	A	307	PIM1	EQU	040		03	00307
000041	A	308	PIM2	EQU	041		03	00308
000042	A	309	PIM3	EQU	042		03	00309
000043	A	310	PIM4	EQU	043		03	00310
000040	A	311	PIM5	EQU	040		03	00311
000040	A	312	PIM6	EQU	040		03	00312
000040	A	313	PIM7	EQU	040		03	00313
000040	A	314	PIM8	EQU	040		03	00314
		315	*				03	00315
000444	A	316	DISPIM	EQU	0400+APIM		03	00316
000244	A	317	ENAPIM	EQU	0200+APIM		03	00317
		319	****	MEMORY PROTECT			***	03 00319
000045	A	320	MP	EQU	045	DEVICE ADDRESS 045	03	00320
000745	A	321	DISMP	EQU	0700+MP	DISABLE MEMORY PROTECT	03	00321
000645	A	322	ENAMP	EQU	0600+MP	ENABLE MEMORY PROTECT	03	00322
000045	A	323	MPNR0	EQU	0000+MP	SELECT MASK REGISTER 0	03	00323
000145	A	324	MPMR1	EQU	0100+MP	SELECT MASK REGISTER 1	03	00324
000245	A	325	MPMR2	EQU	0200+MP	SELECT MASK REGISTER 2	03	00325
000345	A	326	MPMR3	EQU	0300+MP	SELECT MASK REGISTER 3	03	00326
		327		EJEC			03	00327
		328	*				03	00328
		329		NAME	V\$JCP		03	00329
000001	A	330	X	EQU	1		03	00330
000002	A	331	B	EQU	2		03	00331
000002	A	332	S1	EQU	2		03	00332
000003	A	333	S0	EQU	3		03	00333
000005	A	334	LD	EQU	5		03	00334
000011	A	335	GD	EQU	5		03	00335
		336	*				03	00336
		337	*				03	00337
		338	*				03	00338
000000	A	339	V\$JCP	LDA	V\$JCB	ADRS OF JC BUFFER	03	00339
000001	A	340		STA	JC01	STORE BUFFER ADDRESS IN SIFCB	03	00340
000002	A	341		DAR		MINUS ONE	03	00341
000003	A	342		STA	JC02	STORE BUFFER ADDRESS IN LOFCB	03	00342
		343	JC01	EQU	*+3		03	00343
		344		IDLINK	SI,0,40		03	00344
000004	A	006505						
000005	A	000406						
000006	A	001402						
000007	A	000000						
000010	A	000050						
		000014	R	345	JC02	EQU	*+3	03 00345
				346		IDLINK	LD,0,41	03 00346
000011	A	006505						
000012	A	000406						
000013	A	001403						
000014	A	000000						
000015	A	000051						
000016	A	005111		347	IAR		03	00347
000017	A	004241		348	LRLA	1	03	00348
000020	A	006057		349	STAE	CHPTR	03	00349
000021	R	003423						
				350	*		03	00350
				351	*		03	00351
				352	*		03	00352
000022	A	030355						
000023	A	015001		353	JC03	LDA	V\$DSTB	C.1 03 00353
000024	A	001010		354		LDA	1,X	C.1 03 00354
000025	R	000038		355		JAZ	JC05	C.1 03 00355
000026	A	015002		356		LDA	2,X	C.1 03 00356
000027	A	150455		357		ANA	BR12	C.1 03 00357
000030	A	055002		358		STA	2,X	C.1 03 00358
000031	A	005144		359		IXR		C.1 03 00359
000032	A	005144		360		IXR		C.1 03 00360
000033	A	005144		361		IXR		C.1 03 00361
000034	A	001000		362		JMP	JC03	C.1 03 00362
000035	R	000023						
		000030	R	363	JC05	EQU	*	C.1 03 00363
000036	A	010055		364		LDA	V\$JCFG	03 00364
000037	A	150466		365		ANA	SIX	03 00365
000040	A	140422		366		SUB	TMO	03 00366
000041	A	001010		367		JAZ	JCPXQT	03 00367
000042	R	001701						
000043	A	010055		368		LDA	V\$JCFG	03 00368
000044	A	150423		369		ANA	FOUR	03 00369
000045	A	001010		370		JAZ	JC11	03 00370
000046	R	000053						
000047	A	010466		371		LDA	SIX	03 00371
000050	I	057000		372		STA	ERRN	03 00372
000051	A	005001		373		TZA		03 00373
000052	A	050035		374		STA	V\$JCFG	03 00374
000053	A	001000		375		JMP	JCRMSG	03 00375
000054	R	000607						
000055	A	005002		376	JC11	TZR		03 00376
000056	A	006067		377		STBE	TGBLK	03 00377



## E.2 VORTEX LISTING

V\$JCP

PROGRAM PAGE 5

LISTING PAGE ( 613)

000057	003745	R							
000060	006505	A	378	J\$R	JCGTCH,X	GET 1ST CHARACTER		03	00378
000061	003705	R							
000062	006147	A	379	SUBE	N257	IS IT A SLASH ?		03	00379
000063	003404	R							
000064	001010	A	380	JAZ	JC1B1			03	00380
000065	000142	R							
000066	010422	A	381	JCRET	LDA	TWO	LUN FOR SI	03	00381
000067	006505	A	382		JSR	V\$DVTP,X	SI A TTY OR CRT ?	03	00382
000070	004130	R							
000071	001016	A	383	JANZ	JC1A2	NO		03	00383
000072	000102	R							
			384	JC1A1	WRITE	JCPOUT,SI,1,1	YES - WRITE 'JC**' TO SI	03	00384
000073	006505	A							
000074	000404	A							
000075	100000	A							
000076	110402	A							
000077	000724	R							
000100	000000	A							
000101	000000	A							
000102	020412	A	385	JC1A2	LDB	V\$JCB	CLEAR BUFFER	03	00385
000103	006037	A	386		LDX	N50		03	00386
000104	003441	R							
000105	006017	A	387		LDAE	DBLK		03	00387
000106	003372	R							
000107	056000	A	388	JC1B2	STA	0,B		03	00388
000110	005122	A	389		IBR			03	00389
000111	005344	A	390		DXR			03	00390
000112	001046	A	391		JXNZ	JC1B2		03	00391
000113	000107	R							
000114	006030	A	392		LDXI	SIFCB		C	03 00392
000115	000000	E							
000116	015002	A	393		LDA	2,1		C	03 00393
000117	150463	A	394		AMA	RHW	SAVE PROTECTION KEY	C	03 00394
000120	130431	A	395		ERA	B\$8	SET FOR SEQ ACCESS BY LOG REC	C	03 00395
000121	055002	A	396		STA	2,X	STORE IN SIFCB	C	03 00396
000122	017000	I	397		LDA	JCFCBS	STORE 'SIFCB' ADDRESS IN CALL	C	03 00397
000123	054004	A	398		STA	*+5		03	00398
			399	JC1B3	READ	SIFCB,SI,0,1	READ NEXT DIRECTIVE INTO JC BUFFER	03	00399
000124	006505	A							
000125	000404	A							
000126	100000	A							
000127	010002	A							
000130	000115	E							
000131	000000	A							
000132	000000	A							
			400	JC1B4	STAT	JC1B3,JCRER,JCEOF,JCRER,JC1B4		C.1	03 00400
000133	006505	A							
000134	000373	A							
000135	000124	R							
000136	001234	R							
000137	001231	R							
000140	001234	R							
000141	000133	R							
000142	010421	A	401	JC1B1	LDA	ONE	SET JCP	03	00401
000143	050377	A	402		STA	V\$JOP	OPERATING FLAG	03	00402
000144	010412	A	403	JC1A3	LDA	V\$JCB	INITIALIZE	03	00403
000145	004241	A	404		LRLA	1	CHARACTER	03	00404
000146	006057	A	405		STAE	CHPTR	POINTER	03	00405
000147	003423	R							
000150	005001	A	406		TZA			03	00406
000151	006057	A	407		STAE	IGBLK		03	00407
000152	003745	R							
000153	006057	A	408		STAE	CDUNT	ZERO COUNT	03	00408
000154	003415	R							
000155	020412	A	409		LDB	V\$JCB	SET LIMIT	03	00409
000156	056050	A	410		STA	40,B	AT END OF JC BUFFER	03	00410
000157	006505	A	411		JSR	JCGTCH,X	GET 1ST CHAR	03	00411
000160	003705	R							
000161	006147	A	412		SUBE	N257	IS IT A SLASH ?	03	00412
000162	003404	R							
000163	001016	A	413		JANZ	JC2A4	NO - ILLEGAL	03	00413
000164	000604	R							
000165	006017	A	414		LDAE	JCTPTR		03	00414
000166	003406	R							
000167	004241	A	415		LRLA	1		03	00415
000170	006057	A	416		STAE	CHPTR2		03	00416
000171	003424	R							
000172	020466	A	417		LDB	SIX		03	00417
000173	006505	A	418	JC1A31	JSR	JCGTCH,X	TRANSFER	03	00418
000174	003705	R							
000175	005014	A	419		TAX			03	00419
000176	006147	A	420		SUBE	N301	JC STATEMENT	03	00420
000177	003407	R							
000200	001004	A	421		JAN	JC1A33	TO TEMPORARY	03	00421
000201	000227	R							
000202	006147	A	422		SUBE	N32	BUFFER,	03	00422
000203	003410	R							
000204	001002	A	423		JAN	JC1A33		03	00423
000205	000227	R							
000206	006127	A	424		ABDE	N333		03	00424
000207	003412	R							
000210	006505	A	425		JSR	JCPTCH,X		03	00425



000211	003751	R							
000212	005322	A	426	DBR				03	00426
000213	001026	A	427	JBNZ	JC1A31			03	00427
000214	000173	R							
000215	006047	A	428	INRE	IGBLK	IGNORE BLANKS		03	00428
000216	003745	R							
000217	006505	A	429	JSR	JCGTCH,X	ADVANCE SCAN TO DELIMITER		03	00429
000220	003705	R							
000221	001010	A	430	JAZ	JC1A4	NO PARAMETERS		03	00430
000222	000257	R							
000223	006505	A	431	JSR	DLMCHK,X	CHECK IT		03	00431
000224	004072	R							
000225	001000	A	432	JMP	JC1A4			03	00432
000226	000257	R							
000227	005041	A	433	JC1A33	TXA			03	00433
000230	006147	A	434		SUBE	N240		03	00434
000231	003413	R							
000232	001010	A	435	JAZ	JC1A3X			03	00435
000233	000240	R							
000234	006127	A	436	ADDE	N240			03	00436
000235	003413	R							
000236	001000	A	437	JMP	JC1A34			03	00437
000237	000246	R							
000240	006047	A	438	JC1A3X	INRE	IGBLK	IGNORE BLANKS,ADVANCE SCAN	03	00438
000241	003745	R							
000242	006505	A	439	JSR	JCGTCH,X	TO DELIMITER		03	00439
000243	003705	R							
000244	001010	A	440	JAZ	JC1A36	NO PARAMETERS		03	00440
000245	000250	R							
000246	006505	A	441	JC1A34	JSR	DLMCHK,X	CHECK IT	03	00441
000247	004072	R							
000250	006017	A	442	JC1A36	LDAE	N240		03	00442
000251	003413	R							
000252	006505	A	443	JSR	JCPTCH,X	OF BUFFER		03	00443
000253	003751	R							
000254	005322	A	444	DBR		WITH BLANKS		03	00444
000255	001026	A	445	JBNZ	JC1A36			03	00445
000256	000250	R							
000257	030412	A	446	JC1A4	LDX	V\$JCB		03	00446
000260	005344	A	447		DXR			03	00447
000261	014451	A	448		LDA	N12024	PUT SPACE ONE LINE	03	00448
000262	055000	A	449		STA	0,X	IN FRONT OF BUFFER	03	00449
000263	017000	I	450		LDA	JCTBUF	IS DIRECTIVE	03	00450
000264	144132	A	451		SUB	JCTAB	A /JOB ?	03	00451
000265	001016	A	452		JANZ	JC1A41	NO	03	00452
000266	000304	R							
000267	017000	I	453		LDA	JCTBUF+1		03	00453
000270	144127	A	454		SUB	JCTAB+1		03	00454
000271	001016	A	455		JANZ	JC1A41	NO	03	00455
000272	000304	R							
000273	017000	I	456		LDA	JCTBUF+2		03	00456
000274	144124	A	457		SUB	JCTAB+2		03	00457
000275	001016	A	458		JANZ	JC1A41	NO	03	00458
000276	000304	R							
000277	054423	A	459		STA	JCFLSH	YES - CLEAR FLUSH FLAG	03	00459
000300	014431	A	460		LDA	N13064	SET TOP OF FORM CHAR	03	00460
000301	055000	A	461		STA	0,X	IN FRONT OF BUFFER	03	00461
000302	001000	A	462		JMP	JC1C1		03	00462
000303	000360	R							
000304	017000	I	463	JC1A41	LDA	JCTBUF	IS DIRECTIVE	03	00463
000305	144115	A	464		SUB	JCTAB+4	A /ENDJOB ?	03	00464
000306	001016	A	465		JANZ	JC1A42	NO	03	00465
000307	000331	R							
000310	017000	I	466		LDA	JCTBUF+1		03	00466
000311	144112	A	467		SUB	JCTAB+3		03	00467
000312	001016	A	468		JANZ	JC1A42	NO	03	00468
000313	000331	R							
000314	017000	I	469		LDA	JCTBUF+2		03	00469
000315	144107	A	470		SUB	JCTAB+6		03	00470
000316	001016	A	471		JANZ	JC1A42	NO	03	00471
000317	000331	R							
000320	017000	I	472		LDA	JCCHAR	FETCH LAST CHAR	03	00472
000321	001010	A	473		JAZ	JC1A46	JUMP IF NO TERM.	03	00473
000322	000326	R							
000323	147000	I	474		SUB	N256	CHECK IF NEXT CHAR IS PERIOD	03	00474
000324	001016	A	475		JANZ	JC13F2	ANY OTHER CHAR. IS A ERROR	03	00475
000325	003564	R							
000326	054374	A	476	JC1A46	STA	JCFLSH	YES - CLEAR FLUSH FLAG	03	00476
000327	001000	A	477		JMP	JC1C1		03	00477
000330	000360	R							
000331	017000	I	478	JC1A42	LDA	JCTBUF	IS DIRECTIVE	03	00478
000332	144074	A	479		SUB	JCTAB+8	A /FINI ?	03	00479
000333	001016	A	480		JANZ	JC1A43	NO	03	00480
000334	000355	R							
000335	017000	I	481		LDA	JCTBUF+1		03	00481
000336	144071	A	482		SUB	JCTAB+9		03	00482
000337	001016	A	483		JANZ	JC1A43	NO	03	00483
000340	000355	R							
000341	017000	I	484		LDA	JCTBUF+2		03	00484
000342	144066	A	485		SUB	JCTAB+10		03	00485
000343	001016	A	486		JANZ	JC1A43	NO	03	00486
000344	000355	R							
000345	017000	I	487		LDA	JCCHAR	FETCH LAST CHAR	03	00487



000346	001010	A	488	JAZ	JC1A46	JUMP TO CLEAR FLUSH FLAG	03 00488	
000347	000326	R						
000350	147000	I	489	SUB	N256	CHECK IF NEXT CHAR IS PERIOD	03 00489	
000351	001016	A	490	JANZ	JC13F2	ANY OTHER CHAR. IS A ERROR	03 00490	
000352	003564	R						
000353	001000	A	491	JMP	JC1A46	JUMP TO CLEAR FLUSH FLAG	03 00491	
000354	000326	R						
000355	014345	A	492	JC1A43	LDA	JCFLSH	FLUSH FLAG SET ?	03 00492
000356	001016	A	493	JANZ	JCRET	YES - IGNORE DIRECTIVE	03 00493	
000357	000066	R						
000360	006505	A	494	JC1C1	JSR	JCPRT,X	PRINT JCP DIRECTIVE	03 00494
000361	000734	R						
000362	074522	A	495	STX	JCPRTF	SET ALREADY PRINTED FLAG	03 00495	
000363	005002	A	496	TZB			03 00496	
000364	005004	A	497	TZX			03 00497	
000365	006015	A	498	JC1A45	LDAE	JCTAB,X		03 00498
000366	000417	R						
000367	001010	A	499	JAZ	JC2A4	NOT THERE - ERROR	03 00499	
000370	000604	R						
000371	147000	I	500	SUB	JCTBUF		03 00500	
000372	001016	A	501	JANZ	JC1A5	NO MATCH	03 00501	
000373	000406	R						
000374	006015	A	502	LDAE	JCTAB+1,X		03 00502	
000375	000420	R						
000376	147000	I	503	SUB	JCTBUF+1		03 00503	
000377	001016	A	504	JANZ	JC1A5	NO MATCH	03 00504	
000400	000406	R						
000401	006015	A	505	LDAE	JCTAB+2,X		03 00505	
000402	000421	R						
000403	147000	I	506	SUB	JCTBUF+2		03 00506	
000404	001010	A	507	JAZ	JC1A6	MATCH	03 00507	
000405	000413	R						
000406	005041	A	508	JC1A5	TXA		03 00508	
000407	120423	A	509	ADD	FOUR	INCREMENT X REG	03 00509	
000410	005014	A	510	TAX		BY FOUR	03 00510	
000411	001000	A	511	JMP	JC1A45	GO BACK FOR NEXT	03 00511	
000412	000365	R						
000413	006025	A	512	JC1A6	LDBE	JCTAB+3,X	DO INDEXED	03 00512
000414	000422	R						
000415	006706	A	513	IJMP	0,B	JUMP TO ROUTINE	03 00513	
000416	000000	A						
514	*						03 00514	
515	*						03 00515	
516	*						03 00516	
517	*						03 00517	
518	*						03 00518	
519	*						03 00519	
520	JCTAB	DATA		'JOB			03 00520	
000417	145317	A						
000420	141240	A						
000421	120240	A						
000422	001106	R	521	DATA	JCPCON	JOB	03 00521	
000423	142715	A	522	DATA	'ENDJOB'		03 00522	
000424	142312	A						
000425	147702	A						
000426	001106	R	523	DATA	JCPCON	ENDJOB	03 00523	
000427	143311	A	524	DATA	'FINI		03 00524	
000430	147311	A						
000431	120240	A						
000432	001106	R	525	DATA	JCPCON	FINI	03 00525	
000433	142301	A	526	DATA	'DASMR		03 00526	
000434	151715	A						
000435	151240	A						
000436	001527	R	527	DATA	JCPTSK	DASMR	03 00527	
000437	143317	A	528	DATA	'FORT		03 00528	
000440	151324	A						
000441	120240	A						
000442	001527	R	529	DATA	JCPTSK	FORT	03 00529	
000443	143315	A	530	DATA	'FMAIN		03 00530	
000444	140711	A						
000445	147240	A						
000446	001527	R	531	DATA	JCPTSK	FMAIN	03 00531	
000447	151705	A	532	DATA	'SEdit		03 00532	
000450	142311	A						
000451	152240	A						
000452	001527	R	533	DATA	JCPTSK	SEdit	03 00533	
000453	151715	A	534	DATA	'SMAIN		03 00534	
000454	140711	A						
000455	147240	A						
000456	001527	R	535	DATA	JCPTSK	SMAIN	03 00535	
000457	146315	A	536	DATA	'LMGEN		03 00536	
000460	143705	A						
000461	147240	A						
000462	001527	R	537	DATA	JCPTSK	LMGEN	03 00537	
000463	144717	A	538	DATA	'IDUTIL		03 00538	
000464	152724	A						
000465	144714	A						
000466	001527	R	539	DATA	JCPTSK	IDUTIL	03 00539	
000467	141717	A	540	DATA	'CONC		03 00540	
000470	147303	A						
000471	120240	A						
000472	001527	R	541	DATA	JCPTSK	CONC	03 00541	
000473	142730	A	542	DATA	'EXEC		03 00542	
000474	142703	A						

TABLE TO JUMP TO PROPER SUBCOMPONENT. FIRST THREE WORDS  
EQUALS STATEMENT NAME, RIGHT JUSTIFIED, BLANK FILLED.  
FOURTH WORD IS ADDRESS OF STARTING LOCATION OF SUBCOMPONENT.  
TABLE IS TERMINATED BY ZERO WORD



000475	120240	A							
000476	001561	R	543	DATA	JCOPEX	EXEC		03	00543
000477	141717	A	544	DATA	'COMSY'			03	00544
000500	146723	A							
000501	154640	A							
000502	001527	R	545	DATA	JCPTSK	COMSY		03	00545
000503	147720	A	546	DATA	'OPEN'			03	00546
000504	142716	A							
000505	120240	A							
000506	001527	R	547	DATA	JCPTSK	VTAM OPEN		03	00547
000507	141714	A	548	DATA	'CLOSE'			03	00548
000510	147723	A							
000511	142640	A							
000512	001527	R	549	DATA	JCPTSK	VTAM CLOSE		03	00549
000513	142325	A	550	DATA	'DUMP'			C.1	03 00550
000514	146720	A							
000515	120240	A							
000516	002070	R	551	DATA	JCDUMP			C.1	03 00551
000517	146317	A	552	DATA	'LOAD'			03	00552
000520	140704	A							
000521	120240	A							
000522	001720	R	553	DATA	JCPLD	LOAD		03	00553
000523	143317	A	554	DATA	'FORM'			03	00554
000524	151315	A							
000525	120240	A							
000526	002075	R	555	DATA	JCFOR	FORM		03	00555
000527	151706	A	556	DATA	'SFILE'			03	00556
000530	144714	A							
000531	142640	A							
000532	002117	R	557	DATA	JCSFI	SFILE		03	00557
000533	151305	A	558	DATA	'REW'			03	00558
000534	153640	A							
000535	120240	A							
000536	002213	R	559	DATA	JCREW	REWIND		03	00559
000537	151722	A	560	DATA	'SREC'			03	00560
000540	142703	A							
000541	120240	A							
000542	002274	R	561	DATA	JCSRE	SREC		03	00561
000543	153705	A	562	DATA	'WEOF'			03	00562
000544	147706	A							
000545	120240	A							
000546	002441	R	563	DATA	JWEOF	WEOF		03	00563
000547	150306	A	564	DATA	'PFILE'			03	00564
000550	144714	A							
000551	142640	A							
000552	002507	R	565	DATA	JCPFI	PFILE		03	00565
000553	141706	A	566	DATA	'CFILE'			03	00566
000554	144714	A							
000555	142640	A							
000556	002762	R	567	DATA	JCFILE	CLOSEFILE		03	00567
			568			ALLOWS /CFILE,LUN WHERE LUN IS NUMBER		03	00568
			569			OR NAME RESULTING 4 LSO LUN GT1EQ 10		03	00569
			570			CLOSES FILE USING GLOBAL FCB WITH UPDATE		03	00570
			571	DATA	'ASSIGN'			03	00571
000557	140723	A							
000560	151711	A							
000561	143716	A							
000562	003013	R	572	DATA	JCASS	ASSIGN		03	00572
000563	140714	A	573	DATA	'ALTLIB'	SPECIAL ALTLIB DIRECTIVE		03	00573
000564	152314	A							
000565	144702	A							
000566	002733	R	574	DATA	JCALT			03	00574
000567	146705	A	575	DATA	'MEM'	MEMORY		03	00575
000570	146640	A							
000571	120240	A							
000572	003322	R	576	DATA	JCMEM			03	00576
000573	145720	A	577	DATA	'KPMODE'	KPMODE		03	00577
000574	146717	A							
000575	142305	A							
000576	003333	R	578	DATA	JCKPMD			03	00578
000577	141640	A	579	DATA	'C'			03	00579
000600	120240	A							
000601	120240	A							
000602	000066	R	580	DATA	JCRET	C		03	00580
000603	000000	A	581	DATA	0			03	00581
			582		END OF TABLE			03	00582
000604	005101	A	583	JC2A4 INCR	1	ILLEGAL STATEMENT ERROR		03	00583
000605	006057	A	584	STAE	ERRN			03	00584
000606	003414	R							
			585	JMP	JCRMSG			03	00585
			586	EJEC				03	00586
			587					03	00587
			588			ERROR HANDLING ROUTINE		03	00588
			589					03	00589
000607	014113	A	590	JCRMSG LDA	JCFLSH	FLUSH FLAG ALREADY SET ?		03	00590
000610	001016	A	591	JANZ	JC1A2	YES		03	00591
000611	000102	R							
000612	014272	A	592	LDA	JCPRTF			03	00592
000613	001016	A	593	JANZ	JCRMS1	JUMP IF ALREADY PRINTED		03	00593
000614	000617	R							
000615	006505	A	594	JCR	JCPRT,X	GO PRINT JCP ERROR DIRECTIVE		03	00594
000616	000734	R							
000617	005001	A	595	JCRMS1 TZA		RESET PRINTED FLAG		03	00595
000620	054264	A	596	STA	JCPRTF			03	00596



000621	006017	A	597	LDRE	H00	NO -	03 00597	
000622	003440	R						
000623	006127	A	598	ADDE	ERRM	SET JCON IN	03 00598	
000624	003414	R						
000625	006057	A	599	STAE	JCPMSG+1	ERROR MSG	03 00599	
000626	003435	R						
000627	006027	A	600	LDRE	COUNT		03 00600	
000630	003415	R						
000631	001020	A	601	JBZ	JC3D1		03 00601	
000632	000657	R						
000633	005001	A	602	TZA			03 00602	
000634	170471	A	603	DIV	TEN	CONVERT	03 00603	
000635	004250	A	604	LRLA	S		03 00604	
000636	006127	A	605	ADDE	HZERO	COUNT	03 00605	
000637	003417	R						
000640	006057	A	606	STAE	JCPMSG+3	AND SET	03 00606	
000641	003437	R						
000642	005001	A	607	TZA			03 00607	
000643	170471	A	608	DIV	TEN	IN ERROR	03 00608	
000644	006127	A	609	ADDE	HCOMZ	MESSAGE	03 00609	
000645	003416	R						
000646	006057	A	610	STAE	JCPMSG+2		03 00610	
000647	003436	R						
			611	IDLINK	LD,JCPMSG-1,5		03 00611	
000650	006505	A						
000651	000406	A						
000652	001405	A						
000653	003433	R						
000654	000005	A						
000655	001000	A	612	JMP	JC3E2		03 00612	
000656	000664	R						
			613	JC3D1	IDLINK	LD,JCPMSG-1,3	03 00613	
000657	006505	A						
000660	000406	A						
000661	001405	A						
000662	003433	R						
000663	000003	A						
000664	017000	I	614	JC3E2	LDA	JCFCBS+3	STORE 'LOFCB' ADDRESS IN CALL	03 00614
000665	054004	A	615		STA	*+5		03 00615
			616		WRITE	LOFCB,SD,0,1	WRITE ERROR MSG TO SD	03 00616
000666	006505	A						
000667	000404	A						
000670	100000	A						
000671	010403	A						
000672	000000	E						
000673	000000	A						
000674	000000	A						
000675	006505	A	617	JSR	V\$SQLQ,X	LD = SD ?	03 00617	
000676	004160	R						
000677	001010	A	618	JAZ	JC3E4	YES	03 00618	
000700	000712	R						
000701	017000	I	619	LDA	JCFCBS+3	STORE 'LOFCB' ADDRESS IN CALL	03 00619	
000702	054004	A	620		STA	*+5	03 00620	
			621		WRITE	LOFCB,LD,0,1	NO - WRITE ERROR MSG TO LD	03 00621
000703	006505	A						
000704	000404	A						
000705	100000	A						
000706	010405	A						
000707	000672	E						
000710	000000	A						
000711	000000	A						
000712	010422	A	622	JC3E4	LDA	TWD	LUN FOR SI	03 00622
000713	006505	A	623		JSR	V\$DVTP,X	IS SI A TTY OR CRT ?	03 00623
000714	004130	R						
000715	001010	A	624	JAZ	JC1A1	YES - GET NEXT STATEMENT	03 00624	
000716	000073	R						
000717	054003	A	625	STA	JCFLSH	NO - SET FLUSH FLAG	03 00625	
000720	001000	A	626	JMP	JC1A2		03 00626	
000721	000102	R						
000722	152331	A	627	ZTY	DATA	*TY*	03 00627	
000723	000000	A	628	JCFLSH	DATA	0	03 00628	
			629	JCPOUT	DCB	3,HASTR,0	03 00629	
000724	000003	A						
000725	000727	R						
000726	000000	A						
000727	120240	A	630	HASTR	DATA	' JC**'	03 00630	
000730	145303	A						
000731	125252	A						
000732	130640	A	631	N13064	DATA	0130640	03 00631	
000733	120240	A	632	N12024	DATA	0120240	03 00632	
			633		EJEC		03 00633	
			634	*			03 00634	
			635	*			03 00635	
			636	*			03 00636	
			637	JCPRT	STX	JCPRX	03 00637	
			638		STB	JCPRB	03 00638	
			639		LDA	V\$JCB	03 00639	
			640		DAR		03 00640	
			641		STA	*+4	03 00641	
			642		IDLINK	LD,*,41	03 00642	
000741	006505	A						
000742	000406	A						
000743	001405	A						



000744	000741	R								
000745	000051	A								
000746	030400	A	643	LDX	V\$LUT1	ADRS OF LOG UNIT TBL		03	00643	
000747	015003	A	644	LDA	SD,X			03	00644	
000750	150463	A	645	ANA	RM377	SD CUR ASSIGNMT		03	00645	
000751	054445	A	646	STA	JCTA			03	00646	
000752	015002	A	647	LDA	SI,X			03	00647	
000753	150463	A	648	ANA	BM377	SD CUR ASSIGNMT		03	00648	
000754	144442	A	649	SUB	JCTA	SD, SI SAME LUN ?		03	00649	
000755	001010	A	650	JAZ	JCPRI			03	00650	
000756	000770	R								
000757	017000	I	651	LDA	JCFCBS+3	STORE 'LDFCB' ADDRESS IN CALL		03	00651	
000760	054004	A	652	STA	*+5			03	00652	
			653	WRITE	LDFCB,SD,0,1	NO - WRITE JC BUFFER TO SD		03	00653	
000761	006505	A								
000762	000404	A								
000763	100000	A								
000764	010403	A								
000765	000707	E								
000766	000000	A								
000767	000000	A								
000770	030400	A	654	JCPRI	LDX	V\$LUT1		03	00654	
000771	015005	A	655	LDA	LD,X			03	00655	
000772	150463	A	656	ANA	BM377	LD CUR ASSIGNMT		03	00656	
000773	144423	A	657	SUB	JCTA	LD,SD SAME LUN		03	00657	
000774	001010	A	658	JAZ	JCPRE	YES		03	00658	
000775	001007	R								
000776	017000	I	659	LDA	JCFCBS+3	STORE 'LDFCB' ADDRESS IN CALL		03	00659	
000777	054004	A	660	STA	*+5			03	00660	
			661	WRITE	LDFCB,LD,0,1	NO - WRITE JC BUFFER TO LD		03	00661	
001000	006505	A								
001001	000404	A								
001002	100000	A								
001003	010405	A								
001004	000765	E								
001005	000000	A								
001006	000000	A								
001007	010412	A	662	JCPRE	LDA	V\$JCB	CALCULATE CHAR ADDRESS OF LAST + 1	E.1	*****	
001010	006120	A	663	ADDI	40	CHAR IN JC BUF		E.1	*****	
001011	000050	A								
001012	004241	A	664	LRLA	1	AND STORE IT		E.1	*****	
001013	054065	A	665	STA	BUFLIM	INTO BUFLIM.		E.1	*****	
001014	027000	I	666	LDB	CHPTR	SAVE CHPTR IN SAVECP.		E.1	*****	
001015	064064	A	667	STB	SAVECP			E.1	*****	
001016	005111	A	668	IAR				E.1	*****	
001017	137000	I	669	ERA	CHPTR	IS CHPTR AT END OF BUFFER?		E.1	*****	
001020	001010	A	670	JAZ	JCLAB5	IF YES, JUMP TO END OF ROUTINE.		E.1	*****	
001021	001073	R								
001022	017000	I	671	LDA	PERPTR	WHEN PERPTR IS ZERO, WE SCAN FOR "."		E.1	*****	
001023	001010	A	672	JAZ	JCLAB1	IF NOT, WE ALREADY KNOW WHERE "." IS.		E.1	*****	
001024	001030	R								
001025	057000	I	673	STA	CHPTR			E.1	*****	
001026	005001	A	674	TZA				E.1	*****	
001027	057000	I	675	STA	PERPTR	REINITIALIZE PERPTR.		E.1	*****	
001030	006505	A	676	JCLAB1	JSR	JCGTCH,X	IS NEXT CHAR A PERIOD?		E.1	*****
001031	003705	R								
001032	147000	I	677	SUB	N256			E.1	*****	
001033	001016	A	678	JANZ	JCLAB4	IF NOT, JUMP		E.1	*****	
001034	001067	R								
001035	014043	A	679	LDA	BUFLIM	CALCULATE LAST WORD ADDRESS OF		E.1	*****	
001036	004341	A	680	LSRA	1	JCB AND STORE		E.1	*****	
001037	005311	A	681	DAR				E.1	*****	
001040	054040	A	682	STA	BUFLIM	IT BACK INTO BUFLIM		E.1	*****	
001041	037000	I	683	LDX	N12024	TWO SPACES.		E.1	*****	
001042	027000	I	684	LDB	CHPTR			E.1	*****	
001043	005322	A	685	DBR				E.1	*****	
001044	005021	A	686	TBA				E.1	*****	
001045	004141	A	687	LSRB	1	COMPUTE WORD ADDRESS.		E.1	*****	
001046	006440	A	688	BT	RA0+80,JCLAB2	IS PERIOD IN LEFT BYTE?		E.1	*****	
001047	001057	R								
001050	016000	A	689	LDA	0,B	NO.		E.1	*****	
001051	150462	A	690	ANA	LHW	REPLACE PERIOD BY		E.1	*****	
001052	006110	A	691	ORAI	0240	A BLANK.		E.1	*****	
001053	000240	A								
001054	056000	A	692	STA	0,B	STORE BACK INTO JCB.		E.1	*****	
001055	001000	A	693	JMP	JCLAB3			E.1	*****	
001056	001060	R								
001057	076000	A	694	JCLAB2	STX	0,B	STORE BLANKS INTO JCB.		E.1	*****
001060	005021	A	695	JCLAB3	TBA			E.1	*****	
001061	144017	A	696	SUB	BUFLIM	ARE WE AT END OF BUFFER?		E.1	*****	
001062	001010	A	697	JAZ	JCLAB5	IF YES, JUMP TO JCLAB5.		E.1	*****	
001063	001073	R								
001064	005122	A	698	IBR		IF NOT, INCREMENT B AND LOOP.		E.1	*****	
001065	001000	A	699	JMP	JCLAB2			E.1	*****	
001066	001057	R								
001067	017000	I	700	JCLAB4	LDA	CHPTR	THIS CHAR NOT A PERIOD.		E.1	*****
001070	144010	A	701	SUB	BUFLIM			E.1	*****	
001071	001016	A	702	JANZ	JCLAB1	LOOK AT NEXT CHAR.		E.1	*****	
001072	001030	R								
001073	014006	A	703	JCLAB5	LDA	SAVECP	RESTORE CHPTR.		E.1	*****
001074	057000	I	704	STA	CHPTR			E.1	*****	
001075	024006	A	705	LDB	JCPRB			E.1	*****	
001076	034004	A	706	LDX	JCPRX			03	00663	



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001077 006705 A 707 IJMP 0,X EXIT 03 00664
001100 000000 A
001101 000000 A 708 BUFLIM DATA 0 STORES END OF JCB. E.1*****
001102 000000 A 709 SAVECP DATA 0 SAVES CHPTR WHILE WE LOOK FOR PERIOD E.1*****
001103 000000 A 710 JCPRX DATA 0 03 00665
001104 000000 A 711 JCPRB DATA 0 03 00666
001105 000000 A 712 JCPRTF DATA 0 03 00667
713 EJEC 03 00668
714 * 03 00669
715 * 03 00670
716 * 03 00671
001106 010046 A 717 JCPCON LDA V$CRDM GET KEYPUNCH MODE 03 00672
001107 004250 A 718 LRLA 8 03 00673
001110 150462 A 719 ANA LHW 03 00674
001111 054305 A 720 STA JCTA 03 00675
001112 010046 A 721 LDA V$CRDM RESET TO NOMINAL VALUE 03 00676
001113 150463 A 722 ANA RHW 03 00677
001114 114302 A 723 ORA JCTA 03 00678
001115 050046 A 724 STA V$CRDM 03 00679
001116 005001 A 725 TZA 03 00680
726 IOLINK GD,*,120 03 00681

001117 006505 A
001120 000404 A
001121 001411 A
001122 001117 R
001123 000170 A
001124 017000 I 727 LDA JCFCBS+7 STORE 'GDFCB' ADDRESS IN CALL 03 00682
001125 054004 A 728 STA *+5 03 00683
729 OPEN GDFCB,GD,0,0 OPEN 'GD' FILE WITH WAIT/REN. 03 00684

001126 006505 A
001127 000404 A
001130 100000 A
001131 003011 A
001132 000000 E
001133 000000 A
001134 000000 A
001135 017000 I 730 LDA JCFCBS+7 STORE 'GDFCB' ADDRESS IN CALL 03 00685
001136 054004 A 731 STA *+5 03 00686
732 CLOSE GDFCB,GD,0,1 CLOSE 'GD' FILE WITH WAIT/UPDATE 03 00687

001137 006505 A
001140 000404 A
001141 100000 A
001142 013411 A
001143 001132 E
001144 000000 A
001145 000000 A
001146 010465 A 733 LDA FIVE LD E.2*****
001147 006505 A 734 JSR JCLNDV,X GET DST ENTRY ADDR E.2*****

001150 004003 R
001151 005012 A 735 TAB E.2*****
001152 016001 A 736 LDA 1,B DEVICE NAME E.2*****
001153 004350 A 737 LSRA 8 E.2*****
001154 006617 A 738 SRE N304,7,010 IS LD AN RMD E.2*****
001155 003367 R
001156 001000 A 739 JMP JCP1 IF NOT AN RMD E.2*****
001157 001175 R
001160 027000 I 740 LDB JCFCBS+3 LD FCB ADDR E.2*****
001161 016003 A 741 LDA 3,B E.2*****
001162 005311 A 742 DAR E.2*****
001163 001004 A 743 JAN JCP1 IF FILE NOT OPEN, DO NOT CLOSE E.2*****
001164 001175 R
001165 064004 A 744 STB *+5 STORE FCB ADDR IN CALL E.2*****
745 CLOSE LD FCB,LD,0,1 CLOSE 'LD' FILE WITH WAIT/UPDATE E.2*****

001166 006505 A
001167 000404 A
001170 100000 A
001171 013405 A
001172 001004 E
001173 000000 A
001174 000000 A
001175 001175 R 746 JCP1 EQU * E.2*****
001176 010467 A 747 LDA SEVEN BD E.2*****
001177 006505 A 748 JSR JCLNDV,X GET DST ENTRY ADDR E.2*****

001200 005012 A 749 TAB E.2*****
001201 016001 A 750 LDA 1,B DEVICE NAME E.2*****
001202 004350 A 751 LSRA 8 E.2*****
001203 006617 A 752 SRE N304,7,010 IS BD AN RMD E.2*****
001204 003367 R
001205 001000 A 753 JMP JCP2 IF NOT AN RMD E.2*****
001206 001224 R
001207 027000 I 754 LDB JCFCBS+5 BD FCB ADDR E.2*****
001210 016003 A 755 LDA 3,B E.2*****
001211 005311 A 756 DAR E.2*****
001212 001004 A 757 JAN JCP2 IF FILE NOT OPEN E.2*****
001213 001224 R
001214 064004 A 758 STB *+5 STORE FCB ADDR IN CALL E.2*****
759 CLOSE BD FCB,7,0,1 CLOSE 'BD' FILE WITH WAIT/UPDATE E.2*****

001215 006505 A
001216 000404 A
001217 100000 A
001220 013407 A
001221 000000 E

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001222	000000	A							
001223	000000	A							
001224	014637	A	760	JCP2	EQU	*			E.2*****
001225	006617	A	761		LDA	JCTBUF			03 00688
001226	003420	R	762		SRE	HZF,7,010	FINI STATEMENT ?		03 00689
001227	001000	A	763		JMP	JC4C1	NO		03 00690
001230	001271	R							
001231	017000	I	764	JCEOF	LDA	JCFLSH	FLUSH FLAG SET?	C.1	03 00691
001232	001016	A	765		JANZ	JC2A4	YES - CONTINUE FLUSH	C.1	03 00692
001233	000604	R							
001234	006017	A	766	JCRER	LDAE	DBLK			03 00693
001235	003372	R							
001236	020412	A	767		LDB	V\$JCB	CLEAR		03 00694
001237	006037	A	768		LDX	N50	CLEAR JOB CONTROL		03 00695
001240	003441	R							
001241	056000	A	769	JC4B1	STA	0,B	BUFFER		03 00696
001242	005122	A	770		IBR				03 00697
001243	005344	A	771		DXR				03 00698
001244	001046	A	772		JXNZ	JC4B1			03 00699
001245	001241	R							
001246	020400	A	773		LDB	V\$LUT1	ADRS OF JCP ASSIGNABLE		03 00700
001247	036000	A	774		LDX	0,B	LOGICAL UNIT TABLE		03 00701
001250	005122	A	775		IBR		SKIP FIRST UNIT - DC		03 00702
001251	005344	A	776		DXR				03 00703
001252	005122	A	777	JC4BC	IBR		RESET LUNS		03 00704
001253	016000	A	778		LDA	0,B	TO STANDARD		03 00705
001254	150462	A	779		ANA	LHW	ASSIGNMENTS		03 00706
001255	054141	A	780		STA	JCTA			03 00707
001256	004350	A	781		LSRA	8			03 00708
001257	114137	A	782		DRA	JCTA			03 00709
001260	056000	A	783		STA	0,B			03 00710
001261	005344	A	784		DXR		LAST LUN ?		03 00711
001262	001046	A	785		JXNZ	JC4BC	NO - REPEAT LOOP		03 00712
001263	001252	R							
001264	005001	A	786		TZA		YES		03 00713
001265	050377	A	787		STA	V\$JOB	CLEAR JCP FLAG		03 00714
			788		EXIT		EXIT TO RTE		03 00715
001266	006505	A							
001267	000406	A							
001270	000200	A							
001271	006017	A	789	JC4C1	LDAE	NAMPTR	^JOB OR ^ENDJOB STATEMENT		03 00716
001272	003421	R							
001273	004241	A	790		LRLA	1	SET STORAGE		03 00717
001274	006057	A	791		STAE	CHPTR2	CHAR POINTER		03 00718
001275	003424	R							
001276	010424	A	792		LDA	EIGHT			03 00719
001277	054117	A	793		STA	JCTA	SET COUNTER		03 00720
001300	014563	A	794		LDA	JCTBUF			03 00721
001301	006147	A	795		SUBE	HZJ	SET JOB/ENDJOB FLAG		03 00722
001302	003422	R							
001303	005012	A	796		TAB				03 00723
001304	006047	A	797		INRE	IGBLK	IGNORE BLANKS		03 00724
001305	003743	R							
001306	006017	A	798	JC4D1	LDAE	N240			03 00725
001307	003413	R							
001310	001026	A	799		JBNZ	JC4E1	ENDJOB - CLEAR V\$JNAM		03 00726
001311	001337	R							
001312	006505	A	800		JSR	JCGTCH,X	JOB - SET JOB NAME IN V\$JNAM		03 00727
001313	003705	R							
001314	001010	A	801		JAZ	JC4D2	JUMP IF NO MORE CHARS.		03 00728
001315	001334	R							
001316	006140	A	802		SUBI	0254	COMMA ?		03 00729
001317	000254	A							
001320	001010	A	803		JAZ	DLMY	YES,ERROR		03 00730
001321	004122	R							
001322	147000	I	804		SUB	N21	EQUALS ?		03 00731
001323	001010	A	805		JAZ	DLMY	YES,ERROR		03 00732
001324	004122	R							
001325	006120	A	806		ADDI	017	PERIOD ?		03 00733
001326	000017	A							
001327	001016	A	807		JANZ	JC4G1	JUMP IF NOT PERIOD		03 00734
001330	001412	R							
001331	017000	I	808		LDA	JCCHAR			03 00735
001332	006505	A	809		JSR	DLMCHK,X	CHECK DELIMETER		03 00736
001333	004072	R							
001334	006017	A	810	JC4D2	LDAE	N240	STORE BLANK CHAR.		03 00737
001335	003413	R							
001336	005102	A	811		INCR	2			03 00738
001337	006505	A	812	JC4E1	JSR	JCPTCH,X			03 00739
001340	003751	R							
001341	014055	A	813		LDA	JCTA			03 00740
001342	005311	A	814		DAR				03 00741
001343	054053	A	815		STA	JCTA			03 00742
001344	001016	A	816		JANZ	JC4D1			03 00743
001345	001306	R							
001346	020400	A	817		LDB	V\$LUT1	ADRS OF JCP ASSIGNABLE		03 00744
001347	036000	A	818		LDX	0,B	LOGICAL UNIT TABLE		03 00745
001350	005122	A	819		IBR		SKIP FIRST		03 00746
001351	005122	A	820		IBR		TWO LOGICAL UNITS		03 00747
001352	005344	A	821		DXR		DC AND SI		03 00748
001353	005344	A	822		DXR				03 00749
001354	005122	A	823	JC4F1	IBR				03 00750







001503	000170	A							
001504	000000	A							
001505	001400	A							
001506	000000	A							
001507	000000	A							
001510	000000	A							
001511	000000	A							
001512	143717	A							
001513	120240	A							
001514	120240	A	859	FCB	120,0,3,0,'PD',, , ,			03	00786
001515	000170	A							
001516	000000	A							
001517	001400	A							
001520	000000	A							
001521	000000	A							
001522	000000	A							
001523	000000	A							
001524	150317	A							
001525	120240	A							
001526	120240	A							
			860	EJEC					03 00787
			861	*					03 00788
001527	014334	A	862	JCPTSK	LDA JCTBUF	TRANSFER			03 00789
001530	054325	A	863		STA JC5F1+4	TASK NAME			03 00790
001531	014333	A	864		LDA JCTBUF+1	TO			03 00791
001532	054324	A	865		STA JC5F1+5	SCHED			03 00792
001533	014332	A	866		LDA JCTBUF+2	CALL			03 00793
001534	054323	A	867		STA JC5F1+6				03 00794
001535	017000	I	868		LDA N101	SET P1=1, REQ CODE=1,			03 00795
001536	054315	A	869		STA JC5F1+2	P2=0 IN SCHED CALL			03 00796
001537	017000	I	870		LDA N1425	SET P3=105 (0151)			03 00797
001540	054314	A	871		STA JC5F1+3	P4='E' IN SCHED CALL			03 00798
001541	020412	A	872		LDB V\$JCB				03 00799
001542	004041	A	873		LRLB	SET PUT CHARACTER POINTER			03 00800
001543	067000	I	874		STB	TO BEGIN OF JC BUFFER			03 00801
001544	006047	A	875	JC5D1	INRE IGBLK				03 00802
001545	003745	R							
001546	006020	A	876	LDBI	80				03 00803
001547	000120	A							
001550	006505	A	877	JC5D2	JSR JCGTCH,X	TRANSFER PARAMETERS			03 00804
001551	003705	R							
001552	001010	A	878	JAZ	JC5E1	IN JC BUFFER TO			03 00805
001553	002030	R							
001554	006505	A	879	JSR	JCPTCH,X	BEGIN OF BUFFER			03 00806
001555	003751	R							
001556	005322	A	880	DBR					03 00807
001557	001000	A	881	JMP	JC5D2				03 00808
001560	001550	R							
			882	EJEC					03 00809
			883	*					03 00810
			884	*		EXECUTE STATEMENT			03 00811
			885	*					03 00812
001561	006047	A	886	JCPEX	INRE IGBLK	IGNORE BLANKS			03 00813
001562	003745	R							
001563	006505	A	887	JSR	JCGTCH,X	CHECK FOR			03 00814
001564	003705	R							
001565	147000	I	888	SUB	N304	'D' PARAM			03 00815
001566	001016	A	889	JANZ	JC5C4	NO			03 00816
001567	001577	R							
001570	006047	A	890	INRE	IGBLK	IGNORE BLANKS			03 00817
001571	003745	R							
001572	006505	A	891	JSR	JCGTCH,X	GET NEXT CHAR.			03 00818
001573	003705	R							
001574	010055	A	892	LDA	V\$JCFG	YES -			03 00819
001575	110425	A	893	DRA	BS4	SAVE DUMP FLAG AND SET LATER			03 00820
001576	050055	A	894	STA	V\$JCFG				03 00821
001577	017000	I	895	JC5C4	LDA JCCHAR	FETCH LAST CHAR.			03 00822
001600	001010	A	896	JAZ	JC5C5	JUMP IF NO TERM.			03 00823
001601	001605	R							
001602	147000	I	897	SUB	N256	CHECK IF NEXT CHAR IS PERIOD			03 00824
001603	001016	A	898	JANZ	JC5D8	ANY OTHER CHARS. IS AN ERROR			03 00825
001604	001670	R							
001605	010055	A	899	JC5C5	LDA V\$JCFG	SET			03 00826
001606	150465	A	900	ANA	FIVE				03 00827
001607	001010	A	901	JAZ	JCPXQT	JUMP IF NOT LOAD AND GO			03 00828
001610	001701	R							
001611	140421	A	902	SUB	ONE	LOAD AND GO BIT ONLY SET ?			03 00829
001612	001016	A	903	JANZ	JC5XC	NO			03 00830
001613	001676	R							
001614	006010	A	904	LDAI	9				03 00831
001615	000011	A							
001616	006505	A	905	JSR	JCLNDV,X	GET GO DST			03 00832
001617	004003	R							
001620	005014	A	906	TAX					03 00833
001621	015001	A	907	LDA	1,X				03 00834
001622	006617	A	908	SRE	HMT,7,010	MT ?			03 00835
001623	003376	R							
001624	001000	A	909	JMP	JC5C6				03 00836
001625	001637	R							
001626	017000	I	910	LDA	JCFCBS+7	STORE 'GDFCB' ADDRESS IN CALL			03 00837
001627	054004	A	911	STA	*+5				03 00838
			912	WEDF	GDFCB,GO,0				03 00839



001630	006505	A							
001631	000404	A							
001632	100000	A							
001633	001011	A							
001634	001143	E							
001635	000000	A							
001636	000000	A							
001637	006010	A	913	JC5C6	LDAI	'LM'	YES -		03 00840
001640	146315	A							
001641	054214	A	914		STA	JC5F1+4	SET		03 00841
001642	006010	A	915		LDAI	'GE'	'LMGEN'		03 00842
001643	143705	A							
001644	054212	A	916		STA	JC5F1+5	IN		03 00843
001645	006010	A	917		LDAI	'N'	SCHED CALL		03 00844
001646	147240	A							
001647	054210	A	918		STA	JC5F1+6			03 00845
001650	017000	I	919		LDA	N101	SET P1 =1, REQ CODE =1		03 00846
001651	054202	A	920		STA	JC5F1+2	P2=0 IN SCHED CALL		03 00847
001652	017000	I	921		LDA	N1425	SET P3 = 105		03 00848
001653	054201	A	922		STA	JC5F1+3	P4 ='E' IN SCHED CALL		03 00849
001654	006017	A	923		LDAE	DBLK	CLEAR JCP BUFFER		03 00850
001655	003372	R							
001656	020412	A	924		LDB	V\$JCB			03 00851
001657	006037	A	925		LDXE	N50			03 00852
001660	003441	R							
001661	056000	A	926	JC5C66	STA	0,B			03 00853
001662	005122	A	927		IBR				03 00854
001663	005344	A	928		DXR				03 00855
001664	001046	A	929		JXNZ	JC5C66			03 00856
001665	001661	R							
001666	001000	A	930		JMP	JC5F1			03 00857
001667	002052	R							
001670	010422	A	931	JC5D8	LDA	TWO			03 00858
001671	057000	I	932	JC5D7	STA	ERRN	SET ERROR TYPE		03 00859
001672	005001	A	933		TZA		RESET JCP FLAG WORD		03 00860
001673	050055	A	934		STA	V\$JCFG	RESET DUMP FLAG		03 00861
001674	001000	A	935		JMP	JCRMSG	PROCESS ERROR		03 00862
001675	000607	R							
001676	010466	A	936	JC5XC	LDA	SIX			03 00863
001677	001000	A	937		JMP	JC5D7	GO SET ERROR CODE		03 00864
001700	001671	R							
001701	010427	A	938	JCPXQT	LDA	BS6	SET P1=0, P2=0		03 00865
001702	054151	A	939		STA	JC5F1+2	REQ CODE=1 IN SCHED		03 00866
001703	017000	I	940		LDA	N1411	SET P3=102 (0146),		03 00867
001704	054150	A	941		STA	JC5F1+3	P4='B' IN SCHED		03 00868
001705	017000	I	942		LDA	HSW			03 00869
001706	054147	A	943		STA	JC5F1+4	SET		03 00870
001707	017000	I	944		LDA	DBLK	'SW'		03 00871
001710	054146	A	945		STA	JC5F1+5	FOR TASK NAME		03 00872
001711	054146	A	946		STA	JC5F1+6	IN SCHED		03 00873
001712	020412	A	947		LDB	V\$JCB	CLEAR		03 00874
001713	017000	I	948		LDA	DBLK	FIRST		03 00875
001714	056000	A	949		STA	0,B	2 WORDS		03 00876
001715	056001	A	950		STA	1,B	OF JC BUFFER		03 00877
001716	001000	A	951		JMP	JC5E11			03 00878
001717	002037	R							
			952		EJEC				03 00879
			953	*					03 00880
			954	*			LOAD STATEMENT		03 00881
			955	*					03 00882
001720	027000	I	956	JCPLD	LDB	JC5PTR	SET PUT CHAR		03 00883
001721	004041	A	957		LRLB	1	POINTER TO		03 00884
001722	067000	I	958		STB	CHPTR2	SCHED CALL +4		03 00885
001723	020466	A	959		LDB	SIX			03 00886
001724	006047	A	960	JC6A1	INRE	IGBLK			03 00887
001725	003745	R							
001726	006505	A	961	JC6A2	JSR	JCGTCH,X	GET CHAR FROM JC BUFFER		03 00888
001727	003705	R							
001730	054026	A	962		STA	JC6A25+1	SAVE CHAR.		03 00889
001731	006147	A	963		SUBE	N240	BLANK ?		03 00890
001732	003413	R							
001733	001010	A	964		JAZ	JC6A3	YES		03 00891
001734	001765	R							
001735	140423	A	965		SUB	FOUR	DOLLARSIGN ?		03 00892
001736	001010	A	966		JAZ	JC6A25	YES		03 00893
001737	001756	R							
001740	006140	A	967		SUBI	014			03 00894
001741	000014	A							
001742	001004	A	968		JAN	JC6A4			03 00895
001743	001773	R							
001744	140471	A	969		SUB	TEN	NUMBER	E.2 *****	03 00897
001745	001004	A	970		JAN	JC6A25	YES		03 00897
001746	001756	R							
001747	140467	A	971		SUB	SEVEN		E.2 *****	03 00899
001750	001004	A	972		JAN	JC6A4			03 00899
001751	001773	R							
001752	006140	A	973		SUBI	032	LETTER ?		03 00900
001753	000032	A							
001754	001002	A	974		JAP	JC6A4	NO		03 00901
001755	001773	R							
001756	006010	A	975	JC6A25	LDAI	0			03 00902
001757	000000	A							
001760	006505	A	976		JSR	JCPTCH,X	PUT CHAR IN SCHED CALL		03 00903



001761	003751	R							
001762	005322	A	977	DBR				03	00904
001763	001026	A	978	JBNZ	JC6A2			03	00905
001764	001726	R							
001765	006047	A	979	JC6A3	INRE	IGBLK	ADVANCE SCAN	03	00906
001766	003745	R							
001767	006505	A	980		JSR	JCGTCH,X	TO DELIMITER	03	00907
001770	003705	R							
001771	001010	A	981		JAZ	JC6B1	NO PARAMETERS	03	00908
001772	002007	R							
001773	017000	I	982	JC6A4	LDA	JCCHAR	FETCH LAST CHARACTER	03	00909
001774	006505	A	983		JSR	DLMCHK,X	CHECK DELIMITER	03	00910
001775	004072	R							
001776	017000	I	984		LDA	JCCHAR	FETCH LAST CHARACTER	03	00911
001777	147000	I	985		SUB	N254	CHECK IF COMMA	03	00912
002000	001010	A	986		JAZ	JC6B1	IF SO CONTINUE PROCESSING	03	00913
002001	002007	R							
002002	140422	A	987		SUB	TWD	CHECK IF PERIOD	03	00914
002003	001010	A	988		JAZ	JC5E1	IF SO BLANK BUFFER	03	00915
002004	002030	R							
002005	001000	A	989		JMP	JC13F2	ANY OTHER CHAR. IS AN ERROR	03	00916
002006	003564	R							
002007	001020	A	990	JC6B1	JBZ	JC6C1	JUMP IF BLANK FILLED	03	00917
002010	002017	R							
002011	017000	I	991		LDA	N240	FILL OUT	03	00918
002012	006505	A	992		JSR	JCPTCH,X	TASK NAME	03	00919
002013	003751	R							
002014	005322	A	993		DBR		WITH BLANKS	03	00920
002015	001000	A	994		JMP	JC6B1		03	00921
002016	002007	R							
002017	010427	A	995	JC6C1	LDA	BS6	SET P1=0, P2=0	03	00922
002020	054033	A	996		STA	JC5F1+2	IN SCHED	03	00923
002021	017000	I	997		LDA	N1425	SET P3=105 (0151)	03	00924
002022	054032	A	998		STA	JC5F1+3	P4='E' IN SCHED	03	00925
002023	020412	A	999		LDB	V\$JCB		03	00926
002024	004041	A	1000		LRLB	1	SET PUT CHARACTER POINTER	03	00927
002025	067000	I	1001		STB	CHPTR2	TO BEGIN OF JC BUFFER	03	00928
002026	001000	A	1002		JMP	JC5D1		03	00929
002027	001544	R							
002030	006010	A	1003	JC5E1	LDAI	0240		03	00930
002031	000240	A							
002032	006505	A	1004		JSR	JCPTCH,X	BLANK OUT	03	00931
002033	003751	R							
002034	005322	A	1005		DBR		REST OF BUFFER	03	00932
002035	001026	A	1006		JBNZ	JC5E1		03	00933
002036	002030	R							
002037	020055	A	1007	JC5E11	LDB	V\$JCFG	GET JCP FLAG WORD	03	00934
002040	010055	A	1008		LDA	V\$JCFG	MOVE MEM BLOCKS IN BITS 10-15	03	00935
002041	006150	A	1009		ANAI	01740		03	00936
002042	001740	A							
002043	110047	A	1010		DRA	V\$JCTM		03	00937
002044	006464	A	1011		BT	RB0+B4,JC5D9	JUMP IF NO DUMP OPTION	03	00938
002045	002047	R							
002046	110424	A	1012		DRA	BS3	OTHERWISE, SET DUMP FLAG ON	03	00939
002047	050055	A	1013	JC5D9	STA	V\$JCFG	STORE VALUE IN JCP FLAG WORD	03	00940
002050	005001	A	1014		TZA			03	00941
002051	050047	A	1015		STA	V\$JCTM	RESET TEMP. MEM CELL	03	00942
			1016				THE A REG MUST BE ZERO AT THE TIME OF THE SCHED REQ -REQUIRED BY	E.2*****	
			1017				V\$SORT-	E.2*****	
			1018	JC5F1	SCHED	0,0,0,0,0,0,0	BLANK MACRO FOR SCHED CALL	03	00943
002052	006505	A							
002053	000406	A							
002054	000100	A							
002055	000000	A							
002056	000000	A							
002057	000000	A							
002060	000000	A							
			1019		EXIT		EXIT TO RTE	03	00944
002061	006505	A							
002062	000406	A							
002063	000200	A							
002064			1020	JCTBUF	BSS	4		03	00945
			1021		EJEC			C.1	03 00946
			1022	*				C.1	03 00947
			1023	*			DUMP STATEMENT	C.1	03 00948
			1024	*				C.1	03 00949
002070	010055	A	1025	JCDUMP	LDA	V\$JCFG		C.1	03 00950
002071	110425	A	1026		DRA	BS4		C.1	03 00951
002072	050055	A	1027		STA	V\$JCFG		C.1	03 00952
002073	001000	A	1028		JMP	JCRET		C.1	03 00953
002074	000066	R							
			1029		EJEC			03	00954
			1030	*				03	00955
			1031	*			FORM STATEMENT	03	00956
			1032	*				03	00957
002075	006505	A	1033	JCFOR	JSR	JCCNVT,X	GET COUNT	03	00958
002076	003473	R							
002077	006505	A	1034		JSR	JCCKTM,X	CHECK IF BLANK OR PERIOD CHAR.	03	00959
002100	003447	R							
002101	140465	A	1035		SUB	FIVE		03	00960
002102	001004	A	1036		JAN	JC7C2	COUNT LESS THAN 5	03	00961
002103	002113	R							
002104	147000	I	1037		SUB	D9995		03	00962



002105	001002	A	1038	JAP	JC7C2	COUNT GTR THAN 9999	03	00963
002106	002113	R						
002107	127000	I	1039	ADD	D10000		03	00964
002110	050054	A	1040	STA	V&LCNT	COUNT OK, STORE IN LOW CORE	03	00965
002111	001000	A	1041	JMP	JCRET	RETURN	03	00966
002112	000066	R						
002113	010074	A	1042	JC7C2	LDA	V&PLCT	03	00967
002114	050054	A	1043	STA	V&LCNT	RESTORE PERMANENT LINE COUNT	03	00968
002115	001000	A	1044	JMP	JC8B2	ERROR, IF COUNT BAD	03	00969
002116	002174	R						
			1045	EJEC			03	00970
			1046	*			03	00971
			1047	*		SKIP FILE STATEMENT	03	00972
			1048	*			03	00973
002117	006505	A	1049	JCSF1	JSR	JCKLN, X	03	00974
002120	003611	R						
002121	057000	I	1050	STA	JCT1	SAVE LOG UNIT NO.	03	00975
002122	006505	A	1051	JSR	JCLNDV, X	GET DST ENTRY ADRS	03	00976
002123	004003	R						
002124	005014	A	1052	TAX			03	00977
002125	010464	A	1053	LDA	THREE		03	00978
002126	057000	I	1054	STA	ERRN		03	00979
002127	015001	A	1055	LDA	1, X		03	00980
002130	137000	I	1056	ERA	HMT		D.103	00981
002131	001010	A	1057	JAZ	JCSF1	IF MT	D.103	00982
002132	002142	R						
002133	137000	I	1058	ERA	HMT	RESTORE	D.103	00983
002134	006130	A	1059	ERAI	'CR'		D.103	00984
002135	141722	A						
002136	001010	A	1060	JAZ	JCSF1	IF CR	D.103	00985
002137	002142	R						
002140	001000	A	1061	JMP	JCRMSG	GIVE ERROR MESSAGE	D.103	00986
002141	000607	R						
002142	002142	R	1062	JCSF1	EQU	*	D.103	00987
002143	006505	A	1063	JSR	JCCNVT, X	CONVERT AND	03	00988
002144	003473	R						
002144	057000	I	1064	STA	COUNT	SAVE FILE COUNT	03	00989
002145	006505	A	1065	JSR	JCKTM, X	CHECK IF BLANK OR PERIOD CHAR.	03	00990
002146	003447	R						
002147	017000	I	1066	LDA	COUNT		03	00991
002150	001010	A	1067	JAZ	JC8B2	JUMP IF COUNT = ZERO	03	00992
002151	002174	R						
002152	014006	A	1068	LDA	JC8E1+3		03	00993
002153	150462	A	1069	ANA	LHW	SET LUN INTO	03	00994
002154	117000	I	1070	ORA	JCT1	SREC MACRO CALL	03	00995
002155	054003	A	1071	STA	JC8E1+3		03	00996
			1072	JC8E1	SREC	0,0,0,0	03	00997
002156	006505	A						
002157	000404	A						
002160	100000	A						
002161	002000	A						
002162	000000	A						
002163	000000	A						
002164	000000	A						
002165	006017	A	1073	LDAE	JC8E1+2		03	00998
002166	002160	R						
002167	157000	I	1074	ANA	N340		03	00999
002170	006617	A	1075	SRE	N340,7,010	SKIP IF EDT	03	01000
002171	003377	R						
002172	001000	A	1076	JMP	JC8B3	NOT EDT	03	01001
002173	002200	R						
002174	010460	A	1077	JC8B2	LDA	FIVE	03	01002
002175	057000	I	1078	STA	ERRN	EDT -	03	01003
002176	001000	A	1079	JMP	JCRMSG	SET ERROR CODE	03	01004
002177	000607	R				GO TO ERROR ROUTINE	03	01005
002200	006617	A	1080	JC8B3	SRE	N300,7,010	03	01005
002201	003443	R						
002202	001000	A	1081	JMP	JC8E1	NOT EDF - GO BACK	03	01006
002203	002156	R						
002204	017000	I	1082	LDA	COUNT	EDF -	03	01007
002205	005311	A	1083	DAR		DECREMENT COUNT	03	01008
002206	001010	A	1084	JAZ	JCRET	DONE - RETURN	03	01009
002207	000066	R						
002210	057000	I	1085	STA	COUNT	SAVE NEW COUNT	03	01010
002211	001000	A	1086	JMP	JC8E1	CONTINUE	03	01011
002212	002156	R						
			1087	EJEC			03	01012
			1088	*			03	01013
			1089	*		REWIND STATEMENT	03	01014
			1090	*			03	01015
002213	006505	A	1091	JCREW	JSR	JCKLN, X	03	01016
002214	003611	R						
002215	057000	I	1092	STA	JCT1	SAVE LOG UNIT NO.	03	01017
002216	006505	A	1093	JSR	JCLNDV, X	GET DST ENTRY ADRS	03	01018
002217	004003	R						
002220	005014	A	1094	TAB			03	01019
002221	016001	A	1095	LDA	1, R		03	01020
002222	147000	I	1096	SUB	HMT	DEVICE = MAG TAPE ?	03	01021
002223	001010	A	1097	JAZ	JC9B1	YES	03	01022
002224	002242	R						
002225	017000	I	1098	LDA	JCT1		03	01023
002226	140422	A	1099	SUB	TWD	CHECK IF LEGAL LUN (2,4 TO 10)	03	01024
002227	005012	A	1100	TAB			03	01025



Address	Op	Op2	Op3	Op4	Description	Line	Page
1218	EJEC					03	01143
1219	*					03	01144
1220	*				POSITION FILE STATEMENT	03	01145
1221	*					03	01146
002507	JCPFI	JSR	JCCKLN,X		CHECK LUN	03	01147
002510	R						
002511	A	STA	JCT1			03	01148
002512	A	SUB	TWO		CHECK IF LEGAL LUN(2,4 TO 10)	03	01149
002513	A	TAB				03	01150
002514	A	JAN	JC14B3		ERROR IF LESS THAN 2	03	01151
002515	R						
002516	A	SUB	NINE		CHECK IF GREATER THAN 10	03	01152
002517	A	JAP	JC14B3		ERROR	03	01153
002520	R						
002521	A	LDBE	JCFCBS,B			03	01154
002522	R						
002523	A	JBZ	JC14B3		ERROR IF LUN 3	03	01155
002524	R						
002525	A	STB	JC11E3+4		STORE FCB ADDRESS INTO OPEN CALL	03	01156
002526	A	LDA	JCT1			03	01157
002527	A	JSR	JCLNDV,X		GET DST ENTRY ADRS	03	01158
002530	R						
002531	A	TAB				03	01159
002532	A	LDA	THREE			03	01160
002533	A	STA	ERRN			03	01161
002534	A	LDA	1,B			03	01162
002535	A	LSRA	8		IS DEVICE	03	01163
002536	A	SRE	N304,7,010		A RMD ?	03	01164
002537	R						
002540	A	JMP	JCRMSG		NO - GIVE ERROR MESSAGE	03	01165
002541	R						
002542	I	INR	IGBLK			03	01166
002543	A	JSR	JCGTCH,X		GET FILE PROTECT KEY	03	01167
002544	R						
002545	A	JAZ	JC11D2		NOT THERE - ERROR	03	01168
002546	R						
002547	A	STA	JCT2			03	01169
002550	A	SUB	N254		DELIMITER ?	03	01170
002551	A	JAZ	JC11D0		YES	03	01171
002552	R						
002553	A	SUBI	021			03	01172
002554	A						
002555	A	JANZ	JC11D1		NO	03	01173
002556	R						
002557	A	JC11D0	STA	JCT2	SET KEY TO ZERO	03	01174
002560	A	JMP	JC11D3			03	01175
002561	R						
002562	I	JC11D1	INR	IGBLK	ADVANCE POINTER	03	01176
002563	A	JSR	JCGTCH,X			03	01177
002564	R						
002565	A	JSR	ELMCHK,X		CHECK DELIMITER	03	01178
002566	R						
002567	A	LDA	JCT2		CHECK KEY FOR NUMBER, LETTER, OR \$	03	01179
002570	A	SUB	N244			03	01180
002571	A	JAZ	JC11D3		DOLLAR SIGN - OK	03	01181
002572	R						
002573	A	LDA	JCT2			03	01182
002574	A	SUB	N260		TEST FOR NUMBER	03	01183
002575	A	JAN	JC11D2		INVALID	03	01184
002576	R						
002577	A	SUB	TEN			03	01185
002600	A	JAN	JC11D3		NUMBER - OK	03	01186
002601	R						
002602	A	LDA	JCT2		TEST FOR LETTER	03	01187
002603	A	SUB	N301			03	01188
002604	A	JAN	JC11D2		INVALID	03	01189
002605	R						
002606	A	SUB	N32			03	01190
002607	A	JAN	JC11D3		LETTER - OK	03	01191
002610	R						
002611	A	JC11D2	LDA	FOUR	INVALID KEY -	03	01192
002612	A	STA	ERRN		SET ERR NO.	03	01193
002613	A	JMP	JCRMSG		PROCESS ERROR	03	01194
002614	R						
002615	A	JC11D3	LDB	JC11E3+4		03	01195
002616	A	LDA	2,B			03	01196
002617	A	ANA	LHW			03	01197
002620	A	DRA	JCT2			03	01198
002621	A	STA	2,B		PROTECT KEY IN FCB	03	01199
002622	A	LDA	DELK			03	01200
002623	A	STA	7,B			03	01201
002624	A	STA	9,B			03	01202
002625	A	STA	9,B			03	01203
002626	I	INR	IGBLK			03	01204
002627	A	JSR	JCGTCH,X		GET	03	01205
002630	R						
002631	A	LRLA	8		FIRST	03	01206
002632	A	STA	JCT2		WORD	03	01207
002633	A	DRA	N240			03	01208
002634	A	LDB	JC11E3+4			03	01209
002635	A	STA	7,B			03	01210
002636	A	JSR	JCGTCH,X		OF	03	01211
002637	R						



002640	001010	A	1287	JAZ	JC11E2			03	01212
002641	002705	R							
002642	114565	A	1288	DRA	JCT2	FILENAME		03	01213
002643	024051	A	1289	LDB	JC11E3+4			03	01214
002644	056007	A	1290	STA	7,B			03	01215
002645	006505	A	1291	JSR	JCGTCH,X	GET		03	01216
002646	003705	R							
002647	001010	A	1292	JAZ	JC11E2			03	01217
002650	002705	R							
002651	004250	A	1293	LRLA	8	SECOND		03	01218
002652	054555	A	1294	STA	JCT2	WORD		03	01219
002653	114537	A	1295	DRA	N240			03	01220
002654	024040	A	1296	LDB	JC11E3+4			03	01221
002655	056010	A	1297	STA	8,B			03	01222
002656	006505	A	1298	JSR	JCGTCH,X	DF		03	01223
002657	003705	R							
002660	001010	A	1299	JAZ	JC11E2			03	01224
002661	002705	R							
002662	114545	A	1300	DRA	JCT2	FILENAME		03	01225
002663	024031	A	1301	LDB	JC11E3+4			03	01226
002664	056010	A	1302	STA	8,B			03	01227
002665	006505	A	1303	JSR	JCGTCH,X	GET		03	01228
002666	003705	R							
002667	001010	A	1304	JAZ	JC11E2			03	01229
002670	002705	R							
002671	004250	A	1305	LRLA	8	THIRD		03	01230
002672	054535	A	1306	STA	JCT2	WORD		03	01231
002673	114517	A	1307	DRA	N240			03	01232
002674	024020	A	1308	LDB	JC11E3+4			03	01233
002675	056011	A	1309	STA	9,B			03	01234
002676	006505	A	1310	JSR	JCGTCH,X	DF		03	01235
002677	003705	R							
002700	001010	A	1311	JAZ	JC11E2			03	01236
002701	002705	R							
002702	114525	A	1312	DRA	JCT2	FILENAME		03	01237
002703	024011	A	1313	LDB	JC11E3+4			03	01238
002704	056011	A	1314	STA	9,B			03	01239
002705	014000	A	1315	JC11E2 LDA	JC11E3+3			03	01240
002706	150462	A	1316	ANA	LHW	SET LUN		03	01241
002707	114517	A	1317	DRA	JCT1	INTO OPEN CALL		03	01242
002710	054003	A	1318	STA	JC11E3+3			03	01243
			1319	JC11E3 OPEN	PIFCB,0,0,0	OPEN		03	01244
002711	006505	A							
002712	000404	A							
002713	100000	A							
002714	003000	A							
002715	001376	E							
002716	000000	A							
002717	000000	A							
002720	001000	A	1320	JMP	JCRET	RETURN		03	01245
002721	000066	R							
002722	000130	E	1321	JCFCBS	DATA	SIFCB		03	01246
002723	000000	A	1322		DATA	0		03	01247
002724	002713	E	1323		DATA	PIFCB		03	01248
002725	001172	E	1324		DATA	LOFCB		03	01249
002726	000000	E	1325		DATA	BIFCB		03	01250
002727	001221	E	1326		DATA	BOFCB		03	01251
002730	000000	E	1327		DATA	SSFCB		03	01252
002731	001534	E	1328		DATA	GOFCB		03	01253
002732	000000	E	1329		DATA	POFCB		03	01254
			1330		EXT	SIFCB,PIFCB,LOFCB,BIFCB		03	01255
			1331		EXT	BOFCB,SSFCB,GOFCB,POFCB		03	01256
			1332		EJEC			03	01257
			1333	*				03	01258
			1334	*		SPECIAL ALTLIB ROUTINE		03	01259
			1335	*				03	01260
002733	006505	A	1336	JCALT	JSR	JCKLN,X	GET LUN	03	01261
002734	003611	R							
002735	006057	A	1337	STAE	JCT1			03	01262
002736	003427	R							
002737	014463	A	1338	LDA	CHKTR	PICKUP DELIMETER		03	01263
002740	005311	A	1339	DAR				03	01264
002741	054461	A	1340	STA	CHKTR			03	01265
002742	006505	A	1341	JSR	JCGTCH,X			03	01266
002743	003705	R							
002744	006140	A	1342	SUBI	0254	COMMA		03	01267
002745	000254	A							
002746	001016	A	1343	JANZ	JCALT1	NO.		03	01268
002747	002757	R							
002750	006505	A	1344	JSR	JCGTCH,X	YES		03	01269
002751	003705	R							
002752	004250	A	1345	LRLA	3			03	01270
002753	114453	A	1346	JCALT2 DRA	JCT1	ADD IN LUN		03	01271
002754	054410	A	1347	STA	N1425	STORE IT IN BL UNIT HOLDER		03	01272
002755	001000	A	1348	JMP	JCRET	RETURN		03	01273
002756	000066	R							
002757	005001	A	1349	JCALT1	TZA			03	01274
002760	001000	A	1350	JMP	JCALT2			03	01275
002761	002753	R							
			1351		EJEC			03	01276
			1352	*				03	01277
			1353	*		CLOSE FILE DIRECTIVE		03	01278
			1354	*				03	01279



002762	006505	A	1355	JCFILE	JSR	JCCKLN,X	CONVERT LUN	03	01280
002763	003611	R							
002764	005012	A	1356		TAB			03	01281
002765	140423	A	1357		SUB	FOUR	ERROR IF LT 4	03	01282
002766	001004	A	1358		JAN	JC12B3		03	01283
002767	003025	R							
002770	140466	A	1359		SUB	SIX	ERROR IF GT 10	03	01284
002771	001002	A	1360		JAP	JC12B3		03	01285
002772	003025	R							
002773	006016	A	1361		LDAE	JCFCBS-2,B	PICKUP ADDR OF APPROPRIATE	E.2*****	
002774	002720	R							
002775	054010	A	1362		STA	JCFL1+4	GLOBAL FCB AND SET DP CLOSE CALL.	03	01287
002776	005021	A	1363		TBA			03	01288
002777	006110	A	1364		DRAI	013400	SET LUN INTO CLOSE CALL	03	01289
003000	013400	A							
003001	054003	A	1365		STA	JCFL1+3		03	01290
			1366	JCFL1	CLOSE	*	CLOSE	03	01291
003002	006505	A							
003003	000404	A							
003004	100000	A							
003005	003400	A							
003006	003002	R							
003007	000000	A							
003010	000000	A							
003011	001000	A	1367		JMP	JCRET	RETURN	03	01292
003012	000066	R							
			1368		EJEC			03	01293
			1369	*				03	01294
			1370	*			ASSIGN STATEMENT	03	01295
			1371	*				03	01296
003013	006505	A	1372	JCASS	JSR	JCCKLN,X	CHECK LUN	03	01297
003014	003611	R							
003015	001010	A	1373		JAZ	JC12B3	IS LUN JCP	03	01298
003016	003025	R							
003017	054407	A	1374		STA	JCT1	ASSIGNABLE AND VALID ?	03	01299
003020	020400	A	1375		LDB	V\$LUT1		03	01300
003021	146000	A	1376		SUB	0,B		03	01301
003022	005311	A	1377		DAR			03	01302
003023	001004	A	1378		JAN	JC12C1	YES	03	01303
003024	003031	R							
003025	010467	A	1379	JC12B3	LDA	SEVEN	NO -	03	01304
003026	054365	A	1380		STA	ERRN	SET ERROR NO.	03	01305
003027	001000	A	1381		JMP	JCRMSG	PROCESS ERROR	03	01306
003030	000607	R							
003031	014371	A	1382	JC12C1	LDA	CHPTR		03	01307
003032	005311	A	1383		DAR		GET	03	01308
003033	054367	A	1384		STA	CHPTR	NEXT	03	01309
003034	044710	A	1385		INR	IGBLK		03	01310
003035	006505	A	1386		JSR	JCGTCH,X	CHARACTER	03	01311
003036	003705	R							
003037	006505	A	1387		JSR	DLMCHK,X	CHECK DELIMITER	03	01312
003040	004072	R							
003041	014361	A	1388	JC12C2	LDA	CHPTR	SAVE POINTER	03	01313
003042	054367	A	1389		STA	JCT4		03	01314
003043	044701	A	1390		INR	IGBLK		03	01315
003044	006505	A	1391		JSR	JCGTCH,X	GET NEXT	03	01316
003045	003705	R							
003046	004250	A	1392		LRLA	8	TWO CHARACTERS	03	01317
003047	054360	A	1393		STA	JCT2	AND	03	01318
003050	006505	A	1394		JSR	JCGTCH,X	PACK INTO WORD	03	01319
003051	003705	R							
003052	114355	A	1395		DRA	JCT2		03	01320
003053	054354	A	1396		STA	JCT2		03	01321
003054	006505	A	1397		JSR	JCGTCH,X	IS NEXT CHARACTER	03	01322
003055	003705	R							
003056	144003	A	1398		SUB	JC12CM	CHECK IF 'M' CHAR. OF 'DUM'	03	01323
003057	001010	A	1399		JAZ	JC12CZ	YES; GO CHECK FOR 'DU'	03	01324
003060	003104	R							
003061	006120	A	1400		ADDI	0315		03	01325
003062	000315	A							
003063	144361	A	1401	JC12CM	BES	0		03	01326
003064	001004	A	1402		SUB	N260	A NUMBER ?	03	01327
003065	003114	R	1403		JAN	JC12CA	NO	03	01328
003066	140471	A	1404		SUB	TEN		03	01329
003067	001002	A	1405		JAP	JC12CA	NO	03	01330
003070	003114	R							
003071	120471	A	1406		ADD	TEN	YES - GET LAST	03	01331
003072	004212	A	1407		ASLA	10	TWO CHAR OF DEVICE NAME (CNTRLR, DEV)	03	01332
003073	054335	A	1408		STA	JCT3	SAVE 1ST	03	01333
003074	006505	A	1409		JSR	JCGTCH,X	GET SECOND	03	01334
003075	003705	R							
003076	144346	A	1410		SUB	N260	CONVERT	03	01335
003077	004204	A	1411		ASLA	4		03	01336
003100	114330	A	1412		DRA	JCT3	COMBINE WITH 1ST	03	01337
003101	054327	A	1413		STA	JCT3	SAVE	03	01338
003102	001000	A	1414		JMP	JC12CB		03	01339
003103	003121	R							
003104	014328	A	1415	JC12CZ	LDA	JCT2	GET FIRST TWO CHARS.	03	01340
003105	006140	A	1416		SUBI	'DU'		03	01341
003106	142325	A							
003107	005002	A	1417		TZB		SET B= TO DUM LOGICAL UNIT.	03	01342
003110	001010	A	1418		JAZ	JC12E5	JUMP IF 'DUM'	03	01343



003111	003235	R							
003112	001000	A	1419	JMP	JC14B3	SET TO ERROR		03	01344
003113	003676	R							
003114	005001	A	1420	JC12CA	TZA			03	01345
003115	054313	A	1421		JCT3	SET CNTRLR, DEV TO ZERO		03	01346
003116	014304	A	1422		LDA	CHPTR		03	01347
003117	005311	A	1423		DAR	RESET		03	01348
003120	054302	A	1424		STA	CHPTR		03	01349
003121	020355	A	1425	JC12CB	LDB	V\$DSTB	SEARCH DST FOR NAME	03	01350
003122	016001	A	1426	JC12C3	LDA	1,B	END OF TABLE ?	03	01351
003123	001010	A	1427		JAZ	JC12D1	YES	03	01352
003124	003144	R							
003125	144302	A	1428		SUB	JCT2	NO - MATCH ON 1ST 2 CHAR ?	03	01353
003126	001010	A	1429		JAZ	JC12C4	YES	03	01354
003127	003135	R							
003130	005122	A	1430	JC12CC	IBR		NO -	03	01355
003131	005122	A	1431		IBR		INCREMENT	03	01356
003132	005122	A	1432		IBR		POINTER TO	03	01357
003133	001000	A	1433		JMP	JC12C3	NEXT ENTRY	03	01358
003134	003122	R							
003135	016000	A	1434	JC12C4	LDA	0,B	MATCH ON 2ND 2 CHAR ?	03	01359
003136	154244	A	1435		ANA	N17760		03	01360
003137	144271	A	1436		SUB	JCT3		03	01361
003140	001016	A	1437		JANZ	JC12CC	NO - GO BACK	03	01362
003141	003130	R							
003142	001000	A	1438		JMP	JC12E3	YES - DONE	03	01363
003143	003156	R							
003144	014265	A	1439	JC12D1	LDA	JCT4	NOT PHYS UNIT, CHECK FOR LOGICAL	03	01364
003145	054255	A	1440		STA	CHPTR	RESET POINTER	03	01365
003146	006505	A	1441		JSR	JCCKLN,X	CHECK LUN	03	01366
003147	003611	R							
003150	034252	A	1442		LDX	CHPTR	RESET	03	01367
003151	005344	A	1443		DXR		CHARACTER	03	01368
003152	074250	A	1444		STX	CHPTR	POINTER	03	01369
003153	006505	A	1445		JSR	JCLNDV,X	GET DST ENTRY ADDRESS	03	01370
003154	004003	R							
003155	005012	A	1446	JC12E3	TAB			03	01371
003156	016000	A	1447		LDA	0,B	IS DEVICE JCP	03	01372
003157	154266	A	1448		ANA	N60000	ASSIGNABLE ?	03	01373
003160	001016	A	1449		JANZ	JC12B3	NO - ERROR	03	01374
003161	003025	R							
003162	014244	A	1450		LDA	JCT1	IS THIS	03	01375
003163	140421	A	1451		SUB	ONE	OPCOM LOGICAL UNIT ?	03	01376
003164	001010	A	1452		JAZ	JC12ED	YES	03	01377
003165	003171	R							
003166	140422	A	1453		SUB	TWO	NO - IS THIS LOGICAL UNIT	03	01378
003167	001016	A	1454		JANZ	JC12E4	NO	03	01379
003170	003227	R							
003171	016001	A	1455	JC12ED	LDA	1,B	YES	03	01380
003172	006147	A	1456		SUB	ZTY	IS DEVICE A TTY ?	03	01381
003173	000722	R							
003174	001010	A	1457		JAZ	JC12EG	YES	03	01382
003175	003202	R							
003176	016001	A	1458		LDA	1,B	NO - IS DEVICE A	03	01383
003177	144226	A	1459		SUB	ZCT	CRT ?	03	01384
003200	001016	A	1460		JANZ	JC12B3	NO - ERROR	03	01385
003201	003025	R							
003202	014224	A	1461	JC12EG	LDA	JCT1	DEVICE IS TTY OR CRT	03	01386
003203	140421	A	1462		SUB	ONE	IS LOG UNIT OPCOM ?	03	01387
003204	001016	A	1463		JANZ	JC12E4	NO	03	01388
003205	003227	R							
003206	016000	A	1464		LDA	0,B	YES -	03	01389
003207	150460	A	1465		ANA	BR15	MAKE SURE	03	01390
003210	056000	A	1466		STA	0,B	DEVICE IS MARKED UP	03	01391
003211	016002	A	1467		LDA	2,B		03	01392
003212	006413	A	1468		BT	RA1+B11,JC12E4	JUMP IF DEVICE IS ALREADY OPCOM	03	01393
003213	003227	R							
003214	110434	A	1469		DRA	BS11	SET OPCOME DEVICE FLAG	03	01394
003215	056002	A	1470		STA	2,B	IN DST ENTRY	03	01395
003216	030400	A	1471		LDX	V\$LUT1	GET CURRENT	03	01396
003217	015001	A	1472		LDA	1,X	OPCOM ASSIGNMENT	03	01397
003220	150463	A	1473		ANA	RHW		03	01398
003221	006505	A	1474		JSR	JCLNDV,X	GET DEVICE ADDRESS	03	01399
003222	004003	R							
003223	005014	A	1475		TAX			03	01400
003224	015002	A	1476		LDA	2,X	CLEAR OPCOM	03	01401
003225	150454	A	1477		ANA	BR11	DEVICE FLAG IN	03	01402
003226	055002	A	1478		STA	2,X	OLD DST ENTRY	03	01403
003227	005021	A	1479	JC12E4	TBA			03	01404
003230	140355	A	1480		SUB	V\$DSTB	CONVERT	03	01405
003231	005012	A	1481		TAB		DST ADRS	03	01406
003232	005001	A	1482		TZA		TO	03	01407
003233	170464	A	1483		DIV	THREE	DST ENTRY NO.	03	01408
003234	005122	A	1484		IBR			03	01409
003235	010400	A	1485	JC12E5	LDA	V\$LUT1		03	01410
003236	124170	A	1486		ADD	JCT1		03	01411
003237	005014	A	1487		TAX		GET LUN ADRS	03	01412
003240	064167	A	1488		SIB	JCT2		03	01413
003241	015000	A	1489		LDA	0,X		03	01414
003242	150462	A	1490		ANA	LHW		03	01415
003243	114164	A	1491		DRA	JCT2	PACK DST ENTRY NO	03	01416
003244	055000	A	1492		STA	0,X	INTO LUT ENTRY	03	01417
003245	014161	A	1493		LDA	JCT1		03	01418



003246	140422	A	1494	SUB	TWO	CHECK IF SI LUN.	03	01419
003247	001016	A	1495	JANZ	JC12E6	JUMP IF NOT 'SI' LUN	03	01420
003250	003302	R						
003251	010422	A	1496	LDA	TWO		03	01421
003252	006505	A	1497	JSR	JCLNDV,X	GET DST ENTRY ADRS	03	01422
003253	004003	R						
003254	005012	A	1498	TAB			03	01423
003255	016001	A	1499	LDA	1,B		03	01424
003256	004330	A	1500	LSRA	8	IS DEVICE	03	01425
003257	006617	A	1501	SRE	N304,7,010	A RMD ?	03	01426
003260	003367	R						
003261	001000	A	1502	JMP	JC12E6	JUMP IF NOT RMD	03	01427
003262	003302	R						
003263	027000	I	1503	LDB	JCFCBS		03	01428
003264	064012	A	1504	STB	JC12EZ+4	STORE SIFCB ADDRESS	03	01429
003265	006010	A	1505	LDAI	'SI'		03	01430
003266	151711	A						
003267	056007	A	1506	STA	7,B		03	01431
003270	014101	A	1507	LDA	DBLK		03	01432
003271	056010	A	1508	STA	8,B		03	01433
003272	056011	A	1509	STA	9,B		03	01434
			1510	JC12EZ OPEN	SIFCB,2,0,0	OPEN SI IF RMD.	03	01435
003273	006505	A						
003274	000404	A						
003275	100000	A						
003276	003002	A						
003277	002722	E						
003300	000000	A						
003301	000000	A						
003302	006047	A	1511	JC12E6 INRE	IGBLK	IGNORE BLANKS	03	01436
003303	003745	R						
003304	006505	A	1512	JSR	JCGTCH,X		03	01437
003305	003705	R						
003306	001010	A	1513	JAZ	JCRET	MORE ASSIGN PAIRS LEFT ?	03	01438
003307	000066	R						
003310	006140	A	1514	SUBI	0256		03	01439
003311	000256	A						
003312	001010	A	1515	JAZ	JCRET	NO - DONE	03	01440
003313	000066	R						
003314	006120	A	1516	ADDI	0256		03	01441
003315	000256	A						
003316	006505	A	1517	JSR	DLMCHK,X	CHECK DELIMITER	03	01442
003317	004072	R						
003320	001000	A	1518	JMP	JCASS	YES	03	01443
003321	003013	R						
			1519	EJEC			03	01444
			1520	*			03	01445
			1521	*	MEM DIRECTIVE		03	01446
			1522	*			03	01447
003322	006505	A	1523	JCMEM JSR	JCCNVT,X	GET NUMBER OF BLOCKS	03	01448
003323	003473	R						
003324	006505	A	1524	JSR	JCKTM,X	CHECK IF BLANK OR PERIOD CHAR.	03	01449
003325	003447	R						
003326	150474	A	1525	ANA	BM77		03	01450
003327	004252	A	1526	LRLA	10	SHIFT TO POSITION	03	01451
003330	050047	A	1527	STA	V\$JCTM	SAVE MEM BLOCKS	03	01452
003331	001000	A	1528	JMP	JCRET	RETURN	03	01453
003332	000066	R						
			1529	EJEC			03	01454
			1530	*			03	01455
			1531	*	/KPMODE DIRECTIVE		03	01456
			1532	*			03	01457
003333	006047	A	1533	JCKPMD INRE	IGBLK		03	01458
003334	003745	R						
003335	006505	A	1534	JSR	JCCNVT,X	GET PARAMETER	03	01459
003336	003473	R						
003337	054067	A	1535	STA	JCT1		03	01460
003340	006505	A	1536	JSR	JCKTM,X	CHECK IF BLANK OR PERIOD CHAR.	03	01461
003341	003447	R						
003342	001010	A	1537	JAZ	JCKPB	EQUALS ZERO - OK	03	01462
003343	003353	R						
003344	140421	A	1538	SUB	ONE		03	01463
003345	001010	A	1539	JAZ	JCKPB	EQUALS ONE - OK	03	01464
003346	003353	R						
003347	010422	A	1540	LDA	TWO	ILLEGAL PARAMETER	03	01465
003350	054043	A	1541	STA	ERRN	SET ERROR CODE	03	01466
003351	001000	A	1542	JMP	JCRMSG	GIVE ERROR MESSAGE	03	01467
003352	000607	R						
003353	010046	A	1543	JCKPB LDA	V\$CRDM	CLEAR CURRENT SETTING	03	01468
003354	150463	A	1544	ANA	RHH		03	01469
003355	050046	A	1545	STA	V\$CRDM		03	01470
003356	014050	A	1546	LDA	JCT1		03	01471
003357	004250	A	1547	LRLA	8		03	01472
003360	110046	A	1548	ORA	V\$CRDM	OR NEW VALUE	03	01473
003361	050046	A	1549	STA	V\$CRDM	INTO KPMODE WORD	03	01474
003362	001000	A	1550	JMP	JCRET	RETURN	03	01475
003363	000066	R						
			1551	EJEC			03	01476
003364	000101	A	1552	N101 DATA	0101		03	01477
003365	142551	A	1553	N1425 DATA	0142551		03	01478
003366	000170	A	1554	D120 DATA	120		03	01479
003367	000304	A	1555	N304 DATA	0304		03	01480
003370	141146	A	1556	N1411 DATA	0141146		03	01481



003371	151727	A	1557	HSW	DATA	'SW'			03	01482
003372	120240	A	1558	DBLK	DATA	0120240			03	01483
003373	002056	R	1559	JC5PTR	DATA	JC5F1+4			03	01484
003374	023413	A	1560	D9995	DATA	9995			03	01485
003375	023420	A	1561	D10000	DATA	10000			03	01486
003376	146724	A	1562	HMT	DATA	'MT'			03	01487
003377	000340	A	1563	N340	DATA	0340			03	01488
003400	003000	A	1564	N3000	DATA	03000			03	01489
003401	000143	A	1565	D99	DATA	99			03	01490
003402	000275	A	1566	N275	DATA	0275			03	01491
003403	017760	A	1567	N17760	DATA	017760			03	01492
003404	000257	A	1568	N257	DATA	0257			03	01493
003405	106400	A	1569	HCR	DATA	0106400			03	01494
003406	002064	R	1570	JCTPTR	DATA	JCTBUF			03	01495
003407	000301	A	1571	N301	DATA	0301			03	01496
003410	000032	A	1572	N32	DATA	032			03	01497
003411	000244	A	1573	N244	DATA	0244			03	01498
003412	000333	A	1574	N333	DATA	0333			03	01499
003413	000240	A	1575	N240	DATA	0240			03	01500
003414	000000	A	1576	ERRN	DATA	0			03	01501
003415	000000	A	1577	CDUNT	DATA	0			03	01502
003416	126260	A	1578	HCOMZ	DATA	'0'			03	01503
003417	130240	A	1579	HZERO	DATA	'0'			03	01504
003420	143311	A	1580	HZF	DATA	'FI'			03	01505
003421	000050	A	1581	NAMPTR	DATA	V\$JNAM			03	01506
003422	145317	A	1582	HZJ	DATA	'JD'			03	01507
003423	000000	A	1583	CHPTR	DATA	0			03	01508
003424	000000	A	1584	CHPTR2	DATA	0			03	01509
003425	000000	A	1585	CHPTRS	DATA	0			03	01510
003426	141724	A	1586	ZCT	DATA	'CT'			03	01511
003427	000000	A	1587	JCT1	DATA	0			03	01512
003430	000000	A	1588	JCT2	DATA	0			03	01513
003431	000000	A	1589	JCT3	DATA	0			03	01514
003432	000000	A	1590	JCT4	DATA	0			03	01515
003433	120240	A	1591		DATA	'			03	01516
003434	145303	A	1592	JCPMSG	DATA	'JC',0,0,0			03	01517
003435	000000	A								
003436	000000	A								
003437	000000	A								
003440	130260	A	1593	H00	DATA	'00'			03	01518
003441	000050	A	1594	N50	DATA	050			03	01519
003442	000254	A	1595	N254	DATA	0254			03	01520
003443	000300	A	1596	N300	DATA	0300			03	01521
003444	000322	A	1597	N322	DATA	0322			03	01522
003445	000260	A	1598	N260	DATA	0260			03	01523
003446	060000	A	1599	N60000	DATA	060000			03	01524
			1600		EJEC				03	01525
			1601	*					03	01526
			1602	*					03	01527
			1603	*					03	01528
			1604	*					03	01529
003447	074136	A	1605	JCCKTM	STX	JCNVT1	SAVE X		03	01530
003450	054136	A	1606		STA	JCNVT2	SAVE A		03	01531
003451	014136	A	1607		LDA	JCNVT3	GET LAST CHAR.		03	01532
003452	006147	A	1608		SURE	N240			03	01533
003453	003413	R								
003454	001010	A	1609		JAZ	JCCKT1	JUMP IF BLANK		03	01534
003455	003467	R								
003456	006140	A	1610		SUBI	016			03	01535
003457	000016	A								
003460	001010	A	1611		JAZ	JCCKT1	JUMP IF PERIOD		03	01536
003461	003467	R								
003462	010422	A	1612		LDA	TWO	ERROR IF ANY OTHER CHAR.		03	01537
003463	006057	A	1613		STAE	ERRN			03	01538
003464	003414	R								
003465	001000	A	1614		JMP	JCRMSG			03	01539
003466	000607	R								
003467	014117	A	1615	JCCKT1	LDA	JCNVT2			03	01540
003470	034115	A	1616		LDB	JCNVT1			03	01541
003471	006705	A	1617		IJMP	0,X			03	01542
003472	000000	A								
			1618		EJEC				03	01543
			1619	*					03	01544
			1620	*					03	01545
			1621	*					03	01546
			1622	*					03	01547
			1623	*					03	01548
			1624	*					03	01549
			1625	*					03	01550
			1626	*					03	01551
			1627	*					03	01552
			1628	*					03	01553
003473	074112	A	1629	JCCNVT	STX	JCNVT1	SAVE		03	01554
003474	064112	A	1630		STA	JCNVT2	REGISTERS		03	01555
003475	005001	A	1631		TZA				03	01556
003476	054502	A	1632		STA	NUM	INITIALIZE		03	01557
003477	010471	A	1633		LDA	TEN			03	01558
003500	054501	A	1634		STA	BASE			03	01559
003501	044243	A	1635		INR	IGBLK			03	01560
003502	006505	A	1636		JSR	JCGTCH,X	GET 1ST CHAR		03	01561
003503	003705	R								
003504	054103	A	1637		STA	JCNVT3	SAVE CHAR		03	01562
003505	001010	A	1638		JAZ	JC13E3			03	01563



003506	003576	R							
003507	006617	A	1639	SRE	N260,7,010	CHAR EQL ZERO ?		03	01564
003510	003445	R							
003511	001000	A	1640	JMP	JC13E1	NO		03	01565
003512	003515	R							
003513	001000	A	1641	JMP	JC13D2	YES		03	01566
003514	003525	R							
003515	144457	A	1642	JC13E1	SUB	H20	NO, 260 LEQ CHAR LEQ 271 ?	03	01567
003516	001004	A	1643	JAN	JC13E2	NO		03	01568
003517	003543	R							
003520	140471	A	1644	SUB	TEN			03	01569
003521	001002	A	1645	JAP	JC13E2	NO		03	01570
003522	003543	R							
003523	001000	A	1646	JMP	JC13A4	YES		03	01571
003524	003534	R							
003525	010424	A	1647	JC13D2	LDA	EIGHT	1ST CHAR EQUAL ZERO,	03	01572
003526	054453	A	1648	STA	BASE	CHANGE BASE		03	01573
003527	006505	A	1649	JC13D3	JSR	JCGTCH,X	GET NEXT CHAR	03	01574
003530	003705	R							
003531	054056	A	1650	STA	JCNVT3	SAVE IT		03	01575
003532	001000	A	1651	JMP	JC13E1			03	01576
003533	003515	R							
003534	024444	A	1652	JC13A4	LDB	NUM	COMPUTE	03	01577
003535	014052	A	1653	LDA	JCNVT3			03	01578
003536	144436	A	1654	SUB	H20	NUM = NUM*BASE+CHAR-260		03	01579
003537	164442	A	1655	MUL	BASE	MUL IS BX + A INTO A,B		03	01580
003540	064440	A	1656	STB	NUM			03	01581
003541	001000	A	1657	JMP	JC13D3			03	01582
003542	003527	R							
003543	014044	A	1658	JC13E2	LDA	JCNVT3	TEST CHAR	03	01583
003544	001010	A	1659	JAZ	JC13E3			03	01584
003545	003576	R							
003546	006147	A	1660	SUBE	N240	CHAR A BLANK ?		03	01585
003547	003413	R							
003550	001010	A	1661	JAZ	JC13ED	YES		03	01586
003551	003571	R							
003552	144431	A	1662	SUB	N14	NO - CHAR A COMMA ?		03	01587
003553	001010	A	1663	JAZ	JC13E3	YES		03	01588
003554	003576	R							
003555	144425	A	1664	SUB	N21	NO - CHAR AN EQUALS ?		03	01589
003556	001010	A	1665	JAZ	JC13E3	YES		03	01590
003557	003576	R							
003560	006120	A	1666	ADDI	017	PERIOD ?		03	01591
003561	000017	A							
003562	001010	A	1667	JAZ	JC13E3	YES		03	01592
003563	003576	R							
003564	010422	A	1668	JC13F2	LDA	TWO	NONE OF THE ABOVE	03	01593
003565	006057	A	1669	STAE	ERRN			03	01594
003566	003414	R							
003567	001000	A	1670	JMP	JCRMSG	ERROR RETURN		03	01595
003570	000607	R							
003571	044153	A	1671	JC13ED	INR	IGBLK		03	01596
003572	006505	A	1672	JSR	JCGTCH,X	ADVANCE POINTER		03	01597
003573	003705	R							
003574	006505	A	1673	JSR	DLMCHK,X	CHECK DELIMITER		03	01598
003575	004072	R							
003576	014402	A	1674	JC13E3	LDA	NUM		03	01599
003577	001002	A	1675	JAP	JC13F4	0 LEQ NUM LEQ 7777 ?		03	01600
003600	003602	R							
003601	005001	A	1676	TZA		NO		03	01601
003602	034003	A	1677	JC13F4	LDA	JCNVT1	RESTORE	03	01602
003603	024003	A	1678	LDB	JCNVT2	REGISTERS		03	01603
003604	006705	A	1679	IJMP	0,X			03	01604
003605	000000	A							
003606	000000	A	1680	JCNVT1	DATA	0		03	01605
003607	000000	A	1681	JCNVT2	DATA	0		03	01606
003610	000000	A	1682	JCNVT3	DATA	0		03	01607
			1683	EJEC				03	01608
			1684	*				03	01609
			1685	*				03	01610
			1686	*				03	01611
			1687	*				03	01612
			1688	*				03	01613
			1689	*				03	01614
003611	074071	A	1690	JCCKLN	STX	JCKLN1	SAVE RETURN	03	01615
003612	044132	A	1691	INR	IGBLK			03	01616
003613	006505	A	1692	JSR	JCGTCH,X	GET CHARACTER		03	01617
003614	003705	R							
003615	054066	A	1693	STA	JCKLN2	IS IT A NUMBER		03	01618
003616	144356	A	1694	SUB	H20			03	01619
003617	001004	A	1695	JAN	JC14B2	NO		03	01620
003620	003635	R							
003621	140471	A	1696	SUB	TEN			03	01621
003622	001002	A	1697	JAP	JC14B2	NO		03	01622
003623	003635	R							
003624	006017	A	1698	LDAE	CHPTR	YES -		03	01623
003625	003423	R							
003626	005311	A	1699	DAR				03	01624
003627	006057	A	1700	STAE	CHPTR	RESET POINTER		03	01625
003630	003423	R							
003631	006505	A	1701	JSR	JCCNVT,X	GET AND CONVERT NUMBER		03	01626
003632	003473	R							
003633	001000	A	1702	JMP	JC14D2			03	01627



003634	003665	R							
003635	014046	A	1703	JC14B2	LDA	JCKLN2			03 01628
003636	004250	A	1704		LRLA	8			03 01629
003637	054044	A	1705		STA	JCKLN2			03 01630
003640	006503	A	1706		JSR	JCGTCH,X	GET 2ND CHARACTER		03 01631
003641	003705	R							
003642	114041	A	1707		DRA	JCKLN2	COMBINE WITH FIRST		03 01632
003643	054040	A	1708		STA	JCKLN2	SEARCH LOG. UNIT NAME TABLE		03 01633
003644	044100	A	1709		INR	IGBLK			03 01634
003645	006503	A	1710		JSR	JCGTCH,X			03 01635
003646	003705	R							
003647	006505	A	1711		JSR	PLMCHK,X	CHECK DELIMITER		03 01636
003650	004072	R							
003651	030345	A	1712		LDR	V\$LUNT			03 01637
003652	015000	A	1713	JC14C2	LDR	0,X	FOR THIS LOG. UNIT NAME		03 01638
003653	001010	A	1714		JAZ	JC14B3	END OF TABLE - NOT FOUND		03 01639
003654	003676	R							
003655	005144	A	1715		IXR				03 01640
003656	005144	A	1716		IXR		INCREMENT INDEX		03 01641
003657	006617	A	1717		SRE	JCKLN2,7,010	ENTRY FOUND		03 01642
003660	003704	R							
003661	001000	A	1718		JMP	JC14C2	NO		03 01643
003662	003652	R							
003663	005344	A	1719		DXR		YES -		03 01644
003664	015000	A	1720		LDR	0,X	GET LOG. UNIT NUMBER		03 01645
003665	001000	A	1721	JC14D2	JAN	JC14B3			03 01646
003666	003676	R							
003667	140431	A	1722		SUB	950	0 LEQ LUM LEQ 255		03 01647
003670	001000	A	1723		JAP	JC14B3	NO		03 01648
003671	003676	R							
003672	120431	A	1724		ADD	950	YES		03 01649
003673	034007	A	1725		LDR	JCKLN1	RESTORE RETURN		03 01650
003674	006705	A	1726		IJIP	0,X	RETURN		03 01651
003675	000000	A							
003676	010467	A	1727	JC14B3	LDA	SEVEN	ERROR -		03 01652
003677	006057	A	1728		STAE	LRRN	SET CODE		03 01653
003700	003414	R							
003701	001000	A	1729		JMP	JCRMSG	PROCESS ERROR		03 01654
003702	000607	R							
003703	000000	A	1730	JCKLN1	DATA	0			03 01655
003704	000000	A	1731	JCKLN2	DATA	0			03 01656
			1732		EXEC				03 01657
			1733	*					03 01658
			1734	*					03 01659
			1735	*					03 01660
003705	064040	A	1736	JCGTCH	STP	JCGT1	SUBROUTINE TO GET ONE CHARACTER, CHPTR/2		03 01661
003706	006027	A	1737	JC15A2	LDLE	CHPTR	IS WORD ADRS, CHPTR(0)=0 GIVES BITS		03 01662
003707	003423	A							
003710	005021	A	1738		TBA		15-8, CHPTR(0)=1 GIVES BITS 7-0.		03 01663
003711	005111	A	1739		LAR				03 01664
003712	006057	A	1740		STAE	CHPTR	CHAR RETURNED IN A REG BITS 7-0		03 01665
003713	003423	A							
003714	004141	A	1741		LARB	1	ALSO INCREMENTS POINTER TO NEXT CHAR.		03 01666
003715	006440	A	1742		BT	R00+R0,JC15D2	B REG IS SAVED		03 01667
003716	003723	R							
003717	016030	A	1743		LDR	0,0	CHPTR IS ODD, GET BITS 15-8		03 01668
003720	004851	A	1744		LSPR	0			03 01669
003721	001000	A	1745		JMP	JC15F2			03 01670
003722	003723	R							
003723	016030	A	1746	JC15D2	LDR	0,0	CHPTR IS EVEN,		03 01671
003724	150463	A	1747		PRR		GET BITS 7-0		03 01672
003725	024017	A	1748	JC15F2	LDR	IGBLK	IGNORE BLANKS ?		03 01673
003726	001000	A	1749		JAZ	JC15F3	NO		03 01674
003727	003743	R							
003730	006147	A	1750		SUBE	0210	YES - BLANK CHAR ?		03 01675
003731	003413	A							
003732	001010	A	1751		JAZ	JC15A2	YES		03 01676
003733	003705	R							
003734	006127	A	1752		ADDE	0210	NO		03 01677
003735	003413	A							
003736	005021	A	1753		TBB		CLEAR FLAG		03 01678
003737	064037	A	1754		STB	IGBLK			03 01679
003740	021000	A	1755	JC15F3	LDR	JCGT1	RESTORE B		03 01680
003741	005057	A	1756		TIRE	JC15A2	SAVE LAST CHAR.		03 01681
003742	003705	R							
003743	006705	A	1757		TJMP	0,X	RETURN		03 01682
003744	000000	A							
003745	000000	A	1758	IGBLK	DATA	0			03 01683
003746	000000	A	1759	JCGT1	DATA	0			03 01684
003747	000000	A	1760	JCCHAR	DATA	0			03 01685
003750	000236	A	1761	M256	DATA	2556	PERIOD CHAR.		03 01686
			1762		EXEC				03 01687
			1763	*					03 01688
			1764	*					03 01689
003751	064220	A	1765	JCGTCH	STB	JCGT1	SUBROUTINE TO STORE ONE CHARACTER, CHPTR2/		03 01690
003752	150467	A	1766		PRR		IS WORD ADRS, CHPTR2(0)=0 GIVES BITS		03 01691
003753	054028	A	1767		LTA	JCGT2	15-8, CHPTR2(0)=1 GIVES BITS 7-0.		03 01692
003754	006027	A	1768		LDLE	CHPTR2	CHAR MUST BE IN A REG BITS 7-0		03 01693
003755	003423	A							
003756	005021	A	1769		TBA		ALSO INCREMENTS CHPTR2		03 01694
003757	005111	A	1770		LAR		B REG IS SAVED.		03 01695
003760	006057	A	1771		STAE	CHPTR2			03 01696
003761	003423	A							



003762	004141	A	1772	LSRB	1			03	01697
003763	006440	A	1773	BT	RA0+B0,JC16D2			03	01698
003764	003774	R							
003765	016000	A	1774	LDA	0,B	CHPTR2 IS ODD, BITS 15-8		03	01699
003766	004250	A	1775	LRLA	8			03	01700
003767	150462	A	1776	ANA	LHW			03	01701
003770	114207	A	1777	DRA	JCPT2			03	01702
003771	004250	A	1778	LRLA	8			03	01703
003772	001000	A	1779	JMP	JC16F2			03	01704
003773	003777	R							
003774	016000	A	1780	JC16D2	LDA	0,B		03	01705
003775	150462	A	1781	ANA	LHW			03	01706
003776	114201	A	1782	DRA	JCPT2			03	01707
003777	056000	A	1783	JC16F2	STA	0,B		03	01708
004000	024176	A	1784	LDE	JCPT1			03	01709
004001	006705	A	1785	IJMP	0,X			03	01710
004002	000000	A							
			1786	EJEC				03	01711
			1787	*				03	01712
			1788	*				03	01713
			1789	*				03	01714
			1790	*				03	01715
004003	054204	A	1791	JCLNDV	STA	JCLN1	SAVE	03	01716
004004	064204	A	1792	STB	JCLN2	REGISTERS		03	01717
004005	144062	A	1793	SUB	D101	LUN LT 101 ?		03	01718
004006	001002	A	1794	JAP	JC16C1	NO		03	01719
004007	004021	R							
004010	020400	A	1795	LDB	V\$LUT1	YES		03	01720
004011	016000	A	1796	LDA	0,B			03	01721
004012	144175	A	1797	SUB	JCLN1			03	01722
004013	001004	A	1798	JAN	JC16F4	OUT OF RANGE - ERROR		03	01723
004014	004063	R							
004015	010400	A	1799	LDA	V\$LUT1			03	01724
004016	124171	A	1800	ADD	JCLN1			03	01725
004017	001000	A	1801	JMP	JC16D1			03	01726
004020	004050	R							
004021	054166	A	1802	JC16C1	STA	JCLN1	101 LEQ LUN LEQ 179 ?	03	01727
004022	144046	A	1803	SUB	D79			03	01728
004023	001002	A	1804	JAP	JC16C3	NO		03	01729
004024	004037	R							
004025	020401	A	1805	LDB	V\$LUT2	YES		03	01730
004026	016000	A	1806	LDA	0,B			03	01731
004027	144160	A	1807	SUB	JCLN1			03	01732
004030	001004	A	1808	JAN	JC16F4	OUT OF RANGE - ERROR		03	01733
004031	004063	R							
004032	010401	A	1809	LDA	V\$LUT2			03	01734
004033	124154	A	1810	ADD	JCLN1			03	01735
004034	005111	A	1811	IAR				03	01736
004035	001000	A	1812	JMP	JC16D1			03	01737
004036	004050	R							
004037	054150	A	1813	JC16C3	STA	JCLN1	180 LEQ LUN LEQ MAX	03	01738
004040	020402	A	1814	LDB	V\$LUT3			03	01739
004041	016000	A	1815	LDA	0,B			03	01740
004042	144145	A	1816	SUB	JCLN1			03	01741
004043	001004	A	1817	JAN	JC16F4			03	01742
004044	004063	R							
004045	010402	A	1818	LDA	V\$LUT3	YES		03	01743
004046	124141	A	1819	ADD	JCLN1			03	01744
004047	005111	A	1820	IAR				03	01745
004050	005012	A	1821	JC16D1	TAB			03	01746
004051	016000	A	1822	LDA	0,B	GET DST NO.		03	01747
004052	150463	A	1823	ANA	RHW			03	01748
004053	005311	A	1824	DAR				03	01749
004054	054133	A	1825	STA	JCLN1	CONVERT TO		03	01750
004055	004201	A	1826	ASLA	?			03	01751
004056	124131	A	1827	ADD	JCLN1	DISPLACEMENT		03	01752
004057	120355	A	1828	ADD	V\$DSTB	ADD BASE		03	01753
004060	024130	A	1829	LDE	JCLN2	RESTORE B		03	01754
004061	006705	A	1830	IJMP	0,X	RETURN		03	01755
004062	000000	A							
004063	010467	A	1831	JC16F4	LDA	SEVEN	SET ERROR CODE	03	01756
004064	006057	A	1832	STAE	ERRN			03	01757
004065	003414	R							
004066	001000	A	1833	JMP	JCRMSG	PROCESS ERROR		03	01758
004067	000607	R							
004070	000145	A	1834	D101	DATA	101		03	01759
004071	000117	A	1835	D79	DATA	79		03	01760
			1836	EJEC				03	01761
			1837	*				03	01762
			1838	*				03	01763
			1839	*				03	01764
			1840	*				03	01765
			1841	*				03	01766
			1842	*				03	01767
			1843	*				03	01768
			1844	*				03	01769
004072	001010	A	1845	DLMCHK	JAZ	BLMX	END OF BUFFER	03	01770
004073	004120	R							
004074	006140	A	1846	SUBI	0254	COMMA ?		03	01771
004075	000254	A							
004076	001010	A	1847	JAZ	BLMX	YES		03	01772
004077	004120	R							
004100	144102	A	1848	SUB	M21	EQUALS SIGN ?		03	01773







```

004172 000000 A
004173 000000 A 1933 SOLD1 DATA 0
004174 000000 A 1934 SOLD2 DATA 0
004175 000260 A 1935 HB0 DATA 0260
004176 000215 A 1936 N215 DATA 0215
004177 000000 A 1937 JCPT1 DATA 0
004200 000000 A 1938 JCPT2 DATA 0
004201 000000 A 1939 NUM DATA 0
004202 000000 A 1940 BASE DATA 0
004203 000021 A 1941 N21 DATA 021
004204 000014 A 1942 N14 DATA 014
004205 000023 A 1943 N23 DATA 023
004206 000144 A 1944 D100 DATA 100
004207 000120 A 1945 D80 DATA 80
004210 000000 A 1946 JCLN1 DATA 0
004211 000000 A 1947 JCLN2 DATA 0
000000 R 1948 END V$JCP

```

```

03 01854
03 01855
03 01856
03 01857
03 01858
03 01859
03 01860
03 01861
03 01862
03 01863
03 01864
03 01865
03 01866
03 01867
03 01868
03 01869

```

ENTRY NAMES

```

000000 R V$JCP
EXTERNAL NAMES
002726 E BIFCB 002727 E BDFCB 002731 E GDFCB 002725 E LDFCB
002724 E PIFCB 002732 E PDFCB 003277 E SIFCB 002730 E SSFCB
000000 E V$EXEC 000000 E V$IOG 000000 E V$IOST

```

SYMBOLS

```

000044 A APIM 000002 A B 000000 A B0 000001 A B1
000012 A B10 000013 A B11 000014 A B12 000015 A B13
000016 A B14 000017 A B15 000018 A B2 000019 A B3
000004 A B4 000005 A B5 000006 A B6 000007 A B7
000010 A B8 000011 A B9 004202 R BASE 002726 E BIFCB
000421 A BM1 000472 A BM17 000475 A BM177 000477 A BM1777
000464 A BM3 000473 A BM37 000463 A BM377 000467 A BM7
000474 A BM77 000476 A BM777 002727 E BDFCB 000441 A BR0
000442 A BR1 000453 A BR10 000454 A BR11 000455 A BR12
000456 A BR13 000457 A BR14 000460 A BR15 000443 A BR2
000444 A BR3 000445 A BR4 000446 A BR5 000447 A BR6
000450 A BR7 000451 A BR8 000452 A BR9 000421 A BS0
000422 A BS1 000433 A BS10 000434 A BS11 000435 A BS12
000436 A BS13 000437 A BS14 000440 A BS15 000423 A BS2
000424 A BS3 000425 A BS4 000426 A BS5 000427 A BS6
000430 A BS7 000431 A BS8 000432 A BS9 001101 R BUFLIM
003423 R CHPTR 003424 R CHPTR2 003425 R CHPTRS 000047 A CLOCK
003415 R COUNT 004206 R D100 003375 R D10000 004070 R D101
003366 R D120 004071 R D79 004207 R D80 003401 R D99
003374 R D9995 003372 R DBLK 000747 A DISCLK 000745 A DISMP
000444 A DISPIM 004072 R DLMCHK 004120 R DLMX 004122 R DLMY
004151 R DVTPT1 004154 R DVTPT 004155 R DVTPTB 004157 R DVTPTCT
001156 R DVTPTY 000424 A EIGHT 000147 A ENACLK 000645 A ENAMP
000244 A ENAPIM 003414 R ERRN 000465 A FIVE 000420 A FOUR
000011 A G0 002731 E GDFCB 003410 R H00 000727 R HASTE
004175 R HB0 003416 R HCDM2 003405 R HCR 003376 R HMT
003371 R HSN 003417 R HZERO 003420 R HZF 003422 R HZJ
003745 R IGBLK 000007 R JC01 000014 R JC02 000003 R JC03
000036 R JC05 002432 R JC10A4 002333 R JC10B1 002337 R JC10E1
002406 R JC10D2 002401 R JC10D3 002414 R JC10E2 002411 R JC10E3
000055 R JC11 002465 R JC11C1 002557 R JC11D0 002562 R JC11D1
002611 R JC11D2 002615 R JC11D3 002705 R JC11E2 002711 R JC11E3
003025 R JC12B3 003031 R JC12C1 003041 R JC12C2 003122 R JC12C3
003135 R JC12C4 003114 R JC12C4 003121 R JC12C5 003130 R JC12C6
003062 R JC12CM 003104 R JC12C2 003144 R JC12D1 003156 R JC12E3
003227 R JC12E4 003235 R JC12E5 003302 R JC12E6 003171 R JC12ED
003202 R JC12EG 003273 R JC12E2 003534 R JC13A4 003525 R JC13D2
003527 R JC13D3 003515 R JC13E1 003543 R JC13E2 003576 R JC13E3
003571 R JC13ED 003564 R JC13F2 003602 R JC13F4 003635 R JC14B2
003676 R JC14B3 003652 R JC14C2 003665 R JC14D2 003706 R JC15A2
003723 R JC15D2 003725 R JC15F2 003740 R JC15F3 004021 R JC16C1
004037 R JC16C3 004650 R JC16D1 003774 R JC16D2 003777 R JC16F2
004063 R JC16F4 000073 R JC1A1 000102 R JC1A2 000144 R JC1A3
000173 R JC1A31 000227 R JC1A33 000246 R JC1A34 000250 R JC1A36
000240 R JC1A3X 000257 R JC1A4 000304 R JC1A41 000331 R JC1A42
000355 R JC1A43 000365 R JC1A45 000326 R JC1A46 000406 R JC1A5
000413 R JC1A6 000142 R JC1B1 000107 R JC1B2 000124 R JC1B3
000133 R JC1B4 000360 R JC1C1 000604 R JC2A4 000657 R JC3D1
000664 R JC3E2 000712 R JC3E4 001241 R JC4B1 001252 R JC4BC
001271 R JC4C1 001306 R JC4D1 001334 R JC4D2 001367 R JC4E1
001354 R JC4F1 001412 R JC4G1 001577 R JC5C4 001605 R JC5C5
001637 R JC5C6 001661 R JC5C66 001544 R JC5D1 001550 R JC5D2
001671 R JC5D7 001670 R JC5D8 002047 R JC5D9 002030 R JC5D1
002037 R JC5E11 002052 R JC5F1 003373 R JC5PTR 001676 R JC5XC
001724 R JC6A1 001726 R JC6A2 001756 R JC6A25 001760 R JC6A3
001773 R JC6A4 002007 R JC6B1 002017 R JC6C1 002113 R JC7C2
002174 R JC8B2 002200 R JC8B3 002156 R JC8E1 002242 R JC9D1
002246 R JC9D2 002270 R JC9D3 002733 R JCALT 002757 R JCALT1
002753 R JCALT2 003013 R JCASS 003747 R JCCHAR 003611 R JCCKLN
003467 R JCCKT1 003447 R JCCKTM 003473 R JCCNVT 002070 R JCDUMP
001231 R JCEDF 002722 R JCFCB3 002732 R JCFILE 003002 R JCFL1
000723 R JCFLSH 002075 R JCFCR 003746 R JCGT1 003705 R JCGTCH
003703 R JCKLN1 003704 R JCKLN2 003353 R JCKPB 003333 R JCKPMB
001030 R JCLAB1 001057 R JCLAB2 001060 R JCLAB3 001067 R JCLAB4
001073 R JCLAB5 004210 R JCLN1 004211 R JCLN2 004003 R JCLN3V
003322 R JCNM 001377 R JCNM1 001416 R JCNMVC 003606 R JCNVT1
003607 R JCNVT2 003610 R JCNVT3 001170 R JCP1 001224 R JCP2
001136 R JCP3 001561 R JCP4 002507 R JCP5 001720 R JCP6
003434 R JCPMS6 000724 R JCP7 000770 R JCP8 001104 R JCP9

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001007 R JCPRE 000734 R JCPRT 001105 R JCPRTF 001103 R JCPRX
004177 R JCPT1 004200 R JCPT2 003751 R JCPTCH 001527 R JCPTSK
001701 R JCPXQT 001234 R JCRER 000066 R JCRET 002213 R JCREW
000617 R JCRMS1 000607 R JCRMSG 002142 R JCSF1 002117 R JCSFI
002274 R JCSRE 003427 R JCT1 003430 R JCT2 003431 R JCT3
003432 R JCT4 001417 R JCTA 000417 R JCTAB 001420 R JCTB
002064 R JCTDUF 003406 R JCTPTR 002461 R JCHE1 002441 R JCHED
001421 R JFCB1 000300 A LC 000050 A LCJP 000462 A LHW
000005 A LD 002725 E LDFCB 000045 A MP 000045 A MPMR0
000145 A MPMR1 000245 A MPMR2 000345 A MPMR3 000420 A MT
003364 R N101 000733 R N12024 000732 R N13064 004204 R N14
003370 R N1411 003365 R N1425 003403 R N17760 004203 R N21
004176 R N215 004205 R N23 003413 R N240 003411 R N244
003442 R N254 003750 R N256 003404 R N257 003445 R N260
003402 R N275 003443 R N300 003400 R N3000 003407 R N301
003367 R N304 003410 R N32 003444 R N322 003412 R N333
003377 R N340 003441 R N50 003446 R N60000 003421 R NAMPTR
000461 A NEG 000470 A NINE 004201 R NUM 000421 A ONE
004127 R PERPTR 002724 E PIFCB 000040 A PIM1 000041 A PIM2
000042 A PIM3 000043 A PIM4 000040 A PIM5 000040 A PIM6
000040 A PIM7 000040 A PIM8 002732 E POFCE 000040 A RAO
000000 A RA1 000060 A RBO 000020 A RB1 000463 A RHW
001102 R SAVECP 000467 A SEVEN 000002 A SI 003277 E SIFCB
000466 A SIX 000003 A SO 004173 R SOLD1 004174 R SOLD2
002730 E SSFCB 000027 A TBATSK 000026 A TBCPTH 000011 A TBENTY
000003 A TBEVNT 000021 A TBID 000014 A TBISA 000015 A TBISB
000017 A TBISP 000020 A TBISRS 000016 A TBISX 000022 A TBKN1
000023 A TBKN2 000024 A TBKN3 000002 A TBPL 000004 A TBRSB
000005 A TERSE 000030 A TERSE 000007 A TERSP 000010 A TBRST
000006 A TERSE 000000 A TBS0 000001 A TBS1 000012 A TBS10
000013 A TBS11 000014 A TBS12 000015 A TBS13 000016 A TBS14
000017 A TBS15 000002 A TBS2 000003 A TBS3 000004 A TBS4
000005 A TBS5 000006 A TBS6 000007 A TBS7 000010 A TBS8
000011 A TBS9 000001 A TBST 000025 A TBTLC 000013 A TBTMIN
000012 A TBTMS 000000 A TBTRO 000471 A TEN 000464 A THREE
000422 A TWO 000403 A V$1MIN 000415 A V$BFC 000075 A V$BGLB
000056 A V$BIC1 000315 A V$BTB 000414 A V$BVN 000304 A V$CAM
000353 A V$CKB 000411 A V$CKIT 000310 A V$CKPT 000301 A V$CPL
000046 A V$CRDM 000341 A V$CRDR 000354 A V$CRM 000302 A V$CRS
000360 A V$CTAD 000300 A V$CTL 000351 A V$CTMS 000070 A V$DATE
000355 A V$DSTB 004130 R V$DVTP 000376 A V$ERFG 000000 E V$EXEC
000347 A V$FGLB 000306 A V$FLRS 000350 A V$FREE 000320 A V$IM
000410 A V$IDA 000000 E V$IDC 000000 E V$IDST 000412 A V$JCB
000055 A V$JCFG 000000 R V$JCP 000047 A V$JCTM 000050 A V$JNAM
000377 A V$JOP 000054 A V$LONT 000313 A V$LER 000356 A V$LIT
000317 A V$LLUP 000307 A V$LRSK 000312 A V$LSAL 000345 A V$LUNT
000316 A V$LUP 000400 A V$LUT1 000401 A V$LUT2 000402 A V$LUT3
000330 A V$MPM 000362 A V$NCTR 000413 A V$OCB 000346 A V$OPCF
000311 A V$OPCL 000363 A V$PIMN 000074 A V$PLCT 000305 A V$PTVB
000361 A V$SCTL 000352 A V$SCV 000375 A V$SLFG 004160 R V$SDLD
000303 A V$TE 000342 A V$TSGT 000416 A V$TFC 000314 A V$TJCP
000344 A V$TNN 000343 A V$TMS 000304 A V$UTB 000001 A VORTEX
000001 A X 003426 R ZCT 000420 A ZERO 000702 R ZTY
    
```

0 ERRORS ASSEMBLY COMPLETE

306	APIM	316	317							
331	E	388	410	513	689	692	694	736	741	750
		755	769	774	778	783	818	824	829	842
		926	949	950	1095	1104	1130	1142	1145	1201
		1229	1237	1271	1274	1276	1277	1278	1285	1290
		1297	1302	1309	1314	1361	1376	1426	1434	1447
		1455	1458	1464	1466	1467	1470	1499	1506	1508
		1509	1743	1746	1774	1780	1783	1796	1806	1815
		1822	1886	1894	1897					
275	B0	688	1742	1773						
286	B11	1468								
279	B4	1011								
1940	BASE	1634	1648	1655						
0	BIFCB	1325	1330							
254	EM377	645	648	656						
252	EM77	1525								
0	EOFCB	759	1326	1331						
229	ER11	1477								
230	ER12	357	1172							
233	ER15	1465								
213	ES11	1469								
214	ES12	1176								
205	ES3	1012								
206	ES4	893	1026							
208	ES6	938	995	1183						
210	ES8	395	1722	1724						
708	FUFLIM	665	679	682	696	701				
1583	CHPTR	343	405	566	669	673	684	700	704	1115
		1117	1338	1340	1382	1384	1388	1422	1424	1440
		1442	1444	1698	1700	1737	1740	1832	1853	
1584	CHPTR2	416	791	874	958	1001	1768	1771		
299	CLOCK	301	302							
1577	CDUNT	408	600	1064	1066	1082	1085	1151	1179	1186
		1189								
1561	D10000	1039								
1834	D101	1793								
1835	D79	1803								











1947	JCLN2	1792	1829							
1791	JCLNDV	734	748	905	1051	1093	1128	1197	1233	1445
		1474	1497							
1523	JCMEM	576								
839	JCMOV1	847								
850	JCMOVC	836	841	846						
1680	JCNVT1	1605	1616	1629	1677					
1681	JCNVT2	1606	1615	1630	1678					
1682	JCNVT3	1607	1637	1650	1653	1658				
746	JCP1	739	743							
760	JCP2	753	757							
717	JCPCON	521	523	525						
886	JCPEX	543								
1222	JCPFI	565								
956	JCPLD	553								
1592	JCPMSG	599	606	610	611	613				
629	JCPQUT	384								
654	JCPR1	650								
711	JCPRB	638	705							
662	JCPRE	658								
637	JCPRT	494	594							
712	JCPRTF	495	592	596						
710	JCPRX	637	706							
1937	JCPT1	1765	1784							
1938	JCPT2	1767	1777	1782						
1765	JCPTCH	425	443	812	879	976	992	1004		
862	JCPTSK	527	529	531	533	535	537	539	541	545
		547	549							
938	JCPXQT	367	901							
766	JCRER	400	400							
381	JCRET	493	580	840	1028	1041	1084	1114	1188	1213
		1217	1320	1348	1367	1513	1515	1528	1550	
1091	JCREW	559	1118							
595	JCRMS1	593								
590	JCRMSG	375	935	1061	1079	1121	1149	1205	1240	1269
		1381	1542	1614	1670	1729	1833	1863		
1062	JCSF1	1057	1060							
1049	JCSFI	557								
1126	JCSRE	561								
1587	JCT1	1050	1070	1092	1098	1109	1127	1136	1154	1196
		1208	1223	1232	1317	1337	1346	1374	1450	1461
		1486	1493	1535	1546					
1588	JCT2	1244	1249	1254	1257	1262	1273	1282	1288	1294
		1300	1306	1312	1393	1395	1396	1415	1428	1488
		1491								
1589	JCT3	1408	1412	1413	1421	1436				
1590	JCT4	1389	1439							
851	JCTA	646	649	657	720	723	780	782	793	813
		815	826	828						
520	JCTAB	451	454	457	464	467	470	479	482	485
		498	502	505	512					
1020	JCTBUF	450	453	456	463	466	469	478	481	484
		500	503	506	761	794	862	864	866	1570
1570	JCTPTR	414								
1206	JCHE1	1204								
1195	JCHED	563								
853	JFCBI	837								
125	LC	126	127	128	129	130	131	132	133	134
		135	136	137	138	139	140	141	142	143
		144	146	147	148	149	150	151	152	153
		154	155	156	157	158	159	161	162	163
		164	168	169	170	171	172	173	174	179
		180	181	184	189	190	191			
100	LCJP	101	102	103	110	111	112	113	114	117
235	LHW	690	719	779	825	1069	1108	1153	1207	1272
		1316	1490	1776	1781					
334	LD	346	611	613	621	642	655	661	745	
0	LDPCB	616	621	653	661	745	1324	1330		
320	MP	321	322	323	324	325	326			
200	MT	201	202	203	204	205	206	207	208	209
		210	211	212	213	214	215	216	217	218
		219	220	221	222	223	224	225	226	227
		228	229	230	231	232	233	234	235	236
		237	238	239	240	241	242	243	244	245
		246	247	248	249	250	251	252	253	254
		255	256							
1552	N101	868	919							
632	N12024	448	683							
631	N13064	460								
1942	N14	1662								
1556	N1411	940								
1553	N1425	870	921	997	1347					
1567	N17760	1435								
1941	N21	804	1664	1848						
1575	N240	434	436	442	798	810	963	991	1283	1295
		1307	1608	1660	1750	1752				
1573	N244	1255								
1595	N254	985	1245							
1761	N256	474	489	677	897	1160	1170	1215		
1568	N257	379	412							
1598	N260	1258	1402	1410	1639					
1596	N300	1080								
1571	N301	420	1263							







```

000001 A 1 VORTEX SET 1 PUT LAST FOR VORTEX V2 04 00001
2 *THIS IS A COPYRIGHTED PROGRAM.COPYRIGHT 1972 BY VARIAN DATA MACHINEV2 04 00002
3 * 04 00003
4 * V.D.M. PART NO. 92L0205-003D 04 00004
5 * 04 00005
6 * 04 00006
7 * RELEASED 03/01/74 04 00007
8 * 04 00008
9 * 04 00009
10 * 04 00010
11 * TITLE V$FMAIN 04 00011
12 ***** 04 00012
13 * 04 00013
14 * FILE MAINTENANCE ( F M A I N ) 04 00014
15 * 04 00015
16 * FUNCTION: THIS IS THE FILE MAINTENANCE PROGRAM OF THE VARIAN 04 00016
17 * VDM 620/F REAL-TIME OPERATING SYSTEM. IT ACCEPTS THE 04 00017
18 * FOLLOWING COMMANDS FROM THE SI DEVICE: 04 00018
19 * 04 00019
20 * CREATE,LUN,KEY,NAME,RECORD SIZE(WORDS),FILE SIZE(RECS) 04 00020
21 * DELETE,LUN,KEY,NAME 04 00021
22 * RENAME,LUN,KEY,OLD NAME,NEW NAME 04 00022
23 * ENTER ,LUN,KEY,OLD NAME,NEW NAME 04 00023
24 * LIST ,LUN,KEY 04 00024
25 * INIT ,LUN,KEY 04 00025
26 * ADD ,LUN,KEY 04 00026
27 * INPUT ,LUN,KEY,NAME 04 00027
28 * 04 00028
29 * ENTRY: NO SPECIAL CONDITIONS 04 00029
30 * 04 00030
31 * EXIT : TO JCP UPON ENTRY OF A RECORD WITH 1ST CHAR='/' 04 00031
32 * 04 00032
33 * ERRORS: ERROR N PRINTS 'FMON' ON SO DEVICE, WHERE N MEANS: 04 00033
34 * 04 00034
35 * N=1 INVALID MAINTENANCE COMMAND 04 00035
36 * 2 NAME ALREADY IN DIRECTORY 04 00036
37 * 3 NAME NOT FOUND IN DIRECTORY 04 00037
38 * 4 INSUFFICIENT SPACE FOR ENTRY 04 00038
39 * 5 I/O ERROR 04 00039
40 * 6 DIRECTORY STRUCTURE ERROR 04 00040
41 * 7 CHECK-SUM ERROR 04 00041
42 * 8 NO ENTRY NAME 04 00042
43 * 9 RECORD SIZE ERROR 04 00043
44 * 10 LOADER CODE ERROR 04 00044
45 * 11 SEQUENCE ERROR 04 00045
46 * 12 STRUCTOR ERROR 04 00046
47 * 13 INPUT LUN NOT SPECIFIED 04 00047
48 * 14 SPACE IN MEMORY EXHAUSTED 04 00048
49 * 04 00049
50 * FMAIN THEN INPUTS A RECORD FROM THE SO DEVICE, TESTS THE 04 00050
51 * 1ST CHARACTER, AND EXITS THUS: 04 00051
52 * 04 00052
53 * '/' EXIT TO JCP 04 00053
54 * 'C' CONTINUE FMAIN COMMAND INPUT FROM SI DEVICE 04 00054
55 * 04 00055
56 * I/O ERRORS DURING ERROR PROCESSING FORCE A RETURN TO THE 04 00056
57 * SYSTEM THRU VORTEX MACRO 'ABORT'. 04 00057
58 * 04 00058
59 ***** 04 00059
60 ***** 04 00060
61 ***** 04 00061
62 * ENTRIES * 04 00062
63 ***** 04 00063
64 * NAME FMAIN 04 00064
65 * NAME FMBA 04 00065
66 * NAME FMBF 04 00066
67 * NAME FMCR 04 00067
68 * NAME FMEN 04 00068
69 * NAME FMLF 04 00069
70 * NAME FMMV 04 00070
71 * NAME FMPT 04 00071
72 * NAME FMRR 04 00072
73 * NAME FMVH 04 00073
74 * NAME FMWL 04 00074
75 * NAME FMWLI INITIALIZE LD OUTPUT 04 00075
76 * NAME FMWR 04 00076
77 * 04 00077
78 ***** 04 00078
79 * EXTERNALS * 04 00079
80 ***** 04 00080
81 * EXT V$EXEC SYSTEM ENTRY 04 00081
82 * EXT V$IOC IOCS ENTRY ADDRESS 04 00082
83 * EXT V$IOST 04 00083
84 ***** 04 00084
85 ***** 04 00085
86 * SET BLOCK * 04 00086
87 ***** 04 00087
88 B SET 2 B-REGISTER 04 00088
89 X SET 1 X-REGISTER 04 00089
90 FJEC 04 00090
91 ***** 04 00091
92 ***** TIDB SETUP *** 04 00092
93 * 04 00093
94 ***** 04 00094
95 ***** 04 00095
96 TBTRD EQU 0 TASK THREAD 04 00096
97 TBST EQU 1 TASK STATUS 04 00097

```



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000002 A 98 TPL EQU 2 STATUS CONT. (BITS15-6), PRIORITY LEVEL(5-0 04 00098
000003 A 99 TBEVNT EQU 3 INTERRUPT EVENT 04 00099
000004 A 100 TBRSA EQU 4 A REENRANT AND SUSPEND STACK 04 00100
000005 A 101 TBRSE EQU 5 B REENRANT AND SUSPEND STACK 04 00101
000006 A 102 TBRSE EQU 6 X REENRANT AND SUSPEND STACK 04 00102
000007 A 103 TBRSP EQU 7 DF/P REENRANT AND SUSPEND STACK 04 00103
000010 A 104 TBRSTS EQU 8 TEMP. STG. REENRANT AND SUSPEND STACK 04 00104
000011 A 105 TBENTY EQU 9 TASK ENTRY LOCATION 04 00105
000012 A 106 TBTMS EQU 10 TIME COUNTER - CLOCK RESOLUTION IN SMS INC 04 00106
000013 A 107 TBTMIN EQU 11 TIME COUNTER - CLOCK MINUTE INCREMENTS 04 00107
000014 A 108 TBISA EQU 12 A INTERRUPT STACK 04 00108
000015 A 109 TBISB EQU 13 B INTERRUPT STACK 04 00109
000016 A 110 TBISX EQU 14 X INTERRUPT STACK 04 00110
000017 A 111 TBISP EQU 15 DF/P INTERRUPT STACK 04 00111
000020 A 112 TBISRS EQU 16 REENT. STACK INTERRUPT STACK 04 00112
000021 A 113 TBID EQU 17 BLK ALLOC(15-10), I/O THR(9-5), I/O ACT(4-0) 04 00113
000022 A 114 TBKN1 EQU 18 TASK NAME 04 00114
000023 A 115 TBKN2 EQU 19 TASK NAME 04 00115
000024 A 116 TBKN3 EQU 20 TASK NAME 04 00116
000025 A 117 TBTLC EQU 21 1ST LOC. OF TASK ALLOCATABLE 04 00117
000026 A 118 TBCPTH EQU 22 BACKGROUND TASK QUEUE 04 00118
000027 A 119 TBATSK EQU 23 TIDB LOC. OF ACTIVATING TASK 04 00119
000030 A 120 TERSE EQU 24 TASK ERROR CODE 04 00120
121 EJECT 04 00121
122 ***** 04 00122
123 * 04 00123
124 *** TASK STATUS DESCRIPTION (BIT SET WORD 1) *** 04 00124
125 * 04 00125
126 ***** 04 00126
000017 A 128 TBS15 EQU 15 INTERRUPT SUSPEND 04 00128
000016 A 130 TBS14 EQU 14 TASK SUSPEND 04 00130
000015 A 131 TBS13 EQU 13 TASK ABORT 04 00131
000014 A 132 TBS12 EQU 12 TASK EXIT 04 00132
000013 A 134 TBS11 EQU 11 TIDB CORE RESIDENT 04 00134
000012 A 135 TBS10 EQU 10 CORE RESIDENT TASK 04 00135
000011 A 136 TBS9 EQU 9 FOREGROUND TASK 04 00136
000010 A 138 TBS8 EQU 8 TASK PROTECTED 04 00138
000007 A 139 TBS7 EQU 7 TASK SCHEDULED BY TIME DELAY 04 00139
000006 A 140 TBS6 EQU 6 TIME DELAY ACTIVE 04 00140
000005 A 142 TBS5 EQU 5 TASK WAITING TO BE LOADED 04 00142
000004 A 143 TBS4 EQU 4 TASK ERROR 04 00143
000003 A 144 TBS3 EQU 3 TASK INTERRUPT EXPECTED 04 00144
000002 A 146 TBS2 EQU 2 OVERLAY TASK 04 00146
000001 A 147 TBS1 EQU 1 UPON TERMINATION ACTIVATE TASK SCHED TASK 04 00147
000000 A 148 TBS0 EQU 0 TASK SEARCH-ALLOCATED-LOADED 04 00148
149 EJECT 04 00149
150 ***** 04 00150
151 * 04 00151
152 *** TASK STATUS DESCRIPTION (BIT SET WORD 2) *** 04 00152
153 * 04 00153
154 ***** 04 00154
156 * BIT 15 - TASK OPENED 04 00156
158 * BIT 14 - UNUSED 04 00158
159 * BIT 13 - OVERLAY LOAD 04 00159
160 * BIT 12 - TASK WAITING FOR BACKGROUND TASK I/O TO COMPLETE 04 00160
161 * TASK LOCKED-OUT UNTIL BG I/O COMPLETE OR BIT 11 04 00161
162 * IS SET (ALLOCATABLE SPACE AVAILABLE) 04 00162
164 * BIT 11 - DEFINES THAT ALLOCATABLE SPACE IS AVAILABLE, TRY 04 00164
165 * ALLOCATING TASK AGAIN. OVERRIDES BIT 12 SET OR 04 00165
166 * BIT 5 IN STATUS WORD. 04 00166
167 * BIT 10 - BACKGROUND TASK BEING WRITTEN ON CHECKPOINT FILE. 04 00167
168 * BIT 9 - TASK WAITING FOR A TIDB TO COME AVAILABLE FOR 04 00168
169 * SCHEDULING. 04 00169
171 * BIT 8 TO 6 - UNUSED 04 00171
172 EJECT 04 00172
173 ***** 04 00173
174 * 04 00174
175 *** JOB PROCESSOR LOW CORE EQUATES *** 04 00175
176 * 04 00176
177 ***** 04 00177
000050 A 179 LCJP EQU 050 JCP NAME 04 00179
000050 A 180 V$JNAM EQU LCJP LINE COUNT 04 00180
000054 A 181 V$LCNT EQU LCJP+4 JCP FLAGS 04 00181
000055 A 182 V$JCFG EQU LCJP+5 BIT 2-0 = LOAD AND GO FLAGS 04 00182
183 * BIT 3 = DUMP FLAG 1=DUMP, 0=NO DUMP 04 00183
184 * BIT 4 = DUMP FLAG IF LOAD AND GO 04 00184
185 * BIT 9-5 = UNUSED 04 00185
186 * BIT 15-10 = BG EXTRA CORE BLOCKS TO ALLOC 04 00186
187 * BIC INTERRUPT ADDRESS TABLE (10 WORDS) 04 00187
000056 A 189 V$BIC1 EQU LCJP+6 JCP DATE RECORD 04 00189
000070 A 190 V$DATE EQU LCJP+16 PERMUNATE LINE COUNT 04 00190
000074 A 191 V$PLCT EQU LCJP+20 JCP LIB KEY AND LU NO. (BACKGROUND LIB) 04 00191
000075 A 192 V$BGLB EQU LCJP+21 CARD KEYPUNCH TYPE, 0=026, 1=029 04 00192
000076 A 193 V$CRDM EQU LCJP+22 BIT 0 = SYSTEM NOMINAL KEYPUNCH MODE. 04 00193
194 * BIT 9 = CURRENT JOB KEYPUNCH MODE. 04 00194
195 * 04 00195
000077 A 196 V$JCTM EQU LCJP+23 TEMP. STORAGE FOR /MEM BLOCK 04 00196
197 EJECT 04 00197
198 ***** 04 00198
199 * 04 00199
200 *** LOW CORE DESCRIPTION *** 04 00200
201 * 04 00201
202 ***** 04 00202

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000300	A	204	LC	EQU	0300			04	00204
000300	A	205	V\$CTL	EQU	LC	CURRENT TASK TIDB LOCATION		04	00205
000301	A	206	V\$CPL	EQU	LC+1	CURRENT PRIORITY LEVEL		04	00206
000302	A	207	V\$CRS	EQU	LC+2	CURRENT REENRANT STACK POINTER		04	00207
000303	A	208	V\$TB	EQU	LC+3	POINTER TO HIGHEST PRIORITY TIDB		04	00208
000304	A	209	V\$UTB	EQU	LC+4	POINTER TO UNUSED TASK TIDB		04	00209
000305	A	210	V\$PTVB	EQU	LC+5	POINTER TO NEXT ENTRY IN REENRANT STACK		04	00210
000306	A	211	V\$FLRS	EQU	LC+6	FIRST LOC. OF REENRANT STACK		04	00211
000307	A	212	V\$LRK	EQU	LC+7	LAST LOC. OF REENRANT STACK+1		04	00212
000310	A	213	V\$CKPT	EQU	LC+8	CHECKPOINT FLAG 1=ON, 0=OFF		04	00213
000311	A	214	V\$DFCL	EQU	LC+9	LOC. OF TIDB FOR OPCOM TASK		04	00214
000312	A	215	V\$LSAL	EQU	LC+10	LOC. OF TIDB FOR SYSTEM SAL TASK		04	00215
000313	A	216	V\$LER	EQU	LC+11	LOC. OF TIDB FOR SYSTEM ERROR TASK		04	00216
000314	A	217	V\$TJCP	EQU	LC+12	LOC. OF TIDB FOR JOB CONTROL PROCESSOR TAS		04	00217
000315	A	218	V\$BTB	EQU	LC+13	LOC. OF CURRENT ACTIVE BACKGROUND TSK TIDB		04	00218
000316	A	219	V\$LUP	EQU	LC+14	LOC. OF 1ST UNPROTECTED WORD		04	00219
000317	A	220	V\$LLUP	EQU	LC+15	LOC. OF LAST UNPROTECTED WORD		04	00220
000320	A	221	V\$IM	EQU	LC+16	INTERRUPT MASK (8 WORDS)		04	00221
000330	A	222	V\$MPM	EQU	LC+24	MEMORY PROTECT MASK (4 WORDS)		04	00222
000334	A	223	V\$CAM	EQU	LC+28	CORE ALLOCATION MASK (4 WORDS)		04	00223
		224	*	EQU	LC+32	UNUSED		04	00224
000341	A	225	V\$CRDR	EQU	LC+33	CORE RESIDENT DIRECTORY LOCATION		04	00225
000342	A	226	V\$TBGT	EQU	LC+34	TOP OF THREAD OF BG TSK WAITING TO BE ALLO		04	00226
000343	A	227	V\$TMS	EQU	LC+35	TIME OF DAY IN 5 MILLISECOND INCREMENTS		04	00227
000344	A	228	V\$TMN	EQU	LC+36	TIME OF DAY IN MINUTE INCREMENTS		04	00228
000345	A	229	V\$LUNT	EQU	LC+37	ADDR. OF LOGICAL UNIT NAME TABLE		04	00229
000346	A	230	V\$OPCF	EQU	LC+38	OPCOM LOCKOUT FLAG		04	00230
000347	A	231	V\$FGLB	EQU	LC+39	KEY AND LU NO. FOR FOREGROUND LIB		04	00231
000350	A	232	V\$FREE	EQU	LC+40	FREE RUNNING COUNTER INCR. IN MICROSECONDS		04	00232
000351	A	233	V\$CTMS	EQU	LC+41	CLOCK RESOLUTION IN 5 MILLISECOND INCR.		04	00233
000352	A	234	V\$SCV	EQU	LC+42	CLOCK SELECTED COUNT VALUE (1 TO 4095)		04	00234
000353	A	235	V\$CKB	EQU	LC+43	BASIC CLOCK INTERRUPT RATE IN MICROSECONDS		04	00235
000354	A	236	V\$CRM	EQU	LC+44	CLOCK RESOLUTION INCR. FOR 1 MINUTE.		04	00236
000355	A	237	V\$DSTB	EQU	LC+45	BASE ADDR. FOR DST BLOCK		04	00237
000356	A	238	V\$LIT	EQU	LC+46	LAST LOCATION OF BACKGROUND LITERAL TABLE		04	00238
		239	*	EQU	LC+47	UNUSED		04	00239
000360	A	240	V\$CTAD	EQU	LC+48	BASE ADDR. FOR CONTROLLER ADDR. TABLE		04	00240
000361	A	241	V\$SCTL	EQU	LC+49	CURRENT CONTROLLER IN SCAN		04	00241
000362	A	242	V\$NCTR	EQU	LC+50	NO. OF CONTROLLERS		04	00242
000363	A	243	V\$PIMN	EQU	LC+51	EXTERNAL DEVICE ADDRESS TABLE FOR PIMS		04	00243
		244	*	EQU	LC+51	(8 WORDS DEFINED IN PIM NO ORDER)		04	00244
		245	*	EQU	LC+59	UNUSED		04	00245
		246	*	EQU	LC+60	UNUSED		04	00246
000375	A	247	V\$SLFG	EQU	LC+61	SAL TASK BUSY FLAG 1=BUSY, 0=NOT BUSY		04	00247
000376	A	248	V\$ERFG	EQU	LC+62	ERROR TASK BUSY FLAG 1=BUSY, 0=NOT BUSY		04	00248
000377	A	249	V\$JOP	EQU	LC+63	JCP OPERATING FLAG		04	00249
000400	A	250	V\$LUT1	EQU	LC+64	START LUN ADDR FOR JCP/OPCOM ASSIGNABLE		04	00250
000401	A	251	V\$LUT2	EQU	LC+65	START LUN ADDR FOR UNASSIGNABLE		04	00251
000402	A	252	V\$LUT3	EQU	LC+66	START LUN ADDR FOR OPCOM ASSIGNABLE		04	00252
000403	A	253	V\$1MIN	EQU	LC+67	32767 - (60000/(5*V\$CTMS)) + 1		04	00253
		254	*	EQU	LC+68	UNUSED		04	00254
		255	*	EQU	LC+69	UNUSED		04	00255
		256	*	EQU	LC+70	UNUSED		04	00256
		257	*	EQU	LC+71	UNUSED		04	00257
000410	A	258	V\$IDA	EQU	LC+72	I/O ALGORITHM		04	00258
000411	A	259	V\$CKIT	EQU	LC+73	CLOCK INT. IN PIM BEFORE LOCKOUT FLAG.		04	00259
000412	A	260	V\$JCB	EQU	LC+74	ALL SYSTEM BACKGROUND PROGRAMS AND JCP USE		04	00260
		261	*	EQU		THIS SYSTEM BUFFER TO READ DIRECTIVES AND		04	00261
		262	*	EQU		SOURCE RECORDS IN.		04	00262
000413	A	263	V\$DCB	EQU	LC+75	OPCOM WILL READ OPERATOR KEY-IN REQUESTS		04	00263
		264	*	EQU		IN THIS BUFFER. IF JCP IS SET NOT ACTIVE		04	00264
		265	*	EQU		AND A 1 DIRECTIVE IS INPUTED, OPCOM		04	00265
		266	*	EQU		WILL MOVE THE DIRECTIVE TO V\$JCB BEFORE		04	00266
		267	*	EQU		SCHEDULING JCP.		04	00267
000414	A	268	V\$BVN	EQU	LC+76	BOTTOM OF VORTEX NUCLEUS		04	00268
000415	A	269	V\$BFC	EQU	LC+77	TOP OF FG RES. AREA/BOTTOM OF FG BLK COMM.		04	00269
000416	A	270	V\$TFC	EQU	LC+78	TOP OF FG BLK COMMON/TOP OF VORTEX CORE.		04	00270
		271	*	EQU	LC+79	UNUSED		04	00271
		272	EJEC					04	00272
		273	*****					04	00273
		274	*					04	00274
		275	****					04	00275
		276	*					04	00276
		277	*****					04	00277
000420	A	279	MT	SET	0420			04	00279
000420	A	280	ZERO	EQU	MT	ZERO WORD		04	00280
000421	A	281	BS0	EQU	MT+1	BIT MASK CONTENTS 000001		04	00281
000422	A	282	BS1	EQU	MT+2	000002		04	00282
000423	A	283	BS2	EQU	MT+3	000004		04	00283
000424	A	284	BS3	EQU	MT+4	000010		04	00284
000425	A	285	BS4	EQU	MT+5	000020		04	00285
000426	A	286	BS5	EQU	MT+6	000040		04	00286
000427	A	287	BS6	EQU	MT+7	000100		04	00287
000430	A	288	BS7	EQU	MT+8	000200		04	00288
000431	A	289	BS8	EQU	MT+9	000400		04	00289
000432	A	290	BS9	EQU	MT+10	001000		04	00290
000433	A	291	BS10	EQU	MT+11	002000		04	00291
000434	A	292	BS11	EQU	MT+12	004000		04	00292
000435	A	293	BS12	EQU	MT+13	010000		04	00293
000436	A	294	BS13	EQU	MT+14	020000		04	00294
000437	A	295	BS14	EQU	MT+15	040000		04	00295
000440	A	296	BS15	EQU	MT+16	0100000		04	00296
000441	A	297	BR0	EQU	MT+17	BIT MASK CONTENTS 0177776		04	00297



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000442 A 298 BR1 EQU MT+18 0177775 04 00298
000443 A 299 BR2 EQU MT+19 0177773 04 00299
000444 A 300 BR3 EQU MT+20 0177767 04 00300
000445 A 301 BR4 EQU MT+21 0177757 04 00301
000446 A 302 BR5 EQU MT+22 0177737 04 00302
000447 A 303 BR6 EQU MT+23 0177677 04 00303
000450 A 304 BR7 EQU MT+24 0177577 04 00304
000451 A 305 BR8 EQU MT+25 0177377 04 00305
000452 A 306 BR9 EQU MT+26 0176777 04 00306
000453 A 307 BR10 EQU MT+27 0175777 04 00307
000454 A 308 BR11 EQU MT+28 0173777 04 00308
000455 A 309 BR12 EQU MT+29 0167777 04 00309
000456 A 310 BR13 EQU MT+30 0157777 04 00310
000457 A 311 BR14 EQU MT+31 0137777 04 00311
000460 A 312 BR15 EQU MT+32 0077777 04 00312
000461 A 313 NEG EQU MT+33 SET ALL BITS 04 00313
000462 A 314 LHM EQU MT+34 LEFT HALF WORD MASK 0177400 04 00314
000463 A 315 RHM EQU MT+35 RIGHT HALF WORD MASK 0377 04 00315
000421 A 316 ONE EQU MT+1 CONTAINS NUMBER 1 04 00316
000422 A 317 TWO EQU MT+2 CONTAINS NUMBER 2 04 00317
000464 A 318 THREE EQU MT+36 CONTAINS NUMBER 3 04 00318
000423 A 319 FOUR EQU MT+3 CONTAINS NUMBER 4 04 00319
000465 A 320 FIVE EQU MT+37 CONTAINS NUMBER 5 04 00320
000466 A 321 SIX EQU MT+38 CONTAINS NUMBER 6 04 00321
000467 A 322 SEVEN EQU MT+39 CONTAINS NUMBER 7 04 00322
000424 A 323 EIGHT EQU MT+4 CONTAINS NUMBER 8 04 00323
000470 A 324 NINE EQU MT+40 CONTAINS NUMBER 9 04 00324
000471 A 325 TEN EQU MT+41 CONTAINS NUMBER 10 04 00325
000421 A 326 BM1 EQU MT+1 BIT MASK WORD 00001 04 00326
000464 A 327 BM3 EQU MT+36 BIT MASK WORD 00003 04 00327
000467 A 328 BM7 EQU MT+39 BIT MASK WORD 00007 04 00328
000472 A 329 BM17 EQU MT+42 BIT MASK WORD 00017 04 00329
000473 A 330 BM37 EQU MT+43 BIT MASK WORD 00037 04 00330
000474 A 331 BM77 EQU MT+44 BIT MASK WORD 00077 04 00331
000475 A 332 BM177 EQU MT+45 BIT MASK WORD 00177 04 00332
000463 A 333 BM377 EQU MT+35 BIT MASK WORD 00377 04 00333
000476 A 334 BM777 EQU MT+46 BIT MASK WORD 00777 04 00334
000477 A 335 BM1777 EQU MT+47 BIT MASK WORD 01777 04 00335
336 EJECT 04 00336
337 ***** 04 00337
338 * 04 00338
339 **** BIT TEST BIT DESIGNATION *** 04 00339
340 * 04 00340
341 ***** 04 00341
000040 A 343 RA0 EQU 040 BT JUMPS WHEN A REGISTER IS 0 04 00343
000000 A 344 RA1 EQU 000 BT JUMPS WHEN A REGISTER IS 1 04 00344
000060 A 345 RB0 EQU 060 BT JUMPS WHEN B REGISTER IS 0 04 00345
000020 A 346 RB1 EQU 020 BT JUMPS WHEN B REGISTER IS 1 04 00346
348 ***** 04 00348
349 * 04 00349
350 ** THE BIT CHECKED 04 00350
351 * 04 00351
352 ***** 04 00352
000000 A 354 B0 EQU 0 04 00354
000001 A 355 B1 EQU 1 04 00355
000002 A 356 B2 EQU 2 04 00356
000003 A 357 B3 EQU 3 04 00357
000004 A 358 B4 EQU 4 04 00358
000005 A 359 B5 EQU 5 04 00359
000006 A 360 B6 EQU 6 04 00360
000007 A 361 B7 EQU 7 04 00361
000010 A 362 B8 EQU 8 04 00362
000011 A 363 B9 EQU 9 04 00363
000012 A 364 B10 EQU 10 04 00364
000013 A 365 B11 EQU 11 04 00365
000014 A 366 B12 EQU 12 04 00366
000015 A 367 B13 EQU 13 04 00367
000016 A 368 B14 EQU 14 04 00368
000017 A 369 B15 EQU 15 04 00369
370 EJECT 04 00370
371 ***** 04 00371
372 * 04 00372
373 **** DEVICE AND FUNCTION CODES *** 04 00373
374 * 04 00374
375 ***** 04 00375
377 **** REAL TIME CLOCK *** 04 00377
000047 A 378 CLOCK EQU 047 DEVICE NUMBER 047 04 00378
379 * 04 00379
000747 A 380 DISCLK EQU 0700+CLOCK DISABLE CLOCK 04 00380
000147 A 381 ENACLK EQU 0100+CLOCK ENABLE CLOCK 04 00381
383 * 04 00383
384 **** PIM *** 04 00384
000044 A 385 APIM EQU 044 ALL PIMS DEVICE NUMBER 04 00385
000040 A 386 PIM1 EQU 040 04 00386
000041 A 387 PIM2 EQU 041 04 00387
000042 A 388 PIM3 EQU 042 04 00388
000043 A 389 PIM4 EQU 043 04 00389
000040 A 390 PIM5 EQU 040 04 00390
000040 A 391 PIM6 EQU 040 04 00391
000040 A 392 PIM7 EQU 040 04 00392
000040 A 393 PIM8 EQU 040 04 00393
394 * 04 00394
000444 A 395 DISPIM EQU 0400+APIM 04 00395

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000244 A 396 ENAPIM EQU 0200+APIM 04 00396
398 **** MEMORY PROTECT *** 04 00398
000045 A 399 MP EQU 045 04 00399
000745 A 400 DISMP EQU 0700+MP 04 00400
000645 A 401 ENAMP EQU 0600+MP 04 00401
000045 A 402 MPMR0 EQU 0000+MP 04 00402
000145 A 403 MPMR1 EQU 0100+MP 04 00403
000245 A 404 MPMR2 EQU 0200+MP 04 00404
000345 A 405 MPMR3 EQU 0300+MP 04 00405
406 EJEC 04 00406
407 ***** 04 00407
408 * 04 00408
409 * FILE MAINTENANCE ( F M A I N ) * 04 00409
410 * 04 00410
411 * FUNCTION: FMAIN INPUTS/EXECUTES COMMANDS FROM THE SI DEVICE * 04 00411
412 * 04 00412
413 * ENTRY: DIRECT FROM JCP * 04 00413
414 * 04 00414
415 * EXIT : DIRECT TO JCP * 04 00415
416 * 04 00416
417 * ERRORS: FM01 ON INVALID COMMAND * 04 00417
418 * FM05 ON I/O ERROR * 04 00418
419 * 04 00419
420 ***** 04 00420
422 ***** 04 00422
423 * INITIALIZE * 04 00423
424 ***** 04 00424
000000 006030 A 425 FMAIN LDXI SIFCB POINT X AT SI SYSTEM FCB 04 00425
000001 000000 E
000002 015003 A 426 LDA 5,X 04 00426
000003 001010 A 427 JAZ FMA IS SYSTEM SI FCB ACTIVE ? 04 00427
000004 000016 R
000005 074053 A 428 STX FM1+4 YES. STORE ADDRESS IN READ CALL 04 00428
000006 014504 A 429 LDA FMSII 04 00429
000007 055000 A 430 STA 0,X STORE BUFFER SIZE=40 WORDS IN FCB 04 00430
000010 014503 A 431 LDA FMSII+1 04 00431
000011 055001 A 432 STA 1,X STORE BUFFER ADDRESS IN SYSTEM FCB 04 00432
000012 015002 A 433 LDA 2,X 04 00433
000013 150463 A 434 ANA RHW SET MODE =1 C 04 00434
000014 110431 A 435 ORA BSS C 04 00435
000015 055002 A 436 STA 2,X 04 00436
000016 006503 A 437 FMA JSR FMVHI,X INITIALIZE HEADER 04 00437
000017 005120 R
000020 000472 R 438 DATA FMLC 04 00438
000021 006503 A 439 JSR FMWLI,X INITIALIZE LD OUTPUT 04 00439
000022 005166 R
000023 006503 A 440 JSR V$SOLD,X CHECK IF SD=LD 04 00440
000024 005651 R
000025 054724 A 441 STA FMSLSW LOAD SD/LD SWITCH 04 00441
000026 010422 A 442 LDA TWD 04 00442
000027 006503 A 443 JSR V$DVTP,X CHECK IF SI IS TTY OR CRT 04 00443
000030 005621 R
000031 054443 A 444 STA FMTFL LOAD TTY/CRT FLAG 04 00444
445 ***** 04 00445
446 * NORMAL REENTRY * 04 00446
447 ***** 04 00447
000032 002000 A 448 FML1 CALL FMHC HEADER CHECK 04 00448
000033 000444 R
000034 014440 A 449 LDA FMTFL 04 00449
000035 001016 A 450 JANZ FM1 IS SI TTY OR CRT ? 04 00450
000036 000053 R
451 FM0 WRITE FMTDCB,2,0,1 YES. OUTPUT 'FM**' 04 00451
000037 006503 A
000040 000404 A
000041 100000 A
000042 010402 A
000043 000503 R
000044 000000 A
000045 000000 A
452 STAT FM0,FME5,FME5,FME5,FME5 04 00452
000046 006503 A
000047 000373 A
000050 000037 R
000051 000441 R
000052 000441 R
000053 000441 R
000054 000441 R
453 FM1 READ FMSII,2,0,1 READ/COMPLETE/ASCII/SI 04 00453
000055 006503 A
000056 000404 A
000057 100000 A
000060 010002 A
000061 000513 R
000062 000000 A
000063 000000 A
454 STAT FM1,FME5,FME5,FME5,FME5 04 00454
000064 006503 A
000065 000373 A
000066 000053 R
000067 000441 R
000070 000441 R
000071 000441 R
000072 000441 R

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455 *****
456 * TEST FOR '/' RECORD *
457 *****
000073 017000 I 458 LDA FMBF GET 1ST BUFFER WORD
000074 004550 A 459 LLSR 8 GET FIRST CHAR IN A
000075 006140 A 460 SUBI '/'
000076 000257 A
000077 027000 I 461 LDB FM1+5 GET INPUT WORD COUNT
000100 001010 A 462 JAZ FMEEXIT EXIT ON A '/' COMMAND
000101 000677 R

463 *****
464 * ERROR REENTRY *
465 *****
000102 064416 A 466 FME STB FMBSZ STORE INPUT WORD COUNT
000103 005122 A 467 IBR
000104 064411 A 468 STB FMLDE STORE WORD COUNT IN ECHO DCB
000105 005001 A 469 TZA
000106 054414 A 470 STA FMBP CLEAR BUFFER POINTER FMBP
471 *****
472 * ECHO COMMAND ON LD DEVICE *
473 *****
000107 014642 A 474 LDA FMLSW
000110 001010 A 475 JAZ FMI DON'T ECHO IF SD=LD
000111 000120 R
000112 006505 A 476 JSR FMNL,X
000113 005342 R
000114 000516 R 477 DATA FMLDE
000115 000472 R 478 DATA FMLC
000116 001016 A 479 JANZ FMER CHECK I/O ERROR
000117 000570 R

480 *****
481 * INPUT AND IDENTIFY COMMAND *
482 *****
000120 017000 I 483 FMI LDA FMBF
000121 004550 A 484 LLSR 8 GET 1ST CHAR
000122 006140 A 485 SUBI 0240
000123 000240 A
000124 001010 A 486 JAZ FME1 ERROR 1/1ST CHAR BLANK/
000125 000436 R
000126 006505 A 487 JSR FMNA,X INPUT NAME INTO BLOCK FMP1
000127 004076 R
000130 000521 R 488 DATA FMSCB
000131 000557 R 489 DATA FMP1
000132 006010 A 490 LDAI FMIDT-3
000133 000522 R
000134 054014 A 491 STA FMII2 INITIALIZE ID TABLE POINTER
000135 005301 A 492 DECR 1
000136 054330 A 493 STA FMCI INITIALIZE COMMAND INDEX
000137 044327 A 494 FMII1 INR FMCI BUMP INDEX
000140 014010 A 495 LDA FMII2
000141 120464 A 496 ADD THREE BUMP TABLE POINTER
000142 054006 A 497 STA FMII2
000143 006140 A 498 SUBI FMIDE TEST FOR END OF TABLE
000144 000555 R
000145 001002 A 499 JAP FME1 ERROR 1/INVALID COMMAND/
000146 000436 R
000147 006505 A 500 JSR FMCN,X COMPARE COMMAND WITH ID TABLE
000150 001132 R
000151 501 FMII2 BSS 1 POINTER TO ID TABLE
000152 000557 R 502 DATA FMP1 POINTER TO NAME
000153 001007 A 503 JOFN FMII1 LOOP TILL DONE
000154 000137 R

504 *****
505 * INPUT LOGICAL UNIT NUMBER *
506 *****
000155 006505 A 507 JSR FMNB,X SLEW TO NON-BLANK
000156 004133 R
000157 000521 R 508 DATA FMSCB
000160 064312 A 509 STB FMT SAVE 1ST CHAR
000161 014341 A 510 LDA FMBP
000162 005311 A 511 DAR BACK UP SCAN
000163 054337 A 512 STA FMBP
000164 054307 A 513 STA FMT+1
000165 006505 A 514 JSR FMNA,X INPUT LUN STRING TO FMP3
000166 004076 R
000167 000521 R 515 DATA FMSCB
000170 000565 R 516 DATA FMP3
000171 014301 A 517 LDA FMT
000172 006140 A 518 SUBI 0260
000173 000260 A
000174 001004 A 519 JAN *+5
000175 000201 R
000176 140471 A 520 SUB TEN
000177 001004 A 521 JAN FM2 IS LUN FIELD NUMERIC ?
000200 000221 R
000201 030345 A 522 LDX VSLUNT NO. PROCESS AS NAME
523 *****
524 * LOG UNIT IS NAME - SCAN TABLE *
525 *****
000202 015000 A 526 FML3 LDA 0,X GET NAME FROM TABLE
000203 001010 A 527 JAZ FME1 ERROR 1/NO SUCH NAME/
000204 000436 R
000205 006617 A 528 SRE FMP3,7,010 COMPARE WITH DIRECTIVE

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000206 000565 R
000207 001000 A 529      JMP      *+6      EQUAL ?
000210 000215 R
000211 015001 A 530      LDA      1,X      YES. GET LUN IN BINARY
000212 054342 A 531      STA      FMLUN   STORE IN COMMAND BLOCK
000213 001000 A 532      JMP      FMK
000214 000227 R
000215 005144 A 533      IXR
000216 005144 A 534      IXR      NOT EQUAL
000217 001000 A 535      JMP      FML3    BUMP TABLE POINTER X
000220 000202 R                    CONTINUE COMPARE LOOP
04 00529
04 00530
04 00531
04 00532
04 00533
04 00534
04 00535
04 00536
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04 00595
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04 00597
000221 014252 A
000222 054300 A
000223 006505 A
000224 004253 R
000225 000521 R
000226 000555 R
000227 005001 A
000230 054325 A
000231 006505 A
000232 004133 R
000233 000521 R
000234 001018 A
000235 000436 R
000236 005021 A
000237 001004 A
000240 000300 R
000241 144226 A
000242 001010 A
000243 000264 R
000244 144224 A
000245 001010 A
000246 000264 R
000247 064306 A
000250 006505 A
000251 004133 R
000252 000521 R
000253 005021 A
000254 001004 A
000255 000300 R
000256 144211 A
000257 001010 A
000260 000264 R
000261 144207 A
000262 001016 A
000263 000436 R
000264 006505 A
000265 004078 R
000266 000521 R
000267 000557 R
000270 001016 A
000271 000436 R
000272 001007 A
000273 000317 R
000274 014172 A
000275 140467 A
000276 001010 A
000277 000436 R
000300 014166 A
000301 140423 A
000302 001010 A
000303 000417 R
000304 005311 A
000305 001010 A
000306 000417 R
000307 005311 A
000310 001010 A
000311 000417 R
000312 005311 A
000313 001010 A
000314 000417 R
000315 001000 A
000316 000436 R
000317 014147 A
000320 001010 A
000321 000362 R
000322 005311 A
000323 001010 A
529      JMP      *+6      EQUAL ?
530      LDA      1,X      YES. GET LUN IN BINARY
531      STA      FMLUN   STORE IN COMMAND BLOCK
532      JMP      FMK
533      IXR
534      IXR      NOT EQUAL
535      JMP      FML3    BUMP TABLE POINTER X
                    CONTINUE COMPARE LOOP
536 *****
537 * LOG UNIT IS NUMBER *
538 *****
539 FM2      LDA      FMT+1
540      STA      FMBP
541      JSR      FMNU,X  RESTORE SCAN POINTER
                    INPUT NUMERIC FIELD
542      DATA   FMSCB
543      DATA   FMLUN
544 *****
545 * INPUT KEY *
546 *****
547 FMK      TZA
548      STA      FMKEY
549      JSR      FMNB,X  INITIALIZE KEY TO ZERO
                    INPUT NON-BLANK
550      DATA   FMSCB
551      JANZ    FME1     ERROR 1/ILLEGAL CHAR/
552      TBA
553      JAN      FM4     EXIT ON EOL
554      SUB      FMCDM
555      JAZ      FM3     COMMA ?
556      SUB      FMEQMC
557      JAZ      FM3     '=' ?
558      STB      FMKEY
559      JSR      FMNB,X  NO. STORE KEY
                    SCAN PAST KEY
560      DATA   FMSCB
561      TBA
562      JAN      FM4     TEST FOR EOL
563      SUB      FMCDM
564      JAZ      FM3     TEST FOR COMMA
565      SUB      FMEQMC
566      JANZ    FME1     TEST FOR '='
                    ERROR 1/ILLEGAL TERMINATOR/
567 *****
568 * INPUT FILE NAME AFTER KEY *
569 *****
570 FM3      JSR      FMNA,X  INPUT FILE NAME INTO FMP1
571      DATA   FMSCB
572      DATA   FMP1
573      JANZ    FME1     ERROR 1/ILLEGAL CHAR/
574      JDFN    FM6     TEST COMMAND END
575      LDA      FMCI
576      SUB      SEVEN
577      JAZ      FME1     ERROR 1/'INPUT'/
578 *****
579 * COMMAND BLANK AFTER KEY FIELD *
580 *****
581 FM4      LDA      FMCI
582      SUB      FOUR
583      JAZ      FMZ     'LIST' OK
584      DAR
585      JAZ      FMZ     'INIT' OK
586      DAR
587      JAZ      FMZ     'ADD' OK
588      DAR
589      JAZ      FMZ     'INPUT' OK
590      JMP      FME1     ERROR 1/ILLEGAL COMMAND/
591 *****
592 * PARAMETERS FOLLOW KEY FIELD *
593 *****
594 FM6      LDA      FMCI
595      JAZ      FMIIC   'CREATE' ?
596      DAR
597      JAZ      FM7     NO
                    'DELETE' ?

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000324 000340 R
000325 140464 A 598 SUB THREE NO
000326 001004 A 599 JAN FMB 'RENAME'/'ENTER' ?
000327 000345 R
000330 001010 A 600 JAZ FME1 ERROR 1/'LIST'/
000331 000436 R
000332 005311 A 601 DAR
000333 001010 A 602 JAZ FME1 ERROR 1/'INIT'/
000334 000436 R
000335 005311 A 603 DAR
000336 001010 A 604 JAZ FME1 ERROR 1/'ADD'
000337 000436 R
000340 005021 A 605 FM7 TBA 'DELETE'/'INPUT'
000341 001002 A 606 JAP FME1 ERROR 1/ILLEGAL TERMINATION/
000342 000436 R
000343 001000 A 607 JMP FMZ
000344 000417 R
608 *****
609 * ENTER/RENAME - INPUT 2ND FILE NAME *
610 *****
000345 006505 A 611 FM8 JSR FMNA,X INPUT NAME INTO BLOCK FMP2
000346 004076 R
000347 000521 R 612 DATA FMSCB
000350 000562 R 613 DATA FMP2
000351 001016 A 614 JANZ FME1 ERROR 1/ILLEGAL CHAR/
000352 000436 R
000353 001001 A 615 JOF FME1 ERROR 1/NO NAME/
000354 000436 R
000355 005021 A 616 TBA
000356 001002 A 617 JAP FME1 ERROR 1/ILLEGAL TERMINATION/
000357 000436 R
000360 001000 A 618 JMP FMZ
000361 000417 R
619 *****
620 * INPUT TWO NUMERIC FIELDS FOR 'CREATE' *
621 *****
000362 006505 A 622 FMIIC JSR FMNU,X GET RECORD SIZE IN WORDS
000363 004253 R
000364 000521 R 623 DATA FMSCB
000365 000473 R 624 DATA FMT
000366 001016 A 625 JANZ FME1 ERROR 1/ILLEGAL NUMERIC FIELD/
000367 000436 R
000370 001001 A 626 JOF FME1 ERROR 1/NO NUMBER/
000371 000436 R
000372 006505 A 627 JSR FMNU,X GET FILE SIZE(RECORDS)
000373 004253 R
000374 000521 R 628 DATA FMSCB
000375 000562 R 629 DATA FMSCN
000376 001016 A 630 JANZ FME1 ERROR 1/ILLEGAL NUMERIC FIELD/
000377 000436 R
000400 001001 A 631 JOF FME1 ERROR 1/NO NUMBER/
000401 000436 R
632 *****
633 * GET 'CREATE' RECORD COUNT *
634 *****
000402 005001 A 635 TZA
000403 054157 A 636 STA FMSCN+1 DISABLE 'CREATE' FCB POINTER
000404 024066 A 637 LDB FMT GET SPECIFIED RECORD SIZE
000405 174070 A 638 DIV FMK120 GET COUNT OF 120-WORD SECTORS
000406 001010 A 639 JAZ *+3
000407 000411 R
000410 005122 A 640 IBR CORRECT IF NOT EXACT MULTIPLE
000411 005001 A 641 TZA
000412 164147 A 642 MUL FMSCN GET TOTAL SECTOR COUNT
000413 064146 A 643 STB FMSCN SAVE SECTOR COUNT IN FMSCN
000414 014107 A 644 LDA FMTC
000415 001002 A 645 JAP FME1 ERROR 1/ILLEGAL TERMINATION/
000416 000436 R
646 *****
647 * EXIT TO PROCESSORS *
648 *****
000417 014047 A 649 FMZ LDA FMCI
000420 006120 A 650 ADDI FMIIJ
000421 000457 R
000422 005012 A 651 TAB
000423 016000 A 652 LDA 0,B
000424 054001 A 653 STA *+2
000425 006505 A 654 JSR 0,X JUMP TO PROCESSOR
000426 000000 A
000427 000555 R 655 DATA FMCB
000430 000476 R 656 DATA FMFCB
000431 000472 R 657 DATA FMFC
000432 001010 A 658 JAZ FML1 LOOP BACK FOR NEXT COMMAND IF NO ERROR
000433 000032 R
000434 001000 A 659 JMP FMER /PROCESSOR ERROR/
000435 000570 R
660 *****
661 * ERRORS *
662 *****
000436 005101 A 663 FME1 INCR 1
000437 001000 A 664 JMP FMER
000440 000570 R
000441 010465 A 665 FME5 LDA FIVE

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000442 001000 A 666 JMP FMER 04 00666
000443 000570 R 667 ***** 04 00667
668 * HEADER CHECK * 04 00668
669 ***** 04 00669
000444 000000 A 670 FMHC ENTR 04 00670
000445 014024 A 671 LDA FMLC 04 00671
000446 001002 A 672 JAP* FMHC 04 00672
000447 100444 R 673 JSR FMVH,X YES. OUTPUT HEADER 04 00673
000450 006505 A 674 DATA FMLC 04 00674
000451 005115 R 675 JANZ FMER CHECK I/O ERROR 04 00675
000452 000472 R 676 JMP* FMHC EXIT 04 00676
000453 001016 A
000454 000570 R
000455 001000 A
000456 100444 R
677 ***** 04 00677
678 * FMAIN COMMAND JUMP TABLE * 04 00678
679 ***** 04 00679
000457 001451 R 680 FMIIJ DATA FMCR PROCESS 'CREATE' 04 00680
000460 002052 R 681 DATA FMDE PROCESS 'DELETE' 04 00681
000461 004645 R 682 DATA FMRE PROCESS 'RENAME' 04 00682
000462 002330 R 683 DATA FMEN PROCESS 'ENTER' 04 00683
000463 003620 R 684 DATA FMLI PROCESS 'LIST' 04 00684
000464 003276 R 685 DATA FMIN PROCESS 'INIT' 04 00685
000465 006611 R 686 DATA FMAD PROCESS 'ADD' 04 00686
000466 007247 R 687 DATA FMIP PROCESS 'INPUT' 04 00687
688 * 04 00688
000467 689 FMCI BSS 1 COMMAND INDEX 04 00689
000470 000254 A 690 FMCOM DATA 0254 COMMA 04 00690
000471 000021 A 691 FMEQMC DATA 021 '=' - ',' 04 00691
000472 692 FMFC BSS 1 LD LINE COUNTER 04 00692
000473 693 FMT BSS 2 TEMP 04 00693
000475 694 FMFL BSS 1 ZERO IF SI=TTY OR CRT 04 00694
695 ***** 04 00695
696 * DIRECTORY FCB * 04 00696
697 ***** 04 00697
000476 000170 A 698 FMFCB DATA 120 RECORD LENGTH IN WORDS 04 00698
000477 005667 R 699 DATA FMFB RMD BUFFER ADDRESS 04 00699
000500 000000 A 700 DATA 0 ACCESS METHOD/KEY 04 00700
000501 701 BSS 1 CURRENT ADDRESS 04 00701
000502 702 BSS 1 CURRENT EOF 04 00702
000503 703 BSS 1 1ST FILE ADDRESS 04 00703
000504 704 BSS 1 LAST FILE ADDRESS 04 00704
000505 000476 R 705 FMK120 EQU FMFCB 04 00705
706 ***** 04 00706
707 * FMAIN PROMPT MESSAGE DCB * 04 00707
708 ***** 04 00708
000505 000003 A 709 FMDCB DATA 3 04 00709
000506 000510 R 710 DATA *+2 04 00710
000507 000001 A 711 DATA 1 04 00711
000510 120306 A 712 DATA * FM** * 04 00712
000511 146652 A
000512 125240 A
713 ***** 04 00713
714 * FMAIN COMMAND INPUT DCB * 04 00714
715 ***** 04 00715
000513 000050 A 716 FMSCB DATA 40 RECORD LENGTH IN WORDS 04 00716
000514 005667 R 717 DATA FMFB BUFFER 04 00717
000515 000001 A 718 DATA 1 COUNT 04 00718
719 ***** 04 00719
720 * FMAIN COMMAND ECHO DCB * 04 00720
721 ***** 04 00721
000516 000050 A 722 FMLOE DATA 40 RECORD LENGTH IN WORDS 04 00722
000517 005666 R 723 DATA FMFB-1 BUFFER 04 00723
000520 000001 A 724 DATA 1 COUNT 04 00724
725 ***** 04 00725
726 * SCAN CONTROL BLOCK * 04 00726
727 ***** 04 00727
000521 000521 R 728 FMSCB EQU * 04 00728
000522 005667 R 729 FMBSZ BSS 1 INPUT WORD COUNT 04 00729
000523 730 DATA FMFB BUFFER 04 00730
000524 731 FMFB BSS 1 BUFFER POINTER 04 00731
732 FMTC BSS 1 INPUT CHARACTER 04 00732
733 ***** 04 00733
734 * COMMAND ID TABLE * 04 00734
735 ***** 04 00735
000525 141722 A 736 FMIDT DATA 'CREATE' 04 00736
000526 142701 A
000527 152305 A
000530 142305 A 737 DATA 'DELETE' 04 00737
000531 146305 A
000532 152305 A
000533 151305 A 738 DATA 'RENAME' 04 00738
000534 147301 A
000535 146705 A
000536 142716 A 739 DATA 'ENTER' 04 00739
000537 152305 A
000540 151240 A
000541 148311 A 740 DATA 'LIST' 04 00740
000542 151724 A
000543 120240 A
000544 144716 A 741 DATA 'INIT' 04 00741

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000545 144724 A
000546 120240 A
000547 140704 A 742 DATA 'ADD' 04 00742
000550 142240 A
000551 120240 A
000552 144716 A 743 DATA 'INPUT' 04 00743
000553 150325 A
000554 152240 A
000555 R 744 FMIDE EQU * 04 00744
745 ***** 04 00745
746 * FMAIN COMMAND BLOCK * 04 00746
747 ***** 04 00747
000555 R 748 FMCB EQU * 04 00748
749 FMLUN BSS 1 LOGICAL UNIT NUMBER 04 00749
000556 750 FMKEY BSS 1 KEY 04 00750
000557 751 FMP1 BSS 3 1ST FILE NAME 04 00751
000562 R 752 FMSCN EQU * 'CREATE' SECTOR COUNT 04 00752
000565 753 FMP2 BSS 3 2ND FILE NAME 04 00753
754 FMP3 BSS 3 LUN STRING 04 00754
755 EJECT 04 00755
756 ***** 04 00756
757 * 04 00757
758 * ERROR PROCESSOR ( F M E R ) * 04 00758
759 * 04 00759
760 * FUNCTION: TO PROCESS FMAIN ERRORS * 04 00760
761 * 04 00761
762 * ENTRY: A=ERROR NUMBER * 04 00762
763 * 04 00763
764 * EXIT : THROUGH MACRO 'EXIT' IF I/O ERROR * 04 00764
765 * THROUGH MACRO 'EXIT' IF 1ST INPUT CHAR IS '/' * 04 00765
766 * TO FMAIN LABEL FML1 IF 1ST INPUT CHAR IS 'C' * 04 00766
767 * OTHERWISE TO FMAIN REENTRY LABEL FME * 04 00767
768 * 04 00768
769 ***** 04 00769
000570 005012 A 771 FMER TAB 04 00771
000571 005001 A 772 TZA 04 00772
000572 170471 A 773 DIV TEN 04 00773
000573 004050 A 774 LRLB 8 04 00774
000574 005031 A 775 MERG 331 04 00775
000575 006120 A 776 ADDI '00' CONVERT TO ASCII ERROR NUMBER 04 00776
000576 130260 A
000577 054160 A 777 STA FMERB+5 STORE IN ERROR BUFFER 04 00777
000600 014006 A 778 LDA FMERW+3 04 00778
000601 150462 A 779 ANA LHW CLEAR LUN FIELD IN IOC CALL 04 00779
000602 110464 A 780 DRA THREE SET TO 30 04 00780
000603 054003 A 781 STA FMERW+3 04 00781
782 FMERW WRITE FMERB,3,0,1 WRITE/COMPLETE/ASCII/30 04 00782
000604 006505 A
000605 000404 A
000606 100000 A
000607 010403 A
000610 000753 R
000611 000000 A
000612 000000 A
783 STAT FMERW,FMERX,FMERX,FMERX,FMERX CHECK STATUS 04 00783
000613 006505 A
000614 000373 A
000615 000604 R
000616 000744 R
000617 000744 R
000620 000744 R
000621 000744 R
000622 014127 A 784 LDA FMSLSW 04 00784
000623 001010 A 785 JAZ FMERR2 DOES 30=LD ? 04 00785
000624 000634 R
000625 017000 I 786 LDA FMERW+3 NO 04 00786
000626 120422 A 787 ADD TWO BUMP 30 TO LD 04 00787
000627 057000 I 788 STA FMERW+3 04 00788
000630 005111 A 789 IAR 04 00789
000631 150467 A 790 ANA SEVEN 04 00790
000632 001016 A 791 JANZ FMERW DO LD OUTPUT IF NOT DONE 04 00791
000633 000604 R
792 FMERR2 WRITE FMTDCB,3,0,1 OUTPUT ' FM** ' TO 30 04 00792
000634 006505 A
000635 000404 A
000636 100000 A
000637 010403 A
000640 000505 R
000641 000000 A
000642 000000 A
793 STAT FMERR2,FMERX,FMERX,FMERX,FMERX 04 00793
000643 006505 A
000644 000373 A
000645 000634 R
000646 000744 R
000647 000744 R
000650 000744 R
000651 000744 R
794 FMERR READ FMSII,3,0,1 READ/COMPLETE/ASCII/30 04 00794
000652 006505 A
000653 000404 A
000654 100000 A
000655 010003 A

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000656 000513 R
000657 000000 A
000660 000000 A
795          STAT      FMERR,FMERX,FMERX,FMERX,FMERX          04 00795
000661 006505 A
000662 000373 A
000663 000652 R
000664 000744 R
000665 000744 R
000666 000744 R
000667 000744 R
000670 017000 I 796          LDA      FMBF          GET 1ST BUFFER WORD          04 00796
000671 004350 A 797          LSRA     8            GET FIRST CHAR              04 00797
000672 006140 A 798          SUBI     '/'          04 00798
000673 000257 A
000674 001016 A 799          JANZ    FMER2        PROCESS AS FMAIN COMMAND IF NOT '/' 04 00799
000675 000724 R
000676 027000 I 800          LDB     FMERR+5      GET INPUT WORD COUNT        04 00800
000677 064051 A 801 FMEXIT STB     FMERT      SAVE MESSAGE WORD COUNT     04 00801
000700 005021 A 802          TBA
000701 006505 A 803          JSR     FMMV,X       MOVE '/' RECORD TO JCP BUFFER 04 00803
000702 003735 R
000703 005667 R 804          PZE     FMBF          JCP BUFFER ADDRESS          04 00804
000704 100412 A 805          MZE     V$JCB        04 00805
000705 014043 A 806          LDA     FMERT        04 00806
000706 120412 A 807          ADD     V$JCB        04 00807
000707 005014 A 808          TAX
000710 010000 L 809          LDA     =40          POINT X AT JCP BUFFER      04 00808
000711 144037 A 810          SUB     FMERT        04 00809
000712 005012 A 811          TAB
000713 006010 A 812          LDAI   ' '          GET REMAINING WORD COUNT IN B 04 00810
000714 120240 A 812          LDAI   ' '          LOAD A WITH BLANKS        04 00812
000715 001020 A 813 FMEXLP JBZ     FMERX        LOOP TO BLANK BUFFER        04 00813
000716 000744 R
000717 055000 A 814          STA     0,X          LOOP TO BLANK BUFFER        04 00814
000720 005144 A 815          IXR
000721 005322 A 816          DBR
000722 001000 A 817          JMP     FMEXLP       BUMP BUFFER POINTER        04 00815
000723 000715 R 817          JMP     FMEXLP       DECREMENT LOOP COUNT      04 00816
000724 017000 I 818 FMER2  LDA     FMBF          CONTINUE BLANK LOOP        04 00817
000725 006140 A 819          SUBI   'CR'          04 00818
000726 141722 A 819          SUBI   'CR'          04 00819
000727 001010 A 820          JAZ
000730 000737 R 820          JAZ     FMER4        PROCESS 'CREATE'            04 00820
000731 017000 I 821          LDA     FMBF          04 00821
000732 004350 A 822          LSRA     8            04 00822
000733 006140 A 823          SUBI     'C'          04 00823
000734 000303 A
000735 001010 A 824          JAZ     FML1         IF 'C', INPUT NEXT COMMAND FROM SI 04 00824
000736 000032 R
000737 002000 A 825 FMER4  CALL    FMHC          OTHERWISE CHECK HEADER      04 00825
000740 000444 R
000741 027000 I 826          LDB     FMERR+5      GET INPUT WORD COUNT        04 00826
000742 001000 A 827          JMP     FME          PROCESS AS FMAIN COMMAND     04 00827
000743 000102 R
000744 006505 A 828 FMERX  JSR     FMWLT,X      TERMINATE LD                04 00828
000745 005243 R 829          EXIT
000746 006505 A
000747 000406 A
000750 000200 A
000751
000752 830 FMERT  BSS     1          MESSAGE WORD COUNT          04 00830
000752 831 FMSLW  BSS     1          ZERO IF SO=LO              04 00831
000752 832 *****
000752 833 * ERROR OUT DCB *
000752 834 *****
000753 000003 A 835 FMERB  DATA   3          04 00832
000754 000756 R 836          DATA *+2          04 00833
000755 000001 A 837          DATA 1            04 00834
000756 120240 A 838          DATA ' FM00'       04 00835
000757 143315 A
000760 130260 A
839          EJEC
840 *****
841 *
842 * CONVERT BINARY TO ASCII (FMBA)
843 *
844 * FUNCTION: TO CONVERT A BINARY NUMBER TO A PACKED ASCII NUMERIC
845 * STRING, RIGHT-JUSTIFIED, WITH BLANK FILL.
846 *
847 * CALLING SEQUENCE: JSR FMBA,X
848 * DATA ADDRESS OF BINARY NUMBER
849 *
850 * ENTRY: A.EQ.0 OCTAL CONVERSION
851 * A.NE.0 DECIMAL CONVERSION
852 *
853 * EXIT : X=ADDRESS OF PACKED STRING
854 *
855 *****
000761 034104 A 857 FMBA1  LDX     FMBAPP        04 00857
000762 025000 A 858          LDB     0,X          GET BINARY NUMBER IN B     04 00858
000763 005004 A 859          TZX
000764 074117 A 860          STX     FMBAZ        CLEAR ZERO SUPPRESS SWITCH 04 00859

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000765	001010	A	861	JAZ	FMBAD		04	00861	
000766	001016	R							
			862	*****			04	00862	
			863	* DECIMAL CONVERSION *			04	00863	
			864	*****			04	00864	
000767	014100	A	865	LDA	FMBABL		04	00865	
000770	054105	A	866	STA	FMBAS	BLANK 1ST CHAR	04	00866	
000771	006030	A	867	LDXI	FMBAT	POINT X AT POWER OF 10 TABLE	04	00867	
000772	001071	R							
			868	*****			04	00868	
			869	* DECIMAL CONVERSION LOOP *			04	00869	
			870	*****			04	00870	
000773	005001	A	871	FMBAL1	TZA		04	00871	
000774	175000	A	872	DIV	0,X	GET DECIMAL DIGIT	04	00872	
000775	065006	A	873	STB	6,X	STORE	04	00873	
000776	001020	A	874	JBZ	*+4	ZERO ?	04	00874	
000777	001002	R							
001000	020425	A	875	LDB	BS4	NO. SET ZERO SUPPRESS SWITCH	04	00875	
001001	064102	A	876	STB	FMBAZ		04	00876	
001002	005012	A	877	TAB		REMAINDER TO B	04	00877	
001003	015006	A	878	LDA	6,X		04	00878	
001004	124063	A	879	ADD	FMBABL	CONVERT DIGIT TO ASCII	04	00879	
001005	124076	A	880	ADD	FMBAZ	SUPPRESS LEADING ZEROS	04	00880	
001006	055006	A	881	STA	6,X		04	00881	
001007	005145	A	882	INCR	045	BUMP POINTER	04	00882	
001010	006140	A	883	SUB1	FMBAT+5		04	00883	
001011	001076	R							
001012	001004	A	884	JAN	FMBAL1	TEST CONVERSION FINISH	04	00884	
001013	000773	R							
001014	001000	A	885	JMP	FMBAP		04	00885	
001015	001043	R							
			886	*****			04	00886	
			887	* OCTAL CONVERSION *			04	00887	
			888	*****			04	00888	
001016	006030	A	889	FMBAD	LDXI	FMBAS-6	INITIALIZE STRING POINTER X	04	00889
001017	001070	R							
001020	004441	A	890	LLRL	1	ROTATE 1ST BIT INTO A	04	00890	
			891	*****			04	00891	
			892	* OCTAL CONVERSION LOOP *			04	00892	
			893	*****			04	00893	
001021	001010	A	894	FMBAL2	JAZ	*+6	DIGIT = 0 ?	04	00894
001022	001027	R							
001023	065006	A	895	STB	6,X	NO. SAVE B	04	00895	
001024	020425	A	896	LDB	BS4		04	00896	
001025	064056	A	897	STB	FMBAZ	CLEAR ZERO SUPPRESS	04	00897	
001026	025006	A	898	LDB	6,X	RESTORE B	04	00898	
001027	124040	A	899	ADD	FMBABL	CONVERT DIGIT TO ASCII	04	00899	
001030	124053	A	900	ADD	FMBAZ	SUPPRESS LEADING ZEROS	04	00900	
001031	055006	A	901	STA	6,X	STORE CHAR IN STRING	04	00901	
001032	005145	A	902	INCR	045	BUMP STRING POINTER	04	00902	
001033	006140	A	903	SUB1	FMBAS		04	00903	
001034	001076	R							
001035	001002	A	904	JAP	FMBAP	EXIT AFTER 6 CHARS	04	00904	
001036	001043	R							
001037	005001	A	905	TZA			04	00905	
001040	004443	A	906	LLRL	3	SHIFT NEXT OCTAL DIGIT INTO A	04	00906	
001041	001000	A	907	JMP	FMBAL2	LOOP BACK	04	00907	
001042	001021	R							
			908	*****			04	00908	
			909	* PACK CHARS *			04	00909	
			910	*****			04	00910	
001043	015000	A	911	FMBAP	LDA	0,X	DIGIT 1	04	00911
001044	004250	A	912	LRLA	8		04	00912	
001045	115001	A	913	ORA	1,X	DIGIT 2	04	00913	
001046	055000	A	914	STA	0,X		04	00914	
001047	015002	A	915	LDA	2,X	DIGIT 3	04	00915	
001050	004250	A	916	LRLA	8		04	00916	
001051	115003	A	917	ORA	3,X	DIGIT 4	04	00917	
001052	055001	A	918	STA	1,X		04	00918	
001053	015004	A	919	LDA	4,X	DIGIT 5	04	00919	
001054	004250	A	920	LRLA	8		04	00920	
001055	115005	A	921	ORA	5,X	DIGIT 6	04	00921	
001056	055002	A	922	STA	2,X		04	00922	
001057	001000	A	923	JMP*	FMBAXX		04	00923	
001060	101064	R							
001061	074002	A	924	FMBAP	STX	FMBAXX	STORE EXIT	04	00924
001062	006505	A	925	JSR	FMBPT,X	XFER PARAMETER	04	00925	
001063	004457	R							
001064			926	FMBAXX	BSS	1	EXIT ADDRESS	04	00926
001065	000001	A	927	DATA	1	1 PARAMETER	04	00927	
001066			928	FMBAPP	BSS	1	POINTER TO BINARY NUMBER	04	00928
001067	000761	R	929	DATA	FMBAL1	FMBAP START ADDRESS	04	00929	
001070	000240	A	930	FMBABL	DATA	0240	BLANK	04	00930
001071	023420	A	931	FMBAT	DATA	10000	POWER OF 10 TABLE	04	00931
001072	001750	A	932	DATA	1000		04	00932	
001073	000144	A	933	DATA	100		04	00933	
001074	000012	A	934	DATA	10		04	00934	
001075	000001	A	935	DATA	1		04	00935	
001076			936	FMBAS	BSS	6	WORKING STORE	04	00936
001104			937	FMBAZ	BSS	1	ZERO SUPPRESS SWITCH	04	00937
			938	FJEC				04	00938
			939	*****			04	00939	
			940	*			04	00940	



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941 *          C O M P A R E   N A M E S ( F M C N )
942 *
943 * FUNCTION: TO COMPARE TWO 3-WORD FIELDS
944 *
945 * ENTRY: NO SPECIAL CONDITIONS
946 *
947 * CALLING SEQUENCE : JSR   FMCN,X
948 *                   DATA ADDRESS OF FIELD 1
949 *                   DATA ADDRESS OF FIELD 2
950 *
951 * EXIT : OVFL SET IF EQUAL, RESET IF NOT
952 *
953 *****
001105 024031 A 955 FMCN1 LDB   FMCNF1   POINT B AT FIELD 1
001106 034031 A 956         LDH   FMCNF2   POINT X AT FIELD 2
001107 006010 A 957         LDAI  077775
001110 077775 A
001111 054030 A 958         STA   FMCNC    SET LOOP COUNT TO -3
001112 015000 A 959 FMCNL LDA   0,X      COMPARE LOOP
001113 146000 A 960         SUB   0,B
001114 001016 A 961         JAZZ  FMCNX    EQUAL ?
001115 001127 R
001116 005144 A 962         IXR
001117 005122 A 963         IBR
001120 007400 A 964         ROF
001121 044020 A 965         INR   FMCNC    BUMP LOOP COUNT
001122 001007 A 966         JOFN  FMCNL    FINISHED ?
001123 001112 R
001124 007401 A 967         SOF
001125 001000 A 968         JMP*  FMCNXX   YES. SET OVFL TO FLAG EQUAL
001126 101135 R
001127 007400 A 969 FMCNX ROF
001130 001000 A 970         JMP*  FMCNXX   RESET OVFL TO FLAG NOT EQUAL
001131 101135 R
001132 074002 A 971 FMCN  STX   FMCNXX   STORE EXIT
001133 006505 A 972         JSR   FMPT,X   XFER PARAMETERS
001134 004457 R
001135
001136 000002 A 973 FMCNXX BSS   1       EXIT ADDRESS
001137          974 DATA 2       2 PARAMETERS
001140          975 FMCNF1 BSS  1       ADDRESS OF FIELD 1
001141          976 FMCNF2 BSS  1       ADDRESS OF FIELD 2
001142          977 DATA FMCN1   LOOP COUNTER
001143          978 FMCNC  BSS   1
001144          979 EJEJ
980 *****
981 *
982 *          P R O C E S S   C R E A T E ( F M C R )
983 *
984 * FUNCTION: TO ENTER A NEW FILE NAME IN THE DIRECTORY WITH A
985 * SPECIFIED RMD (120-WORD)RECORD COUNT SIZE.
986 *
987 *
988 * ENTRY: NO SPECIAL CONDITIONS
989 *
990 * CALLING SEQUENCE: JSR   FMCR,X
991 *                   DATA ADDRESS OF COMMAND BLOCK
992 *                   DATA ADDRESS OF DIRECTORY FCB(FMCR LOADS IT)
993 *                   DATA 0
994 *
995 * COMMAND BLOCK: WORD 0: LOGICAL UNIT NUMBER(LUN)
996 *                WORD 1: KEY
997 *                WORDS 2-4: FILE NAME
998 *                WORD 5: SECTOR COUNT
999 *                WORD 6: ADDRESS OF FILE NAME FCB(FMCR LOADS THIS)
1000 *                0 IF FILE NAME FCB NOT TO BE LOADED
1001 *
1002 * EXIT : A=0 IF NO ERRORS
1003 *
1004 * ERRORS:  A=2 IF NAME ALREADY IN DIRECTORY
1005 *           A=4 IF INSUFFICIENT SPACE FOR ENTRY
1006 *           A=5 IF I/O ERROR
1007 *           A=6 IF DIRECTORY STRUCTURE ERROR
1008 *
1009 *****
001143 005001 A 1011 FMCR1 TZA
001144 054323 A 1012         STA   FMCREF   CLEAR ERROR FLAG
001145 010422 A 1013         LDA   TWO
001146 054313 A 1014         STA   FMCRAA   INITIALIZE NEXT AVAIL SECTOR TO 2
1015 *****
1016 * GET FILE PARAMETERS *
1017 *****
001147 006505 A 1018         JSR   FMFA,X   MAKE FILE ACCESS/LOAD DIRECTORY FCB
001150 002433 R
001151 101456 R 1019         MZE   FMCRCB
001152 101457 R 1020         MZE   FMCRCFC
001153 074320 A 1021         STX   FMCRCPB   SAVE ADDRESS OF POINTER BLOCK
001154 001010 A 1022         JAZ   *+5      ERROR ?
001155 001161 R
001156 044311 A 1023         INR   FMCREF   YES, SET FLAG AND EXIT
001157 001000 A 1024         JMP   FMCRCX2
001160 001437 R
001161 014274 A 1025         LDA   FMCRCB
001162 120422 A 1026         ADD   TWO

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E.1 \*\*\*\*\*  
04 01023  
04 01026



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001163 054307 A 1027 STA FMCRNA GET ADDRESS OF FILE NAME 04 01027
001164 024271 A 1028 LDB FMCRFB 04 01028
001165 016005 A 1029 LDA 5,B GET RECORD COUNT REQUEST 04 01029
001166 054306 A 1030 STA FMCRRC SAVE 04 01030
001167 016006 A 1031 LDA 6,B GET FILE FCB POINTER 04 01031
001170 054300 A 1032 STA FMCRFB SAVE IT IN FMCRFB 04 01032
001171 001010 A 1033 JAZ FMCR2 IS THERE ONE ? 04 01033
001172 001212 R
001173 005014 A 1034 TAX YES 04 01034
001174 120467 A 1035 ADD SEVEN 04 01035
001175 054274 A 1036 STA FMCRFB+1 SAVE ADDRESS OF FCB NAME FIELD 04 01036
001176 005101 A 1037 INCR 1 04 01037
001177 055003 A 1038 STA 3,X SET CURRENT RECORD NO TO 1 04 01038
001200 024255 A 1039 LDB FMCRFB 04 01039
001201 015002 A 1040 LDA 2,X GET KEY WORD FROM FCB 04 01040
001202 150462 A 1041 ANA LHW CLEAR KEY FIELD 04 01041
001203 116001 A 1042 ORA 1,B OR IN KEY 04 01042
001204 055002 A 1043 STA 2,X RESTORE IN FCB 04 01043
001205 010464 A 1044 LDA THREE 04 01044
001206 006505 A 1045 JSR FMMV,X MOVE FILE NAME TO FCB 04 01045
001210 101473 R
001211 101472 R
1046 MZE FMCRNA 04 01046
1047 MZE FMCRFB+1 04 01047
1048 ***** 04 01048
1049 * TEST FOR NAME ALREADY IN DIRECTORY * 04 01049
1050 ***** 04 01050
001212 006505 A 1051 FMCR2 JSR FMRW,X REWIND DIRECTORY 04 01051
001213 004745 R
001214 101456 R 1052 MZE FMCRFB 04 01052
001215 101457 R 1053 MZE FMCRFC 04 01053
001216 001467 R 1054 PZE FMCRBP 04 01054
001217 001016 A 1055 JANZ FMCR2 CHECK FOR ERROR 04 01055
001220 001446 R
001221 006505 A 1056 JSR FMSD,X SEARCH DIRECTORY FOR NAME 04 01056
001222 005032 R
001223 101473 R 1057 MZE FMCRNA 04 01057
001224 101456 R 1058 MZE FMCRFB 04 01058
001225 101457 R 1059 MZE FMCRFC 04 01059
001226 101474 R 1060 MZE FMCRBP 04 01060
001227 001467 R 1061 PZE FMCRBP 04 01061
001230 001462 R 1062 PZE FMCRAA 04 01062
001231 001016 A 1063 JANZ FMCR2 CHECK FOR ERROR 04 01063
001232 001446 R
001233 001001 A 1064 JOF FMCR2 ERROR 2/NAME ALREADY IN DIRECTORY/ 04 01064
001234 001442 R
1065 ***** 04 01065
1066 * SEARCH FOR BLANK ENTRY * 04 01066
1067 ***** 04 01067
001235 006505 A 1068 JSR FMRW,X REWIND DIRECTORY 04 01068
001236 004745 R
001237 101456 R 1069 MZE FMCRFB 04 01069
001240 101457 R 1070 MZE FMCRFC 04 01070
001241 001467 R 1071 PZE FMCRBP 04 01071
001242 001016 A 1072 JANZ FMCR2 CHECK FOR ERROR 04 01072
001243 001446 R
001244 006505 A 1073 FMCR1 JSR FMSD,X SEARCH FOR BLANK SLOT 04 01073
001245 005032 R
001246 001464 R 1074 PZE FMCRAS 04 01074
001247 101456 R 1075 MZE FMCRFB 04 01075
001250 101457 R 1076 MZE FMCRFC 04 01076
001251 101474 R 1077 MZE FMCRBP 04 01077
001252 001467 R 1078 PZE FMCRBP 04 01078
001253 001462 R 1079 PZE FMCRAA 04 01079
001254 001016 A 1080 JANZ FMCR2 CHECK FOR ERROR 04 01080
001255 001446 R
001256 001007 A 1081 JOFN FMCRNB EXIT IF NO BLANK SLOT BIG ENOUGH 04 01081
001257 001350 R
1082 ***** 04 01082
1083 * BLANK ENTRY FOUND - TEST IF LARGE ENOUGH * 04 01083
1084 ***** 04 01084
001260 015005 A 1085 LDA 5,X 04 01085
001261 145004 A 1086 SUB 4,X GET RECORD COUNT OF BLANK ENTRY 04 01086
001262 144212 A 1087 SUB FMCRRC COMPARE WITH REQUEST 04 01087
001263 001004 A 1088 JAN FMCR1 CONTINUE SCAN IF BLANK FILE TOO SMALL 04 01088
001264 001244 R
1089 ***** 04 01089
1090 * ASSIGN ENTRY TO BLANK SLOT * 04 01090
1091 ***** 04 01091
001265 024203 A 1092 LDB FMCRFB 04 01092
001266 054207 A 1093 STA FMCRRC+1 SAVE REMAINDER COUNT 04 01093
001267 015005 A 1094 LDA 5,X 04 01094
001270 054172 A 1095 STA FMCRAP+1 SAVE END ADDRESS+1 04 01095
001271 015004 A 1096 LDA 4,X 04 01096
001272 001020 A 1097 JNZ #+3 IS THERE A FILE NAME FCB ? 04 01097
001273 001275 R
001274 056005 A 1098 STA 5,B YES. LOAD START ADDRESS 04 01098
001275 124177 A 1099 ADD FMCRRC 04 01099
001276 055005 A 1100 STA 5,X STORE END ADDRESS+1 IN ENTRY 04 01100
001277 055003 A 1101 STA 3,X STORE AS CURRENT EOF 04 01101
001300 001020 A 1102 JNZ #+4 IS THERE A FILE NAME FCB ? 04 01102
001301 001304 R
001302 056004 A 1103 STA 4,B YES. STORE END ADDRESS+1 04 01103
001303 056006 A 1104 STA 6,B 04 01104

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001304 010464 A 1105 LDA THREE 04 01105
001305 006505 A 1106 JSR FMMV,X MOVE NAME TO ENTRY 04 01106
001306 003735 R 1107 MZE FMCRNA 04 01107
001310 101473 R 1108 MZE FMCRBP 04 01108
001311 101467 R 1109 LDA FMCRRC+1 04 01109
001312 001010 R 1110 JAZ FMCRW EXIT IF NO REMAINING RMD SPACE 04 01110
001313 001424 R 1111 JSR FMWR,X WRITE OUT SECTOR TO RMD 04 01111
001314 006505 R 1112 MZE FMCRCB 04 01112
001315 005611 R 1113 MZE FMCRFC 04 01113
001316 101456 R 1114 JANZ FMCRE EXIT IF ERROR 04 01114
001317 101457 R 1115 ***** 04 01115
001318 001016 R 1116 * CREATE NEW BLANK ENTRY FOR REMAINDER * 04 01116
001319 001446 R 1117 ***** 04 01117
001322 006505 A 1118 JSR FMGD,X GET A DIRECTORY SLOT 04 01118
001323 002732 R 1119 MZE FMCRCB 04 01119
001324 101456 R 1120 MZE FMCRFC 04 01120
001325 101457 R 1121 MZE FMCRPB 04 01121
001326 101474 R 1122 PZE FMCRRA 04 01122
001327 001462 R 1123 STX FMCRBP 04 01123
001330 074136 A 1124 JANZ FMCRE EXIT IF ERROR 04 01124
001331 001016 A 1125 TZA 04 01125
001332 001446 R 1126 STA 3,X SET CURRENT POSITION=0 04 01126
001333 005001 A 1127 LDA FMCRRA+1 04 01127
001334 055003 A 1128 STA 5,X STORE END ADDR+1 04 01128
001335 014125 A 1129 SUB FMCRRC+1 04 01129
001336 055005 A 1130 STA 4,X STORE START ADDRESS 04 01130
001337 144136 A 1131 LDA THREE 04 01131
001338 055004 A 1132 JSR FMMV,X MOVE '*****' TO NAME FIELD 04 01132
001341 010464 A 1133 PZE FMCRAS 04 01133
001342 006505 A 1134 MZE FMCRBP 04 01134
001343 003735 R 1135 JMP FMCRW WRITE SECTOR TO RMD 04 01135
001344 001464 R 1136 ***** 04 01136
001345 101467 R 1137 * NO BLANK ENTRY LARGE ENOUGH - ALLOCATE NEW SPACE * 04 01137
001346 001000 A 1138 ***** 04 01138
001347 001424 R 1139 FMCRNB JSR FMGD,X GET DIRECTORY SLOT 04 01139
001350 006505 A 1140 MZE FMCRCB 04 01140
001351 002732 R 1141 MZE FMCRFC 04 01141
001352 101456 R 1142 MZE FMCRPB 04 01142
001353 101457 R 1143 PZE FMCRRA 04 01143
001354 101474 R 1144 STX FMCRBP 04 01144
001355 001462 R 1145 JANZ FMCRE CHECK FOR ERROR 04 01145
001356 074110 A 1146 LDX FMCRPB 04 01146
001357 001016 A 1147 LDB 2,X POINT B AT PST ENTRY 04 01147
001360 001446 R 1148 LDA 3,B 04 01148
001361 034112 A 1149 SUB 0,B GET PARTITION TRACK COUNT 04 01149
001362 025002 A 1150 SUB 2,B GET GOOD TRACK COUNT 04 01150
001363 016003 A 1151 STA FMCRT SAVE 04 01151
001364 146000 A 1152 LDX 1,X POINT X AT PST 04 01152
001365 146002 A 1153 LDA 1,X GET RECORDS/TRACK 04 01153
001366 054110 A 1154 ANA RHW 04 01154
001367 035001 A 1155 LLSR 16 04 01155
001370 015001 A 1156 MUL FMCRT GET GOOD RECORD COUNT 04 01156
001371 150463 A 1157 INCR 021 04 01157
001372 004560 A 1158 SUB FMCRRA SUBTRACT OFF CURRENT ALLOCATION 04 01158
001373 164103 A 1159 SUB FMCRRC COMPARE WITH REQUEST 04 01159
001374 005121 A 1160 JAN FMCRE4 ERROR 4/RMD SPACE EXHAUSTED/ 04 01160
001400 001445 R 1161 LDB FMCRFB POINT B AT FILE NAME FCB 04 01161
001401 024067 A 1162 LDX FMCRBP POINT X AT SLOT 04 01162
001402 034064 A 1163 LDA FMCRRA GET START ADDRESS OF RMD ALLOCATION 04 01163
001403 014056 A 1164 STA 4,X STORE IN FILE NAME ENTRY 04 01164
001404 055004 A 1165 JNZ *+3 04 01165
001405 001020 A 1166 STA 5,B STORE IN FILE NAME FCB 04 01166
001406 001410 R 1167 ADD FMCRRC GET END ADDRESS+1 OF ALLOC 04 01167
001407 056005 A 1168 STA 3,X STORE AS CURRENT EOF 04 01168
001410 124064 A 1169 STA 5,X STORE IN ENTRY 04 01169
001411 053003 A 1170 JNZ *+4 04 01170
001412 055005 A 1171 STA 4,B STORE IN FILE NAME FCB 04 01171
001413 001020 A 1172 STA 6,B 04 01172
001414 001417 R 1173 LDA THREE 04 01173
001415 056004 A 1174 JSR FMMV,X MOVE NAME TO BUFFER 04 01174
001416 056006 A 1175 MZE FMCRNA 04 01175
001421 003735 R 1176 MZE FMCRBP 04 01176
001422 101473 R 1177 FMCRW JSR FMWR,X WRITE SECTOR TO RMD 04 01177
001423 101467 R 1178 MZE FMCRCB 04 01178
001424 006505 A 1179 MZE FMCRFC 04 01179
001425 005611 R 1180 JANZ FMCRE CHECK FOR ERROR 04 01180
001426 101456 R 1181 ***** 04 01181
001427 101457 R 1182 ***** 04 01182
001428 001016 A 1183 ***** 04 01183
001429 001446 R 1184 ***** 04 01184
001430 001016 A 1185 ***** 04 01185
001431 001446 R 1186 ***** 04 01186

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1182 * CLEAR LOCKOUT BIT IN DST *
1183 *****
001432 034041 A 1184 FMCRX LDX FMCRPB
001433 035000 A 1185 LDX 0,X POINT X AT DST
001434 015002 A 1186 LDA 2,X
001435 150455 A 1187 ANA BR12 CLEAR LOCKOUT BIT
001436 055002 A 1188 STA 2,X
001437 014030 A 1189 FMCRX2 LDA FMCREF LOAD A WITH ERROR FLAG
001440 001000 A 1190 JMP FMCRXX EXIT
001441 101454 R
1191 *****
1192 * ERRORS *
1193 *****
001442 010422 A 1194 FMCRE2 LDA TWO
001443 001000 A 1195 JMP FMCRE
001444 001446 R
001445 010423 A 1196 FMCRE4 LDA FOUR
001446 054021 A 1197 FMCRE STA FMCREF LOAD ERROR FLAG
001447 001000 A 1198 JMP FMCRX
001450 001432 R
1199 *****
1200 * ENTRY *
1201 *****
001451 074002 A 1202 FMCR STX FMCRXX SAVE EXIT
001452 006505 A 1203 JSR FMPT,X XFER PARAMETERS
001453 004457 R
001454
001455 000003 A 1204 FMCRXX BSS 1 EXIT ADDRESS
001456 1205 DATA 3 3 PARAMETERS
001457
001461 001143 R 1206 FMCRFB BSS 1 ADDRESS OF COMMAND BLOCK
001462 1207 FMCRFC BSS 2 FCB ADDRESS
001463 1208 DATA FMCR1 FMCR START ADDRESS
001464 125252 A 1209 FMCRAB BSS 2 ALLOCATE ADDRESSES
001465 125252 A
001466 125252 A
001467
001470 1211 FMCRBP BSS 1 BUFFER POINTER
001471 1212 FMCREP BSS 1 ERROR FLAG
001472 1213 FMCRFB BSS 2 POINTERS TO FILE NAME FCB
001473 1214 FMCRNA BSS 1 ADDRESS OF FILE NAME
001474 1215 FMCRPB BSS 1 ADDRESS OF POINTER BLOCK
001475 1216 FMCRRC BSS 2 RECORD COUNTS
001477 1217 FMCRF BSS 1 TEMP STORE
1218 EQUO
1219 *****
1220 *
1221 * PROCESS DELETE (FMDE)
1222 *
1223 * FUNCTION: TO DELETE A FILE NAME FROM A DIRECTORY
1224 *
1225 * ENTRY: NO SPECIAL CONDITIONS
1226 *
1227 * CALLING SEQUENCE: JSR FMDE,X
1228 * DATA ADDRESS OF COMMAND BLOCK(CB)
1229 * DATA FCB ADDRESS
1230 * DATA ADDRESS OF LINE COUNTER(C FOR NO LISTING)
1231 *
1232 * COMMAND BLOCK: WORD 0: LOGICAL UNIT NUMBER
1233 * WORD 1: KEY
1234 * WORDS 2-4: FILE NAME
1235 *
1236 * EXIT : A=0 IF NO ERRORS
1237 * ENTRY CONVERTED TO BLANK
1238 * PRECEDING AND FOLLOWING BLANK ENTRIES ATTACHED
1239 * ATTACHED AND EQUIVALENT ENTRIES CONVERTED TO ZEROS
1240 *
1241 * ERRORS: A=1 ON LUN OR KEY ERROR
1242 * A=3 IF NAME NOT FOUND
1243 * A=5 ON I/O ERROR
1244 * A=6 ON DIRECTORY STRUCTURE ERROR
1245 *
1246 *****
001500 005001 A 1248 FMDE1 TZA
001501 054363 A 1249 STA FMDEEF CLEAR ERROR FLAG
001502 010422 A 1250 LDA TWO
001503 054357 A 1251 STA FMDEEA INITIALIZE NEXT AVAIL ADDRESS TO 2
1252 *****
1253 * GET FILE PARAMETERS *
1254 *****
001504 006505 A 1255 JSR FMFA,X MAKE FILE ACCESS
001505 002433 R
001506 102057 R 1256 MZE FMDECB
001507 102060 R 1257 MZE FMDEFC
001510 074356 A 1258 STX FMDEPB SAVE ADDRESS OF POINTER BLOCK
001511 001010 A 1259 JAZ *+5 ERROR ?
001512 001516 R
001513 044351 A 1260 THR FMDEEF YES. SET FLAG AND EXIT
001514 001000 A 1261 JMP FMDEX2
001515 001765 R
001516 034340 A 1262 LDX FMDECB
001517 015010 A 1263 LDA 8,X
001520 054375 A 1264 STA FMDEH2 LOAD LUN TEXT
001521 015011 A 1265 LDA 9,X
001522 054374 A 1266 STA FMDEA2+1

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001523 002080 A 1267      CALL      FMDECI      OUTPUT DELETE HEADER      04 01267
001524 001777 R
1268 *****
1269 * TEST IF NAME IN DIRECTORY *
1270 *****
001525 014331 A 1271      LDA      FMDECB
001526 120422 A 1272      ADD      TWO
001527 054336 A 1273      STA      FMDENA      LOAD ADDRESS OF FILE NAME
001530 006505 A 1274      JSR      FMRW,X      REWIND DIRECTORY
001531 004745 R
001532 102057 R 1275      MZE      FMDECB      04 01275
001533 102060 R 1276      MZE      FMDEFC      04 01276
001534 002064 R 1277      PZE      FMDEBP      04 01277
001535 001016 A 1278      JANZ     FMDEE      EXIT IF ERROR      04 01278
001536 001774 R
001537 006505 A 1279      JSR      FMDS,X      SEARCH DIRECTORY      04 01279
001540 005032 R
001541 102066 R 1280      MZE      FMDENA      04 01280
001542 102057 R 1281      MZE      FMDECB      04 01281
001543 102060 R 1282      MZE      FMDEFC      04 01282
001544 102067 R 1283      MZE      FMDEPB      04 01283
001545 002064 R 1284      PZE      FMDEBP      04 01284
001546 002063 R 1285      PZE      FMDEAA      04 01285
001547 001016 A 1286      JANZ     FMDEE      CHECK FOR ERROR      04 01286
001550 001774 R
001551 001007 A 1287      JOFN     FMDEE3      ERROR 3/NAME NOT IN DIRECTORY/ 04 01287
001552 001773 R
1288 *****
1289 * NAME FOUND - SAVE EXTENT *
1290 *****
001553 015004 A 1291      LDA      4,X
001554 054317 A 1292      STA      FMDESA      SAVE STARTING RMD ADDRESS OF FILE
001555 015005 A 1293      LDA      5,X
001556 054316 A 1294      STA      FMDEEA      SAVE ENDING RMD ADDRESS OF FILE
1295 *****
1296 * SCAN DIRECTORY FOR EQUIV(SAME RMD SPACE) NAMES *
1297 *****
001557 002000 A 1298      CALL     FMDECH      CHECK HEADER      04 01298
001560 002014 R
001561 006505 A 1299      JSR      FMRW,X      REWIND FILE DIRECTORY      04 01299
001562 004745 R
001563 102057 R 1300      MZE      FMDECB      04 01300
001564 102060 R 1301      MZE      FMDEFC      04 01301
001565 002064 R 1302      PZE      FMDEBP      04 01302
001566 001016 A 1303      JANZ     FMDEE      CHECK ERROR      04 01303
001567 001774 R
001570 006505 A 1304      FMDEL1 JSR      FMFF,X      GET NEXT FILE NAME FROM DIRECTORY 04 01304
001571 002604 R
001572 102057 R 1305      MZE      FMDECB      04 01305
001573 102060 R 1306      MZE      FMDEFC      04 01306
001574 102067 R 1307      MZE      FMDEPB      04 01307
001575 002064 R 1308      PZE      FMDEBP      04 01308
001576 002063 R 1309      PZE      FMDEAA      04 01309
001577 001016 A 1310      JANZ     FMDEE      CHECK FOR ERROR      04 01310
001600 001774 R
001601 001001 A 1311      JOF      FMDEX1      EXIT AT END OF DIRECTORY      04 01311
001602 001642 R
001603 005021 A 1312      TBA
001604 001010 A 1313      JAZ      FMDEL1      SKIP ZERO ENTRIES      04 01313
001605 001570 R
001606 001002 A 1314      JAP      FMDEL1      SKIP BLANK ENTRIES      04 01314
001607 001570 R
001610 015004 A 1315      LDA      4,X
001611 144262 A 1316      SUB      FMDESA      COMPARE START ADDRESSES      04 01316
001612 001016 A 1317      JANZ     FMDEL1      CONTINUE SCAN IF UNEQUAL      04 01317
001613 001570 R
1318 *****
1319 * EQUIVALENT NAME FOUND *
1320 *****
001614 034244 A 1321      LDX      FMDELC
001615 001040 A 1322      JXZ      FMDENL      TEST LIST SWITCH      04 01322
001616 001627 R
1323 *****
1324 * LIST DELETED ENTRY *
1325 *****
001617 002000 A 1326      CALL     FMDECH      CHECK HEADER      04 01326
001620 002014 R
001621 006505 A 1327      JSR      FMDF,X      OUTPUT FILE NAME AND EXTENT      04 01327
001622 004422 R
001623 102064 R 1328      MZE      FMDEBP      04 01328
001624 102061 R 1329      MZE      FMDELC      04 01329
001625 001016 A 1330      JANZ     FMDEE      CHECK FOR ERROR      04 01330
001626 001774 R
1331 *****
1332 * CONVERT EQUIV ENTRY TO ZERO ENTRY *
1333 *****
001627 034234 A 1334      FMDEL1 LDX      FMDEBP
001630 005001 A 1335      TZA
001631 055000 A 1336      STA      J,X      MAKE DELETED ENTRY INTO A ZERO ENTRY 04 01336
001632 006505 A 1337      JSR      FMWR,X      WRITE SECTOR TO RMD      04 01337
001633 005611 R
001634 102057 R 1338      MZE      FMDECB      04 01338
001635 102060 R 1339      MZE      FMDEFC      04 01339

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001636 001016 A 1340      JANZ      FMDEE
001637 001774 R
001640 001000 A 1341      JMP        FMDEL1      CONTINUE SCAN
001641 001570 R
1342 *****
1343 * END OF EQUIVALENCES - TRY TO EXTEND BLANK *
1344 *****
001642 006505 A 1345  FMDEX1 JSR      FMPW,X      REWIND DIRECTORY
001643 004745 R
001644 102057 R 1346      MZE        FMDECB
001645 102060 R 1347      MZE        FMDEFC
001646 002064 R 1348      PZE        FMDEBP
001647 001016 A 1349      JANZ      FMDEE      CHECK FOR ERROR
001650 001774 R
1350 *****
1351 * SEARCH FOR ADJOINING BLANK ENTRIES *
1352 *****
001651 006505 A 1353  FMDEL2 JSR      FMSD,X      SEARCH FOR BLANK ENTRY
001652 005032 R
001653 002070 R 1354      PZE        FMDEAS
001654 102057 R 1355      MZE        FMDECB
001655 102060 R 1356      MZE        FMDEFC
001656 102067 R 1357      MZE        FMDEPB
001657 002064 R 1358      PZE        FMDEBP
001660 002063 R 1359      PZE        FMDEAA
001661 001016 A 1360      JANZ      FMDEE      CHECK FOR ERROR
001662 001774 R
001663 001007 A 1361      JDFN      FMDEWB      EXIT AT END OF DIRECTORY
001664 001715 R
1362 *****
1363 * TEST IF BLANK ADJOINS DELETE ENTRY ON LEFT *
1364 *****
001665 015005 A 1365      LDA        5,X      GET BLANK END ADDR+1
001666 144205 A 1366      SUB        FMDESA      COMPARE WITH START OF DELETED FILE
001667 001016 A 1367      JANZ      FMDER      ADJOINING ?
001670 001675 R
001671 015004 A 1368      LDA        4,X      YES. EXTEND BLANK TO LEFT
001672 054201 A 1369      STA        FMDESA
001673 001000 A 1370      JMP        FMDEWZ      WRITE OUT ZERO ENTRY
001674 001703 R
1371 *****
1372 * TEST IF BLANK ADJOINS DELETE ENTRY ON RIGHT *
1373 *****
001675 014177 A 1374  FMDER   LDA        FMDEEA      GET END ADDR+1 OF DELETED ITEM
001676 145004 A 1375      SUB        4,X
001677 001016 A 1376      JANZ      FMDEL2      CONTINUE SCAN IF NON-ADJOINING
001700 001651 R
001701 015005 A 1377      LDA        5,X      ADJOINING
001702 054172 A 1378      STA        FMDEEA      EXTEND BLANK TO RIGHT
001703 005001 A 1379  FMDEWZ TZA
001704 055000 A 1380      STA        0,X      CONVERT BLANK TO ZERO ENTRY
001705 006505 A 1381      JSR      FMUR,X      WRITE OUT ZERO ENTRY
001706 005611 R
001707 102057 R 1382      MZE        FMDECB
001710 102060 R 1383      MZE        FMDEFC
001711 001016 A 1384      JANZ      FMDEE      CHECK FOR ERRORS
001712 001774 R
001713 001000 A 1385      JMP        FMDEL2      CONTINUE SCAN OF DIRECTORY
001714 001651 R
1386 *****
1387 * SCAN FINISHED *
1388 *****
001715 014157 A 1389  FMDEWB LDA        FMDEEA      GET END ADDR OF BLANK
001716 144144 A 1390      SUB        FMDEEA      COMPARE WITH PART NEXT AVAIL
001717 001016 A 1391      JANZ      FMDEX4      IS BLANK AT END OF ALLOCATED SPACE ?
001720 001734 R
001721 014152 A 1392      LDA        FMDESA      YES. GET START ADDRESS OF BLANK
001722 140422 A 1393      SUB        TWO      COMPARE WITH START OF PARTITION
001723 001016 A 1394      JANZ      FMDEX      IS DIRECTORY ALL DELETED ?
001724 001760 R
001725 006505 A 1395      JSR      FMIN,X      YES. INITIALIZE DIRECTORY
001726 003276 R
001727 102057 R 1396      MZE        FMDECB
001730 102060 R 1397      MZE        FMDEFC
001731 000000 A 1398      DATA     3
001732 001000 A 1399      JMP        FMDEX      EXIT
001733 001760 R
001734 006505 A 1400  FMDEX4 JSR      FMGD,X      GET DIRECTORY SPACE
001735 002732 R
001736 102057 R 1401      MZE        FMDECB
001737 102060 R 1402      MZE        FMDEFC
001740 102067 R 1403      MZE        FMDEPB
001741 002063 R 1404      PZE        FMDEAA
001742 001016 A 1405      JANZ      FMDEE      CHECK FOR ERROR
001743 001774 R
001744 074117 A 1406      STX      FMDEBP
001745 010466 A 1407      LDA        SIX
001746 006505 A 1408      JSR      FMV,X      MOVE ENTRY INTO BUFFER
001747 003735 R
001750 002070 R 1409      PZE        FMDEAS
001751 102064 R 1410      MZE        FMDEBP
001752 006505 A 1411  FMDEWR JSR      FMUR,X      WRITE TO RMD
001753 005611 R

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001754	102057	R	1412	MZE	FMDECB			04	01412
001755	102060	R	1413	MZE	FMDEFC			04	01413
001756	001016	A	1414	JANZ	FMDEE	CHECK FOR ERROR		04	01414
001757	001774	R							
			1415	*****				04	01415
			1416	* CLEAR LOCKOUT BIT IN DST *				04	01416
			1417	*****				04	01417
001760	034106	A	1418	FMDEX	LDX	FMDEPB		04	01418
001761	035000	A	1419		LDX	0,X	POINT X AT DST	04	01419
001762	015002	A	1420		LDA	2,X		04	01420
001763	150455	A	1421		ANA	BR12		04	01421
001764	055002	A	1422		STA	2,X		04	01422
001765	006505	A	1423	FMDEX2	JSR	FMLF,X	LINE FEED LD	E.1	*****
001766	003320	R							
001767	102061	R	1424	MZE	FMDELC			04	01424
001770	014074	A	1425	LDA	FMDEEF	LOAD A WITH ERROR FLAG AT EXIT		04	01425
001771	001000	A	1426	JMP*	FMDEXX	EXIT		04	01426
001772	102055	R							
			1427	*****				04	01427
			1428	* ERRORS *				04	01428
			1429	*****				04	01429
001773	010464	A	1430	FMDEE3	LDA	THREE		04	01430
001774	054070	A	1431	FMDEE	STA	FMDEEF	LOAD ERROR FLAG	04	01431
001775	001000	A	1432		JMP	FMDEX2		04	01431
001776	001765	R						E.2	*****
			1433	*****				04	01433
			1434	* CHECK HEADER *				04	01434
			1435	*****				04	01435
001777	000000	A	1436	FMDECI	ENTR		INITIALIZE ENTRY	04	01436
002000	006017	A	1437		LDAR	FMDECI		04	01437
002001	001777	R							
002002	054011	A	1438		STA	FMDECH	LOAD EXIT	04	01438
002003	034055	A	1439		LDX	FMDELC		04	01439
002004	001040	A	1440		JXZ*	FMDECH	EXIT IF NO LIST	04	01440
002005	102014	R							
002006	015000	A	1441		LDA	0,X		04	01441
002007	140423	A	1442		SUB	FOUR		04	01442
002010	001004	A	1443		JAN	FMDECJ	TEST PAGE END	04	01443
002011	002023	R							
002012	001000	A	1444		JMP	FMDEC2	PRINT DELETE HEADER	04	01444
002013	002030	R							
002014	000000	A	1445	FMDECH	ENTR			04	01445
002015	034043	A	1446		LDX	FMDELC		04	01446
002016	001040	A	1447		JXZ*	FMDECH	EXIT IF NO LIST	04	01447
002017	102014	R							
002020	015000	A	1448		LDA	0,X	GET LINE COUNT	04	01448
002021	001002	A	1449		JAP*	FMDECH	END OF PAGE ?	04	01449
002022	102014	R							
002023	006505	A	1450	FMDECJ	JSR	FMVH,X	YES, OUTPUT VORTEX HEADER	04	01450
002024	005115	R							
002025	102061	R	1451	MZE	FMDELC			04	01451
002026	001016	A	1452	JANZ	FMDEE	CHECK ERROR		04	01452
002027	001774	R							
002030	006505	A	1453	FMDEC2	JSR	FMLF,X	WRITE ' DELETE LISTING'	04	01453
002031	005342	R							
002032	002076	R	1454	PZE	FMDEH1			04	01454
002033	102061	R	1455	MZE	FMDELC			04	01455
002034	001016	A	1456	JANZ	FMDEE	CHECK FOR ERROR		04	01456
002035	001774	R							
002036	006505	A	1457		JSR	FMLF,X	LINE FEED	04	01457
002037	003320	R							
002040	102061	R	1458	MZE	FMDELC			04	01458
002041	001016	A	1459	JANZ	FMDEE	CHECK FOR ERROR		04	01459
002042	001774	R							
002043	006505	A	1460		JSR	FMDC,X	WRITE COLUMN HEADER	04	01460
002044	004302	R							
002045	102061	R	1461	MZE	FMDELC			04	01461
002046	001016	A	1462	JANZ	FMDEE	CHECK FOR ERROR		04	01462
002047	001774	R							
002050	001000	A	1463		JMP*	FMDECH	EXIT	04	01463
002051	102014	R							
			1464	*****				04	01464
			1465	* ENTRY *				04	01465
			1466	*****				04	01466
002052	074002	A	1467	FMDE	STX	FMDEXX	STORE EXIT	04	01467
002053	006505	A	1468		JSR	FMPT,X	XFER PARAMETERS	04	01468
002054	004457	R							
002055			1469	FMDEXX	BSS	1	EXIT ADDRESS	04	01469
002056	000003	A	1470		DATA	3	3 PARAMETERS	04	01470
002057			1471	FMDECB	BSS	1	COMMAND BLOCK ADDRESS	04	01471
002060			1472	FMDEFC	BSS	1	FCB ADDRESS	04	01472
002061			1473	FMDELC	BSS	1	ADDRESS OF LINE COUNTER	04	01473
002062	001500	R	1474		DATA	FMDE1	FMDE START ADDRESS	04	01474
002063			1475	FMDEEA	BSS	1	NEXT AVAILABLE ADDRESS	04	01475
002064			1476	FMDEBP	BSS	1	BUFFER POINTER	04	01476
002065			1477	FMDEEF	BSS	1	ERROR FLAG	04	01477
002066			1478	FMDENA	BSS	1	ADDRESS OF FILE NAME	04	01478
002067			1479	FMDEPB	BSS	1	ADDRESS OF POINTER BLOCK	04	01479
002070	125252	A	1480	FMDEAS	DATA	*****		04	01480
002071	125252	A							
002072	125252	A							
002073	000000	A	1481		DATA	0		04	01481
002074			1482	FMDESA	BSS	1	BLANK START ADDRESS	04	01482



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002075      1483 FMDEEA BSS      1          BLANK END ADDRESS      04 01483
002076 000017 A 1484 FMDEH1 DATA    15          DELETE TITLE DCB      04 01484
002077 002101 R 1485          DATA    *+2          04 01485
002100 000001 A 1486          DATA    1          04 01486
002101 130240 A 1487          DATA    '0 DELETE LISTING FOR LUN ' 04 01487
002102 142305 A
002103 146305 A
002104 152305 A
002105 120314 A
002106 144723 A
002107 152311 A
002110 147307 A
002111 120306 A
002112 147722 A
002113 120314 A
002114 152716 A
002115 120240 A
002116 120240 A 1488 FMDEH2 DATA    ' '          LUN TEXT      04 01488
002117 120240 A

1489          EJECT      04 01489
1490 *****      04 01490
1491 *   M O D I F Y   A S C I I   D I G I T   S T R I N G ( F M D S ) * 04 01491
1492 *      04 01492
1493 *   FUNCTION: TO INCREMENT A 4-CHARACTER ASCII DECIMAL DIGIT FIELD 04 01493
1494 *           WITH LEADING BLANKS.      04 01494
1495 *      04 01495
1496 *   ENTRY: NO SPECIAL CONDITIONS      04 01496
1497 *      04 01497
1498 *   CALLING SEQUENCE: JSR   FMDS,X      04 01498
1499 *           DATA  ASCII FIELD ADDRESS 04 01499
1500 *      04 01500
1501 *   EXIT : ASCII DECIMAL STRING INCREMENTED 04 01501
1502 *      04 01502
1503 *****      04 01503
002120 034036 A 1505 FMDS1  LDX   FMDSP          POINT X AT ASCII STRING 04 01505
002121 025000 A 1506          LDB   0,X          CHARS 1-2 TO B      04 01506
002122 015001 A 1507          LDA   1,X          CHARS 3-4 TO A      04 01507
002123 005111 A 1508          IAR          INCREMENT CHAR 4      04 01508
002124 002000 A 1509          CALL  FMDS$          PROPAGATE CHAR 4 OVERFLOW TO CHAR 3 04 01509
002125 002140 R
002126 004470 A 1510          LLRL  24          CHARS 2-3 TO A      04 01510
002127 002000 A 1511          CALL  FMDS$          PROPAGATE CHAR 3 OVERFLOW TO CHAR 2 04 01511
002130 002140 R
002131 004470 A 1512          LLRL  24          CHARS 1-2 TO A      04 01512
002132 002000 A 1513          CALL  FMDS$          PROPAGATE CHAR 2 OVERFLOWS TO CHAR 1 04 01513
002133 002140 R
002134 055000 A 1514          STA   0,X          RESTORE CHARS 1-2    04 01514
002135 065001 A 1515          STB   1,X          RESTORE CHARS 3-4    04 01515
002136 001000 A 1516          JMP*  FMDSXX         EXIT      04 01516
002137 102155 R

1517 *****      04 01517
1518 * SERVICE SUBROUTINE TO PROPAGATE OVERFLOWS * 04 01518
1519 *****      04 01519
002140 000000 A 1520 FMDS$  ENTR          IF OVERFLOW, LOW BYTE OF A=0272 04 01520
002141 124017 A 1521          ADD   FMDS0          ADDING 0106 BUMPS HIGH BYTE-MAKES LOW=0 04 01521
002142 004250 A 1522          LRLA  8          SWAP BYTES      04 01522
002143 001004 A 1523          JAN   *+3          OVERFLOW ?      04 01523
002144 002146 R
002145 114014 A 1524          DRA   FMDS$          YES, DR HI BYTE WITH 0366, LOW WITH '0' 04 01524
002146 004250 A 1525          LRLA  8          RESTORE BYTES    04 01525
002147 144011 A 1526          SUB   FMDS0          RESTORE LOW BYTE TO '0' 04 01526
002150 001000 A 1527          JMP*  FMDS$          04 01527
002151 102140 R

1528 *****      04 01528
1529 * ENTRY *      04 01529
1530 *****      04 01530
002152 074002 A 1531 FMDS$  STX   FMDSXX         STORE EXIT      04 01531
002153 006505 A 1532          JSR   FMPT,X         TRANSFER PARAMETER 04 01532
002154 004457 R
002155 1533 FMDSXX BSS      1          EXIT ADDRESS      04 01533
002156 000001 A 1534          DATA 1          1 PARAMETER      04 01534
002157 1535 FMDSP  BSS      1          ADDRESS OF ASCII STRING 04 01535
002160 002120 R 1536          DATA  FMDS1         FMDS START ADDRESS 04 01536
1537 *      04 01537
002161 000106 A 1538 FMDS0  DATA    0106          04 01538
002162 173260 A 1539 FMDS$  DATA    0173260        16-BIT MASK      04 01539
1540          EJECT      04 01540
1541 *****      04 01541
1542 *      04 01542
1543 *   P R O C E S S   E N T E R ( F M E N ) * 04 01543
1544 *      04 01544
1545 *   FUNCTION: TO ATTACH ANOTHER NAME TO AN EXISTING FILE 04 01545
1546 *      04 01546
1547 *   ENTRY: NO SPECIAL CONDITIONS      04 01547
1548 *      04 01548
1549 *   CALLING SEQUENCE: JSR   FMEN,X      04 01549
1550 *           DATA  ADDRESS OF COMMAND BLOCK(CB) 04 01550
1551 *           DATA  FCB ADDRESS      04 01551
1552 *           DATA  0      04 01552
1553 *      04 01553
1554 *   COMMAND BLOCK: WORD 0: LOGICAL UNIT NUMBER 04 01554
1555 *           WORD 1: KEY      04 01555
1556 *           WORDS 2-4: OLD(EXISTING) FILE NAME 04 01556

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1557 *          WORDS 5-7: NEW FILE NAME
1558 *
1559 * EXIT : A=0 IF NO ERRORS
1560 *
1561 * ERRORS: A=1 ON LUN OR KEY ERROR
1562 *          A=2 IF NEW NAME ALREADY IN DIRECTORY
1563 *          A=3 IF OLD NAME NOT IN DIRECTORY
1564 *          A=5 ON I/O ERROR
1565 *          A=6 ON DIRECTORY STRUCTURE ERROR
1566 *
1567 *****
002163 005001 A 1569 FMEN1 TZA
002164 054156 A 1570 STA FMENEF CLEAR ERROR FLAG
002165 010422 A 1571 LDA TWO
002166 054152 A 1572 STA FMENAA INITIALIZE NEXT AVAIL ADDRESS TO 2
1573 *****
1574 * GET FILE PARAMETERS *
1575 *****
002167 006505 A 1576 JSR FMFA,X MAKE FILE ACCESS
002170 002433 R
002171 102333 R 1577 MZE FMENCB
002172 102336 R 1578 MZE FMENFC
002173 074152 A 1579 STX FMENPB SAVE ADDRESS OF POINTER BLOCK
002174 001010 A 1580 JAZ *+5 ERROR ?
002175 002201 R
002176 044144 A 1581 INR FMENEF YES. SET FLAG AND EXIT
002177 001000 A 1582 JMP FMENX2
002200 002325 R
1583 *****
1584 * CHECK THAT NEW NAME NOT IN FILE *
1585 *****
002201 006505 A 1586 JSR FMRW,X REWIND DIRECTORY
002202 004745 R
002203 102335 R 1587 MZE FMENCB
002204 102336 R 1588 MZE FMENFC
002205 002342 R 1589 PZE FMENBP
002206 001016 A 1590 JANZ FMENE CHECK FOR ERROR
002207 002317 R
002210 014124 A 1591 LDA FMENCB
002211 120422 A 1592 ADD TWO
002212 054131 A 1593 STA FMENNA LOAD ADDRESS OF OLD NAME
002213 120464 A 1594 ADD THREE
002214 054130 A 1595 STA FMENNA+1 LOAD ADDRESS OF NEW NAME
002215 006505 A 1596 JSR FMSD,X SEARCH DIRECTORY FOR NEW NAME
002216 005032 R
002217 102345 R 1597 MZE FMENNA+1
002220 102335 R 1598 MZE FMENCB
002221 102336 R 1599 MZE FMENFC
002222 102346 R 1600 MZE FMENPB
002223 002342 R 1601 PZE FMENBP
002224 002341 R 1602 PZE FMENAA
002225 001016 A 1603 JANZ FMENE CHECK FOR ERROR
002226 002317 R
002227 001001 A 1604 JOF FMENE2 ERROR 2/NEW NAME IN FILE/
002230 002313 R
1605 *****
1606 * NEW NAME OK. FIND OLD NAME *
1607 *****
002231 006505 A 1608 JSR FMRW,X REWIND DIRECTORY
002232 004745 R
002233 102335 R 1609 MZE FMENCB
002234 102336 R 1610 MZE FMENFC
002235 002342 R 1611 PZE FMENBP
002236 001016 A 1612 JANZ FMENE CHECK FOR ERROR
002237 002317 R
002240 006505 A 1613 JSR FMSD,X SEARCH DIRECTORY FOR OLD NAME
002241 005032 R
002242 102344 R 1614 MZE FMENNA
002243 102335 R 1615 MZE FMENCB
002244 102336 R 1616 MZE FMENFC
002245 102346 R 1617 MZE FMENPB
002246 002342 R 1618 PZE FMENBP
002247 002341 R 1619 PZE FMENAA
002250 001016 A 1620 JANZ FMENE CHECK FOR ERROR
002251 002317 R
002252 001007 A 1621 JOFN FMENE3 ERROR 3/OLD NAME NOT IN FILE/
002253 002316 R
002254 074065 A 1622 STX FMENBP SAVE BUFFER POINTER
1623 *****
1624 * SAVE OLD NAME PARAMS IN TEMP *
1625 *****
002255 010466 A 1626 LDA SIX
002256 006505 A 1627 JSR FMV,X
002257 003735 R
002260 102342 R 1628 MZE FMENBP
002261 002347 R 1629 PZE FMENF
1630 *****
1631 * MOVE NEW NAME INTO TEMP *
1632 *****
002262 010464 A 1633 LDA THREE
002263 006505 A 1634 JSR FMV,X
002264 003735 R
002265 102345 R 1635 MZE FMENNA+1
    
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E.1



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002266 002347 R 1636 PZE FMENT 04 01636
1637 ***** 04 01637
1638 * MAKE ENTRY IN DIRECTORY * 04 01638
1639 ***** 04 01639
002267 006505 A 1640 JSR FMGD,X 04 01640
002270 002732 R 1641 MZE FMENCB 04 01641
002271 102335 R 1642 MZE FMENFC 04 01642
002272 102336 R 1643 MZE FMENPB 04 01643
002273 102340 R 1644 PZE FMENAA 04 01644
002274 002341 R 1645 JANZ FMENE CHECK FOR ERRORS 04 01645
002275 001016 A 1646 STX FMENBP 04 01646
002276 002317 R 1647 LDA SIX 04 01647
002277 074042 A 1648 JSR FMV,X MOVE ENTRY FROM TEMP TO BUFFER 04 01648
002300 010466 A 1649 PZE FMENT 04 01649
002301 006505 A 1650 MZE FMENBP 04 01650
002302 003735 R 1651 JSR FMV,X WRITE BUFFER TO RMD 04 01651
002303 002347 R 1652 MZE FMENCB 04 01652
002304 102342 R 1653 MZE FMENFC 04 01653
002305 006505 A 1654 JAZ FMENX 04 01654
002306 005611 R
002307 102335 R
002310 102336 R
002311 001010 A
002312 002320 R
1655 ***** 04 01655
1656 * ERROR * 04 01656
1657 ***** 04 01657
002313 010422 A 1658 FMENE2 LDA TWO 04 01658
002314 001000 A 1659 JMP FMENE 04 01659
002315 002317 R
002316 010464 A 1660 FMENE3 LDA THREE 04 01660
002317 054023 A 1661 FMENE STA FMENEF LOAD ERROR FLAG 04 01661
1662 ***** 04 01662
1663 * CLEAR LOCKOUT BIT IN DST * 04 01663
1664 ***** 04 01664
002320 034025 A 1665 FMENX LDX FMENPB 04 01665
002321 035000 A 1666 LDX 0,X POINT X AT DST 04 01666
002322 015002 A 1667 LDA 2,X CLEAR LOCKOUT BIT 04 01667
002323 150455 A 1668 ANA BR12 04 01668
002324 055002 A 1669 STA 2,X 04 01669
002325 014015 A 1670 FMENX2 LDA FMENEF LOAD A WITH ERROR FLAG E.1 04 01670
002326 001000 A 1671 JMP* FMENXX 04 01671
002327 102333 R
1672 ***** 04 01672
1673 * ENTRY * 04 01673
1674 ***** 04 01674
002330 074002 A 1675 FMEN STX FMENXX STORE EXIT 04 01675
002331 006505 A 1676 JSR FMV,X XFER PARAMETERS 04 01676
002332 004457 R
002333 1677 FMENXX BSS 1 EXIT ADDRESS 04 01677
002334 000003 A 1678 DATA 3 3 PARAMETERS 04 01678
002335 1679 FMENCB BSS 1 COMMAND BLOCK ADDRESS 04 01679
002336 1680 FMENFC BSS 2 FCB ADDRESS 04 01680
002340 002163 R 1681 DATA FMENI FMEN START ADDRESS 04 01681
002341 1682 FMENAA BSS 1 NEXT AVAIL ADDRESS 04 01682
002342 1683 FMENBP BSS 1 BUFFER POINTER 04 01683
002343 1684 FMENEF BSS 1 ERROR FLAG 04 01684
002344 1685 FMENNA BSS 2 NAME POINTERS 04 01685
002346 1686 FMENPB BSS 1 ADDRESS OF POINTER BLOCK 04 01686
002347 1687 FMENT BSS 6 ENTRY 04 01687
1688 EUJEC 04 01688
1689 ***** 04 01689
1690 * 04 01690
1691 * FILE ACCESS (FMFA) * 04 01691
1692 * 04 01692
1693 * FUNCTION: TO PROCESS FILE PARAMETERS, CHECK KEY, LOAD FCB, AND SET 04 01693
1694 * LOCKOUT BIT IN DST. * 04 01694
1695 * 04 01695
1696 * ENTRY: NO SPECIAL CONDITIONS * 04 01696
1697 * 04 01697
1698 * CALLING SEQUENCE: JSR FMFA,X * 04 01698
1699 * DATA ADDRESS OF COMMAND BLOCK * 04 01699
1700 * DATA ADDRESS OF FCB * 04 01700
1701 * 04 01701
1702 * COMMAND BLOCK: WORD 0: LUN * 04 01702
1703 * WORD 1: KEY * 04 01703
1704 * 04 01704
1705 * EXIT : A=0 IF NO ERRORS * 04 01705
1706 * X=ADDRESS OF POINTER BLOCK(SEE FMGP) * 04 01706
1707 * LOCKOUT BIT(BIT 12 OF DST(2)) SET IF NO ERRORS * 04 01707
1708 * 04 01708
1709 * ERRORS: A=1 IF ILLEGAL KEY OR LUN * 04 01709
1710 * 04 01710
1711 ***** 04 01711
002355 006505 A 1712 FMFA1 JSR FMGP,X GET POINTERS 04 01712
002356 003110 R
002357 102440 R 1714 MZE FMFACB 04 01714
002360 001016 A 1715 JANZ FMFAE1 ERROR ? 04 01715
002361 002374 R
002362 025002 A 1716 LDB 2,X NO. POINT B AT PST ENTRY 04 01716
002363 016001 A 1717 LDA 1,B 04 01717
002364 150463 A 1718 ANA RHW GET KEY FROM PST 04 01718
002365 054056 A 1719 STA FMFAK SAVE KEY 04 01719

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002366 001010 A 1720      JAZ      FMFAX      OK IF ZERO      04 01720
002367 002377 R          LDB      FMFACB     OTHERWISE MUST COMPARE KEYS 04 01721
002370 024047 A 1721      SUB      1,B      04 01722
002371 146001 A 1722      JAZ      FMFAX      EQUAL ?        04 01723
002372 001010 A 1723      JAZ      FMFAX      04 01723
002373 002377 R          LDB      FMFACB     04 01723
002374 005101 A 1724 FMFAE1 INCR      1      NO. SET A=1 TO FLAG ERROR 04 01724
002375 001000 A 1725      JMP*     FMFAXX     EXIT           04 01725
002376 102436 R          LDB      FMFACB     04 01726
1726 ***** 04 01726
1727 * LOAD FCB * 04 01727
1728 ***** 04 01728
002377 025002 A 1729 FMFAX LDB      2,X      POINT B AT PST ENTRY 04 01729
002400 016003 A 1730      LDA      3,B      GET END+1 TRACK ADDRESS 04 01730
002401 146000 A 1731      SUB      0,B      SUBTRACT START TO GET PARTITION TRACK COUNT 04 01731
002402 146002 A 1732      SUB      2,B      SUBTRACT OFF BAD TRACK COUNT 04 01732
002403 054037 A 1733      STA      FMFAT     SAVE GOOD TRACK COUNT 04 01733
002404 025001 A 1734      LDB      1,X      POINT B AT PST 04 01734
002405 016001 A 1735      LDA      1,B      GET COUNT OF RECORDS/TRACK 04 01735
002406 150463 A 1736      ANA      RHW      04 01736
002407 004560 A 1737      LLSR     16      04 01737
002410 164032 A 1738      MUL      FMFAT     GET PARTITION GOOD RECORD COUNT 04 01738
002411 005121 A 1739      INCR     021     04 01739
002412 024026 A 1740      LDB      FMFAFC    POINT B AT FCB 04 01740
002413 056004 A 1741      STA      4,B      STORE CURRENT EOF 04 01741
002414 056006 A 1742      STA      6,B      STORE EXTENT END 04 01742
002415 005101 A 1743      INCR     1      04 01743
002416 056003 A 1744      STA      3,B      STORE CURRENT RECORD 04 01744
002417 056005 A 1745      STA      5,B      STORE EXTENT START 04 01745
002420 016002 A 1746      LDA      2,B      04 01746
002421 150462 A 1747      ANA      LHW      CLEAR KEY FIELD 04 01747
002422 114021 A 1748      ORA      FMFAK     LOAD KEY 04 01748
002423 056002 A 1749      STA      2,B      04 01749
1750 ***** 04 01750
1751 * SET LOCKOUT BIT IN DST * 04 01751
1752 ***** 04 01752
002424 025000 A 1753      LDB      0,X      POINT B AT DST 04 01753
002425 016002 A 1754      LDA      2,B      04 01754
002426 110435 A 1755      ORA      BS12     SET LOCKOUT BIT IN DST 04 01755
002427 056002 A 1756      STA      2,B      04 01756
002430 005001 A 1757      TZA      SET A=0 TO FLAG OK 04 01757
002431 001000 A 1758      JMP*     FMFAXX     EXIT           04 01758
002432 102436 R          LDB      FMFACB     04 01758
1759 ***** 04 01759
1760 * ENTRY * 04 01760
1761 ***** 04 01761
002433 074002 A 1762 FMFA STX      FMFAXX     STORE EXIT 04 01762
002434 006505 A 1763      JSR      FMPT,X   XFER PARAMETER 04 01763
002435 004457 R          LDB      FMFACB     04 01763
002436 000002 A 1764 FMFAXX BSS      1      EXIT ADDRESS 04 01764
002437 000002 A 1765      DATA   2      2 PARAMETERS 04 01765
002440 1766 FMFACB BSS      1      CONTROL BLOCK ADDRESS 04 01766
002441 1767 FMFAFC BSS      1      ADDRESS OF FCB 04 01767
002442 002355 R 1768      DATA   FMFA1    FMFA START ADDRESS 04 01768
002443 1769 FMFAT BSS      1      TEMP STORE 04 01769
002444 1770 FMFAK BSS      1      PROTECT KEY 04 01770
1771 EJEC 04 01771
1772 ***** 04 01772
1773 * 04 01773
1774 * FIND NEXT FILE NAME ( FMFF ) * 04 01774
1775 * 04 01775
1776 * FUNCTION: TO FIND THE NEXT FILE NAME IN THE FILE NAME DIRECTORY 04 01776
1777 * AND MAINTAIN A NEXT AVAILABLE RMD ADDRESS COUNTER 04 01777
1778 * 04 01778
1779 * ENTRY: BUFFER HOLDS CURRENT SECTOR OF DIRECTORY 04 01779
1780 * BUFFER POINTER POINTS TO CURRENT NAME 04 01780
1781 * 04 01781
1782 * CALLING SEQUENCE: JSR FMFF,X 04 01782
1783 * DATA ADDRESS OF LUN 04 01783
1784 * DATA FCB ADDRESS 04 01784
1785 * DATA ADDRESS OF POINTER BLOCK 04 01785
1786 * DATA BUFFER POINTER ADDRESS 04 01786
1787 * DATA ADDRESS OF PTR TO NEXT AVAIL ADDRESS 04 01787
1788 * 04 01788
1789 * EXIT : OVFL SET ON EOF 04 01789
1790 * A=0 IF NO ERRORS 04 01790
1791 * B.EQ.0 ZERO ENTRY 04 01791
1792 * B.GT.0 BLANK ENTRY 04 01792
1793 * B.LT.0 FILE NAME ENTRY 04 01793
1794 * X=ADDRESS OF NEXT ENTRY(IN BUFFER) 04 01794
1795 * 04 01795
1796 * ERRORS: A=5 ON I/O ERROR 04 01796
1797 * A=6 ON DIRECTORY STRUCTURE ERROR 04 01797
1798 * 04 01798
1799 ***** 04 01799
1801 ***** 04 01801
1802 * CHECK ZERO ENTRY COUNT * 04 01802
1803 ***** 04 01803
002445 034146 A 1804 FMFF1 LDX      FMFFBP     POINT X AT BUFFER POINTER 04 01804
002446 024143 A 1805      LDB      FMFFFC    POINT B AT FCB 04 01805
002447 026001 A 1806      LDB      1,B      GET BUFFER ADDRESS 04 01806
002450 064146 A 1807      STB      FMFFT     SAVE 04 01807
002451 016000 A 1808      LDA      0,B      GET ENTRY COUNT 04 01808

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002452 001016 A 1809      JANZ      FMFF2      ENTRY COUNT = 0 ?      04 01809
002453 002464 R
002454 005021 A 1810      TBA
002455 120465 A 1811      ADD      FIVE      YES      04 01810
002456 055000 A 1812      STA      0,X      SET BUFFER POINTER TO WORD 5      04 01811
002457 005014 A 1813      TAX
002460 005001 A 1814      TZA      POINT X AT ENTRY      04 01813
002461 007401 A 1815      SDF      SET A=0 TO FLAG NO ERROR      04 01814
002462 001010 A 1816      JAZ*     FMFFXX    SET OVFL TO FLAG EOF      04 01815
002463 102607 R      EOF IF ZERO ENTRY COUNT      04 01816
1817 *****
1818 * BUMP BUFFER POINTER *
1819 *****
002464 001004 A 1820      FMFF2    JAN      FMFFE6    ERROR 6/NEG ENTRY COUNT/      04 01820
002465 002570 R
002466 144131 A 1821      SUB      FMFF20
002467 001002 A 1822      JAP      FMFFE6    ERROR 6/MORE THAN 19 ENTRIES/      04 01821
002470 002570 R
002471 015000 A 1823      LDA      0,X
002472 120466 A 1824      ADD      SIX      BUMP BUFFER POINTER BY 6      04 01823
002473 055000 A 1825      STA      0,X
002474 005014 A 1826      TAX      POINT X AT NEXT ENTRY      04 01825
1827 *****
1828 * IDENTIFY ENTRY TYPE *
1829 *****
002475 015000 A 1830      LDA      0,X      GET WORD 1      04 01830
002476 005012 A 1831      TAB      LOAD EXIT FLAG IN B      04 01831
002477 007400 A 1832      RDF      RESET OVFL TO FLAG OK      04 01832
002500 001010 A 1833      JAZ*     FMFFXX    B=0 ON ZERO ENTRY      04 01833
002501 102607 R
002502 005311 A 1834      DAR
002503 007401 A 1835      SDF      SET OVFL TO FLAG EOF      04 01834
002504 001010 A 1836      JAZ*     FMFFXX    EOF EXIT      04 01835
002505 102607 R
002506 005341 A 1837      DECR     041
002507 140423 A 1838      SUB      FOUR
002510 144106 A 1839      SUB      FMFFT
002511 004560 A 1840      LLSR     16      GET COUNT OF DATA WORDS IN SECTOR      04 01839
002512 170466 A 1841      DIV      SIX      GET CURRENT ENTRY NUMBER      04 01841
002513 005021 A 1842      TBA
002514 024102 A 1843      LDB      FMFFT
002515 146000 A 1844      SUB      0,B      SUBTRACT TOTAL COUNT      04 01843
002516 001010 A 1845      JAZ      FMFFX
002517 002544 R      LAST ENTRY ?      04 01845
002520 015000 A 1846      LDA      0,X      NO      04 01846
002521 001002 A 1847      JAP      FMFFE6    ERROR 6/ENTRY NOT ASCII NAME/      04 01847
002522 002570 R
002523 006140 A 1848      SUBI     '***'
002524 125252 A
002525 001016 A 1849      JANZ     *+5      BLANK ENTRY ?      04 01849
002526 002532 R
002527 005102 A 1850      INCR     2      YES. SET B=1 AS EXIT FLAG      04 01850
002530 001000 A 1851      JMP      *+3
002531 002533 R
002532 005302 A 1852      DECR     2      NO. SET B.LT.0 FOR FILE NAME ENTRY      04 01852
002533 064063 A 1853      STB      FMFFT
002534 015005 A 1854      LDA      5,X      SAVE EXIT FLAG      04 01853
002535 002000 A 1855      CALL     FMFFTS    GET FILE END ADDR+1      04 01854
002536 002573 R      CHECK NEXT AVAILABLE ADDRESS
002537 024057 A 1856      LDB      FMFFT
002540 005001 A 1857      TZA      RESTORE EXIT FLAG      04 01856
002541 007400 A 1858      RDF      SET A=0 TO FLAG OK      04 01857
002542 001000 A 1859      JMP*     FMFFXX    RESET OVFL TO FLAG NOT EOF      04 01858
002543 102607 R
1860 *****
1861 * READ IN NEXT DIRECTORY RECORD ON CHAIN *
1862 *****
002544 015000 A 1863      FMFFX    LDA      0,X      GET RMD LINK ADDRESS      04 01863
002545 005012 A 1864      TAB      SAVE      04 01864
002546 034043 A 1865      LDX      FMFFFC    POINT X AT FCB      04 01865
002547 145003 A 1866      SUB      3,X
002550 005311 A 1867      DAR
002551 001004 A 1868      JAN      FMFFE6    ERROR 6/CHAIN ADDRESSES NOT INCREASING/      04 01868
002552 002570 R
002553 065003 A 1869      STB      3,X      STORE NEXT CHAIN ADDRESS IN FCB      04 01869
002554 005121 A 1870      INCR     021
002555 002000 A 1871      CALL     FMFFTS    CHECK NEXT AVAILABLE ADDRESS      04 01871
002556 002573 R
002557 006505 A 1872      JSR      FMRR,X
002560 004722 R
002561 102611 R 1873      MZE      FMFFLU
002562 102612 R 1874      MZE      FMFFFC
002563 102614 R 1875      MZE      FMFFBP
002564 001016 A 1876      JANZ*   FMFFXX    EXIT ON READ ERROR      04 01876
002565 102607 R
002566 001000 A 1877      JMP      FMFF1
002567 002445 R      CONTINUE SCAN      04 01877
1878 *****
1879 * ERROR *
1880 *****
002570 010466 A 1881      FMFFE6  LDA      SIX      SET A=6 AT EXIT      04 01881
002571 001000 A 1882      JMP*     FMFFXX    EXIT      04 01882
002572 102607 R

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1883 *****
1884 * NEXT AVAILABLE ADDRESS SUBROUTINE *
1885 *****
002573 000000 A 1886 FMFFTS ENTR 04 01883
002574 024020 A 1887 LDB FMFFAA 04 01884
002575 146000 A 1888 SUB 0,B 04 01885
002576 001004 A 1889 JAN* FMFFTS COMPARE WITH NEXT AVAIL RMD ADDR
002577 102573 R 1889 JAN* FMFFTS EXIT IF NO CHANGE 04 01887
002600 126000 A 1890 ADD 0,B UPDATE NEXT AVAIL ADDRESS 04 01888
002601 056000 A 1891 STA 0,B 04 01889
002602 001000 A 1892 JMP* FMFFTS 04 01890
002603 102573 R 1892 JMP* FMFFTS 04 01892

1893 *****
1894 * ENTRY *
1895 *****
002604 074002 A 1896 FMFF STX FMFFXX STORE EXIT 04 01893
002605 006505 A 1897 JSR FMPT,X XFER PARAMETERS 04 01894
002606 004457 R 1897 JSR FMPT,X XFER PARAMETERS 04 01895
002607 1898 FMFFXX BSS 1 EXIT ADDRESS 04 01896
002610 000005 A 1899 DATA 5 5 PARAMETERS 04 01897
002611 1900 FMFFLU BSS 1 ADDRESS OF LUN 04 01900
002612 1901 FMFFFC BSS 1 FCB ADDRESS 04 01901
002613 1902 FMFFPB BSS 1 ADDRESS OF POINTER BLOCK 04 01902
002614 1903 FMFFBP BSS 1 BUFFER POINTER ADDRESS 04 01903
002615 1904 FMFFAA BSS 1 ADDRESS OF NEXT AVAIL RMD ADDR 04 01904
002616 002445 R 1905 DATA FMFF1 FMFF START ADDRESS 04 01905
002617 1906 FMFFT BSS 1 TEMP STORE 04 01906
002620 000024 A 1907 FMFF20 DATA 20 04 01907
1908 EJEC 04 01908
1909 *****
1910 * 04 01909
1911 * GET DIRECTORY SPACE (FMGD) * 04 01910
1912 * 04 01911
1913 * FUNCTION: TO GET SPACE FOR A NEW ENTRY IN FILE DIRECTORY * 04 01912
1914 * 04 01913
1915 * ENTRY: NO SPECIAL CONDITIONS * 04 01914
1916 * 04 01915
1917 * CALLING SEQUENCE: JSR FMGD,X * 04 01916
1918 * DATA ADDRESS OF LUN * 04 01917
1919 * DATA ADDRESS OF FCB * 04 01918
1920 * DATA ADDRESS OF POINTER BLOCK(SEE FMGP) * 04 01919
1921 * DATA ADDRESS OF NEXT AVAIL RMD ADDRESS * 04 01920
1922 * 04 01921
1923 * EXIT : A=0 IF NO ERRORS * 04 01922
1924 * ZERO ENTRY USED IF PRESENT IN DIRECTORY * 04 01923
1925 * EOF ENTRY MADE(IN BUFFER) IF NEW SECTOR ASSIGNED * 04 01924
1926 * X=ENTRY ADDRESS(IN BUFFER) * 04 01925
1927 * IF NEW SECTOR, LINK IS WRITTEN OUT ON OLD SECTOR * 04 01926
1928 * 04 01927
1929 * ERRORS: A=4 IF PARTITION SPACE EXHAUSTED * 04 01928
1930 * A=5 ON I/O ERROR * 04 01929
1931 * A=6 ON DIRECTORY STRUCTURE ERROR * 04 01930
1932 * 04 01931
1933 ***** 04 01932
1934 ***** 04 01933
1935 ***** 04 01934
1936 * REWIND DIRECTORY * 04 01935
1937 ***** 04 01936
002621 006505 A 1938 FMGD1 JSR FMRW,X 04 01937
002622 004743 R 1938 FMGD1 JSR FMRW,X 04 01938
002623 102737 R 1939 MZE FMGDLU 04 01939
002624 102740 R 1940 MZE FMGDFC 04 01940
002625 002744 R 1941 PZE FMGDBP 04 01941
002626 001016 A 1942 JANZ* FMGDXX EXIT ON I/O ERROR 04 01942
002627 102735 R 1942 JANZ* FMGDXX EXIT ON I/O ERROR 04 01942

1943 *****
1944 * SEARCH FOR ZERO ENTRY *
1945 *****
002630 006505 A 1946 FMGDL JSR FMFF,X GET NEXT DIRECTORY ENTRY 04 01943
002631 002604 R 1946 FMGDL JSR FMFF,X GET NEXT DIRECTORY ENTRY 04 01944
002632 102737 R 1947 MZE FMGDLU 04 01945
002633 102740 R 1948 MZE FMGDFC 04 01946
002634 102741 R 1949 MZE FMGDPB 04 01947
002635 002744 R 1950 PZE FMGDBP 04 01948
002636 102742 R 1951 MZE FMGDAA 04 01949
002637 001016 A 1952 JANZ* FMGDXX EXIT ON ERROR 04 01950
002640 102735 R 1952 JANZ* FMGDXX EXIT ON ERROR 04 01951
002641 001020 A 1953 JBZ* FMGDXX EXIT IF ZERO ENTRY FOUND 04 01952
002642 102735 R 1953 JBZ* FMGDXX EXIT IF ZERO ENTRY FOUND 04 01953
002643 001007 A 1954 JQFN FMGDL OTHERWISE CONTINUE SCAN TO EOF 04 01954
002644 002630 R 1954 JQFN FMGDL OTHERWISE CONTINUE SCAN TO EOF 04 01955

1955 *****
1956 * NO ZERO ENTRIES *
1957 *****
002645 034072 A 1958 LDX FMGDFC 04 01956
002646 014073 A 1959 LDA FMGDBP 04 01957
002647 143001 A 1960 SUB 1,X GET COUNT OF WORDS USED IN SECTOR 04 01958
002650 006140 A 1961 SUBI 120 COMPARE WITH SECTOR SIZE 04 01959
002651 000170 A 1961 SUBI 120 COMPARE WITH SECTOR SIZE 04 01960
002652 120466 A 1962 ADD SIX 04 01961
002653 035001 A 1963 LDX 1,X POINT X AT BUFFER 04 01962
002654 001004 A 1964 JAN FMGDXX EXIT IF SECTOR NOT FULL 04 01963
002655 002723 R 1964 JAN FMGDXX EXIT IF SECTOR NOT FULL 04 01964
1965 ***** 04 01965

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1966 * SECTOR FULL - ALLOCATE NEW SECTOR TO DIRECTORY *
1967 *****
002656 034062 A 1968 LDX FMGDPB
002657 025002 A 1969 LDB 2,X POINT B AT PST ENTRY
002660 016003 A 1970 LDA 3,B
002661 146000 A 1971 SUB 0,B GET PARTITION TRACK COUNT
002662 146002 A 1972 SUB 2,B GET GOOD TRACK COUNT
002663 054074 A 1973 STA FMGDT SAVE
002664 035001 A 1974 LDX 1,X POINT X AT PST
002665 015001 A 1975 LDA 1,X GET COUNT OF GOOD RECORDS IN PARTITION
002666 150463 A 1976 ANA RHN
002667 004563 A 1977 LLSR 16
002670 164067 A 1978 MUL FMGDT
002671 005021 A 1979 TBA
002672 034047 A 1980 LDX FMGDAA
002673 145000 A 1981 SUB 0,X COMPARE WITH NEXT AVAIL ADDRESS
002674 001004 A 1982 JAN FMGDER ERROR 4/PARTITION EXHAUSTED/
002675 002735 R
002676 015000 A 1983 LDA 0,X ASSIGN NEXT AVAIL TO DIRECTORY
002677 034040 A 1984 LDX FMGDFC
002700 035001 A 1985 LDX 1,X
002701 055167 A 1986 STA 119,X LOAD LINK ADDRESS INTO PREVIOUS RECORD
002702 006505 A 1987 JSR FMUR,X WRITE OUT CURRENT RECORD AND LINK
002703 005611 R
002704 102737 R 1988 MZE FMGDLU
002705 102740 R 1989 MZE FMGDFC
002706 001016 A 1990 JANZ* FMGDXX CHECK FOR ERROR
002707 102735 R
002710 034031 A 1991 LDX FMGDAA
002711 015000 A 1992 LDA 0,X GET NEXT AVAIL RECORD ADDRESS
002712 045000 A 1993 INR 0,X BUMP NEXT AVAIL ADDRESS
002713 034024 A 1994 LDX FMGDFC POINT X AT FCB
002714 055003 A 1995 STA 0,X SET CURRENT FCB ADDRESS TO NEXT LINK
002715 035001 A 1996 LDX 1,X POINT X AT BUFFER
002716 005001 A 1997 TZA
002717 055000 A 1998 STA 0,X CLEAR ENTRY COUNT
002720 005041 A 1999 TZA
002721 120465 A 2000 ADD FIVE
002722 054021 A 2001 STA FMGDBP UPDATE BUFFER POINTER
002723 045000 A 2002 FMGDXX INR 0,X BUMP ENTRY COUNT
002724 034017 A 2003 LDX FMGDBP
002725 005101 A 2004 INCR 1
002726 035006 A 2005 STA 6,X STORE EOF IN BUFFER
002727 005001 A 2006 TZA SET A=0 TO FLAG NO ERRORS
002730 001000 A 2007 JMP* FMGDXX EXIT
002731 102735 R
2008 *****
2009 * ENTRY *
2010 *****
002732 074002 A 2011 FMGD STX FMGDXX STORE EXIT
002733 006505 A 2012 JSR FMPT,X XFER PARAMETERS
002734 004457 R
002735 2013 FMGDXX BSS 1 EXIT ADDRESS
002736 000004 A 2014 DATA 4 4 PARAMETERS
002737 2015 FMGDLU BSS 1 ADDRESS OF LUN
002740 2016 FMGDFC BSS 1 FCB ADDRESS
002741 2017 FMGDPB BSS 1 ADDRESS OF POINTER BLOCK
002742 2018 FMGDAA BSS 1 NEXT AVAILABLE ADDRESS
002743 002621 R 2019 DATA FMGD1 FMGD START ADDRESS
002744 2020 FMGDBP BSS 1 BUFFER POINTER
002745 2021 FMGDAB BSS 3 ALLOCATE BLOCK
002752 2022 FMGDRN BSS 1 SAVE RECORD NO
002753 2023 FMGDSP BSS 1 SAVE BUFFER POINTER
002754 2024 FMGDSS BSS 1 SECTOR COUNT
002755 010423 A 2025 FMGDER LDA FOUR ERROR 4/PARTITION EXHAUSTED/
002756 001000 A 2026 JMP* FMGDXX EXIT
002757 102735 R
002760 2027 FMGDT BSS 1 TEMP STORE
2028 EJEC
2029 *****
2030 *
2031 * GET POINTERS ( FMGP ) *
2032 *
2033 * FUNCTION: TO FETCH I/O AND FILE CONTROL POINTERS *
2034 *
2035 * ENTRY: NO SPECIAL CONDITIONS *
2036 *
2037 * CALLING SEQUENCE: JSR FMGP,X *
2038 * DATA ADDRESS OF LUN *
2039 *
2040 * EXIT : A = 0 IF NO ERROR *
2041 * X = ADDRESS OF 3-WORD BLOCK: *
2042 *
2043 * WORD 0: ADDRESS OF ENTRY IN DST *
2044 * WORD 1: ADDRESS OF PST TABLE *
2045 * WORD 2: ADDRESS OF PST ENTRY *
2046 *
2047 * ERRORS: A = 1 IF LOGICAL UNIT NUMBER INVALID *
2048 *
2049 *****
002761 034133 A 2051 FMGP1 LDX FMGPP
002762 015000 A 2052 LDA 0,X GET LUN
2053 *****

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2054 * TEST VALIDITY OF LUN *
2055 *****
002763 001004 A 2056 JAN FMGPE1 ERROR 1/NEGATIVE LUN/
002764 003105 R
002765 001010 A 2057 JAZ FMGPE1 ERROR 1/ZERO LUN/
002766 003105 R
002767 004550 A 2058 LLSR 8
002770 001016 A 2059 JANZ FMGPE1 ERROR 1/LUN .GT. 255/
002771 003105 R
002772 004450 A 2060 LLRL 8 RESTORE LUN IN A
2061 *****
2062 * LOCATE LOGICAL UNIT TABLE(LUT) ENTRY *
2063 *****
002773 006030 A 2064 LDXI FMLUT POINT X AT LUT POINTER BLOCK
002774 003121 R
002775 005012 A 2065 TAB SAVE IN B
002776 005322 A 2066 DBR LUT BLOCK 1 BIASED BASE 1
002777 006140 A 2067 SUBI 101
003000 000145 A
003001 001004 A 2068 JAN FMGPE5 IS LUN IN BLOCK 1(1-101) ?
003002 003013 R
003003 005012 A 2069 TAB NO. SAVE BIASED LUN
003004 005144 A 2070 IXR BUMP BLOCK POINTER
003005 006140 A 2071 SUBI 79
003006 000117 A
003007 001004 A 2072 JAN FMGPE5 IS LUN IN BLOCK 2(101-179) ?
003010 003013 R
003011 005012 A 2073 TAB NO. SAVE BIASED LUN
003012 005144 A 2074 IXR BUMP BLOCK POINTER
003013 035000 A 2075 FMGPE5 LDX 0,X
003014 035000 A 2076 LDX 0,X GET BLOCK START ADDRESS
003015 074101 A 2077 STX FMGPT SAVE
003016 015000 A 2078 LDA 0,X GET BLOCK ENTRY COUNT
003017 054100 A 2079 STA FMGPT+1 SAVE
003020 005021 A 2080 TBA
003021 144076 A 2081 SUB FMGPT+1 TEST LUN
003022 001002 A 2082 JAP FMGPE1 ERROR 1/INVALID LOGICAL UNIT NUMBER/
003023 003105 R
003024 005021 A 2083 TBA
003025 124071 A 2084 ADD FMGPT
003026 005114 A 2085 INCR 014 POINT X AT LUT ENTRY
2086 *****
2087 * LOCATE DST ENTRY *
2088 *****
003027 015000 A 2089 LDA 0,X LOAD LUT ENTRY
003030 150463 A 2090 ANA RHW GET CURRENT ASSIGNMENT
003031 001010 A 2091 JAZ FMGPE1 ERROR 1/LUN 0 ILLEGAL/
003032 003105 R
003033 005311 A 2092 DAR BIAS BASE 1
003034 054062 A 2093 STA FMGPT SAVE
003035 004241 A 2094 LRLA 1 *2
003036 124060 A 2095 ADD FMGPT *3
003037 120355 A 2096 ADD V$DSTB ADD DST BASE ADDRESS
003040 005014 A 2097 TAX POINT X AT DST
003041 074062 A 2098 STX FMGPE5 SAVE
2099 *****
2100 * LOCATE COTAD ENTRY *
2101 *****
003042 025002 A 2102 LDB 2,X GET WORD 2 OF DST
003043 004441 A 2103 LLRL 1
003044 005001 A 2104 TZA
003045 004442 A 2105 LLRL 2 GET DEVICE UNIT NUMBER
003046 054050 A 2106 STA FMGPT SAVE
003047 004442 A 2107 LLRL 2
003050 005001 A 2108 TZA
003051 004443 A 2109 LLRL 3 GET PST INCREMENT
003052 001010 A 2110 JAZ FMGPE1 ERROR 1/NOT RMD DEVICE/
003053 003105 R
003054 005311 A 2111 DAR CONVERT TO BASE 1
003055 054042 A 2112 STA FMGPT+1 SAVE
003056 005001 A 2113 TZA
003057 004446 A 2114 LLRL 6 GET COTAD INCREMENT
003060 120360 A 2115 ADD V$COTAD ADD BASE ADDRESS
003061 005014 A 2116 TAX POINT X INTO COTAD TABLE
2117 *****
2118 * LOCATE CTBL ENTRY *
2119 *****
003062 035000 A 2120 LDX 0,X GET ADDRESS OF CTBL
2121 *****
2122 * LOCATE PST ENTRY *
2123 *****
003063 005041 A 2124 TXA GET CTBL BASE ADDRESS
003064 124032 A 2125 ADD FMGPT ADD UNIT NUMBER
003065 005014 A 2126 TAX
003066 035017 A 2127 LDX 15,X
003067 005041 A 2128 TXA
003070 140422 A 2129 SUB TWO
003071 054033 A 2130 STA FMGPE5 STORE ADDRESS OF PST
003072 014025 A 2131 LDA FMGPT+1 GET PST INCREMENT
003073 004241 A 2132 LRLA 1 *2
003074 124023 A 2133 ADD FMGPT+1 *3
003075 120464 A 2134 ADD THREE +3
003076 124026 A 2135 ADD FMGPE5 ADD PST BASE ADDRESS
    
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003077 054026 A 2136 STA FMGPPE SAVE PST ENTRY ADDRESS 04 02136
2137 ***** 04 02137
2138 * NORMAL EXIT * 04 02138
2139 ***** 04 02139
003100 006030 A 2140 LDXI FMGPDS POINT X AT TABLE 04 02140
003101 003124 R
003102 005001 A 2141 TZA SET A=0 TO FLAG DK 04 02141
003103 001000 A 2142 JMP* FMGPXX EXIT 04 02142
003104 103113 R
2143 ***** 04 02143
2144 * ERROR EXIT * 04 02144
2145 ***** 04 02145
003105 005101 A 2146 FMGPE1 INCR 1 SET A=1 TO FLAG BAD LUN 04 02146
003106 001000 A 2147 JMP* FMGPXX EXIT 04 02147
003107 103113 R
2148 ***** 04 02148
2149 * ENTRY * 04 02149
2150 ***** 04 02150
003110 074002 A 2151 FMGP STX FMGPXX STORE EXIT 04 02151
003111 006505 A 2152 JSR FMPT,X TRANSFER PARAMETER 04 02152
003112 004457 R
003113 2153 FMGPXX BSS 1 EXIT ADDRESS 04 02153
003114 000001 A 2154 DATA 1 1 PARAMETER 04 02154
003115 2155 FMGPP BSS 1 ADDRESS OF LUN 04 02155
003116 002761 R 2156 DATA FMGP1 FMGP START ADDRESS 04 02156
2157 * 04 02157
003117 2158 FMGPT BSS 2 TEMP STORE 04 02158
003121 000400 A 2159 FMLUT DATA V$LUT1 04 02159
003122 000401 A 2160 DATA V$LUT2 04 02160
003123 000402 A 2161 DATA V$LUT3 04 02161
2162 * 04 02162
003124 2163 FMGPDS BSS 1 ADDRESS OF DST ENTRY 04 02163
003125 2164 FMGPPS BSS 1 ADDRESS OF PST TABLE 04 02164
003126 2165 FMGPPE BSS 1 ADDRESS OF PST ENTRY 04 02165
2166 EJEC 04 02166
2167 ***** 04 02167
2168 * 04 02168
2169 * INPUT CHARACTER ( FMIC ) * 04 02169
2170 * 04 02170
2171 * FUNCTION: TO INPUT AND VERIFY THE NEXT SOURCE CHARACTER. * 04 02171
2172 * 04 02172
2173 * ENTRY: 4-WORD SCAN CONTROL BLOCK(SCB) LOADED: * 04 02173
2174 * 04 02174
2175 * WORD 0: BUFFER SIZE IN WORDS * 04 02175
2176 * WORD 1: BUFFER ADDRESS * 04 02176
2177 * WORD 2: CHARACTER COUNT * 04 02177
2178 * WORD 3: INPUT CHARACTER * 04 02178
2179 * 04 02179
2180 * CALLING SEQUENCE: JSR FMIC,X * 04 02180
2181 * DATA ADDRESS OF SCB * 04 02181
2182 * 04 02182
2183 * EXIT : A=0 IF NO ERRORS * 04 02183
2184 * B= SCB(3)=INPUT CHARACTER * 04 02184
2185 * = SCB(3)=-1 IF BUFFER EXHAUSTED * 04 02185
2186 * SCB CHARACTER COUNT INCREMENTED UNLESS END OF LINE(EOL) * 04 02186
2187 * 04 02187
2188 * ERRORS: A=1 IF CHAR NOT ALPHAMERIC,BLANK,COMMA,EOL,OR '$' * 04 02188
2189 * 04 02189
2190 ***** 04 02190
003127 034077 A 2192 FMIC1 LDX FMICP POINT X AT SCB 04 02192
003130 005301 A 2193 DECR 1 04 02193
003131 055003 A 2194 STA 3,X CHAR=-1 AT EOL 04 02194
003132 005002 A 2195 TZE CLEAR HIGH/LOW BYTE SWITCH 04 02195
003133 015002 A 2196 LDA 2,X GET BUFFER CHAR COUNT 04 02196
003134 004541 A 2197 LLSR 1 CONVERT TO WORD COUNT/BYTE SWITCH 04 02197
003135 145000 A 2198 SUB 0,X 04 02198
003136 001002 A 2199 JAP FMIC5 BUFFER EXHAUSTED ? 04 02199
003137 003216 R
003140 045002 A 2200 INR 2,X NO. BUMP CHAR COUNTER 04 02200
003141 125000 A 2201 ADD 0,X RESTORE WORD COUNT 04 02201
003142 125001 A 2202 ADD 1,X ADD BUFFER START ADDRESS 04 02202
003143 005014 A 2203 TAX POINT X INTO BUFFER 04 02203
003144 015000 A 2204 LDA 0,X GET BUFFER WORD 04 02204
003145 004250 A 2205 LRLA 8 SWAP BYTES 04 02205
003146 001020 A 2206 JRZ *+3 LOW BYTE REQUESTED ? 04 02206
003147 003151 R
003150 004250 A 2207 LRLA 8 YES. ROTATE TO POSITION 04 02207
003151 150463 A 2208 ANA RHW CLEAR HIGH BYTE 04 02208
003152 034034 A 2209 LDX FMICP 04 02209
003153 055003 A 2210 STA 3,X SAVE CHAR 04 02210
003154 006140 A 2211 SUBI 0240 04 02211
003155 000240 A
003156 001010 A 2212 JAZ FMIC5 BLANK DK 04 02212
003157 003216 R
003160 140423 A 2213 SUB FOUR 04 02213
003161 001010 A 2214 JAZ FMIC5 '$' DK 04 02214
003162 003216 R
003163 140424 A 2215 SUB EIGHT 04 02215
003164 001010 A 2216 JAZ FMIC5 COMMA DK 04 02216
003165 003216 R
003166 140422 A 2217 SUB TWO 04 02217
003167 001016 A 2218 JANZ *+7 '.' STOPS SCAN 04 02218
003170 003176 R

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003171 015000 A 2219 LDA 0,X
003172 004241 A 2220 LRLA 1 CONVERT WORD TO CHAR COUNT
003173 055002 A 2221 STA 2,X
003174 001000 A 2222 JMP FMIC1
003175 003127 R
003176 140422 A 2223 SUB TWO
003177 001004 A 2224 JAN FMICE1 ERROR 1/ILLEGAL CHAR/
003200 003213 R
003201 140471 A 2225 SUB TEN
003202 001004 A 2226 JAN FMIC5 NUMERIC OK
003203 003216 R
003204 140467 A 2227 SUB SEVEN
003205 001004 A 2228 JAN FMICE1 ERROR 1/ILLEGAL CHAR/
003206 003213 R
003207 006140 A 2229 SUBI 032 ALPHABETIC OK
003210 000032 A
003211 001004 A 2230 JAN FMIC5
003212 003216 R
2231 *****
2232 * ERROR *
2233 *****
003213 005101 A 2234 FMICE1 INCR 1 SET A=1 TO FLAG ERROR
003214 001000 A 2235 JMP *+3
003215 003217 R
2236 *****
2237 * EXIT *
2238 *****
003216 005001 A 2239 FMIC5 TZA SET A=0 TO FLAG OK
003217 025003 A 2240 LDB 3,X LOAD B WITH CHAR AT EXIT
003220 001000 A 2241 JMP* FMICXX
003221 103225 R
2242 *****
2243 * ENTRY *
2244 *****
003222 074002 A 2245 FMIC STX FMICXX STORE EXIT
003223 006505 A 2246 JSR FMPT,X XFER PARAMETER
003224 004457 R
2247 FMICXX BSS 1 EXIT ADDRESS
003225 000001 A 2248 DATA 1 1 PARAMETER
003226 000001 A 2249 FMICP BSS 1 ADDRESS OF SCB
003227 003127 R 2250 DATA FMIC1 FMIC START ADDRESS
2251 EJEJ
2252 *****
2253 *
2254 * INITIALIZE ( F M I N )
2255 *
2256 * FUNCTION: TO INITIALIZE A FILE NAME DIRECTORY
2257 *
2258 * ENTRY: NO SPECIAL CONDITIONS
2259 *
2260 * CALLING SEQUENCE: JSR FMIN,X
2261 * DATA ADDRESS OF COMMAND BLOCK(CB)
2262 * DATA FCB ADDRESS
2263 * DATA 0
2264 *
2265 * COMMAND BLOCK: WORD 0: LOGICAL UNIT NUMBER
2266 * WORD 1: KEY
2267 *
2268 * EXIT : A=0 IF NO ERRORS
2269 * WORD 0=0: ENTRY COUNT
2270 * WORD 5=EOF(1)
2271 *
2272 * ERRORS: A=1 ON LUN OR KEY ERROR
2273 * A=5 ON I/O ERROR
2274 *
2275 *****
003231 005001 A 2277 FMIN1 TZA
003232 054054 A 2278 STA FMINEF CLEAR ERROR FLAG
2279 *****
2280 * GET FILE PARAMETERS *
2281 *****
003233 006505 A 2282 JSR FMFA,X MAKE FILE ACCESS
003234 002433 R
003235 103303 R 2283 MZE FMINCB
003236 103304 R 2284 MZE FMINFC
003237 074050 A 2285 STX FMINPB SAVE ADDRESS OF POINTER BLOCK
003240 001010 A 2286 JAZ *+4 ERROR ?
003241 003244 R
003242 001000 A 2287 JMP* FMINXX YES. EXIT
003243 103301 R
003244 006505 A 2288 JSR FMRW,X REWIND FILE DIRECTORY
003245 004745 R
003246 103303 R 2289 MZE FMINCB
003247 103304 R 2290 MZE FMINFC
003250 003311 R 2291 PZE FMINT
003251 001016 A 2292 JANZ FMINE EXIT ON I/O ERROR
003252 003265 R
2293 *****
2294 * CONSTRUCT INITIALIZED 1ST DIRECTORY RECORD *
2295 *****
003253 005001 A 2296 TZA
003254 055001 A 2297 STA 1,X SET ENTRY COUNT TO ZERO
003255 005101 A 2298 INCR 1

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003256 055006 A 2299 STA 6,X STORE EOF IN BUFFER 04 02299
003257 006505 A 2300 JSR FMWR,X WRITE OUT INITIALIZED 1ST DIRECTORY REC 04 02300
003260 005611 R 2301 MZE FMINCB 04 02301
003262 103303 R 2302 MZE FMINFC 04 02302
003263 103304 R 2303 JAZ *+3 CHECK FOR I/O ERROR 04 02303
003264 003266 R 2304 ***** 04 02304
2305 * ERROR * 04 02305
2306 ***** 04 02306
003265 054021 A 2307 FMINE STA FMINEF 04 02307
2308 ***** 04 02308
2309 * CLEAR LOCKOUT BIT IN DST * 04 02309
2310 ***** 04 02310
003266 034021 A 2311 LDX FMINPB 04 02311
003267 035000 A 2312 LDX 0,X POINT X AT DST 04 02312
003270 015002 A 2313 LDA 2,X 04 02313
003271 150455 A 2314 ANA BR12 CLEAR LOCKOUT BIT 04 02314
003272 055002 A 2315 STA 2,X 04 02315
003273 014013 A 2316 LDA FMINEF LOAD ERROR FLAG 04 02316
003274 001000 A 2317 JMP* FMINXX EXIT 04 02317
003275 103301 R 2318 ***** 04 02318
2319 * ENTRY * 04 02319
2320 ***** 04 02320
003276 074002 A 2321 FMIN STX FMINXX SAVE EXIT 04 02321
003277 006505 A 2322 JSR FMPT,X XFER PARAMETERS 04 02322
003300 004457 R 2323 FMINXX BSS 1 EXIT ADDRESS 04 02323
003301 000003 A 2324 DATA 3 3 PARAMETERS 04 02324
003303 2325 FMINCB BSS 1 CB ADDRESS 04 02325
003304 2326 FMINFC BSS 2 FCB ADDRESS 04 02326
003306 003231 R 2327 DATA FMIN1 FMIN START ADDRESS 04 02327
003307 2328 FMINEF BSS 1 ERROR FLAG 04 02328
003310 2329 FMINPB BSS 1 ADDRESS OF POINTER BLOCK 04 02329
003311 2330 FMINT BSS 1 TEMP 04 02330
2331 EJEJ 04 02331
2332 ***** 04 02332
2333 * 04 02333
2334 * LINE FEED ( F M L F ) * 04 02334
2335 * 04 02335
2336 * FUNCTION: TO PERFORM A LINE FEED ON THE LD DEVICE * 04 02336
2337 * 04 02337
2338 * ENTRY: NO SPECIAL CONDITIONS * 04 02338
2339 * 04 02339
2340 * CALLING SEQUENCE: JSR FMLF,X * 04 02340
2341 * DATA ADDRESS OF LINE COUNTER * 04 02341
2342 * 04 02342
2343 * EXIT : A=0 IF NO ERRORS * 04 02343
2344 * LINE COUNTER DECREMENTED * 04 02344
2345 * 04 02345
2346 * ERRORS: A=5 ON I/O ERROR * 04 02346
2347 * 04 02347
2348 ***** 04 02348
003312 006505 A 2350 FMLF1 JSR FMWL,X WRITE BLANK LINE 04 02350
003313 005342 R 2351 PZE FMLFDC 04 02351
003314 003327 R 2352 MZE FMLFP 04 02352
003315 103325 R 2353 JMP* FMLFXX 04 02353
003316 001000 A 2354 FMLF STX FMLFXX SAVE EXIT 04 02354
003320 074002 A 2355 JSR FMPT,X XFER PARAMETERS 04 02355
003321 006505 A 2356 FMLFXX BSS 1 EXIT ADDRESS 04 02356
003322 004457 R 2357 DATA 1 1 PARAMETER 04 02357
003323 000001 A 2358 FMLFP BSS 1 ADDRESS OF LINE COUNTER 04 02358
003324 003312 R 2359 DATA FMLF1 FMLF START ADDRESS 04 02359
003325 000001 A 2360 FMLFDC DATA 1 LINE FEED DCB 04 02360
003326 003331 R 2361 PZE *+1 04 02361
003327 120240 A 2362 DATA * 04 02362
2363 EJEJ 04 02363
2364 ***** 04 02364
2365 * 04 02365
2366 * PROCESS LIST ( F M L I ) * 04 02366
2367 * 04 02367
2368 * FUNCTION: TO LIST A FILE NAME DIRECTORY ON THE LD DEVICE * 04 02368
2369 * 04 02369
2370 * ENTRY: NO SPECIAL CONDITIONS * 04 02370
2371 * 04 02371
2372 * CALLING SEQUENCE: JSR FMLI,X * 04 02372
2373 * DATA ADDRESS OF COMMAND BLOCK(CB) * 04 02373
2374 * DATA FCB ADDRESS * 04 02374
2375 * DATA ADDRESS OF LINE COUNTER * 04 02375
2376 * 04 02376
2377 * COMMAND BLOCK: WORD 0: LOGICAL UNIT NUMBER * 04 02377
2378 * WORD 1: KEY * 04 02378
2379 * WORDS 8-9: LUN STRING * 04 02379
2380 * 04 02380
2381 * EXIT : A=0 IF NO ERROR * 04 02381
2382 * SORTED(BY RMD ADDRESS) LIST OUTPUT ON LD DEVICE * 04 02382
2383 * 04 02383
2384 * ERRORS: A=1 IF LUN OR KEY ERROR * 04 02384
2385 * A=5 IF I/O ERROR * 04 02385

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2386 *          A=6 IF DIRECTORY STRUCTURE ERROR                      * 04 02386
2387 *                                                                * 04 02387
2388 *****                                                                * 04 02388
003332 005001 A 2390 FMLI1  TZA                                     04 02390
003333 054277 A 2391 STA          FMLIEF          CLEAR ERROR FLAG      04 02391
2392 *****                                                                * 04 02392
2393 * GET FILE PARAMETERS *                                          * 04 02393
2394 *****                                                                * 04 02394
003334 006505 A 2395 JSR          FMFA,X          MAKE FILE ACCESS      04 02395
003335 002433 R 2396 MZE          FMLICB                                     04 02396
003336 103625 R 2397 MZE          FMLIFC                                     04 02397
003340 074273 A 2398 STX          FMLIPB          SAVE ADDRESS OF POINTER BLOCK 04 02398
003341 001010 A 2399 JAZ          *+5          ERROR ?                      04 02399
003342 003346 R 2400 INR          FMLIEF          YES. SET FLAG AND EXIT      04 02400
003343 044267 A 2401 JMP          FMLIX2                                     E.1 *****
003345 003537 R 2402 LDX          FMLICB                                     04 02402
003346 034256 A 2403 LDA          8,X          MOVE STRING INTO HEADER      04 02403
003347 015010 A 2404 STA          FMLIU                                     04 02404
003350 054314 A 2405 LDA          9,X                                     04 02405
003351 015011 A 2406 STA          FMLIU+1                                     04 02406
003352 054313 A 2407 *****                                                                * 04 02407
2408 * INITIALIZE *                                                * 04 02408
2409 *****                                                                * 04 02409
003353 010422 A 2410 LDA          TWD                                     04 02410
003354 054266 A 2411 STA          FMLIAA          INITIALIZE NEXT ALLOCATION      04 02411
003355 054257 A 2412 STA          FMLISA          STORE AS INITIAL SEARCH ADDRESS 04 02412
003356 034255 A 2413 LDX          FMLIPB                                     04 02413
003357 025002 A 2414 LDB          2,X          POINT B AT PST ENTRY      04 02414
003360 016003 A 2415 LDA          3,B                                     04 02415
003361 146000 A 2416 SUB          0,B          GET PARTITION TRACK COUNT      04 02416
003362 146002 A 2417 SUB          2,B          GET GOOD TRACK COUNT      04 02417
003363 054252 A 2418 STA          FMLIT          SAVE                      04 02418
003364 035001 A 2419 LDX          1,X                                     04 02419
003365 015001 A 2420 LDA          1,X                                     04 02420
003366 150463 A 2421 ANA          RHW          GET RECORDS/TRACK      04 02421
003367 004560 A 2422 LLSR          16          04 02422
003370 164245 A 2423 MUL          FMLIT          GET GOOD RECORD COUNT      04 02423
003371 005122 A 2424 IBR          04 02424
003372 064251 A 2425 STB          FMLIUN+5          STORE AS END OF UNASSIGNED RMD SPACE 04 02425
003373 002000 A 2426 CALL          FMLIH          OUTPUT LIST HEADER      04 02426
003374 003551 R 2427 *****                                                                * 04 02427
2428 * OUTER LOOP - INITIALIZE SCAN OF DIRECTORY *                  * 04 02428
2429 *****                                                                * 04 02429
003375 006505 A 2430 FMLIL1 JSR          FMRW,X          REWIND DIRECTORY      04 02430
003376 004745 R 2431 MZE          FMLICB                                     04 02431
003377 103625 R 2432 MZE          FMLIFC                                     04 02432
003401 003631 R 2433 PZE          FMLIBP                                     04 02433
003402 001016 A 2434 JANZ          FMLIE          CHECK FOR ERROR      04 02434
003403 003546 R 2435 TZA                                     04 02435
003404 005001 A 2436 STA          FMLIEA          FLAG NO END ADDRESS DEFINED 04 02436
003405 054224 A 2437 *****                                                                * 04 02437
2438 * INNER LOOP - OUTPUT FILE NAMES ASSIGNED TO RMD ADDRESS FMLISA * 04 02438
2439 *****                                                                * 04 02439
003406 006505 A 2440 FMLIL2 JSR          FMFF,X          FIND NEXT FILE NAME      04 02440
003407 002604 R 2441 MZE          FMLICB                                     04 02441
003410 103625 R 2442 MZE          FMLIFC                                     04 02442
003412 103634 R 2443 MZE          FMLIPB                                     04 02443
003413 003631 R 2444 PZE          FMLIBP                                     04 02444
003414 003643 R 2445 PZE          FMLIAA                                     04 02445
003415 001016 A 2446 JANZ          FMLIE          CHECK FOR ERROR      04 02446
003416 003546 R 2447 JOF          FMLIX1          END OF DIRECTORY ?      04 02447
003420 003501 R 2448 JBZ          FMLIL2          NO. IGNORE ZERO ENTRIES      04 02448
003422 003406 R 2449 LDA          4,X          GET FILE START ADDRESS      04 02449
003423 015004 A 2450 SUB          FMLISA          COMPARE WITH SEARCH ADDRESS 04 02450
003424 144210 A 2451 JAZ          FMLI4          TEST FOR FIND      04 02451
003425 001010 A 2452 *****                                                                * 04 02452
003426 003451 R 2453 * NO FIND - CHECK VALIDITY *                  * 04 02453
2454 *****                                                                * 04 02454
003427 001004 A 2455 JAN          FMLI3          IS ENTRY BEYOND CURRENT ? 04 02455
003430 003442 R 2456 LDA          FMLIEA          YES                      04 02456
003431 014200 A 2457 JAZ          FMLIL2          CONTINUE SCAN IF END UNDEFINED 04 02457
003432 001010 A 2458 SUB          4,X                                     04 02458
003433 003406 R 2459 BAR          04 02459
003434 145004 A 2460 JAP          FMLIE6          ERROR 6/BAD DIRECTORY STRUCTURE/ 04 02460
003435 005311 A 2461 JMP          FMLIL2          CONTINUE SCAN      04 02461
003436 001002 A 2462 FMLI3 LDA          4,X                                     04 02462
003437 003545 R 2463 SUB          TWD                                     04 02463
003440 001000 A 2464 BRN          4,X                                     04 02464
003441 003406 R
003442 015004 A
003443 140422 A
003444 115004 A

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003445 001004 A 2465 JAN FMLIE6 ERROR 6/BAD DIRECTORY STRUCTURE/ 04 02465
003446 003545 R 2466 JMP FMLIL2 CONTINUE SCAN 04 02466
003447 001000 A 2466
003450 003406 R 2467 *****
2468 * FILE NAME FOUND ASSIGNED TO FMLISA *
2469 *****
003451 014160 A 2470 FMLI4 LDA FMLIEA
003452 001016 A 2471 JANZ FMLI5 IS END ADDRESS DEFINED ? 04 02470
003453 003464 R 2471
003454 015005 A 2472 LDA 5,X NO 04 02472
003455 054154 A 2473 STA FMLIEA DEFINE IT 04 02473
003456 144156 A 2474 SUB FMLISA 04 02474
003457 005311 A 2475 DAR 04 02475
003460 001004 A 2476 JAN FMLIE6 ERROR 6/BAD DIRECTORY STRUCTURE/ 04 02476
003461 003545 R 2477 JMP *+5 04 02477
003462 001000 A 2477
003463 003467 R 2478 FMLI5 SUB 5,X YES 04 02478
003464 145005 A 2479 JANZ FMLIE6 ERROR 6/BAD DIRECTORY STRUCTURE/ 04 02479
003465 001016 A 2480 CALL FMLIHC CHECK HEADER 04 02480
003466 003545 R 2481 JSR FMOF,X OUTPUT FILE LINE 04 02481
003467 002000 A 2482 MZE FMLIBP 04 02482
003470 003564 R 2483 MZE FMLILC 04 02483
003471 006505 A 2484 JANZ FMLIE CHECK ERROR 04 02484
003472 004422 R 2485 JMP FMLILE CONTINUE SCAN 04 02485
003473 103631 R 2486 *****
003474 103627 R 2487 * INNER LOOP EXIT - EOF READ *
003475 001016 A 2488 *****
003476 003546 R 2489 FMLIX1 LDA FMLIEA
003477 001000 A 2490 JANZ *+4 IS END ADDR DEFINED ? 04 02490
003478 003375 R 2491 LDA FMLISA NO 04 02491
003479 005111 A 2492 IAR 04 02492
003480 054126 A 2493 STA FMLISA UPDATE SEARCH ADDRESS 04 02493
003481 144133 A 2494 SUB FMLIUN+4 COMPARE WITH END OF ASSIGNED RMD SPACE 04 02494
003482 005311 A 2495 DAR 04 02495
003483 001004 A 2496 JAN FMLIL1 CONTINUE SCAN TO END 04 02496
003484 003375 R 2497 *****
2498 * DIRECTORY OUTPUT FINISHED - OUTPUT UNASSIGNED *
2499 *****
003501 014130 A 2500 LDA FMLIUN+5 GET PARTITION END ADDRESS+1 04 02500
003502 001016 A 2501 SUB FMLIUN+4 COMPARE WITH NEXT AVAIL 04 02501
003503 003506 R 2502 JAZ FMLIX ANY UNASSIGNED RMD SPACE ? 04 02502
003504 014130 A 2503 JSR FMOF,X YES. LINE FEED 04 02503
003505 005111 A 2504 MZE FMLILC 04 02504
003506 054126 A 2505 JANZ FMLIE CHECK FOR ERROR 04 02505
003507 144133 A 2506 JSR FMOF,X OUTPUT 'UNASSIGNED' LINE 04 02506
003508 005311 A 2507 MZE FMLIUN 04 02507
003509 001004 A 2508 MZE FMLILC 04 02508
003510 003375 R 2509 JANZ FMLIE CHECK FOR ERROR 04 02509
003511 003375 R 2510 *****
003512 003375 R 2511 * EXIT *
2512 *****
003513 014130 A 2513 FMLIX LDX FMLIPE
003514 144126 A 2514 LDX 0,X PRINT X AT DST 04 02514
003515 001010 A 2515 LDA 2,X 04 02515
003516 003532 R 2516 ANA BR12 CLEAR LOCKOUT BIT 04 02516
003517 006505 A 2517 STA 2,X 04 02517
003518 003320 R 2518 FMLIX2 JSR FMOF,X LINE FEED ON LD E.1 *****
003519 103627 R 2519 MZE FMLILC 04 02519
003520 014070 A 2520 LDA FMLIEF LOAD A WITH ERROR FLAG 04 02520
003521 001000 A 2521 JMP* FMLIXX EXIT 04 02521
003522 103623 R 2522 *****
2523 * ERRORS *
2524 *****
003525 010466 A 2525 FMLIE6 LDA SIX
003526 054064 A 2526 FMLIE STA FMLIEF LOAD ERROR FLAG 04 02526
003527 001000 A 2527 JMP FMLIX 04 02527
003528 003532 R 2528 *****
2529 * CHECK HEADER *
2530 *****
003531 000000 A 2531 FMLIHI ENTR
003532 006017 A 2532 LDAE FMLIHI 04 02532
003533 003551 R 2533 STA FMLIHC LOAD EXIT 04 02533
003534 054097 A 2534 LDX FMLILC 04 02534
003535 015000 A 2535 LDA 0,X 04 02535
003536 140423 A 2536 SUB FOUR 04 02536

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003560	001004	A	2537	JAN	FMLIHH		TEST PAGE END	04	02537
003561	003571	R							
003562	001000	A	2538	JMP	FMLIH2			04	02538
003563	003576	R							
003564	000000	A	2539	FMLIHC	ENTR			04	02539
003565	034041	A	2540	LDX	FMLILC			04	02540
003566	015000	A	2541	LDA	0,X		GET LINE COUNTER	04	02541
003567	001002	A	2542	JAP*	FMLIHC		END OF PAGE ?	04	02542
003570	103564	R							
003571	006503	A	2543	FMLIHH	JSR	FMVH,X	YES, OUTPUT VORTEX HEADER	04	02543
003572	005113	R							
003573	103627	R	2544	MZE	FMLILC			04	02544
003574	001016	A	2545	JANZ	FMLIE		CHECK FOR ERROR	04	02545
003575	003546	R							
003576	006505	A	2546	FMLIH2	JSR	FMWL,X	WRITE 2ND HEADER LINE	04	02546
003577	005342	R							
003600	003645	R	2547	PZE	FMLIH1			04	02547
003601	103627	R	2548	MZE	FMLILC			04	02548
003602	001016	A	2549	JANZ	FMLIE		CHECK FOR ERROR	04	02549
003603	003546	R							
003604	006505	A	2550	JSR	FMLF,X		LINE FEED	04	02550
003605	003320	R							
003606	103627	R	2551	MZE	FMLILC			04	02551
003607	001016	A	2552	JANZ	FMLIE		CHECK FOR ERROR	04	02552
003610	003546	R							
003611	006505	A	2553	JSR	FMOC,X		OUTPUT COLUMN HEADER	04	02553
003612	004302	R							
003613	103627	R	2554	MZE	FMLILC			04	02554
003614	001016	A	2555	JANZ	FMLIE		CHECK FOR ERROR	04	02555
003615	003546	R							
003616	001000	A	2556	JMP*	FMLIHC		EXIT	04	02556
003617	103564	R							
			2557	*****				04	02557
			2558	* ENTRY *				04	02558
			2559	*****				04	02559
003620	074002	A	2560	FMLI	STX	FMLIXX	STORE EXIT	04	02560
003621	006505	A	2561	JSR	FMPT,X		XFER PARAMETERS	04	02561
003622	004457	R							
003623			2562	FMLIXX	BSS	1	EXIT ADDRESS	04	02562
003624	000003	A	2563	DATA	3		3 PARAMETERS	04	02563
003625			2564	FMLICB	BSS	1	COMMAND BLOCK ADDRESS	04	02564
003626			2565	FMLIFC	BSS	1	FCB ADDRESS	04	02565
003627			2566	FMLILC	BSS	1	ADDRESS OF LINE COUNTER	04	02566
003630	003332	R	2567	DATA	FMLII		FMLI START ADDRESS	04	02567
			2568	*				04	02568
003631			2569	FMLIBP	BSS	1	BUFFER POINTER	04	02569
003632			2570	FMLIEA	BSS	1	SEARCH ITEM END ADDRESS+1	04	02570
003633			2571	FMLIEF	BSS	1	ERROR FLAG	04	02571
003634			2572	FMLIPB	BSS	1	ADDRESS OF POINTER BLOCK	04	02572
003635			2573	FMLISA	BSS	1	RND SEARCH ADDRESS	04	02573
003636			2574	FMLIT	BSS	1	TEMP STORE	04	02574
003637	125325	A	2575	FMLIUN	DATA	'*UNOS*'	DUMMY DIRECTORY ENTRY	04	02575
003640	147301	A							
003641	151652	A							
003642	000000	A	2576	DATA	0			04	02576
003643			2577	BSS	2			04	02577
	003643	R	2578	FMLIAA	EQU	*-2		04	02578
003645	000017	A	2579	FMLIH1	DATA	FMLIU-FMLIH1-1		04	02579
003646	003650	R	2580	DATA	*+2			04	02580
003647	000001	A	2581	DATA	1			04	02581
003650	130240	A	2582	DATA	'0 FILE DIRECTORY FOR LUN			04	02582
003651	143311	A							
003652	146305	A							
003653	120304	A							
003654	144722	A							
003655	142703	A							
003656	152317	A							
003657	151331	A							
003660	120306	A							
003661	147722	A							
003662	120314	A							
003663	152716	A							
003664	120240	A							
003665	000000	A	2583	FMLIU	DATA	0,0	LOGICAL UNIT NUMBER	04	02583
003666	000000	A							
			2584	EJEC				04	02584
			2585	*****				04	02585
			2586	*				04	02586
			2587	*				04	02587
			2588	*				04	02588
			2589	* FUNCTION: TO MOVE A BLOCK OF N WORDS FROM ADDRESS F TO ADDRESS T				04	02589
			2590	*				04	02590
			2591	* ENTRY: A = N				04	02591
			2592	*				04	02592
			2593	* CALLING SEQUENCE: JSR FMV,X				04	02593
			2594	* DATA F				04	02594
			2595	* DATA T				04	02595
			2596	*				04	02596
			2597	* EXIT : N WORDS MOVED FROM F TO T				04	02597
			2598	*				04	02598
			2599	*****				04	02599
003667	054056	A	2601	FMMV1	STA	FMMVC	SAVE MOVE COUNT	04	02601
003670	005211	A	2602	CPA				04	02602



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003671 005111 A 2603 IAR SET A=-A 04 02603
003672 004241 A 2604 LRLA 1 04 02604
003673 004341 A 2605 LSRA 1 04 02605
003674 054050 A 2606 STA FMMVT STORE AS LOOP COUNT 04 02606
003675 014044 A 2607 LDA FMMVFP GET F POINTER 04 02607
003676 144044 A 2608 SUB FMMVTP SUBTRACT T POINTER 04 02608
003677 001004 A 2609 JAN FMMVRE JUMP IF REVERSE MOVE 04 02609
003700 003715 R
003701 024040 A 2610 LDB FMMVFP LOAD B AS F POINTER 04 02610
003702 034040 A 2611 LDX FMMVTP LOAD X AS T POINTER 04 02611
003703 007400 A 2612 ROF CLEAR LOOP END FLAG 04 02612
2613 *****
2614 * MOVE FORWARD * 04 02614
2615 ***** 04 02615
003704 016000 A 2616 FMMVL LDA 0,B GET WORD 04 02616
003705 055000 A 2617 STA 0,X STORE WORD 04 02617
003706 005144 A 2618 IXR BUMP POINTERS 04 02618
003707 005122 A 2619 IBR 04 02619
003710 044034 A 2620 INR FMMVT BUMP LOOP COUNT 04 02620
003711 001007 A 2621 JOFN FMMVL LOOP UNTIL DONE 04 02621
003712 003704 R
003713 001000 A 2622 JMP* FMMVXX 04 02622
003714 103740 R
2623 ***** 04 02623
2624 * MOVE REVERSE * 04 02624
2625 ***** 04 02625
003715 003715 R 2626 FMMVRE EQU * 04 02626
003716 014024 A 2627 LDA FMMVFP GET F POINTER 04 02627
003717 124027 A 2628 ADD FMMVC ADD COUNT 04 02628
003718 005012 A 2629 TAB 04 02629
003720 014022 A 2630 LDA FMMVTP GET T POINTER 04 02630
003721 124024 A 2631 ADD FMMVC ADD COUNT 04 02631
003722 005014 A 2632 TAX 04 02632
003723 007400 A 2633 ROF CLEAR LOOP END FLAG 04 02633
003724 003724 R 2634 FMMVLX EQU * 04 02634
003725 005344 A 2635 DXR BUMP POINTERS 04 02635
003726 005322 A 2636 DBR 04 02636
003727 016000 A 2637 LDA 0,B GET WORD 04 02637
003728 055000 A 2638 STA 0,X STORE WORD 04 02638
003730 044014 A 2639 INR FMMVT BUMP LOOP COUNT 04 02639
003731 001007 A 2640 JOFN FMMVLX LOOP UNTIL DONE 04 02640
003732 003724 R
003733 001000 A 2641 JMP* FMMVXX 04 02641
003734 103740 R
2642 ***** 04 02642
2643 * ENTRY * 04 02643
2644 ***** 04 02644
003735 074002 A 2645 FMMV STX FMMVXX STORE EXIT 04 02645
003736 006505 A 2646 JSR FMPT,X XFER PARAMETERS 04 02646
003737 004457 R
003740 2647 FMMVXX BSS 1 EXIT ADDRESS 04 02647
003741 000002 A 2648 DATA 2 2 PARAMETERS 04 02648
003742 2649 FMMVFP BSS 1 F ADDRESS 04 02649
003743 2650 FMMVTP BSS 1 T ADDRESS 04 02650
003744 003667 R 2651 DATA FMMVI FMMV START ADDRESS 04 02651
2652 * 04 02652
003745 2653 FMMVT BSS 1 TEMP STORE 04 02653
003746 2654 FMMVC BSS 1 MOVE COUNT 04 02654
2655 EQUJ 04 02655
2656 ***** 04 02656
2657 * 04 02657
2658 * INPUT NAME ( FMNA ) * 04 02658
2659 * 04 02659
2660 * FUNCTION: TO INPUT AN ALPHAMERIC(OR '$') NAME, UP TO 6 CHARS, OR * 04 02660
2661 * TO A ',' BLANK, OR END-OF-LINE(EOL) * 04 02661
2662 * 04 02662
2663 * ENTRY: NO SPECIAL CONDITIONS * 04 02663
2664 * 04 02664
2665 * CALLING SEQUENCE: JSR FMNA,X * 04 02665
2666 * DATA ADDRESS OF SCAN BLOCK(SCB) (SEE FMIC) * 04 02666
2667 * DATA ADDRESS OF NAME(3-WORD BLOCK) * 04 02667
2668 * 04 02668
2669 * EXIT : A=0 IF NO ERROR * 04 02669
2670 * B=TERMINATING CHARACTER * 04 02670
2671 * NAME LEFT-JUSTIFIED, WITH BLANK FILL * 04 02671
2672 * OVFL SET IF FIELD EMPTY * 04 02672
2673 * 04 02673
2674 * ERRORS: A=1 IF INVALID CHAR IN NAME FIELD * 04 02674
2675 * A=1 IF MORE THAN 6 CHARS * 04 02675
2676 * 04 02676
2677 ***** 04 02677
003747 005001 A 2679 FMNA1 TZA 04 02679
003750 054143 A 2680 STA FMNAEF CLEAR ERROR FLAG 04 02680
003751 006505 A 2681 JSR FMNB,X SLEW THROUGH LEADING BLANKS 04 02681
003752 004133 R
003753 104103 R 2682 MZE FMNASC 04 02682
003754 001016 A 2683 JANZ FMNAE1 ERROR 1/ILLEGAL CHAR/ 04 02683
003755 004073 R
003756 006010 A 2684 LDAI 077772 04 02684
003757 077772 A
003760 054127 A 2685 STA FMNAC LOAD LOOP COUNT WITH -7 04 02685
2686 ***** 04 02686
2687 * INPUT/PACK LOOP * 04 02687

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2688 *****
003761 005021 A 2689 FMNAL TBA
003762 054127 A 2690 STA FMNAH LOAD INPUT CHAR INTO PACK CELL
003763 054127 A 2691 STA FMNAH+1 ALSO SAVE IT
003764 001004 A 2692 JAN FMNA2 PACK BLANK ON END OF LINE
003765 003774 R
003766 144122 A 2693 SUB FMNACH 04 02693
003767 001010 A 2694 JAZ FMNA2 PACK BLANK IF COMMA 04 02694
003770 003774 R
003771 144114 A 2695 SUB FMNA21 04 02695
003772 001016 A 2696 JANZ FMNAL1 PACK BLANK IF '=' 04 02696
003773 003776 R
003774 014112 A 2697 FMNA2 LDA FMNABL 04 02697
003775 054114 A 2698 STA FMNAH 04 02698
2699 *****
2700 * SHIFT PACK STRING LEFT 1 CHAR *
2701 *****
003776 034105 A 2702 FMNAL1 LDX FMNAPB POINT X AT PACK BLOCK 04 02702
003777 015000 A 2703 LDA 0,X 04 02703
004000 025001 A 2704 LDB 1,X 04 02704
004001 004450 A 2705 LLRL 8 04 02705
004002 055000 A 2706 STA 0,X WORD 0 04 02706
004003 015001 A 2707 LDA 1,X 04 02707
004004 025002 A 2708 LDB 2,X 04 02708
004005 004450 A 2709 LLRL 8 04 02709
004006 055001 A 2710 STA 1,X WORD 1 04 02710
004007 005021 A 2711 TBA 04 02711
004010 150462 A 2712 ANA LHW 04 02712
004011 114100 A 2713 ORA FMNAH 04 02713
004012 055002 A 2714 STA 2,X WORD 2 04 02714
004013 007400 A 2715 RFB 04 02715
004014 044073 A 2716 INR FMNAC BUMP LOOP COUNT 04 02716
004015 001001 A 2717 JOF FMNAX LOOP UNTIL DONE 04 02717
004016 004032 R
004017 014072 A 2718 LDA FMNAH 04 02718
004020 144066 A 2719 SUB FMNABL 04 02719
004021 001010 A 2720 JAZ FMNAL1 STOP SCAN IF BLANK PACKED 04 02720
004022 003776 R
004023 006505 A 2721 JSR FMIC,X GET NEXT CHAR 04 02721
004024 003222 R
004025 104103 R 2722 MZE FMNASC 04 02722
004026 001016 A 2723 JANZ FMNAE1 CHECK FOR ERROR 04 02723
004027 004073 R
004030 001000 A 2724 JMP FMNAL PROCESS NEXT CHAR 04 02724
004031 003761 R
2725 *****
2726 * END OF INPUT *
2727 *****
004032 014060 A 2728 FMNAX LDA FMNAH+1 GET LAST CHAR 04 02728
004033 005012 A 2729 TAB ALSO IN B 04 02729
004034 144054 A 2730 SUB FMNACH 04 02730
004035 001010 A 2731 JAZ FMNA4 COMMA OK 04 02731
004036 004060 R
004037 144046 A 2732 SUB FMNA21 04 02732
004040 001010 A 2733 JAZ FMNA4 '=' OK 04 02733
004041 004060 R
004042 006505 A 2734 JSR FMNB,X SLEW THRU BLANKS 04 02734
004043 004133 R
004044 104103 R 2735 MZE FMNASC 04 02735
004045 001016 A 2736 JANZ FMNAE1 CHECK FOR ERROR 04 02736
004046 004073 R
004047 005021 A 2737 TBA 04 02737
004050 001004 A 2738 JAN FMNA4 EOL OK 04 02738
004051 004060 R
004052 144036 A 2739 SUB FMNACH 04 02739
004053 001010 A 2740 JAZ FMNA4 COMMA OK 04 02740
004054 004060 R
004055 144030 A 2741 SUB FMNA21 04 02741
004056 001016 A 2742 JANZ FMNAE1 ERROR 1/ILLEGAL TERMINATOR/ 04 02742
004057 004073 R
2743 *****
2744 * EXIT *
2745 *****
004060 034023 A 2746 FMNA4 LDX FMNAPB 04 02746
004061 015000 A 2747 LDA 0,X GET 1ST WORD 04 02747
004062 006140 A 2748 SUBI ' 04 02748
004063 120240 A
004064 007401 A 2749 SDF SET OVFL ON EMPTY FIELD 04 02749
004065 001010 A 2750 JAZ *+3 EMPTY FIELD ? 04 02750
004066 004070 R
004067 007400 A 2751 RFB NO. RESET OVFL 04 02751
004070 014023 A 2752 LDA FMNAEF LOAD ERROR FLAG AT EXIT 04 02752
004071 001000 A 2753 JMP FMNAXX EXIT 04 02753
004072 104101 R
2754 *****
2755 * ERROR *
2756 *****
004073 044020 A 2757 FMNAE1 INR FMNAEF FLAG ERROR 04 02757
004074 001000 A 2758 JMP FMNA4 04 02758
004075 004060 R
2759 *****
2760 * ENTRY *
2761 *****

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004076	074002	A	2762	FMNA	STX	FMNAXX	SAVE EXIT	04	02762
004077	006505	A	2763		JSR	FMPT,X	XFER PARAMETERS	04	02763
004100	004457	R							
004101			2764	FMNAXX	BSS	1	EXIT ADDRESS	04	02764
004102	000002	A	2765		DATA	2	2 PARAMETERS	04	02765
004103			2766	FMNASC	BSS	1	SCAN BLOCK ADDRESS	04	02766
004104			2767	FMNAPB	BSS	1	NAME ADDRESS	04	02767
004105	003747	R	2768		DATA	FMNA1	FMNA START ADDRESS	04	02768
			2769	*				04	02769
004106	000021	A	2770	FMNA21	DATA	021	'=' - ','	04	02770
004107	000240	A	2771	FMNABL	DATA	0240	BLANK	04	02771
004110			2772	FMNAC	BSS	1	LOOP COUNT	04	02772
004111	000254	A	2773	FMNACM	DATA	0254	COMMA	04	02773
004112			2774	FMNAH	BSS	2	PACK CHARACTER	04	02774
004114			2775	FMNAEF	BSS	1	ERROR FLAG	04	02775
			2776		EJEC			04	02776
			2777	*				04	02777
			2778	*				04	02778
			2779	*				04	02779
			2780	*				04	02780
			2781	*				04	02781
			2782	*				04	02782
			2783	*				04	02783
			2784	*				04	02784
			2785	*				04	02785
			2786	*				04	02786
			2787	*				04	02787
			2788	*				04	02788
			2789	*				04	02789
			2790	*				04	02790
			2791	*				04	02791
			2792	*				04	02792
			2793	*				04	02793
			2795	*				04	02795
004115	006505	A	2795	FMNB1	JSR	FMIC,X	INPUT CHARACTER	04	02795
004116	003222	R							
004117	104140	R	2796		MZE	FMNBP		04	02796
004120	001016	A	2797		JANZ*	FMNBXX	EXIT ON ILLEGAL CHAR	04	02797
004121	104136	R							
004122	005021	A	2798		TBA			04	02798
004123	001004	A	2799		JAN	FMNBX	EXIT ON END OF BUFFER	04	02799
004124	004130	R							
004125	140000	L	2800		SUB	=0240		04	02800
004126	001010	A	2801		JAZ	FMNB1	IS CHAR A BLANK ?	04	02801
004127	004115	R							
004130	005001	A	2802	FMNBX	TZA		NO. SET A=0 TO FLAG OK	04	02802
004131	001000	A	2803		JMP*	FMNBXX	EXIT	04	02803
004132	104136	R							
004133	074002	A	2804	FMNB	STX	FMNBXX	SAVE EXIT	04	02804
004134	006505	A	2805		JSR	FMPT,X	XFER PARAMETERS	04	02805
004135	004457	F							
004136			2806	FMNBXX	BSS	1	EXIT	04	02806
004137	000001	A	2807		DATA	1	1 PARAMETER	04	02807
004140			2808	FMNBP	BSS	1	ADDRESS OF SCAN BLOCK	04	02808
004141	004115	R	2809		DATA	FMNB1	FMNB START ADDRESS	04	02809
			2810		EJEC			04	02810
			2811	*				04	02811
			2812	*				04	02812
			2813	*				04	02813
			2814	*				04	02814
			2815	*				04	02815
			2816	*				04	02816
			2817	*				04	02817
			2818	*				04	02818
			2819	*				04	02819
			2820	*				04	02820
			2821	*				04	02821
			2822	*				04	02822
			2823	*				04	02823
			2824	*				04	02824
			2825	*				04	02825
			2826	*				04	02826
			2827	*				04	02827
			2828	*				04	02828
			2829	*				04	02829
004142	005001	A	2831	FMNU1	TZA			04	02831
004143	054120	A	2832		STA	FMNUM	CLEAR COUNTER	04	02832
004144	054116	A	2833		STA	FMNUEF	CLEAR ERROR FLAG	04	02833
004145	010424	A	2834		LDA	EIGHT		04	02834
004146	054116	A	2835		STA	FMNUR	SET RADIX TO 8	04	02835
004147	006010	A	2836		LDAI	4096		04	02836
004150	010000	A						E.2	*****
004151	054030	A	2837		STA	FMN1		E.2	*****
004152	006505	A	2838		JSR	FMNB,X	SLEW THRU BLANKS	04	02838
004153	004133	R							
004154	104260	R	2839		MZE	FMNUSC		04	02839
004155	001016	A	2840		JANZ	FMNUE1	ERROR 1/ILLEGAL CHAR/	04	02840
004156	004240	R							
004157	005021	A	2841		TBA			04	02841
004160	140000	L	2842		SUB	=0260		04	02842
004161	001010	A	2843		JAZ	FMNUL1	1ST DIGIT = '0'	04	02843
004162	004170	R							
004163	010471	A	2844		LDA	TEN	NO	04	02844
004164	054180	A	2845		STA	FMNUR	SET RADIX TO 10	04	02845



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004165 006010 A 2846 LDAI 3277
004166 006315 A
004167 054012 A 2847 STA FMN1
2848 *****
2849 * PROCESS NUMERIC STRING *
2850 *****
004170 005021 A 2851 FMNUL1 TBA
004171 140000 L 2852 SUB =0260
004172 001004 A 2853 JAN FMNUX EXIT IF NON-NUMERIC
004173 004216 R
004174 054071 A 2854 STA FMNUT CONVERT ASCII DIGIT TO BINARY
004175 140471 A 2855 SUB TEN
004176 001002 A 2856 JAP FMNUX EXIT IF NON-NUMERIC
004177 004216 R
004200 014063 A 2857 LDA FMNUM GET COUNTER
004201 006140 A 2858 SUBI 3277 TEST SIZE
004202 006315 A
004202 2859 FMN1 BES 0
004203 001002 A 2860 JAP FMNUE1 ERROR 1/NUMBER TOO LARGE/
004204 004240 R
004205 014060 A 2861 LDA FMNUT
004206 024055 A 2862 LDB FMNUM
004207 164055 A 2863 MUL FMNUR 10*COUNTER + NEW DIGIT
004210 064053 A 2864 STB FMNUM RESTORE COUNTER
004211 006505 A 2865 JSR FMIC,X INPUT NEXT CHAR
004212 003222 R
004213 104260 R 2866 MZE FMNUSC
004214 001000 A 2867 JMP FMNUL1 LOOP TILL DONE
004215 004170 R
2868 *****
2869 * TERMINATE FIELD *
2870 *****
004216 005021 A 2871 FMNUX TBA
004217 140000 L 2872 SUB =0240
004220 001016 A 2873 JANZ *+7 BLANK ?
004221 004227 R
004222 006505 A 2874 JSR FMNB,X YES. SLEW THRU BLANKS
004223 004133 R
004224 104260 R 2875 MZE FMNUSC
004225 001016 A 2876 JANZ FMNUE1 ERROR 1/ILLEGAL CHAR/
004226 004240 R
004227 005021 A 2877 TBA
004230 001004 A 2878 JAN FMNUY EXIT ON BUFFER END
004231 004241 R
004232 140000 L 2879 SUB =0254
004233 001010 A 2880 JAZ FMNUY COMMA OK
004234 004241 R
004235 140000 L 2881 SUB =021
004236 001010 A 2882 JAZ FMNUY '=' OK
004237 004241 R
2883 *****
2884 * ERROR *
2885 *****
004240 044022 A 2886 FMNUE1 INR FMNUEF SET ERROR FLAG
2887 *****
2888 * END OF STRING *
2889 *****
004241 034017 A 2890 FMNUY LDX FMNUM
004242 014021 A 2891 LDA FMNUM
004243 055000 A 2892 STA 0,X STORE NUMBER
004244 007401 A 2893 SOF SET OVFL IF NUMBER=0
004245 001010 A 2894 JAZ *+3
004246 004250 R
004247 007400 A 2895 ROF
004250 014012 A 2896 LDA FMNUEF LOAD ERROR FLAG AT EXIT
004251 001000 A 2897 JMP* FMNUXX EXIT
004252 104256 R
004253 074002 A 2898 FMNU STX FMNUXX SAVE EXIT
004254 006505 A 2899 JSR FMPT,X XFER PARAMETERS
004255 004457 R
004256
004257 000002 A 2900 FMNUXX BSS 1 EXIT ADDRESS
004260 2901 DATA 2 2 PARAMETERS
004261 2902 FMNUSC BSS 1 ADDRESS OF SCAN BLOCK
004262 004142 R 2903 FMNUM BSS 1 ADDRESS OF NUMBER
2904 DATA FMNU1 FMNU START ADDRESS
2905 *
004263 2906 FMNUEF BSS 1 ERROR FLAG
004264 2907 FMNUM BSS 1 BINARY CONVERSION COUNTER
004265 2908 FMNUR BSS 1 RADIX
004266 2909 FMNUT BSS 1 TEMP STORE
2910 EJEC
2911 *****
2912 *
2913 * OUTPUT COLUMN HEADER ( FMDC ) *
2914 *
2915 * FUNCTION: TO OUTPUT THE COLUMN HEADER FOR FMAIN LISTINGS *
2916 *
2917 * ENTRY: NO SPECIAL CONDITIONS *
2918 *
2919 * CALLING SEQUENCE: JSR FMDC,X *
2920 * DATA ADDRESS OF LINE COUNTER *
2921 *
2922 * EXIT : A=0 IF NO ERRORS *

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2923 *
2924 * ERRORS: A=5 ON I/O ERROR
2925 *
2926 *****
004267 006505 A 2928 FMDC1 JSR FMWL,X OUTPUT LINE TO LD
004270 005342 R
004271 004311 R 2929 PZE FMCH
004272 104307 R 2930 MZE FMDCLC
004273 001016 A 2931 JANZ* FMDCXX EXIT ON I/O ERROR
004274 104305 R
004275 006505 A 2932 JSR FMFL,X LINE FEED
004276 003320 R
004277 104307 R 2933 MZE FMDCLC
004300 001000 A 2934 JMP* FMDCXX EXIT
004301 104305 R

2935 *****
2936 * ENTRY *
2937 *****
004302 074002 A 2938 FMDC STX FMDCXX STORE RETURN
004303 006505 A 2939 JSR FMPT,X XFER PARAMETER
004304 004457 R
004305
2940 FMDCXX BSS 1, RETURN ADDRESS
004306 000001 A 2941 DATA 1 1 PARAMETER
004307
2942 FMDCLC BSS 1 ADDRESS OF LINE COUNTER
004310 004267 R 2943 DATA FMDC1 START OF FMDC
2944 *****
2945 * FMAIN COLUMN HEAD DCB *
2946 *****
004311 000021 A 2947 FMCH DATA FMCH2-FMCH1
004312 004314 R 2948 DATA FMCH1
004313 000001 A 2949 DATA 1
004314 120240 A 2950 FMCH1 DATA ' FILE NAME START END CURRENT'
004315 143311 A 2951 DATA
004316 146305 A
004317 120316 A
004320 140715 A
004321 142640 A
004322 120323 A
004323 152301 A
004324 151324 A
004325 120240 A
004326 120240 A
004327 120305 A
004330 147304 A
004331 120303 A
004332 152722 A
004333 151305 A
004334 147324 A
004335 R

2952 FMCH2 EQU *
2953 EJEC
2954 *****
2955 *
2956 * OUTPUT FILE LINE ( F M D F )
2957 *
2958 * FUNCTION: TO OUTPUT A LINE TO THE LD DEVICE WITH A FILE NAME AND
2959 * EXTENT
2960 *
2961 *
2962 * ENTRY: NO SPECIAL CONDITIONS
2963 *
2964 * CALLING SEQUENCE: JSR FMDF,X
2965 * DATA ADDRESS OF FILE NAME ENTRY
2966 * DATA ADDRESS OF LINE COUNTER
2967 *
2968 * EXIT : A=0 IF NO ERROR
2969 *
2970 * ERRORS: A=5 IF I/O ERROR
2971 *
2972 *****
2973 *****
2974 * CLEAR BUFFER *
2975 *****
2976 *****
004335 006030 A 2977 FMDF1 LDXI FMDFBF
004336 004435 R
004337 020000 L 2978 LDB = ' '
004340 065000 A 2979 FMDFL STB 0,X STORE BLANKS IN BUFFER
004341 005145 A 2980 INCR 045
004342 006140 A 2981 SUBI FMDFBE
004343 004456 R
004344 001004 A 2982 JAN FMDFL TEST LOOP END
004345 004340 R

2983 *****
2984 * LOAD FILE NAME *
2985 *****
004346 010464 A 2986 LDA THREE
004347 006505 A 2987 JSR FMNV,X MOVE NAME TO BUFFER
004350 003735 R
004351 104427 R 2988 MZE FMDFBP
004352 004436 A 2989 PZE FMDFBF+1
004353 014053 R 2990 LDA FMDFBP
004354 120464 A 2991 ADD THREE BUMP BUFFER POINTER
004355 054051 A 2992 STA FMDFBP
2993 *****
2994 *****

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2994 * LOAD CURRENT EOF SECTOR *
2995 *****
004356 005001 A 2996 TZA REQUEST OCTAL
004357 006505 A 2997 JSR FMBA,X CONVERT TO ASCII DIGIT STRING
004360 001061 R
004361 104427 R 2998 MZE FMDFBP
004362 074073 A 2999 STX FMDFB SAVE STRING ADDRESS
004363 010464 A 3000 LDA THREE
004364 006505 A 3001 JSR FMV,X MOVE CURRENT STRING TO BUFFER
004365 003735 R
004366 104456 R 3002 MZE FMDFB
004367 004453 R 3003 PZE FMDFB+14
3004 *****
3005 * LOAD START SECTOR *
3006 *****
004370 044036 A 3007 INR FMDFBP BUMP BUFFER POINTER
004371 005001 A 3008 TZA REQUEST OCTAL
004372 006505 A 3009 JSR FMBA,X CONVERT TO ASCII DIGIT STRING
004373 001061 R
004374 104427 R 3010 MZE FMDFBP
004375 010464 A 3011 LDA THREE
004376 006505 A 3012 JSR FMV,X MOVE START STRING TO BUFFER
004377 003735 R
004400 104456 R 3013 MZE FMDFB
004401 004443 R 3014 PZE FMDFB+6
3015 *****
3016 * LOAD END SECTOR *
3017 *****
004402 044024 A 3018 INR FMDFBP BUMP BUFFER POINTER
004403 005001 A 3019 TZA REQUEST OCTAL
004404 006505 A 3020 JSR FMBA,X CONVERT TO ASCII DIGIT STRING
004405 001061 R
004406 104427 R 3021 MZE FMDFBP
004407 010464 A 3022 LDA THREE
004410 006505 A 3023 JSR FMV,X MOVE END STRING TO BUFFER
004411 003735 R
004412 104456 R 3024 MZE FMDFB
004413 004447 R 3025 PZE FMDFB+10
3026 *****
3027 * WRITE LINE TO LD DEVICE *
3028 *****
004414 006505 A 3029 JSR FMWL,X
004415 005342 R
004416 004432 R 3030 PZE FMDFDC
004417 104430 R 3031 MZE FMDFLC
004420 001000 A 3032 JMP FMDFXX EXIT
004421 104425 R
3033 *****
3034 * ENTRY *
3035 *****
004422 074002 A 3036 FMDF STX FMDFXX STORE EXIT
004423 006505 A 3037 JSR FMPT,X XFER PARAMETERS
004424 004457 R
004425 3038 FMDFXX BSS 1 EXIT ADDRESS
004426 000002 A 3039 DATA 2 2 PARAMETERS
004427 3040 FMDFBP BSS 1 BUFFER POINTER
004430 3041 FMDFLC BSS 1 LINE COUNTER
004431 004335 R 3042 DATA FMDF1 FMDF START ADDRESS
004432 000021 A 3043 FMDFDC DATA 17 BUFFER SIZE
004433 004435 R 3044 DATA *+2
004434 000001 A 3045 DATA 1
004435 3046 FMDFBF BSS 17 LIST BUFFER
004456 004456 R 3047 FMDFBE EQU *
3048 FMDFB BSS 1 TEMP STORE
3049 EJEK
3050 *****
3051 *
3052 * P A R A M E T E R T R A N S F E R ( F M P T )
3053 *
3054 * FUNCTION: TO TRANSFER PARAMETERS FROM A CALLING PROGRAM 1 TO A
3055 * CALLED PROGRAM 2, WHICH CALLS FMPT.
3056 *
3057 * ENTRY: NO SPECIAL CONDITIONS
3058 *
3059 * CALLING SEQUENCE: JSR FMPT,X
3060 * DATA ADDRESS OF CALL SEQ OF PROG 1
3061 * DATA N (PARAMETER COUNT)
3062 * BSS N (FMPT STORES PARAMETERS HERE)
3063 * DATA ADDRESS OF FMPT EXIT
3064 *
3065 * EXIT : A,B SAVED
3066 * PROG 2 EXIT SAVED
3067 *
3068 *****
3070 *****
3071 * SAVE A,B *
3072 *****
004457 054036 A 3073 FMPT STA FMPTA SAVE A
004460 064036 A 3074 STB FMPTB SAVE B
3075 *****
3076 * INITIALIZE TRANSFER LOOP *
3077 *****
004461 015000 A 3078 LDA 0,X

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004462 054036 A 3079 STA FMPTS1 SAVE POINTER TO CALL SEQ 1 04 03074
004463 005042 A 3080 TXB 04 03075
004464 005144 A 3081 IXR 04 03076
004465 015000 A 3082 LDA 0,X 04 03077
004466 054031 A 3083 STA FMPTN SAVE PARAMETER COUNT 04 03078
004467 124031 A 3084 ADD FMPTS1 04 03079
004470 056000 A 3085 STA 0,B BUMP PROG 2 EXIT BY N 04 03080
004471 005144 A 3086 IXR 04 03081
3087 *****
3088 * LOOP TO PROCESS NEXT PARAMETER * 04 03082
3089 *****
004472 024026 A 3090 FMPTL1 LDB FMPTS1 POINT B AT CALL SEQ 1 04 03083
3091 *****
3092 * LOOP TO RESOLVE INDIRECTS * 04 03084
3093 *****
004473 016000 A 3094 FMPTL2 LDA 0,B GET PARAMETER 04 03085
004474 001002 A 3095 JAP FMPT2 INDIRECT ? 04 03086
004475 004501 R 04 03087
004476 005012 A 3096 TAB YES. FOLLOW DOWN INDIRECT CHAIN 04 03088
004477 001000 A 3097 JMP FMPTL2 04 03089
004500 004473 R 04 03090
004501 055000 A 3098 FMPT2 STA 0,X STORE PARAMETER IN CALL SEQ 2 04 03091
004502 044016 A 3099 INR FMPTS1 BUMP CALL SEQ 1 POINTER 04 03092
004503 005144 A 3100 IXR BUMP CALL SEQ 2 POINTER 04 03093
004504 014013 A 3101 LDA FMPTN 04 03094
004505 005311 A 3102 DAR DECREMENT PARAMETER COUNT 04 03095
004506 034011 A 3103 STA FMPTN 04 03096
004507 001016 A 3104 JANZ FMPTL1 LOOP TILL DONE 04 03097
004510 004472 R 04 03098
3105 *****
3106 * DONE - RESTORE REGS AND EXIT * 04 03099
3107 *****
004511 014004 A 3108 LDA FMPTA 04 03100
004512 024004 A 3109 LDB FMPTB 04 03101
004513 035000 A 3110 LDX 0,X 04 03102
004514 006705 A 3111 IJMP 0,X EXIT 04 03103
004515 000000 A 04 03104
004516 3112 FMPTA BSS 1 SAVE A 04 03105
004517 3113 FMPTB BSS 1 SAVE B 04 03106
004520 3114 FMPTN BSS 1 PARAMETER COUNT 04 03107
004521 3115 FMPTS1 BSS 1 POINTER TO CALL SEQ 1 04 03108
3116 EJEC 04 03109
3117 *****
3118 * 04 03110
3119 * PROCESS RENAME ( FMRE ) * 04 03111
3120 * 04 03112
3121 * FUNCTION: TO RENAME A FILE * 04 03113
3122 * 04 03114
3123 * ENTRY: NO SPECIAL CONDITIONS * 04 03115
3124 * 04 03116
3125 * CALLING SEQUENCE: JSR FMRE,X * 04 03117
3126 * DATA ADDRESS OF COMMAND BLOCK(CB) * 04 03118
3127 * DATA FCB ADDRESS * 04 03119
3128 * DATA 0 * 04 03120
3129 * 04 03121
3130 * COMMAND BLOCK: WORD 0: LOGICAL UNIT NUMBER * 04 03122
3131 * WORD 1: KEY * 04 03123
3132 * WORDS 2-4: OLD NAME * 04 03124
3133 * WORDS 5-7: NEW NAME * 04 03125
3134 * 04 03126
3135 * EXIT : A=0 IF NO ERRORS * 04 03127
3136 * 04 03128
3137 * ERRORS: A=1 ON LUN OR KEY ERROR * 04 03129
3138 * A=2 IF NEW NAME ALREADY IN DIRECTORY * 04 03130
3139 * A=3 IF OLD NAME NOT IN DIRECTORY * 04 03131
3140 * A=5 ON I/O ERROR * 04 03132
3141 * A=6 IN DIRECTORY STRUCTURE ERROR * 04 03133
3142 * 04 03134
3143 *****
004522 005001 A 3145 FMRE1 TZA 04 03135
004523 054134 A 3146 STA FMREF CLEAR ERROR FLAG 04 03136
004524 010422 A 3147 LDA TWO 04 03137
004525 054130 A 3148 STA FMREAA INITIALIZE NEXT AVAIL RECORD TO 2 04 03138
3149 *****
3150 * GET FILE PARAMETERS * 04 03139
3151 *****
004526 006505 A 3152 JSR FMFA,X MAKE FILE ACCESS 04 03140
004527 002433 R 04 03141
004530 104652 R 3153 MZE FMRECB 04 03142
004531 104653 R 3154 MZE FMREFC 04 03143
004532 074130 A 3155 STX FMREPB SAVE ADDRESS OF POINTER BLOCK 04 03144
004533 001010 A 3156 JAZ *+5 ERPOR ? 04 03145
004534 004540 R 04 03146
004535 044122 A 3157 INR FMREF YES. SET FLAG AND EXIT 04 03147
004536 001000 A 3158 JMP FMREX2 E.1 *****
004537 004633 R 04 03148
3159 *****
3160 * SEARCH DIRECTORY FOR NEW NAME * 04 03149
3161 *****
004540 006505 A 3162 JSR FMRA,X REWIND DIRECTORY 04 03150
004541 004745 R 04 03151
004542 104652 R 3163 MZE FMRECB 04 03152
004543 104653 R 3164 MZE FMREFC 04 03153

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004544 004657 R 3165 PZE FMREBP
004545 001016 A 3166 JANZ FMREE CHECK FOR ERROR 04 03160
004546 004642 R 3167 LDA FMRECB 04 03162
004550 120422 A 3168 ADD TWO 04 03163
004551 054107 A 3169 STA FMRENA LOAD ADDRESS OF OLD NAME 04 03164
004552 120464 A 3170 ADD THREE 04 03165
004553 054106 A 3171 STA FMRENA+1 LOAD ADDRESS OF NEW NAME 04 03166
004554 006505 A 3172 JSR FMSD,X SEARCH FOR NEW NAME 04 03167
004555 005032 R 3173 MZE FMRENA+1 04 03168
004556 104662 R 3174 MZE FMRECB 04 03169
004560 104653 R 3175 MZE FMREFC 04 03170
004561 104663 R 3176 MZE FMREPB 04 03171
004562 004657 R 3177 PZE FMREBP 04 03172
004563 004656 R 3178 PZE FMREAA 04 03173
004564 001016 A 3179 JANZ FMREE CHECK FOR ERROR E 04 03174
004565 004642 R 3180 JOF FMREE2 ERROR 2/NEW NAME ALREADY IN DIRECTORY/ 04 03175
004566 001001 A 3181 ***** 04 03176
004567 004636 R 3182 * SEARCH DIRECTORY FOR OLD NAME * 04 03177
3183 ***** 04 03178
004570 006505 A 3184 JSR FMRW,X REWIND DIRECTORY 04 03179
004571 004743 R 3185 MZE FMRECB 04 03180
004572 104652 R 3186 MZE FMREFC 04 03181
004573 104653 R 3187 PZE FMREBP 04 03182
004574 004657 A 3188 JANZ FMREE CHECK FOR ERROR 04 03183
004575 001016 A 3189 JSR FMSD,X SEARCH FOR OLD NAME 04 03184
004576 004642 R 3190 MZE FMRENA 04 03185
004577 006505 A 3191 MZE FMRECB 04 03186
004600 005032 R 3192 MZE FMREFC 04 03187
004601 104661 R 3193 MZE FMREPB 04 03188
004602 104652 R 3194 PZE FMREBP 04 03189
004603 104653 R 3195 PZE FMREAA 04 03190
004604 104663 R 3196 JANZ FMREE CHECK FOR ERROR E 04 03191
004605 004657 R 3197 JOFN FMREE3 ERROR 3/OLD NAME NOT IN DIRECTORY/ 04 03192
004606 004656 R 3198 LDA THREE 04 03193
004607 001016 A 3199 JSR FMV,X MOVE NEW NAME INTO BUFFER 04 03194
004610 004642 R 3200 MZE FMRENA+1 04 03195
004611 001007 A 3201 MZE FMREBP 04 03196
004612 004641 R 3202 JSR FMWR,X WRITE TO RMD 04 03197
004613 010464 A 3203 MZE FMRECB 04 03198
004614 006505 A 3204 MZE FMREFC 04 03199
004615 003735 R 3205 JANZ FMREE CHECK FOR ERROR 04 03200
004616 104662 R 3206 ***** 04 03201
004617 104657 R 3207 * CLEAR LOCKOUT BIT AND EXIT * 04 03202
004620 006505 A 3208 ***** 04 03203
004621 005611 R 3209 FMREX LDX FMREPB 04 03204
004622 104652 R 3210 LDX 0,X POINT X AT DST 04 03205
004623 104653 R 3211 LDA 2,X 04 03206
004624 001016 A 3212 ANA BR12 CLEAR LOCKOUT BIT 04 03207
004625 004642 R 3213 STA 2,X 04 03208
004626 034034 A 3214 FMREX2 LDA FMREFE LOAD A WITH ERROR FLAG E.1 *****
004627 035000 A 3215 ***** 04 03210
004630 015002 A 3216 JMP FMREXX EXIT 04 03211
004631 150455 A 3217 * ERRORS * 04 03212
004632 055002 A 3218 ***** 04 03213
004633 014024 A 3219 FMREE2 LDA TWO 04 03214
004634 001000 A 3220 JMP FMREE 04 03215
004635 104650 R 3221 FMREE3 LDA THREE 04 03216
004636 010422 A 3222 FMREE STA FMREFE LOAD ERROR FLAG 04 03217
004637 001000 A 3223 JMP FMREX 04 03218
004640 004642 R 3224 ***** 04 03219
004641 010464 A 3225 * ENTRY * 04 03220
004642 054015 A 3226 ***** 04 03221
004643 001000 A 3227 FMRE STX FMREXX STORE EXIT 04 03222
004644 004626 R 3228 JSR FMPT,X XFER PARAMETERS 04 03223
004645 074002 A 3229 FMREXX BSS 1 EXIT ADDRESS 04 03224
004646 006505 A 3230 DATA 3 3 PARAMETERS 04 03225
004647 004457 R 3231 FMRECB BSS 1 COMMAND BLOCK ADDRESS 04 03226
004650 000003 A 3232 FMREFC BSS 2 FCB ADDRESS 04 03227
004651 004522 R 3233 DATA FMRE1 FMRE START ADDRESS 04 03228
004652 000003 A 3234 FMREAA BSS 1 NEXT AVAIL ADDRESS 04 03229
004653 004522 R 3235 FMREBP BSS 1 BUFFER POINTER 04 03230
004654 004522 R 3236 FMREFE BSS 1 ERROR FLAG 04 03231
004655 004522 R 3237 FMRENA BSS 2 FILE NAME POINTERS 04 03232
004656 004522 R 3238 FMREPB BSS 1 ADDRESS OF POINTER BLOCK 04 03233
004657 004522 R 3239 EJEC 04 03234
004660 004522 R 3240 ***** 04 03235
004661 004522 R 3241 * 04 03236

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004747 004457 R
004750 004751 000003 A 3318 FMRWXX BSS 1 EXIT ADDRESS 04 03313
004752 004753 004754 004755 004733 R 3319 DATA 3 3 PARAMETERS 04 03314
3320 FMRWLU BSS 1 LUN ADDRESS 04 03315
3321 FMRWFC BSS 1 FCB ADDRESS 04 03316
3322 FMRWBP BSS 1 BUFFER POINTER ADDRESS 04 03317
3323 DATA FMRW1 04 03318
3324 EJEC 04 03319
3325 ***** 04 03320
3326 * 04 03321
3327 * SEARCH DIRECTORY ( FMSD ) * 04 03322
3328 * * 04 03323
3329 * FUNCTION: TO SEARCH FORWARD IN FILE DIRECTORY FOR A FILE NAME * 04 03324
3330 * * 04 03325
3331 * ENTRY: NO SPECIAL CONDITIONS * 04 03326
3332 * * 04 03327
3333 * CALLING SEQUENCE: JSR FMSD,X * 04 03328
3334 * DATA ADDRESS OF NAME * 04 03329
3335 * DATA ADDRESS OF LUN * 04 03330
3336 * DATA FCB ADDRESS * 04 03331
3337 * DATA POINTER BLOCK ADDRESS(SEE FMGP) * 04 03332
3338 * DATA ADDRESS OF BUFFER POINTER * 04 03333
3339 * DATA ADDRESS OF NEXT AVAIL RMD RECORD * 04 03334
3340 * * 04 03335
3341 * EXIT : A=0 IF NO ERRORS * 04 03336
3342 * OVFL SET ON FIND, RESET OTHERWISE * 04 03337
3343 * X=ADDRESS(IN BUFFER) OF FILE NAME * 04 03338
3344 * * 04 03339
3345 * ERRORS: A=5 IF I/O ERROR * 04 03340
3346 * A=6 IF DIRECTORY STRUCTURE ERROR * 04 03341
3347 * * 04 03342
3348 ***** 04 03343
004756 006505 A 3350 FMSD1 JSR FMFF,X GET NEXT FILE NAME 04 03345
004757 002604 R
004760 105040 R 3351 MZE FMSDLU 04 03346
004761 105041 R 3352 MZE FMSDFC 04 03347
004762 105042 R 3353 MZE FMSDPB 04 03348
004763 105043 R 3354 MZE FMSDBP 04 03349
004764 105044 R 3355 MZE FMSDAA 04 03350
004765 001016 A 3356 JANZ* FMSDXX EXIT ON ERROR 04 03351
004766 105035 R
004767 001001 A 3357 JDF FMSDX EXIT ON EOF 04 03352
004770 005012 R
004771 001020 A 3358 JBZ FMSD1 SKIP ZERO ENTRIES 04 03353
004772 004756 R
004773 074053 A 3359 STX FMSDBF SAVE BUFFER ADDRESS 04 03354
004774 015005 A 3360 LDA 3,X GET END ADDR+1 04 03355
004775 034046 A 3361 LDX FMSDAA 04 03356
004776 145000 A 3362 SUB 0,X 04 03357
004777 001004 A 3363 JAN *+4 COMPARE WITH NEXT AVAILABLE 04 03358
005000 005003 R
005001 125000 A 3364 ADD 0,X 04 03359
005002 055000 A 3365 STA 0,X UPDATE NEXT AVAILABLE ADDRESS 04 03360
005003 006505 A 3366 JSR FMCN,X COMPARE NAMES 04 03361
005004 001132 R
005005 105037 R 3367 MZE FMSDNA 04 03362
005006 105047 R 3368 MZE FMSDBF 04 03363
005007 001007 A 3369 JDFN FMSD1 MATCH ? 04 03364
005010 004756 R
005011 005101 A 3370 FMSDX INCR 1 YES 04 03365
005012 054033 A 3371 FMSDFL SAVE EXIT FLAG 04 03366
005013 024025 A 3372 FMSDFC POINT B AT FCB 04 03367
005014 034027 A 3373 FMSDAA 04 03368
005015 016003 A 3374 LDA 3,B 04 03369
005016 145000 A 3375 SUB 0,X 04 03370
005017 001004 A 3376 JAN *+4 04 03371
005020 005023 R
005021 125000 A 3377 ADD 0,X 04 03372
005022 055000 A 3378 STA 0,X UPDATE NEXT AVAILABLE ADDRESS 04 03373
005023 010460 A 3379 LDA BR15 04 03374
005024 007400 A 3380 ROF 04 03375
005025 124020 A 3381 ADD FMSDFL LOAD OVFL 04 03376
005026 005001 A 3382 TZA SET A=0 TO FLAG NO ERROR 04 03377
005027 034017 A 3383 LDX FMSDBF POINT X AT ITEM AT EXIT 04 03378
005030 001000 A 3384 JMP* FMSDXX EXIT 04 03379
005031 105035 R
3385 ***** 04 03380
3386 * ENTRY * 04 03381
3387 ***** 04 03382
005032 074002 A 3388 FMSD STX FMSDXX STORE EXIT 04 03383
005033 006505 A 3389 JSR FMPT,X XFER PARAMETERS 04 03384
005034 004457 R
005035 3390 FMSDXX BSS 1 EXIT ADDRESS 04 03385
005036 000006 A 3391 DATA 6 6 PARAMETERS 04 03386
005037 3392 FMSDNA BSS 1 ADDRESS OF NAME 04 03387
005040 3393 FMSDLU BSS 1 ADDRESS OF LUN 04 03388
005041 3394 FMSDFC BSS 1 FCB ADDRESS 04 03389
005042 3395 FMSDPB BSS 1 POINTER BLOCK ADDRESS 04 03390
005043 3396 FMSDBP BSS 1 BUFFER POINTER ADDRESS 04 03391
005044 3397 FMSDAA BSS 1 ADDRESS OF NEXT AVAIL RECORD 04 03392
005045 004756 R 3398 DATA FMSD1 FMSD START ADDRESS 04 03393
005046 3399 FMSDFL BSS 1 EXIT FLAG 04 03394
005047 3400 FMSDBF BSS 1 ADDRESS OF NAME IN BUFFER 04 03395

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3401          EJEC
3402 *****
3403 *
3404 *   O U T P U T   V O R T E X   H E A D E R ( F M V H I , F M V H )
3405 *
3406 *   F U N C T I O N :   T O   P R O C E S S   O U T P U T   O F   T H E   S T A N D A R D   V O R T E X   H E A D E R .
3407 *
3408 *   E N T R Y :   F M V H I ( I N I T I A L I Z E D )
3409 *               F M V H ( O U T P U T )
3410 *
3411 *   C A L L I N G   S E Q U E N C E :   J S R   F M V H ( O R   F M V H I ) , X
3412 *               D A T A   A D D R E S S   O F   L I N E   C O U N T E R
3413 *
3414 *   E X I T   :   F M V H I :   P A G E   N O   F I E L D   F M P N = '   0 '
3415 *               D A T E   L O A D E D   F R O M   V $ D A T E
3416 *               J O B   N A M E   L O A D E D   F R O M   V $ J N A M
3417 *               L I N E   C O U N T = - 1   T O   F L A G   P A G E   E N D
3418 *
3419 *               F M V H :   P A G E   N O   I N C R E M E N T E D
3420 *               L I N E   C O U N T = V $ L C N T - 3
3421 *
3422 *   E R R O R S :   A = 5   O N   F M V H   E X I T   I F   I / O   E R R O R
3423 *
3424 *****
3425 *****
3426 *****
3427 *   I N I T I A L I Z E   E N T R Y   *
3428 *****
005050 010000 L 3429 FMVHI1 LDA      = ' '
005051 034070 A 3430          STA      FMPN
005052 110425 A 3431          ORA      BS4          LOAD PAGE NUMBER FIELD WITH ' 0 '
005053 034067 A 3432          STA      FMPN+1
005054 005301 A 3433          DECR     1
005055 034050 A 3434          LDX      FMVHLC
005056 055000 A 3435          STA      0,X          SET LINE COUNT TO -1 TO FLAG PAGE END
005057 010423 A 3436          LDA      FOUR
005060 006505 A 3437          JSR      FMV,X        MOVE DATE STRING TO HEADER
005061 003735 R
005062 000070 A 3438          DATA   V$DATE
005063 005145 R 3439          DATA   FMDA
005064 010423 A 3440          LDA      FOUR
005065 006505 A 3441          JSR      FMV,X        MOVE JOB NAME STRING TO LIST HEADER
005066 003735 R
005067 000050 A 3442          DATA   V$JNAM
005070 005152 R 3443          DATA   FMJM
005071 001000 A 3444          JMP*     FMVHXX        EXIT
005072 105124 R
3445 *****
3446 *   O U T P U T   H E A D E R   E N T R Y   *
3447 *****
005073 006505 A 3448 FMVHI1 JSR      FMDS,X        BUMP PAGE NUMBER
005074 002152 R
005075 005142 R 3449          DATA   FMPN
005076 006505 A 3450          JSR      FMWL,X        WRITE HEADER
005077 005342 R
005100 005134 R 3451          PZE     FMHD
005101 105126 R 3452          MZE     FMVHLC
005102 001016 A 3453          JANZ*   FMVHXX        EXIT ON I/O ERROR
005103 105124 R
005104 034021 A 3454          LDX      FMVHLC
005105 010054 A 3455          LDA      V$LCNT
005106 140464 A 3456          SUB     THREE
005107 055000 A 3457          STA      0,X          RELOAD LINE COUNT
005110 006505 A 3458          JSR      FMLF,X        LINE FEED
005111 003320 R
005112 105126 R 3459          MZE     FMVHLC
005113 001000 A 3460          JMP*     FMVHXX        EXIT
005114 105124 R
3461 *****
3462 *   E N T R I E S   *
3463 *****
005115 005001 A 3464 FMVH   TZA          SET A=0 TO FLAG FMVH ENTRY
005116 001000 A 3465          JMP     *+3
005117 005121 R
005120 005301 A 3466 FMVHI  DECR     1          SET A=-1 TO FLAG FMVHI ENTRY
005121 074002 A 3467          STX     FMVHXX        SAVE RETURN
005122 006505 A 3468          JSR     FMPT,X        XFER PARAMS
005123 004457 R
005124          3469 FMVHXX BSS     1          EXIT
005125 000001 A 3470          DATA  1          1 PARAMETER
005126          3471 FMVHLC BSS     1          ADDRESS OF LINE COUNTER
005127 005130 R 3472          DATA  *+1
005130 001010 A 3473          JAZ     FMVHI        TEST ENTRY SWITCH
005131 005073 R
005132 001000 A 3474          JMP     FMVHI1
005133 005050 R
3475 *****
3476 *   S T A N D A R D   V O R T E X   H E A D E R   D C B   *
3477 *****
005134 000027 A 3478 FMHD   DATA   FMHDE-FMHDS
005135 005137 R 3479          DATA   FMHDS
005136 000001 A 3480          DATA   1
005137 130720 A 3481 FMHDS  DATA   '1PAGE '
005140 140707 A

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005141 142640 A
005142 120240 A 3482 FMPN DATA ' 0 ' PAGE NUMBER 04 03477
005143 120260 A
005144 120240 A
005145 120240 A 3483 FMDA DATA ' ' DATE 04 03478
005146 120240 A
005147 120240 A
005150 120240 A
005151 120240 A
005152 120240 A 3484 FMJN DATA ' ' JOB NAME 04 03479
005153 120240 A
005154 120240 A
005155 120240 A
005156 120240 A
3485 IFF VORTEX-2 V2 04 03480
3486 DATA 'VORTXII' V2 04 03481
3487 IFF VORTEX-1 V2 04 03482
3488 DATA 'VORTEX' V2 04 03483
005157 153317 A
005160 151324 A
005161 142730 A
005162 120240 A
005163 143315 A 3489 DATA 'FMAIN' 04 03484
005164 140711 A
005165 147240 A
005166 3490 FMHDE BSS 0 04 03485
3491 EJEJ 04 03486
3492 ***** 04 03487
3493 * 04 03488
3494 * WRITE TO LD DEVICE 04 03489
3495 * ( FMWLI , FMWL , FMWLT ) 04 03490
3496 * 04 03491
3497 * FUNCTION: TO PROCESS LD OUTPUT 04 03492
3498 * 04 03493
3499 * 04 03494
3500 * ENTRY: FMWLI: INITIALIZE 04 03495
3501 * FMWL : OUTPUT 04 03496
3502 * FMWLT: TERMINATE 04 03497
3503 * 04 03498
3504 * CALLING SEQUENCE: JSR FMWLI,X 04 03499
3505 * 04 03500
3506 * JSR FMWL,X 04 03501
3507 * DATA DCB ADDRESS 04 03502
3508 * DATA ADDRESS OF LINE COUNTER 04 03503
3509 * 04 03504
3510 * JSR FMWLT,X 04 03505
3511 * 04 03506
3512 * EXIT : A=0 IF NO ERROR 04 03507
3513 * LINE COUNT PROCESSED 04 03508
3514 * 04 03509
3515 * ERRORS: A=5 ON I/O ERROR 04 03510
3516 * 04 03511
3517 * ***** 04 03512
3518 * ***** 04 03513
3519 * ***** 04 03514
3520 * INITIALIZE ENTRY * 04 03515
3521 * ***** 04 03516
005166 074156 A 3523 FMWLI STX FMWLXX SAVE EXIT 04 03518
005167 006030 A 3524 LDXI LOFCB POINT X AT SYSTEM LD FCB 04 03519
005170 000000 E
005171 015005 A 3525 LDA 5,X 04 03520
005172 001010 A 3526 JAZ FMWLCK IS SYSTEM LD FCB ACTIVE ? C.1 04 03521
005173 005287 R
005174 074125 A 3527 STX FMWLW+4 YES. STORE FCB ADDRESS IN WRITE CALL 04 03522
005175 014154 A 3528 LDA FMWLFC 04 03523
005176 055000 A 3529 STA 0,X STORE WORD COUNT IN FCB 04 03524
005177 014153 A 3530 LDA FMWLFC+1 04 03525
005200 055001 A 3531 STA 1,X STORE BUFFER ADDRESS 04 03526
005201 015002 A 3532 LDA 2,X 04 03527
005202 150463 A 3533 ANA RHW CLEAR MODE FIELD 04 03528
005203 114150 A 3534 ORA FMWLFC+2 DR IN MODE 04 03529
005204 055002 A 3535 STA 2,X 04 03530
005205 001000 A 3536 JMP FMWLZ 04 03531
005206 005334 R
005207 002000 A 3537 FMWLCK CALL RMD,5 CHECK IF LD ON RMD C04 03532
005210 010252 R
005211 000005 A
005212 001016 A 3538 JANZ FMWLI2 IF NOT ON RMD C.1 04 03533
005213 005235 R 3539 FMWLI1 OPEN FMWLFC,5,0,1 OPEN/LO/WAIT/LEAVE 04 03534
005214 006505 A
005215 000404 A
005216 100000 A
005217 013005 A
005220 005352 R
005221 000000 A
005222 000000 A
3540 STAT ,FMWLI1,FMWLE,FMWLE,FMWLE,FMWLE 04 03535
005223 006505 A
005224 000373 A
005225 005214 R
005226 005337 R
005227 005337 R
005230 005337 R
005231 005337 R

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005232	014124	A	3541	LDA	FMWLFC+5				04	03536
005233	001016	A	3542	JANZ	FMWLZ	EXIT IF LD IS RMD			04	03537
005234	005334	R								
	005235	R	3543	FMWL12 EQU	*			C.1	04	03538
005235	005101	A	3544	INCR	1	LD IS NOT RMD			04	03539
005236	054125	A	3545	STA	FMWLFL	SET RMD FLAG			04	03540
005237	010465	A	3546	LDA	FIVE				04	03541
005240	054113	A	3547	STA	FMWLFC+2	SET REPEAT COUNT TO 5			04	03542
005241	001000	A	3548	JMP	FMWLZ	EXIT			04	03543
005242	005334	R								
			3549	*****					04	03544
			3550	* TERMINATE ENTRY *					04	03545
			3551	*****					04	03546
005243	074101	A	3552	FMWLT STX	FMWLXX	SAVE EXIT			04	03547
005244	014117	A	3553	LDA	FMWLFL				04	03548
005245	001016	A	3554	JANZ	FMWLZ	IS LD RMD ?			04	03549
005246	005334	R								
			3555	CLOSE	FMWLFC,5,0,1	YES. CLOSE/LD/WAIT/UPDATE			04	03550
005247	006505	A								
005250	000404	A								
005251	100000	A								
005252	013405	A								
005253	005352	R								
005254	000000	A								
005255	000000	A								
005256	001000	A	3556	JMP	FMWLZ				04	03551
005257	005334	R								
			3557	*****					04	03552
			3558	* OUTPUT ENTRY *					04	03553
			3559	*****					04	03554
005260	034067	A	3561	FMWL1 LDX	FMWLLC				04	03556
005261	015000	A	3562	LDA	0,X				04	03557
005262	005311	A	3563	DAR		DECREMENT LINE COUNTER			04	03558
005263	055000	A	3564	STA	0,X				04	03559
005264	014077	A	3565	LDA	FMWLFL				04	03560
005265	001010	A	3566	JAZ	FMWL2	IS LD RMD ?			04	03561
005266	005273	R								
005267	014057	A	3567	LDA	FMWLDC	NO. GET DCB ADDRESS			04	03562
005270	054031	A	3568	STA	FMWLW+4	STORE IN I/O CALL SEQ			04	03563
005271	001000	A	3569	JMP	FMWLW	OUTPUT			04	03564
005272	005316	R								
			3570	*****					04	03565
			3571	* LD IS RMD *					04	03566
			3572	*****					04	03567
005273	034053	A	3573	FMWL2 LDX	FMWLDC				04	03568
005274	015001	A	3574	LDA	1,X	GET BUFFER ADDRESS			04	03569
005275	054003	A	3575	STA	FMWLFA	STORE IN MOVE CALL			04	03570
005276	015000	A	3576	LDA	0,X	GET OUTPUT COUNT			04	03571
005277	006505	A	3577	JSR	FMWV,X	MOVE OUTPUT TO BLOCKING BUFFER			04	03572
005300	003735	R								
005301			3578	FMWLFA BSS	1				04	03573
005302	005366	R	3579	PZE	FMWLBF				04	03574
005303	034043	A	3580	LDX	FMWLDC				04	03575
005304	014045	A	3581	LDA	FMWLFC				04	03576
005305	145000	A	3582	SUB	0,X	GET REMAINING WORD COUNT			04	03577
005306	005012	A	3583	TAB		IN B			04	03578
005307	124043	A	3584	ADD	FMWLFC+1				04	03579
005310	005014	A	3585	TAX		POINT X AT BLOCKING BUFFER			04	03580
005311	014053	A	3586	LDA	FMWLBL				04	03581
005312	055000	A	3587	STA	0,X	BLANK REST OF RECORD			04	03582
005313	005322	A	3588	DBR					04	03583
005314	001026	A	3589	JBNZ	*-2	LOOP TILL DONE			04	03584
005315	005312	R								
			3590	FMWLW WRITE	FMWLFC,5,0,1	WRITE/LD/COMPLETE/ASCII			04	03585
005316	006505	A								
005317	000404	A								
005320	100000	A								
005321	010405	A								
005322	005352	R								
005323	000000	A								
005324	000000	A								
			3591	STAT	FMWLW,FMWLE,FMWLE,FMWLE,FMWLE	CHECK I/O			04	03586
005325	006505	A								
005326	000373	A								
005327	005316	R								
005330	005337	R								
005331	005337	R								
005332	005337	R								
005333	005337	R								
005334	005001	A	3592	FMWLZ TZA		SET A=0 TO FLAG OK			04	03587
005335	001000	A	3593	JMP*	FMWLXX				04	03588
005336	105345	R								
005337	010465	A	3594	FMWLE LDA	FIVE	SET A=5 TO FLAG I/O ERROR			04	03589
005340	001000	A	3595	JMP*	FMWLXX				04	03590
005341	105345	R								
005342	074002	A	3596	FMWL STX	FMWLXX	STORE EXIT			04	03591
005343	006505	A	3597	JSR	FMPT,X	XFER PARAMETERS			04	03592
005344	004457	R								
005345			3598	FMWLXX BSS	1	EXIT ADDRESS			04	03593
005346	000002	A	3599	DATA	2	2 PARAMETERS			04	03594
005347			3600	FMWLDC BSS	1	DCB ADDRESS			04	03595
005350			3601	FMWLLC BSS	1	ADDRESS OF LINE COUNTER			04	03596
005351	005260	R	3602	DATA	FMWL1	FMWL START ADDRESS			04	03597



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3603 FMWLF CCB      120,FMWLB,3,,'LD', ' ',' '      04 03598
005352 000170 A
005353 005366 R
005354 001400 A
005355 000000 A
005356 000000 A
005357 000000 A
005360 000000 A
005361 146317 A
005362 120240 A
005363 120240 A
005364 000000 A
005365 000240 A
005366

3604 FMWFL DATA      0      RMD FLAG      04 03599
3605 FMWLBL DATA     0240     BLANK      04 03600
3606 FMWLB BSS        120      LD BLOCKING BUFFER 04 03601
3607      EJEC
3608 *****
3609 *
3610 *      W R I T E   R O T A T I N G   M E M O R Y ( F M W R ) *
3611 *
3612 * FUNCTION: TO WRITE A SECTOR FROM CORE TO THE ROTATING MEMORY *
3613 *
3614 * ENTRY: FCB LOADED *
3615 *
3616 * CALLING SEQUENCE: JSR   FMWR,X *
3617 *                   DATA ADDRESS OF LUN *
3618 *                   DATA FCB ADDRESS *
3619 *
3620 * EXIT : A=0 IF NO ERRORS *
3621 *        OUTPUT COMPLETE *
3622 *
3623 * ERRORS: A=5 ON I/O ERROR *
3624 *
3625 *****
005556 034040 A
005557 074011 A
005560 034033 A
005561 014006 A
005562 150462 A
005563 115000 A
005564 054003 A
005565 006503 A
005566 000404 A
005567 100000 A
005570 000400 A
005571 005565 R
005572 000000 A
005573 000000 A

3627 FMWR1 LDX      FMWRFC      GET FCB ADDRESS      04 03622
3628      STX      FMWRW+4      STORE IN I/O CALL    04 03623
3629      LDX      FMWRLU      04 03624
3630      LDA      FMWRW+3      GET LUN WORD FROM CALL SEQ 04 03625
3631      ANA      LHM          CLEAR LUN FIELD      04 03626
3632      ORA      0,X          OR IN LUN              04 03627
3633      STA      FMWRW+3      STORE IN I/O CALL    04 03628
3634 FMWRW WRITE *0          WRITE/COMPLETE/BINARY 04 03629

005574 006503 A
005575 000373 A
005576 005565 R
005577 085606 R
005600 005606 R
005601 005606 R
005602 005606 R
005603 005001 A
005604 001000 A
005605 105614 R
005606 010463 A
005607 001000 A
005610 105614 R
005611 074002 A
005612 006503 A
005613 004457 R
005614
005615 000002 A
005616
005617
005620 005556 R

3635 * STAT FMWRW,FMWRE,FMWRE,FMWRE,FMWRE CHECK STATUS 04 03630

3636 TZA          SET A=0 TO FLAG OK      04 03631
3637 JMP*         FMWRXX                    04 03632

3638 FMWRE LDA     FIVE          SET A=5 ON I/O ERROR 04 03633
3639 JMP*         FMWRXX                    04 03634

3640 FMWR STX     FMWRXX          STORE EXIT          04 03635
3641 JSR        FMPT,X          XFER PARAMETERS      04 03636

3642 FMWRXX BSS    1             EXIT ADDRESS          04 03637
3643      DATA  2             2 PARAMETERS          04 03638
3644 FMWRLU BSS    1             ADDRESS OF LUN          04 03639
3645 FMWRFC BSS    1             FCB ADDRESS            04 03640
3646      DATA  FMWR1        FMWR START ADDRESS      04 03641
3647      EJEC
3648 *
3649 *
3650 * SUBROUTINE TO DETERMINE IF LOGICAL UNIT IS
3651 * ASSIGNED TO TELETYPE OR CRT. CALLING SEQUENCE IS:
3652 *
3653 * JSR V$DVTP,X
3654 *
3655 * ENTRANCE PARAMETER: A REGISTER CONTAINS LOG. UNIT NO.
3656 *
3657 * RETURN PARAMETER: A REGISTER EQUALS ZERO - DEVICE IS
3658 * A TTY OR CRT.
3659 *
3660 * A REGISTER NOT EQUAL ZERO - DEVICE
3661 * IS NOT A TTY OR CRT.
3662 *
3663 * B REGISTER IS SAVED.
3664 *
005621 084023 A
005622 120400 A
005623 005012 A
005624 016000 A
005625 150463 A

3665 V$DVTP STB    DVTPA          04 03659
3666      ADD    V$LUT1          04 03660
3667      TAB
3668      LDA    0,B             GET CURRENT DST ENTRY NO. 04 03662
3669      ANA

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005626 005311 A 3670      DAR          CONVERT
005627 034016 A 3671      STA          TO
005630 004201 A 3672      ASLA        1      DISPLACEMENT
005631 124014 A 3673      ADD         DVTPB   IN TABLE
005632 120355 A 3674      ADD         V$DSTB ADD TABLE BASE
005633 005012 A 3675      TAB
005634 016001 A 3676      LDA         1,B     GET DEVICE NAME
005635 144011 A 3677      SUB         DVTPY   IS IT TY ?
005636 001010 A 3678      JAZ         DVTP1   YES
005637 005642 R
005640 016001 A 3679      LDA         1,B     NO -
005641 144006 A 3680      SUB         DVTPCT TRY FOR CT
005642 024002 A 3681 DVTP1     LDB         DVTPA   RESTORE B
005643 006703 A 3682      IJMP        0,X     RETURN
005644 000000 A
005645 000000 A 3683 DVTPA     DATA     0
005646 000000 A 3684 DVTPB     DATA     0
005647 152331 A 3685 DVTPY     DATA     'TY'
005650 141724 A 3686 DVTPCT    DATA     'CT'
3687      E.ICC
3688 *
3689 *
3690 *
3691 *
3692 *
3693 *
3694 *
3695 *
3696 *
3697 *
3698 *
3699 *
3700 *
3701 *
3702 *
3703 *
3704 *
3705 V$SOLO STX     SOLO1
3706      LDX     V$LUT1
3707      LDA     0,X
3708      ANA     RHW
3709      STA     SOLO2
3710      LDA     0,X
3711      ANA     RHW
3712      SUB     SOLO2
3713      LDX     SOLO1
3714      IJMP    0,X
3715 SOLO1     DATA     0
3716 SOLO2     DATA     0
3717 *****
3718 * FMAIN BUFFER *
3719 *****
005666 120240 A 3720      DATA
005667      FMBF     BSS     120      RMD BUFFER
3722 *****
3723 *
3724 *
3725 *
3726 *
3727 *
3728 *
3729 *
3730 *
3731 *
3732 *
3733 *
3734 *
3735 *
3736 *
3737 *
3738 *
3739 *
3740 *
3741 *
3742 *
3743 *
3744 *
3745 *
3746 *
3747 *
3748 *
3749 *
3750 *
3751 *
3752 *
3753 *
3754 *
3755 *
3756 *****
006057 R 3757 FMADD1 EQU *
3758 *****
3759 * RESET LINE COUNTER *

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006057 034540 A 3760 *****
006060 005001 A 3761 LDX FMADLC 04 03755
006061 055000 A 3762 TZA 04 03756
006062 054571 A 3763 STA 0,X 04 03757
006062 054571 A 3764 FMAD02 EQU * 04 03758
006062 054571 A 3765 STA FMADSW 04 03759
006062 054571 A 3766 ***** 04 03760
006062 054571 A 3767 * INIT. STACKS * 04 03761
006062 054571 A 3768 ***** 04 03762
006062 054571 A 3769 ***** 04 03763
006063 006030 A 3770 LDXI FMENT 04 03764
006064 006701 R 3771 LDA 0,X 04 03765
006065 015000 A 3772 STA 1,X 04 03766
006066 055001 A 3773 STA 3,X 04 03767
006067 055003 A 3774 STA 4,X 04 03768
006070 055004 A 3775 ***** 04 03769
006070 055004 A 3776 * OPEN 'SW' * 04 03770
006070 055004 A 3777 ***** 04 03771
006071 014577 A 3778 LDA FMSWFC+2 SET 04 03772
006072 150463 A 3779 ANA RHW MODE 04 03773
006073 110432 A 3780 ORA BS9 FOR 04 03774
006074 054574 A 3781 STA FMSWFC+2 DIRECT ACCESS - RELATIVE 04 03775
006074 054574 A 3781 OPEN FMSWFC,SW,0,0 OPEN & REWIND SW 04 03776

006075 006505 A
006076 000404 A
006077 100000 A
006100 003146 A
006101 006667 R
006102 000000 A
006103 000000 A
006104 014570 A
006105 054565 A 3782 LDA FMSWFC+6 SET CURRENT END-OF-FILE TO THE 04 03777
006105 054565 A 3783 STA FMSWFC+4 END OF THE FILE 04 03778
006105 054565 A 3784 ***** 04 03779
006105 054565 A 3785 * RESET RECORD COUNT * 04 03780
006105 054565 A 3786 ***** 04 03781
006106 085301 A 3787 DEC A 04 03782
006107 054516 A 3788 STA FMARCT 04 03783
006107 054516 A 3789 ***** 04 03784
006107 054516 A 3790 * RESET WORDS PER SECTOR * 04 03785
006107 054516 A 3791 ***** 04 03786
006110 006010 A 3792 LDAI 60 04 03787
006111 000074 A
006112 054514 A 3793 STA FMWPS 04 03788
006112 054514 A 3794 ***** 04 03789
006112 054514 A 3795 * READ RECORD * 04 03790
006112 054514 A 3796 ***** 04 03791
006113 006505 A 3797 JSR FMIR,X INPUT RECORD 04 03792
006114 007371 R
006115 006642 R 3798 DATA FMMBUF BUFFER ADDRESS LOCATION 04 03793
006116 006626 R 3799 DATA FMARCT RECORD COUNT 04 03794
006117 006627 R 3800 DATA FMWPS ADDRESS OF WORDS PER SECTOR 04 03795
006120 107273 R 3801 MZE FMICBA FCB ADDRESS 04 03796
006121 007260 R 3802 DATA FMOMLU ADDRESS OF LOGICAL UNIT NUMBER 04 03797
006122 001002 A 3803 JAP FMAD05 JUMP IF NOT 'EOF' 04 03798
006123 006127 R
006124 005001 A 3804 TZA 04 03799
006125 001000 A 3805 JMP* FMADXX NORMAL EXIT 04 03800
006126 106614 R
006127 006127 R 3806 FMAD05 EQU * 04 03801
006127 001016 A 3807 JANZ* FMADXX EXIT IF ERROR 04 03802
006130 106614 R
006131 006131 R 3808 FMAD10 EQU * NOTE: (FMMBUF) = BUFFER ADDRESS 04 03803
006131 034510 A 3809 LDX FMMBUF GET BUFFER ADDRESS 04 03804
006132 015000 A 3810 LDA 0,X GET FIRST WORD OF BUFFER 04 03805
006133 110434 A 3811 ORA BS11 SET NOT END RECORD BIT 04 03806
006134 134465 A 3812 ERA FMMPW IS IT FIRST WORD OF OBJECT MODULE? 04 03807
006135 001010 A 3813 JAZ FMAD12 JUMP IF IT IS 04 03808
006136 006143 R
006137 006137 R 3814 FMAD11 EQU * 04 03809
006137 006010 A 3815 LDAI 12 SET STRUCTOR ERROR 04 03810
006140 000014 A
006141 001000 A 3816 JMP* FMADXX EXIT WITH ERROR 04 03811
006142 106614 R
006143 006143 R 3817 ***** 04 03812
006143 006143 R 3818 * PROCESS DM * 04 03813
006143 006143 R 3819 ***** 04 03814
006143 006143 R 3820 FMAD12 EQU * 04 03815
006143 015002 A 3821 LDA 2,X GET OBJECT MODULE SIZE 04 03816
006144 054463 A 3822 STA FMOMS SAVE IT 04 03817
006145 005041 A 3823 TXA 04 03818
006146 120464 A 3824 ADD THREE CREATE OBJECT MODULE NAME ADDRESS 04 03819
006147 054005 A 3825 STA FMAD14 04 03820
006150 120423 A 3826 ADD FOUR CREATE OBJECT MODULE DATE ADDRESS 04 03821
006151 054010 A 3827 STA FMAD16 04 03822
006152 010423 A 3828 LDA FOUR 04 03823
006153 006505 A 3829 JSR FMV,X MOVE DM NAME 04 03824
006154 003735 R
006155 000000 A 3830 FMAD14 DATA 0 FROM ADDRESS 04 03825
006156 006631 R 3831 DATA FMOMN TO ADDRESS 04 03826
006157 010423 A 3832 LDA FOUR 04 03827
006160 006505 A 3833 JSR FMV,X MOVE DM DATE 04 03828
006161 003735 R
006162 000000 A 3834 FMAD16 DATA 0 FROM ADDRESS 04 03829

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006273	150462	A	3910	ANA	LHW		04	03905
006274	115001	A	3911	DRA	1,X		04	03906
006275	054361	A	3912	STA	FMMFCB+2		04	03907
			3913	*****	*****		04	03908
			3914	* COPY SW TO OUTPUT LOGICAL UNIT *			04	03909
			3915	*****	*****		04	03910
006276	006505	A	3916	JSR	FMCP,X	COPY	04	03911
006277	007023	R						
006300	006625	R	3917	DATA	FMSWLU	ADDRESS OF INPUT LUN	04	03912
006301	006667	R	3918	DATA	FMSWFC	ADDRESS OF INPUT FCB	04	03913
006302	106616	R	3919	MZE	FMAFCB	ADDRESS OF OUTPUT LUN	04	03914
006303	006655	R	3920	DATA	FMMFCB	ADDRESS OF OUTPUT FCB	04	03915
006304	006646	R	3921	DATA	FMAFSC	ADDRESS OF SECTOR COUNT	04	03916
006305	001010	A	3922	JAZ	FMAF02	INPUT NEXT Q.M. IF NO ERRORS	04	03917
006306	006062	R						
006307	001000	A	3923	JMP*	FMAFXX	EXIT	04	03918
006310	106614	R						
	006311	R	3924	FMAF23	EQU	*	04	03919
			3925	*****	*****		04	03920
			3926	* READ RECORD *			04	03921
			3927	*****	*****		04	03922
006311	006505	A	3928	JSR	FMIR,X	INPUT RECORD	04	03923
006312	007371	R						
006313	006642	R	3929	DATA	FMMBUF	BUFFER ADDRESS LOCATION	04	03924
006314	006626	R	3930	DATA	FMMRCT	ADDRESS OF RECORD COUNT	04	03925
006315	006627	R	3931	DATA	FMMWPS	ADDRESS OF WORDS PER SECTOR	04	03926
006316	107273	R	3932	MZE	FMICBA	FCB ADDRESS	04	03927
006317	007260	R	3933	DATA	FMOMLU	ADDRESS OF LOGICAL UNIT NUMBER	04	03928
006320	001016	A	3934	JANZ*	FMAFXX	EXIT IF ERROR	04	03929
006321	106614	R						
006322	034317	A	3935	LDX	FMMBUF	GET BUFFER ADDRESS	04	03930
006323	015000	A	3936	LDA	0,X		04	03931
006324	154276	A	3937	ANA	FMMRLT	EXTRACT BITS - 14, 13 & 8	04	03932
006325	134275	A	3938	ERA	FMMRLT	IS THIS AN OBJECT MODULE RECORD?	04	03933
006326	001016	A	3939	JANZ	FMAF11	JUMP IF NOT AN OBJECT MODULE RECORD	04	03934
006327	006137	R						
006330	014310	A	3940	LDA	FMMLTP	GET LOADER TEXT POSITION	04	03935
006331	006140	A	3941	SUBI	60		04	03936
006332	000074	A						
006333	120422	A	3942	ADD	TWO		04	03937
006334	001002	A	3943	JAP	FMAF17	RESET 'FMMLTP' IF NOT ALREADY RESET	04	03938
006335	006166	R						
006336	001000	A	3944	JMP	FMAF18		04	03939
006337	006167	R						
			3945	*****	*****		04	03940
			3946	* PROCESS RECORD *			04	03941
			3947	*****	*****		04	03942
			3948	FMAF24	EQU	*	04	03943
006340	014300	A	3949	LDA	FMMLTP	GET LOADER TEXT POINTER	04	03944
006341	124300	A	3950	ADD	FMMBUF	ADD BUFFER ADDRESS	04	03945
006342	005014	A	3951	TAX			04	03946
006343	015000	A	3952	LDA	0,X	GET LOADER CODE WORD	04	03947
006344	001010	A	3953	JAZ	FMAF40	JUMP IF LC + LSC = 0	04	03948
006345	006442	R						
006346	004555	A	3954	LLSR	13		04	03949
006347	001010	A	3955	JAZ	FMAF28	JUMP IF LC = 0 (SEE SUBCODE)	04	03950
006350	006370	R						
006351	005311	A	3956	DAR			04	03951
006352	001010	A	3957	JAZ	FMAF26	JUMP IF LC = 1 (UNUSED)	04	03952
006353	006365	R						
006354	005311	A	3958	DAR			04	03953
006355	001010	A	3959	JAZ	FMAF38	JUMP IF LC = 2	04	03954
006356	006441	R						
006357	005311	A	3960	DAR			04	03955
006360	001010	A	3961	JAZ	FMAF36	JUMP IF LC = 3	04	03956
006361	006440	R						
006362	005311	A	3962	DAR			04	03957
006363	001010	A	3963	JAZ	FMAF44	JUMP IF LC = 4	04	03958
006364	006602	R						
	006365	R	3964	FMAF26	EQU	*	04	03959
006365	010471	A	3965	LDA	TEN	LOADER CODE ERROR	04	03960
006366	001000	A	3966	JMP*	FMAFXX	EXIT WITH ERROR	04	03961
006367	106614	R						
	006370	R	3967	FMAF28	EQU	*	04	03962
006370	004444	A	3968	LLRL	4	GET LOADER SUB-CODE (LSC)	04	03963
006371	140423	A	3969	SUB	FOUR		04	03964
006372	001004	A	3970	JAN	FMAF38	JUMP IF LSC = 0,1,2 OR 3	04	03965
006373	006441	R						
006374	140464	A	3971	SUB	THREE		04	03966
006375	001004	A	3972	JAN	FMAF26	JUMP IF LSC = 4,5 OR 6	04	03967
006376	006365	R						
006377	001010	A	3973	JAZ	FMAF38	JUMP IF LSC = 7	04	03968
006400	006441	R						
006401	140422	A	3974	SUB	TWO		04	03969
006402	001004	A	3975	JAN	FMAF30	JUMP IF LSC = 010	04	03970
006403	006413	R						
006404	001010	A	3976	JAZ	FMAF34	JUMP IF LSC = 011	04	03971
006405	006437	R						
006406	140464	A	3977	SUB	THREE		04	03972
006407	001004	A	3978	JAN	FMAF32	JUMP IF LSC = 012 OR 013	04	03973
006410	006427	R						
006411	001000	A	3979	JMP	FMAF26	JUMP IF LSC > 013	04	03974
006412	006365	R						



Address	Code	Label	Op	Op2	Description	Line	Page	
006413	R	3980	FMAD30	EQU *		04	03975	
006413	A	3981	JNPM	FMAD42	GET NAME	04	03976	
006414	A	3982	JSR	FMV,X	PUT ENTRY NAME INTO STACK	04	03977	
006416	R	3983		FMMENT	STACK ADDRESS	04	03978	
006420	R	3984		FMITEM	ITEM ADDRESS	04	03979	
006421	A	3985	JAP	FMAD34	JUMP IF PUT IN STACK	04	03980	
006422	R	3986	FMAD31	EQU *		04	03981	
006423	A	3987	LDAI	14	MEMORY EXHAUSTED	04	03982	
006424	A	3988	JMP*	FMADXX	EXIT WITH ERROR	04	03983	
006425	A	3989	FMAD32	EQU *		04	03984	
006426	A	3990	JNPM	FMAD42	GET NAME	04	03985	
006427	A	3991	JSR	FMV,X	PUT EXTERNAL NAME INTO STACK	04	03986	
006430	R	3992		FMMENT	STACK ADDRESS	04	03987	
006431	R	3993		FMITEM	ITEM ADDRESS	04	03988	
006432	A	3994	JAN	FMAD31	JUMP IF NOT ABLE TO PUT ENTRY IN STACK	04	03989	
006433	R	3995	FMAD34	INR	FMMLTP	04	03990	
006434	R	3996	FMAD36	INR	FMMLTP	04	03991	
006435	R	3997	FMAD38	INR	FMMLTP	04	03992	
006436	R	3998	FMAD40	INR	FMMLTP	04	03993	
006437	A	3999	JMP	FMAD22	* UPDATE (FMMLTP) AND RETURN	04	03994	
006441	A	4000			*****	04	03995	
006442	A	4001			* GET NAME FROM TEXT *	04	03996	
006443	A	4002			*****	04	03997	
006444	A	4003	FMAD42	DATA 0		04	03998	
006445	A	4004	LDAI	FMITEM	GET ADDRESS OF ITEM	04	03999	
006446	A	4005	LRLA	1	COMPUTE BYTE ADDRESS	04	04000	
006447	A	4006	STA	FMADIA		04	04001	
006448	A	4007	LDA	FMMLBK		04	04002	
006449	A	4008	JSR	FMV,X	CLEAR OUT ITEM BUFFER	04	04003	
006450	A	4009	DATA	3	COUNT	04	04004	
006451	R	4010	DATA	FMITEM	ADDRESS	04	04005	
006452	A	4011	LDA	FMMLTP		04	04006	
006453	A	4012	ADD	FMMLTP	COMPUTE NAME ADDRESS	04	04007	
006454	A	4013	STA	*+4		C.1	04 04008	
006455	A	4014	LDA	THREE		C.1	04 04009	
006456	A	4015	JSR	FMV,X	MOVE NAME	C.1	04 04010	
006457	A	4016	DATA	0		C.1	04 04011	
006458	R	4017	DATA	FMADNB+1		C.1	04 04012	
006459	A	4018	LDA	FMMLTP		C.1	04 04013	
006460	L	4019	SUB	=58		C.1	04 04014	
006461	A	4020	JAN	FMAD4C	BUFFER OVERFLOW ?	C.1	04 04015	
006462	A	4021	CPA		YES	C.1	04 04016	
006463	A	4022	STA	FMADCT	SAVE COUNT	C.1	04 04017	
006464	A	4023	INP	FMADSW	SET CONTROL SWITCH	C.1	04 04018	
006465	A	4024	JMP	FMAD2B	AND GET NEXT RECORD	C.1	04 04019	
006466	A	4025	FMAD4A	LDA	FMMLTP	C.1	04 04020	
006467	A	4026	ADD	TWO		C.1	04 04021	
006468	A	4027	TAX		POINT X AT BUFFER	C.1	04 04022	
006469	A	4028	FMAD4B	LDAI	FMADNB+4	C.1	04 04023	
006470	A	4029	ADD	FMADCT		C.1	04 04024	
006471	A	4030	TAB		POINT B AT NAME BLOCK	C.1	04 04025	
006472	A	4031	LDA	0,X		C.1	04 04026	
006473	A	4032	STA	0,B	MOVE NAME	C.1	04 04027	
006474	A	4033	INP		BUMP BUFFER POINTER	C.1	04 04028	
006475	A	4034	INR	FMADCT	BUMP COUNT	C.1	04 04029	
006476	A	4035	LDA	FMADCT		C.1	04 04030	
006477	A	4036	JANZ	FMAD4B	LOOP TILL DONE	C.1	04 04031	
006478	A	4037	FMAD4C	LDA	FMADNB	RESTORE X	C.1	04 04032
006479	A	4038	LDA	0,X		C.1	04 04033	
006480	A	4039	ADD	FM17		04	04034	
006481	A	4040	SUB	1,X		04	04035	
006482	A	4041	LRL	2	GET FIRST CHARACTER	04	04036	
006483	A	4042	JNPM	FMAD43	STORE IT IN ITEM BUFFER	04	04037	
006484	A	4043	LRL	6	GET SECOND CHARACTER	04	04038	
006485	A	4044	JNPM	FMAD43	STORE IT IN ITEM BUFFER	04	04039	
006486	A	4045	LRL	6	GET THIRD CHARACTER	04	04040	
006487	A	4046	JNPM	FMAD43	STORE IT IN ITEM BUFFER	04	04041	
006488	A	4047	LRL	2		04	04042	
006489	A	4048	LDA	2,X		04	04043	
006490	A	4049	LRL	4	GET FOURTH CHARACTER	04	04044	
006491	A	4050	JNPM	FMAD43	STORE IT IN ITEM BUFFER	04	04045	
006492	A	4051	LRL	6	GET FIFTH CHARACTER	04	04046	
006493	A	4052	JNPM	FMAD43	STORE IT IN ITEM BUFFER	04	04047	







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006677 120240 A
006700 120240 A
4117 *****
4118 * STACK CONTROL BLOCK *
4119 *****
006701 006701 R 4120 FMMENT EQU * ENTRY NAME STACK
006701 010273 R 4121 DATA FMBENT BASE ADDRESS
006702 010273 R 4122 DATA FMTENT TOP ADDRESS
006703 000003 A 4123 DATA 3 ENTRY LENGTH
006704 006704 R 4124 FMNEXT EQU * EXTERNAL NAME STACK
006704 010273 R 4125 DATA FMBEXT BASE ADDRESS
006705 010273 R 4126 DATA FMTEXT TOP ADDRESS
006706 000003 A 4127 DATA 3 ENTRY LENGTH
006707 006705 R 4128 FMESTK EQU *-2 LAST TOP ADDRESS
006707 177777 A 4129 DATA -1 END OF STACK FLAG
4130 EJECT
4131 *****
4132 *
4133 * COMPUTE OBJECT MODULE TEXT CHECK-SUM (FMCC)
4134 *
4135 * FUNCTION: TO COMPUTE THE CHECK-SUM OF AN OBJECT MODULE TEXT RECORD
4136 *
4137 * ENTRY: NO SPECIAL CONDITIONS
4138 *
4139 * CALLING SEQUENCE: JSR FMCC,X
4140 * DATA BUFFER ADDRESS
4141 *
4142 * EXIT: A=0 IF GOOD CHECK-SUM
4143 * A NOT 0 IF BAD CHECK-SUM
4144 *
4145 *****
006710 006710 R 4146 FMCC00 EQU *
006710 034042 A 4147 LDX FMCCBA GET BUFFER ADDRESS
006711 015000 A 4148 LDA 0,X GET FIRST WORD OF BUFFER
006712 001002 A 4149 JAP FMCC01 JUMP IF NOT CHECK-SUM SUPPRESS
006713 006724 R
006714 150460 A 4150 ANA BR15 TURN OFF CHECK-SUM SUPPRESS BIT
006715 055000 A 4151 STA 0,X
006716 005001 A 4152 TZA
006717 055001 A 4153 STA 1,X RESET CHECK-SUM WORD
006720 002000 A 4154 JMPM FMCC10 COMPUTE NEW CHECK-SUM
006721 006730 R
006722 034030 A 4155 LDX FMCCBA GET BUFFER ADDRESS
006723 055001 A 4156 STA 1,X STORE CORRECT CHECK-SUM
006724 006724 R 4157 FMCC01 EQU *
006724 002000 A 4158 JMPM FMCC10 COMPUTE CHECK-SUM
006725 006730 R
006726 001000 A 4159 JMP* FMCCXX RETURN
006727 106751 R
4160 *****
4161 * COMPUTE CHECK-SUM *
4162 *****
006730 000000 A 4163 FMCC10 DATA 0
006731 005002 A 4164 LDB
006732 006732 R 4165 FMCC02 EQU *
006732 005021 A 4166 TBA
006733 135000 A 4167 ERA 0,X COMPUTE CHECK-SUM
006734 005012 A 4168 TAB SAVE ACCUMULATED CHECK-SUM IN B-REG.
006735 005145 A 4169 INCR 045 A=X=X+1
006736 144014 A 4170 SUB FMCCBA
006737 006140 A 4171 SUBI 60
006740 000074 A
006741 001004 A 4172 JAN FMCC02 JUMP IF NOT AT END OF BUFFER
006742 006732 R
006743 005021 A 4173 TBA
006744 001000 A 4174 JMP* FMCCXX RETURN
006745 106751 R
4175 *****
4176 * ENTRY *
4177 *****
006746 074002 A 4178 FMCC STX FMCCXX SAVE EXIT
006747 006505 A 4179 JSR FMPT,X XFER PARAMETERS
006750 004457 R
006751 4180 FMCCXX BSS 1 RETURN ADDRESS
006752 000001 A 4181 DATA 1 1 PARAMETER
006753 4182 FMCCBA BSS 1 ADDRESS OF BUFFER
006754 006710 R 4183 DATA FMCC00 FMCC START ADDRESS
4184 EJECT
4185 *****
4186 *
4187 * COPY RMD TO RMD (FMCP)
4188 *
4189 * FUNCTION: TO COPY FROM A FILE ON A RMD TO A FILE ON A RMD
4190 *
4191 * ENTRY: NO SPECIAL CONDITIONS
4192 *
4193 * CALLING SEQUENCE: JSR FMCP,X
4194 * DATA ADDRESS OF INPUT LUN
4195 * DATA ADDRESS OF INPUT FCB
4196 * DATA ADDRESS OF OUTPUT LUN
4197 * DATA ADDRESS OF OUTPUT FCB
4198 * DATA ADDRESS OF SECTOR COUNT
4199 *

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007045 005301 A 4285      DECR      A      NOTHING IN STACK      04 04280
007046 001000 A 4286      JMP*     FMGTXX  RETURN      04 04281
007047 107130 R      FMGT02 EQU      *      04 04282
007050 015001 A 4288      LDA      1,X     GET TOP ADDRESS      04 04283
007051 054046 A 4289      STA      FMGT14 FROM ADDRESS      04 04284
007052 145002 A 4290      SUB      2,X     - ENTRY LENGTH      04 04285
007053 054045 A 4291      STA      FMGT14+1 TO ADDRESS      04 04286
007054 054033 A 4292      STA      FMGT10 FROM ADDRESS      04 04287
007055 015002 A 4293      LDA      2,X     GET ENTRY LENGTH      04 04288
007056 054026 A 4294      STA      FMGT08 COUNT      04 04289
007057 006017 A 4295      LDAE     FMESTK GET TOP OF ALL STACKS 04 04290
007060 006705 R      SUB      0,X     - BASE      04 04291
007061 145000 A 4296      ADD      2,X     + ENTRY LENGTH      04 04292
007062 054027 A 4297      STA      FMGT12 SIZE      04 04293
007063 024046 A 4298      LDB      FMGT1A GET ITEM ADDRESS      04 04294
007064 064023 A 4300      STB      FMGT10+1 TO ADDRESS      04 04295
4301 *****
4302 * UPDATE BASE & TOP POINTERS *
4303 *****
007066 005042 A 4304      TXB      FMGT04 EQU      *      04 04299
007067 016001 A 4305      LDA      1,B     GET TOP ADDRESS      04 04300
007070 145002 A 4306      SUB      2,X     - ENTRY LENGTH      04 04301
007071 056001 A 4307      STA      1,B     PUT BACK      04 04302
007072 005122 A 4308      ISR      IBR      04 04303
007073 005122 A 4309      ISR      IBR      04 04304
007074 005122 A 4310      ISR      IBR      04 04305
007075 016000 A 4311      LDA      0,B     GET BASE ADDRESS      04 04306
007076 001004 A 4312      JAB      FMGT06 JUMP IF AT END OF STACKS 04 04307
007077 007104 R      SUB      2,X     - ENTRY LENGTH      04 04309
007100 145002 A 4314      STA      0,B     PUT BACK      04 04310
007101 056000 A 4315      JMP      FMGT04 04 04311
007102 001000 A 4316      FMGT06 EQU      *      04 04312
007103 007104 R 4317      LDBI     0      COUNT      04 04313
007104 006010 A 4318      FMGT08 EQU      *-1      04 04314
007105 000000 A 4319      JSR      FMMV,X GET ITEM FROM STACK      04 04315
007106 006505 A 4320      FMGT10 DATA 0 FROM ADDRESS      04 04316
007107 003735 R 4321      DATA 0 TO ADDRESS      04 04317
007110 000000 A 4322      LDAB    0      COUNT      04 04318
007111 000000 A 4323      FMGT12 EQU      *-1      04 04319
007112 006010 A 4324      JAZ      FMGT16 JUMP IF COUNT ZERO      04 04320
007113 000000 A 4325      JSR      FMMV,X DELETE ITEM FROM STACK      04 04321
007114 001010 A 4326      FMGT14 DATA 0 FROM ADDRESS      04 04322
007115 007122 R 4327      DATA 0 TO ADDRESS      04 04323
007116 006505 A 4328      EQU      *      04 04324
007117 003735 R 4329      INCRA   A      GOT ITEM FROM STACK      04 04325
007120 000000 A 4330      JMP*    FMGTXX RETURN      04 04326
007121 007122 R 4331      *****
007122 005101 A 4332      * ENTRY *
007123 001000 A 4333      *****
007124 107130 R 4334      FMGT    STX     FMGTXX SAVE EXIT      04 04327
007125 074002 A 4335      JSR     FMPT,X XFER PARAMETERS      04 04328
007126 006505 A 4336      FMGTXX BSS     1      RETURN ADDRESS      04 04329
007127 004457 R 4337      DATA 2      2 PARAMETERS      04 04330
007130 4338      DATA 1      ADDRESS OF STACK CONTROL BLOCK 04 04331
007131 000002 A 4339      EQU     1      ITEM ADDRESS      04 04332
007132 4340      DATA 1      FMGT START ADDRESS      04 04333
007133 007040 R 4341      EQU     *      *****
4342 *****
4343 *****
4344 *****
4345 *****
4346 *****
4347 * FUNCTION: BUILD AN FCB FOR THE INPUT LOGICAL UNIT
4348 *
4349 * ENTRY: NO SPECIAL CONDITIONS
4350 *
4351 * CALLING SEQUENCE: JSR  FMIP,X
4352 *                   DATA ADDRESS OF COMMAND BLOCK
4353 *                   DATA FCB ADDRESS
4354 *                   BSS  1 (DUMMY)
4355 *
4356 * EXIT: A=0 FCB BUILT FOR OBJECT MODULE INPUT
4357 *
4358 * NOTE: THE FCB IS REFERENCED BY 'FMOMFC'
4359 *       THE LUN IS REFERENCED BY 'FMOMLU'
4360 *
4361 *****
007135 R 4362      FMIP00 EQU     *      04 04336
4363 *****
4364 * SET BUFFER ADDRESS *
4365 *****
007135 034117 A 4366      LDAX    FMIPFC GET FCB ADDRESS      01 04361

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007136 015001 A 4367 LDA 1,X GET BUFFER ADDRESS 04 04362
007137 054122 A 4368 STA FMMFMC+1 SET BUFFER ADDRESS 04 04363
4369 ***** 04 04364
4370 * SET KEY * 04 04365
4371 ***** 04 04366
007140 034113 A 4372 LDX FMIPCB GET ADDRESS OF COMMAND BLOCK 04 04367
007141 014121 A 4373 LDA FMMFMC+2 GET WORD WITH ACCESS METHOD + PROTECT KEY 04 04368
007142 150462 A 4374 ANA LHW CLEAR OUT PROTECT KEY 04 04369
007143 115001 A 4375 ORA 1,X OR IN PROTECT KEY 04 04370
007144 054115 A 4376 STA FMMFMC+2 04 04371
4377 ***** 04 04372
4378 * SET FILE NAME * 04 04373
4379 ***** 04 04374
007145 015002 A 4380 LDA 2,X 04 04375
007146 054121 A 4381 STA FMMFMC+7 04 04376
007147 015003 A 4382 LDA 3,X 04 04377
007150 054120 A 4383 STA FMMFMC+8 04 04378
007151 015004 A 4384 LDA 4,X 04 04379
007152 054117 A 4385 STA FMMFMC+9 04 04380
4386 ***** 04 04381
4387 * SET LUN * 04 04382
4388 ***** 04 04383
007153 015000 A 4389 LDA 0,X 04 04384
007154 054103 A 4390 STA FMMMLU 04 04385
4391 ***** 04 04386
4392 * CHECK FOR LUN = 'SI' = RMD * 04 04387
4393 ***** 04 04388
007155 054002 A 4394 STA *+3 STORE IN CALL TO RMD C.1 04 04389
007156 002000 A 4395 CALL RMD,0 CHECK IF LUN IS ON RMD C.1 04 04390
007157 010252 R
007160 000000 A
007161 001010 A 4396 JAZ FMIP20 IF ON A RMD D.104 04391
007162 007172 R
007163 007163 R 4397 FMIP05 EQU * C.1 04 04392
007163 006010 A 4398 LDAI 60 04 04393
007164 000074 A
007165 054073 A 4399 STA FMMFMC SET INPUT RECORD SIZE 04 04394
007166 006020 A 4400 LDAI SIFCB (B) = UNIVERSAL FCB ADDRESS 04 04395
007167 000001 E
007170 001000 A 4401 JMP FMIP25 04 04396
007171 007207 R
007172 R 4402 FMIP20 EQU * 04 04397
4403 ***** 04 04398
4404 * CHECK FOR LUN = 4,5,6,7,8,9,10 * 04 04399
4405 ***** 04 04400
007172 006010 A 4406 LDAI 120 04 04401
007173 000170 A
007174 054064 A 4407 STA FMMFMC SET INPUT RECORD SIZE 04 04402
007175 014062 A 4408 LDA FMMMLU GET LUN 04 04403
007176 140423 A 4409 SUB FOUR 04 04404
007177 001004 A 4410 JAN FMIP05 JUMP IF LUN < 4 D.104 04405
007200 007163 R
007201 140467 A 4411 SUB SEVEN 04 04406
007202 001002 A 4412 JAP FMIP30 JUMP IF LUN > 10 04 04407
007203 007226 R
007204 034053 A 4413 LDX FMMMLU 04 04408
007205 006025 A 4414 LDAI FMIPUB,X (B) = UNIVERSAL FCB ADDRESS 04 04409
007206 007270 R
007207 R 4415 FMIP25 EQU * 04 04410
4416 ***** 04 04411
4417 * BUILD UNIVERSAL FCB * 04 04412
4418 ***** 04 04413
007207 064063 A 4419 STB FMICBA SAVE UNIVERSAL FCB ADDRESS 04 04414
007210 014052 A 4420 LDA FMMFMC+2 04 04415
007211 150462 A 4421 ANA LHW AND OUT ACCESS METHOD 04 04416
007212 054050 A 4422 STA FMMFMC+2 04 04417
007213 016002 A 4423 LDA 2,B 04 04418
007214 150463 A 4424 ANA RHW AND OUT PROTECT KEY 04 04419
007215 114045 A 4425 ORA FMMFMC+2 04 04420
007216 056002 A 4426 STA 2,B SET ACCESS METHOD & PROTECT KEY 04 04421
007217 014041 A 4427 LDA FMMFMC 04 04422
007220 056000 A 4428 STA 3,B SET RECORD LENGTH 04 04423
007221 014040 A 4429 LDA FMMFMC+1 04 04424
007222 056001 A 4430 STA 1,B SET BUFFER ADDRESS 04 04425
007223 005001 A 4431 TZA 04 04426
007224 001000 A 4432 JMP* FMIPXX RETURN 04 04427
007225 107252 R
007226 R 4433 FMIP30 EQU * 04 04428
4434 ***** 04 04429
4435 * BUILD 'FMMFMC' FCB * 04 04430
4436 ***** 04 04431
007226 006010 A 4437 LDAI FMMFMC 04 04432
007227 007261 R
007230 054042 A 4438 STA FMICBA SAVE 'FMMFMC' FCB ADDRESS 04 04433
007231 014006 A 4439 LDA FMIP10+3 04 04434
007232 150462 A 4440 ANA LHW 04 04435
007233 114024 A 4441 ORA FMMMLU ENTER LUN IN OPEN CALL 04 04436
007234 054003 A 4442 STA FMIP10+3 04 04437
4443 ***** 04 04438
4444 * OPEN + REWIND LU * 04 04439
4445 ***** 04 04440
007235 R 4446 FMIP10 EQU * 04 04441
4447 OPEN FMMFMC,0,0,0 04 04442

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007235 006503 A
007236 000404 A
007237 100000 A
007240 003000 A
007241 007261 R
007242 000000 A
007243 000000 A
007244 005001 A 4448 TZA
007245 001000 A 4449 JMP* FMIPXX RETURN 04 04443
007246 107252 R 04 04444
4450 ***** 04 04445
4451 * ENTRY * 04 04446
4452 ***** 04 04447
007247 074002 A 4453 FMIP STX FMIPXX SAVE EXIT 04 04448
007250 006505 A 4454 JSR FMPT,X XFER PARAMETERS 04 04449
007251 004457 R
007252 4455 FMIPXX BSS 1 RETURN ADDRESS 04 04450
007253 000003 A 4456 DATA 3 3 PARAMETERS 04 04451
007254 4457 FMIPCB BSS 1 ADDRESS OF COMMAND BLOCK 04 04452
007255 4458 FMIPFC BSS 1 FCB ADDRESS 04 04453
007256 4459 BSS 1 04 04454
007257 007135 R 4460 DATA FMIP00 FMIP START ADDRESS 04 04455
007260 4461 FMDMLU BSS 1 INPUT LUN 04 04456
4462 FMDMFC FCB 120,0,3,0,0 INPUT FCB 04 04457
007261 000170 A
007262 000000 A
007263 001400 A
007264 000000 A
007265 000000 A
007266 000000 A
007267 000000 A
007270 000000 A
007271 000000 A
007272 000000 A
007273 4463 FMICBA BSS 1 INPUT FCB ADDRESS 04 04458
007274 007270 R 4464 FMIPUB EQU *-4 04 04459
007275 000000 E 4465 DATA PIFCB PI 04 04460
007276 005170 E 4466 DATA LOFCB LO 04 04461
007277 000000 E 4467 DATA BIFCB BI 04 04462
007278 000000 E 4468 DATA BOFCB BO 04 04463
007300 000000 E 4469 DATA SSFCB SS 04 04464
007301 000000 E 4470 DATA GDFCB GO 04 04465
007302 000000 E 4471 DATA POFCB PO 04 04466
4472 EXT PIFCB,LOFCB,BIFCB,BOFCB,SSFCB,GDFCB,POFCB 04 04467
4473 EXT SIFCB 04 04468
4474 EXT WACKSI 04 04469
4475 EJEJ 04 04470
4476 ***** 04 04471
4477 * INPUT RECORD (FMIR) 04 04472
4478 * 04 04473
4479 * 04 04474
4480 * FUNCTION: INPUT A RECORD IF NECESSARY AND SET BUFFER ADDRESS 04 04475
4481 * 04 04476
4482 * ENTRY: NO SPECIAL CONDITIONS 04 04477
4483 * 04 04478
4484 * CALLING SEQUENCE: JSR FMIR,X 04 04479
4485 * DATA BUFFER ADDRESS LOCATION 04 04480
4486 * DATA RECORD COUNT ADDRESS 04 04481
4487 * DATA WORDS PER SECTOR ADDRESS 04 04482
4488 * DATA FCB ADDRESS 04 04483
4489 * DATA ADDRESS OF LUN 04 04484
4490 * 04 04485
4491 * EXIT: A=0 IF NO ERRORS 04 04486
4492 * OBJECT MODULE READ INTO 'FMBF' BUFFER. 04 04487
4493 * BUFFER ADDRESS SET. 04 04488
4494 * A=-1 IF END OF FILE 04 04489
4495 * 04 04490
4496 * ERRORS: A=5 IF I/O ERROR 04 04491
4497 * 04 04492
4498 ***** 04 04493
007303 007303 R 4499 FMIR00 EQU * 04 04494
007303 034073 A 4500 LDX FMIRRC GET RECORD COUNT ADDRESS 04 04495
007304 045000 A 4501 INR 0,X INCREMENT RECORD COUNT 04 04496
007305 015000 A 4502 LDA 0,X GET RECORD COUNT 04 04497
007306 005002 A 4503 TZE 04 04498
007307 004541 A 4504 LLSR 1 IS RECORD COUNT EVEN - 0,2,4,6,... 04 04499
007310 034065 A 4505 LDX FMIRBA GET BUFFER ADDRESS LOCATION 04 04500
007311 006010 A 4506 LOAI FMBF GET BUFFER ADDRESS 04 04501
007312 005667 R
007313 001020 A 4507 JNZ FMIR10 JUMP IF RECORD COUNT EVEN 04 04502
007314 007316 R
007315 124066 A 4508 ADD FMIRRS ADD RECORD SIZE 04 04503
007316 007316 R 4509 FMIR10 EQU * 04 04504
007316 055000 A 4510 STA 0,X SET BUFFER ADDRESS FOR PROCESSING 04 04505
007317 024060 A 4511 LDB FMIRWS GET WORDS PER SECTOR ADDRESS 04 04506
007320 016000 A 4512 LDA 0,B GET WORDS PER SECTOR 04 04507
007321 144062 A 4513 SUB FMIRRS SUBTRACT RECORD SIZE 04 04508
007322 056000 A 4514 STA 0,R SET WORDS PER SECTOR LEFT 04 04509
007323 001016 A 4515 JANZ FMIRNE JUMP IF WORDS STILL IN SECTOR 04 04510
007324 007360 R
007325 015000 A 4516 LDA 0,X GET BUFFER ADDRESS 04 04511
007326 024052 A 4517 LDB FMIRFC GET FCB ADDRESS 04 04512
007327 064012 A 4518 STB FMIRIR+4 SET FCB ADDRESS 04 04513

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007330 056001 A 4519 STA 1,B SET BUFFER ADDRESS IN FCB 04 04514
007331 034050 A 4520 LDX FMIRLU GET ADDRESS OF LUN 04 04515
007332 014006 A 4521 LDA FMIRIR+3 GET WORD WITH LUN 04 04516
007333 150462 A 4522 ANA LHW CLEAR OUT LUN FIELD 04 04517
007334 115000 A 4523 ORA 0,X OR IN LUN 04 04518
007335 054003 A 4524 STA FMIRIR+3 SET IN I/O REQUEST 04 04519
4525 ***** 04 04520
4526 * READ A RECORD * 04 04521
4527 ***** 04 04522
4528 FMIRIR READ 0,0,0,0 READ SYSTEM BINARY & SUSPEND UNTIL I/O DON 04 04523

007336 006505 A
007337 000404 A
007340 100000 A
007341 000000 A
007342 000000 A
007343 000000 A
007344 000000 A
007345 006017 A 4529 LDAE FMIRIR+5 GET NUMBER OR WORDS READ 04 04524
007346 007343 R
007347 034030 A 4530 LDX FMIRWS GET WORDS PER SECTOR ADDRESS 04 04525
007350 055000 A 4531 STA 0,X SET WORDS PER SECTOR 04 04526
4532 STAT FMIRIR,FMIRER,FMIREF,FMIRER,FMIRER 04 04527

007351 006505 A
007352 000373 A
007353 007336 R
007354 007366 R
007355 007363 R
007356 007366 R
007357 007366 R
007360 005001 A 4533 FMIRNE EQU * 04 04528
007361 001000 A 4534 TZA A=0 NO ERRORS 04 04529
007362 107374 R 4535 JMP* FMIRXX 04 04530
007363 007363 R 4536 FMIREF EQU * 04 04531
007364 005301 A 4537 DECR 01 A=-1 EOF DETECTED 04 04532
007365 001000 A 4538 JMP* FMIRXX 04 04533
007366 007366 R 4539 FMIRER EQU * 04 04534
007367 010465 A 4540 LDA FIVE A=5 I/O ERROR 04 04535
007370 107374 R 4541 JMP* FMIRXX 04 04536
4542 ***** 04 04537
4543 * ENTRY * 04 04538
4544 ***** 04 04539
007371 074002 A 4545 FMIR STX FMIRXX SAVE EXIT 04 04540
007372 006505 A 4546 JSR FMPT,X XFER PARAMETERS 04 04541
007373 004457 R
007374 4547 FMIRXX BSS 1 RETURN ADDRESS 04 04542
007375 000005 A 4548 DATA 5 5 PARAMETERS 04 04543
007376 4549 FMIRBA BSS 1 BUFFER ADDRESS LOCATION 04 04544
007377 4550 FMIRRC BSS 1 RECORD COUNT ADDRESS 04 04545
007400 4551 FMIRWS BSS 1 WORDS PER SECTOR ADDRESS 04 04546
007401 4552 FMIRFC BSS 1 FCB ADDRESS 04 04547
007402 4553 FMIRLU BSS 1 ADDRESS OF LUN 04 04548
007403 007303 R 4554 DATA FMIR00 FMIR START ADDRESS 04 04549
007404 000074 A 4555 FMIRRS DATA 60 RECORD SIZE 04 04550
4556 EJEC 04 04551
4557 ***** 04 04552
4558 * 04 04553
4559 * LIST OBJECT MODULE (FMLT) 04 04554
4560 * 04 04555
4561 * FUNCTION: TO LIST ENTRY AND EXTERNAL NAMES OF AN OBJECT MODULE ONTO 04 04556
4562 * THE LD DEVICE AND ENTER THE ENTRY NAMES IN THE DIRECTORY 04 04557
4563 * 04 04558
4564 * ENTRY: NO SPECIAL CONDITIONS 04 04559
4565 * 04 04560
4566 * CALLING SEQUENCE: JSR FMLT,X 04 04561
4567 * DATA ADDRESS OF COMMAND BLOCK 04 04562
4568 * DATA FCB ADDRESS 04 04563
4569 * DATA ADDRESS OF LINE COUNTER 04 04564
4570 * DATA ADDRESS OF ID INFORMATION 04 04565
4571 * 04 04566
4572 * COMMAND BLOCK: WORD 0: LOGICAL UNIT NUMBER 04 04567
4573 * WORD 1: KEY 04 04568
4574 * WORDS 2-4: BLANK AREA 04 04569
4575 * WORD 5: SECTOR COUNT 04 04570
4576 * WORDS 6-7: BLANK AREA 04 04571
4577 * 04 04572
4578 * EXIT: A=0 IF NO ERRORS 04 04573
4579 * 04 04574
4580 * ERRORS: A=1 IF LUN OR KEY ERROR 04 04575
4581 * A=2 IF NAME ALREADY IN DIRECTORY 04 04576
4582 * A=3 IF OLD NAME NOT IN DIRECTORY 04 04577
4583 * A=4 IF INSUFFICIENT SPACE FOR ENTRY 04 04578
4584 * A=5 IF I/O ERROR 04 04579
4585 * A=6 IF DIRECTORY STRUCTOR ERROR 04 04580
4586 * A=8 IF NO ENTRY NAME 04 04581
4587 * 04 04582
4588 ***** 04 04583
4589 ***** 04 04584
4590 * CLEAR BUFFER * 04 04585
4591 ***** 04 04586
007405 R 4592 FMLT00 EQU * 04 04587

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007405	014230	A	4593	LDA	FMLTBK	(A) = .	04	04588
007406	006505	A	4594	JSR	FMSA,X	CLEAR LIST BUFFER TO BLANK	04	04589
007407	010130	R						
007410	000044	A	4595	DATA	36	COUNT	04	04590
007411	007637	R	4596	DATA	FMMLTB	ADDRESS	04	04591
			4597	*****			04	04592
			4598	* SET ADDRESSES *			04	04593
			4599	*****			04	04594
007412	014221	A	4600	LDA	FMLTID	GET BASE ADDRESS OF ID INFORMATION	04	04595
007413	054021	A	4601	STA	FMLT06	SET SIZE ADDRESS	04	04596
007414	120421	A	4602	ADD	ONE		04	04597
007415	054005	A	4603	STA	FMLT02	SET NAME ADDRESS	04	04598
007416	120423	A	4604	ADD	FOUR		04	04599
007417	054010	A	4605	STA	FMLT04	SET DATE ADDRESS	04	04600
			4606	*****			04	04601
			4607	* MOVE ID NAME *			04	04602
			4608	*****			04	04603
007420	010423	A	4609	LDA	FOUR	COUNT	04	04604
007421	006505	A	4610	JSR	FMMV,X	MOVE NAME TO LIST BUFFER	04	04605
007422	003735	R						
007423	000000	A	4611	FMLT02	DATA	0	04	04606
007424	007640	R	4612	DATA	FMLT02	FROM ADDRESS	04	04607
			4613	*****		TO ADDRESS	04	04608
			4614	* MOVE DATE *			04	04609
			4615	*****			04	04610
007425	010423	A	4616	LDA	FOUR	COUNT	04	04611
007426	006505	A	4617	JSR	FMMV,X	MOVE DATE TO LIST BUFFER	04	04612
007427	003735	R						
007430	000000	A	4618	FMLT04	DATA	0	04	04613
007431	007645	R	4619	DATA	FMLT04	FROM ADDRESS	04	04614
			4620	*****		TO ADDRESS	04	04615
			4621	* MOVE SIZE *			04	04616
			4622	*****			04	04617
007432	005101	A	4623	INCR	A	A.NE.0	04	04618
007433	006505	A	4624	JSR	FMBA,X	FIRST MUST CONVERT TO ASCII	04	04619
007434	001061	R						
007435	000000	A	4625	FMLT06	DATA	0	04	04620
007436	074003	A	4626	STX	FMLT08	ADDRESS OF BINARY NUMBER	04	04621
007437	010464	A	4627	LDA	THREE	SET ADDRESS OF PACKED STRING	04	04622
007440	006505	A	4628	JSR	FMMV,X	COUNT	04	04623
007441	003735	R				MOVE SIZE TO LIST BUFFER	04	04624
007442	000000	A	4629	FMLT08	DATA	0	04	04625
007443	007652	R	4630	DATA	FMLT08	FROM ADDRESS	04	04626
			4631	*****		TO ADDRESS	04	04627
			4632	* GET ENTRY *			04	04628
			4633	*****			04	04629
007444	014164	A	4634	LDA	FMLTCB	GET COMMAND BLOCK ADDRESS	04	04630
007445	120422	A	4635	ADD	TWO	COMPUTE FILE-NAME ADDRESS	04	04631
007446	054011	A	4636	STA	FMLT10		04	04632
007447	054030	A	4637	STA	FMLT14		04	04633
007450	120464	A	4638	ADD	THREE	COMPUTE NEW FILE-NAME ADDRESS	04	04634
007451	054037	A	4639	STA	FMLT18		04	04635
007452	054053	A	4640	STA	FMLT20		04	04636
007453	054060	A	4641	STA	FMLT24		04	04637
007454	054074	A	4642	STA	FMLT26		04	04638
007455	006505	A	4643	JSR	FMGT,X	GET AN ENTRY NAME	04	04639
007456	007125	R						
007457	006701	R	4644	DATA	FMMENT	ADDRESS OF STACK CONTROL BLOCK	04	04640
007460	000000	A	4645	FMLT10	DATA	0	04	04641
007461	001002	A	4646	JAP	FMLT12	ADDRESS OF WHERE TO PUT ITEM	04	04642
007462	007466	R				JUMP IF ITEM TAKEN FROM STACK	04	04643
007463	010424	A	4647	LDA	EIGHT	NO ENTRY NAME	04	04644
007464	001000	A	4648	JMP*	FMLTXX	EXIT WITH ERROR	04	04645
007465	107627	R						
	007466	R	4649	FMLT12	EQU	*	04	04646
			4650	*****			04	04647
			4651	* CREATE FILE *			04	04648
			4652	*****			04	04649
007466	006505	A	4653	JSR	FMCR,X		04	04650
007467	001451	R					04	04651
007470	107631	R	4654	MZE	FMLTCB	ADDRESS OF COMMAND BLOCK	04	04652
007471	107632	R	4655	MZE	FMLTFC	FCB ADDRESS	04	04653
007472	000000	A	4656	DATA	0		04	04654
007473	001016	A	4657	JANZ*	FMLTXX	EXIT IF ERROR	04	04655
007474	107627	R						
			4658	*****			04	04656
			4659	* MOVE ENTRY *			04	04657
			4660	*****			04	04658
007475	010464	A	4661	LDA	THREE	COUNT	04	04659
007476	006505	A	4662	JSR	FMMV,X	MOVE IT	04	04660
007477	003735	R						
007500	000000	A	4663	FMLT14	DATA	0	04	04661
007501	007657	R	4664	DATA	FMLTN1	FROM ADDRESS	04	04662
007502	001000	A	4665	JMP	FMLT22	TO ADDRESS	04	04663
007503	007530	R				PROCESS NEXT ENTRY	04	04664
007504	007504	R	4666	FMLT16	EQU	*	04	04665
007505	005001	A	4667	TZA			04	04666
	054241	A	4668	STA	FMLTII	RESET ITEM INDICATOR	04	04667
			4669	*****			04	04668
			4670	* GET ENTRY 1 *			04	04669
			4671	*****			04	04670
007506	006505	A	4672	JSR	FMGT,X	GET ITEM	04	04671
007507	007125	R					04	04672



Address	Code	Label	Operation	Operand	Description	Line	Page
007510	006701	R	4673	DATA	FMMENT	04	04668
007511	000000	A	4674	FMLT18	DATA 0	04	04669
007512	001004	A	4675	JAN	FMLT28	04	04670
007513	007553	R					
			4676	*****		04	04671
			4677	* ENTER ENTRY NAME *		04	04672
			4678	*****		04	04673
007514	006505	A	4679	JSR	FMEN,X	04	04674
007515	002330	R					
007516	107631	R	4680	MZE	FMLTCB	04	04675
007517	107632	R	4681	MZE	FMLTFC	04	04676
007520	000000	A	4682	DATA	0	04	04677
007521	001016	A	4683	JANZ*	FMLTXX	04	04678
007522	107627	R					
			4684	*****		04	04679
			4685	* MOVE ENTRY 1 *		04	04680
			4686	*****		04	04681
007523	010464	A	4687	LDA	THREE	04	04682
007524	006505	A	4688	JSR	FMMV,X	04	04683
007525	003735	R					
007526	000000	A	4689	FMLT20	DATA 0	04	04684
007527	007657	R	4690	DATA	FMLTN1	04	04685
	007530	R	4691	FMLT22	EQU *	04	04686
007530	044216	A	4692	INR	FMLTII	04	04687
			4693	*****		04	04688
			4694	* GET ENTRY 2 *		04	04689
			4695	*****		04	04690
007531	006505	A	4696	JSR	FMGT,X	04	04691
007532	007125	R					
007533	006701	R	4697	DATA	FMMENT	04	04692
007534	000000	A	4698	FMLT24	DATA 0	04	04693
007535	001004	A	4699	JAN	FMLT28	04	04694
007536	007553	R					
			4700	*****		04	04695
			4701	* ENTER ENTRY NAME *		04	04696
			4702	*****		04	04697
007537	006505	A	4703	JSR	FMEN,X	04	04698
007540	002330	R					
007541	107631	R	4704	MZE	FMLTCB	04	04699
007542	107632	R	4705	MZE	FMLTFC	04	04700
007543	000000	A	4706	DATA	0	04	04701
007544	001016	A	4707	JANZ*	FMLTXX	04	04702
007545	107627	R					
			4708	*****		04	04703
			4709	* MOVE ENTRY 2 *		04	04704
			4710	*****		04	04705
007546	010464	A	4711	LIA	THREE	04	04706
007547	006505	A	4712	JSR	FMMV,X	04	04707
007550	003735	R					
007551	000000	A	4713	FMLT26	DATA 0	04	04708
007552	007663	R	4714	DATA	FMLTN2	04	04709
	007553	R	4715	FMLT28	EQU *	04	04710
			4716	*****		04	04711
			4717	* GET EXTERNAL 1 *		04	04712
			4718	*****		04	04713
007553	006505	A	4719	JSR	FMGT,X	04	04714
007554	007125	R					
007555	006704	R	4720	DATA	FMMENT	04	04715
007556	007670	R	4721	DATA	FMLTX1	04	04716
007557	001004	A	4722	JAN	FMLT30	04	04717
007560	007566	R					
007561	044165	A	4723	INR	FMLTII	04	04718
			4724	*****		04	04719
			4725	* GET EXTERNAL 2 *		04	04720
			4726	*****		04	04721
007562	006505	A	4727	JSR	FMGT,X	04	04722
007563	007125	R					
007564	006704	R	4728	DATA	FMMENT	04	04723
007565	007674	R	4729	DATA	FMLTX2	04	04724
	007566	R	4730	FMLT30	EQU *	04	04725
007566	014160	A	4731	LDA	FMLTII	04	04726
007567	001010	A	4732	JANZ*	FMLTXX	04	04727
007570	107627	R					
007571	034041	P	4733	LDA	FMLTLC	04	04728
007572	015000	A	4734	LDA	0,X	04	04729
007573	001016	A	4735	JANZ	FMLT34	04	04730
007574	007611	R					
			4736	*****		04	04731
			4737	* WRITE STANDARD HEADER *		04	04732
			4738	*****		04	04733
007575	006505	A	4739	JSR	FMMV,X	04	04734
007576	009113	R					
007577	107633	R	4740	MZE	FMLTLC	04	04735
007600	001016	A	4741	JANZ*	FMLTXX	04	04736
007601	107627	R					
			4742	*****		04	04737
			4743	* WRITE LIST HEADER *		04	04738
			4744	*****		04	04739
007602	008000	A	4745	JSR	FMLL,X	04	04740
007603	005842	R					
007604	007730	R	4746	DATA	FMLTLH	04	04741
007605	107633	R	4747	MZE	FMLTLC	04	04742
			4748	*****		04	04743



007405	014230	A	4593	LDA	FMLTBK	(A) = * *	04	04588
007406	006505	A	4594	JSR	FMSA,X	CLEAR LIST BUFFER TO BLANK	04	04589
007407	010130	R						
007410	000044	A	4595	DATA	36	COUNT	04	04590
007411	007637	R	4596	DATA	FMMLTB	ADDRESS	04	04591
			4597	*****			04	04592
			4598	* SET ADDRESSES *			04	04593
			4599	*****			04	04594
007412	014221	A	4600	LDA	FMLTID	GET BASE ADDRESS OF ID INFORMATION	04	04595
007413	054021	A	4601	STA	FMLT06	SET SIZE ADDRESS	04	04596
007414	120421	A	4602	ADD	ONE		04	04597
007415	054005	A	4603	STA	FMLT02	SET NAME ADDRESS	04	04598
007416	120423	A	4604	ADD	FOUR		04	04599
007417	054010	A	4605	STA	FMLT04	SET DATE ADDRESS	04	04600
			4606	*****			04	04601
			4607	* MOVE ID NAME *			04	04602
			4608	*****			04	04603
007420	010423	A	4609	LDA	FOUR	COUNT	04	04604
007421	006505	A	4610	JSR	FMMV,X	MOVE NAME TO LIST BUFFER	04	04605
007422	003735	R						
007423	000000	A	4611	FMLT02	DATA	0	04	04606
007424	007640	R	4612	DATA	FMLTNM	FROM ADDRESS TO ADDRESS	04	04607
			4613	*****			04	04608
			4614	* MOVE DATE *			04	04609
			4615	*****			04	04610
007425	010423	A	4616	LDA	FOUR	COUNT	04	04611
007426	006505	A	4617	JSR	FMMV,X	MOVE DATE TO LIST BUFFER	04	04612
007427	003735	R						
007430	000000	A	4618	FMLT04	DATA	0	04	04613
007431	007645	R	4619	DATA	FMLTDT	FROM ADDRESS TO ADDRESS	04	04614
			4620	*****			04	04615
			4621	* MOVE SIZE *			04	04616
			4622	*****			04	04617
007432	005101	A	4623	INCR	A	A.NE.0	04	04618
007433	006505	A	4624	JSR	FMBA,X	FIRST MUST CONVERT TO ASCII	04	04619
007434	001061	R						
007435	000000	A	4625	FMLT06	DATA	0	04	04620
007436	074003	A	4626	STX	FMLT08	ADDRESS OF BINARY NUMBER	04	04621
007437	010464	A	4627	LDA	THREE	SET ADDRESS OF PACKED STRING	04	04622
007440	006505	A	4628	JSR	FMMV,X	COUNT	04	04623
007441	003735	R				MOVE SIZE TO LIST BUFFER		
007442	000000	A	4629	FMLT08	DATA	0	04	04624
007443	007652	R	4630	DATA	FMLTSZ	FROM ADDRESS TO ADDRESS	04	04625
			4631	*****			04	04626
			4632	* GET ENTRY *			04	04627
			4633	*****			04	04628
007444	014164	A	4634	LDA	FMLTCB	GET COMMAND BLOCK ADDRESS	04	04629
007445	120422	A	4635	ADD	TWO	COMPUTE FILE-NAME ADDRESS	04	04630
007446	054011	A	4636	STA	FMLT10		04	04631
007447	054030	A	4637	STA	FMLT14		04	04632
007450	120464	A	4638	ADD	THREE	COMPUTE NEW FILE-NAME ADDRESS	04	04633
007451	054037	A	4639	STA	FMLT18		04	04634
007452	054053	A	4640	STA	FMLT20		04	04635
007453	054060	A	4641	STA	FMLT24		04	04636
007454	054074	A	4642	STA	FMLT26		04	04637
007455	006505	A	4643	JSR	FMGT,X	GET AN ENTRY NAME	04	04638
007456	007125	R						
007457	006701	R	4644	DATA	FMMENT	ADDRESS OF STACK CONTROL BLOCK	04	04639
007460	000000	A	4645	FMLT10	DATA	0	04	04640
007461	001002	A	4646	JAP	FMLT12	ADDRESS OF WHERE TO PUT ITEM	04	04641
007462	007466	R				JUMP IF ITEM TAKEN FROM STACK		
007463	010424	A	4647	LDA	EIGHT		04	04642
007464	001000	A	4648	JMP*	FMLTXX	NO ENTRY NAME	04	04643
007465	107627	R				EXIT WITH ERROR	04	04644
	007466	R	4649	FMLT12	EQU	*	04	04645
			4650	*****			04	04646
			4651	* CREATE FILE *			04	04647
			4652	*****			04	04648
007466	006505	A	4653	JSR	FMCR,X		04	04649
007467	001451	R						
007470	107631	R	4654	MZE	FMLTCB	ADDRESS OF COMMAND BLOCK	04	04650
007471	107632	R	4655	MZE	FMLTFC	FCB ADDRESS	04	04651
007472	000000	A	4656	DATA	0		04	04652
007473	001016	A	4657	JANZ*	FMLTXX	EXIT IF ERROR	04	04653
007474	107627	R						
			4658	*****			04	04654
			4659	* MOVE ENTRY *			04	04655
			4660	*****			04	04656
007475	010464	A	4661	LDA	THREE	COUNT	04	04657
007476	006505	A	4662	JSR	FMMV,X	MOVE IT	04	04658
007477	003735	R						
007500	000000	A	4663	FMLT14	DATA	0	04	04659
007501	007657	R	4664	DATA	FMLTN1	FROM ADDRESS TO ADDRESS	04	04660
007502	001000	A	4665	JMP	FMLT22	PROCESS NEXT ENTRY	04	04661
007503	007530	R						
	007504	R	4666	FMLT16	EQU	*	04	04662
007504	005001	A	4667	TZA			04	04663
007505	054241	A	4668	STA	FMLTII	RESET ITEM INDICATOR	04	04664
			4669	*****			04	04665
			4670	* GET ENTRY 1 *			04	04666
			4671	*****			04	04667
007506	006505	A	4672	JSR	FMGT,X	GET ITEM	04	04668
007507	007125	R						



Address	Code	Label	Operation	Comment	Address	Code
007510	006701	R	4673	DATA FMMENT	ADDRESS OF STACK CONTROL BLOCK	04 04668
007511	000000	A	4674	FMLT18 DATA 0	ADDRESS OF WHERE TO PUT ITEM	04 04669
007512	001004	A	4675	JAN FMLT28	JUMP IF NO ITEM TAKEN FROM STACK	04 04670
007513	007553	R	4676	*****		04 04671
			4677	* ENTER ENTRY NAME *		04 04672
			4678	*****		04 04673
007514	006505	A	4679	JSR FMEN,X	ATTACH ENTRY NAME TO EXISTING FILE-NAME	04 04674
007515	002330	R				
007516	107631	R	4680	MZE FMLTCB	ADDRESS OF COMMAND BLOCK	04 04675
007517	107632	R	4681	MZE FMLTFC	FCB ADDRESS	04 04676
007520	000000	A	4682	DATA 0		04 04677
007521	001016	A	4683	JANZ* FMLTXX	EXIT IF ERROR	04 04678
007522	107627	R				
			4684	*****		04 04679
			4685	* MOVE ENTRY 1 *		04 04680
			4686	*****		04 04681
007523	010464	A	4687	LDA THREE	COUNT	04 04682
007524	006505	A	4688	JSR FMMV,X	MOVE IT	04 04683
007525	003735	R				
007526	000000	A	4689	FMLT20 DATA 0	FROM ADDRESS	04 04684
007527	007657	R	4690	DATA FMLTN1	TO ADDRESS	04 04685
	007530	R	4691	FMLT22 EQU *		04 04686
007530	044216	A	4692	INR FMLTII	INCREMENT ITEM INDICATOR	04 04687
			4693	*****		04 04688
			4694	* GET ENTRY 2 *		04 04689
			4695	*****		04 04690
007531	006505	A	4696	JSR FMGT,X	GET ITEM	04 04691
007532	007125	R				
007533	006701	R	4697	DATA FMMENT	ADDRESS OF STACK CONTROL BLOCK	04 04692
007534	000000	A	4698	FMLT24 DATA 0	ADDRESS OF WHERE TO PUT ITEM	04 04693
007535	001004	A	4699	JAN FMLT28	JUMP IF NO ITEM TAKEN FROM STACK	04 04694
007536	007553	R				
			4700	*****		04 04695
			4701	* ENTER ENTRY NAME *		04 04696
			4702	*****		04 04697
007537	006505	A	4703	JSR FMEN,X	ATTACH ENTRY NAME TO EXISTING FILE-NAME	04 04698
007540	002330	R				
007541	107631	R	4704	MZE FMLTCB	ADDRESS OF COMMAND BLOCK	04 04699
007542	107632	R	4705	MZE FMLTFC	FCB ADDRESS	04 04700
007543	000000	A	4706	DATA 0		04 04701
007544	001016	A	4707	JANZ* FMLTXX	EXIT IF ERROR	04 04702
007545	107627	R				
			4708	*****		04 04703
			4709	* MOVE ENTRY 2 *		04 04704
			4710	*****		04 04705
007546	010464	A	4711	LDA THREE	COUNT	04 04706
007547	006505	A	4712	JSR FMMV,X	MOVE IT	04 04707
007550	003735	R				
007551	000000	A	4713	FMLT26 DATA 0	FROM ADDRESS	04 04708
007552	007663	R	4714	DATA FMLTN2	TO ADDRESS	04 04709
	007553	R	4715	FMLT28 EQU *		04 04710
			4716	*****		04 04711
			4717	* GET EXTERNAL 1 *		04 04712
			4718	*****		04 04713
007553	006505	A	4719	JSR FMGT,X	GET ITEM	04 04714
007554	007125	R				
007555	006704	R	4720	DATA FMMENT	ADDRESS OF STACK CONTROL BLOCK	04 04715
007556	007670	R	4721	DATA FMLTX1	ADDRESS OF WHERE TO PUT ITEM	04 04716
007557	001004	A	4722	JAN FMLT30	JUMP IF NO ITEM TAKEN FROM STACK	04 04717
007560	007566	R				
007561	044165	A	4723	INR FMLTII	INCREMENT ITEM INDICATOR	04 04718
			4724	*****		04 04719
			4725	* GET EXTERNAL 2 *		04 04720
			4726	*****		04 04721
007562	006505	A	4727	JSR FMGT,X	GET ITEM	04 04722
007563	007125	R				
007564	006704	R	4728	DATA FMMENT	ADDRESS OF STACK CONTROL BLOCK	04 04723
007565	007674	R	4729	DATA FMLTX2	ADDRESS OF WHERE TO PUT ITEM	04 04724
	007566	R	4730	FMLT30 EQU *		04 04725
007566	014160	A	4731	LDA FMLTII	GET ITEM INDICATOR	04 04726
007567	001016	A	4732	JANZ* FMLTXX	EXIT IF NO MORE ITEMS	04 04727
007570	107627	R				
007571	034041	P	4733	LDB FMLTLC	GET LINE COUNTER ADDRESS	04 04728
007572	015000	A	4734	LDA 0,X	GET LINE COUNTER	04 04729
007573	001016	A	4735	JANZ FMLT34	JUMP IF NOT AT END OF PAGE	04 04730
007574	007611	R				
			4736	*****		04 04731
			4737	* WRITE STANDARD HEADER *		04 04732
			4738	*****		04 04733
007575	006505	A	4739	JSR FMMV,X	OUTPUT STANDARD HEADER	04 04734
007576	009113	R				
007577	107633	R	4740	MZE FMLTLC	ADDRESS OF LINE COUNTER	04 04735
007600	001016	A	4741	JANZ* FMLTXX	EXIT IF ERROR	04 04736
007601	107627	R				
			4742	*****		04 04737
			4743	* WRITE LIST HEADER *		04 04738
			4744	*****		04 04739
007602	006505	A	4745	JSR FMVL,X	WRITE LIST HEADER	04 04740
007603	005342	R				
007604	007730	R	4746	DATA FMLTLH	DCB ADDRESS	04 04741
007605	107633	R	4747	MZE FMLTLC	ADDRESS OF LINE COUNTER	04 04742
			4748	*****		04 04743



Address	Code	Label	Operation	Register	Description	Line	Column
4749		* FEED LINE *				04	04744
4750		*****				04	04745
007606	006505	A	4751	JSR	FMLF,X	LINE FEED	04 04746
007607	003320	R					
007610	107633	R	4752	MZE	FMLTLC	ADDRESS OF LINE COUNTER	04 04747
	007611	R	4753	FMLT34	EQU *		04 04748
			4754	*****			04 04749
			4755	* LIST DATA *			04 04750
			4756	*****			04 04751
007611	006505	A	4757	JSR	FMWL,X	LIST DM DATA	04 04752
007612	005342	R					
007613	007753	R	4758	DATA	FMLTLB	DCB ADDRESS	04 04753
007614	107633	R	4759	MZE	FMLTLC	ADDRESS OF LINE COUNTER	04 04754
			4760	*****			04 04755
			4761	* CLEAR BUFFER *			04 04756
			4762	*****			04 04757
007615	014020	A	4763	LDA	FMLTBK	(A) = *	04 04758
007616	006505	A	4764	JSR	FMSA,X	CLEAR LIST BUFFER TO BLANK	04 04759
007617	010130	R					
007620	000044	A	4765	DATA	36	COUNT	04 04760
007621	007637	R	4766	DATA	FMMLTB	ADDRESS	04 04761
007622	001000	A	4767	JMP	FMLT16	GET NEXT NAMES	04 04762
007623	007504	R					
			4768	*****			04 04763
			4769	* ENTRY *			04 04764
			4770	*****			04 04765
007624	074002	A	4771	FMLT	STX	SAVE EXIT	04 04766
007625	006505	A	4772	JSR	FMPT,X	XFER PARAMETERS	04 04767
007626	004457	R					
007627			4773	FMLTXX	BSS	RETURN ADDRESS	04 04768
007630	000004	A	4774	DATA	4	4 PARAMETERS	04 04769
007631			4775	FMLTCB	BSS	ADDRESS OF COMMAND BLOCK	04 04770
007632			4776	FMLTFC	BSS	FCB ADDRESS	04 04771
007633			4777	FMLTLC	BSS	ADDRESS OF LINE COUNTER	04 04772
007634			4778	FMLTID	BSS	ADDRESS OF ID INFORMATION	04 04773
007635	007405	R	4779	DATA	FMLT00	FMLT START ADDRESS	04 04774
007636	120240	A	4780	FMLTBK	DATA	TWO ASCII BLANKS	04 04775
	007637	R	4781	FMMLTB	EQU *	LIST BUFFER	04 04776
007637			4782	BSS	1		04 04777
007640			4783	FMLTNM	BSS	DM NAME	04 04778
007644			4784	BSS	1		04 04779
007645			4785	FMLTDT	BSS	DM DATE	04 04780
007651			4786	BSS	1		04 04781
007652			4787	FMLT32	BSS	DM SIZE	04 04782
007655			4788	BSS	2		04 04783
007657			4789	FMLTN1	BSS	ENTRY NAME-POSITION 1	04 04784
007662			4790	BSS	1		04 04785
007663			4791	FMLTN2	BSS	ENTRY NAME-POSITION 2	04 04786
007666			4792	BSS	2		04 04787
007670			4793	FMLTX1	BSS	EXTERNAL NAME-POSITION 1	04 04788
007673			4794	BSS	1		04 04789
007674			4795	FMLTX2	BSS	EXTERNAL NAME-POSITION 2	04 04790
007677			4796	BSS	4		04 04791
007703	120240	A	4797	FMLTHD	DATA	ID NAME	04 04792
007704	144704	A					
007705	120316	A					
007706	140715	A					
007707	142640	A					
007710	120240	A					
007711	120240	A					
007712	142301	A					
007713	152305	A					
007714	120240	A					
007715	120240	A					
007716	120323	A					
007717	144732	A					
007720	142640	A					
007721	120240	A					
007722	120240	A					
007723	120305	A	4798	DATA	ENTRY NAMES	EXTERNAL NAMES	04 04793
007724	147324	A					
007725	151331	A					
007726	120316	A					
007727	140715	A					
007730	142723	A					
007731	120240	A					
007732	120240	A					
007733	120240	A					
007734	142730	A					
007735	152305	A					
007736	151316	A					
007737	140714	A					
007740	120316	A					
007741	140715	A					
007742	142723	A					
007743	120240	A					
007744	120240	A					
007745	120240	A					
007746	120240	A					
007747	000000	A	4799	FMLTII	DATA	ITEM INDICATOR	04 04794
		R	4800	FMLTLH	DCB	36,FMLTHD,1	04 04795
007750	000044	A					
007751	007703	R					



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007752 000001 A
007753 000044 A
007754 007637 R
007755 000001 A
4801 FMRTL B DCB 36,FMRTL B,1 04 04796
4802 EJECT 04 04797
4803 ***** 04 04798
4804 * 04 04799
4805 * OUTPUT RECORD (FMOR) 04 04800
4806 * 04 04801
4807 * FUNCTION: OUTPUT RECORD AND INCREMENT RECORD NUMBER IF NECESSARY 04 04802
4808 * 04 04803
4809 * ENTRY: NO SPECIAL CONDITIONS 04 04804
4810 * 04 04805
4811 * CALLING SEQUENCE: JSR FMOR,X 04 04806
4812 * DATA BUFFER ADDRESS LOCATION 04 04807
4813 * DATA RECORD COUNT ADDRESS 04 04808
4814 * DATA ADDRESS OF WORDS PER SECTOR 04 04809
4815 * DATA FCB ADDRESS 04 04810
4816 * DATA ADDRESS OF LOGICAL UNIT NUMBER 04 04811
4817 * 04 04812
4818 * EXIT: A=0 IF NO ERRORS 04 04813
4819 * 04 04814
4820 * ERRORS: A=5 IF I/O ERROR 04 04815
4821 * 04 04816
4822 ***** 04 04817
007756 R 4823 FMOR00 EQU * 04 04818
007756 006010 A 4824 LDAI FMBF GET BUFFER ADDRESS 04 04819
007757 003667 R
007760 024033 A 4825 LDB FMORFC GET FCB ADDRESS 04 04820
007761 036001 A 4826 STA 1,B SET BUFFER ADDRESS IN FCB 04 04821
007762 064003 A 4827 STB FMOR10 SET FCB ADDRESS IN WRITE CALL 04 04822
007763 006503 A 4828 JSR FMWR,X WRITE THE RECORD 04 04823
007764 005611 R
007765 110013 R 4829 MZE FMORLU ADDRESS OF LUN 04 04824
007766 4830 FMOR10 BSS 1 FCB ADDRESS 04 04825
007767 001016 A 4831 JANZ* FMORXX EXIT IF I/O ERROR 04 04826
007770 110007 R
007771 034020 A 4832 LDX FMORRC GET ADDRESS OF RECORD COUNT 04 04827
007772 015000 A 4833 LDA 0,X GET RECORD COUNT 04 04828
007773 005002 A 4834 TZB 04 04829
007774 004541 A 4835 LLSR 1 IS RECORD COUNT EVEN? - 0,2,4,6,... 04 04830
007775 001020 A 4836 JBZ FMOR20 JUMP IF RECORD COUNT EVEN 04 04831
007776 010001 R
007777 034014 A 4837 LDX FMORFC GET FCB ADDRESS 04 04832
010000 045003 A 4838 INR 3,X INCREMENT RELATIVE SECTOR NUMBER 04 04833
010001 005001 A 4839 FMOR20 EQU * 04 04834
010002 001000 A 4840 TZA A=0 NO ERRORS 04 04835
010003 110007 R 4841 JMP* FMORXX EXIT 04 04836
4842 ***** 04 04837
4843 * ENTRY * 04 04838
4844 ***** 04 04839
010004 074002 A 4845 FMOR STX FMORXX SAVE EXIT 04 04840
010005 006503 A 4846 JSR FMPT,X XFER PARAMETERS 04 04841
010006 004457 R
010007 4847 FMORXX BSS 1 RETURN ADDRESS 04 04842
010010 000005 A 4848 DATA 5 5 PARAMETERS 04 04843
010011 4849 FMORBA BSS 1 BUFFER ADDRESS LOCATION 04 04844
010012 4850 FMORRC BSS 1 RECORD COUNT ADDRESS 04 04845
010013 4851 FMORWS BSS 1 ADDRESS OF WORDS PER SECTOR 04 04846
010014 4852 FMORFC BSS 1 FCB ADDRESS 04 04847
010015 4853 FMORLU BSS 1 ADDRESS OF LUN 04 04848
010016 007756 R 4854 DATA FMOR00 FMOR START ADDRESS 04 04849
4855 EJECT 04 04850
4856 ***** 04 04851
4857 * 04 04852
4858 * PUT ITEM IN STACK (FMPU) 04 04853
4859 * 04 04854
4860 * FUNCTION: PUT ITEM INTO TOP OF STACK 04 04855
4861 * 04 04856
4862 * ENTRY: NO SPECIAL CONDITIONS 04 04857
4863 * 04 04858
4864 * CALLING SEQUENCE: JSR FMPU,X 04 04859
4865 * DATA ADDRESS OF STACK CONTROL BLOCK 04 04860
4866 * DATA ADDRESS OF WHERE ITEM IS 04 04861
4867 * 04 04862
4868 * EXIT: A-REG. = +1 IF ITEM PUT INTO STACK 04 04863
4869 * A-REG. = -1 IF NO ROOM IN MEMORY TO PUT ITEM IN STACK 04 04864
4870 * 04 04865
4871 ***** 04 04866
010017 R 4872 FMPU00 EQU * 04 04867
010017 034073 A 4873 LDX FMPUSA GET ADDRESS OF STACK CONTROL BLOCK 04 04868
010020 006017 A 4874 LDAE FMESTK GET END OF STACK ADDRESS 04 04869
010021 006703 R
010022 125002 A 4875 ADD 2,X + ENTRY LENGTH 04 04870
010023 140317 A 4876 SUB V$LLUP - TOP OF BACKGROUND 04 04871
010024 001004 A 4877 JAN FMPU01 JUMP IF THERE IS ROOM 04 04872
010025 010031 R
010026 005301 A 4878 DECR A NO MEMORY LEFT 04 04873
010027 001000 A 4879 JMP* FMPUXX RETURN ERROR 04 04874
010030 110111 R
010031 R 4880 FMPU01 EQU * 04 04875

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Address	Hex	Mode	Label	Op	Opnd	Description	Page	Line
010031	024062	A	4881	LDB	FMPUAI	GET ADDRESS OF ITEM	04	04876
010032	064027	A	4882	STB	FMPU08	FROM ADDRESS	04	04877
010033	015002	A	4883	LDA	2,X	GET ENTRY LENGTH	04	04878
010034	054022	A	4884	STA	FMPU06	SAVE FOR COUNT	04	04879
010035	015001	A	4885	LDA	1,X	GET TOP ADDRESS	04	04880
010036	054024	A	4886	STA	FMPU08+1	TO ADDRESS	04	04881
010037	015003	A	4887	LDA	3,X	GET NEXT BASE POINTER	04	04882
010040	001004	A	4888	JAN	FMPU04	JUMP IF NO NEXT STACK	04	04883
010041	010056	R						
010042	054011	A	4889	STA	FMPU02	FROM ADDRESS	04	04884
010043	125002	A	4890	ADD	2,X	+ ENTRY LENGTH	04	04885
010044	054010	A	4891	STA	FMPU02+1	TO ADDRESS	04	04886
010045	006017	A	4892	LDAE	FNESTK	GET END OF STACK ADDRESS	04	04887
010046	006703	R						
010047	145003	A	4893	SUB	3,X	- NEXT BASE	04	04888
010050	001010	A	4894	JAZ	FMPU04	JUMP IF COUNT ZERO	04	04889
010051	010056	R						
010052	006505	A	4895	JSR	FMMV,X	MOVE EVERYBODY DOWN	04	04890
010053	003735	R						
010054	000000	A	4896	FMPU02	DATA 0	FROM ADDRESS	04	04891
010055	000000	A	4897	DATA	0	TO ADDRESS	04	04892
	010056	R	4898	FMPU04	EQU *		04	04893
010056	006010	A	4899	LDAI	0	PICK-UP COUNT	04	04894
010057	000000	A						
	010057	R	4900	FMPU06	EQU *-1	COUNT	04	04895
010060	006505	A	4901	JSR	FMMV,X	PUT ITEM INTO STACK	04	04896
010061	003735	R						
010062	000000	A	4902	FMPU08	DATA 0	FROM ADDRESS	04	04897
010063	000000	A	4903	DATA	0	TO ADDRESS	04	04898
			4904	*****			04	04899
			4905	* UPDATE TOP & BASE POINTERS *			04	04900
			4906	*****			04	04901
010064	034026	A	4907	LDB	FMPUSA	RESTORE E-REG.	04	04902
	010064	R	4908	FMPU10	EQU *-1		04	04903
010065	005042	A	4909	TXB			04	04904
	010066	R	4910	FMPU12	EQU *		04	04905
010066	016001	A	4911	LDA	1,B	GET TOP ADDRESS	04	04906
010067	125002	A	4912	ADD	2,X	PLUS ENTRY LENGTH	04	04907
010070	056001	A	4913	STA	1,B	PUT IT BACK	04	04908
010071	005122	A	4914	IBR			04	04909
010072	005122	A	4915	IBR			04	04910
010073	005122	A	4916	IBR			04	04911
010074	016000	A	4917	LDA	0,B	GET BASE	04	04912
010075	001004	A	4918	JAN	FMPU14	JUMP IF END OF STACK CONTROL BLOCK	04	04913
010076	010103	R						
010077	125002	A	4919	ADD	2,X	PLUS ENTRY LENGTH	04	04914
010100	056000	A	4920	STA	0,B	PUT IT BACK	04	04915
010101	001000	A	4921	JMP	FMPU12		04	04916
010102	010066	R						
010103	005101	A	4922	FMPU14	INCR 1	A+=1	04	04917
010104	001000	A	4923	JMP*	FMPUXX	RETURN	04	04918
010105	110111	R						
			4924	*****			04	04919
			4925	* ENTRY *			04	04920
			4926	*****			04	04921
010106	074002	A	4927	FMPU	STX FMPUXX	SAVE EXIT	04	04922
010107	006505	A	4928	JSR	FMPU,X	XFER PARAMETERS	04	04923
010110	004457	R						
010111			4929	FMPUXX	BSS 1	RETURN ADDRESS	04	04924
010112	000002	A	4930	DATA	2	2 PARAMETERS	04	04925
010113			4931	FMPUSA	BSS 1	ADDRESS OF STACK CONTROL BLOCK	04	04926
010114			4932	FMPUAI	BSS 1	ADDRESS OF ITEM	04	04927
010115	010017	R	4933	DATA	FMPU00	FMPU START ADDRESS	04	04928
			4934	EJEC			04	04929
			4935	*****			04	04930
			4936	*			04	04931
			4937	*		STORE A-REG (FMSA)	04	04932
			4938	*			04	04933
			4939	*		FUNCTION: TO STORE THE A-REGISTER REPEATEDLY	04	04934
			4940	*			04	04935
			4941	*		ENTRY: (A) = WORD TO BE STORED	04	04936
			4942	*			04	04937
			4943	*		CALLING SEQUENCE: JSR FMSA,X	04	04938
			4944	*		DATA COUNT	04	04939
			4945	*		DATA ADDRESS	04	04940
			4946	*			04	04941
			4947	*		EXIT: NO SPECIAL CONDITIONS	04	04942
			4948	*			04	04943
			4949	*****			04	04944
			4950	FMSA00	EQU *		04	04945
010116	024017	A	4951	LDB	FMSA00	GET ADDRESS	04	04946
010117	064003	A	4952	STB	FMSA10	SET ADDRESS IN LOOP	04	04947
010120	034014	A	4953	LDB	FMSA00	GET COUNT	04	04948
	010121	R	4954	FMSA05	EQU *		04	04949
010121	005344	A	4955	BXR		DECREMENT COUNT	04	04950
010122	006055	A	4956	STAE	0,X	STORE 'A-REG'	04	04951
010123	000000	A						
	010123	R	4957	FMSA10	EQU *-1		04	04952
010124	001046	A	4958	JKNZ	FMSA05	JUMP IF NOT DONE	04	04953
010125	010121	R						
010126	001000	A	4959	JMP*	FMSAXX	RETURN IF DONE	04	04954
010127	110133	R						
			4960	*****			04	04955



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4961 * ENTRY *
4962 *****
010130 074002 A 4963 FMSA STX FMSAXX SAVE EXIT
010131 006505 A 4964 JSR FMPT,X XFER PARAMETERS
010132 004457 R
010133 4965 FMSAXX BSS 1 RETURN ADDRESS
010134 000002 A 4966 DATA 2 2 PARAMETERS
010135 4967 FMSACT BSS 1 COUNT
010136 4968 FMSAAD BSS 1 ADDRESS
010137 010116 R 4969 DATA FMSA00 FMSA START ADDRESS
4970 EJEC
000001 A 4971 EQU 1
000146 A 4972 SW EQU 102
4973 EJEC
4974 *
4975 *
4976 * SUBROUTINE TO DETERMINE IF CALLER'S LOGICAL
4977 * UNIT IS SAME AS THE 'SI' DEVICE AND ALSO
4978 * A ROTATING MEMORY DEVICE. CALLING SEQUENCE IS:
4979 *
4980 * JSR V$CKSI,X
4981 *
4982 * ENTRANCE PARAMETER: A REGISTER CONTAINS LOG. UNIT NO.
4983 * RETURN PARAMETER: A REGISTER = 0 - LUN = 'SI' AND RMD.
4984 * A REG. NOT 0 - LUN NOT = 'SI' AND RMD.
4985 * B REGISTER IS SAVED AND RESTORED.
010140 074127 A 4986 V$CKSI STX CKSIX SAVE X REGISTER
010141 064127 A 4987 STB CKSIB SAVE B REGISTER
010142 120400 A 4988 ADD V$LUT1 ADD BASE OF LUN TABLE
010143 005014 A 4989 TAX
010144 015000 A 4990 LDA 0,X GET LUN ENTRY NUMBER
010145 150463 A 4991 ANA BM377
010146 054123 A 4992 STA CKSIT SAVE LUN POINTER
010147 010422 A 4993 LDA TWD
010150 120400 A 4994 ADD V$LUT1
010151 005014 A 4995 TAX
010152 015000 A 4996 LDA 0,X GET 'SI' LUN ENTRY
010153 150463 A 4997 ANA BM377
010154 144115 A 4998 SUB CKSIT
010155 001010 A 4999 JAZ CKS12 JUMP IF CALLER'S LUN EQUALS TO 'SI' LUN
010156 010163 R
010157 024111 A 5000 CKS11 LDB CKSIB
010160 034107 A 5001 LDX CKSIX
010161 006705 A 5002 IJMP 0,X EXIT
010162 000000 A
010163 124106 A 5003 CKS12 ADD CKSIT
010164 005311 A 5004 DAR
010165 054104 A 5005 STA CKSIT
010166 004201 A 5006 ASLA 1
010167 124102 A 5007 ADD CKSIT
010170 120355 A 5008 ADD V$DSTB
010171 005012 A 5009 TAB
010172 016001 A 5010 LDA 1,B
010173 004350 A 5011 LSRA 8 IS DEVICE A RMD ?
010174 006617 A 5012 SRE N304,7,010
010175 010267 R
010176 005101 A 5013 INCR 1 NO RETURN NON ZERO
010177 001006 A 5014 DATA 01006 SKIP ONE WORD
010200 005001 A 5015 TZA
010201 001000 A 5016 JMP CKS11 YES RETURN 0
010202 010157 R
5017 *
5018 * THIS ROUTINE DETERMINES IF THE LOGICAL UNIT IS ON A RMD
5019 *
5020 * CALLING SEQUENCE
5021 * CALL RMD,X X=LUN
5022 * RETURN A REG=0 IF ON RMD
5023 *
010203 034046 A 5025 RMD1 LDX RMD
010204 044040 A 5026 INR RMD BUMP EXIT
010205 015000 A 5027 LDA 0,X LUN
010206 005012 A 5028 TAB
010207 034053 A 5029 LDX RMDLUT LUN BLOCK TABLE
010210 005322 A 5030 DBR LUT BLOCK 1 IS BASE 1
010211 006140 A 5031 SUBI 101
010212 000140 A
010213 001004 A 5032 JAN RMD5 IF LUN IN LUT 1
010214 010220 R
010215 005012 A 5033 TAB
010216 005144 A 5034 IXR NEXT LUT ADDR
010217 006140 A 5035 SUBI 79
010220 000117 A
010221 001004 A 5036 JAN RMD5 IF LUN IN LUT 2
010222 010220 R
010223 005012 A 5037 TAB LUN IS IN LUT 3
010224 005144 A 5038 IXR
010225 035000 A 5039 RMD5 LDX 0,X LUT LOW CORE POINTER
010226 005021 A 5040 TBA LUN
010227 125000 A 5041 ADD 0,X LUT BASE
010230 005114 A 5042 INCR 014 LUT ENTRY
010231 013000 A 5043 LBA 0,X
010232 150463 A 5044 ANA RMX CURRENT LUN ASSIGNMENT
010233 005311 A 5045 LAR BIAS ZERO

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010234 054024 A 5046 STA RMDT D.104 05041
010235 004241 A 5047 LRLA 1 *2 D.104 05042
010236 124022 A 5048 ADD RMDT *3 D.104 05043
010237 120355 A 5049 ADD V%DSTB DST BASE ADDR D.104 05044
010240 005014 A 5050 TAX D.104 05045
010241 015002 A 5051 LDA 2,X D.104 05046
010242 004346 A 5052 LSRA 6 D.104 05047
010243 150473 A 5053 ANA BM37 GET PST INCREMENT [NON ZERO IF RMD] D.104 05048
010244 003016 A 5054 XANZ RMDSET A = -1 IF NOT RMD D.104 05049
010245 010262 R 5055 CPA A = 0 IF RMD D.104 05050
010246 005211 A 5056 LDB RMDB D.104 05051
010247 024007 A 5057 LDX RMDX D.104 05052
010250 034007 A 5058 JMP *- * RETURN D.104 05053
010251 001000 A 5059 RMD BES 0 D.104 05054
010252 000000 A 5060 STB RMDB D.104 05055
010253 064003 A 5061 STX RMDX D.104 05056
010254 001000 A 5062 JMP RMD1 D.104 05057
010255 010203 R 5063 * D.104 05058
010256 000000 A 5064 RMDB DATA 0 D.104 05059
010257 000000 A 5065 RMDX DATA 0 D.104 05060
010258 000000 A 5066 RMDT DATA 0 D.104 05061
010259 005301 A 5067 RMDSET DECR 1 SET A = -1 D.104 05062
010260 010264 R 5068 RMDLUT PZE *+1 LUN BLOCK POINTER D.104 05063
010261 000400 A 5069 PZE V$LUT1 LUN 1-100 D.104 05064
010262 000401 A 5070 PZE V$LUT2 LUN 101-179 D.104 05065
010263 000402 A 5071 PZE V$LUT3 LUN 180-255 D.104 05066
010264 000355 A 5072 V%DSTB EQU 0355 04 05067
010265 000400 A 5073 V$LUT1 EQU 0400 04 05068
010266 000304 A 5074 N304 DATA 0304 04 05069
010267 000000 A 5075 CKSIX DATA 0 04 05070
010268 000000 A 5076 CKSIB DATA 0 04 05071
010269 000000 A 5077 CKSIT DATA 0 04 05072
010270 5078 EJEC 04 05073
010271 5079 ***** 04 05074
010272 5080 * STACKS * 04 05075
010273 5081 ***** 04 05076
010273 R 5082 FMBENT EQU * BASE OF ENTRY NAME STACK 04 05077
010273 R 5083 FMTENT EQU * TOP OF ENTRY NAME STACK 04 05078
010273 R 5084 FMBEXT EQU * BASE OF EXTERNAL NAME STACK 04 05079
010273 R 5085 FMTEXT EQU * TOP OF EXTERNAL NAME STACK 04 05080
010273 5086 BSS 05700 04 05081
016173 5087 BSS 0 04 05082
000000 R 5088 END FMAIN 04 05083

ENTRY NAMES
000000 R FMAIN 001061 R FMBA 005667 R FMBF 001451 R FMCR
002330 R FMEN 003320 R FMLF 003735 R FMMV 004457 R FMPT
004722 R FMRR 005115 R FMVH 005342 R FMWL 005166 R FMWLI
EXTERNAL NAMES
007276 E BIFCB 007277 E BDFCB 007301 E GDFCB 007275 E LOFCB
007274 E PIFCB 007302 E PDFCB 007167 E SIFCB 007300 E SSFCB
000000 E V$EXEC 000000 E V$ICD 000000 E V$IDST
SYMBOLS
000001 A A 000044 A APIM 000002 A B 000000 A B0
000001 A B1 000012 A B10 000013 A B11 000014 A B12
000015 A B13 000016 A B14 000017 A B15 000002 A B2
000003 A B3 000004 A B4 000005 A B5 000006 A B6
000007 A B7 000010 A B8 000011 A B9 007276 E BIFCB
000421 A BM1 000472 A BM17 000475 A BM177 000477 A BM1777
000464 A BM3 000473 A BM37 000463 A BM377 000467 A BM7
000474 A BM77 000476 A BM777 007277 E BDFCB 000441 A BR0
000442 A BR1 000453 A BR10 000454 A BR11 000455 A BR12
000456 A BR13 000457 A BR14 000456 A BR15 000443 A BR2
000444 A BR3 000445 A BR4 000446 A BR5 000447 A BR6
000450 A BR7 000451 A BR8 000452 A BR9 000421 A BS0
000422 A BS1 000433 A BS10 000434 A BS11 000435 A BS12
000436 A BS13 000437 A BS14 000440 A BS15 000423 A BS2
000424 A BS3 000425 A BS4 000426 A BS5 000427 A BS6
000430 A BS7 000431 A BS8 000432 A BS9 010157 R CKS11
010163 R CKS12 010271 R CKSIB 010272 R CKSIT 010270 R CKSIX
000047 A CLOCK 000747 A DISCLK 000745 A DISMP 000444 A DISPIM
005642 R DVTP1 005645 R DVTPA 005646 R DVTPB 005650 P DVTPCT
005647 R DVTPTY 000424 A EIGHT 000147 A ENACKL 000645 A ENAMP
000244 A ENAPIM 000465 A FIVE 000037 R FM0 000053 R FM1
000221 R FM2 000264 R FM3 000300 R FM4 000317 R FM6
000340 R FM7 000343 R FM8 000016 R FMA 006611 R FMAD
006057 R FMAD01 006062 R FMAD02 006127 R FMAD05 006131 R FMAD10
005137 R FMAD11 006143 R FMAD12 006153 R FMAD14 006162 R FMAD16
006166 R FMAD17 006167 R FMAD18 006177 R FMAD20 006211 R FMAD22
006311 R FMAD23 006340 R FMAD24 006365 R FMAD26 006379 R FMAD28
006320 R FMAD2A 006225 R FMAD2B 006413 R FMAD30 006423 R FMAD31
006427 R FMAD32 006437 R FMAD34 006440 P FMAD36 006441 R FMAD38
006442 R FMAD40 006445 R FMAD42 006551 R FMAD43 006602 R FMAD44
006500 R FMAD4A 006503 R FMAD4B 006516 R FMAD4C 006577 R FMAD50
006600 R FMAD52 006601 R FMAD54 006616 R FMADCB 006647 P FMADCI
006617 R FMADFC 006576 R FMADIA 006630 R FMADID 006620 R FMADLC
006650 R FMADNB 006646 R FMADSC 006654 R FMADSW 006614 R FMADXX
000000 R FMAIN 001061 R FMBA 000761 R FMBB1 001070 R FMBABL
000773 R FMBAL1 001021 R FMBAL2 001016 R FMBAD 001043 R FMBAP
001066 R FMBAPP 001076 R FMBPS 001071 R FMBAT 001064 R FMBAXX

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001104	R	FMBAZ	010273	R	FMBENT	010273	R	FMBEXT	005667	R	FMBF
000523	R	FMBEP	000521	R	FMBSSZ	000555	R	FMCBB	006746	R	FMCC
006710	R	FMCC00	006724	R	FMCC01	006732	R	FMCC02	006730	R	FMCC10
006753	R	FMCCBA	006751	R	FMCCXX	004311	R	FMCH	004314	R	FMCH1
004335	R	FMCH2	000467	R	FMCI	001132	R	FMCN	001105	R	FMCN1
001142	R	FMCHC	001137	R	FMCNF1	001140	R	FMCNF2	001112	R	FMCNL
001127	R	FMCHX	001135	R	FMCHXX	000470	R	FMCOM	007023	R	FMCP
006755	R	FMCP00	006773	R	FMCP30	007037	R	FMCPDC	007031	R	FMCPIF
007030	R	FMCPIL	007033	R	FMCPDF	007032	R	FMCPOL	007036	R	FMCPSA
007034	R	FMCPSC	007026	R	FMCPFX	001451	R	FMCR	001143	R	FMCR1
001212	R	FMCR2	001462	R	FMCRAA	001464	R	FMCRAS	001467	R	FMCRBP
001456	R	FMCRCB	001446	R	FMCRE	001442	R	FMCRE2	001445	R	FMCRE4
001470	R	FMCREP	001471	R	FMCRFB	001457	R	FMCRFC	001244	R	FMCR11
001473	R	FMCRNA	001350	R	FMCRNB	001474	R	FMCRPB	001475	R	FMCRRC
001477	R	FMCRT	001424	R	FMCRW	001432	R	FMCRX	001437	R	FMCRX2
001454	R	FMCRXX	005145	R	FMDA	002052	R	FMDE	001500	R	FMDE1
002063	R	FMDEAA	002070	R	FMDEAS	002064	R	FMDEBP	002030	R	FMDECC
002057	R	FMDECB	002014	R	FMDECH	001777	R	FMDECI	002023	R	FMDECCJ
001774	R	FMDEE	001773	R	FMDEE3	002075	R	FMDEEA	002065	R	FMDEEF
002060	R	FMDEFC	002076	R	FMDEH1	002116	R	FMDEH2	001570	R	FMDEL1
001651	R	FMDEL2	002061	R	FMDEL3	002066	R	FMDENA	001627	R	FMDELN
002067	R	FMDEPB	001675	R	FMDER	002074	R	FMDESA	001715	R	FMDEWB
001752	R	FMDEWR	001703	R	FMDEWZ	001760	R	FMDEX	001642	R	FMDEX1
001765	R	FMDEX2	001734	R	FMDEX4	002055	R	FMDEXX	002152	R	FMD\$
002120	R	FMD\$1	002161	R	FMD\$D	002157	R	FMD\$P	002140	R	FMD\$S
002162	R	FMD\$T	002155	R	FMD\$XX	000102	R	FME	000436	R	FME1
000441	R	FME5	002330	R	FMEN	002163	R	FMEN1	002341	R	FMENAA
002342	R	FMENBP	002335	R	FMENCB	002317	R	FMENE	002313	R	FMENE2
002316	R	FMENE3	002343	R	FMENEF	002336	R	FMENFC	002344	R	FMENNA
002346	R	FMENPB	002347	R	FMENT	002320	R	FMENX	002325	R	FMENX2
002333	R	FMENXX	000471	R	FMEQMC	000570	R	FMER	000724	R	FMER2
000737	R	FMER4	000753	R	FMERB	000652	R	FMERR	000634	R	FMERR2
000751	R	FMERT	000604	R	FMERW	000714	R	FMERX	006705	R	FMESTK
000677	R	FMEXIT	000715	R	FMEXLP	002433	R	FMFA	002355	R	FMFA1
002440	R	FMFACB	002374	R	FMFAE1	002441	R	FMFAFC	002444	R	FMFAK
002443	R	FMFAT	002377	R	FMFAX	002436	R	FMFAXX	000476	R	FMFCB
002604	R	FMFF	002445	R	FMFF1	002464	R	FMFF2	002620	R	FMFF20
002615	R	FMFFAA	002614	R	FMFFBP	002570	R	FMFFE6	002612	R	FMFFFC
002611	R	FMFFLU	002613	R	FMFFPB	002617	R	FMFFT	002573	R	FMFFTS
002544	R	FMFFX	002607	R	FMFFXX	002732	R	FMGD	002621	R	FMGD1
002742	R	FMGDAA	002745	R	FMGDAB	002744	R	FMGDBP	002755	R	FMGDBR
002740	R	FMGDFC	002630	R	FMGDL	002737	R	FMGDLU	002741	R	FMGDBPB
002752	R	FMGDRN	002753	R	FMGDSP	002734	R	FMGDSS	002700	R	FMGDT
002723	R	FMGDXX	002735	R	FMGDXX	003110	R	FMGP	002761	R	FMGP1
003013	R	FMGPF5	003124	R	FMGPDF5	003105	R	FMGPE1	003115	R	FMGPP
003126	R	FMGPPPE	003125	R	FMGPPS	003117	R	FMGPT	003113	R	FMGPPX
007125	R	FMGT	007040	R	FMGT00	007050	R	FMGT02	007067	R	FMGT04
007104	R	FMGT06	007105	R	FMGT08	007110	R	FMGT10	007113	R	FMGT12
007120	R	FMGT14	007122	R	FMGT16	007133	R	FMGT1A	007132	R	FMGTSA
007130	R	FMGTXX	007444	R	FMHC	005134	R	FMHD	005166	R	FMHDE
005137	R	FMHDS	000120	R	FMI	003222	R	FMIC	003127	R	FMIC1
003216	R	FMIC5	007273	R	FMICBA	003213	R	FMICE1	003227	R	FMICP
003225	R	FMICXX	000555	R	FMIDE	000525	R	FMIDT	000151	R	FMII2
000362	R	FMIIIC	000457	R	FMIIJ	000132	R	FMIIL1	003276	R	FMIIH
003231	R	FMINI1	003303	R	FMINCB	003265	R	FMINE	003307	R	FMINEF
003304	R	FMINFC	003310	R	FMINPB	003311	R	FMINT	003301	R	FMINXX
007247	R	FMIP	007135	R	FMIP00	007163	R	FMIP05	007235	R	FMIP10
007172	R	FMIP20	007207	R	FMIP25	007226	R	FMIP30	007254	R	FMIPCB
007255	R	FMIPFC	007270	R	FMIPUB	007252	R	FMIPXX	007371	R	FMIR
007303	R	FMIR00	007316	R	FMIR10	007376	R	FMIRBA	007363	R	FMIRBF
007366	R	FMIRER	007401	R	FMIRFC	007336	R	FMIRIR	007402	R	FMIRLU
007360	R	FMIRNE	007377	R	FMIRRC	007404	R	FMIRRS	007400	R	FMIRWS
007374	R	FMIRXX	005152	R	FMJN	000227	R	FMK	000476	R	FMK120
000556	R	FMKEY	000032	R	FML1	000222	R	FML3	000472	R	FMLC
003320	R	FMLF	003312	R	FMLF1	003327	R	FMLFDC	003315	R	FMLFP
003323	R	FMLFXX	003320	R	FMLI	003332	R	FMLI1	003442	R	FMLI3
003451	R	FMLI4	003464	R	FMLI5	003643	R	FMLIAG	003631	R	FMLI52
003625	R	FMLICB	003546	R	FMLIE	003545	R	FMLIE6	003632	R	FMLI6A
003633	R	FMLIEF	003626	R	FMLIFC	003645	R	FMLIH1	003576	R	FMLIH2
003564	R	FMLIHC	003511	R	FMLIHH	003531	R	FMLIHI	003375	R	FMLI11
003406	R	FMLIL2	003327	R	FMLILC	003634	R	FMLIPB	003635	R	FMLI20
003636	R	FMLIT	003635	R	FMLIU	003637	R	FMLIUN	003522	R	FMLIX
003501	R	FMLIX1	003537	R	FMLIX2	003623	R	FMLIXX	000514	R	FMLI5
007324	R	FMLT	007435	R	FMLT00	007422	R	FMLT02	007430	R	FMLT04
007435	R	FMLT06	007442	R	FMLT08	007430	R	FMLT10	007445	R	FMLT12
007500	R	FMLT14	007334	R	FMLT16	007511	R	FMLT18	007326	R	FMLT20
007530	R	FMLT22	007534	R	FMLT24	007551	R	FMLT26	007552	R	FMLT28
007566	R	FMLT30	007611	R	FMLT34	007636	R	FMLT3K	007631	R	FMLT08
007645	R	FMLTBT	007632	R	FMLTFC	007703	R	FMLTH9	007634	R	FMLT13
007747	R	FMLTII	007753	R	FMLTLB	007633	R	FMLTLC	007750	R	FMLTLH
007657	R	FMLTN1	007663	R	FMLTN2	007640	R	FMLTN3	007652	R	FMLT27
007670	R	FMLTX1	007674	R	FMLTX2	007627	R	FMLTXX	000551	R	FMLUN
003121	R	FMLUT	006624	R	FMMBLK	006642	R	FMMBUP	006701	R	FMMBNT
006704	R	FMMEXT	006635	R	FMMFCB	006622	R	FMMFPU	006643	R	FMMITH
007637	R	FMMLTB	006641	R	FMMLTP	006635	R	FMMQND	006631	R	FMMQND
006630	R	FMMQMS	006626	R	FMMRCT	006623	R	FMMRLT	003733	R	FMMV
003667	R	FMMV1	003746	R	FMMVC	003743	R	FMMVFP	003734	R	FMMVL
003724	R	FMMVLX	003715	R	FMMVRE	003745	R	FMMVT	003740	R	FMMVTP
003740	R	FMMVXX	006627	R	FMMVPS	004202	R	FMMJ	004076	R	FMMNA
003747	R	FMMNA1	003774	R	FMMNA2	004106	R	FMMNA3	004060	R	FMMNA4
004107	R	FMMNAB	004119	R	FMMNAC	004111	R	FMMNAD	004072	R	FMMNAE1
004114	R	FMMNAF	004112	R	FMMNAN	003761	R	FMMNAL	003775	R	FMMNAL1
004104	R	FMMNAP	004103	R	FMMNAS	004032	R	FMMNAX	004101	R	FMMNAXX



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004133 R FMNB 004115 R FMNB1 004140 R FMNBP 004130 R FMNBX
004136 R FMNBXX 004253 R FMNU 004142 R FMNU1 004240 R FMNUE1
004263 R FMNUE7 004170 R FMNUL1 004264 R FMNUM 004261 R FMNUN
004265 R FMNUR 004260 R FMNUSC 004266 R FMNUT 004216 R FMNUX
004256 R FMNUXX 004241 R FMNUY 004302 R FMOC 004267 R FMOC1
004307 R FMOCLO 004305 R FMOCXX 004422 R FMOF 004335 R FMOF1
004456 R FMOFBE 004435 R FMOFBF 004427 R FMOFBP 004432 R FMOFDC
004340 R FMDFL 004430 R FMDFLC 004456 R FMDFT 004425 R FMDFXX
007261 R FMDFMFC 007260 R FMDFMLU 010004 R FMOR 007756 R FMOR00
007766 R FMOR10 010001 R FMOR20 010011 R FMORBA 010014 R FMORFC
010015 R FMORLU 010012 R FMORRC 010013 R FMORNS 010007 R FMORXX
000557 R FMP1 000562 R FMP2 000565 R FMP3 005142 R FMPN
004457 R FMPT 004501 R FMPT2 004516 R FMPTA 004517 R FMPTB
004472 R FMPTL1 004473 R FMPTL2 004520 R FMPTN 004521 R FMPTS1
010106 R FMPU 010017 R FMPU00 004531 R FMPU01 010054 R FMPU02
010056 R FMPU04 010057 R FMPU06 010062 R FMPU08 010064 R FMPU10
010066 R FMPU12 010103 R FMPU14 010114 R FMPUAI 010113 R FMPUSA
010111 R FMPUX 004645 R FMRE 004522 R FMRE1 004650 R FMREAA
004657 R FMREBP 004652 R FMRECB 004642 R FMREE 004636 R FMREE2
004641 R FMREE3 004660 R FMREEF 004653 R FMREFC 004661 R FMRENA
004663 R FMREPB 004626 R FMREX 004633 R FMREX2 004650 R FMREXX
004722 R FMRR 004664 R FMRR1 004731 R FMRRBP 004717 R FMRR
004730 R FMRRFC 004727 R FMRRLU 004671 R FMRRR 004725 R FMRRXX
004745 R FMRW 004733 R FMRW1 004754 R FMRWBP 004753 R FMRWFC
004752 R FMRWLU 004750 R FMRWXX 010130 R FMSA 010116 R FMSA00
010121 R FMSA05 010123 R FMSA10 010136 R FMSCAD 010135 R FMSACT
010133 R FMSAXX 000521 R FMSCB 000582 R FMSCN 005032 R FMSD
004756 R FMSD1 005044 R FMSDAA 005047 R FMDBF 005043 R FMDBBP
005041 R FMDBFC 005046 R FMDBFL 005040 R FMDBLU 005037 R FMDBNA
005042 R FMDBPB 005012 R FMDBX 005035 R FMDBXX 000513 R FMSII
000752 R FMSLSM 006667 R FMSWFC 006625 R FMSMLU 000473 R FMT
000524 R FMTIC 000505 R FMTDCB 010273 R FMTENT 010273 R FMTXT
000475 R FMTFL 005115 R FMVH 005073 R FMVH1 005120 R FMVHI
005050 R FMVHI1 005126 R FMVHLC 005124 R FMVHXX 005342 R FMWL
005260 R FMWL1 005273 R FMWL2 005366 R FMWLEF 005365 R FMWLEL
005207 R FMWLCK 005347 R FMWLDC 005337 R FMWLE 005301 R FMWLFA
005352 R FMWLFC 005364 R FMWLFL 005156 R FMWLI 005214 R FMWLI1
005235 R FMWLI2 005350 R FMWLLC 005242 R FMWLT 005316 R FMWLW
005345 R FMWLXX 005334 R FMWLZ 005611 R FMWR 005556 R FMWR1
005606 R FMWRE 005617 R FMWRFC 005616 R FMWRLU 005567 R FMWRU
005614 R FMWRXX 000417 R FMZ 000423 R FOUR 007301 E GOFCE
000300 A LC 000050 A LOJP 000462 A LHW 007275 E LOFCB
000045 A MP 000045 A MPMR0 000145 A MPMR1 000245 A MPMR2
000345 A MPMR3 000420 A NT 010267 R N304 000461 A NEG
000470 A NINE 000421 A ONE 007274 E PIFCB 000040 A PIM1
000041 A PIM2 000042 A PIM3 000043 A PIM4 000040 A PIM5
000040 A PIM6 000040 A PIM7 000040 A PIM8 007302 E POFCE
000040 A RAO 000000 A RA1 000060 A RB0 000020 A RB1
000463 A RHU 010252 R RMD 010203 R RMD1 010225 R RMD5
010257 R RMDB 010263 R RMDLUT 010262 R RMDSET 010261 R RMDT
010260 R RMDX 000467 A SEVEN 007167 E SIFCB 000466 A SIX
005664 R SOLD1 005665 R SOLD2 007300 E SSFCB 000140 A SH
000027 A TBATSK 000026 A TBOPTH 000011 A TBENTY 000003 A TBEVNT
000021 A TBID 000014 A TBISA 000015 A TBISB 000017 A TBISP
000020 A TBISRS 000016 A TBISX 000022 A TEKN1 000023 A TEKN2
000024 A TBKNS 000002 A TBPL 000004 A TERSH 000005 A TERSB
000030 A TERSE 000007 A TERSP 000010 A TERSTS 000006 A TEREX
000000 A TBS0 000001 A TBS1 000012 A TBS10 000013 A TBS11
000014 A TBS12 000015 A TBS13 000016 A TBS14 000017 A TBS15
000002 A TBS2 000003 A TBS3 000004 A TBS4 000005 A TBS5
000006 A TBS6 000007 A TBS7 000010 A TBS8 000011 A TBS9
000001 A TBST 000025 A TBTLC 000013 A TBTMIN 000012 A TBTMS
000000 A TBTBD 000471 A TEN 000465 A THREE 000402 A TWO
000403 A V$1MIN 000415 A V$BFC 000075 A V$BGLB 000056 A V$BIC1
000315 A V$BTB 000414 A V$BVN 000334 A V$CAM 000353 A V$CKB
000411 A V$CKIT 000310 A V$CKPT 010140 R V$CKSI 000301 A V$CPL
000076 A V$CRDM 000341 A V$CRDR 000354 A V$CRN 000302 A V$CRS
000360 A V$CTAD 000370 A V$CTL 000351 A V$CTMS 000070 A V$DATE
000355 A V$DSTB 005621 R V$DVTP 000376 A V$ERFG 000000 E V$EXEC
000347 A V$GLB 000306 A V$FLRS 000358 A V$FREE 000320 A V$IN
000410 A V$IDA 000000 E V$IDC 000000 E V$IDST 000412 A V$JOB
000055 A V$JCFG 000077 A V$JCTM 000050 A V$JNAM 000377 A V$JDP
000054 A V$LONT 000312 A V$LER 000356 A V$LIT 000317 A V$LLUP
000307 A V$LR3K 000312 A V$LSAL 000345 A V$LUNT 000316 A V$LUP
000400 A V$LUT1 000401 A V$LUT2 000402 A V$LUT3 000353 A V$MFM
000362 A V$NCTR 000413 A V$DCB 000346 A V$DPCF 000311 A V$DPCL
000363 A V$PINN 000074 A V$PLOT 000305 A V$PTVB 000301 A V$SCTL
000352 A V$SCV 000375 A V$SLFG 005671 R V$SOLD 000306 A V$TB
000342 A V$TGT 000411 A V$TFC 000314 A V$TJCR 000344 A V$TMN
000343 A V$TMS 000304 A V$UTB 000001 A VORTEX 000001 A X
000420 A ZERO

```

0 ERRORS ASSEMBLY COMPLETE

305	APIM	395	396							
88	B	652	960	1029	1031	1040	1098	1103	1104	1148
		1149	1150	1166	1171	1172	1217	1222	1230	1231
		1732	1735	1741	1742	1742	1745	1746	1749	1754
		1756	1806	1808	1844	1888	1890	1891	1920	1971
		1972								
309	BR12	1187	1421	1608						
293	BS12	1755								
205	BS4	875	836							











E.2 VORTEX LISTING

V\*FMAIN

PROGRAM PAGE

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LISTING PAGE ( 714)

501	FMII2	491	495	497						
622	FMIIIC	595								
680	FMIIJ	650								
494	FMIIIL1	503								
0	FMIN	685	1395							
0	FMIP	687								
547	FMK	532								
705	FMK120	638								
750	FMKEY	548	558							
448	FML1	658	824							
526	FML3	535								
692	FMLC	438	478	657	671	674				
0	FMLF	69	1423	1457						
0	FMLI	684								
722	FMLDE	468	477							
749	FMLUN	531	543							
0	FMLUT	2064								
0	FMMV	70	803	1045	1106	1132	1174	1408	1627	1634
		1648								
0	FMNA	487	514	570	611					
0	FMNB	507	549	559						
0	FMNU	541	622	627						
0	FMOC	1460								
0	FMOF	1327								
751	FMP1	489	502	572						
753	FMP2	613								
754	FMP3	516	528							
0	FMPT	71	925	972	1203	1468	1532	1676	1763	1897
		2012								
0	FMRE	682								
0	FMRR	72	1872							
0	FMRW	1051	1068	1274	1299	1345	1586	1608	1938	
728	FMSCB	488	508	515	542	550	560	571	612	623
		628								
752	FMSCN	629	636	642	643					
0	FMSD	1056	1073	1279	1353	1596	1613			
716	FMSII	429	431	453	794					
831	FMSLSW	441	474	784						
693	FMT	509	513	517	539	624	637			
732	FMTC	644								
709	FMTDCB	451	792							
694	FMTFL	444	449							
0	FMVH	73	673	1450						
0	FMVHI	437								
0	FMWL	74	476	1453						
0	FMWLI	75	439							
0	FMWLT	828								
0	FMWR	76	1111	1177	1337	1381	1411	1651	1987	
649	FMZ	583	585	587	589	607	618			
319	FOUR	582	1196	1442	1838	2025				
204	LC	205	206	207	208	209	210	211	212	213
		214	215	216	217	218	219	220	221	222
		223	225	226	227	228	229	230	231	232
		233	234	235	236	237	238	240	241	242
		243	247	248	249	250	251	252	253	258
		259	260	263	268	269	270			
179	LCJP	180	181	182	189	190	191	192	193	196
314	LHW	779	1041	1747						
399	MP	400	401	402	403	404	405			
279	MT	280	281	282	283	284	285	286	287	288
		289	290	291	292	293	294	295	296	297
		298	299	300	301	302	303	304	305	306
		307	308	309	310	311	312	313	314	315
		316	317	318	319	320	321	322	323	324
		325	326	327	328	329	330	331	332	333
		334	335							
315	RHW	434	1154	1718	1736	1976				
322	SEVEN	576	790	1035						
0	SIFCB	425								
321	SIX	1407	1626	1647	1824	1841	1881	1962		
325	TEN	520	773							
318	THREE	496	598	780	1044	1105	1131	1173	1430	1594
		1633	1660							
317	TWO	442	787	1013	1026	1194	1250	1272	1393	1571
		1592	1658							
0	VSDVTP	443								
0	VSEXEC	81								
0	VSFMAI	11								
0	VSIDC	82								
0	VSIDST	83								
260	V\$JCB	805	807							
229	V\$LUNT	522								
0	V\$SOLD	440								
89	X	426	430	432	433	436	437	439	440	443
		476	487	500	507	514	526	530	541	549
		559	570	611	622	627	654	673	803	814
		828	858	872	873	878	881	895	898	901
		911	913	914	915	917	918	919	921	922
		925	959	972	1018	1038	1040	1043	1045	1051
		1056	1068	1073	1085	1086	1094	1096	1100	1101
		1106	1111	1118	1126	1128	1130	1132	1139	1147
		1152	1153	1164	1168	1169	1174	1177	1185	1186
		1188	1203	1255	1263	1265	1274	1279	1291	1293



1299	1304	1315	1327	1336	1337	1345	1353	1365
1368	1375	1377	1380	1381	1395	1400	1408	1411
1419	1420	1422	1423	1441	1448	1450	1453	1457
1460	1468	1506	1507	1514	1515	1532	1576	1586
1596	1608	1613	1627	1634	1640	1648	1651	1666
1667	1669	1676	1713	1716	1729	1734	1753	1763
1812	1823	1825	1830	1846	1854	1863	1866	1869
1872	1897	1938	1946	1960	1963	1969	1974	1975
1981	1983	1985	1986	1987	1992	1993	1995	1996
1998	2002	2005	2012	2052	2075	2076	2078	



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000001 A 1 VORTEX SET 1 PUT LAST FOR VORTEX V2 03 00001
2 * THIS IS A COPYRIGHTED PROGRAM.COPYRIGHT 1972 BY VARIAN DATA MACHINV2 03 00002
3 * 03 00003
4 * V.D.M. PART NO. 92L0203-006D 03 00004
5 * 03 00005
6 * 03 00006
7 * 03 00007
8 * 03 00008
9 * 03 00009
10 * 03 00010
11 * 03 00011
12 * 03 00012
13 ***** 03 00013
14 * 03 00014
15 ***** 03 00015
000000 A 17 TBTRD EQU 0 TASK THREAD 03 00017
000001 A 18 TBST EQU 1 TASK STATUS 03 00018
000002 A 19 TBPL EQU 2 STATUS CONT. (BITS15-6),PRIORITY LEVEL(5-0 03 00019
000003 A 20 TBEVNT EQU 3 INTERRUPT EVENT 03 00020
000004 A 21 TBRSA EQU 4 A REENTRANT AND SUSPEND STACK 03 00021
000005 A 22 TBRSE EQU 5 B REENTRANT AND SUSPEND STACK 03 00022
000006 A 23 TBRX EQU 6 X REENTRANT AND SUSPEND STACK 03 00023
000007 A 24 TBRSP EQU 7 DF/P REENTRANT AND SUSPEND STACK 03 00024
000010 A 25 TBRSTS EQU 8 TEMP. STG. REENTRANT AND SUSPEND STACK 03 00025
000011 A 26 TBENTY EQU 9 TASK ENTRY LOCATION 03 00026
000012 A 27 TBTMS EQU 10 TIME COUNTER - CLOCK RESOLUTION IN SMS INC 03 00027
000013 A 28 TBTMIN EQU 11 TIME COUNTER - CLOCK MINUTE INCREMENTS 03 00028
000014 A 29 TBISA EQU 12 A INTERRUPT STACK 03 00029
000015 A 30 TBISB EQU 13 B INTERRUPT STACK 03 00030
000016 A 31 TBISX EQU 14 X INTERRUPT STACK 03 00031
000017 A 32 TBISP EQU 15 DF/P INTERRUPT STACK 03 00032
000020 A 33 TBISRS EQU 16 REENT. STACK INTERRUPT STACK 03 00033
000021 A 34 TBID EQU 17 BLK ALLOC(15-10),I/O THR(9-5),I/O ACT(4-0) 03 00034
000022 A 35 TBKN1 EQU 18 TASK NAME 03 00035
000023 A 36 TBKN2 EQU 19 TASK NAME 03 00036
000024 A 37 TBKN3 EQU 20 TASK NAME 03 00037
000025 A 38 TBTLC EQU 21 1ST LOC. OF TASK ALLOCATABLE 03 00038
000026 A 39 TBCPTH EQU 22 BACKGROUND TASK QUEUE 03 00039
000027 A 40 TBATSK EQU 23 TIDB LOC. OF ACTIVATING TASK 03 00040
000030 A 41 TBRSE EQU 24 TASK ERROR CODE 03 00041
42 EJECT 03 00042
43 ***** 03 00043
44 * 03 00044
45 ***** 03 00045
46 * 03 00046
47 ***** 03 00047
000017 A 49 TBS15 EQU 15 INTERRUPT SUSPEND 03 00049
000016 A 51 TBS14 EQU 14 TASK SUSPEND 03 00051
000015 A 52 TBS13 EQU 13 TASK ABORT 03 00052
000014 A 53 TBS12 EQU 12 TASK EXIT 03 00053
000013 A 55 TBS11 EQU 11 TIDB CORE RESIDENT 03 00055
000012 A 56 TBS10 EQU 10 CORE RESIDENT TASK 03 00056
000011 A 57 TBS9 EQU 9 FOREGROUND TASK 03 00057
000010 A 59 TBS8 EQU 8 TASK PROTECTED 03 00059
000007 A 60 TBS7 EQU 7 TASK SCHEDULED BY TIME DELAY 03 00060
000006 A 61 TBS6 EQU 6 TIME DELAY ACTIVE 03 00061
000005 A 63 TBS5 EQU 5 TASK WAITING TO BE LOADED 03 00063
000004 A 64 TBS4 EQU 4 TASK ERROR 03 00064
000003 A 65 TBS3 EQU 3 TASK INTERRUPT EXPECTED 03 00065
000002 A 67 TBS2 EQU 2 OVERLAY TASK 03 00067
000001 A 68 TBS1 EQU 1 UPON TERMINATION ACTIVATE TASK SCHED TASK 03 00068
000000 A 69 TBS0 EQU 0 TASK SEARCH-ALLOCATED-LOADED 03 00069
70 EJECT 03 00070
71 ***** 03 00071
72 * 03 00072
73 ***** 03 00073
74 * 03 00074
75 ***** 03 00075
76 * 03 00076
77 * BIT 15 - TASK OPENED 03 00077
78 * 03 00078
79 * BIT 14 - UNUSED 03 00079
80 * 03 00080
81 * BIT 13 - OVERLAY LOAD 03 00081
82 * BIT 12 - TASK WAITING FOR BACKGROUND TASK I/O TO COMPLETE 03 00082
83 * TASK LOCKED-OUT UNTIL BG I/O COMPLETE OR BIT 11 03 00083
84 * IS SET (ALLOCATABLE SPACE AVAILABLE) 03 00084
85 * BIT 11 - DEFINES THAT ALLOCATABLE SPACE IS AVAILABLE, TRY 03 00085
86 * ALLOCATING TASK AGAIN. OVERRIDES BIT 12 SET OR 03 00086
87 * BIT 5 IN STATUS WORD. 03 00087
88 * BIT 10 - BACKGROUND TASK BEING WRITTEN ON CHECKPOINT FILE. 03 00088
89 * BIT 9 - TASK WAITING FOR A TIDB TO COME AVAILABLE FOR 03 00089
90 * SCHEDULING. 03 00090
91 * 03 00091
92 * BIT 8 TO 6 - UNUSED 03 00092
93 EJECT 03 00093
94 ***** 03 00094
95 * 03 00095
96 ***** 03 00096
97 * 03 00097
98 ***** 03 00098
000050 A 100 LCJP EQU 050 03 00100
000050 A 101 V$JNAM EQU LCJP JCP NAME 03 00101
000054 A 102 V$LCNT EQU LCJP+4 LINE COUNT 03 00102
000055 A 103 V$JCFG EQU LCJP+5 JCP FLAGS 03 00103
104 * BIT 2-0 = LOAD AND GO FLAGS 03 00104
105 * BIT 3 = DUMP FLAG 1=DUMP, 0=NO DUMP 03 00105

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106	*			BIT 4 = DUMP FLAG IF LOAD AND GO	03	00106
107	*			BIT 9-5 = UNUSED	03	00107
108	*			BIT 15-10 = BG EXTRA CORE BLOCKS TO ALLOC	03	00108
000056	A	110	V\$BIC1 EQU LCJP+6	BIC INTERRUPT ADDRESS TABLE (10 WORDS)	03	00110
000070	A	111	V\$DATE EQU LCJP+16	JCP DATE RECORD	03	00111
000074	A	112	V\$PLCT EQU LCJP+20	PERMATE LINE COUNT	03	00112
000075	A	113	V\$BGLB EQU LCJP+21	JCP LIB KEY AND LU NO. (BACKGROUND LIB)	03	00113
000076	A	114	V\$CRDM EQU LCJP+22	CARD KEYPUNCH TYPE, 0=026, 1=029	03	00114
		115	*	BIT 0 = SYSTEM NOMINAL KEYPUNCH MODE.	03	00115
		116	*	BIT 9 = CURRENT JOB KEYPUNCH MODE.	03	00116
000077	A	117	V\$JCTM EQU LCJP+23	TEMP. STORAGE FOR /MEM BLOCK	03	00117
		118	EJEC		03	00118
		119	*****	*****	03	00119
		120	*		03	00120
		121	*** LOW CORE DESCRIPTION ***		03	00121
		122	*		03	00122
		123	*****	*****	03	00123
000300	A	125	LC EQU 0300	CURRENT TASK TIDB LOCATION	03	00125
000300	A	126	V\$CTL EQU LC	CURRENT PRIORITY LEVEL	03	00126
000301	A	127	V\$CPL EQU LC+1	CURRENT REENTRANT STACK POINTER	03	00127
000302	A	128	V\$CRS EQU LC+2	POINTER TO HIGHEST PRIORITY TIDB	03	00128
000303	A	129	V\$TB EQU LC+3	POINTER TO UNUSED TASK TIDB	03	00129
000304	A	130	V\$UTB EQU LC+4	POINTER TO NEXT ENTRY IN REENTRANT STACK	03	00130
000305	A	131	V\$PTVB EQU LC+5	FIRST LOC. OF REENTRANT STACK	03	00131
000306	A	132	V\$FLRS EQU LC+6	LAST LOC. OF REENTRANT STACK+1	03	00132
000307	A	133	V\$LRSK EQU LC+7	CHECKPOINT FLAG 1=ON, 0=OFF	03	00133
000310	A	134	V\$CKPT EQU LC+8	LOC. OF TIDB FOR DPCOM TASK	03	00134
000311	A	135	V\$OPCL EQU LC+9	LOC. OF TIDB FOR SYSTEM SAL TASK	03	00135
000312	A	136	V\$LSAL EQU LC+10	LOC. OF TIDB FOR SYSTEM ERROR TASK	03	00136
000313	A	137	V\$LER EQU LC+11	LOC. OF TIDB FOR JOB CONTROL PROCESSOR TAS	03	00137
000314	A	138	V\$TJCP EQU LC+12	LOC. OF CURRENT ACTIVE BACKGROUND TSK TIDB	03	00138
000315	A	139	V\$BTB EQU LC+13	LOC. OF 1ST UNPROTECTED WORD	03	00139
000316	A	140	V\$SLUP EQU LC+14	LOC. OF LAST UNPROTECTED WORD	03	00140
000317	A	141	V\$LLUP EQU LC+15	INTERRUPT MASK (8 WORDS)	03	00141
000320	A	142	V\$IM EQU LC+16	MEMORY PROTECT MASK (4 WORDS)	03	00142
000330	A	143	V\$MPM EQU LC+24	CORE ALLOCATION MASK (4 WORDS)	03	00143
000334	A	144	V\$CAM EQU LC+28	UNUSED	03	00144
		145	* EQU LC+32	CORE RESIDENT DIRECTORY LOCATION	03	00145
000341	A	146	V\$CRDR EQU LC+33	TOP OF THREAD OF BG TSK WAITING TO BE ALLO	03	00146
000342	A	147	V\$TBGT EQU LC+34	TIME OF DAY IN 5 MILLISECOND INCREMENTS	03	00147
000343	A	148	V\$TMS EQU LC+35	TIME OF DAY IN MINUTE INCREMENTS	03	00148
000344	A	149	V\$TMN EQU LC+36	ADDR. OF LOGICAL UNIT NAME TABLE	03	00149
000345	A	150	V\$LUNT EQU LC+37	DPCOM LOCKOUT FLAG	03	00150
000346	A	151	V\$OPCF EQU LC+38	KEY AND LU NO. FOR FOREGROUND LIB	03	00151
000347	A	152	V\$FGLB EQU LC+39	FREE RUNNING COUNTER INCR. IN MICROSECONDS	03	00152
000350	A	153	V\$FREE EQU LC+40	CLOCK RESOLUTION IN 5 MILLISECOND INCR.	03	00153
000351	A	154	V\$CTMS EQU LC+41	CLOCK SELECTED COUNT VALUE (1 TO 4095)	03	00154
000352	A	155	V\$SCV EQU LC+42	BASIC CLOCK INTERRUPT RATE IN MICROSECONDS	03	00155
000353	A	156	V\$CKB EQU LC+43	CLOCK RESOLUTION INCR. FOR 1 MINUTE.	03	00156
000354	A	157	V\$CRM EQU LC+44	BASE ADDR. FOR DST BLOCK	03	00157
000355	A	158	V\$DSTB EQU LC+45	LAST LOCATION OF BACKGROUND LITERAL TABLE	03	00158
000356	A	159	V\$LIT EQU LC+46	UNUSED	03	00159
		160	* EQU LC+47	UNUSED	03	00160
000360	A	161	V\$CTAD EQU LC+48	BASE ADDR. FOR CONTROLLER ADDR. TABLE	03	00161
000361	A	162	V\$SCTL EQU LC+49	CURRENT CONTROLLER IN SCAN	03	00162
000362	A	163	V\$NCTR EQU LC+50	NO. OF CONTROLLERS	03	00163
000363	A	164	V\$PIMN EQU LC+51	EXTERNAL DEVICE ADDRESS TABLE FOR PIMS	03	00164
		165	*	(8 WORDS DEFINED IN PIM NO ORDER)	03	00165
		166	* EQU LC+59	UNUSED	03	00166
		167	* EQU LC+60	UNUSED	03	00167
000375	A	168	V\$SLFG EQU LC+61	SAL TASK BUSY FLAG 1=BUSY, 0=NOT BUSY	03	00168
000376	A	169	V\$ERFG EQU LC+62	ERROR TASK BUSY FLAG 1=BUSY, 0=NOT BUSY	03	00169
000377	A	170	V\$JOP EQU LC+63	JCP OPERATING FLAG	03	00170
000400	A	171	V\$LUT1 EQU LC+64	START LUN ADDR FOR JCP/DPCOM ASSIGNABLE	03	00171
000401	A	172	V\$LUT2 EQU LC+65	START LUN ADDR FOR UNASSIGNABLE	03	00172
000402	A	173	V\$LUT3 EQU LC+66	START LUN ADDR FOR DPCOM ASSIGNABLE	03	00173
000403	A	174	V\$1MIN EQU LC+67	32767 - (60000/(5*V\$CTMS)) + 1	03	00174
		175	* EQU LC+68	UNUSED	03	00175
		176	* EQU LC+69	UNUSED	03	00176
		177	* EQU LC+70	UNUSED	03	00177
		178	* EQU LC+71	UNUSED	03	00178
000410	A	179	V\$IDA EQU LC+72	I/O ALGORITHM	03	00179
000411	A	180	V\$CKIT EQU LC+73	CLOCK INT. IN PIM BEFORE LOCKOUT FLAG.	03	00180
000412	A	181	V\$JCB EQU LC+74	ALL SYSTEM BACKGROUND PROGRAMS AND JCP USE	03	00181
		182	*	THIS SYSTEM BUFFER TO READ DIRECTIVES AND	03	00182
		183	*	SOURCE RECORDS IN.	03	00183
000413	A	184	V\$DCB EQU LC+75	DPCOM WILL READ OPERATOR KEY-IN REQUESTS	03	00184
		185	*	IN THIS BUFFER. IF JCP IS SET NOT ACTIVE	03	00185
		186	*	AND A 1 DIRECTIVE IS INPUTED, DPCOM	03	00186
		187	*	WILL MOVE THE DIRECTIVE TO V\$JCB BEFORE	03	00187
		188	*	SCHEDULING JCP.	03	00188
000414	A	189	V\$BVN EQU LC+76	BOTTOM OF VORTEX NUCLEUS	03	00189
000415	A	190	V\$BFC EQU LC+77	TOP OF FG RES. AREA/BOTTOM OF FG BLK COMM.	03	00190
000416	A	191	V\$TFC EQU LC+78	TOP OF FG BLK COMMON/TOP OF VORTEX CORE.	03	00191
		192	* EQU LC+79	UNUSED	03	00192
		193	EJEC		03	00193
		194	*****	*****	03	00194
		195	*		03	00195
		196	*** MASK TABLE DESCRIPTION ***		03	00196
		197	*		03	00197
		198	*****	*****	03	00198
000420	A	200	MT SET 0420		03	00200
000420	A	201	ZERO EQU MT	ZERO WORD	03	00201



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000421 A 202 BS0 EQU MT+1 BIT MASK CONTENTS 000001 03 00202
000422 A 203 BS1 EQU MT+2 000002 03 00203
000423 A 204 BS2 EQU MT+3 000004 03 00204
000424 A 205 BS3 EQU MT+4 000010 03 00205
000425 A 206 BS4 EQU MT+5 000020 03 00206
000426 A 207 BS5 EQU MT+6 000040 03 00207
000427 A 208 BS6 EQU MT+7 000100 03 00208
000430 A 209 BS7 EQU MT+8 000200 03 00209
000431 A 210 BS8 EQU MT+9 000400 03 00210
000432 A 211 BS9 EQU MT+10 001000 03 00211
000433 A 212 BS10 EQU MT+11 002000 03 00212
000434 A 213 BS11 EQU MT+12 004000 03 00213
000435 A 214 BS12 EQU MT+13 010000 03 00214
000436 A 215 BS13 EQU MT+14 020000 03 00215
000437 A 216 BS14 EQU MT+15 040000 03 00216
000440 A 217 BS15 EQU MT+16 0100000 03 00217
000441 A 218 BR0 EQU MT+17 BIT MASK CONTENTS 0177776 03 00218
000442 A 219 BR1 EQU MT+18 0177775 03 00219
000443 A 220 BR2 EQU MT+19 0177773 03 00220
000444 A 221 BR3 EQU MT+20 0177767 03 00221
000445 A 222 BR4 EQU MT+21 0177757 03 00222
000446 A 223 BR5 EQU MT+22 0177737 03 00223
000447 A 224 BR6 EQU MT+23 0177677 03 00224
000450 A 225 BR7 EQU MT+24 0177577 03 00225
000451 A 226 BR8 EQU MT+25 0177377 03 00226
000452 A 227 BR9 EQU MT+26 0176777 03 00227
000453 A 228 BR10 EQU MT+27 0175777 03 00228
000454 A 229 BR11 EQU MT+28 0173777 03 00229
000455 A 230 BR12 EQU MT+29 0167777 03 00230
000456 A 231 BR13 EQU MT+30 0157777 03 00231
000457 A 232 BR14 EQU MT+31 0137777 03 00232
000460 A 233 BR15 EQU MT+32 0077777 03 00233
000461 A 234 NEG EQU MT+33 SET ALL BITS 03 00234
000462 A 235 LHW EQU MT+34 LEFT HALF WORD MASK 0177400 03 00235
000463 A 236 RHW EQU MT+35 RIGHT HALF WORD MASK 0377 03 00236
000421 A 237 ONE EQU MT+1 CONTAINS NUMBER 1 03 00237
000422 A 238 TWO EQU MT+2 CONTAINS NUMBER 2 03 00238
000464 A 239 THREE EQU MT+36 CONTAINS NUMBER 3 03 00239
000423 A 240 FOUR EQU MT+3 CONTAINS NUMBER 4 03 00240
000465 A 241 FIVE EQU MT+37 CONTAINS NUMBER 5 03 00241
000466 A 242 SIX EQU MT+38 CONTAINS NUMBER 6 03 00242
000467 A 243 SEVEN EQU MT+39 CONTAINS NUMBER 7 03 00243
000424 A 244 EIGHT EQU MT+4 CONTAINS NUMBER 8 03 00244
000470 A 245 NINE EQU MT+40 CONTAINS NUMBER 9 03 00245
000471 A 246 TEN EQU MT+41 CONTAINS NUMBER 10 03 00246
000421 A 247 BM1 EQU MT+1 BIT MASK WORD 00001 03 00247
000464 A 248 BM3 EQU MT+36 BIT MASK WORD 00003 03 00248
000467 A 249 BM7 EQU MT+39 BIT MASK WORD 00007 03 00249
000472 A 250 BM17 EQU MT+42 BIT MASK WORD 00017 03 00250
000473 A 251 BM37 EQU MT+43 BIT MASK WORD 00037 03 00251
000474 A 252 BM77 EQU MT+44 BIT MASK WORD 00077 03 00252
000475 A 253 BM177 EQU MT+45 BIT MASK WORD 00177 03 00253
000463 A 254 BM377 EQU MT+35 BIT MASK WORD 00377 03 00254
000476 A 255 BM777 EQU MT+46 BIT MASK WORD 00777 03 00255
000477 A 256 BM1777 EQU MT+47 BIT MASK WORD 01777 03 00256
257 EJECT *****
258 *****
259 *****
260 ***** BIT TEST BIT DESIGNATION *****
261 *****
262 *****
000040 A 264 RA0 EQU 040 BT JUMPS WHEN A REGISTER IS 0 03 00264
000000 A 265 RA1 EQU 000 BT JUMPS WHEN A REGISTER IS 1 03 00265
000060 A 266 RB0 EQU 060 BT JUMPS WHEN B REGISTER IS 0 03 00266
000020 A 267 RB1 EQU 020 BT JUMPS WHEN B REGISTER IS 1 03 00267
269 *****
270 *****
271 ***** THE BIT CHECKED *****
272 *****
273 *****
000000 A 275 B0 EQU 0 03 00275
000001 A 276 B1 EQU 1 03 00276
000002 A 277 B2 EQU 2 03 00277
000003 A 278 B3 EQU 3 03 00278
000004 A 279 B4 EQU 4 03 00279
000005 A 280 B5 EQU 5 03 00280
000006 A 281 B6 EQU 6 03 00281
000007 A 282 B7 EQU 7 03 00282
000010 A 283 B8 EQU 8 03 00283
000011 A 284 B9 EQU 9 03 00284
000012 A 285 B10 EQU 10 03 00285
000013 A 286 B11 EQU 11 03 00286
000014 A 287 B12 EQU 12 03 00287
000015 A 288 B13 EQU 13 03 00288
000016 A 289 B14 EQU 14 03 00289
000017 A 290 B15 EQU 15 03 00290
291 EJECT *****
292 *****
293 *****
294 ***** DEVICE AND FUNCTION CODES *****
295 *****
296 *****
298 ***** REAL TIME CLOCK *****

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Address	Op	Opnd	Opnd	Opnd	Opnd	Opnd	Opnd	Opnd	Opnd
000047	A	299	CLOCK	EQU	047	DEVICE NUMBER 047			03 00299
000747	A	300	DISCLK	EQU	0700+CLOCK	DISABLE CLOCK			03 00300
000147	A	301	ENACLK	EQU	0100+CLOCK	ENABLE CLOCK			03 00301
		302							03 00302
		303							03 00303
		304							03 00304
		305	****	PIM				***	03 00305
000044	A	306	APIM	EQU	044	ALL PIMS DEVICE NUMBER			03 00306
000040	A	307	PIM1	EQU	040				03 00307
000041	A	308	PIM2	EQU	041				03 00308
000042	A	309	PIM3	EQU	042				03 00309
000043	A	310	PIM4	EQU	043				03 00310
000040	A	311	PIM5	EQU	040				03 00311
000040	A	312	PIM6	EQU	040				03 00312
000040	A	313	PIM7	EQU	040				03 00313
000040	A	314	PIM8	EQU	040				03 00314
		315	*						03 00315
000444	A	316	DISPIM	EQU	0400+APIM				03 00316
000244	A	317	ENAPIM	EQU	0200+APIM				03 00317
		318	****	MEMORY PROTECT				***	03 00318
		319							03 00319
000045	A	320	MP	EQU	045	DEVICE ADDRESS 045			03 00320
000745	A	321	DISMP	EQU	0700+MP	DISABLE MEMORY PROTECT			03 00321
000645	A	322	ENAMP	EQU	0600+MP	ENABLE MEMORY PROTECT			03 00322
000045	A	323	MPMR0	EQU	0000+MP	SELECT MASK REGISTER 0			03 00323
000145	A	324	MPMR1	EQU	0100+MP	SELECT MASK REGISTER 1			03 00324
000245	A	325	MPMR2	EQU	0200+MP	SELECT MASK REGISTER 2			03 00325
000345	A	326	MPMR3	EQU	0300+MP	SELECT MASK REGISTER 3			03 00326
		327							03 00327
		328	EJEC						03 00328
		329	EXT		SIFCB,PIFCB,LOFCB,BIFCB				03 00329
		330	EXT		BOFCB,SSFCB,GOFCB,POFCB				03 00330
000001	A	330	X	EQU	1				03 00330
000002	A	331	B	EQU	2				03 00331
000002	A	332	SI	EQU	2				03 00332
000003	A	333	SO	EQU	3				03 00333
000003	A	334	LD	EQU	5				03 00334
		335	*			ENTRY POINT FOR			03 00335
		336	*			I/O UTILITY PROGRAM			03 00336
		337	*						03 00337
		338	*						03 00338
		339	*						03 00339
		340							03 00340
000000	A	006030	V\$IUTL	LDXI	100	CLEAR			03 00341
000001	A	000144							03 00342
000002	A	005001	IUTLA	TZA		STORAGE			03 00343
000003	A	006055	IUTLA	STAE	LUNLST,X	AREAS			03 00344
000004	R	005004							03 00345
000005	A	005344		DXR					03 00346
000006	A	001046		JXNZ	IUTLA				03 00347
000007	R	000003							03 00348
000010	A	006027		LDBE	SIFADD				03 00349
000011	R	004653							03 00350
000012	A	016006		LDA	6,B	IS SIFCB OPEN ?			03 00351
000013	A	001010		JAZ	IUTLAD	NO			03 00352
000014	R	000017							03 00353
000015	A	010422		LDA	TWO	SET ENTRY IN FCBLUN TABLE			03 00354
000016	I	057000		STA	FCBLUN+12				03 00355
000017	A	030400		IUTLAD	LDX	GET CUR ASSIGNMENT			03 00356
000020	A	015003		LDA	V\$LUT1	FOR SD			03 00357
000021	A	150463		ANA	SD,X	LOG. UNIT			03 00358
000022	A	054450		STA	RHW				03 00359
000023	A	015005		STA	IUTA				03 00360
000024	A	150463		LDA	LD,X	GET CUR ASSIGNMENT			03 00361
000025	A	144445		ANA	RHW	FOR LD,			03 00362
000026	A	001010		SUB	IUTA	LD, SO, SAME LUN ?			03 00363
000027	R	000073		JAZ	IUTLB	YES			03 00364
000030	A	010421		LDA	ONE	NO - INITIALIZE			03 00365
000031	A	054617		STA	LN CNT	LINE COUNT AND			03 00366
000032	A	006057		STAE	PAGND				03 00367
000033	R	004640							03 00368
000034	I	057000		STA	PRIFLG	SET PRINT FLAG			03 00369
000035	A	010070		LDA	V\$DATE	SET UP PRINT LINE -			03 00370
000036	I	057000		STA	HEAD+6	MOVE			03 00371
000037	A	010071		LDA	V\$DATE+1	DATE			03 00372
000040	I	057000		STA	HEAD+7	TO			03 00373
000041	A	010072		LDA	V\$DATE+2	HEADING			03 00374
000042	I	057000		STA	HEAD+8				03 00375
000043	A	010073		LDA	V\$DATE+3				03 00376
000044	I	057000		STA	HEAD+9				03 00377
000045	A	010050		LDA	V\$JNAM	MOVE			03 00378
000046	I	057000		STA	HEAD+11	JOB			03 00379
000047	A	010051		LDA	V\$JNAM+1	NAME			03 00380
000050	I	057000		STA	HEAD+12	TO			03 00381
000051	A	010052		LDA	V\$JNAM+2	HEADING			03 00382
000052	I	057000		STA	HEAD+13				03 00383
000053	A	010053		LDA	V\$JNAM+3				03 00384
000054	I	057000		STA	HEAD+14				03 00385
		379		IOLINK	LD,HEAD,30				03 00386
000055	A	006505							03 00387
000056	A	000406							03 00388
000057	A	001405							03 00389
000060	R	004437							03 00390
000061	A	000036							03 00391
000062	A	006505							03 00392
		380		WRITE	LOFCB,LD,0,1	WRITE HEADING			03 00393



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000063 000404 A
000064 100000 A
000065 010405 A
000066 000000 E
000067 000000 A
000070 000000 A
000071 006505 A 381 JSR IOCHK,X CHECK I/O STATUS 03 00381
000072 004227 R
000073 037000 I 382 IUTLB LDX D40 03 00382
000074 020412 A 383 LDB V$JCB 03 00383
000075 006017 A 384 LDAE DBLK CLEAR 03 00384
000076 004513 R
000077 056000 A 385 IUTLC STA 0,B JC 03 00385
000100 005122 A 386 IBR JC BUFFER 03 00386
000101 005344 A 387 DKR 03 00387
000102 001046 A 388 JXNZ IUTLC 03 00388
000103 000077 R
000104 076000 A 389 STX 0,B 03 00389
000105 010412 A 390 LDA V$JCB GET BUFFER ADRS 03 00390
000106 006057 A 391 STAE INDCB+1 SET IN INPUT DCB 03 00391
000107 004503 R
000110 010422 A 392 LDA TWO 03 00392
000111 006505 A 393 JSR V$DVTP,X SI A TTY OR CRT ? 03 00393
000112 004303 R
000113 001016 A 394 JANZ IUTLCH NO 03 00394
000114 000124 R 395 WRITE REQDCB,SI,0,1 YES - WRITE 'IU**' 03 00395

000115 006505 A
000116 000404 A
000117 100000 A
000120 010402 A
000121 000474 R
000122 000000 A
000123 000000 A
000124 010412 A 396 IUTLCH LDA V$JCB 03 00396
000125 054003 A 397 STA IUTLCK+3 03 00397
398 IUTLCK IDLINK SI,0,40 03 00398

000126 006505 A
000127 000406 A
000130 001402 A
000131 000000 A
000132 000050 A

399 READ SIFCB,SI,0,1 READ DIRECTIVE 03 00399

000133 006505 A
000134 000404 A
000135 100000 A
000136 010002 A
000137 000000 E
000140 000000 A
000141 000000 A
000142 006505 A 400 JSR IOCHK,X CHECK I/O STATUS 03 00400
000143 004227 R
000144 005001 A 401 IUTLD IZA 03 00401
000145 057000 I 402 STA IGBLK 03 00402
000146 010412 A 403 LDA V$JCB SET CHAR POINTER 03 00403
000147 004241 A 404 LRLA 1 TO BEGIN OF 03 00404
000150 057000 I 405 STA IUPTR JC BUFFER 03 00405
000151 006505 A 406 JSR IUSCAN,X GET 1ST CHAR 03 00406
000152 003673 R
000153 004250 A 407 LRLA 8 03 00407
000154 147000 I 408 SUB N12740 IS IT A SLASH ? 03 00408
000155 001016 A 409 JANZ IUTLF NO 03 00409
000156 000162 R 410 EXIT YES - EXIT, DONE 03 00410

000157 006505 A
000160 000406 A
000161 000200 A
000162 006127 A 411 IUTLF ADDE N12740 03 00411
000163 004512 R
000164 054305 A 412 STA IUTLZ SAVE CHARACTER 03 00412
000165 017000 I 413 LDA PRIFLG PRINT FLAG SET ? 03 00413
000166 001010 A 414 JAZ IUTLH NO 03 00414
000167 000245 R
000170 014460 A 415 LDA LNCNT YES - 03 00415
000171 005111 A 416 IAR INCREMENT 03 00416
000172 054456 A 417 STA LNCNT LINE COUNT 03 00417
000173 140054 A 418 SUB V$LCNT END OF PAGE ? 03 00418
000174 001004 A 419 JAN IUTLG NO 03 00419
000175 000224 R
000176 010421 A 420 LDA ONE YES - 03 00420
000177 054451 A 421 STA LNCNT RESET LINE COUNT 03 00421
000200 017000 I 422 LDA PAGNO INCREASE 03 00422
000201 005111 A 423 IAR PAGE NUMBER 03 00423
000202 057000 I 424 STA PAGNO 03 00424
000203 027000 I 425 LDB PCAD 03 00425
000204 006505 A 426 JSR BINASC,X SET PAGE NO IN HEADING 03 00426
000205 003635 R

427 IUTLFH IDLINK LD,HEAD,30 03 00427

000206 006505 A
000207 000406 A
000210 001405 A
000211 004437 R
000212 000036 A

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Address	Code	Label	Operation	Comments	Page
000213	006505	A	WRITE	LOFCB,LD,0,1	03 00428
000214	000404	A			
000215	100000	A			
000216	010405	A			
000217	000056	E			
000220	000000	A			
000221	000000	A			
000222	006505	A	429 JSR	IDCHK,X CHECK I/O STATUS	03 00429
000223	004227	R			
000224	010412	A	430 IUTLG LDA	V*JCB	03 00430
000225	005311	A	431 DAR		03 00431
000226	054003	A	432 STA	IUTLGD+3	03 00432
			433 IUTLGD	IDLINK LD,0,40	03 00433
000227	006505	A			
000230	000406	A			
000231	001405	A			
000232	000000	A			
000233	000050	A			
000234	006505	A	434 WRITE	LOFCB,LD,0,1 WRITE DIRECTIVE	03 00434
000235	000404	A			
000236	100000	A			
000237	010405	A			
000240	000217	E			
000241	000000	A			
000242	000000	A			
000243	006505	A	435 JSR	IDCHK,X CHECK I/O STATUS	03 00435
000244	004227	R			
000245	006505	A	436 IUTLH JSR	IUSCAN,X GET NEXT CHARACTER	03 00436
000246	003670	R			
000247	114222	A	437 DRB	IUTLZ PACK WITH 1ST	03 00437
000250	057000	I	438 STA	IUTBUF	03 00438
000251	006505	A	439 JSR	IUSCAN,X GET 3RD CHAR	03 00439
000252	003670	R			
000253	004250	A	440 LRLA	8	03 00440
000254	054215	A	441 STA	IUTLZ	03 00441
000255	006505	A	442 JSR	IUSCAN,X GET 4TH CHAR	03 00442
000256	003670	R			
000257	147000	I	443 SUB	N240 BLANK ?	03 00443
000260	001010	A	444 JAZ	IUTLK YES	03 00444
000261	000332	R			
000262	147000	I	445 SUB	N14 NO - COMMA ?	03 00445
000263	001010	A	446 JAZ	IUTLKC YES	03 00446
000264	000333	R			
000265	147000	I	447 SUB	N21 NO - EQUALS SIGN ?	03 00447
000266	001010	A	448 JAZ	IUTLKC YES	03 00448
000267	000333	R			
000270	127000	I	449 ADD	N275 NO -	03 00449
000271	114200	A	450 DRB	IUTLZ PACK WITH 3RD CHAR	03 00450
000272	057000	I	451 STA	IUTBUF+1	03 00451
000273	006505	A	452 JSR	IUSCAN,X GET 5TH CHAR	03 00452
000274	003670	R			
000275	147000	I	453 SUB	N240 BLANK ?	03 00453
000276	001010	A	454 JAZ	IUTLM YES	03 00454
000277	000342	R			
000300	147000	I	455 SUB	N14 NO - COMMA ?	03 00455
000301	001010	A	456 JAZ	IUTLMC YES	03 00456
000302	000343	R			
000303	147000	I	457 SUB	N21 NO - EQUALS SIGN ?	03 00457
000304	001010	A	458 JAZ	IUTLMC YES	03 00458
000305	000343	R			
000306	127000	I	459 ADD	N275 NO -	03 00459
000307	004250	A	460 LRLA	8 SAVE CHAR	03 00460
000310	054161	A	461 STA	IUTLZ	03 00461
000311	006505	A	462 JSR	IUSCAN,X GET 6TH CHAR	03 00462
000312	003670	R			
000313	147000	I	463 SUB	N240 BLANK ?	03 00463
000314	001010	A	464 JAZ	IUTLN YES	03 00464
000315	000347	R			
000316	147000	I	465 SUB	N14 NO - COMMA ?	03 00465
000317	001010	A	466 JAZ	IUTLNC YES	03 00466
000320	000350	R			
000321	147000	I	467 SUB	N21 NO - EQUALS SIGN ?	03 00467
000322	001010	A	468 JAZ	IUTLNC YES	03 00468
000323	000350	R			
000324	127000	I	469 ADD	N275 NO -	03 00469
000325	114144	A	470 DRB	IUTLZ PACK WITH 6TH CHAR	03 00470
000326	057000	I	471 STA	IUTBUF+2	03 00471
000327	047000	I	472 INR	IGBLK SET SCAN SWITCH	03 00472
000330	001000	A	473 JMP	IUTLP	03 00473
000331	000353	R			
000332	047000	I	474 IUTLK INR	IGBLK SET SCAN SWITCH	03 00474
000333	014136	A	475 IUTLKC LDA	IUTLZ	03 00475
000334	117000	I	476 DRB	N240	03 00476
000335	057000	I	477 STA	IUTBUF+1	03 00477
000336	017000	I	478 LDA	DBLK NAME WITH	03 00478
000337	057000	I	479 STA	IUTBUF+2	03 00479
000340	001000	A	480 JMP	IUTLP	03 00480
000341	000353	R			
000342	047000	I	481 IUTLM INR	IGBLK SET SCAN SWITCH	03 00481
000343	017000	I	482 IUTLMC LDA	DBLK FILL OUT DIRECTIVE	03 00482
000344	057000	I	483 STA	IUTBUF+2	03 00483



000345	001000	A	484	JMP	IUTLP			03	00484
000346	000353	R							
000347	047000	I	485	IUTLN	INR	IGBLK	SET SCAN SWITCH	03	00485
000350	014121	A	486	IUTLNC	LDA	IUTLZ	FILL OUT DIR	03	00486
000351	117000	I	487		ORA	N240	NAME	03	00487
000352	057000	I	488		STA	IUTBUF+2		03	00488
000353	017000	I	489	IUTLP	LDA	IGBLK	SCAN SWITCH SET	03	00489
000354	001010	A	490		JAZ	IUTLQ	NO	03	00490
000355	000362	R							
000356	006505	A	491	JSR	IUSCAN,X		YES - SCAN TO DELIMITER	03	00491
000357	003670	R							
000360	006505	A	492	JSR	DLMCHK,X		SET ERROR CODE	03	00492
000361	004260	R							
000362	005004	A	493	IUTLQ	TXZ		FIND DIRECTIVE NAME IN TABLE	03	00493
000363	006015	A	494	IUTLQB	LDAE	IUTAB,X	END OF TABLE ?	03	00494
000364	000415	R							
000365	001010	A	495	JAZ	IUERR1		YES - ERROR	03	00495
000366	000502	R							
000367	147000	I	496	SUB	IUTBUF		MATCH ON 1ST 2 CHAR ?	03	00496
000370	001016	A	497	JANZ	IUTLQF		NO	03	00497
000371	000404	R							
000372	006015	A	498	LDAE	IUTAB+1,X		YES -	03	00498
000373	000416	R							
000374	147000	I	499	SUB	IUTBUF+1		MATCH ON 2ND 2 CHAR ?	03	00499
000375	001010	A	500	JANZ	IUTLQF		NO	03	00500
000376	000404	R							
000377	006015	A	501	LDAE	IUTAB+2,X		YES -	03	00501
000400	000417	R							
000401	147000	I	502	SUB	IUTBUF+2		MATCH ON 3RD 2 CHAR ?	03	00502
000402	001010	A	503	JAZ	IUTLQH		YES	03	00503
000403	000411	R							
000404	005041	A	504	IUTLQF	TXA		NO MATCH,	03	00504
000405	120423	A	505		ADD	FOUR	INCREMENT	03	00505
000406	005014	A	506		TAX		INDEX	03	00506
000407	001000	A	507	JMP	IUTLQB		GO BACK FOR NEXT ENTRY	03	00507
000410	000363	R							
000411	006025	A	508	IUTLQH	LDBE	IUTAB+3,X	DO INDEXED	03	00508
000412	000420	R							
000413	006706	A	509	IJMP	0,B		JUMP TO SUBCOMPONENT	03	00509
000414	000000	A							
			510	*				03	00510
			511	*			TABLE TO JUMP TO PROPER SUBCOMPONENT,	03	00511
			512	*			FIRST 3 WORDS EQUALS DIRECTIVE NAME,	03	00512
			513	*			RIGHT JUSTIFIED, BLANK FILLED. 4TH WORD	03	00513
			514	*			IS ADDRESS OF SUBCOMPONENT. TABLE	03	00514
			515	*			IS TERMINATED BY ZERO WORD.	03	00515
			516	*				03	00516
000415	141717	A	517	IUTAB	DATA	'COPYF'	COPYF	03	00517
000416	150331	A							
000417	143240	A							
000420	000652	R	518		DATA	IUCOPY		03	00518
000421	151706	A	519		DATA	'SFILE'	SFILE	03	00519
000422	144714	A							
000423	142640	A							
000424	002121	R	520		DATA	IUSFIL		03	00520
000425	151305	A	521		DATA	'REW'	REW	03	00521
000426	153640	A							
000427	120240	A							
000430	002172	R	522		DATA	IUREW		03	00522
000431	151722	A	523		DATA	'SREC'	SREC	03	00523
000432	142703	A							
000433	120240	A							
000434	002231	R	524		DATA	IUSREC		03	00524
000435	153705	A	525		DATA	'WEOF'	WEOF	03	00525
000436	147706	A							
000437	120240	A							
000440	002320	R	526		DATA	IUNEWF		03	00526
000441	150306	A	527		DATA	'PFILE'	PFILE	03	00527
000442	144714	A							
000443	142640	A							
000444	002361	R	528		DATA	IUPFIL		03	00528
000445	141717	A	529		DATA	'COPYR'	COPYR	03	00529
000446	150331	A							
000447	151240	A							
000450	000652	R	530		DATA	IUCOPY		03	00530
000451	150301	A	531		DATA	'PACKB'	PACKB	D.103	00531
000452	141713	A							
000453	141240	A							
000454	000652	R	532		DATA	IUCOPY		D.103	00532
000455	150322	A	533		DATA	'PRNTE'	PRNTE	D.103	00533
000456	147324	A							
000457	143240	A							
000460	001574	R	534		DATA	IUPRNT		D.103	00534
000461	142325	A	535		DATA	'DUMP'	DUMP	03	00535
000462	146720	A							
000463	120240	A							
000464	002607	R	536		DATA	IUDUMP		03	00536
000465	141706	A	537		DATA	'CFILE'	CFILE	03	00537
000466	144714	A							
000467	142640	A							
000470	003354	R	538		DATA	IUCFIL		03	00538
000471	000000	A	539		DATA	0	END OF TABLE	03	00539
000472	000000	A	540	IUTLZ	DATA	0		03	00540







000617	000000	A							
000620	000000	A							
000621	006505	A	590	JSR	IDCHK,X	CHECK I/O STATUS		03	00590
000622	004227	R							
000623	020412	A	591	LDB	V\$JCB			03	00591
000624	016000	A	592	LDA	0,B			03	00592
000625	144022	A	593	SUB	HCBLK	IS IT A 'C'		03	00593
000626	001010	A	594	JAZ	IUTLB	YES - CONTINUE READING		03	00594
000627	000077	R							
000630	001000	A	595	JMP	IUTLD	NO - PROCESS DIRECTIVE		03	00595
000631	000144	R							
000632	120240	A	596	ERRBUF	DATA	' IU		03	00596
000633	144725	A							
000634	120240	A							
000635	120240	A							
000636	120240	A	597	ERRDCB	DCB	S,ERRBUF,0		03	00597
000637	000005	A							
000640	000632	R							
000641	000000	A							
000642	130261	A	598	CODE1	DATA	'01'		03	00598
000643	130262	A	599	CODE2	DATA	'02'		03	00599
000644	130263	A	600	CODE3	DATA	'03'		03	00600
000645	130264	A	601	CODE4	DATA	'04'		03	00601
000646	130265	A	602	CODE5	DATA	'05'		03	00602
000647	126000	A	603	HDC	DATA	0126000		03	00603
000650	141640	A	604	HCBLK	DATA	'C'		03	00604
000651	000000	A	605	LNCNT	DATA	0		03	00605
	000417	R	606	HFBLK	EQU	IUTAB+2	'F'	D.1	03 00606
			607		EJEC			03	00607
			608	*				03	00608
			609	*		COPYING ROUTINE -		03	00609
			610	*		COPIES EITHER FILES		03	00610
			611	*		OR RECORDS		03	00611
			612	*				03	00612
000652	006505	A	613	IUCOPY	JSR	IUCNVT,X	GET NO. OF RECORDS OR FILES	03	00613
000653	004123	R							
000654	001016	A	614	JANZ	IUC1			D.1	03 00614
000655	000665	R							
000656	014702	A	615	LDA	IUTBUF+2			D.1	03 00615
000657	147000	I	616	SUB	HFBLK	'F'		D.1	03 00616
000660	001010	A	617	JAZ	IUTLB	COPYF. GET OUT		D.1	03 00617
000661	000073	R							
000662	017000	I	618	LDA	HFBLK	CHANGE COPYR TO		D.1	03 00618
000663	054675	A	619	STA	IUTBUF+2	COPYF		D.1	03 00619
000664	010421	A	620	LDA	ONE	ONE FILE		D.1	03 00620
	000665	R	621	IUC1,	EQU	*		D.1	03 00621
000665	057000	I	622	STA	TENT			03	00622
000666	006505	A	623	JSR	IUCKLN,X	GET INPUT LOG. UNIT NO		03	00623
000667	004034	R							
000670	054674	A	624	STA	IUCPZ			03	00624
000671	014331	A	625	LDA	RDMAC+3			03	00625
000672	150462	A	626	ANA	LN'	SET INTO		03	00626
000673	114671	A	627	DRA	IUCPZ	READ MACRO		03	00627
000674	054326	A	628	STA	RDMAC+3			03	00628
000675	006505	A	629	JSR	IUSCAN,X	GET MODE FOR READ		03	00629
000676	003670	R							
000677	147000	I	630	SUB	N264			03	00630
000700	001002	A	631	JAP	IUERR2	INVALID MODE		03	00631
000701	000505	R							
000702	120423	A	632	ADD	FOUR			03	00632
000703	001004	A	633	JAN	IUERR2	INVALID MODE		03	00633
000704	000505	R							
000705	004254	A	634	LRLA	12			03	00634
000706	054655	A	635	STA	IUCPY	VALID MODE -		03	00635
000707	014313	A	636	LDA	RDMAC+3			03	00636
000710	157000	I	637	ANA	N10777			03	00637
000711	114652	A	638	DRA	IUCPY	SET MODE INTO		03	00638
000712	054310	A	639	STA	RDMAC+3	READ MACRO		03	00639
000713	047000	I	640	INR	IGBLK			03	00640
000714	006505	A	641	JSR	IUSCAN,X	ADVANCE SCAN TO DELIMITER		03	00641
000715	003670	R							
000716	006505	A	642	JSR	BLMCHK,X	CHECK IT		03	00642
000717	004260	R							
000720	006505	A	643	JSR	IUCNVT,X	GET RECORD LENGTH		03	00643
000721	004123	R							
000722	001016	A	644	JANZ	IUCPA	IF RECORD LENGTH GIVEN		D.1	03 00644
000723	000727	R							
000724	010317	A	645	LDA	V\$LLUP	END OF BUFFER		D.1	03 00645
000725	006140	A	646	SUBI	IDBUF	START OF BUFFER		D.1	03 00646
000726	005023	R							
	000727	R	647	IUCPA	EQU	*		D.1	03 00647
000727	005012	A	648	TAB		SAVE RECORD LENGTH		D.1	03 00648
000730	006120	A	649	ADDI	IDBUF			D.1	03 00649
000731	005023	R							
000732	140317	A	650	SUB	V\$LLUP			D.1	03 00650
000733	005311	A	651	DAR				D.1	03 00651
000734	001002	A	652	JAP	IUERR2	ERROR--RECORD SIZE TOO LARGE		D.1	03 00652
000735	000505	R							
000736	064625	A	653	STB	IUCPY	SAVE RECORD LENGTH		D.1	03 00653
000737	014625	A	654	LDA	IUCPZ			03	00654
000740	006505	A	655	JSR	IULNDV,X	DETERMINE DEVICE TYPE		03	00655
000741	003727	R							



000742	005311	A	656	DAR				03	00656
000743	001004	A	657	JAN	IUCPD	NOT AN RMD		03	00657
000744	001001	R							
000745	006020	A	658	LDBI	14			03	00658
000746	000016	A							
000747	005004	A	659	TZX				03	00659
000750	006015	A	660	IUCPB	LDAE	FCBLUN,X	SEARCH FCBLUN	03	00660
000751	004654	R							
000752	001010	A	661	JAZ	IUCPBC	TABLE FOR LUN		03	00661
000753	000757	R							
000754	144610	A	662	SUB	IUCPZ			03	00662
000755	001010	A	663	JAZ	IUCPC	FOUND IT		03	00663
000756	000766	R							
000757	005144	A	664	IUCPBC	IXR			03	00664
000760	005144	A	665		IXR			03	00665
000761	005322	A	666		DBR	LAST ENTRY ?		03	00666
000762	001026	A	667		JBNZ	NO		03	00667
000763	000750	R							
000764	001000	A	668	JMP	IUERR3	YES - ERROR		03	00668
000765	000510	R							
000766	006015	A	669	IUCPC	LDAE	FCBLUN+1,X	GET FCB ADDRESS	03	00669
000767	004655	R							
000770	054233	A	670	STA	RDMAC+4	INTO READ MACRO		03	00670
000771	054571	A	671	STA	IUCPX	SAVE ADRS		03	00671
000772	005012	A	672	TAB				03	00672
000773	014570	A	673	LDA	IUCPY	SET RECORD LENGTH		03	00673
000774	056000	A	674	STA	0,B	INTO FCB		03	00674
000775	017000	I	675	LDA	BUFAD	PUT BUFR ADRS		03	00675
000776	056001	A	676	STA	1,B	IN FCB		03	00676
000777	001000	A	677	JMP	IUCPE			03	00677
001000	001007	R							
001001	014562	A	678	IUCPD	LDA	IUCPY	BUILD DCB - PUT	03	00678
001002	057000	I	679	STA	FRDCB	RECORD LENGTH IN DCB		03	00679
001003	017000	I	680	LDA	BUFAD	PUT BUFFER ADRS		03	00680
001004	057000	I	681	STA	FRDCB+1	IN DCB		03	00681
001005	017000	I	682	LDA	FRDCBAD			03	00682
001006	054215	A	683	STA	RRMAC+4	PUT DCB ADRS IN READ MACRO		03	00683
001007	006505	A	684	IUCPE	JSR	IUCKLN,X	GET 'TD' LOG. UNIT	03	00684
001010	004034	R							
001011	054553	A	685	STA	IUCPZ	SAVE IT		03	00685
001012	006505	A	686	JSR	IUSCAN,X	GET MODE FOR WRITE		03	00686
001013	003670	R							
001014	147000	I	687	SUB	H264			03	00687
001015	001002	A	688	JAF	IUERR2	INVALID MODE		03	00688
001016	000505	P							
001017	120423	A	689	ADD	FOUR			03	00689
001020	001004	A	690	JAN	IUERR2	INVALID MODE		03	00690
001021	000505	R							
001022	004254	A	691	LRLA	12			03	00691
001023	054540	A	692	STA	IUCPY	VALID MODE -		03	00692
001024	011462	A	693	LDA	RRMAC+3			03	00693
001025	157000	I	694	ANA	N10777	SET INTO		03	00694
001026	114535	A	695	DRA	IUCPY	WRITE MACRO		03	00695
001027	054457	A	696	STA	RRMAC+3			03	00696
001030	047000	I	697	INR	IGBLK			03	00697
001031	006505	A	698	JSR	IUSCAN,X	ADVANCE SCAN TO DELIMITER		03	00698
001032	003670	R							
001033	006505	A	699	JSR	BLMCHK,X	CHECK IT		03	00699
001034	004260	R							
001035	006505	A	700	JSR	IUCNVT,X	YES, GET RECORD LENGTH		03	00700
001036	004123	R							
001037	054526	A	701	STA	IUPFLG	SET PACK FLAG		D.100	00701
001040	001016	A	702	JANZ	IUCPF	IF RECORD LENGTH GIVEN		D.103	00702
001041	001045	R							
001042	010317	A	703	LDA	V\$LLUP	END OF BUFFER		D.103	00703
001043	006140	A	704	SUBT	IOBUF	START OF BUFFER		D.103	00704
001044	005023	R							
001045	001045	R	705	IUCPF	EQU	*		D.103	00705
001045	005012	A	706	TAB		SAVE RECORD SIZE		D.103	00706
001046	006120	A	707	ADDI	IOBUF			D.103	00707
001047	005023	P							
001050	140317	A	708	SUB	V\$LLUP			D.103	00708
001051	005311	A	709	DAR				D.103	00709
001052	001002	A	710	JAF	IUERR2	ERROR--RECORD SIZE TOO LARGE		D.103	00710
001053	000505	R							
001054	064507	A	711	STB	IUCPY	SAVE RECORD LENGTH		D.103	00711
001055	005001	A	712	TZA				03	00712
001056	057000	I	713	STA	LCNT	SET LUN COUNT		03	00713
001057	014505	A	714	IUCPG	LDA	IUCPZ		03	00714
001060	006505	A	715	JSR	IULNDV,X	GET DEVICE TYPE		03	00715
001061	003727	R							
001062	005311	A	716	DAR		IS IT RMD		03	00716
001063	001034	A	717	JAN	IUCPK	NO		03	00717
001064	001120	R							
001065	006020	A	718	LDBI	14	YES -		03	00718
001066	000016	A							
001067	005004	A	719	TZX				03	00719
001070	006015	A	720	IUCPH	LDAE	FCBLUN,X	SEARCH FCBLUN	03	00720
001071	004654	R							
001072	001010	A	721	JAZ	IUCPHC	TABLE FOR LUN		03	00721
001073	001077	R							
001074	144470	A	722	SUB	IUCPZ			03	00722
001075	001010	A	723	JAZ	IUCPJ	FOUND IT		03	00723



001076	001106	R							
001077	005144	A	724	IUCPHC	IXR		NOT		03 00724
001100	005144	A	725		IXR		FOUND -		03 00725
001101	005322	A	726		DBR		LAST ENTRY ?		03 00726
001102	001026	A	727		JENZ	IUCPH	NO - TRY NEXT		03 00727
001103	001070	R							
001104	001000	A	728		JMP	IUERR3	YES - ERROR		03 00728
001105	000510	R							
001106	006015	A	729	IUCPJ	LDAE	FCBLUN+1,X	GET FCB ADDRESS		03 00729
001107	004655	R							
001110	054452	A	730		STA	IUCPX	SAVE IT		03 00730
001111	005012	A	731		TAB				03 00731
001112	014451	A	732		LDA	IUCPY	PUT RECORD LENGTH		03 00732
001113	056000	A	733		STA	J,B	IN FCB		03 00733
001114	017000	I	734		LDA	BUFAD	BUFR ADRS		03 00734
001115	056001	A	735		STA	I,B	IN FCB		03 00735
001116	001000	A	736		JMP	IUCPL			03 00736
001117	001126	R							
001120	014443	A	737	IUCPK	LDA	IUCPY	BUILD DCB -		03 00737
001121	057000	I	738		STA	TDCB	RECORD LENGTH IN DCB		03 00738
001122	017000	I	739		LDA	BUFAD	PUT BUFFER ADRS		03 00739
001123	057000	I	740		STA	TDCB+1	IN DCB		03 00740
001124	017000	I	741		LDA	TDCBAD			03 00741
001125	054435	A	742		STA	IUCPX			03 00742
001126	014436	A	743	IUCPL	LDA	IUCPZ			03 00743
001127	037000	I	744		LDX	LCNT	PUT LUN		03 00744
001130	006055	A	745		STAE	LUNLST,X	IN LUNLST		03 00745
001131	005004	R							
001132	014430	A	746		LDA	IUCPX	PUT FCB ADRS		03 00746
001133	006055	A	747		STAE	LUNLST+1,X	IN LUNLST		03 00747
001134	005005	R							
001135	005144	A	748		IXR				03 00748
001136	005144	A	749		IXR		INCREMENT COUNTER		03 00749
001137	077000	I	750		STX	LCNT			03 00750
001140	047000	I	751		INR	IGBLK			03 00751
001141	006505	A	752		JSR	IUSCAN,X	MORE LUNS LEFT ?		03 00752
001142	003670	R							
001143	001010	A	753		JAZ	IUCPN	NO		03 00753
001144	001161	R							
001145	017000	I	754		LDA	LCNT	YES -		03 00754
001146	147000	I	755		SUB	M14	CHECK COUNT		03 00755
001147	001002	A	756		JAP	IUERR1	TOO MANY LUNS -ERROR		03 00756
001150	000502	R							
001151	017000	I	757		LDA	IUPTR	COUNT OK,		03 00757
001152	005311	A	758		DAR		BACK UP		03 00758
001153	057000	I	759		STA	IUPTR	SCAN		03 00759
001154	006505	A	760		JSR	IUCKLN,X	GET LOG. UNIT NO.		03 00760
001155	004034	R							
001156	054406	A	761		STA	IUCPZ			03 00761
001157	001000	A	762		JMP	IUCPG	GO BACK TO PROCESS LUN		03 00762
001160	001057	R							
001161	005001	A	763	IUCPN	TZA				03 00763
001162	054407	A	764		STA	IUCHEF	CLEAR WEOF FLAG		03 00764
001163	057000	I	765		STA	RCNT	SET READ COUNTER		03 00765
001164	014377	A	766		LDA	IUCPY			03 00766
001165	057000	I	767		STA	WCNT	SET WRITE COUNTER		03 00767
001166	017000	I	768	IUCPD	LDA	TCNT	LAST READ ?		03 00768
001167	001016	A	769		JANZ	RDMAC	NO		03 00769
001170	001220	R							
001171	017000	I	770		LDA	RCNT	YES - PARTIAL RECORD LEFT ?		03 00770
001172	001010	A	771		JAZ	IUTLB	NO, ALL DONE		03 00771
001173	000073	R							
001174	014312	A	772	IUCPOB	LDA	WDMAC+3	PARTIAL RECORD TO WRITE		03 00772
001175	154373	A	773		ANA	N7000	SYSTEM BINARY MODE ?		03 00773
001176	037000	I	774		LDX	RCNT			03 00774
001177	005102	A	775		INCR	02	SET FILL OUT FLAG		D.103 00775
001200	064367	A	776		STB	PFBLG			D.103 00776
001201	005002	A	777		TZB				03 00777
001202	001010	A	778		JAZ	IUCPOC	YES - ZERO FILL RECORD		03 00778
001203	001206	R							
001204	006027	A	779		LDDE	DBLK	NO - BLANK FILL RECORD		03 00779
001205	004513	R							
001206	006065	A	780	IUCPOC	STBE	IDBUF,X	FILL OUT		03 00780
001207	005023	R							
001210	005144	A	781		IXR		BUFFER		03 00781
001211	005041	A	782		IXA		WITH		03 00782
001212	147000	I	783		SUB	WCNT	BLANKS		03 00783
001213	001004	A	784		JAN	IUCPOC			03 00784
001214	001206	R							
001215	077000	I	785		STX	RCNT			03 00785
001216	001000	A	786		JMP	IUCPRF			03 00786
001217	001416	R							
001220	006505	A	787	RDMAC	READ	FRDCB,SI,0,1	READ INPUT RECORD		03 00787
001221	000404	A							
001222	100000	A							
001223	010002	A							
001224	004535	R							
001225	000000	A							
001226	000000	A							
001227	006505	A	788		JSR	ICCHK,X	CHECK I/O STATUS		03 00788
001230	004227	R							
001231	027000	I	789		LDB	RDMAC+4	FCB/DCB ADDR		D.103 00789



001232	016001	A	790	LDA	1,B	CURRENT BUFFER ADDR	D.103	00790
001233	054333	A	791	STA	IUBAD		D.1	03 00791
001234	014324	A	792	LDA	IUTBUF+2			03 00792
001235	147000	I	793	SUB	HRBLK	COPYING RECORDS ?		03 00793
001236	001010	A	794	JAZ	IUCPQE	YES		03 00794
001237	001323	R						
001240	006017	A	795	LDAE	RDMAC+2	NO - COPYING FILES		03 00795
001241	001222	R						
001242	157000	I	796	ANA	N340			03 00796
001243	147000	I	797	SUB	N300	EOF ?		03 00797
001244	001010	A	798	JAZ	IUCPQ	YES		03 00798
001245	001253	R						
001246	147000	I	799	SUB	N40	NO - EDT ?		03 00799
001247	001010	A	800	JAZ	IUERR5	YES, ERROR		03 00800
001250	000516	R						
001251	001000	A	801	JMP	IUCPR			03 00801
001252	001334	R						
001253	017000	I	802	IUCPQ	LDA	TCNT		03 00802
001254	005311	A	803	DAR		DECREMENT		03 00803
001255	057000	I	804	STA	TCNT	FILE COUNT		03 00804
001256	017000	I	805	LDA	RCNT	BUFFER EMPTY ?		03 00805
001257	001010	A	806	JAZ	IUCPQA	YES		03 00806
001260	001265	R						
001261	005111	A	807	IAR		NO -		03 00807
001262	054307	A	808	STA	IUCWEF	SET WEOF FLAG		03 00808
001263	001000	A	809	JMP	IUCPRB	WRITE OUT BUFFER		03 00809
001264	001344	R						
001265	037000	I	810	IUCPQA	LDX	LCNT		03 00810
001266	077000	I	811	STX	MCNT	LUN COUNT		03 00811
001267	037000	I	812	IUCPQB	LDX	MCNT		03 00812
001270	005344	A	813	DXR				03 00813
001271	005344	A	814	DXR				03 00814
001272	077000	I	815	STX	MCNT			03 00815
001273	014014	A	816	LDA	WEFMAC+3	SET LUN		03 00816
001274	150462	A	817	ANA	LHW	INTO WEOF		03 00817
001275	006115	A	818	IRAE	LUNLST,X	MACRO		03 00818
001276	005004	R						
001277	054010	A	819	STA	WEFMAC+3			03 00819
001300	006015	A	820	LDAE	LUNLST+1,X	SET FCB/DCB ADRS		03 00820
001301	005005	R						
001302	054006	A	821	STA	WEFMAC+4	IN WEOF MACRO		03 00821
001303	005001	A	822	TZA				03 00822
001304	054265	A	823	STA	IUCWEF	CLEAR WEOF FLAG		03 00823
			824	HEFMAC	WEOF	0,0,0,0	WRITE END OF FILE	03 00824
001305	006505	A						
001306	000404	A						
001307	100000	A						
001310	001000	A						
001311	000000	A						
001312	000000	A						
001313	000000	A						
001314	006505	A	825	JSR	IDCHK,X	CHECK I/O STATUS		03 00825
001315	004227	R						
001316	017000	I	826	LDA	MCNT	LAST LUN ?		03 00826
001317	001016	A	827	JANZ	IUCPQB	NO		03 00827
001320	001267	R						
001321	001000	A	828	JMP	IUCPD	YES		03 00828
001322	001166	R						
001323	006017	A	829	IUCPQE	LDAE	RDMAC+2	COPYING RECORDS -	03 00829
001324	001222	R						
001325	157000	I	830	ANA	N300			03 00930
001326	147000	I	831	SUB	N300	EOF OR EDT ?		03 00931
001327	001010	A	832	JAZ	IUERR5	YES - ERROR		03 00932
001330	000516	R						
001331	017000	I	833	LDA	TCNT	NO -		03 00933
001332	005311	A	834	DAR		DECREMENT		03 00934
001333	057000	I	835	STA	TCNT	RECORD COUNT		03 00935
001334	014231	A	836	IUCPR	LDA	IUPFLG	PACKING FLAG	D.103 00936
001335	001010	A	837	JAZ	IUCPRF	IF NOT PACKING		D.103 00937
001336	001416	R						
001337	006037	A	838	LDXE	RDMAC+4			D.103 00938
001340	001224	R						
001341	015000	A	839	LDA	D,X	INCREMENT		03 00939
001342	127000	I	840	ADD	RCNT	READ COUNT		03 00940
001343	057000	I	841	STA	RCNT			03 00941
			842	IUCPRB	EQU	*		D.103 00942
001344	014221	A	843	LDA	IUPFLG	PACKING FLAG		D.103 00943
001345	001010	A	844	JAZ	IUCPRF	IF NOT PACKING		D.103 00944
001346	001416	R						
001347	017000	I	845	LDA	RCNT	WRITE COUNT		D.103 00945
001350	147000	I	846	SUB	MCNT	LESS THAN READ COUNT ?		03 00946
001351	001002	A	847	JAF	IUCPRF	YES		03 00947
001352	001416	R						
			848	IUCPRD	EQU	*		D.103 00948
001353	006037	A	849	LDXE	RDMAC+4			03 00949
001354	001224	R						
001355	017000	I	850	LDA	BUFAD	RESET INPUT BUFR		03 00950
001356	127000	I	851	ADD	RCNT	ADRS IN FCB/DCB		03 00951
001357	055001	A	852	STA	1,X			03 00952
001360	014211	A	853	LDA	IUCWEF	WEOF FLAG SET ?		03 00953
001361	001010	A	854	JAZ	IUCPRC	NO-CHECK IF PACKB		D.103 00954
001362	001370	R						
001363	017000	I	855	LDA	RCNT	YES - BUFFER EMPTY ?		03 00955



001364	001010	A	856	JAZ	IUCPQA	YES - WRITE EOF'S	03	00856
001365	001265	R						
001366	001000	A	857	JMP	IUCPOB	NO - WRITE REST OF BUFFER	03	00857
001367	001174	R						
001370	014170	A	858	IUCPRC	LDA IUTBUF+2		D.103	00858
001371	006140	A	859		SUBI 'B'	IF PACKB	D.103	00859
001372	141240	A						
001373	001016	A	860	JANZ	IUCPO	NO--DO NEXT READ	D.103	00860
001374	001166	R						
001375	024171	A	861	LDB	IUBAD	BUFFER ADDR	D.103	00861
001376	016000	A	862	LDA	0,B	OBJECT RECORD CONTROL WORD	D.103	00862
001377	150434	A	863	ANA	BS11	LAST RECORD FLAG	D.103	00863
001400	001016	A	864	JANZ	IUCPO	IF NOT LAST RECORD--DO NEXT READ	D.103	00864
001401	001166	R						
001402	014165	A	865	LDA	PBFLG	PACKB FILL OUT FLAG	D.103	00865
001403	001010	A	866	JAZ	IUCPRE	IF FILL OUT HAS NOT BEEN DONE YET	D.103	00866
001404	001411	R						
001405	005001	A	867	TZA			D.103	00867
001406	054161	A	868	STA	PBFLG	CLEAR FLAG	D.103	00868
001407	001000	A	869	JMP	IUCPO	DO NEXT READ	D.103	00869
001410	001166	R						
001411	001411	R	870	IUCPRE	EQU *		D.103	00870
001412	017000	I	871	LDA	RCNT		D.103	00871
001413	001010	A	872	JAZ	IUCPO	IF BUFFER FULL--DO NEXT READ	D.103	00872
001414	001000	R						
001415	001174	R	873	JMP	IUCPOB	FILL REMAINDER OF BUFFER	D.103	00873
001416	017000	I	874	IUCPRF	LDA LCNT	SET TEMPORARY	03	00874
001417	037000	I	875		MCNT	LUN COUNT	03	00875
001420	037000	I	876		LDX MCNT		03	00876
001421	005344	A	877	IUCPRG	DXR	DECREMENT	03	00877
001422	005344	A	878		DXR	LUN COUNT	03	00878
001423	077000	I	879		STX MCNT		03	00879
001424	014062	A	880	LDA	WRMAC+3	SET	03	00880
001425	150462	A	881	ANA	LHW	LUN	03	00881
001426	006115	A	882	ORAE	LUNLST,X	INTO	03	00882
001427	005004	R						
001430	054056	A	883	STA	WRMAC+3	WRITE MACRO	03	00883
001431	006015	A	884	LDRE	LUNLST+1,X	SET FCB/DCB ADRS	03	00884
001432	005005	R						
001433	054054	A	885	STA	WRMAC+4	INTO WRITE MACRO	03	00885
001434	005001	A	886	TZA			03	00886
001435	054135	A	887	STA	TODCBF	CLEAR DCB FLAG	03	00887
001436	014030	A	888	LDA	WRMAC+3		E.1*****	
001437	004244	A	889	LRLA	4		E.1*****	
001440	150464	A	890	ANA	BM3	ISOLATE MODE	E.1*****	
001441	005311	A	891	DAR			E.1*****	
001442	001016	A	892	JANZ	IUCPS	IF NOT ASCII MODE	E.1*****	
001443	001474	R						
001444	014120	A	893	LDA	IUCPZ	GET LOGICAL UNIT NUMBER	03	00893
001445	006505	A	894	JSR	V\$DVTP,X	CHECK IF LUN = 'CT' OR 'TY'	03	00894
001446	004303	R						
001447	001010	A	895	JAZ	IUCPZZ		03	00895
001450	001464	R						
001451	006010	A	896	LDAI	'LP'		03	00896
001452	146320	A						
001453	057000	I	897	STA	DVTPCT		03	00897
001454	014110	A	898	LDA	IUCPZ		03	00898
001455	006505	A	899	JSR	V\$DVTP,X	CHECK IF LUN = 'LP'	03	00899
001456	004303	R						
001457	006020	A	900	LDBI	'CT'		03	00900
001460	141724	A						
001461	067000	I	901	STB	DVTPCT		03	00901
001462	001016	A	902	JANZ	IUCPS		D.103	00902
001463	001474	R						
001464	017000	I	903	IUCPZZ	LDA TODCB+1		03	00903
001465	005311	A	904		DAR		03	00904
001466	057000	I	905		STA TODCB+1		03	00905
001467	017000	I	906		LDA TODCB		03	00906
001470	005111	A	907	IAR			03	00907
001471	057000	I	908		STA TODCB		03	00908
001472	010421	A	909		LDA ONE		03	00909
001473	054077	A	910		STA TODCBF	SET DCB FLAG	03	00910
001474	014071	A	911	IUCPS	LDA IUPFLG	PACKING FLAG	D.103	00911
001475	001016	A	912	JANZ	WRMAC	IF PACKING	D.103	00912
001476	001504	R						
001477	024010	A	913	LDB	WRMAC+4	FCB/DCB ADDR	D.103	00913
001500	017000	I	914	LDA	PRMAC+5	ACTUAL READ COUNT	D.103	00914
001501	056000	A	915	STA	0,B	SET IN WRITE FCB/DCB	D.103	00915
001502	057000	I	916	STA	WCNT	SET WRITE COUNT TO READ COUNT	D.103	00916
001503	057000	I	917	STA	RCNT	SET READ COUNT TO ACTUAL READ COUNT	D.103	00917
			918	WRMAC	WRITE 0,0,0,0	WRITE	03	00918
001504	006505	A						
001505	000404	A						
001506	100000	A						
001507	000400	A						
001510	000000	A						
001511	000000	A						
001512	000000	A						
001513	006505	A	919	JSR	IDCHK,X	CHECK I/O STATUS	03	00919
001514	004227	R						
001515	017000	I	920	LDA	TODCB+1		03	00920
001516	124034	A	921	ADD	TODCBF	RESET BUFFER ADRS	03	00921



001517	057000	I	922	STA	TODCB+1			03	00917
001520	017000	I	923	LDA	TODCB			03	00918
001521	144031	A	924	SUB	TODCBF	RESET WORD COUNT		03	00919
001522	057000	I	925	STA	TODCB			03	00920
001523	006017	A	926	LDAE	WRMAC+2			03	00921
001524	001506	R							
001525	157000	I	927	ANA	N340	TEST FOR		03	00922
001526	147000	I	928	SUB	N340	END OF TAPE OR DEVICE		03	00923
001527	001010	A	929	JAZ	IUERR5	YES - ERROR		03	00924
001530	000516	R							
001531	037000	I	930	LDX	MCNT	LAST LUN ?		03	00925
001532	001046	A	931	JXNZ	IUCPRG	NO - GO BACK		03	00926
001533	001421	R							
001534	017000	I	932	LDA	RCNT	YES -		03	00927
001535	147000	I	933	SUB	WCNT	RESET		03	00928
001536	057000	I	934	STA	PCNT	READ COUNT		03	00929
001537	001010	A	935	JAZ	IUCPRD	BUFFER EMPTY		D.103	00930
001540	001353	R							
001541	027000	I	936	LDB	WCNT			03	00931
001542	005004	A	937	TZX		BUFFER NOT EMPTY -		03	00932
001543	006016	A	938	IUCPRK LDAE	IOBUF,B	TRANSFER		03	00933
001544	005023	R							
001545	006055	A	939	STAE	IOBUF,X	REMAINING		03	00934
001546	005023	R							
001547	005144	A	940	IXR		WORDS		03	00935
001550	005122	A	941	IBR		TO		03	00936
001551	005041	A	942	TXA		BEGIN		03	00937
001552	147000	I	943	SUB	RCNT	OF		03	00938
001553	001004	A	944	JAN	IUCPRK	BUFR		03	00939
001554	001543	R							
001555	001000	A	945	JMP	IUCPRB			03	00940
001556	001344	R							
001557			946	IUTBUF	BSS	4		03	00941
001563	000000	A	947	IUCPX	DATA	0		03	00942
001564	000000	A	948	IUCPY	DATA	0		03	00943
001565	000000	A	949	IUCPZ	DATA	0		03	00944
001566	000000	A	950	IUPFLG	DATA	0	PACKING FLAG, 0=NO, >0=YES	D.103	00945
001567	000000	A	951	IUBAD	DATA	0	CURRENT BUFFER ADDR	D.103	00946
001570	000000	A	952	PBFLG	DATA	0	PACKB FILL OUT FLAG	D.103	00947
001571	070000	A	953	N70000	DATA	070000		03	00948
001572	000000	A	954	IUCHEF	DATA	0		03	00949
001572	000000	A	955	TODCBF	DATA	0		03	00950
			956	EJEC				D.103	00951
			957	*				D.103	00952
			958	*				D.103	00953
			959	*				D.103	00954
			960	*				D.103	00955
			961	*				D.103	00956
			962	IUPRNT	JSR	IUCNVT,X	GET NO. OF FILES TO PRINT	D.103	00957
001574	006505	A							
001575	004123	R							
001576	001010	A	963	JAZ	IUTLB			D.103	00958
001577	000073	R							
001600	057000	I	964	STA	TCNT			D.103	00959
001601	006505	A	965	JSR	IUCKLN,X	GET INPUT LOG. UNIT NO.		D.103	00960
001602	004034	R							
001603	054312	A	966	STA	IUPFZ1			D.103	00961
001604	014160	A	967	LDA	RDMAC1+3	SET INTO LUN FIELD		D.103	00962
001605	150462	A	968	ANA	LHW	OF READ MACRO		D.103	00963
001606	114307	A	969	ORA	IUPFZ1			D.103	00964
001607	054155	A	970	STA	RDMAC1+3			D.103	00965
001610	014305	A	971	LDA	IUPFZ1			D.103	00966
001611	006505	A	972	JSR	IULNDV,X	DETERMINE DEVICE TYPE		D.103	00967
001612	003727	R							
001613	005311	A	973	DAR				D.103	00968
001614	054277	A	974	STA	IUPFID	SAVE TYPE FLAG		D.103	00969
001615	001004	A	975	JAN	IUPFD1	NOT AN RMD		D.103	00970
001616	001652	R							
001617	006020	A	976	LDBI	14			D.103	00971
001620	000016	A							
001621	005004	A	977	TZX				D.103	00972
001622	006015	A	978	IUPFA	LDAE	FCBLUN,X	SEARCH FCBLUN TABLE FOR LUN	D.103	00973
001623	004654	R							
001624	001010	A	979	JAZ	IUPFB1	NULL ENTRY		D.103	00974
001625	001631	R							
001626	144267	A	980	SUB	IUPFZ1			D.103	00975
001627	001010	A	981	JAZ	IUPFC1	FOUND IT		D.103	00976
001630	001640	R							
001631	005144	A	982	IUPFB1	IXR			D.103	00977
001632	005144	A	983	IXR				D.103	00978
001633	005322	A	984	DAR		LAST ENTRY?		D.103	00979
001634	001020	A	985	JBNZ	IUPFA	NO, CHECK NEXT.		D.103	00980
001635	001622	R							
001636	001000	A	986	JMP	IUERR3	YES - ERROR		D.103	00981
001637	000510	R							
001640	006015	A	987	IUPFC1	LDAE	FCBLUN+1,X	MOVE FCB ADDRESS	D.103	00982
001641	004655	R							
001642	054123	A	988	STA	RDMAC1+4	INTO READ MACRO		D.103	00983
001643	005012	A	989	IAB				D.103	00984
001644	014232	A	990	LDA	IUPFIZ	SET RECORD SIZE		D.103	00985
001645	056000	A	991	STA	0,B	INTO FCB		D.103	00986
001646	017000	I	992	LDA	BUFAD	PUT INPUT BUFF ADDR		D.103	00987
001647	056001	A	993	STA	1,B	INTO FCB		D.103	00988
001650	001000	A	994	JMP	IUPFE			D.103	00989



001651	001662	R							
001652	014245	A	995	IUPFD1	LDA	IUPFQZ	BUILD DCB		D.103 00990
001653	057000	I	996		STA	FRDCB	MOVE OUTPUT BUFFER SIZE		D.103 00991
001654	017000	I	997		LDA	BUFAD	AND BUFFER ADDR		D.103 00992
001655	057000	I	998		STA	FRDCB+1	INTO DCB		D.103 00993
001656	017000	I	999		LDA	FDCBAD			D.103 00994
001657	054106	A	1000		STA	RDMAC1+4	PUT DCB ADDR IN READ MACRO		D.103 00995
001660	005001	A	1001		TZA				D.103 00996
001661	057000	I	1002		STA	LCNT			D.103 00997
001662	006505	A	1003	IUPFE	JSR	IUCKLN,X	GET LINE PRINTER LUN		D.103 00998
001663	004034	R							
001664	054231	A	1004		STA	IUPFZ1	SAVE IT		D.103 00999
001665	014232	A	1005		LDA	IUPFQZ	BUILD DCB		D.103 01000
001666	057000	I	1006		STA	TDDCB	BUFFER SIZE		D.103 01001
001667	017000	I	1007		LDA	BUFAD	AND ADDR		D.103 01002
001670	057000	I	1008		STA	TDDCB+1	INTO DCB		D.103 01003
001671	005001	A	1009		TZA				D.103 01004
001672	057000	I	1010		STA	TDDCB+2			D.103 01005
001673	017000	I	1011		LDA	TDCBAD			D.103 01006
001674	054220	A	1012		STA	IUPFX1			D.103 01007
001675	014220	A	1013		LDA	IUPFZ1			D.103 01008
001676	037000	I	1014		LDX	LCNT	PUT LUN		D.103 01009
001677	006055	A	1015		STAE	LUNLST,X	IN LUNLST		D.103 01010
001700	005004	R							
001701	014213	A	1016		LDA	IUPFX1	ALSO DCB ADDR		D.103 01011
001702	006055	A	1017		STAE	LUNLST+1,X			D.103 01012
001703	005005	R							
001704	005144	A	1018		IXR				D.103 01013
001705	005144	A	1019		IXR		INCREMENT COUNTER		D.103 01014
001706	077000	I	1020		STX	LCNT			D.103 01015
001707	047000	I	1021		INR	IGBLK			D.103 01016
001710	006505	A	1022		JSR	IUSCAN,X	MORE LUNS LEFT?		D.103 01017
001711	003670	R							
001712	001010	A	1023		JAZ	IUPFE0	NO		D.103 01018
001713	001725	R							
001714	017000	I	1024		LDA	LCNT	YES		D.103 01019
001715	147000	I	1025		SUB	N14	CHECK COUNT		D.103 01020
001716	001002	A	1026		JAP	IUERR1	TOD MANY LUNS - ERROR		D.103 01021
001717	000502	R							
001720	017000	I	1027		LDA	IUPTR	BACK UP POINTER		D.103 01022
001721	005311	A	1028		DAR		FOR SCAN		D.103 01023
001722	057000	I	1029		STA	IUPTR			D.103 01024
001723	001000	A	1030		JMP	IUPFE	GO BACK TO PROCESS NEXT LUN		D.103 01025
001724	001662	R							
001725	037000	I	1031	IUPFE0	LDX	LCNT	LUN COUNT		D.103 01026
001726	005344	A	1032	IUPFE1	DXR		DECREMENT		D.103 01027
001727	005344	A	1033		DXR		LUN COUNT		D.103 01028
001730	077000	I	1034		STX	MCNT	SAVE IT		D.103 01029
001731	014012	A	1035		LDA	TDOFFUN+3	SET LUN INTO		D.103 01030
001732	150462	A	1036		ANA	LHW	WRITE MACRO		D.103 01031
001733	006115	A	1037		ORAE	LUNLST,X			D.103 01032
001734	005004	R							
001735	054006	A	1038		STA	TDOFFUN+3			D.103 01033
001736	006015	A	1039		LDAE	LUNLST+1,X	SET FCB/DCB ADDRESS		D.103 01034
001737	005005	R							
001740	054004	A	1040		STA	TDOFFUN+4	INTO FUNC MACRO		D.103 01035
001741	006505	A	1041	TDOFFUN	FUNC	0,0,0,0	TOP-OF-FORM FUNC		D.103 01036
001742	000404	A							
001743	100000	A							
001744	002400	A							
001745	000000	A							
001746	000000	A							
001747	000000	A							
001750	006505	A	1042		JSR	IDCHK,X	CHECK I/O STATUS		D.103 01037
001751	004227	R							
001752	037000	I	1043		LDX	MCNT	LAST LUN		D.103 01038
001753	001046	A	1044		JXNZ	IUPFE1	NO, DO NEXT LUN		D.103 01039
001754	001726	R							
001755	001755	R	1045	IUPFN	EQU	*	MAIN PRINT LOOP		D.103 01040
001756	017000	I	1046		LDA	TCNT	CHECK FILE COUNT		D.103 01041
001757	001016	A	1047		JANZ	IUPFD	NOT DONE, PRINT NEXT FILE		D.103 01042
001758	001762	R							
001760	001000	A	1048		JMP	TUTLB	ALL DONE, NO MORE FILES.		D.103 01043
001761	000073	R							
001762	001762	R	1049	IUPFD	EQU	*			D.103 01044
001763	006505	A	1050	RDMAC1	READ	FRDCB,SI,0,1	READ INPUT RECORD, MODE ASCII(1)		D.103 01045
001764	000404	A							
001765	100000	A							
001766	010002	A							
001767	004535	R							
001770	000000	A							
001771	000000	A							
001771	006505	A	1051		JSR	IDCHK,X	CHECK I/O STATUS		D.103 01046
001772	004227	R							
001773	006017	A	1052		LDAE	RDMAC1+2	PICK UP STATUS		D.103 01047
001774	001764	R							
001775	157000	I	1053		ANA	N340			D.103 01048
001776	147000	I	1054		SUB	N300	EOF?		D.103 01049
001777	001010	A	1055		JAZ	IUPFQ	YES		D.103 01050
002000	002014	R							
002001	147000	I	1056		SUB	N40	NO - EOF?		D.103 01051



002002	001010	A	1057	JAZ	IUERR5	YES, ERROR	D.103	01052	
002003	000516	R							
002004	014107	A	1058	LDA	IUPFID	RMD?	D.103	01053	
002005	001002	A	1059	JAP	IUPFRA	YES, USE MAX REC LENGTH TO PRINT RECORD	D.103	01054	
002006	002054	R							
002007	006017	A	1060	LDAE	RDMAC1+5	NO, USE NO OF WDS INPUT	D.103	01055	
002010	001767	R							
002011	057000	I	1061	STA	TDDCB	MOVE WORD COUNT INTO OUTPUT DCB	D.103	01056	
002012	001000	A	1062	JMP	IUPFRA	PRINT RECORD	D.103	01057	
002013	002054	R							
002014	017000	I	1063	IUPFQ	LDA	TCNT	WE GO HERE ON EOF ON INPUT FILE	D.103	01058
002015	005311	A	1064	DAR		DECREMENT	D.103	01059	
002016	057000	I	1065	STA	TCNT	FILE COUNT	D.103	01060	
002017	037000	I	1066	LDX	LCNT	LUN COUNT	D.103	01061	
002020	005344	A	1067	IUPFQA	DXR		D.103	01062	
002021	005344	A	1068	DXR			D.103	01063	
002022	077000	I	1069	STX	MCNT		D.103	01064	
002023	014012	A	1070	LDA	FUNMAC+3	SET LUN	D.103	01065	
002024	150462	A	1071	ANA	LHW	INTO FUNC	D.103	01066	
002025	006115	A	1072	ORAE	LUNLST,X	MACRO	D.103	01067	
002026	005004	R							
002027	054006	A	1073	STA	FUNMAC+3		D.103	01068	
002030	006015	A	1074	LDAE	LUNLST+1,X	SET FCB/DCB ADDR	D.103	01069	
002031	005005	R							
002032	054004	A	1075	STA	FUNMAC+4	IN FUNC MACRO	D.103	01070	
			1076	FUNMAC	FUNC	0,0,0,0	D.103	01071	
002033	006505	A							
002034	000404	A							
002035	100000	A							
002036	002400	A							
002037	000000	A							
002040	000000	A							
002041	000000	A							
002042	006505	A	1077	JSR	IDCHK,X	CHECK I/O STATUS	D.103	01072	
002043	004227	R							
002044	037000	I	1078	LDX	MCNT	LAST LUN	D.103	01073	
002045	001046	A	1079	JXNZ	IUPFQA	NO	D.103	01074	
002046	002020	R							
002047	014044	A	1080	LDA	IUPFID	YES, CHECK IF RMD OR NOT	D.103	01075	
002050	001002	A	1081	JAP	IUTLB	RMD, ALL DONE	D.103	01076	
002051	000073	R							
002052	001000	A	1082	JMP	IUPFN	NOT RMD, PRINT NEXT FILE	D.103	01077	
002053	001755	R							
002054	017000	I	1083	IUPFRA	LDA	LCNT	SET TEMPORARY	D.103	01078
002055	005014	A	1084	TAX			D.103	01079	
002056	005344	A	1085	IUPFRB	DXR	DECREMENT	D.103	01080	
002057	005344	A	1086	DXR		LUN COUNT	D.103	01081	
002060	077000	I	1087	STX	MCNT	SAVE IT	D.103	01082	
002061	014012	A	1088	LDA	WRMAC1+3	SET LUN INTO	D.103	01083	
002062	150462	A	1089	ANA	LHW	WRITE MACRO	D.103	01084	
002063	006115	A	1090	ORAE	LUNLST,X		D.103	01085	
002064	005004	R							
002065	054006	A	1091	STA	WRMAC1+3		D.103	01086	
002066	006015	A	1092	LDAE	LUNLST+1,X	SET FCB/DCB ADDR	D.103	01087	
002067	005005	R							
002070	054004	A	1093	STA	WRMAC1+4	INTO WRITE MACRO	D.103	01088	
			1094	WRMAC1	WRITE	0,0,0,1	D.103	01089	
002071	006505	A							
002072	000404	A							
002073	100000	A							
002074	010400	A							
002075	000000	A							
002076	000000	A							
002077	000000	A							
002100	006505	A	1095	JSR	IDCHK,X	CHECK I/O STATUS	D.103	01090	
002101	004227	R							
002102	006017	A	1096	LDAE	WRMAC1+2	GET COMPLETION CODE	D.103	01091	
002103	002073	R							
002104	157000	I	1097	ANA	M340	ISOLATE IT	D.103	01092	
002105	001015	A	1098	JANZ	IUERR5	NOT NORMAL I/O COMPLETE- ERROR	D.103	01093	
002106	000516	R							
002107	037000	I	1099	LDX	MCNT	NORMAL I/O COMPLETE, LAST LUN?	D.103	01094	
002110	001046	A	1100	JXNZ	IUPFRB	NO, GO BACK	D.103	01095	
002111	002056	R							
002112	001000	A	1101	JMP	IUPFD	DO NEXT READ.	D.103	01096	
002113	001762	R							
			1102	*			D.103	01097	
002114	000000	A	1103	IUPFID	DATA	0	D.103	01098	
002115	000000	A	1104	IUPFX1	DATA	0	D.103	01099	
002116	000000	A	1105	IUPFZ1	DATA	0	D.103	01100	
002117	000170	A	1106	IUPFIZ	DATA	120	D.103	01101	
002120	000102	A	1107	IUPFOZ	DATA	66	D.103	01102	
			1108		EJEC		00	01103	
			1109	*			00	01104	
			1110	*		SKIP FILES SUBCOMPONENT	00	01105	
			1111	*			00	01106	
002121	006505	A	1112	IUSFIL	JSR	IUCKLN,X	GET LOG. UNIT NO.	00	01107
002122	004034	R							
002123	057000	I	1113	STA	IUSFZ		00	01108	
002124	006505	A	1114	JSR	IULNDV,X	GET DEVICE TYPE	00	01109	
002125	003727	R							
002126	001010	A	1115	JANZ	IUERR2	DEVICE NOT MAG TAPE - ERROR	00	01110	
002127	000505	R							



002130	006505	A	1116	JSR	IUCNVT,X	GET NO. OF FILES TO SKIP	03	01111	
002131	004123	R							
002132	001010	A	1117	JAZ	IUTLB	ZERO - DONE	03	01112	
002133	000073	R							
002134	057000	I	1118	STA	TCNT		03	01113	
002135	014006	A	1119	LDA	SRMAC+3	SET LOG.	03	01114	
002136	150462	A	1120	ANA	LHW	UNIT NO.	03	01115	
002137	117000	I	1121	DRA	IUSFZ	INTO	03	01116	
002140	054003	A	1122	STA	SRMAC+3	SREC MACRO	03	01117	
			1123	SRMAC	SREC	SKIP ONE RECORD	03	01118	
002141	006505	A							
002142	000404	A							
002143	100000	A							
002144	002000	A							
002145	000000	A							
002146	000000	A							
002147	000000	A							
002150	006505	A	1124	JSR	IDCHK,X	CHECK I/O STATUS	03	01119	
002151	004227	R							
002152	006017	A	1125	LDAE	SRMAC+2		03	01120	
002153	002143	R							
002154	157000	I	1126	ANA	N340	TEST STATUS	03	01121	
002155	147000	I	1127	SUB	N340	EOT ?	03	01122	
002156	001010	A	1128	JAZ	IUERR5	YES - ERROR	03	01123	
002157	000516	R							
002160	127000	I	1129	ADD	N40	NO- EOF ?	03	01124	
002161	001016	A	1130	JANZ	SRMAC	NO - GO BACK	03	01125	
002162	002141	R							
002163	017000	I	1131	LDA	TCNT	YES -	03	01126	
002164	005311	A	1132	DAR		REDUCE COUNT	03	01127	
002165	001010	A	1133	JAZ	IUTLB	IF ZERO - DONE	03	01128	
002166	000073	R							
002167	057000	I	1134	STA	TCNT	RESET COUNT	03	01129	
002170	001000	A	1135	JMP	SRMAC	REPEAT	03	01130	
002171	002141	R							
			1136	EJEC			03	01131	
			1137	*			03	01132	
			1138	*		REWIND SUBCOMPONENT	03	01133	
			1139	*			03	01134	
002172	006505	A	1140	IUREW	JSR	IUCKLN,X	GET LOG UNIT NO.	03	01135
002173	004034	R							
002174	054033	A	1141	STA	IUREZ		03	01136	
002175	006505	A	1142	JSR	IULNDV,X	GET DEVICE TYPE	03	01137	
002176	003727	R							
002177	001016	A	1143	JANZ	IUERR2	NOT MAG TAPE - ERROR	03	01138	
002200	000505	R							
002201	014006	A	1144	LDA	REWMAC+3		03	01139	
002202	150462	A	1145	ANA	LHW	SET LOG UNIT NO.	03	01140	
002203	114024	A	1146	DRA	IUREZ	INTO REW MACRO	03	01141	
002204	054003	A	1147	STA	REWMAC+3		03	01142	
			1148	REWMAC	REW	REWIND	03	01143	
002205	006505	A							
002206	000404	A							
002207	100000	A							
002210	001400	A							
002211	000000	A							
002212	000000	A							
002213	000000	A							
002214	006505	A	1149	JSR	IDCHK,X	CHECK I/O STATUS	03	01144	
002215	004227	R							
002216	047000	I	1150	INR	IGBLK		03	01145	
002217	006505	A	1151	JSR	IUSCAN,X	MORE LUNS LEFT ?	03	01146	
002220	003670	R							
002221	001010	A	1152	JAZ	IUTLB	NO - DONE	03	01147	
002222	000073	R							
002223	017000	I	1153	LDA	IUPTR	YES -	03	01148	
002224	005311	A	1154	DAR		BACK UP	03	01149	
002225	057000	I	1155	STA	IUPTR	SCAN	03	01150	
002226	001000	A	1156	JMP	IUREW	GO BACK FOR NEXT	03	01151	
002227	002172	R							
002230	000000	A	1157	IUREZ	DATA	0	03	01152	
			1158	EJEC			03	01153	
			1159	*			03	01154	
			1160	*		SKIP RECORDS SUBCOMPONENT	03	01155	
			1161	*			03	01156	
002231	006505	A	1162	IUSREC	JSR	IUCKLN,X	GET LOG. UNIT NO.	03	01157
002232	004034	R							
002233	054071	A	1163	STA	IUSPZ		03	01158	
002234	006505	A	1164	JSR	IULNDV,X	GET DEVICE TYPE	03	01159	
002235	003727	R							
002236	001004	A	1165	JAN	IUERR2	NOT RMD, NOT MT, ERROR	03	01160	
002237	000505	R							
002240	001010	A	1166	JAZ	IUSRH	MAG TAPE	03	01161	
002241	002266	R							
002242	005004	A	1167	TZX			03	01162	
002243	006020	A	1168	LDBI	14	RMD -	03	01163	
002244	000016	A							
002245	006015	A	1169	IUSRB	LDAE	SCAN FOBLUN	03	01164	
002246	004654	K							
002247	001010	A	1170	JAZ	IUSRC	TABLE FOR LUN	03	01165	
002250	002254	R							
002251	144053	A	1171	SUB	IUSRZ		03	01166	
002252	001010	A	1172	JAZ	IUSRG	FOUND	03	01167	



002253	002263	R								
002254	005144	A	1173	IUSRC	IXR		NOT FOUND -		03	01168
002255	005144	A	1174		IXR		INCREMENT INDEX		03	01169
002256	005322	A	1175		DBR		END OF TABLE ?		03	01170
002257	001026	A	1176		JBNZ	IUSRB	NO - GO BACK		03	01171
002260	002243	R								
002261	001000	A	1177		JMP	IUERR3	YES - ERROR		03	01172
002262	000510	R								
002263	006015	A	1178	IUSRG	LDAE	FCBLUN+1,X			03	01173
002264	004655	R								
002265	054015	A	1179		STA	SRMACB+4	PUT FCB ADRS IN MACRO		03	01174
002266	006505	A	1180	IUSRH	JSR	IUCNVT,X	GET NO. OF RECORDS		03	01175
002267	004123	R								
002270	001010	A	1181		JAZ	IUTLB	ZERO - DONE		03	01176
002271	000073	R								
002272	057000	I	1182		STA	TCNT			03	01177
002273	014006	A	1183		LDA	SRMACB+3			03	01178
002274	150462	A	1184		ANA	LHW	PUT LUN INTO		03	01179
002275	114027	A	1185		DRA	IUSRZ	SREC MACRO		03	01180
002276	054003	A	1186		STA	SRMACB+3			03	01181
			1187	SRMACB	SPEC	0,0,0,0	SKIP RECORD		03	01182
002277	006505	A								
002300	000404	A								
002301	100000	A								
002302	002000	A								
002303	000000	A								
002304	000000	A								
002305	000000	A								
002306	006505	A	1188		JSR	IDCHK,X	CHECK I/O STATUS		03	01183
002307	004227	R								
002310	006017	A	1189		LDAE	SRMACB+2			03	01184
002311	002301	R								
002312	157000	I	1190		ANA	N300	GET STATUS		03	01185
002313	147000	I	1191		SUB	N300	EDF OR EDT ?		03	01186
002314	001010	A	1192		JAZ	IUERR5	YES - ERROR		03	01187
002315	000516	R								
002316	017000	I	1193		LDA	TCNT	NO -		03	01188
002317	005311	A	1194		DAR		DECREMENT COUNT		03	01189
002320	001010	A	1195		JAZ	IUTLB	DONE - RETURN		03	01190
002321	000073	R								
002322	057000	I	1196		STA	TCNT	RESET COUNT		03	01191
002323	001000	A	1197		JMP	SRMACB	GO BACK		03	01192
002324	002277	R								
002325	000000	A	1198	IUSRZ	DATA	0			03	01193
			1199		EJEC				03	01194
			1200	*					03	01195
			1201	*			WEUF SUBCOMPONENT		03	01196
			1202	*					03	01197
002326	006505	A	1203	IUWEDF	JSR	IUCKLN,X	GET LOG. UNIT NO.		03	01198
002327	004034	R								
002330	054027	A	1204		STA	IUWEZ			03	01199
002331	014006	A	1205		LDA	MACWF+3			03	01200
002332	150462	A	1206		ANA	LHW	SET LUN INTO		03	01201
002333	114024	A	1207		DRA	IUWEZ	WEUF MACRO		03	01202
002334	054003	A	1208		STA	MACWF+3			03	01203
			1209	MACWF	WEUF	0,0,0,0	WRITE EDF		03	01204
002335	006505	A								
002336	000404	A								
002337	100000	A								
002340	001000	A								
002341	000000	A								
002342	000000	A								
002343	000000	A								
002344	006505	A	1210		JSR	IDCHK,X	CHECK I/O STATUS		03	01205
002345	004227	R								
002346	047000	I	1211		INR	I6BLK			03	01206
002347	006505	A	1212		JSR	IUSCAN,X	LAST LUN ?		03	01207
002350	003670	R								
002351	001010	A	1213		JAZ	IUTLB	YES - RETURN		03	01208
002352	000073	R								
002353	017000	I	1214		LDA	IUPTR	NO -		03	01209
002354	005311	A	1215		DAR		BACK UP		03	01210
002355	057000	I	1216		STA	IUPTR	SCAN		03	01211
002356	001000	A	1217		JMP	IUWEDF	REPEAT		03	01212
002357	002326	R								
002360	000000	A	1218	IUWEZ	DATA	0			03	01213
			1219		EJEC				03	01214
			1220	*					03	01215
			1221	*			PFILE SUBCOMPONENT		03	01216
			1222	*					03	01217
002361	006505	A	1223	IUPFIL	JSR	IUCKLN,X	GET LOG UNIT NO.		03	01218
002362	004034	R								
002363	054215	A	1224		STA	IUPFZ			03	01219
002364	140422	A	1225		SUB	TWO	IS THIS LUN SI ?		03	01220
002365	001010	A	1226		JAZ	IUERR2	YES - ERROR		03	01221
002366	000505	R								
002367	120422	A	1227		ADD	TWO	NO -		03	01222
002370	006503	A	1228		JSR	IULNDV,X	GET DEVICE TYPE		03	01223
002371	003727	R								
002372	005311	A	1229		DAR		RMD ?		03	01224
002373	001004	A	1230		JAN	IUERR2	NO - ERROR		03	01225
002374	000505	R								
002375	006033	A	1231		LDXI	14			03	01226



002376	000016	A							
002377	005002	A	1232		TZB			IS THERE A FCB	03 01227
002400	006016	A	1233	IUPFAB	LDAB	FCBLUN,B		ALREADY OPEN FOR THIS LUN ?	03 01228
002401	004654	R							
002402	144176	A	1234		SUB	IUPFZ			03 01229
002403	001010	A	1235		JAZ	IUPFD		YES	03 01230
002404	002445	R							
002405	005122	A	1236		IBR				03 01231
002406	005122	A	1237		IBR				03 01232
002407	005344	A	1238		DXR				03 01233
002410	001046	A	1239		JXNZ	IUPFAB			03 01234
002411	002400	R							
002412	014166	A	1240		LDA	IUPFZ		NO -	03 01235
002413	140423	A	1241		SUB	FOUR		DOES THIS LUN USE A GLOBAL FCB ?	03 01236
002414	001004	A	1242		JAN	IUPFB		NO	03 01237
002415	002430	R							
002416	140467	A	1243		SUB	SEVEN			03 01238
002417	001002	A	1244		JAP	IUPFB		NO	03 01239
002420	002430	R							
002421	120467	A	1245		ADD	SEVEN		YES -	03 01240
002422	004241	A	1246		LRLA	1		COMPUTE ADRS FOR	03 01241
002423	006120	A	1247		ADDI	14		FCBLUN ENTRY	03 01242
002424	000016	A							
002425	005012	A	1248		TAB				03 01243
002426	001000	A	1249		JMP	IUPFD			03 01244
002427	002445	R							
002430	005002	A	1250	IUPFB	TZB				03 01245
002431	030466	A	1251		LDB	SIX			03 01246
002432	006016	A	1252	IUPFC	LDAB	FCBLUN,B		FIND FCB NOT ALREADY IN USE	03 01247
002433	004654	R							
002434	001010	A	1253		JAZ	IUPFD		FOUND ONE	03 01248
002435	002445	R							
002436	005122	A	1254		IBR			IN USE -	03 01249
002437	005122	A	1255		IBR				03 01250
002440	005344	A	1256		DXR			END OF TABLE ?	03 01251
002441	001046	A	1257		JXNZ	IUPFC		NO	03 01252
002442	002432	R							
002443	001000	A	1258		JMP	IUERR1		YES - ERROR	03 01253
002444	000502	R							
002445	064137	A	1259	IUPFD	STB	IUPFV		SAVE ENTRY NO.	03 01254
002446	014116	A	1260		LDA	OPMAC+3			03 01255
002447	150462	A	1261		ANA	LHW		PUT LUN IN	03 01256
002450	114130	A	1262		ORA	IUPFZ		OPEN MACRO	03 01257
002451	054113	A	1263		STA	OPMAC+3			03 01258
002452	047000	I	1264		INR	IGBLK			03 01259
002453	006505	A	1265		JSR	IUSCAN,X		GET PROT. KEY	03 01260
002454	003670	R							
002455	054123	A	1266		STA	IUPFY			03 01261
002456	147000	I	1267		SUB	N204		IS THIS A DELIMITER ?	03 01262
002457	001010	A	1268		JAZ	IUPFEC		YES - COMMA	03 01263
002460	002473	R							
002461	147000	I	1269		SUB	N21			03 01264
002462	001010	A	1270		JAZ	IUPFEC		YES - EQUALS SIGN	03 01265
002463	002473	R							
002464	047000	I	1271		INR	IGBLK		NO -	03 01266
002465	006505	A	1272		JSR	IUSCAN,X		ADVANCE SCAN TO DELIMITER	03 01267
002466	003670	R							
002467	006505	A	1273		JSR	DLMCHK,X		CHECK IT	03 01268
002470	004260	R							
002471	001000	A	1274		JMP	IUPFEG			03 01269
002472	002474	R							
002473	054107	A	1275	IUPFEC	STA	IUPFY		NO KEY - ASSUME ZERO	03 01270
002474	006036	A	1276	IUPFEG	LDXE	FCBLUN+1,B		GET FCB ADRS	03 01271
002475	004655	R							
002476	005001	A	1277		TZA				03 01272
002477	114103	A	1278		ORA	IUPFY		IN FCB	03 01273
002500	110431	A	1279		ORA	B08		SET FOR SEQUENTIAL ADRS	03 01274
002501	055002	A	1280		STA	2,X			03 01275
002502	074063	A	1281		STX	OPMAC+4		PUT FCB ADRS IN OPEN MACRO	03 01276
002503	006505	A	1282		JSR	IUCNVT,X		YES - GET RECORD LENGTH	03 01277
002504	004123	R							
002505	001010	A	1283		JAZ	IUERR2		TOO SMALL - ERROR	03 01278
002506	000505	R							
002507	144606	A	1284		SUB	N2001			03 01279
002510	001002	A	1285		JAP	IUERR2		TOO LARGE - ERROR	03 01280
002511	000505	R							
002512	124603	A	1286		ADD	N2001			03 01281
002513	024052	A	1287		LDB	OPMAC+4			03 01282
002514	056000	A	1288		STA	0,B		STORE REC LENGTH IN FCB	03 01283
002515	006017	A	1289		LDAB	DBLK			03 01284
002516	004513	R							
002517	056007	A	1290		STA	7,B		BLANK	03 01285
002520	056010	A	1291		STA	8,B		OUT FILE NAME	03 01286
002521	056011	A	1292		STA	9,B			03 01287
002522	006047	A	1293		INRE	IGBLK			03 01288
002523	004431	R							
002524	010464	A	1294	IUPEG	LDA	THREE		SET COUNT	03 01289
002525	054056	A	1295		STA	IUPFW			03 01290
002526	006505	A	1296		JSR	IUSCAN,X		GET RT HAND CHAR FOR FILE NAME	03 01291
002527	003670	R							
002530	001010	A	1297		JAZ	OPMAC		END OF BUFFER	03 01292
002531	002562	R							
002532	144053	A	1298		SUB	N206		PERIOD ?	03 01293



002533	001010	A	1299	JAZ	OPMAC	YES - END OF BUFFER	03	01294	
002534	002562	R							
002535	124050	A	1300	ADD	N256		03	01295	
002536	004250	A	1301	LRLA	8		03	01296	
002537	054042	A	1302	STA	IUPFX	SAVE CHAR	03	01297	
002540	006127	A	1303	ADDE	N240		03	01298	
002541	004430	R							
002542	056007	A	1304	STA	Z,B	STORE IN FILE NAME	03	01299	
002543	006505	A	1305	JSR	IUSCAN,X	GET RT HAND CHAR	03	01300	
002544	003670	R							
002545	001010	A	1306	JAZ	OPMAC	END OF BUFFER	03	01301	
002546	002562	R							
002547	144036	A	1307	SUB	N256	PERIOD ?	03	01302	
002550	001010	A	1308	JAZ	OPMAC	YES	03	01303	
002551	002562	R							
002552	124033	A	1309	ADD	N256	NO -	03	01304	
002553	114026	A	1310	ORA	IUPFX	COMBINE WITH LH CHAR	03	01305	
002554	056007	A	1311	STA	Z,B	STORE IN FILE NAME	03	01306	
002555	005122	A	1312	IBR			03	01307	
002556	014025	A	1313	LDA	IUPFW	GET COUNT	03	01308	
002557	005311	A	1314	DAR		DONE ?	03	01309	
002560	001016	A	1315	JANZ	IUPFG	NO - GO BACK	03	01310	
002561	002525	R							
			1316	OPMAC	OPEN	0,0,0,0			
002562	006505	A				OPEN FCB	03	01311	
002563	000404	A							
002564	100000	A							
002565	003000	A							
002566	000000	A							
002567	000000	A							
002570	000000	A							
002571	006505	A	1317	JSR	IUCHK,X	CHECK I/O STATUS	03	01312	
002572	004227	R							
002573	024011	A	1318	LDB	IUPFV	GOOD -	03	01313	
002574	014004	A	1319	LDA	IUPFZ	SET LUN IN	03	01314	
002575	006056	A	1320	STAE	FCPLUN,B	FCBLUN TABLE	03	01315	
002576	004654	R							
002577	001000	A	1321	JMP	IUTLB	RETURN	03	01316	
002600	000073	R							
002601	000000	A	1322	IUPFZ	DATA	0	03	01317	
002602	000000	A	1323	IUPFX	DATA	0	03	01318	
002603	000000	A	1324	IUPFY	DATA	0	03	01319	
002604	000000	A	1325	IUPFW	DATA	0	03	01320	
002605	000000	A	1326	IUPFV	DATA	0	03	01321	
002606	000256	A	1327	N256	DATA	0256	03	01322	
			1328		EJEC		03	01323	
			1329	*			03	01324	
			1330	*		DUMP SUBCOMPONENT	03	01325	
			1331	*			03	01326	
002607	006505	A	1332	IUDUMP	JSR	IUCNVT,X	GET NO. OF RECORDS	03	01327
002610	004123	R							
002611	057000	I	1333	STA	FCNT		03	01328	
002612	006505	A	1334	JSR	IUCKLN,X	GET LOG UNIT NO.	03	01329	
002613	004034	R							
002614	054475	A	1335	STA	IUDPZ		03	01330	
002615	047000	I	1336	INR	IGBLK		03	01331	
002616	006505	A	1337	JSR	IUSCAN,X	GET MODE	03	01332	
002617	003670	R							
002620	147000	I	1338	SUB	N204		03	01333	
002621	001002	A	1339	JAP	IUERR2	INVALID - ERROR	03	01334	
002622	000505	R							
002623	120423	A	1340	ADD	FOUR		03	01335	
002624	001004	A	1341	JAN	IUERR2	INVALID - ERROR	03	01336	
002625	000505	R							
002626	004254	A	1342	LRLA	12		03	01337	
002627	054461	A	1343	STA	IUDPY		03	01338	
002630	014121	A	1344	LDA	MACRD+3	SET MODE	03	01339	
002631	107000	I	1345	ANA	N10777		03	01340	
002632	114455	A	1346	ORA	IUDPY		03	01341	
002633	150462	A	1347	ANA	LHW	AND LUN	03	01342	
002634	114455	A	1348	ORA	IUDPZ		03	01343	
002635	054114	A	1349	STA	MACRD+3	INTD READ MACRO	03	01344	
002636	047000	I	1350	INR	IGBLK		03	01345	
002637	006505	A	1351	JSR	IUSCAN,X	ADVANCE SCAN TO DELIMITER	03	01346	
002640	003670	R							
002641	006505	A	1352	JSR	RMCHK,X	CHECK IT	03	01347	
002642	004269	R							
002643	006505	A	1353	JSR	IUCNVT,X	GET RECORD LENGTH	03	01348	
002644	004123	R							
002645	144450	A	1354	SUB	N2001	CHECK IT	03	01349	
002646	001002	A	1355	JAP	IUERR2	INVALID	03	01350	
002647	000505	R							
002650	124445	A	1356	ADD	N2001		03	01351	
002651	001010	A	1357	JAZ	IUERR2	INVALID	03	01352	
002652	000505	R							
002653	054435	A	1358	STA	IUDPY		03	01353	
002654	014435	A	1359	LDA	IUDPZ		03	01354	
002655	006505	A	1360	JSR	IULNDV,X	GET DEVICE TYPE	03	01355	
002656	003727	R							
002657	005311	A	1361	DAR		IS IT RMB ?	03	01356	
002660	001004	A	1362	JAN	IUDPZ	NO	03	01357	
002661	002715	R							
002662	005004	A	1363	TZX		YES -	03	01358	







003016	006505	A	1423	JSR	IDCHK,X	CHECK FOR ID PROBLEMS		03	01418
003017	004227	R							
003020	006030	A	1424	LDXI	47		C	03	01419
003021	000057	A							
003022	017000	I	1425	LDA	DBLK		C	03	01420
003023	006055	A	1426	IUDP1	STAE	PRBUF,1	C	03	01421
003024	004553	R							
003025	001040	A	1427	JXZ	IUDP2	JUMP IF BUFFER FULLY BLANKED	C	03	01422
003026	003032	R							
003027	005344	A	1428	DXR			C	03	01423
003030	001000	A	1429	JMP	IUDP1		C	03	01424
003031	003023	R							
	003032	R	1430	IUDP2	EQU	*	C	03	01425
003032	047000	I	1431	INR	LNCNT	INCREMENT LINE COUNT		03	01426
003033	005004	A	1432	TZX				03	01427
003034	074257	A	1433	STX	IUDX	SET WORDS INTO.		03	01428
003035	074257	A	1434	STX	IUDY	PRINT LINE		03	01429
003036	017000	I	1435	LDA	PRBAD			03	01430
003037	004241	A	1436	LRLA	1	POINTER		03	01431
003040	054311	A	1437	STA	PPTR			03	01432
003041	054311	A	1438	STA	IUDPH			03	01433
003042	005001	A	1439	IUDPH	TZA			03	01434
003043	034251	A	1440	LDX	IUDY			03	01435
003044	006025	A	1441	LDSE	IDBUF,X	GET WORD		03	01436
003045	005023	R							
003046	004441	A	1442	LLRL	1			03	01437
003047	127000	I	1443	ADD	N260	BIT 15		03	01438
003050	006505	A	1444	JSR	IUPUT,X	INTO LINE		03	01439
003051	003317	R							
003052	004443	A	1445	LLRL	3			03	01440
003053	127000	I	1446	ADD	N260	BITS 14-12		03	01441
003054	006505	A	1447	JSR	IUPUT,X	INTO LINE		03	01442
003055	003317	R							
003056	004443	A	1448	LLRL	3			03	01443
003057	127000	I	1449	ADD	N260	BITS 11-9		03	01444
003060	006505	A	1450	JSR	IUPUT,X	INTO LINE		03	01445
003061	003317	R							
003062	004443	A	1451	LLRL	3			03	01446
003063	127000	I	1452	ADD	N260	BITS 8-6		03	01447
003064	006505	A	1453	JSR	IUPUT,X	INTO LINE		03	01448
003065	003317	R							
003066	004443	A	1454	LLRL	3			03	01449
003067	127000	I	1455	ADD	N260	BITS 5-3		03	01450
003070	006505	A	1456	JSR	IUPUT,X	INTO LINE		03	01451
003071	003317	R							
003072	004443	A	1457	LLRL	3			03	01452
003073	127000	I	1458	ADD	N260	BITS 2-0		03	01453
003074	006505	A	1459	JSR	IUPUT,X	INTO LINE		03	01454
003075	003317	R							
003076	006017	A	1460	LDAE	N240			03	01455
003077	004430	R							
003100	006505	A	1461	JSR	IUPUT,X	PUT BLANK BETWEEN WORDS		03	01456
003101	003317	R							
003102	024211	A	1462	LDB	IUDX			03	01457
003103	005122	A	1463	IBR				03	01458
003104	064207	A	1464	STB	IUDX			03	01459
003105	006627	A	1465	SRE	TEN,7,020	LINE COMPLETE ?		03	01460
003106	000471	A							
003107	001000	A	1466	JMP	IUDPL	NO		03	01461
003110	003266	R							
003111	006017	A	1467	LDAE	MACRD+3		C	03	01462
003112	002752	R							
003113	004354	A	1468	LSRA	12	GET MODE	C	03	01463
003114	005311	A	1469	JAR			C	03	01464
003115	001016	A	1470	JANZ	IUDPJ	SKIP ASCII SCAN IF NOT IN ASCII MODE	C	03	01465
003116	003210	R							
003117	006017	A	1471	LDAE	N240	BLANK	C	03	01466
003120	004430	P							
003121	006505	A	1472	JSR	IUPUT,X		C	03	01467
003122	003317	R							
003123	006505	A	1473	JSR	IUPUT,X		C	03	01468
003124	003317	R							
003125	006505	A	1474	JSR	IUPUT,X		C	03	01469
003126	003317	R							
003127	006505	A	1475	JSR	IUPUT,X	INSERT BLANK CHARS	C	03	01470
003130	003317	R							
003131	014163	A	1476	LDA	IUDY		C	03	01471
003132	006140	A	1477	SUBI	011	SET BACK TO START OF LINE	C	03	01472
003133	000011	A							
003134	054014	A	1478	STA	CNT		C	03	01473
003135	034013	A	1479	IUASC	LDB		C	03	01474
003136	006025	A	1480	LDSE	IDBUF,X	GET WORD	C	03	01475
003137	005023	R							
003140	002000	A	1481	CALL	ASCII	CHECK FOR ASCII AND STORE	C	03	01476
003141	003152	R							
003142	044006	A	1482	INR	CNT		C	03	01477
003143	014151	A	1483	LDA	IUDY		C	03	01478
003144	144004	A	1484	SUB	CNT	CHECK FOR END OF LINE	C	03	01479
003145	001002	A	1485	JAP	IUASC	JUMP IF MORE WORDS TO CHECK	C	03	01480
003146	003135	F							
003147	001000	A	1486	JMP	IUDPJ	GO TO OUTPUT LINE	C	03	01481
003150	003210	R							
003151	000000	A	1487	CNT	DATA	0	C	03	01482



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1488 *
1489 * SUBROUTINE TO PERFORM SCAN FOR ASCII CHARS
1490 * BLANK FILLS NON ASCII BYTES AND STORES THEN
1491 *
003152 000000 A 1492 ASCII ENTR
003153 005021 A 1493 TBA
003154 004350 A 1494 LSRA 8 LEFT CHAR
003155 002000 A 1495 CALL ASCOK CHECK IF ASCII CHAR
003156 003171 R
003157 006503 A 1496 JSR IUPUT,X STORE IT
003160 003317 R
003161 005021 A 1497 TBA
003162 150463 A 1498 ANA RHW RIGHT CHAR
003163 002000 A 1499 CALL ASCOK CHECK IF ASCII CHAR
003164 003171 R
003165 006503 A 1500 JSR IUPUT,X STORE IT
003166 003317 R
003167 001000 A 1501 RETUM* ASCII
003170 103152 R
1502 *
003171 000000 A 1503 ASCOK ENTR
003172 147000 I 1504 SUB N240
003173 001004 A 1505 JAN ASCA UNPRINTABLE
003174 003205 R
003175 006140 A 1506 SUBI 0340-0240
003176 000100 A
003177 001002 A 1507 JAN ASCA UNPRINTABLE
003200 003205 R
003201 006120 A 1508 ADDI 0340 RESTORE CHAR AS IT IS PRINTABLE
003202 000340 A
003203 001000 A 1509 RETUM* ASCOK
003204 103171 R
003205 017000 I 1510 ASCA LDA N240 REPLACE WITH BLANK
003206 001000 A 1511 RETUM* ASCOK
003207 103171 R
1512 *
003210 006503 A 1513 IUDPJ WRITE PRDCB,LD,0,1 YES - PRINT LINE
003211 000404 A
003212 100000 A
003213 010405 A
003214 004635 R
003215 000000 A
003216 000000 A
003217 006503 A 1514 JSR IDCHK,X CHECK I/O STATUS
003220 004227 R
003221 037000 I 1515 LDX D40
003222 006017 A 1516 LDAE DBLK CLEAR
003223 004513 R
003224 006055 A 1517 IUDPK STAE PRDAD+1,X PRINT
003225 004552 R
003226 005344 A 1518 DXR BUFFER
003227 001046 A 1519 JANZ IUDPK
003230 003224 R
003231 014121 A 1520 LDA IUDPW
003232 054117 A 1521 STA PTR
003233 005004 A 1522 TZX
003234 074057 A 1523 STX IUDX RESET LINE
003235 006017 A 1524 LDAE LNCNT WORD COUNT
003236 000651 R
003237 005111 A 1525 IAR INCREMENT
003240 006057 A 1526 STAE LNCNT LINE COUNT
003241 000651 R
003242 140054 A 1527 SUB V$LONT PAGE FULL ?
003243 001004 A 1528 JAN IUDPL NO
003244 003226 R
003245 027000 I 1529 LDB PGAD YES -
003246 047000 I 1530 INR PAGNO
003247 017000 I 1531 LDA PAGNO
003250 006503 A 1532 JSR BINASC,X SET PAGE NUMBER IN HDG
003251 003635 R
1533 IUDPKB WRITE HEADCB,LD,0,1 PRINT HEADING
003252 006503 A
003253 000404 A
003254 100000 A
003255 010405 A
003256 004477 R
003257 000000 A
003260 000000 A
003261 006503 A 1534 JSR IDCHK,X CHECK I/O STATUS
003262 004227 R
003263 010421 A 1535 LDA ONE
003264 006057 A 1536 STAE LNCNT RESET LINE COUNT
003265 000651 R
003266 014026 A 1537 IUDPL LDA IUDY
003267 005111 A 1538 IAR INCREMENT
003270 054024 A 1539 STA IUDY WORD COUNT
003271 144017 A 1540 SUB IUDPY END OF THE RECORD ?
003272 001004 A 1541 JAN IUDPH NO
003273 003042 R
003274 014017 A 1542 LDA IUDX YES - PARTIAL LINE TO PRINT ?
003275 001016 A 1543 JANZ IUDPJ YES
003276 003210 R

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Address	Hex	Op	Label	Op	Comment	Line	Page	
003277	017000	I	1544	LDA	TCNT	NO -	03 01539	
003300	001010	A	1545	JAZ	IUDPM	IF ZERO THEN LOOKING FOR EOF	D.103 01540	
003301	003306	R						
003302	005311	A	1546	DAR		DECREMENT COUNT	03 01541	
003303	001010	A	1547	JAZ	IUTLB	RETURN IF DONE	03 01542	
003304	000073	R						
003305	057000	I	1548	STA	TCNT		03 01543	
	003306	R	1549	EQU	*		D.103 01544	
003306	047000	I	1550	INR	RECND	NOT DONE -	03 01545	
003307	001000	A	1551	JMP	MACRD	GET NEXT RECURD	03 01546	
003310	002747	R						
003311	000000	A	1552	IUDPY	DATA	0	03 01547	
003312	000000	A	1553	IUDPZ	DATA	0	03 01548	
003313	000000	A	1554	IUDPX	DATA	0	03 01549	
003314	000000	A	1555	IUDX	DATA	0	03 01550	
003315	000000	A	1556	IUDY	DATA	0	03 01551	
003316	002001	A	1557	N2001	DATA	02001	03 01552	
			1558	EJEC			03 01553	
			1559	*		SUBROUTINE TO STORE ONE CHARACTER, PPTR/2 IS WORD	03 01554	
			1560	*		ADDRESS, PPTR(0)=0 GIVES BITS 15-8, PPTR(0)=1	03 01555	
			1561	*		GIVES BITS 7-09 ENTER WITH CHARACTER IN A REGISTER,	03 01556	
			1562	*		BITS 7-0.	03 01557	
003317	064031	A	1563	IUPUT	STB		03 01558	
003320	150463	A	1564	ANA	RHW		03 01559	
003321	054026	A	1565	STA	IUPUTY		03 01560	
003322	024027	A	1566	LDB	PPTR		03 01561	
003323	005021	A	1567	TBA			03 01562	
003324	005111	A	1568	IAR			03 01563	
003325	054024	A	1569	STA	PPTR		03 01564	
003326	004141	A	1570	LSRB	1		03 01565	
003327	006440	A	1571	BT	RAC+B0,IUPUTA		03 01566	
003330	003340	R						
003331	016000	A	1572	LDA	0,B		03 01567	
003332	004250	A	1573	LRLA	8		03 01568	
003333	150462	A	1574	ANA	LHW		03 01569	
003334	114013	A	1575	DRA	IUPUTY		03 01570	
003335	004250	A	1576	LRLA	8		03 01571	
003336	001000	A	1577	JMP	IUPUTB		03 01572	
003337	003343	R						
003340	016000	A	1578	IUPUTA	LDA	0,B	03 01573	
003341	150462	A	1579	ANA	LHW		03 01574	
003342	114005	A	1580	DRA	IUPUTY		03 01575	
003343	056000	A	1581	IUPUTB	STA	0,B	03 01576	
003344	024004	A	1582	LDB	IUPUTZ		03 01577	
003345	005001	A	1583	TZA			03 01578	
003346	006705	A	1584	IJMP	0,X	RETURN	03 01579	
003347	000000	A						
003350	000000	A	1585	IUPUTY	DATA	0	03 01580	
003351	000000	A	1586	IUPUTZ	DATA	0	03 01581	
003352	000000	A	1587	PPTR	DATA	0	03 01582	
003353	000000	A	1588	IUDPW	DATA	0	03 01583	
			1589	EJEC			03 01584	
			1590	*			03 01585	
			1591	*			03 01586	
			1592	*		CLOSE FILE SUBCOMPONENT	03 01587	
			1593	*			03 01588	
			1594	*			03 01589	
003354	006505	A	1595	IUCFIL	JSR	IUCKLN,X	GET LOG UNIT NO.	03 01590
003355	004034	R						
003356	054250	A	1596	STA	IUCFZ		03 01591	
003357	140422	A	1597	SUB	TWD	IS THIS LUN SI ?	03 01592	
003360	001010	A	1598	JAZ	IUERR2	YES - ERROR	03 01593	
003361	000505	R						
003362	120422	A	1599	ADD	TWD	NO	03 01594	
003363	006020	A	1600	LDBI	14		03 01595	
003364	000016	A						
003365	005004	A	1601	TZX		SEARCH FCBLUN TABLE	03 01596	
003366	006015	A	1602	IUCFA	LDAE	FCBLUN,X	FOR THIS LUN.	03 01597
003367	004655	R						
003370	001010	A	1603	JAZ	IUCFB		03 01598	
003371	003373	R						
003372	144234	A	1604	SUB	IUCFZ		03 01599	
003373	001010	A	1605	JAZ	IUCFD	FOUND	03 01600	
003374	003404	R						
003375	005144	A	1606	IUCFB	INR	NOT FOUND -	03 01601	
003376	005144	A	1607	INR			03 01602	
003377	005322	A	1608	ADD			03 01603	
003400	001026	A	1609	JBNZ	IUCFA	LOOK AT NEXT ENTRY	03 01604	
003401	003366	R						
003402	001000	A	1610	JMP	IUERR3	END OF TABLE - ERROR	03 01605	
003403	000510	R						
003404	014173	A	1611	IUCFD	LDA	CLMAC+3		03 01606
003405	150462	A	1612	ANA	LHW	PUT LUN INTO	03 01607	
003406	114220	A	1613	DRA	IUCFZ	CLOSE MACRO	03 01608	
003407	054170	A	1614	STA	CLMAC+3		03 01609	
003410	006013	A	1615	LDAE	FCBLUN+1,X		03 01610	
003411	004655	R						
003412	054213	A	1616	STA	IUCFY	FCB ADRS	03 01611	
003413	074213	A	1617	STX	IUCFZ	SAVE FCBLUN ENTRY ADRS	03 01612	
003414	047000	I	1618	INR	IGALK		03 01613	
003415	006505	A	1619	JSR	IUSCAN,X	GET KEY	03 01614	
003416	003670	R						
003417	054205	A	1620	STA	IUCFX		03 01615	



003420	147000	I	1621	SUB	N254	IS THIS A COMMA ?	03	01616	
003421	001010	A	1622	JAZ	IUCFDB	YES	03	01617	
003422	003435	R							
003423	147000	I	1623	SUB	N21	NO - EQUALS SIGN ?	03	01618	
003424	001010	A	1624	JAZ	IUCFDB	YES	03	01619	
003425	003435	R							
003426	047000	I	1625	INR	IGBLK	NEITHER -	03	01620	
003427	006505	A	1626	JSR	IUSCAN,X	ADVANCE SCAN TO DELIMITER	03	01621	
003430	003670	R							
003431	006505	A	1627	JSR	DLMCHK,X	CHECK IT	03	01622	
003432	004260	R							
003433	001000	A	1628	JMP	IUCFDD		03	01623	
003434	003436	R							
003435	054167	A	1629	IUCFDB	STA	IUCFX		03	01624
003436	024171	A	1630	IUCFDD	LDB	IUCFY	NO KEY - DEFAULT TO ZERO	03	01625
003437	016002	A	1631	LDA	2,B	THIS KEY SAME	03	01626	
003440	150463	A	1632	ANA	RHW	AS KEY IN	03	01627	
003441	144163	A	1633	SUB	IUCFX	FCB ?	03	01628	
003442	001016	A	1634	JANZ	IUERR2	NO - ERROR	03	01629	
003443	000505	R							
003444	006017	A	1635	LDAE	DBLK		03	01630	
003445	004513	R							
003446	054162	A	1636	STA	IUCFTB		03	01631	
003447	054162	A	1637	STA	IUCFTB+1		03	01632	
003450	054162	A	1638	STA	IUCFTB+2		03	01633	
003451	005002	A	1639	TZB			03	01634	
003452	006505	A	1640	IUCFDG	JSR	IUSCAN,X	SCAN OFF FILE NAME	03	01635
003453	003670	R							
003454	001010	A	1641	JAZ	IUCFEC		03	01636	
003455	003546	R							
003456	147000	I	1642	SUB	N254	COMMA ?	03	01637	
003457	001010	A	1643	JAZ	IUCFE	YES	03	01638	
003460	003532	R							
003461	140422	A	1644	SUB	TWO	NO - PERIOD ?	03	01639	
003462	001010	A	1645	JAZ	IUCFEC	YES	03	01640	
003463	003546	R							
003464	144137	A	1646	SUB	N17	NO - EQUALS SIGN ?	03	01641	
003465	001010	A	1647	JAZ	IUCFE	YES	03	01642	
003466	003532	R							
003467	127000	I	1648	ADD	N275		03	01643	
003470	004250	A	1649	LRLA	8		03	01644	
003471	054131	A	1650	STA	IUCFV		03	01645	
003472	114735	A	1651	DRA	N240		03	01646	
003473	006056	A	1652	STAE	IUCFTB,B	SAVE CHAR	03	01647	
003474	003631	R							
003475	006505	A	1653	JSR	IUSCAN,X		03	01648	
003476	003670	R							
003477	001010	A	1654	JAZ	IUCFEC		03	01649	
003500	003546	R							
003501	147000	I	1655	SUB	N254	COMMA ?	03	01650	
003502	001010	A	1656	JAZ	IUCFE	YES	03	01651	
003503	003532	R							
003504	140422	A	1657	SUB	TWO	NO - PERIOD ?	03	01652	
003505	001010	A	1658	JAZ	IUCFEC	YES	03	01653	
003506	003546	R							
003507	144114	A	1659	SUB	N17	NO - EQUALS SIGN ?	03	01654	
003510	001010	A	1660	JAZ	IUCFE	YES	03	01655	
003511	003532	R							
003512	127000	I	1661	ADD	N275	NO -	03	01656	
003513	114107	A	1662	DRA	IUCFV	COMBINE WITH PREV CHAR	03	01657	
003514	006056	A	1663	STAE	IUCFTB,B		03	01658	
003515	003631	R							
003516	005122	A	1664	IPR			03	01659	
003517	005021	A	1665	TBA			03	01660	
003520	140464	A	1666	SUB	THREE	FILENAME COMPLETE ?	03	01661	
003521	001004	A	1667	JAN	IUCFDG	NO - GO BACK	03	01662	
003522	003452	R							
003523	044705	A	1668	INR	IGBLK	YES -	03	01663	
003524	006505	A	1669	JSR	IUSCAN,X	ADVANCE SCAN TO DELIMITER	03	01664	
003525	003670	R							
003526	001010	A	1670	JAZ	IUCFEC		03	01665	
003527	003546	R							
003530	006505	A	1671	JSR	DLMCHK,X	CHECK IT	03	01666	
003531	004260	R							
003532	044676	A	1672	IUCFE	INR	IGBLK	03	01667	
003533	006505	A	1673	JSR	IUSCAN,X	GET MODE	03	01668	
003534	003670	R							
003535	001010	A	1674	JAZ	IUCFEC		03	01669	
003536	003546	R							
003537	147000	I	1675	SUB	N262	CHECK IT	03	01670	
003540	001002	A	1676	JAP	IUERR2	TOO BIG - ERROR	03	01671	
003541	000505	R							
003542	120422	A	1677	ADD	TWO		03	01672	
003543	001004	A	1678	JAN	IUERR2	TOO SMALL - ERROR	03	01673	
003544	000505	R							
003545	004254	A	1679	IUCFEC	LRLA	12	03	01674	
003546	054057	A	1680	STA	IUCFV	SAVE MODE	03	01675	
003547	024060	A	1681	LDB	IUCFY		03	01676	
003550	014060	A	1682	LDA	IUCFTB	CHECK FILE NAME	03	01677	
003551	006146	A	1683	SURE	7,B	1ST 2 CHAR MATCH ?	03	01678	
003552	000007	A							
003553	001015	A	1684	JANZ	IUERR2	NO	03	01679	
003554	000505	R							



Address	Hex	Op	Label	Op	Comment	Page	Line
003555	014054	A	1685	LDA	IUCFTB+1	YES -	03 01680
003556	006146	A	1686	SUPE	8,B	2ND 2 CHAR MATCH ?	03 01681
003557	000010	A					
003560	001016	A	1687	JANZ	IUERR2	NO	03 01682
003561	000505	R					
003562	014050	A	1688	LDA	IUCFTB+2	YES -	03 01683
003563	006146	A	1689	SUPE	9,B	3RD 2 CHAR MATCH ?	03 01684
003564	000011	A					
003565	001016	A	1690	JANZ	IUERR2	NO	03 01685
003566	000505	R					
003567	014010	A	1691	LDA	CLMAC+3		03 01686
003570	154725	A	1692	AMA	N10777	SET MODE INTO	03 01687
003571	114034	A	1693	ORA	IUCFW	CLOSE MACRO	03 01688
003572	054005	A	1694	STA	CLMAC+3		03 01689
003573	014034	A	1695	LDA	IUCFY	PUT FCB ADRS IN	03 01690
003574	054004	A	1696	STA	CLMAC+4	CLOSE MACRO	03 01691
			1697	CLMAC	CLOSE	CLOSE	03 01692
003575	006505	A					
003576	000404	A					
003577	100000	A					
003600	000000	A					
003601	000000	A					
003602	000000	A					
003603	000000	A					
003604	006505	A	1698	JSR	IOCHK,X	CHECK I/O STATUS	03 01693
003605	004227	R					
003606	034020	A	1699	LDX	IUCFZ		03 01694
003607	005001	A	1700	TZA		CLEAR FCBLUN	03 01695
003610	006053	A	1701	STAE	FCBLUN,X	ENTRY	03 01696
003611	004654	R					
003612	020471	A	1702	LDB	TEN		03 01697
003613	034014	A	1703	LDB	IUCFY		03 01698
003614	055000	A	1704	IUCFK	0,X	CLEAR	03 01699
003615	005144	A	1705	IXR		FCB	03 01700
003616	005322	A	1706	BRZ			03 01701
003617	001026	A	1707	JBNZ	IUCFK		03 01702
003620	003614	R					
003621	001000	A	1708	JNP	IUTLB	RETURN	03 01703
003622	000073	R					
003623	000000	A	1709	IUCFV	DATA	0	03 01704
003624	000017	A	1710	N17	DATA	017	03 01705
003625	000000	A	1711	IUCFX	DATA	0	03 01706
003626	000000	A	1712	IUCFW	DATA	0	03 01707
003627	000000	A	1713	IUCFZ	DATA	0	03 01708
003630	000000	A	1714	IUCFY	DATA	0	03 01709
003631			1715	IUCFTB	BSS	4	03 01710
			1716		CJEC		03 01711
			1717	*			03 01712
			1718	*			03 01713
			1719	*		BINARY TO ASCII CONVERSION	03 01714
			1720	*		HAVE BINARY NUMBER IN A,	03 01715
			1721	*		ADDRESS TO STORE ASCII IN B.	03 01716
			1722	*		MAX VALUE IS 9999 - 4 DIGITS,	03 01717
			1723	*		TWO HERDS.	03 01718
			1724	BINASC	STX	BINZ	03 01719
003635	074030	A	1724	BINASC	STX	BINZ	03 01720
003636	005024	A	1725	TXB		SAVE RETURN	03 01721
003637	005010	A	1726	TAB			03 01722
003640	005001	A	1727	TAB			03 01723
003641	170471	A	1728	DIV	TEN	GET ONE'S	03 01724
003642	054022	A	1729	STA	BINY	DIGIT	03 01725
003643	005001	A	1730	TAB			03 01726
003644	170471	A	1731	DIV	TEN	GET TEN'S	03 01727
003645	004250	A	1732	LRLA	0	DIGIT	03 01728
003646	114015	A	1733	ORA	BINY		03 01729
003647	124017	A	1734	ABD	HDZERO		03 01730
003650	055001	A	1735	STA	1,X	PUT IN RESULT	03 01731
003651	005001	A	1736	TAB			03 01732
003652	170471	A	1737	DIV	TEN	GET 100'S	03 01733
003653	054011	A	1738	STA	BINY	DIGIT	03 01734
003654	005001	A	1739	TZA			03 01735
003655	170471	A	1740	DIV	TEN	GET 1000'S	03 01736
003656	004250	A	1741	LRLA	0	DIGIT	03 01737
003657	114005	A	1742	ORA	BINY		03 01738
003660	124006	A	1743	ABD	HDZERO		03 01739
003661	055000	A	1744	STA	0,X	STORE IN RESULT	03 01740
003662	034003	A	1745	LDB	BINZ		03 01741
003663	006705	A	1746	TUMP	0,X	RETURN	03 01742
003664	000000	A					
003665	000000	A	1747	BINY	DATA	0	03 01743
003666	000000	A	1748	BINZ	DATA	0	03 01744
003667	130260	A	1749	HDZERO	DATA	'00'	03 01745
			1750		BJEC		03 01746
			1751	*			03 01747
			1752	*		SUBROUTINE TO GET ONE CHARACTER,	03 01748
			1753	*		IUPTR/2 IS WORD ADDRESS. IUPTR(0)=0	03 01749
			1754	*		GIVES BITS 15-8, IUPTR(0)=1 GIVES	03 01750
			1755	*		BITS 7-0.	03 01751
			1756	*		CHARACTER RETURNED IN A REG BITS 7-0.	03 01752
			1757	*		INCREMENTS POINTER, SAVES 2 REG.	03 01753
			1758	*		IF IOBLK DOES NOT EQUAL ZERO,	03 01754
			1759	*		BLANKS ARE IGNORED.	03 01755
			1760	*			03 01756
003670	064035	A	1761	TUSCAN	STB	IUSCZ	03 01756



Address	Op	Label	Op	Op	Op	Op	Op	Op
003671	006027	A 1762	IUSCA	LDDB	IUPTR	GET CHAR POINTER		03 01757
003672	004432	R						
003673	005021	A 1763		TBA				03 01758
003674	005111	A 1764		IAR		INCREMENT		03 01759
003675	006057	A 1765		STAE	IUPTR	AND SAVE		03 01760
003676	004432	R						
003677	004141	A 1766		LSRB	1			03 01761
003700	006440	A 1767		BT	RA0+B0,IUSCD			03 01762
003701	003706	R						
003702	016000	A 1768		LDA	0,B	IUPTR IS ODD -		03 01763
003703	004350	A 1769		LSRA	8	GET BITS 15-8		03 01764
003704	001000	A 1770		JMP	IUSCG			03 01765
003705	003710	R						
003706	016000	A 1771	IUSCD	LDA	0,B	IUPTR IS EVEN -		03 01766
003707	150463	A 1772		ANA	RHW	GET BITS 7-0		03 01767
003710	024520	A 1773	IUSCG	LDB	IGBLK	IGNORE BLANKS ?		03 01768
003711	001020	A 1774		JBZ	IUSCL	NO		03 01769
003712	003723	R						
003713	006147	A 1775		SUBE	N240	YES - BLANK CHAR ?		03 01770
003714	004430	R						
003715	001010	A 1776		JAZ	IUSCA	YES - GO BACK		03 01771
003716	003671	R						
003717	006127	A 1777		ADDE	N240	NO -		03 01772
003720	004430	R						
003721	005002	A 1778		TZB		CLEAR FLAG		03 01773
003722	064506	A 1779		STB	IGBLK			03 01774
003723	024002	A 1780	IUSCL	LDB	IUSCZ	RESTORE B		03 01775
003724	006705	A 1781		IJMP	0,X	RETURN		03 01776
003725	000000	A						
003726	000000	A	1782	IUSCZ	DATA			03 01777
			1783		EJEC			03 01778
			1784	*				03 01779
			1785	*		SUBROUTINE TO DETERMINE DEVICE		03 01780
			1786	*		TYPE. ENTER WITH A = LOGICAL		03 01781
			1787	*		UNIT NUMBER; RETURN WITH A SET		03 01782
			1788	*		= 1 FOR RMD'S, A = 0 FOR MT'S,		03 01783
			1789	*		AND A = -1 FOR ALL OTHER DEVICES.		03 01784
			1790	*		B IS SAVED.		03 01785
			1791	*				03 01786
003727	054102	A 1792	IULNDV	STA	IULNY	SAVE A		03 01787
003730	064102	A 1793		STB	IULNZ	SAVE B		03 01788
003731	144601	A 1794		SUB	D101	LUN LT 101 ?		03 01789
003732	001002	A 1795		JAP	IULNB	NO		03 01790
003733	003745	R						
003734	020400	A 1796		LDB	VSLUT1	YES -		03 01791
003735	016000	A 1797		LDA	0,B	TEST FOR		03 01792
003736	144073	A 1798		SUB	IULNY	VALID LUN		03 01793
003737	001004	A 1799		JAN	IUSRR2	OUT OF RANGE - ERROR		03 01794
003740	000505	R						
003741	010400	A 1800		LDA	VSLUT1			03 01795
003742	124067	A 1801		ADD	IULNY	COMPUTE ENTRY ADRS		03 01796
003743	001000	A 1802		JMP	IULNE			03 01797
003744	003774	R						
003745	054064	A 1803	IULNB	STA	IULNY	101 LEQ LUN LEQ 179 ?		03 01798
003746	144565	A 1804		SUB	D79			03 01799
003747	001002	A 1805		JAP	IULND	NO		03 01800
003750	003763	R						
003751	020401	A 1806		LDB	VSLUT2	YES -		03 01801
003752	016000	A 1807		LDA	0,B	TEST FOR		03 01802
003753	144056	A 1808		SUB	IULNY	VALID LUN		03 01803
003754	001004	A 1809		JAN	IUSRR2	OUT OF RANGE - ERROR		03 01804
003755	000505	R						
003756	010401	A 1810		LDA	VSLUT2			03 01805
003757	124052	A 1811		ADD	IULNY	COMPUTE		03 01806
003760	005111	A 1812		IAR		ENTRY ADRS		03 01807
003761	001000	A 1813		JMP	IULNE			03 01808
003762	003774	R						
003763	054046	A 1814	IULND	STA	IULNY	180 LEQ LUN LEQ 255 ?		03 01809
003764	020402	A 1815		LDB	VSLUT3			03 01810
003765	016000	A 1816		LDA	0,B			03 01811
003766	144043	A 1817		SUB	IULNY			03 01812
003767	001004	A 1818		JAN	IUSRR2	OUT OF RANGE - ERROR		03 01813
003770	000505	R						
003771	010402	A 1819		LDA	VSLUT3	VALID LUN -		03 01814
003772	124037	A 1820		ADD	IULNY	COMPUTE		03 01815
003773	005111	A 1821		IAR		ENTRY ADRS		03 01816
003774	005012	A 1822	IULNE	TAB				03 01817
003775	016000	A 1823		LDA	0,B	GET DST NO.		03 01818
003776	150463	A 1824		ANA	RHW			03 01819
003777	005311	A 1825		DAR				03 01820
004000	054031	A 1826		STA	IULNY	COMPUTE		03 01821
004001	004201	A 1827		ASLA	1	DST		03 01822
004002	124027	A 1828		ADD	IULNY	ENTRY		03 01823
004003	120355	A 1829		ADD	V\$DSTB			03 01824
004004	005012	A 1830		TAB		ADDRESS		03 01825
004005	016001	A 1831		LDA	1,B	GET DEVICE NAME		03 01826
004006	005002	A 1832		TZB				03 01827
004007	006617	A 1833		SRE	HMT,7,010	SKIP IF MAG TAPE		03 01828
004010	004426	R						
004011	001000	A 1834		JMP	IULNG			03 01829
004012	004615	R						
004013	001000	A 1835		JMP	IULNP	MAG TAPE - FLAG = 0		03 01830
004014	004026	R						







004127	010471	A	1910	LDA	TEN			03	01905
004130	054304	A	1911	STA	BASE			03	01906
004131	044277	A	1912	INR	IGBLK			03	01907
004132	006505	A	1913	JSR	IUSCAN,X	GET 1ST CHAR		03	01908
004133	003670	R							
004134	054067	A	1914	STA	IUCVX			03	01909
004135	001010	A	1915	JAZ	IUCVP			03	01910
004136	004214	R							
004137	006617	A	1916	SRE	N260,7,010	CHAR A ZERO ?		03	01911
004140	004433	R							
004141	001000	A	1917	JMP	IUCVB	NO		03	01912
004142	004145	R							
004143	001000	A	1918	JMP	IUCVD	YES		03	01913
004144	004155	R							
004145	144265	A	1919	IUCVB	SUB	N260	IS CHAR A NUMBER (0 LEQ CHAR LT BASE) ?	03	01914
004146	001004	A	1920	JAN	IUCVJ	NO		03	01915
004147	004173	R							
004150	144264	A	1921	SUB	BASE			03	01916
004151	001002	A	1922	JAP	IUCVJ	NO		03	01917
004152	004173	R							
004153	001000	A	1923	JMP	IUCVH	YES		03	01918
004154	004164	R							
004155	010424	A	1924	IUCVD	LDA	EIGHT	1ST CHAR A ZERO -	03	01919
004156	054256	A	1925	STA	BASE	CHANGE BASE		03	01920
004157	006505	A	1926	IUCVF	JSR	IUSCAN,X	GET NEXT CHAR	03	01921
004160	003670	R							
004161	054042	A	1927	STA	IUCVX	SAVE IT		03	01922
004162	001000	A	1928	JMP	IUCVB	TEST IT		03	01923
004163	004145	R							
004164	024247	A	1929	IUCVH	LDR	NUM	COMPUTE -	03	01924
004165	014036	A	1930	LDA	IUCVX			03	01925
004166	144244	A	1931	SUB	N260	NUM = NUM*BASE+CHAR-260		03	01926
004167	164245	A	1932	MUL	BASE			03	01927
004170	064243	A	1933	STB	NUM			03	01928
004171	001000	A	1934	JMP	IUCVF	GO BACK FOR NEXT CHAR		03	01929
004172	004157	R							
004173	014030	A	1935	IUCVJ	LDA	IUCVX	TEST CHAR	03	01930
004174	001010	A	1936	JAZ	IUCVP			03	01931
004175	004214	R							
004176	144231	A	1937	SUB	N240	CHAR A BLANK ?		03	01932
004177	001010	A	1938	JAZ	IUCVN	YES		03	01933
004200	004211	R							
004201	144234	A	1939	SUB	N14	NO - CHAR A COMMA ?		03	01934
004202	001010	A	1940	JAZ	IUCVP	YES		03	01935
004203	004214	R							
004204	144444	A	1941	SUB	N21	NO - CHAR AN EQUALS ?		03	01936
004205	001010	A	1942	JAZ	IUCVP	YES		03	01937
004206	004214	R							
004207	001000	A	1943	JMP	IUERR2	NO - NONE OF THE ABOVE - ERROR		03	01938
004210	000505	R							
004211	044217	A	1944	IUCVN	INR	IGBLK		03	01939
004212	006505	A	1945	JSR	IUSCAN,X	ADVANCE SCAN		03	01940
004213	003670	R							
004214	014217	A	1946	IUCVP	LDA	NUM	0 LEQ NUM LEQ 7777 ?	03	01941
004215	001002	A	1947	JAP	IUCVR			03	01942
004216	004220	R							
004217	005001	A	1948	TZA		NO - ZERO IT		03	01943
004220	034005	A	1949	IUCVR	LDX	IUCVZ	RESTORE	03	01944
004221	024003	A	1950	LDB	IUCVY	REGISTERS		03	01945
004222	006705	A	1951	IJMP	0,X	RETURN		03	01946
004223	000000	A							
004224	000000	A	1952	IUCVX	DATA	0		03	01947
004225	000000	A	1953	IUCVY	DATA	0		03	01948
004226	000000	A	1954	IUCVZ	DATA	0		03	01949
			1955	EJEC				03	01950
			1956	*				03	01951
			1957	*	SUBROUTINE TO CHECK I/O STATUS FOR ERROR CONDITIONS.			03	01952
			1958	*	IF NO ERROR - RETURNS TO CALLER			03	01953
			1959	*	IF ERRORS, IF ON SD - EXIT, OTHERWISE, SET IU04 ERROR.			03	01954
			1960	*	SUBROUTINE CALL IS - JSK IDCHK,X			03	01955
			1961	*	CALL MUST BE IMMEDIATELY AFTER STANDARD VORTEX I/O MACRO.			03	01956
			1962	*				03	01957
004227	074027	A	1963	IDCHK	STX	IDCHKZ	SAVE RETURN	03	01958
004230	005041	A	1964	TXA				03	01959
004231	140467	A	1965	SUB	SEVEN	GET ADRS OF STATUS WORD		03	01960
004232	005014	A	1966	TAX				03	01961
004233	015000	A	1967	LDA	0,X	GET STATUS WORD		03	01962
004234	006150	A	1968	ANAI	0340			03	01963
004235	000340	A							
004236	006140	A	1969	SUBI	0240	ERROR ?		03	01964
004237	000240	A							
004240	001010	A	1970	JAZ	IDCHKB	YES		03	01965
004241	004245	R							
004242	034014	A	1971	LDX	IDCHKZ			03	01966
004243	006705	A	1972	IJMP	0,X	NO - RETURN		03	01967
004244	000000	A							
004245	015001	A	1973	IDCHKB	LDA	1,X		03	01968
004246	150463	A	1974	RWA	RHW	GET LOGICAL UNIT		03	01969
004247	140464	A	1975	SUB	THREE	IS IT SD ?		03	01970
004250	001010	A	1976	JAZ	IDCHKD	YES		03	01971
004251	004254	R							
004252	001000	A	1977	JMP	IUERR4	NO - TYPE 4 ERROR		03	01972
004253	000513	R							



Address	Hex	Op	Label	Comment	Page
004254	006505	A	1978 IDCHKD	EXIT	03 01973
004255	000406	A			
004256	000200	A			
004257	000000	A	1979 IDCHKZ	DATA 0	03 01974
				EJEC	03 01975
		*			03 01976
		*		SUBROUTINE TO CHECK DELIMITER. ENTER WITH	03 01977
		*		CHARACTER IN A REGISTER, IF COMMA OR EQUALS SIGN,	03 01978
		*		RETURN IS MADE WITH A = 0. IF PERIOD, IUPTR IS	03 01979
		*		SET TO END OF JC BUFFER AND RETURN IS MADE WITH	03 01980
		*		A = 0. ANYTHING ELSE CAUSES AN EXIT TO IUERR1.	03 01981
		*			03 01982
004260	001010	A	1987 DLMCHK	JAZ DLMX	
004261	004301	R		END OF BUFFER	
004262	144365	A	1988	SUB N254	03 01983
004263	001010	A	1989	JAZ DLMX	03 01984
004264	004301	R		COMMA ?	
004265	144363	A	1990	SUB N21	03 01985
004266	001010	A	1991	JAZ DLMX	03 01986
004267	004301	R		EQUALS SIGN ?	
004270	006120	A	1992	ADDI 017	03 01987
004271	000017	A		PERIOD ?	
004272	001016	A	1993	JANZ IUERR2	03 01988
004273	000505	R		NO - ERROR	
004274	010412	A	1994	LDA V\$JCB	03 01989
004275	004241	A	1995	LRLA 1	03 01990
004276	124125	A	1996	ADD D80	03 01991
004277	006037	A	1997	STAE IUPTR	03 01992
004300	004432	R		JC BUGFER	
004301	006705	A	1998 DLMX	IJMP 0,X	03 01993
004302	000000	A		RETURN	
			1999	EJEC	03 01994
		*			03 01995
		*		SUBROUTINE TO DETERMINE IF LOGICAL UNIT IS	03 01996
		*		ASSIGNED TO TELETYPE OR CRT. CALLING SEQUENCE IS:	03 01997
		*			03 01998
		*		JSR V\$DVTP,X	03 01999
		*			03 02000
		*		ENTRANCE PARAMETER: A REGISTER CONTAINS LOG. UNIT NO.	03 02001
		*			03 02002
		*		RETURN PARAMETER: A REGISTER EQUALS ZERO - DEVICE IS	03 02003
		*		A TTY OR CRT.	03 02004
		*			03 02005
		*		A REGISTER NOT EQUAL ZERO - DEVICE	03 02006
		*		IS NOT A TTY OR CRT.	03 02007
		*			03 02008
		*		B REGISTER IS SAVED.	03 02009
		*			03 02010
		*			03 02011
004303	064066	A	2017 V\$DVTP	STB DVTPA	E.1*****
004304	074073	A	2018	STX DVTPX	E.1*****
004305	005012	A	2019	TAB	E.1*****
004306	005004	A	2020	TZX	E.1*****
004307	006145	A	2021	SUBE DVLUN,X	E.1*****
004310	004401	R			
004311	001004	A	2022	JAN DVTP5	E.1*****
004312	004321	R		IF IN LUT 1	
004313	005144	A	2023	IXR	E.1*****
004314	006145	A	2024	SUBE DVLUN,X	E.1*****
004315	004401	R			
004316	001004	A	2025	JAN DVTP5	E.1*****
004317	004321	R		IF IN LUT 2	
004320	005144	A	2026	IXR	E.1*****
	004321	R	2027 DVTP5	EQU * LUN	E.1*****
004321	006125	A	2028	ADDE DVLUN,X	E.1*****
004322	004401	R		ADJUST FOR LUT ENTRY	
004323	006025	A	2029	LDBE DVLUT,X	E.1*****
004324	004404	R			
004325	126000	A	2030	ADD 0,B	E.1*****
004326	005012	A	2031	TAB	E.1*****
004327	016000	A	2032	LDA 0,B	E.1*****
004330	150463	A	2033	ANA RHN	E.1*****
004331	005311	A	2034	DAR	E.1*****
004332	054040	A	2035	STA DVTPB	E.1*****
004333	004201	A	2036	ASLA 1	E.1*****
004334	124036	A	2037	ADD DVTPB	E.1*****
004335	120355	A	2038	ADD V\$DSTB	E.1*****
004336	005012	A	2039	TAB	E.1*****
004337	016001	A	2040	LDA 1,B	E.1*****
004340	144035	A	2041	SUB DVTPSP	E.1*****
004341	001016	A	2042	JANZ DVTP10	E.1*****
004342	004360	R		IF NOT A SPOOL UNIT	
004343	016000	A	2043	LDA 0,B	E.1*****
004344	004352	A	2044	LSRA 10	E.1*****
004345	150467	A	2045	ANA B#7	E.2*****
004346	120402	A	2046	ADD V\$LUT3	E.1*****
004347	005112	A	2047	INCR 012	E.2*****
004350	016000	A	2048	LDA 0,B	E.1*****
004351	150463	A	2049	ANA RHN	E.1*****
004352	005311	A	2050	DAR	E.1*****
004353	054017	A	2051	STA DVTPB	E.1*****
004354	004201	A	2052	ASLA 1	E.1*****
004355	124015	A	2053	ADD DVTPB	E.1*****



Address	Hex	Mode	Label	Op	Op2	Text	Page
004356	120355	A	2054	ADD	V\$DSTB	ADD TABLE BASE	E.1*****
004357	005012	A	2055	TAB			E.1*****
004360	016001	A	2056	DVTP10	LDA	1,B	DEVICE NAME
004361	144012	A	2057		SUB	DVTPTY	IS IT TY ?
004362	001010	A	2058		JAZ	DVTP1	YES
004363	004366	R					03 02024
004364	016001	A	2059	LDA	1,B	NO -	03 02026
004365	144007	A	2060	SUB	DVTPTCT	TRY FOR CT	03 02027
004366	024003	A	2061	DVTP1	LDB	DVTPA	RESTORE B
004367	034010	A	2062		LDX	DVTPX	RETURN ADDR
004370	006705	A	2063		IJMP	0,X	RETURN
004371	000000	A					03 02029
004372	000000	A	2064	DVTPA	DATA	0	03 02030
004373	000000	A	2065	DVTPB	DATA	0	03 02031
004374	152331	A	2066	DVTPTY	DATA	'TY'	03 02032
004375	141724	A	2067	DVTPTCT	DATA	'CT'	03 02033
004376	151720	A	2068	DVTSP	DATA	'SP'	E.1*****
004377	000000	A	2069	DVTPC	DATA	0	E.1*****
004400	000000	A	2070	DVTPX	DATA	0	E.1*****
004401	000145	A	2071	DVLUN	DATA	101	E.1*****
004402	000117	A	2072		DATA	79	E.1*****
004403	000000	A	2073		DATA	0	E.1*****
004404	000400	A	2074	DVLUT	DATA	V\$LUT1	E.1*****
004405	000401	A	2075		DATA	V\$LUT2	E.1*****
004406	000402	A	2076		DATA	V\$LUT3	E.1*****
			2077		EJEC		
			2078	*			03 02034
			2079	*			03 02035
			2080	*		SUBROUTINE TO DETERMINE IF LD LOGICAL	03 02036
			2081	*		UNIT AND SD LOGICAL UNIT ARE ASSIGNED	03 02037
			2082	*		TO THE SAME DEVICE.	03 02038
			2083	*			03 02039
			2084	*		CALLING SEQUENCE:	03 02040
			2085	*			03 02041
			2086	*		JSR V\$SOLO,X	03 02042
			2087	*			03 02043
			2088	*		ENTRANCE PARAMETERS - NONE	03 02044
			2089	*			03 02045
			2090	*		RETURN PARAMETER - A REGISTER = ZERO,	03 02046
			2091	*		SAME DEVICE. A REGISTER NOT = ZERO,	03 02047
			2092	*		DIFFERENT DEVICES.	03 02048
			2093	*			03 02049
			2094	*		B REGISTER IS PRESERVED DURING EXECUTION.	03 02050
			2095	*			03 02051
004407	074012	A	2095	V\$SOLO	STX	SOLO1	03 02052
004410	030400	A	2096		LDX	V\$LUT1	03 02053
004411	015003	A	2097		LDA	0,X	03 02054
004412	150463	A	2098		ANA	RHW	03 02055
004413	054007	A	2099		SFA	SOLO2	03 02056
004414	015005	A	2100		LDA	0,X	03 02057
004415	150463	A	2101		ANA	RHW	03 02058
004416	144004	A	2102		SUP	SOLO2	03 02059
004417	034002	A	2103		LDX	SOLO1	03 02060
004420	006705	A	2104		IJMP	0,X	03 02061
004421	000000	A					
004422	000000	A	2105	SOLO1	DATA	0	03 02062
004423	000000	A	2106	SOLO2	DATA	0	03 02063
004424	000120	A	2107	D80	DATA	80	03 02064
004425	000144	A	2108	D100	DATA	100	03 02065
004426	146724	A	2109	HMT	DATA	'MT'	03 02066
004427	142000	A	2110	HDZ	DATA	0142000	03 02067
004430	000240	A	2111	N240	DATA	0240	03 02068
004431	000000	A	2112	IGBLK	DATA	0	03 02069
004432	000000	A	2113	IUFTR	DATA	0	03 02070
004433	000260	A	2114	N260	DATA	0260	03 02071
004434	000000	A	2115	NUM	DATA	0	03 02072
004435	000000	A	2116	BASE	DATA	0	03 02073
004436	000014	A	2117	N14	DATA	014	03 02074
004437	130720	A	2118	HEAD	DATA	'1PAGE 0001 * HEADING, WDS 1-6	03 02075
004440	140707	A					
004441	142640	A					
004442	130260	A					
004443	130261	A					
004444	120240	A					
004445	120240	A	2119	DATA	'	WDS 7-12	03 02076
004446	120240	A					
004447	120240	A					
004450	120240	A					
004451	120240	A					
004452	120240	A					
004453	120240	A	2120	DATA	' VORTEX'	WDS 13-18	03 02077
004454	120240	A					
004455	120240	A					
004456	153317	A					
004457	151324	A					
004460	142730	A					
004461	120240	A	2121	DATA	' IDUTIL'	WDS 19-24	03 02078
004462	144717	A					
004463	152724	A					
004464	144714	A					
004465	120240	A					
004466	120240	A					
004467	120240	A	2122	DATA	'	WDS 25-30	03 02079
004470	120240	A					







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004676 000000 A
004677 000000 E
004700 000000 A
004701 000000 E
004702 000000 A
004703 000000 E
004704 000000 A
004705 000000 E
004706 000000 A
004707 000000 E
2171 FCBA FCB 0,0,0,0,0,0,0,0,0,0 03 02128
004710 000000 A
004711 000000 A
004712 000000 A
004713 000000 A
004714 000000 A
004715 000000 A
004716 000000 A
004717 000000 A
004720 000000 A
004721 000000 A
004722 000000 A 2172 FCBB DATA 0,0,0,0,0,0,0,0,0,0 03 02129
004723 000000 A
004724 000000 A
004725 000000 A
004726 000000 A
004727 000000 A
004730 000000 A
004731 000000 A
004732 000000 A
004733 000000 A
004734 000000 A 2173 FCBC DATA 0,0,0,0,0,0,0,0,0,0 03 02130
004735 000000 A
004736 000000 A
004737 000000 A
004740 000000 A
004741 000000 A
004742 000000 A
004743 000000 A
004744 000000 A
004745 000000 A
004746 000000 A 2174 FCBD DATA 0,0,0,0,0,0,0,0,0,0 03 02131
004747 000000 A
004750 000000 A
004751 000000 A
004752 000000 A
004753 000000 A
004754 000000 A
004755 000000 A
004756 000000 A
004757 000000 A
004760 000000 A 2175 FCBE DATA 0,0,0,0,0,0,0,0,0,0 03 02132
004761 000000 A
004762 000000 A
004763 000000 A
004764 000000 A
004765 000000 A
004766 000000 A
004767 000000 A
004770 000000 A
004771 000000 A
004772 000000 A 2176 FCBF DATA 0,0,0,0,0,0,0,0,0,0 03 02133
004773 000000 A
004774 000000 A
004775 000000 A
004776 000000 A
004777 000000 A
005000 000000 A
005001 000000 A
005002 000000 A
005003 000000 A
005004 000000 A 2177 LUNLST BSS 14 03 02134
005022 120240 A 2178 DATA 03 02135
005023 000000 A 2179 IOBUF BSS 1025 03 02136
007024 000000 A 2180 ENDPRG DATA 0 03 02137
000000 R 2181 END V$IUTL 03 02138

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ENTRY NAMES

000000 R V\$IUTL

EXTERNAL NAMES

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004677 E BIFCB 004701 E BDFCB 004705 E GDFCB 004675 E LDFCB
004673 E PIFCB 004707 E PDFCB 004671 E SIFCB 004703 E SSFCB
000000 E V$EXEC 000000 E V$IDC

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SYMBOLS

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000044 A APIM 003205 R ASCA 003152 R ASCII 003171 R ASCOK
000002 A B 000000 A B0 000001 A B1 000012 A B10
000013 A B11 000014 A B12 000015 A B13 000016 A B14
000017 A B15 000002 A B2 000003 A B3 000004 A B4
000005 A B5 000006 A B6 000007 A B7 000010 A B8
000011 A B9 004435 R BASE 004677 E BIFCB 003635 R BINASC
003665 R BINY 003666 R BINZ 000421 A BM1 000472 A BM17
000475 A BM177 000477 A BM1777 000464 A BM3 000473 A BM37
000463 A BM377 000467 A BM7 000474 A BM77 000476 A BM777
004701 E BDFCB 000441 A BR0 000442 A BR1 000453 A BR10

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000454	A	BR11	000455	A	BR12	000456	A	BR13	000457	A	BR14
000460	A	BR15	000443	A	BR2	000444	A	BR3	000445	A	BR4
000446	A	BR5	000447	A	BR6	000450	A	BR7	000451	A	BR8
000452	A	BR9	000421	A	BS0	000422	A	BS1	000433	A	BS10
000434	A	BS11	000435	A	BS12	000436	A	BS13	000437	A	BS14
000440	A	BS15	000423	A	BS2	000424	A	BS3	000425	A	BS4
000426	A	BS5	000427	A	BS6	000430	A	BS7	000431	A	BS8
000432	A	BS9	004521	R	BUFAD	003575	R	CLMAC	000047	A	CLOCK
003151	R	CNT	000642	R	CODE1	000643	R	CODE2	000644	R	CODE3
000645	R	CODE4	000646	R	CODE5	004425	R	D100	004533	R	D101
004476	R	D40	004534	R	D79	004424	R	D80	004513	R	DBLK
000747	A	DISCLK	000745	A	DISMP	000444	A	DISPIM	004260	R	DLMCHK
004301	R	DLMX	004401	R	DVLUN	004404	R	DVLUT	004366	R	DVTP1
004360	R	DVTP10	004321	R	DVTP5	004372	R	DVTPA	004373	R	DVTPB
004377	R	DVTPC	004375	R	DVTPCT	004376	R	DVTPSP	004374	R	DVTPTY
004400	R	DVTPX	000424	A	EIGHT	000147	A	ENACLK	000645	A	ENAMP
000244	A	ENAPIM	007024	R	ENDPRG	000632	R	ERRBUF	000637	R	ERRDCB
004710	R	FCBA	004722	R	FCBC	004724	R	FCBD	004746	R	FCBD
004769	R	FCBE	004772	R	FCBF	004654	R	FCBLUN	004520	R	FDCPAD
000465	A	FIVE	004515	R	FLUNAD	000423	A	FOUR	004535	R	FRDCB
002033	R	FUNMAC	004705	E	GDFCP	000477	R	HASTR	000650	R	HCBLK
004427	R	HBZ	003667	R	HMZERO	004437	R	HEAD	004477	R	HEADCB
000417	R	HFBLK	004426	R	HMT	000647	R	HOC	004526	R	HRBLK
004431	R	IGBLK	004502	R	INDCB	005023	R	IDBUF	004227	R	IDCHK
004245	R	IGCHKB	004254	R	IGCHKD	004257	R	IGCHKZ	003135	R	IUASC
001567	R	IUBAD	000665	R	IUC1	003366	R	IUCFA	003375	R	IUCFB
003403	R	IUCFD	003435	R	IUCFDB	003436	R	IUCFDD	003452	R	IUCFDG
003532	R	IUCFE	003546	R	IUCFEC	003354	R	IUCFIL	003614	R	IUCFK
003631	R	IUCFTB	003623	R	IUCFV	003626	R	IUCFW	003625	R	IUCFX
003630	R	IUCFY	003627	R	IUCFZ	004056	R	IUCKB	004073	R	IUCKB
004105	R	IUCKF	004034	R	IUCKLN	004121	R	IUCKY	004122	R	IUCKZ
004123	R	IUCNVT	000652	R	IUCOPY	000727	R	IUCPA	000750	R	IUCPB
000757	R	IUCPBC	000736	R	IUCPC	001001	R	IUCPB	001007	R	IUCPE
001045	R	IUCPF	001057	R	IUCPS	001070	R	IUCPH	001077	R	IUCPHC
001106	R	IUCPJ	001120	R	IUCPK	001125	R	IUCPL	001161	R	IUCPN
001166	R	IUCPO	001174	R	IUCPOB	001206	R	IUCPOC	001253	R	IUCPO
001265	R	IUCPOA	001267	R	IUCPOB	001323	R	IUCPOE	001334	R	IUCPR
001344	R	IUCPRB	001370	R	IUCPRC	001353	R	IUCPRD	001411	R	IUCPRE
001416	R	IUCPRF	001421	R	IUCPRG	001543	R	IUCPRK	001474	R	IUCPS
001563	R	IUCPX	001564	R	IUCPY	001565	R	IUCPZ	001464	R	IUCPZZ
004145	R	IUCYB	004155	R	IUCVD	004137	R	IUCVF	004164	R	IUCVH
004173	R	IUCVJ	004211	R	IUCVN	004214	R	IUCVP	004220	R	IUCVR
004224	R	IUCVX	004225	R	IUCVY	004226	R	IUCVZ	001572	R	IUCHEF
003023	R	IUDP1	003032	R	IUDP2	002665	R	IUDP3	002674	R	IUDP3C
002703	R	IUDPC	002715	R	IUDPB	002723	R	IUDPE	002773	R	IUDPF
002776	R	IUDPG	003042	R	IUDPH	003210	R	IUDPJ	003224	R	IUDPK
003252	R	IUDPKB	003266	R	IUDPL	003303	R	IUDPM	003353	R	IUDPN
003313	R	IUDPX	003311	R	IUDPY	003312	R	IUDPZ	002607	R	IUDUMP
003314	R	IUDX	003315	R	IUDY	000540	R	IUERB	000546	R	IUERD
000552	R	IUERDX	000612	R	IUERH	000502	R	IUERR1	000505	R	IUERR2
000510	R	IUERR3	000513	R	IUERR4	000514	R	IUERR5	003745	R	IULNB
003763	R	IULND	003727	R	IULNBV	003771	R	IULNE	004015	R	IULNG
004025	R	IULNF	004026	R	IULNP	004032	R	IULNY	004033	R	IULNZ
001622	R	IUPFA	002400	R	IUPFAB	002430	R	IUPFB	001631	R	IUPFB1
002432	R	IUPFC	001640	R	IUPFC1	002445	R	IUPFD	001652	R	IUPFD1
001662	R	IUPFE	001725	R	IUPFE0	001726	R	IUPFE1	002473	R	IUPFEC
002474	R	IUPFEG	002525	R	IUPFG	002114	R	IUPFID	002361	R	IUPFIL
002117	R	IUPFI2	001566	R	IUPFLG	001755	R	IUPFN	001762	R	IUPFO
002120	R	IUPFD2	002014	R	IUPFQ	002020	R	IUPFQA	002034	R	IUPFRA
002056	R	IUPFRB	002605	R	IUPFV	002604	R	IUPFW	002602	R	IUPFX
002115	R	IUPFX1	002603	R	IUPFY	002601	R	IUPFZ	002116	R	IUPFZ1
001574	R	IUPRMT	004432	R	IUPTR	003317	R	IUPUT	003340	R	IUPUTA
003343	R	IUPUTB	003350	R	IUPUTY	003351	R	IUPUTZ	002172	R	IUREW
002230	R	IUREZ	003671	R	IUSCA	003670	R	IUSCAN	003706	R	IUSCB
003710	R	IUSCG	003723	R	IUSCL	003720	R	IUSCZ	002121	R	IUSFIL
004532	R	IUSTZ	002240	R	IUSRB	002254	R	IUSRC	002231	R	IUSREC
002263	R	IUSRG	002266	R	IUSRH	002325	R	IUSRZ	000473	R	IUT
000415	R	IUTAP	001557	R	IUTBUF	000003	R	IUTLA	000317	R	IUTLAD
000073	R	IUTLE	000077	R	IUTLC	000124	R	IUTLCH	000126	R	IUTLCK
000144	R	IUTLD	000162	R	IUTLF	000206	R	IUTLFH	000224	R	IUTLG
000227	R	IUTLGD	000245	R	IUTLH	000332	R	IUTLK	000333	R	IUTLKC
000342	R	IUTLM	000343	R	IUTLHC	000347	R	IUTLN	000350	R	IUTLNC
000353	R	IUTLP	000362	R	IUTLQ	000363	R	IUTLQB	000404	R	IUTLQF
000411	R	IUTLOH	000472	R	IUTLZ	002326	R	IUNEDF	002360	R	IUNEZ
000300	A	LC	000050	A	LCJP	004517	R	LCNT	000462	A	LHW
000651	R	LNCNT	000003	A	LD	004675	E	LDPCB	005004	R	LUNLST
002747	R	MACRD	002335	R	MACWF	004680	R	MCNT	000045	A	MP
000045	A	MPCR0	000145	A	MPCR1	000245	A	MPCR2	000345	A	MPCR3
003420	A	MT	004516	R	N10777	004512	R	N12740	004436	R	N14
003624	R	N17	003316	R	N2001	004651	R	N21	004430	R	N240
004650	R	N254	002606	R	N256	004433	R	N260	004641	R	N262
004514	R	N264	004652	R	N273	004530	R	N300	004527	R	N340
004511	R	N366	004531	R	N40	001571	R	N70000	004510	R	N72
003461	A	NEG	000470	A	NINE	004404	R	NUM	000421	A	ONE
002562	R	OPMAC	004505	R	OUTECB	004640	R	PAGND	001570	R	PBFLG
004475	R	PGAD	004673	E	PIFCB	000070	A	PIM1	000041	A	PIM2
000042	A	PIM3	000043	A	PIM4	000040	A	PIME	000040	A	PIMS
000040	A	PIM7	000040	A	PIM8	004767	E	PDFCB	003352	R	PPTR
004551	R	PREAD	004553	R	PRBUF	004605	R	PRDCB	004612	R	PRTFLG
000040	A	RA0	000000	A	RA1	000000	A	RA2	000020	A	RB1
004546	R	RCDCB	004644	R	RCNT	001220	R	RDMAC	001762	R	RDMAC1
004541	R	RECN	004540	R	RECH1	004647	R	RECH0	000474	R	REDCB
002205	R	REHMAC	000463	A	RHW	000467	A	SEVEN	000000	A	SI



004653	R	SIFADD	004671	E	SIFCB	000466	A	SIX	000003	A	SD
004422	R	SOLO1	004423	R	SOLO2	002141	R	SRMAC	002277	R	SRMACB
004703	E	SSFCB	000027	A	TBATSX	000026	A	TBCPTH	000011	A	TBENTY
000003	A	TBEVNT	000021	A	TBID	000014	A	TBISA	000015	A	TBISB
000017	A	TBISP	000020	A	TBISRS	000016	A	TBISX	000022	A	TBKN1
000023	A	TBKN2	000024	A	TBKN3	000002	A	TEPL	000004	A	TBRSA
000005	A	TBRSE	000030	A	TBRSE	000007	A	TBRSP	000010	A	TBRSTS
000006	A	TBRX	000000	A	TBS0	000001	A	TBS1	000012	A	TBS10
000013	A	TBS11	000014	A	TBS12	000015	A	TBS13	000016	A	TBS14
000017	A	TBS15	000002	A	TBS2	000003	A	TBS3	000004	A	TBS4
000005	A	TBS5	000006	A	TBS6	000007	A	TBS7	000010	A	TBS8
000011	A	TBS9	000001	A	TBST	000025	A	TBTLC	000013	A	TBTMIN
000012	A	TBTMS	000000	A	TBTRD	004643	R	TCNT	004525	R	TDCEAD
000471	A	TEN	000464	A	THREE	004522	R	TDDCB	001573	R	TDDCBF
001741	R	TDOFFUN	000422	A	TWO	000403	A	V\$1MIN	000415	A	V\$BFC
000075	A	V\$BGLB	000036	A	V\$BIC1	000315	A	V\$BTB	000414	A	V\$BVN
000334	A	V\$CAM	000353	A	V\$CKB	000411	A	V\$CKIT	000310	A	V\$CKPT
000301	A	V\$CPL	000076	A	V\$CRDM	000341	A	V\$CRDR	000354	A	V\$CRM
000302	A	V\$CRS	000360	A	V\$CTAD	000300	A	V\$CTL	000351	A	V\$CTMS
000070	A	V\$DATE	000355	A	V\$DSTB	004303	R	V\$DVTP	000376	A	V\$ERFG
000000	E	V\$EXEC	000347	A	V\$FGLB	000306	A	V\$FLRS	000350	A	V\$FREE
000320	A	V\$IM	000410	A	V\$IDA	000000	E	V\$IDC	000000	R	V\$IUTL
000412	A	V\$JCB	000055	A	V\$JCFG	000077	A	V\$JCTM	000050	A	V\$JNAM
000377	A	V\$JDP	000054	A	V\$LCNT	000313	A	V\$LER	000356	A	V\$LIT
000317	A	V\$LLUP	000307	A	V\$LRSK	000312	A	V\$LSAL	000345	A	V\$LUNT
000316	A	V\$LUP	000400	A	V\$LUT1	000401	A	V\$LUT2	000402	A	V\$LUT3
000330	A	V\$MPM	000362	A	V\$NCTR	000413	A	V\$OCB	000346	A	V\$OPCF
000311	A	V\$OPCL	000363	A	V\$PIMN	000074	A	V\$PLCT	000365	A	V\$PTVB
000361	A	V\$SCTL	000352	A	V\$SCV	000375	A	V\$SLFG	004407	R	V\$SOLD
000303	A	V\$TB	000342	A	V\$TBGT	000416	A	V\$TFC	000314	A	V\$TJCP
000344	A	V\$TMN	000343	A	V\$TMS	000304	A	V\$UTB	000001	A	VORTEX
004645	R	WCNT	001305	R	WEFMAC	001504	R	WRMAC	002071	R	WRMAC1
000001	A	X	000420	A	ZERO						

0 ERRORS ASSEMBLY COMPLETE

306	APIM	316	317								
1510	ASCA	1505	1507								
1492	ASCII	1481	1501								
1503	ASCOK	1495	1499	1509	1511						
331	B	347	385	389	509	578	592	674	676	733	
		735	790	862	915	938	991	993	1233	1252	
		1276	1288	1290	1291	1292	1304	1311	1320	1378	
		1380	1572	1578	1581	1631	1652	1663	1683	1686	
		1689	1768	1771	1797	1807	1816	1823	1831	2030	
		2032	2040	2043	2048	2056	2059				
275	B0	1571	1767								
0	BASE	1911	1921	1923	1932						
0	BIFCB	328									
1724	BINASC	426	1421	1532							
1747	BINY	1729	1733	1733	1742						
1748	BINZ	1724	1745								
248	BM3	890									
249	BM7	2045									
0	BOFCB	329									
213	BS11	863									
210	BSS	1279	1888	1890							
0	BUFAD	675	680	734	739	850	992	997	1007	1379	
		1384									
1697	CLMAC	1611	1614	1691	1694	1696					
299	CLOCK	301	302								
1487	CNT	1478	1479	1482	1484						
598	CODE1	548									
599	CODE2	550									
600	CODE3	552									
601	CODE4	554									
602	CODE5	568									
0	D101	1794									
0	D40	382	577	1415	1515						
0	D79	1804									
0	D80	1936									
0	D8LK	384	478	482	572	575	779	1289	1414	1425	
		1516	1635								
1987	DLMCHK	492	642	699	1273	1352	1627	1671	1876		
1998	DLMX	1987	1989	1991							
2071	DVLUN	2021	2024	2022							
2074	DVLUT	2029									
2061	DVTP1	2058									
2056	DVTP10	2042									
2027	DVTP5	2022	2025								
2064	DVTPA	2017	2061								
2065	DVTPB	2035	2037	2051	2053						
2067	DVTPCT	897	901	2060							
2068	DVTPSP	2041									
2066	DVTPTY	2037									
2070	DVTPX	2018	2062								
244	EIGHT	1924									
596	ERRBUF	562	567	569	571	573	574	586	597		
597	ERRDCB	582									
0	FCBLUN	350	660	669	720	729	978	987	1169	1178	
		1233	1252	1276	1320	1365	1374	1602	1615	1701	
0	FDCBAD	682	999	1386							
240	FOUR	500	632	689	1241	1340					







1929	IUCVH	1923								
1935	IUCVJ	1920	1922							
1944	IUCVN	1938								
1946	IUCVP	1915	1936	1940	1942					
1949	IUCVR	1947								
1952	IUCVX	1914	1927	1930	1935					
1953	IUCVY	1907	1950							
1954	IUCVZ	1906	1949							
954	IUCWEF	764	808	823	853					
1426	IUDP1	1429								
1430	IUDP2	1427								
1365	IUDP8	1372								
1369	IUDPBC	1366								
1374	IUDPC	1368								
1382	IUDP8	1362								
1388	IUDPE	1381								
1414	IUDPF	1410								
1416	IUDPG	1418								
1439	IUDPH	1541								
1513	IUDPJ	1395	1398	1470	1486	1543				
1517	IUDPK	1519								
1533	IUDPKB	1399	1402							
1537	IUDPL	1466	1528							
1549	IUDPM	1545								
1588	IUDPN	1438	1520							
1554	IUDPX	1375	1387	1388						
1552	IUDPY	1343	1346	1358	1377	1382	1540			
1553	IUDPZ	1335	1348	1359	1367	1391	1397	1401		
1332	IUDUMP	536								
1555	IUDX	1433	1462	1464	1523	1542				
1556	IUDY	1434	1440	1476	1483	1537	1539			
571	IUERB	549	551	553	555					
573	IUERD	570								
578	IUERDX	581								
589	IUERH	585								
548	IUERR1	495	756	1026	1258					
550	IUERR2	631	633	652	688	690	710	1115	1143	1165
		1226	1230	1283	1285	1339	1341	1355	1357	1394
		1598	1634	1676	1678	1684	1687	1690	1799	1809
		1818	1879	1886	1887	1889	1943	1993		
552	IUERR3	668	728	986	1177	1373	1610			
554	IUERR4	1977								
556	IUERR5	800	832	929	1057	1098	1128	1192	1412	
1803	IULNB	1795								
1814	IULND	1805								
1792	IULNDV	655	715	972	1114	1142	1164	1228	1360	1392
1822	IULNE	1802	1813							
1836	IULNG	1834								
1841	IULND	1838								
1842	IULNP	1835	1840							
1845	IULNY	1792	1798	1801	1803	1808	1811	1814	1817	1820
		1826	1828							
1846	IULNZ	1793	1843							
978	IUPFA	985								
1233	IUPFAB	1239								
1250	IUPFB	1242	1244							
982	IUPFB1	979								
1252	IUPFC	1257								
987	IUPFC1	981								
1259	IUPFD	1235	1249	1253						
995	IUPFD1	975								
1003	IUPFE	994	1030							
1031	IUPFE0	1023								
1032	IUPFE1	1044								
1275	IUPFEC	1268	1270							
1276	IUPFEG	1274								
1295	IUPFG	1315								
1103	IUPFID	974	1058	1080						
1223	IUPFIL	528								
1106	IUPFIZ	990								
950	IUPFLG	701	836	843	911					
1045	IUPFN	1082								
1049	IUPFD	1047	1101							
1107	IUPFDZ	995	1005							
1063	IUPFQ	1055								
1067	IUPFQA	1079								
1083	IUPFRA	1059	1062							
1085	IUPFRB	1100								
1326	IUPFV	1259	1318							
1325	IUPFN	1295	1313							
1323	IUPFX	1302	1310							
1104	IUPFX1	1012	1016							
1324	IUPFY	1266	1275	1278						
1322	IUPFZ	1224	1234	1240	1262	1319				
1105	IUPFZ1	966	969	971	980	1004	1013			
962	IUPRNT	534								
0	IUPTR	405	757	759	1027	1029	1153	1155	1214	1216
		1762	1765	1863	1865	1997				
1563	IUPUT	1444	1447	1450	1453	1456	1459	1461	1472	1473
		1474	1475	1496	1500					
1578	IUPUTA	1571								
1581	IUPUTE	1577								
1585	IUPUTY	1565	1575	1580						







0	N264	630	687	1338						
0	N275	449	459	469	1648	1661				
0	N300	797	830	831	1054	1190	1191	1408	1409	
0	N340	796	927	928	1053	1097	1126	1127		
0	N40	799	1056	1129						
953	N70000	773								
0	NUM	1909	1929	1933	1946					
237	ONE	359	420	620	909	1403	1535			
1316	OPMAC	1260	1263	1281	1287	1297	1299	1306	1308	
0	PAGND	361	422	424	1530	1531				
952	PBFLG	776	865	868						
0	PGAD	425	1529							
0	PIFCB	328								
0	PDFCB	329								
1587	PPTR	1437	1521	1566	1569					
0	PRBAD	1416	1435	1517						
0	PRBUF	1426								
0	PRDCB	1513								
0	PRTFLG	362	413							
264	RA0	1571	1767							
0	RCDCB	1422								
0	RCNT	765	770	774	785	805	840	841	845	851
		855	871	917	932	934	943			
787	RDMAC	625	628	636	639	670	683	769	789	795
		829	838	849	914					
1050	RDMAC1	967	970	988	1000	1052	1060			
0	RECND	1419								
0	RECND	1404	1420	1550						
542	REQDCB	395								
1148	RENMAC	1144	1147							
236	RHW	353	356	1498	1564	1632	1772	1824	1974	2033
		2049								
243	SEVEN	1243	1245	1965						
332	SI	395	398	399	787	1050				
0	SIFADD	346								
0	SIFCB	328	399							
242	SIX	1251								
333	SO	352	582	589						
1123	SRMAC	1119	1122	1125	1130	1135				
1187	SRMACB	1179	1183	1186	1189	1197				
0	SSFCB	329								
0	TCNT	556	622	768	802	804	833	835	964	1046
		1063	1065	1118	1131	1134	1182	1193	1196	1333
		1411	1544	1548						
0	TDCBAD	741	1011							
246	TEN	558	564	1465	1702	1728	1731	1737	1740	1861
		1910								
239	THREE	1294	1666	1975						
0	TODCB	738	740	903	905	906	908	920	922	923
		925	1006	1008	1010	1061				
955	TODCBF	887	910	921	924					
1041	TOFFUN	1035	1038	1040						
238	TWO	349	392	1225	1227	1597	1599	1644	1657	1677
111	V\$DATE	363	365	367	369					
158	V\$DSTB	1829	2038	2054						
2017	V\$DVTP	393	894	899						
0	V\$IDUT	11								
341	V\$IUTL	340								
181	V\$JCB	383	390	396	403	430	576	591	1994	
101	V\$JNAM	371	373	375	377					
102	V\$LCNT	418	1527							
141	V\$LLUP	645	650	703	708					
150	V\$LUNT	1877								
171	V\$LUT1	351	1796	1800	2074					
172	V\$LUT2	1806	1810	2075						
173	V\$LUT3	1815	1819	2046	2076					
0	V\$SOLD	584								
0	WCNT	767	783	846	916	933	936			
824	WEFMAC	816	819	821						
918	WRMAC	693	696	772	880	883	885	888	912	913
		926								
1094	WRMAC1	1088	1091	1093	1096					
330	X	343	352	355	381	393	400	406	426	429
		435	436	439	442	452	462	491	492	494
		498	501	508	583	584	588	590	613	623
		629	641	642	643	655	660	669	684	686
		698	699	700	715	720	729	745	747	752
		760	780	788	818	820	825	839	852	882
		884	894	899	919	939	962	965	972	978
		987	1003	1015	1017	1022	1037	1039	1042	1051
		1072	1074	1077	1090	1092	1095	1112	1114	1116
		1124	1140	1142	1149	1151	1162	1164	1169	1178
		1180	1188	1203	1210	1212	1223	1228	1265	1272
		1273	1280	1282	1296	1305	1317	1332	1334	1337
		1351	1352	1353	1360	1365	1374	1390	1392	1406
		1416	1421	1423	1441	1444	1447	1450	1453	1456
		1459	1461	1472	1473	1474	1475	1480	1496	1500
		1514	1517	1532	1534	1584	1595	1602	1615	1619
		1626	1627	1640	1653	1669	1671	1673	1698	1701
		1704	1735	1744	1746	1781	1844	1857	1866	1871
		1875	1876	1873	1885	1892	1913	1926	1945	1951
		1967	1972	1973	1998	2021	2024	2028	2029	2063



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1      TITLE      MERGE
2      *****
3      *
4      * VORTEX OPERATING SYSTEM SORT UTILITY
5      *
6      * *****
7      *
8      * SORT MEMORY MAP
9      *
10     * *****
11     * SND1 * END OF WORK AREAS
12     *
13     * SINI * INITIALIZATION PHASE * START OF SORT PHASE WORK AREA
14     *
15     * SRT1 * SORT PHASE * START OF MERGE PHASE WORK AREAS
16     *
17     * XIT2 * DUMMY DUTEXIT
18     *
19     * XIT1 * DUMMY INEXIT
20     *
21     * BTOA * ROUTINES
22     *      * USED
23     * MOVE * BY
24     *      * INITIALIZATION
25     * COMP * SORT
26     *      * AND
27     * SRTC * MERGE PHASES
28     *
29     * MERG * MERGE PHASE
30     *
31     * ROOT * PRIMARY CONTROL
32     * *****
33     * * * * *
34     * THE FOLLOWING EQUATES REPRESENT DISPLACEMENTS IN THE SORT CONTROL
35     * TABLE. FUNCTIONS OF THE VARIOUS CELLS ARE COMMENTED IN THE SORT
36     * TABLE GENERATION CODE. INDEX FOR THE TABLE IS SYMBOL SRTC
37     * * * * *
000000 A 38 INPT EQU 0
000001 A 39 ACCP EQU 1
000002 A 40 INST EQU 2
000003 A 41 DLTD EQU 3
000004 A 42 DRCT EQU 4
000005 A 43 INRL EQU 5
000006 A 44 DTRL EQU 6
000007 A 45 SLGH EQU 7
000010 A 46 SBLK EQU 8
000010 A 47 MBLH EQU 8
000011 A 48 FSOB EQU 9
000012 A 49 SQUT EQU 10
000013 A 50 SPCT EQU 11
000014 A 51 SPWT EQU 12
000015 A 52 INBF EQU 13
000016 A 53 DUBF EQU 14
000017 A 54 CMBF EQU 15
000020 A 55 SBEG EQU 16
000021 A 56 SEND EQU 17
000022 A 57 SCUR EQU 18
000023 A 58 SNUM EQU 19
000024 A 59 MFLH EQU 20
000025 A 60 SWK1 EQU 21
000026 A 61 SWK2 EQU 22
000027 A 62 SWK3 EQU 23
000030 A 63 NCTL EQU 24
000031 A 64 SND1 EQU 25
000032 A 65 SFPT EQU 26
000033 A 66 STDT EQU 27
000033 A 67 TSEQ EQU 27
000034 A 68 SFIB EQU 28
000035 A 69 STM1 EQU 29
000036 A 70 STM2 EQU 30
000037 A 71 IPRC EQU 31
000040 A 72 CTLI EQU 32
000041 A 73 CTLP EQU 33
000042 A 74 LCNT EQU 34
000043 A 75 CTLC EQU 35
000044 A 76 CKEY EQU 36
000045 A 77 CKE1 EQU 37
000046 A 78 CKF2 EQU 38
000047 A 79 CKF3 EQU 39
000050 A 80 CTLF EQU 40
000113 A 81 SCPT EQU 75
000114 A 82 SCIP EQU 76
000122 A 83 SCTL EQU 82
000174 A 84 SSPT EQU 124
000175 A 85 SLPT EQU 125
000176 A 86 SQPT EQU 126
000177 A 87 SFAS EQU 127
000202 A 88 SFAL EQU 130
000205 A 89 SFAD EQU 133
000210 A 90 SAFP EQU 136
000211 A 91 SALP EQU 137
000212 A 92 SAOP EQU 138
000213 A 93 DCAB EQU 139

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000214 A 94 DCAE EQU 140 00 00094
000215 A 95 SFAC EQU 141 00 00095
000216 A 96 SFFC EQU 142 00 00096
000217 A 97 DCB5 EQU 143 00 00097
000220 A 98 FSI0 EQU 144 00 00098
000221 A 99 ISI EQU 145 00 00099
000222 A 100 DILU EQU 146 00 00100
000223 A 101 FSDI EQU 147 00 00101
000224 A 102 SIDI EQU 148 00 00102
000225 A 103 S1I0 EQU 149 00 00103
000236 A 104 S2I0 EQU 158 00 00104
000247 A 105 S3I0 EQU 167 00 00105
000260 A 106 SWCH EQU 176 00 00106
000261 A 107 LPSW EQU 177 00 00107
000262 A 108 MBUF EQU 178 00 00108
109 * * * * *
110 * END OF SORT CONTROL TABLE DISPLACEMENT EQUATES *
111 * * * * *
000001 A 112 X EQU 1 00 00112
000002 A 113 B EQU 2 00 00113
114 * * * * *
115 *
116 * * * * BIT TEST BIT DESIGNATION * * * *
117 *
118 * * * * *
000040 A 119 RA0 EQU 040 BT JUMPS WHEN A REGISTER IS 0 00 00119
000000 A 120 RA1 EQU 000 BT JUMPS WHEN A REGISTER IS 1 00 00120
121 * * * * *
122 *
123 * * * * MASK TABLE DESCRIPTION * * * *
124 *
125 * * * * *
000420 A 126 MT SET 0420 00 00126
000420 A 127 ZER0 EQU MT ZER0 WORD 00 00127
000421 A 128 ONE EQU MT+1 CONTAINS NUMBER 1 00 00128
000422 A 129 TWO EQU MT+2 CONTAINS NUMBER 2 00 00129
000464 A 130 THREE EQU MT+36 CONTAINS NUMBER 3 00 00130
000423 A 131 FOUR EQU MT+3 CONTAINS NUMBER 4 00 00131
000465 A 132 FIVE EQU MT+37 CONTAINS NUMBER 5 00 00132
000466 A 133 SIX EQU MT+38 CONTAINS NUMBER 6 00 00133
000467 A 134 SEVEN EQU MT+39 CONTAINS NUMBER 7 00 00134
000424 A 135 EIGHT EQU MT+4 CONTAINS NUMBER 8 00 00135
000471 A 136 TEN EQU MT+41 CONTAINS NUMBER 10 00 00136
000462 A 137 LHW EQU MT+34 LEFT HALF WORD MASK 0177400 00 00137
000463 A 138 RHW EQU MT+35 RIGHT HALF WORD MASK 0377 00 00138
000424 A 139 BS3 EQU MT+4 000010 BIT SET 3 00 00139
000426 A 140 BS5 EQU MT+6 000040 BIT SET 5 00 00140
000427 A 141 BS6 EQU MT+7 000100 BIT SET 6 00 00141
000430 A 142 BS7 EQU MT+8 000200 BIT SET 7 00 00142
000440 A 143 BS15 EQU MT+16 0100000 BIT SET 15 00 00143
000441 A 144 BR0 EQU MT+17 0177776 BIT RESET 0 00 00144
000442 A 145 BR1 EQU MT+18 0177775 BIT RESET 1 00 00145
000444 A 146 BR3 EQU MT+20 0177767 BIT RESET 3 00 00146
000450 A 147 BR7 EQU MT+24 0177577 BIT RESET 7 00 00147
000451 A 148 BR8 EQU MT+25 0177377 BIT RESET 8 00 00148
000460 A 149 BR15 EQU MT+32 0077777 BIT RESET 15 00 00149
000461 A 150 NEG EQU MT+33 0177777 ALL ONES 00 00150
151 NAME SRTC,COMP,MOVE,BTDA,XIT1 00 00151
152 EXT XIT2,SRT1,SINI 00 00152
000000 P 153 SORT EQU * 00 00153
000001 002000 A 154 CALL SINI 00 00154
000002 002000 E 155 CALL SRT1 00 00155
000003 000000 E 156 CALL MERG 00 00156
000004 002000 A 157 EXIT END THE PROGRAM 00 00157
000005 000011 R
000006 006505 A
000007 000406 A
000010 000200 A
158 EJEK 00 00158
159 * * * * * 00 00159
160 * 00 00160
161 * MERGE PHASE ROUTINES 00 00161
162 * 00 00162
163 * MERG - MERGE PHASE PRIMARY CONTROL 00 00163
164 * 00 00164
165 * MERG USES THE TWO-WAY POLYPHASE MERGE METHOD TO REPEATEDLY MERGE 00 00165
166 * THE SORTED SEQUENCES FROM TWO WORKFILES ONTO THE THIRD WORKFILE. 00 00166
167 * LONGER SEQUENCES RESULT FROM EACH MERGE PASS AND FINALLY A 00 00167
168 * SINGLE SORTED SEQUENCE IS OUTPUT. 00 00168
169 * 00 00169
170 * EXAMPLE: EACH DIGIT REPRESENTS THE LENGTH OF ONE SEQUENCE 00 00170
171 * 00 00171
172 * PASS WORKFILE1 WORKFILE2 WORKFILE3 OUTPUT 00 00172
173 * 111 11111 - - 00 00173
174 * 1 - 11 222 - - 00 00174
175 * 2 33 - 2 - - 00 00175
176 * 3 3 5 - - - 00 00176
177 * 4 - - - 8 00 00177
178 * 00 00178
179 * * * * * 00 00179
000011 000000 A 180 MERG ENTR 00 00180

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Address	Op	Opnd	Label	Description	Line
000012	CALL	S1CA		RE-OPEN SORTFILE1	00 00181
000013	CALL	S2CA		RE-OPEN SORTFILE2	00 00182
000014	LDXI	SRTC			00 00183
000016	LDA	SWCH,X			00 00184
000017	ANA	BR3			00 00185
000020	STA	SWCH,X		RESET USER EXIT EDF SWITCH	00 00186
000021	BT	RA0+4,MG0		JUMP IF NOT TAG SORT	00 00187
000022	CALL	IFCLS		CLOSE INPUT FILE	00 00188
000023	LDAE	FCBI+2			00 00189
000024	ANA	BR8		CHANGE INPUT ACCESS METHOD TO DIRECT	00 00190
000025	STAE	FCBI+2			00 00191
000026	CALL	IFCA		RE-OPEN INPUT FILE	00 00192
000027	LDXI	SRTC			00 00193
000028	TZA				00 00194
000029	STA	ACCP,X		ZERO ACCEPTED RECORD COUNT	00 00195
000030	STA	INST,X		ZERO INSERTED RECORD COUNT	00 00196
000031	STA	DLTD,X		ZERO DELETED RECORD COUNT	00 00197
000032				* CHECK FOR ONE SEQUENCE... IF SO SWITCH SF AND LF POINTERS	00 00198
000033	LDA	TSEQ,X			00 00199
000034	DAR				00 00200
000035	JANZ	MG1			00 00201
000036	LDA	SOPT,X			00 00202
000037	LDB	SLPT,X			00 00203
000038	STA	SLPT,X			00 00204
000039	STB	SOPT,X			00 00205
000040				* NOW PROCESS NORMALLY	00 00206
000041	LDA	TSEQ,X		GET TOTAL SEQUENCE CNT	00 00207
000042	JAZ	MGND		TOTAL SEQ=V GO TO END OF JOB	00 00208
000043	DAR			MINUS 1	00 00209
000044	JAZ	MG2		JUMP IF TOT SEQ CNT = 1	00 00210
000045	DAR				00 00211
000046	JAZ	MG3		JUMP IF TOT SEQ CNT = 2	00 00212
000047	LDA	SOPT,X		GET OUTPUT FILE PTR	00 00213
000048	LDB	SLPT,X		GET LF PTR	00 00214
000049	STA	SLPT,X		MAKE THE OLD OUTPUT FILE, THE NEW LF	00 00215
000050	LDA	SSPT,X			00 00216
000051	STA	SOPT,X		MAKE THE OLD SF FILE, THE NEW OUTPUT	00 00217
000052	STB	SSPT,X		MAKE THE OLD LF FILE, THE NEW SF FILE	00 00218
000053	CALL	SCMP		COMPUTE NEW OUTPUT SEQUENCE CNTS	00 00219
000054	LDXI	SRTC			00 00220
000055	LDB	SOPT,X		GET OUTPUT FILE PTR	00 00221
000056	LDA	7,B		GET SWITCH	00 00222
000057	ANA	BR0		TURN OFF WRITE SWITCHES FOR FILE	00 00223
000058	STA	7,B		SAVE SWITCH	00 00224
000059	LDB	SSPT,X		DO THE SAME	00 00225
000060	LDA	7,B		FOR OTHER FILES	00 00226
000061	ANA	BR0			00 00227
000062	STA	7,B			00 00228
000063	LDB	SLPT,X			00 00229
000064	LDA	7,B			00 00230
000065	ANA	BR0			00 00231
000066	STA	7,B			00 00232
000067	LDB	SLPT,X		GET LF FILE POINTER	00 00233
000068	STB	SSFC,X		MAKE IT THE CURRENT FILE	00 00234
000069	LDA	7,B		GET FILE SWITCH	00 00235
000070	BT	01,MG6		JUMP IF DUMMY SWITCH ON	00 00236
000071	LDB	SLPT,X			00 00237
000072	LDA	5,B		GET BLK PER REG SEQ	00 00238
000073	STA	8,B		MAKE IT NEW BLK COUNT	00 00239
000074	LDA	3,B		GET REG SEQ COUNT	00 00240
000075	JANZ	MG75		IF ANY, BLOCK COUNT IS OKAY	00 00241
000076	LDA	6,B		IF NOT GET BLK PER SEQ, SHT SEQ	00 00242
000077	STA	0,B		MAKE IT THE BLK COUNT	00 00243
000078	LDA	4,B		GET SHORT SEQ COUNT	E.1*****
000079	ADD	2,B		PLUS DUMMYS	E.1*****
000080	JAZ	MG8		JUMP IF ZERO	E.1*****
000081					00 00244
000082	LDB	4,B			00 00245
000083	LDA	SFAL+1,X			00 00246
000084	STA	1,2			00 00247
000085	JMP	MG7A		READ THE LF SWITCH (JMP MG7A OR MG9)	00 00248
000086	CALL	MRRA,0		READ AN INITIAL SEQ BLK ON LF	00 00249



000144	000000	A							
000145	006030	A	254	LDXI	SRTC			00	00251
000146	002473	R							
000147	006017	A	255	LDAE	MG7A+2			00	00252
000150	000144	R							
000151	001004	A	256	JAN	MG8	JUMP IF EOF		00	00253
000152	000271	R							
000153	025211	A	257	LDB	SALP,X	GET PTR TO LF AREA PTRS		00	00254
000154	016001	A	258	LDA	1,B	GET START OF IO AREA		00	00255
000155	056000	A	259	STA	0,B	MAKE IT CURRENT LF AREA PTR		00	00256
000156	025174	A	260	LDB	SSPT,X	DO THE SAME FOR		00	00257
000157	006010	A	261	LDAI	MG7A	GET LF READ PTR		00	00258
000160	000142	R							
000161	006057	A	262	STAE	MG7C+1	RESET SWITCH		00	00259
000162	000141	R							
000163	065216	A	263	STB	SFFC,X			00	00260
000164	016007	A	264	LDA	7,B	THE SHORT FILE		00	00261
000165	006401	A	265	BT	01,MG10			00	00262
000166	000302	R							
000167	025174	A	266	LDB	SSPT,X			00	00263
000170	016005	A	267	LDA	5,B	GET BLK PER REG SEQ		00	00264
000171	056010	A	268	STA	8,B	MAKE IT NEW BLK COUNT		00	00265
000172	016003	A	269	LDA	3,B	GET REG SEQ COUNT		00	00266
000173	001016	A	270	JANZ	MG11B	IF ANY, BLOCK COUNT IS OKAY		00	00267
000174	000203	R							
000175	016006	A	271	LDA	6,B	IF NOT GET BLK PER SEQ, SHT SEQ		00	00268
000176	056010	A	272	STA	8,B	MAKE IT THE BLK COUNT		00	00269
000177	016004	A	273	LDA	4,B	GET SHORT SEQ COUNT		E.1*****	
000200	126002	A	274	ADD	2,B	PLUS DUMMYS		E.1*****	
000201	001010	A	275	JAZ	MG12	JUMP IF ZERO		E.1*****	
000202	000304	R							
000203	000203	R	276	MG11B	EQU	*		00	00270
000203	026000	A	277	LDB	0,B			00	00271
000204	026004	A	278	LDB	4,B			00	00272
000205	015200	A	279	LDA	STAS+1,X			00	00273
000206	056001	A	280	STA	1,B			00	00274
000207	002000	A	281	MG11A	CALL	MRRA,0		00	00275
000210	001777	R							
000211	000000	A							
000212	006030	A	282	LDXI	SRTC			00	00276
000213	002473	R							
000214	006017	A	283	LDAE	MG11A+2			00	00277
000215	000211	R							
000216	001004	A	284	JAN	MG12			00	00278
000217	000304	R							
000220	025210	A	285	LDB	SASP,X			00	00279
000221	016001	A	286	LDA	1,B			00	00280
000222	056000	A	287	STA	0,B			00	00281
000223	001000	A	288	JMP	MRGE	GO MERGE THE SEQUENCES		00	00282
000224	000721	R							
000225	025175	A	289	MG3	LDB	SLPT,X	GET OLD LONG FILE PTR	00	00283
000226	016000	A	290	LDA	0,B			00	00284
000227	145220	A	291	SUB	FSID,X	LF SAME FILE AS FINAL OUTPUT		00	00285
000230	001010	A	292	JAZ	MG4	YES - CAN'T MAKE FINAL MERGE PASS		00	00285
000231	000065	R							
000232	025176	A	293	MG2	LDB	SOPT,X	GET OLD OUTPUT FILE PTR	00	00287
000233	016000	A	294	LDA	0,B			00	00288
000234	145220	A	295	SUB	FSID,X	OF SAME FILE AS FINAL OUTPUT		00	00289
000235	001010	A	296	JAZ	MG4	YES - CAN'T MAKE FINAL MERGE PASS		00	00290
000236	000065	R							
000237	015260	A	297	LDA	SWCH,X			00	00291
000240	110427	A	298	DRA	2S6	TURN ON FINAL MERGE PASS SWITCH		00	00292
000241	025174	A	299	LDB	SSPT,X	GET SHT FILE POINTER		00	00293
000242	055260	A	300	STA	SWCH,X			00	00294
000243	015223	A	301	LDA	FSOI,X	GET FINAL FILE PTR		00	00295
000244	056000	A	302	STA	0,B	STORE AS OLD SF		00	00296
000245	025212	A	303	LDB	SASP,X	GET OUTPUT AREA POINTER		00	00297
000246	016001	A	304	LDA	1,B	GET START OF AREA		00	00298
000247	125011	A	305	ADD	FSOB,X	PLUS OUTPUT REC LGH IN WORDS		00	00299
000250	005311	A	306	DAR		MINUS 1		00	00300
000251	056002	A	307	STA	2,B	MAKE IT NEW END OF AREA		00	00301
000252	055214	A	308	STA	OCAE,X	SAVE END-AREA ADR FOR FINAL OUTPUT		00	00302
000253	015033	A	309	LDA	TSEQ,X			00	00303
000254	005311	A	310	DAR				00	00304
000255	001016	A	311	JANZ	MG4	JUMP IF TOT SEQ CNT NOT 1		00	00305
000256	000065	R							
000257	025175	A	312	LDB	SLPT,X			00	00306
000260	005101	A	313	INCR	1			00	00307
000261	056002	A	314	STA	2,B	MAKE OLD LF DUMMY COUNT = 1		00	00308
000262	016007	A	315	LDA	7,B			00	00309
000263	110422	A	316	DRA	TWO			00	00310
000264	056007	A	317	STA	7,B	TURN ON OLD LF DUMMY SWITCH		00	00311
000265	001000	A	318	JMP	MG4			00	00312
000266	000065	R							
000267	150442	A	319	MG6	ANA	BR1	TURN OFF DUMMY SWITCH	00	00313
000270	056007	A	320	STA	7,B	SAVE SWITCH		00	00314
000271	025175	A	321	MG8	LDB	SLPT,X	GET LF PTR	00	00315
000272	016002	A	322	LDA	2,B	GET DUMMY CNT LF		00	00316
000273	001010	A	323	JAZ	MR50	GO START NEW PASS		00	00317
000274	000421	R							
000275	016007	A	324	LDA	7,B	GET FILE SWITCH LF		00	00318
000276	110422	A	325	DRA	TWO	TURN ON DUMMY SWITCH LF		00	00319
000277	056007	A	326	STA	7,B			00	00320



000300	001000	A	327	JMP	MG9		00	00321
000301	000156	R						
000302	150442	A	328	MG10	ANA	BR1	TURN OFF DUMMY SWITCH SF	00 00322
000303	056007	A	329		STA	7,B		00 00323
000304	025174	A	330	MG12	LDB	SSPT,X	GET SHT FILE PTR	00 00324
000305	016002	A	331		LDA	2,B	GET DUMMY CNT SF	00 00325
000306	001010	A	332		JAZ	MR50	GO START NEW PASS	00 00326
000307	000421	R						
000310	025175	A	333		LDB	SLPT,X	GET LF PTR	00 00327
000311	016007	A	334		LDA	7,B	DUMMY SWITCH LF	00 00328
000312	006401	A	335		BT	01,MG14	DUMMY SWITCH OFF LF	00 00329
000313	000322	R						
000314	025174	A	336		LDB	SSPT,X	GET SF PTR	00 00330
000315	016007	A	337		LDA	7,B	GET SF SWITCH	00 00331
000316	110422	A	338		ORA	TWO	TURN ON DUMMY SWITCH SF	00 00332
000317	056007	A	339		STA	7,B	SAVE IT	00 00333
000320	001000	A	340		JMP	MRGE	GO WRITE SEQ FROM LF	00 00334
000321	000721	R						
000322	025175	A	341	MG14	LDB	SLPT,X	GET LF PTR	00 00335
000323	016002	A	342		LDA	2,B	GET DUMMY CNT	00 00336
000324	025174	A	343		LDB	SSPT,X	GET SF PTR	00 00337
000325	146002	A	344		SUB	2,B	SUB DUM CNT SF FROM DUM CNT LF	00 00338
000326	001016	A	345		JANZ	MG17	NOT EQUAL	00 00339
000327	000335	R						
000330	056002	A	346		STA	2,B	ZERO SF DUMMY CNT	00 00340
000331	025175	A	347	MG16	LDB	SLPT,X		00 00341
000332	056002	A	348		STA	2,B	ZERO LF DUMMY CNT	00 00342
000333	001000	A	349		JMP	MR50	START NEXT PASS	00 00343
000334	000421	R						
000335	001004	A	350	MG17	JAN	MG15	JUMP IF RESULT NEGATIVE	00 00344
000336	000346	R						
000337	025175	A	351		LDB	SLPT,X	GET LF PTR	00 00345
000340	056002	A	352		STA	2,B	MAKE LF DUMMY COUNT = DIFFERENCE	00 00346
000341	025174	A	353		LDB	SSPT,X	GET SF PTR	00 00347
000342	005001	A	354		TZA			00 00348
000343	056002	A	355		STA	2,B	ZERO THE SF DUMMY CNT	00 00349
000344	001000	A	356		JMP	MR50	START NEXT PASS	00 00350
000345	000421	R						
000346	005211	A	357	MG15	CPA			00 00351
000347	005111	A	358		IAR			00 00352
000350	056002	A	359		STA	2,B	MAKE SF DUMMY CNT = THE DIFFERENCE	00 00353
000351	005001	A	360		TZA			00 00354
000352	001000	A	361		JMP	MG16		00 00355
000353	000331	R						
000354	025175	A	362	MR20	LDB	SLPT,X	GET LF PTR	00 00356
000355	016007	A	363		LDA	7,B	GET SWITCH LF	00 00357
000356	006150	A	364		ANAI	0177772	TURN OFF EDS AND WRITE SWITCH	00 00358
000357	177772	A						
000360	056007	A	365		STA	7,B	SAVE IT	00 00359
000361	025174	A	366		LDB	SSPT,X	DO THE SAME	00 00360
000362	016007	A	367		LDA	7,B	FOR SF	00 00361
000363	006150	A	368		ANAI	0177772		00 00362
000364	177772	A						
000365	056007	A	369		STA	7,B		00 00363
000366	025175	A	370		LDB	SLPT,X	GET LF PTR	00 00364
000367	016003	A	371		LDA	3,B	LF REG SEQ CNT LF	00 00365
000370	126004	A	372		ADD	4,B	PLUS SHT SEQ CNT LF	00 00366
000371	025174	A	373		LDB	SSPT,X		00 00367
000372	126003	A	374		ADD	3,B	PLUS REG SEQ CNT SF	00 00368
000373	126004	A	375		ADD	4,B	PLUS SHT SEQ CNT SF	00 00369
000374	055033	A	376		STA	TSEQ,X	STORE TOT SEQ CNT	00 00370
000375	015260	A	377		LDA	SWCH,X	GET SYSTEM SWITCH	00 00371
000376	006407	A	378		BT	0007,MR50	START NEXT PASS IF FE0F SWITCH ON	00 00372
000377	000421	R						
000400	025174	A	379		LDB	SSPT,X	GET SF PTR	00 00373
000401	016003	A	380		LDA	3,B	GET SF REG SEQ CNT	00 00374
000402	126004	A	381		ADD	4,B	PLUS SF SHT SEQ CNT	00 00375
000403	126002	A	382		ADD	2,B	PLUS SF DUM SEQ CNT	00 00376
000404	001016	A	383		JANZ	MG5	IF NOT 0, LEAVE SWITCH TO READ LF	00 00377
000405	000113	R						
000406	025175	A	384		LDB	SLPT,X	GET LF PTR	00 00378
000407	126003	A	385		ADD	3,B	PLUS LF REG SEQ CNT	00 00379
000410	126004	A	386		ADD	4,B	PLUS LF SHT SEQ CNT	00 00380
000411	001010	A	387		JAZ	MG5	IF LF BLK CNT = 0, READ LF FOR EOF	00 00381
000412	000113	R						
000413	006010	A	388		LDAI	MG9	GET SF READ PTR	00 00382
000414	000156	R						
000415	006057	A	389		STAE	MG7C+1	SET SWITCH TO BYPASS LF READ	00 00383
000416	000141	R						
000417	001000	A	390		JMP	MG5	*****	00 00384
000420	000113	R						
000421	006030	A	391	MR50	LDXI	BR7C		00 00385
000422	002473	R						
000423	025176	A	392		LDB	SSPT,X		00 00386
000424	015260	A	393		LDA	SWCH,X	GET SYSTEM SWITCH	00 00387
000425	150450	A	394		ANA	BR7	TURN OFF FE0F SWITCH	00 00388
000426	055260	A	395		STA	SWCH,X	SAVE SWITCH	00 00389
000427	016003	A	396		LDA	3,B		00 00390
000430	126004	A	397		ADD	4,B	SEQUENCE COUNT	00 00391
000431	126002	A	398		ADD	2,B	DUMMY COUNT	00 00392
000432	025175	A	399		LDB	SLPT,X	GET LONG FILE POINTER	00 00393
000433	126003	A	400		ADD	3,B		00 00394
000434	126004	A	401		ADD	4,B		00 00395



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000435	126002	A	402	ADD	2,B	DUMMY COUNT	00	00396
000436	055033	A	403	STA	TSEQ,X		00	00397
000437	015260	A	404	LDA	SWCH,X		00	00398
000440	006446	A	405	BT	RA0+6,MR51	JUMP IF NOT END OF FINAL MERGE PASS	00	00399
000441	000446	R						
000442	006410	A	406	BT	RA1+8,DEDF	TELL USER DUTEXIT ABOUT EOF	00	00400
000443	001556	R						
000444	001000	A	407	JMP	MGND	DONE	00	00401
000445	000502	R						
000446	025176	A	408	MR51 LDB	SOPT,X	GET OLD OUTPUT FILE	00	00402
000447	016000	A	409	LDA	0,B	GET I/O MACRO PTRS	00	00403
000450	006120	A	410	ADDI	30	PTR TO CLOSE	00	00404
000451	000036	A						
000452	005311	A	411	DAR			00	00405
000453	054001	A	412	STA	*+2	STORE IN JUMP	00	00406
000454	002000	A	413	JMPM	0	CLOSE OF WITH FILE MARK	00	00407
000455	000000	A						
000456	006030	A	414	LDXI	SRTC		00	00408
000457	002473	R						
000460	025174	A	415	LDB	SSPT,X	GET SHORT FILE MACRO POINTER	00	00409
000461	016000	A	416	LDA	0,B		00	00410
000462	005311	A	417	DAR			00	00411
000463	054001	A	418	STA	*+2		00	00412
000464	002000	A	419	JMPM	0	OPEN SF FILE WITH REWIND	00	00413
000465	000000	A						
000466	006030	A	420	LDXI	SRTC		00	00414
000467	002473	R						
000470	025176	A	421	LDB	SOPT,X		00	00415
000471	016000	A	422	LDA	0,B		00	00416
000472	005311	A	423	DAR			00	00417
000473	054001	A	424	STA	*+2		00	00418
000474	002000	A	425	JMPM	0	OPEN OUTPUT FILE WITH REWIND	00	00419
000475	000000	A						
000476	006030	A	426	LDXI	SRTC		00	00420
000477	002473	R						
000500	001000	A	427	JMP	MG1		00	00421
000501	000054	R						
000502	006030	A	428	MR51 LDXI	SRTC		F	*****
000503	002473	R						
000504	015260	A	429	LDA	SWCH,X	GET SWITCH	F	*****
000505	006411	A	430	BT	RA1+9,FMOM	FINISH UP MERGE OMIT FILE	F	*****
000506	001762	R						
000507	000507	R	431	MR51 EQU	*		F	*****
000510	002000	A	432	CALL	IFCLS	CLOSE INPUT FILE	00	00423
000511	003204	R						
000512	006030	A	433	LDXI	SRTC		00	00424
000513	002473	R						
000514	015001	A	434	LDA	ACCP,X	GET ACCEPTED RECORD COUNT	00	00425
000515	125002	A	435	ADD	INST,X	PLUS INSERTED RECORD COUNT	00	00426
000516	054002	A	436	STA	*+3		00	00427
000517	002000	A	437	CALL	BTDA,0	CONVERT TO ASCII	00	00428
000518	004206	R						
000520	000000	A						
000521	000000	A						
000522	064004	A	438	MR51 STB	MGM2+4	STORE AS SOURCE	00	00429
000523	002000	A	439	MR51 CALL	MOVE,MGS1+19,0,0,0,5		00	00430
000524	004042	R						
000525	000657	R						
000526	000000	A						
000527	000000	A						
000530	000005	A						
000531	002000	A	440	CALL	CLR5	CLEAR THE LIST OUTPUT BUFFER	00	00431
000532	003350	R						
000533	002000	A	441	CALL	MOVE,LU5B,0,MGS1,0,44	MOVE MGS1 TO BUFFER	00	00432
000534	004042	R						
000535	003402	R						
000536	000000	A						
000537	000634	R						
000540	000000	A						
000541	000054	A						
000542	002000	A	442	CALL	WRT5	WRITE MESSAGE 1	00	00433
000543	003365	R						
000544	006030	A	443	LDXI	SRTC		00	00434
000545	002473	R						
000546	015012	A	444	LDA	SOUT,X	GET TOTAL RECS OUTPUT BY SORT PHASE	00	00435
000547	054002	A	445	STA	*+3		00	00436
000550	002000	A	446	CALL	BTDA,0	CONVERT TO ASCII	00	00437
000551	004206	R						
000552	000000	A						
000553	064004	A	447	MR51 STB	MGM3+4		00	00438
000554	002000	A	448	MR51 CALL	MOVE,MGS2+4,0,0,0,5	MOVE TOTAL MERGE RECS TO MSG	00	00439
000555	004042	R						
000556	000666	R						
000557	000000	A						
000560	000000	A						
000561	000000	A						
000562	000005	A						
000563	006030	A	449	LDXI	SRTC+ACCP		00	00440
000564	002474	R						
000565	005041	A	450	TXA			00	00441
000566	054043	A	451	STA	MGN3		00	00442
000567	120464	A	452	ADD	THREE		00	00443
000570	054042	A	453	STA	MGN4	LOOP 3 TIMES - ACCP, INST, DLTD	00	00444



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000571 014012 A 434 MGN1 LDA MGN2+2 00 00445
000572 120424 A 455 ADD EIGHT BUMP MOVE TGT TO NEXT TOTAL 00 00446
000573 034010 A 456 STA MGN2+2 00 00447
000574 013000 A 457 LDA 0,X GET TOTAL 00 00448
000575 034002 A 458 STA *+3 00 00449
000576 002000 A 459 CALL BTQA,0 CONVERT TO ASCII 00 00450
000577 004206 R
000600 000000 A
000601 064004 A 460 STB MGN2+4 MAKE IT THE SOURCE FOR MOVE 00 00451
000602 002000 A 461 MGN2 CALL MOVE,MGS2+4,0,0,0,5 00 00452
000603 004042 R
000604 000666 R
000605 000000 A
000606 000000 A
000607 000000 A
000610 000005 A
000611 044020 A 462 INR MGN3 BUMP PTR TO BINARY TOTAL 00 00453
000612 034017 A 463 LDX MGN3 00 00454
000613 005041 A 464 TXA 00 00455
000614 144016 A 465 SUB MGN4 00 00456
000615 001004 A 466 JAN MGN1 IF NOT DONE - GO CONVERT & MOVE ANOTHER 00 00457
000616 000571 R
000617 002000 A 467 CALL MOVE,LU5B,0,MGS2,0,62 MOVE MGS2 TO BUFFER 00 00458
000620 004042 R
000621 003402 R
000622 000000 A
000623 000662 R
000624 000000 A
000625 000076 A
000626 002000 A 468 CALL WRT5 WRITE MESSAGE 2 00 00459
000627 003365 R
000630 001000 A 469 JMP* MERG RETURN 00 00460
000631 100011 R
000632 000000 A 470 MGN3 DATA 0 00 00461
000633 000000 A 471 MGN4 DATA 0 00 00462
000634 120240 A 472 MGS1 DATA * SORT COMPLETE, OUTPUT RECORD COUNT= XXXXX * 00 00463
000635 151717 A
000636 151324 A
000637 120303 A
000640 147715 A
000641 150314 A
000642 142724 A
000643 142654 A
000644 120317 A
000645 152724 A
000646 150325 A
000647 152240 A
000650 151300 A
000651 141717 A
000652 151304 A
000653 120303 A
000654 147725 A
000655 147324 A
000656 136640 A
000657 154330 A
000660 154330 A
000661 154240 A
000662 120240 A 473 MGS2 DATA * MERGE=XXXXX ACCEPTED=XXXXX * 00 00464
000663 146705 A
000664 151367 A
000665 142675 A
000666 154330 A
000667 154330 A
000670 154240 A
000671 120301 A
000672 141703 A
000673 142720 A
000674 152305 A
000675 142275 A
000676 154330 A
000677 154330 A
000700 154240 A
000701 120311 A 474 DATA * INSERTED=XXXXX DELETED= XXXXX * 00 00465
000702 147323 A
000703 142722 A
000704 152305 A
000705 142275 A
000706 154330 A
000707 154330 A
000710 154240 A
000711 120304 A
000712 142714 A
000713 142724 A
000714 142704 A
000715 136640 A
000716 154330 A
000717 154330 A
000720 154240 A
475 EJEC 00 00466
476 ***** 00 00467
477 * 00 00468
478 * MRGE - MERGE PHASE ROUTINE TO MERGE TWO SEQUENCES 00 00469
479 * 00 00470

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000721	006030	A	480	*****				00	00471
000722	002473	R	481	MRGE	LDXI	SRTC	GET SORT CONTROL TABLE	00	00472
000723	025175	A	482		LDB	SLPT,X	GET LONG FILE PTR	00	00473
000724	016007	A	483		LDA	7,B	GET LONG FILE SWITCH	00	00474
000725	006401	A	484		BT	01,MR1	JUMP IF DUMMY SWITCH IS ON	00	00475
000726	001101	R							
000727	025174	A	485		LDB	SSFT,X	GET SHT FILE PTR	00	00476
000730	016007	A	486		LDA	7,B	GET SHT FILE SWITCH	00	00477
000731	006401	A	487		BT	01,MR2	JUMP IF DUMMY SWITCH IS ON	00	00478
000732	001120	R							
000733	025175	A	488	MR3	LDB	SLPT,X		00	00479
000734	016007	A	489		LDA	7,B	GET LONG FILE SWITCH	00	00480
000735	006400	A	490		BT	00,MR4	JUMP IF LONG FILE WRITE SWITCH IS ON	00	00481
000736	001161	R							
000737	025174	A	491	MR5	LDB	SSPT,X		00	00482
000740	016007	A	492		LDA	7,B	GET SHORT FILE SWITCH	00	00483
000741	006400	A	493		BT	00,MR6	JUMP IF SHT FILE WRITE SWITCH IS ON	00	00484
000742	000754	R							
000743	002000	A	494	MR7	CALL	MCMP,0	COMPARE RECORDS FOR MERGE	00	00485
000744	001563	R							
000745	000000	A							
000746	006030	A	495		LDXI	SRTC	GET SORT CONTROL TABLE	00	00486
000747	002473	R							
000750	006017	A	496		LDAE	MR7+2	GET COMPARE RESULT	00	00487
000751	000745	R							
000752	001004	A	497		JAN	MR4	LONG FILE REC LT SHT FILE REC	00	00488
000753	001161	R							
000754	015210	A	498	MR6	LDA	SASP,X	GET SHORT FILE I/O AREA PTR	00	00489
000755	055215	A	499		STA	SFAC,X	MAKE IT THE CURRENT RECORD	00	00490
000756	015174	A	500		LDA	SSPT,X	GET SHORT FILE PTR	00	00491
000757	055216	A	501		STA	SFFC,X	MAKE IT CURRENT FILE	00	00492
000760	015260	A	502	MR8	LDA	SWCH,X	GET SORT SWITCH	00	00493
000761	006406	A	503		BT	06,MR9	JUMP IF FINAL MERGE PASS SWITCH IS ON	00	00494
000762	001326	R							
000763	025215	A	504		LDB	SFAC,X	GET CURRENT AREA PTR, PTR	00	00495
000764	016000	A	505		LDA	0,B	GET CURRENT AREA REC PTR	00	00496
000765	054010	A	506		STA	MRM1+4	STORE AS SOURCE	00	00497
000766	015205	A	507		LDA	SFAC,X	GET PTR TO CURRENT OUTPUT AREA	00	00498
000767	054004	A	508		STA	MRM1+2	STORE AS TARGET	00	00499
000770	015007	A	509		LDA	SLGH,X	GET INTERMEDIATE RECORD SIZE	00	00500
000771	054006	A	510		STA	*+7	STORE IN CALL	00	00501
000772	002000	A	511	MRM1	CALL	MOVE,0,0,0,0,0	MOVE CURRENT REC TO OUTPUT	00	00502
000773	004042	R							
000774	000000	A							
000775	000000	A							
000776	000000	A							
000777	000000	A							
001000	000000	A							
001001	006030	A	512		LDXI	SRTC	GET SORT CONTROL TABLE	00	00503
001002	002473	R							
001003	025011	A	513	MR34	LDB	FSDB,X	OUTPUT RECORD LENGTH	00	00504
001004	015260	A	514		LDA	SWCH,X	SWITCH	00	00505
001005	006406	A	515		BT	6,MR35	JUMP IF FINAL MERGE PASS	00	00506
001006	001010	R							
001007	025024	A	516		LDB	MFLH,X	MERGE REC LENGTH (TAGS + RECNO OR REC)	00	00507
001010	005021	A	517	MR35	TBA			00	00508
001011	125205	A	518		ADD	SFAC,X	PLUS OUTPUT AREA POINTER	00	00509
001012	055205	A	519		STA	SFAC,X	STORE NEW OUTPUT REC PTR	00	00510
001013	145214	A	520		SUB	DCAE,X	MINUS END OF OUTPUT AREA	00	00511
001014	001002	A	521		JAP	MR11	JUMP IF OUTPUT AREA FULL	00	00512
001015	001167	R							
001016	025215	A	522	MR22	LDB	SFAC,X	GET CURRENT AREA PTR, PTR	00	00513
001017	016000	A	523		LDA	0,B	GET CURRENT REC PTR	00	00514
001020	125024	A	524		ADD	MFLH,X	PLUS INTERMEDIATE RECORD LENGTH	00	00515
001021	056000	A	525		STA	0,B	PUT BACK IN CURRENT AREA PTR	00	00516
001022	146002	A	526		SUB	2,B	MINUS END OF CURRENT AREA	00	00517
001023	001004	A	527		JAN	MRGE	JUMP IF MORE RECORDS IN AREA	00	00518
001024	000721	R							
001025	025216	A	528		LDB	SFFC,X	GET CURRENT FILE PTR	00	00519
001026	016010	A	529		LDA	8,B	GET BLOCKS REMAINING	00	00520
001027	005311	A	530		DAR		MINUS 1 JUST READ	00	00521
001030	056010	A	531		STA	8,B	SAVE NEW REMAINING COUNT	00	00522
001031	001010	A	532		JAZ	MR12	IF COUNT ZERO, ADJUST SEQ COUNTS	00	00523
001032	001035	R							
001033	001002	A	533		JAP	MR13	JUMP IF .GT. 0	00	00524
001034	001210	R							
001035	016003	A	534	MR12	LDA	3,B	GET REG SEQ CNT	00	00525
001036	001010	A	535		JAZ	MR14	IF ZERO, CHECK SHT SEQ CNT	00	00526
001037	001047	R							
001040	005311	A	536		DAR		MINUS 1	00	00527
001041	056003	A	537		STA	3,B	SAVE NEW REG SEQ CNT	00	00528
001042	015033	A	538	MR16	LDA	TSEQ,X	DECREMENT	00	00529
001043	005311	A	539		DAR		TOTAL SEQ CNT	00	00530
001044	055033	A	540		STA	TSEQ,X		00	00531
001045	001000	A	541		JMP	MR17		00	00532
001046	001056	R							
001047	016004	A	542	MR14	LDA	4,B	GET SHT SEQ CNT	00	00533
001050	001010	A	543		JAZ	MR17	JUMP IF 0	00	00534
001051	001056	R							
001052	005311	A	544		DAR		MINUS 1	00	00535
001053	056004	A	545		STA	4,B	STORE NEW SHORT SEQ CNT	00	00536
001054	001000	A	546		JMP	MR16		00	00537

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001055	001042	R									
001056	015175	A	547	MR17	LDA	SLPT,X	GET LONG FILE PTR		00	00538	
001057	145216	A	548		SUB	SFFC,X	MINUS CURRENT FILE PTR		00	00539	
001060	001010	A	549		JAZ	MR18	JUMP IF CURRENT FILE IS LONG FILE		00	00540	
001061	001065	R									
001062	025175	A	550		LDB	SLPT,X	GET LONG FILE PTR		00	00541	
001063	001000	A	551		JMP	MR19			00	00542	
001064	001066	R									
001065	025174	A	552	MR18	LDB	SSPT,X	GET LONG FILE PTR		00	00543	
001066	016007	A	553	MR19	LDA	7,B	GET SWITCH		00	00544	
001067	006402	A	554		BT	RA1+2,MR20	JUMP IF EDS ON BOTH FILES		00	00545	
001070	000354	R									
001071	110421	A	555		DRA	ONE	TURN ON WRITE SWITCH FOR NON-ACTIVE FILE		00	00546	
001072	056007	A	556		STA	7,B	AND SAVE		00	00547	
001073	025216	A	557		LDB	SFFC,X			00	00548	
001074	016007	A	558		LDA	7,B	GET CURRENT FILE SWITCH		00	00549	
001075	110423	A	559		DRA	FOUR	TURN ON EDS SWITCH		00	00550	
001076	056007	A	560		STA	7,B	AND SAVE		00	00551	
001077	001000	A	561		JMP	MRGE	MAKE ANOTHER PASS		00	00552	
001100	000721	R									
001101	025174	A	562	MR1	LDB	SSPT,X	GET SHT FILE PTR		00	00553	
001102	016007	A	563		LDA	7,B	GET SWITCH		00	00554	
001103	006401	A	564		BT	01,MR21	JUMP IF DUMMY SWITCH ON		00	00555	
001104	001146	R									
001105	110421	A	565		DRA	ONE	TURN ON SHORT FILE WRITE SW		00	00556	
001106	056007	A	566		STA	7,B	AND SAVE		00	00557	
001107	025175	A	567		LDB	SLPT,X	GET LONG FILE PTR		00	00558	
001110	016002	A	568		LDA	2,B	GET LONG FILE DUMMY CNT		00	00559	
001111	005311	A	569		DAR		MINUS 1		00	00560	
001112	056002	A	570		STA	2,B	AND SAVE NEW DUMMY CNT		00	00561	
001113	016007	A	571		LDA	7,B	GET LF SWITCH		00	00562	
001114	110423	A	572		DRA	FOUR	TURN ON EDS SWITCH		00	00563	
001115	056007	A	573		STA	7,B	AND SAVE		00	00564	
001116	001000	A	574		JMP	MR3			00	00565	
001117	000737	R									
001120	006402	A	575	MR2	BT	02,MR3	IF DUMMY AND EDS, IGNORE DUMMY		00	00566	
001121	000733	R									
001122	016002	A	576		LDA	2,B	GET DUMMY COUNT SF		00	00567	
001123	005311	A	577		DAR		MINUS 1		00	00568	
001124	056002	A	578		STA	2,B	SAVE NEW DUMMY CNT		00	00569	
001125	001016	A	579		JANZ	MR2A	JIF DUMMY COUNT NOT ZERO		00	00570	
001126	001135	R									
001127	016007	A	580		LDA	7,B	GET SF SWITCH		00	00571	
001130	150442	A	581		ANA	BR1	TURN OFF DUMMY SWITCH		00	00572	
001131	056007	P	582		STA	7,B	SAVE SW SWITCH		00	00573	
001132	015260	A	583		LDA	SNCH,X	GET SYSTEM SWITCH		00	00574	
001133	110430	A	584		DRA	SS7	TURN ON FE0F SWITCH		00	00575	
001134	055260	A	585		STA	SNCH,X	SAVE SYSTEM SWITCH		00	00576	
001135	001135	R	586	MR2A	EQU	*			00	00577	
001136	016007	A	587		LDA	7,B	GET SF SWITCH		00	00578	
001137	110423	A	588		DRA	FOUR	TURN ON EDS SWITCH		00	00579	
001138	056007	A	589		STA	7,B	SAVE		00	00580	
001140	025175	A	590		LDB	SLPT,X	GET LF PTR		00	00581	
001141	016007	A	591		LDA	7,B	GET LF SWITCH		00	00582	
001142	110421	A	592		DRA	ONE	TURN ON WRITE LF SWITCH		00	00583	
001143	056007	A	593		STA	7,B	AND SAVE		00	00584	
001144	001000	A	594		JMP	MR3			00	00585	
001145	000733	R									
001146	025175	A	595	MR21	LDB	SLPT,X	GET LF PTR		00	00586	
001147	016002	A	596		LDA	2,B	GET LF DUMMY CNT		00	00587	
001150	025174	A	597		LDB	SSPT,X	GET SF PTR		00	00588	
001151	146002	A	598		SUB	2,B	MINUS SF DUMMY CNT		00	00589	
001152	025175	A	599		LDB	SLPT,X	GET LF PTR		00	00590	
001153	056002	A	600		STA	2,B	SAVE NEW DUMMY CNT		00	00591	
001154	015260	A	601		LDA	SNCH,X	GET SWITCH		00	00592	
001155	110430	A	602		DRA	SS7	TURN ON FE0F SF SWITCH		00	00593	
001156	055260	A	603		STA	SNCH,X			00	00594	
001157	001000	A	604		JMP	MR30	GO START A NEW PASS		00	00595	
001160	000421	R									
001161	015211	A	605	MR4	LDA	SNLP,X	GET LF I/O AREA PTR		00	00596	
001162	055215	A	606		STA	SFAC,X	MAKE IT THE CURRENT RECORD		00	00597	
001163	015175	A	607		LDA	SLPT,X	GET LF PTR		00	00598	
001164	055216	A	608		STA	SFFC,X	MAKE IT CURRENT FILE		00	00599	
001165	001000	A	609		JMP	MR3			00	00600	
001166	000760	R									
001167	025176	A	610	MR11	LDB	SSPT,X			00	00601	
001170	026000	A	611		LDB	0,B			00	00602	
001171	026004	A	612		LDB	4,B			00	00603	
001172	015206	A	613		LDA	SFAD+1,X			00	00604	
001173	056001	A	614		STA	1,B			00	00605	
001174	015260	A	615		LDA	SNCH,X	GET SWITCH		F	*****	
001175	006421	A	616		BT	RA1+9,#+4	SKIP WRITE IF FILE OF TAGS		F	*****	
001176	001201	R									
001177	002000	P	617		CALL	MR3B	WRITE THE OUTPUT BLOCK		00	00606	
001200	002104	R									
001201	006030	P	618		LDXI	SRFC	GET SORT CONTROL TABLE		00	00607	
001202	002473	R									
001203	025212	A	619		LDB	SADP,X			00	00608	
001204	016001	A	620		LDA	1,B			00	00609	
001205	056000	A	621		STA	0,B			00	00610	
001206	001000	A	622		JMP	MR32			00	00611	
001207	001016	R									
001210	002000	A	623	MR13	CALL	MRR9,0	READ ANOTHER SEQ BLOCK FROM ACTIVE FILE		00	00612	



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001211 001777 R
001212 000000 A
001213 006030 A 624 LDXI SRTC 00 00613
001214 002473 R
001215 006017 A 625 LDAE MR13+2 GET RETURN CODE E.1*****
001216 001212 R
001217 001004 A 626 JAN MMEG INVALID END OF FILE E.1*****
001220 002030 R
001221 015216 A 627 LDA SFAC,X GET ACTIVE FILE PTR 00 00614
001222 145175 A 628 SUB SLPT,X MINUS LF PTR 00 00615
001223 001010 A 629 JAZ MR23 IF EQUAL, LF IS ACTIVE FILE 00 00616
001224 001230 R
001225 025175 A 630 LDB SLPT,X GET LF POINTER 00 00617
001226 001000 A 631 JMP MR24 00 00618
001227 001231 R
001230 025174 A 632 MR23 LDB SSPT,X GET SF POINTER 00 00619
001231 016007 A 633 MR24 LDA 7,B GET SWITCH FOR INACTIVE FILE 00 00620
001232 006402 A 634 BT 02,MR25 IF EOS, JUMP 00 00621
001233 001250 R
001234 015215 A 635 LDA SFAC,X GET ACTIVE AREA PTR, PTR 00 00622
001235 145211 A 636 SUB SALP,X MINUS PTR TO LF AREA PTR 00 00623
001236 001010 A 637 JAZ MR26 JUMP IF LF AREA IS ACTIVE 00 00624
001237 001245 R
001240 025210 A 638 LDB SASP,X GET SF AREA PTR, PTR 00 00625
001241 016001 A 639 MR27 LDA 1,B GET START OF AREA 00 00626
001242 056000 A 640 STA 0,B MAKE IT CURRENT AREA 00 00627
001243 001000 A 641 JMP MRGE MAKE ANOTHER PASS 00 00628
001244 000721 R
001245 025211 A 642 MR26 LDB SALP,X GET LF AREA PTR, PTR 00 00629
001246 001000 A 643 JMP MR27 00 00630
001247 001241 R
001250 015260 A 644 MR25 LDA SWCH,X GET SWITCH 00 00631
001251 006406 A 645 BT 0006,MR28 JUMP IF FINAL MERGE 00 00632
001252 001312 R
001253 015215 A 646 LDA SFAC,X GET CURRENT AREA PTR, PTR 00 00633
001254 145211 A 647 SUB SALP,X MINUS LF AREA PTR, PTR 00 00634
001255 001010 A 648 JAZ MR29 JUMP IF LF IS CURRENT 00 00635
001256 001262 R
001257 025210 A 649 LDB SASP,X GET SF PTR. ITS CURRENT AREA PTR, PTR 00 00636
001260 001000 A 650 JMP MR30 00 00637
001261 001263 R
001262 025211 A 651 MR29 LDB SALP,X GET LF PTR ITS CURRENT AREA PTR, PTR 00 00638
001263 016001 A 652 MR30 LDA 1,B GET START OF ACTIVE AREA 00 00639
001264 054016 A 653 STA MRM2+4 MAKE IT THE SOURCE 00 00640
001265 016002 A 654 LDA 2,B GET END OF ACTIVE AREA 00 00641
001266 005111 A 655 IAR 00 00642
001267 145024 A 656 SUB MFLH,X MINUS INTERMEDIATE RECORD SIZE IN WORDS 00 00643
001270 056000 A 657 STA 0,B MAKE IT ACTIVE AREA PTR TO FORCE ECB 00 00644
001271 025212 A 658 LDB SAOP,X GET OUTPUT AREA PTR, PTR 00 00645
001272 016001 A 659 LDA 1,B GET START OF OUTPUT AREA 00 00646
001273 054005 A 660 STA MRM2+2 MAKE IT THE TARGET 00 00647
001274 015010 A 661 LDA SBLK,X GET BLOCK LENGTH IN WORDS 00 00648
001275 004241 A 662 LRLA 1 TIMES 2 00 00649
001276 054006 A 663 STA X+7 STORE IN CALL 00 00650
001277 002000 A 664 MRM2 CALL MOVE,0,0,0,0 MOVE INPUT BLOCK TO OUTPUT BLOCK 00 00651
001300 004042 R
001301 000000 A
001302 000000 A
001303 000000 A
001304 000000 A
001305 000000 A
001306 006030 A 665 LDXI SRTC GET SORT CONTROL TABLE 00 00652
001307 002473 R
001310 001000 A 666 JMP MR11 WRITE THE OUTPUT BLOCK 00 00653
001311 001167 R
667 * 00 00654
668 * FINAL MERGE PASS 00 00655
669 * 00 00656
670 * ACTIVE AREA PTR POINTS TO MERGE RECORD 00 00657
671 * IF IT IS A DUMMY, ONLY DUTEXIT INSERTS ARE ALLOWED, ELSE DONE 00 00658
672 * READ (TAGSORT) OR MOVE (FULL REC SORT) RECORD TO OUTBUF 00 00659
673 * IF NO USER DUTEXIT, WRITE AND GO GET NEXT REC (MR22) 00 00660
674 * CALL USER ROUTINE 00 00661
675 * IF RECORD INSERTED, WRITE IT, GET NEXT OUT IF REJ, GO CALL USER 00 00662
676 * IF EOF, DONE - END OF MERGE PHASE 00 00663
677 * IF RECORD ACCEPTED, WRITE IT AND GO GET NEXT REC (MR22) 00 00664
001312 015215 A 678 MR28 LDA SFAC,X GET CURRENT AREA PTR, PTR 00 00665
001313 145211 A 679 SUB SALP,X MINUS LF AREA PTR, PTR 00 00666
001314 001010 A 680 JAZ MR31 JUMP IF LF CURRENT AREA 00 00667
001315 001323 R
001316 025210 A 681 LDB SASP,X GET SF AREA PTR PTR 00 00668
001317 016001 A 682 MR32 LDA 1,B GET START OF AREA 00 00669
001320 056000 A 683 STA 0,B MAKE IT CURRENT AREA 00 00670
001321 001000 A 684 JMP MR9 00 00671
001322 001326 R
001323 025211 A 685 MR31 LDB SPLP,X GET LF AREA PTR, PTR 00 00672
001324 001000 A 686 JMP MR32 00 00673
001325 001317 R
001326 015260 A 687 MR9 LDA SWCH,X GET SWITCH 00 00674
001327 006404 A 688 BT 004,MR33 JUMP IF KEY SORT 00 00675
001330 001423 R
001331 025215 A 689 LDB SFAC,X GET CURRENT AREA PTR, PTR 00 00676
001332 026000 A 690 LDB 0,B GET CURRENT AREA PTR 00 00677

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001333 016000 A 691 LDA 0,B GET FIRST WORD OF CONTROL FIELD 00 00678
001334 140440 A 692 SUB BS15 00 00679
001335 001010 A 693 JAZ MR9A JUMP IF LOW VALUE, BYPASS FILE WRITE 00 00680
001336 001344 R 694 LDA 0,B 00 00681
001337 016000 A 694 IAR E.1***** 00 00681
001340 005111 A 695 JANZ MR9C JUMP IF NOT HIGH VALUE 00 00683
001341 001016 A 696 00 00684
001342 001360 R 697 DECR 1 00 00684
001343 005301 A 697 MR9A STA MPAD 00 00685
001344 054055 A 698 MR9B LDX MFLH,X GET MERGE REC LENGTH AS LOOP CTR 00 00686
001345 035024 A 699 DXR 00 00687
001346 005344 A 700 JXZ MR50 IF DUMMY REC, END OF PASS 00 00688
001347 001040 A 701 00 00689
001350 000421 R 702 IER 00 00689
001351 005122 A 703 LDA 0,B 00 00690
001352 016000 A 703 SUB MPAD 00 00691
001353 144046 A 704 JAZ MR9B 00 00692
001354 001010 A 705 00 00693
001355 001346 R 706 LDXI SRTC 00 00693
001356 006030 A 707 MR9C LDA CTLI,X GET PTR TO CTL FLD 00 00694
001357 002473 R 708 ADDI 30 FOR RECORD MOVE 00 00695
001360 015040 A 709 LDB CTLC,X NUMBER OF CTL FLDS 00 00696
001361 000036 A 710 TZA 00 00697
001362 025043 A 711 MUL FIVE 00 00698
001363 005001 A 712 TBA 00 00699
001364 005001 A 713 ADD CTLI,X PLUS START OF CTL FLD TABLE 00 00700
001365 160465 A 714 TAB PUT IN B REG 00 00701
001366 005021 A 715 LDA 0,B GET RECORD FIELD DISPLACEMENT 00 00702
001367 125040 A 716 STA MRM3+4 STORE IN PARAMETER 00 00703
001370 005012 A 717 LDA 1,B GET RECORD STARTING BYTE 00 00704
001371 016000 A 718 STA MRM3+5 STORE IN PARAMETER 00 00705
001372 054022 A 719 LDA DTRL,X GET OUTPUT RECORD LENGTH 00 00706
001373 016001 A 720 STA MRM3+6 STORE IN PARAMETER 00 00707
001374 054021 A 721 LDB SADP,X GET OUTPUT AREA PTR 00 00708
001375 015006 A 722 LDA 1,B GET START OF OUTPUT AREA 00 00709
001376 054020 A 723 STA MRM3+2 STORE AS TARGET 00 00710
001377 025212 A 724 ADD FSDB,X ADD OUTPUT RECORD LENGTH IN WORDS 00 00711
001400 016001 A 725 DAR MINUS 1 00 00712
001401 054011 A 726 STA 2,B MAKE IT NEW END OF OUTPUT BUFFER 00 00713
001402 125011 A 727 LDB SFAC,X GET ACTIVE AREA PTR, PTR 00 00714
001403 005311 A 728 LDA 0,B GET ACTIVE AREA PTR 00 00715
001404 056002 A 729 ADD MRM3+4 PLUS DISPLACEMENT OF RECORD 00 00716
001405 025215 A 730 STA MRM3+4 00 00717
001406 016000 A 731 MRM3 CALL MOVE,0,0,0,0,0 MOVE FINAL OUTPUT REC TO OUTPUT AREA 00 00718
001407 124005 A 732 00 00719
001410 054004 A 733 JMP MR36 GO CHECK FOR USER EXIT 00 00719
001411 002000 A 734 MR36 DATA 0 00 00720
001412 004042 R 735 LDB CTLC,X GET NUM OF CTL FLDS 00 00721
001413 000000 A 736 TZA 00 00722
001414 000000 A 737 MUL FIVE 00 00723
001415 000000 A 738 TBA 00 00724
001416 000000 A 739 ADD CTLI,X PLUS START OF CTL FLD TABLE 00 00725
001417 000000 A 740 TAB 00 00726
001420 001000 A 741 LDA 0,B GET TARGET WD DISP 00 00727
001421 001450 R 741 ADDE* SFAC,X ADD START OF MERGE RECORD 00 00728
001422 000000 A 742 00 00729
001423 025043 A 743 YAB *00 00729
001424 005001 A 744 LDA 0,B GET RELATIVE RECORD NUMBER 00 00730
001425 160465 A 744 JAZ MR50 IF LOW VALUE, END OF PASS 00 00731
001426 005021 A 745 00 00732
001427 125040 A 746 IAR 00 00732
001430 005012 A 747 JAZ MR50 IF HIGH VALUE, END OF PASS 00 00733
001431 016000 A 748 00 00734
001432 006125 A 749 DAR *+3 STORE IN CALL 00 00734
001433 100215 A 749 STA MRR1,0 READ ACTUAL RECORD INTO OUTPUT AREA 00 00736
001434 005012 A 750 00 00737
001435 016000 A 751 MR36 LDXI SRTC 00 00737
001436 001010 A 752 00 00738
001437 000421 R 753 LDA SWCH,X 00 00738
001440 005111 A 754 ANA BR1 TURN OFF ACCEPT OUTPUT SWITCH 00 00739
001441 001010 A 755 STA SWCH,X 00 00740
001442 000421 R 756 BT RA1+8,DXIT JUMP IF DUTEXIT 00 00741
001443 005311 A 757 00 00742
001444 054002 A 758 INR ACCP,X ADD 1 TO ACCEPTED OUTPUT CTR 00 00742
001445 002000 A 759 JMP MR34 GO WRITE 00 00743
001446 001674 R 757 DXIT LDA TWO GET 2 00 00744
001447 000000 A 758 DXTO STA DXT1+4 SET OPTION FLAG - DEFAULT TO 2 = ACCEPT BUT 00 00745
001450 006030 A 759 LDX MRPJ,X GET OUTPUT BUFFER PTR 00 00746
001451 002473 R 760 STA DXT1+2 STORE IN CALL 00 00747
001452 015260 A 761 LDA SFAD,X GET OUTPUT BUFFER PTR 00 00748
001453 150442 A 762 STA DXT1+3 STORE IN CALL 00 00749
001454 055260 A 763 00 00749
001455 006410 A 764 00 00749
001456 001462 R 765 00 00749
001457 045001 A 766 00 00749
001460 001000 A 767 00 00749
001461 001000 R 768 00 00749
001462 010422 A 769 00 00749
001463 054014 A 770 00 00749
001464 015262 A 771 00 00749
001465 054010 A 772 00 00749
001466 015205 A 773 00 00749
001467 054007 A 774 00 00749

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001470 015260 A 763 LDA SWCH,X
001471 006150 A 764 ANAI 0177774 TURN OF ACCEPT I/O SWITCHES
001472 177774 A
001473 055260 A 765 STA SWCH,X
001474 002000 A 766 DXT1 CALL XIT2,0,0,0 CALL USER OUTPUT EXIT ROUTINE
001475 000000 E
001476 000000 A
001477 000000 A
001500 000000 A
001501 006017 A 767 LDAE DXT1+4
001502 001500 R
001503 150464 A 768 ANA THREE SELECT BITS OF RETURN CODE
001504 006030 A 769 LDXI SRTC
001505 002473 R
001506 115260 A 770 ORA SWCH,X SET USER RETURN CODE SWITCHES
001507 055260 A 771 STA SWCH,X
001510 006400 A 772 BT 0,DEX1 JUMP IF INPUT ACCEPTED (REC INSERTED)
001511 001521 R
001512 006403 A 773 BT 03,MGND DONE IF EOF HAS BEEN REACHED
001513 000502 R
001514 006401 A 774 BT 01,DEX2 JUMP IF OUTPUT RECORD ACCEPTED
001515 001534 R
001516 045003 A 775 INR DLTD,X ADD 1 TO DELETED RECORD COUNT
001517 001000 A 776 JMP MR22 GO GET NEXT OUTPUT RECORD
001520 001016 R
001521 045002 A 777 DEX1 INR INST,X ADD 1 TO INSERTED RECORD COUNT
001522 015262 A 778 LDA MBUF,X GET PTR TO INSERTED RECORD
001523 006057 A 779 STAE FCBD+1 PUT IN OUTPUT FCB
001524 003337 R
001525 006403 A 780 BT 03,DEX3 JUMP IF EOF HAS BEEN REACHED (INSERTS ONLY)
001526 001543 R
001527 006401 A 781 BT 01,DEX3 JUMP IF OUTPUT RECORD ACCEPTED
001530 001543 R
001531 045003 A 782 INR DLTD,X ADD 1 TO DELETED RECORD COUNT
001532 001000 A 783 JMP DEX3 GO WRITE
001533 001543 R
001534 045001 A 784 DEX2 INR ACCP,X ADD 1 TO ACCEPTED RECORD COUNT
001535 015206 A 785 LDA SFAD+1,X GET PTR TO OUTPUT BUFFER
001536 006057 A 786 STAE FCBD+1 PUT IN OUTPUT FCB
001537 003337 R
001540 015260 A 787 LDA SWCH,X
001541 150442 A 788 ANA BR1 TURN OFF ACCEPT OUTPUT SWITCH
001542 055260 A 789 STA SWCH,X
001543 002000 A 790 DEX3 CALL MRDB WRITE FINAL OUTPUT RECORD
001544 002104 R
001545 006030 A 791 LDXI SRTC
001546 002473 R
001547 015260 A 792 LDA SWCH,X
001550 006403 A 793 BT 03,DXIT JUMP IF EOF HAS BEEN REACHED (INSERT MORE)
001551 001462 R
001552 006401 A 794 BT 01,DXIT JUMP IF OUTPUT REC ACCEPTED (INSERT MORE)
001553 001462 R
001554 001000 A 795 JMP MR22 GO GET NEXT OUTPUT RECORD
001555 001016 R
001556 110424 A 796 DEOF ORA BS3
001557 055260 A 797 STA SWCH,X TURN ON OUTEXIT EOF SWITCH
001560 005001 A 798 TZA SET OPTION CODE TO ZERO FOR EOF
001561 001000 A 799 JMP DXT0 JUMP TO USER EXIT ROUTINE
001562 001460 R

800 EJEC
801 *****
802 *
803 * MCMP - MERGE PHASE ROUTINE TO COMPARE TWO RECORDS
804 *
805 * CALLING SEQUENCE: CALL MCMP,RETURNCODE
806 * WHERE RETURNCODE = -1 IF LF SHOULD BE OUTPUT BEFORE SF
807 * = 0 IF SF SHOULD BE OUTPUT BEFORE LF
808 *
809 * CALLS: COMP
810 *****
001563 000000 A 811 MCMP ENTR
001564 006030 A 812 LDXI SRTC GET SORT CONTROL TABLE
001565 002473 R
001566 015030 A 813 LDA NCTL,X GET NUMBER OF CONTROL FIELDS
001567 055027 A 814 STA SWK3,X SAVE IN SORT WORK 3
001570 015027 A 815 MC1 LDA CNK3,X GET NUMBER OF CONTROL FIELDS
001571 005311 A 816 BAR MINUS 1
001572 055027 A 817 STA SWK3,X SAVE CONTROL FIELD LOOP CTR
001573 001004 A 818 JAN MC8 CONTROL FIELDS ARE EQUAL
001574 001652 R
001575 015113 A 819 LDA SCPT,X GET SORT CONTROL FIELD PTR TABLE
001576 125027 A 820 ADD SWK3,X ADD CTL FIELD CTR
001577 120466 A 821 ADD SIX
001600 145030 A 822 SUB NCTL,X
001601 005012 A 823 TAB
001602 026000 A 824 LDB 0,B
001603 016000 A 825 LDA 0,B GET TARGET WD DISPLACEMENT
001604 125202 A 826 ADD SFAL,X ADD SF AREA PTR
001605 054017 A 827 STA MC3+2 STORE TARGET IN PARAMETER
001606 016001 A 828 LDA 1,B GET TARGET BYTE
001607 054016 A 829 STA MC3+3 STORE IN PARAMETER
001610 016002 A 830 LDA 2,B GET SOURCE WD DISPLACEMENT
001611 125177 A 831 ADD SFAS,X ADD SF AREA PTR

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001612	054014	A	832	STA	MC3+4	STORE IN PARAMETER	00	00819	
001613	016003	A	833	LDA	3,B	GET SOURCE BYTE	00	00820	
001614	054013	A	834	STA	MC3+5	STORE AS PARAMETER	00	00821	
001615	016004	A	835	LDA	4,B	GET NUMBER OF BYTES	00	00822	
001616	054012	A	836	STA	MC3+6	STORE AS PARAMETER	00	00823	
001617	016005	A	837	LDA	5,B		00	00824	
001620	054011	A	838	STA	MC3+7		00	00825	
001621	016006	A	839	LDA	6,B	GET RESULT INDICATOR	00	00826	
001622	054010	A	840	STA	MC3+8	STORE AS PARAMETER	00	00827	
001623	002000	A	841	MC3	CALL	COMP,1,2,3,4,5,6,7 COMPARE THE CONTROL FIELD	00	00828	
001624	003452	R							
001625	000001	A							
001626	000002	A							
001627	000003	A							
001630	000004	A							
001631	000005	A							
001632	000006	A							
001633	000007	A							
001634	006030	A	842	LDXI	SRTC		00	00829	
001635	002473	R							
001636	006017	A	843	LDAE	MC3+8	GET THE RESULT	00	00830	
001637	001633	R							
001640	001010	A	844	JAZ	MC1	JUMP IF CONTROL FIELD EQUAL	00	00831	
001641	001570	R							
001642	001002	A	845	JAP	MC4	JUMP IF LF GT SF RECORD	00	00832	
001643	001646	R							
001644	001004	A	846	JAN	MC5	JUMP IF LF LT SF RECORD	00	00833	
001645	001666	R							
001646	006017	A	847	MC4	LDAE	MC3+7	GET SEQ INDICATOR	00	00834
001647	001632	R							
001650	001010	A	848	JAZ	MC6	ASCENDING SEQ, LF GT SF	00	00835	
001651	001661	R							
001652	005301	A	849	MC8	DECR	1	DESCENDING SEQ LF GT SF, MOVE LF	00	00836
001653	006057	A	850	STAE*	MCMP		00	00837	
001654	101563	R							
001655	006047	A	851	MC7	INRE	MCMP	00	00838	
001656	001563	R							
001657	001000	A	852	JMP*	MCMP		00	00839	
001660	101563	R							
001661	005001	A	853	MC6	TZA	ASCENDING SEQ LF GT SF, MOVE SF	00	00840	
001662	006057	A	854	STAE*	MCMP		00	00841	
001663	101563	R							
001664	001000	A	855	JMP	MC7		00	00842	
001665	001655	R							
001666	006017	A	856	MC5	LDAE	MC3+7	GET SEQ INDICATOR	00	00843
001667	001632	R							
001670	001010	A	857	JAZ	MC8	ASCENDING SEQ LF LT SF, MOVE LF	00	00844	
001671	001652	R							
001672	001000	A	858	JMP	MC6	DESCENDING SEQ LF LT SF, MOVE SF	00	00845	
001673	001661	R							
			859	EJEC			00	00846	
			860	*****			00	00847	
			861	*			00	00848	
			862	* MRRI - MERGE PHASE ROUTINE TO READ INPUT FOR KEYWORD SORT			00	00849	
			863	*			00	00850	
			864	* CALLING SEQUENCE: CALL MRRI,RECNO			00	00851	
			865	* WHERE RECNO IS THE RECORD NUMBER OF THE REC TO BE READ			00	00852	
			866	*			00	00853	
			867	* CALLS: IFRD			00	00854	
			868	* ERROR EXIT: MERG IN MRRA ENDS THE JOB			00	00855	
			869	*			00	00856	
			870	*****			00	00857	
001674	000000	A	871	MRRI	ENTR		00	00858	
001675	006030	A	872	LDXI	SRTC		00	00859	
001676	002473	R							
001677	015260	A	873	LDA	SWCH,X	GET SWITCH	F	*****	
001700	006411	A	874	BT	RAI+9,MOPT	BUILD FILE OF TAGS	F	*****	
001701	001732	R							
001702	025221	A	875	LDB	DSI,X	GET PTR TO SORT INPUT FCB	00	00860	
001703	015205	A	876	LDA	SFAD,X	GET OUTPUT AREA PTR	00	00861	
001704	056001	A	877	STA	1,B	STORE IN THE SORT IN FCB	00	00862	
001705	006017	A	878	LDAE*	MRRI	GET RECORD NUMBER	00	00863	
001706	101674	R							
001707	056003	A	879	STA	3,B	STORE IN FCB	00	00864	
001710	002000	A	880	CALL	IFRD	READ INPUT RECORD	00	00865	
001711	003160	R							
			881	STAT	IFRD+1,MIER,MIER,MIER,MIER	CHECK STATUS	00	00866	
001712	006505	A							
001713	000373	A							
001714	003161	R							
001715	001725	R							
001716	001725	R							
001717	001725	R							
001720	001725	R							
001721	006047	A	882	INRE	MRRI	INCREMENT RETURN PTR	00	00867	
001722	001674	R							
001723	001000	A	883	JMP*	MRRI	RETURN	00	00868	
001724	101674	R							
001725	006030	A	884	MIER	LDXI	SRTC	*00	00869	
001726	002473	R							
001727	015221	A	885	LDA	DSI,X	GET PTR TO INPUT FCB	00	00870	
001730	001000	A	886	JMP	MERG	PRINT ERROR MSG AND END JOB	00	00871	
001731	002040	R							



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887      EJEC
888 *
889 *
890 * MDMT - BUILD LIST OF TAGS ON THE OUTPUT FILE
891 *
892 *
001732 001732 R 893 MDMT EQU *
001733 003336 R 894 LDBI FCBD
001734 016001 A 895 LDA 1,B OUTPUT ADDRESS
001735 124040 A 896 ADD CWC PLUS CURRENT OUTPUT WORD
001736 054003 A 897 STA MDMTA
001737 006017 A 898 LDAE* MRR1 RECORD NUMBER
001740 101674 R
001741 006057 A 899 STAE 000
001742 000000 A
001743 001742 R 900 MDMTA EQU *-1
001743 044032 A 901 INR CWC BUMP CURRENT WORD
001744 014031 A 902 LDA CWC
001745 146000 A 903 SUB 0,B TEST FOR END
001746 001010 A 904 JAZ MDMT1
001747 001754 R
001750 006047 A 905 MDMTX INRE MRR1 STEP RETURN
001751 001674 R
001752 001000 A 906 JMP* MRR1 -EXIT-
001753 101674 R
001754 002000 A 907 MDMT1 CALL MROB WRITE TAGS
001755 002104 R
001756 005001 A 908 TZA ZERO
001757 054016 A 909 STA CWC WORD COUNTER
001760 001000 A 910 JMP MDMTX -EXIT-
001761 001750 R
911 *
912 * FINISH UP FILE OF TAGS
913 *
001762 001762 R 914 FMOM EQU *
001763 001010 A 915 LDA CWC RECCRD OUT?
001764 001772 R 916 JAZ FMOM1 -YES-
001765 002000 A 917 CALL MRR1,0 PUT TAG OF ZERO
001766 001674 R
001767 000000 A
001770 001000 A 918 JMP FMOM LOOP
001771 001762 R
001772 002000 A 919 FMOM1 CALL OFCLS CLOSE OUTPUT FILE WITH FILE MARK
001773 003254 R
001774 001000 A 920 JMP MGN0
001775 000507 R
921 *
001776 000000 A 922 CWC DATA 0 CURRENT WORD COUNTER
923 EJEC
924 *****
925 *
926 * MRR1 - MERGE PHASE ROUTINE TO READ A SEQUENCE BLOCK
927 *
928 * CALLING SEQUENCE: CALL MRR1,RETURN CODE
929 * WHERE RETURN CODE = -1 IF EOF
930 * 0 OTHERWISE
931 * CALLS: WORKFILE READ MACRO IN SRTC
932 * ENTRIES: MMEF, MER6 TO END THE JOB IF READ ERROR
933 *
934 *****
001777 000000 A 935 MRR1 ENR
002000 006030 R 936 LDXI SRTC
002001 002473 R
002002 006015 A 937 LDAE* SFFC,X GET CURRENT FILE PTR
002003 100210 A
002004 120471 A 938 ADD TEN GET PTR TO READ
002005 054006 A 939 STA MA2+2 STORE IN STAT
002006 005311 A 940 DAR
002007 054001 A 941 STA MA1+1 STORE IN JUMP
002010 002000 A 942 MA1 JMPM 0 READ THE BLOCK
002011 000000 A
943 MA2 STAT 0,MAER,MAEF,MAEF,MAER
002012 006505 A
002013 000373 A
002014 000000 A
002015 002033 R
002016 002077 R
002017 002077 R
002020 002033 R
002021 005001 A 944 TZA
002022 006057 A 945 STAE* MRR1 STORE RETURN CODE 0 FOR NORMAL RETURN
002023 101777 R
002024 006047 A 946 MA3 INRE MRR1 INCREMENT RETURN PTR
002025 001777 R
002026 001000 A 947 JMP* MRR1 RETURN
002027 101777 R
002030 006010 A 948 MMEG LDAI '07' MAKE ST07
002031 130267 A
002032 054037 A 949 STA MER3+2
002033 002033 R 950 MAER EQU *
002033 006017 A 951 MMEF LDAE MA2+2 GET PTR TO READ MACRO

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002034 002014 R
002035 120423 A 952 ADD FOUR
002036 005012 A 953 TAB
002037 016000 A 954 LDA 0,B GET PTR TO FCB
002040 120467 A 953 MER6 ADD SEVEN GET PTR TO FILENAME
002041 054004 A 956 STA MER1+4 STORE AS SOURCE
002042 002000 A 957 MER1 CALL MOVE,MER3+4,0,0,0,6 MOVE FILENAME TO ERROR MSG
002043 004042 R
002044 002074 R
002045 000000 A
002046 000000 A
002047 000000 A
002050 000006 A
958 WRITE MER2,5,0,1 WRITE ERROR MSG
002051 006505 A
002052 000404 A
002053 100000 A
002054 010405 A
002055 002065 R
002056 000000 A
002057 000000 A
002060 002000 A 959 CALL DFCLS CLOSE OUTPUT FILE WITH FILE MARK
002061 003254 R
960 EXIT END THE JOB
002062 006505 A
002063 000406 A
002064 000200 A
961 MER2 DCB 7,MER3,0
002065 000007 A
002066 002070 R
002067 000000 A
002070 120240 A 962 MER3 DATA ST06,
002071 151724 A
002072 130266 A
002073 126240 A
002074 120240 A
002075 120240 A
002076 120240 A
002077 005301 A 963 MAEF DECR 1 GET -1
002100 006057 A 964 STAE# MRRA STORE AS RETURN CODE
002101 101777 R
002102 001000 A 965 JMP MA3 RETURN
002103 002024 R
966 EJEC
967 *****
968 *
969 * MR0B - MERGE PHASE ROUTINE TO WRITE A SEQUENCE BLOCK
970 *
971 * CALLING SEQUENCE: CALL MR0B
972 *
973 * CALLS: WORKFILE WRITE MACRO IN SRTC
974 * ERROR EXIT: MER6 IN MRRA ENDS THE JOB
975 *
976 *****
002104 000000 A 977 MR0B ENTR
002105 006030 A 978 LDXI SRTC GET SORT CONTROL TABLE
002106 002473 R
002107 025176 A 979 LDB SOPT,X GET OUTPUT FILE PTR, PTR
002110 016000 A 980 LDA 0,B GET OUTPUT FILE PTR
002111 006120 A 981 ADDI 20 GET PTR TO WRITE
002112 000024 A
002113 005311 A 982 BAR
002114 054032 A 983 STA MRD1+1 PUT IN JUMP
002115 054022 A 984 STA MRD3+1 PUT IN JUMP
002116 005111 A 985 IAR
002117 054032 A 986 STA MRD2+2 PUT IN STAT
002120 015260 A 987 LDA SNCH,X
002121 006446 A 988 BT RA0+06,MRD1 JUMP IF NOT FINAL MERGE PASS
002122 002146 R
002123 015261 A 989 LDA LPSW,X
002124 001010 A 990 JAZ MRD1 JUMP IF NOT LINE PRINTER OUTPUT
002125 002146 R
002126 025206 A 991 LDB SFAD+1,X GET PTR TO OUTPUT BUFFER
002127 005322 A 992 BIR MINUS 1
002130 006067 A 993 STBE FCBD+1 PUT IN OUTPUT FCB
002131 003337 R
002132 016000 A 994 LDA 0,B
002133 054011 A 995 STA LSAVE SAVE BUFF-1
002134 006010 A 996 LDAI
002135 120240 A
002136 055000 A 997 STA 0,B BLANK IT
002137 002000 A 998 MRD3 UNPM *-* WRITE
002140 000000 A
002141 014000 A 999 LDA LSAVE
002142 056000 A 1000 STA 0,B RESTORE BUFF-1
002143 001000 A 1001 JMP MRD2 GO CHECK STATUS
002144 002150 R
002145 000000 A 1002 LSAVE DATA 0
002146 002000 A 1003 MRD1 UNPM 0 ISSUE THE WRITE
002147 000000 A
1004 MRD2 STAT 0,MRER,MRER7,MRER7,MRER
002150 006505 A
002151 000373 A

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002152 000000 A
002153 002167 R
002154 002161 R
002155 002161 R
002156 002167 R
002157 001000 A 1005      JMP*   MR0B      RETURN
002160 102104 R
002161 006017 A 1006 MRER7  LDAE   MRD2+2
002162 002152 R
002163 006057 A 1007      STAE   MA2+2
002164 002014 R
002165 001000 A 1008      JMP    MMEG
002166 002030 R
002167 006017 A 1009 MRER   LDAE   MRD2+2      GET PTR TO WRITE MACRO
002170 002152 R
002171 120423 A 1010      ADD   FOUR
002172 005012 A 1011      TAB
002173 016000 A 1012      LDA   0,B      GET PTR TO OUTPUT FILE FCB
002174 001000 A 1013 MRJMP  JMP    MER6      PRINT ERROR MSG AND END JOB
002175 002040 R

1014      EJEC
1015 *****
1016 *
1017 * SCMP - MERGE PHASE ROUTINE TO COMPUTE NEW OUTPUT SEQUENCE COUNTS
1018 *
1019 *      CALLING SEQUENCE:  CALL SCMP
1020 *
1021 *****
1022 *
1023 *      SHORT FILE          OUTPUT FILE
1024 * RSC      SSC      DSC      * RSC      SSC      DSC      BSS      BRS
1025 *
1026 *****
1027 *
1028 * 0          0          * SFDC  0      0      0      LFBRS
1029 *          LE LFRSC    * SFSSC 0      0      0      SFBSS
1030 *          *          *          *          *          *          *
1031 *          *          *          *          *          *          *
1032 *          GT LFRSC    * LFRSC  SFSSC  0      SFBSS  SFBSS
1033 *          *          *          *          *          *          *
1034 *          *          *          *          *          *          *
1035 * LE LFRSC  0          0      * SFRSC  0      0      0      SFBRS
1036 *          *          *          *          *          *          *
1037 *          *          *          *          *          *          *
1038 *          0          NE 0 * SFRSC  SFDC  0      LFBRS  SFBRS
1039 *          *          *          *          *          *          *
1040 *          *          *          *          *          *          *
1041 *          NE 0          * SFRSC  SFSSC  0      SFBSS  SFBRS
1042 *          *          *          *          *          *          *
1043 *          *          *          *          *          *          *
1044 *          GT LFRSC    * LFRSC  SFRSC  0      SFBRS  SFBRS
1045 *          *          *          *          *          *          *
1046 *          *          *          *          *          *          *
1047 *****
1048 *
1049 * OUTPUT FILE TOTAL SEQ COUNT = DFSSC + DFRSC
1050 *
1051 * TOTAL SEQUENCE COUNT = LFRSC + LFSSC + SFRSC + SFSSC
1052 *
1053 * WHERE LF = LONG FILE
1054 * SF = SHORT FILE
1055 * RSC = REGULAR SEQUENCE COUNT
1056 * SSC = SHORT SEQUENCE COUNT
1057 * DSC = DUMMY SEQUENCE COUNT
1058 * BSS = BLOCKS PER SHORT SEQUENCE
1059 * BRS = BLOCKS PER REGULAR SEQUENCE
1060 *
1061 *****
002176 000000 A 1062 SCMP   ENTR
002177 006030 R 1063      LDXI   SRTC
002200 002473 R
002201 025174 A 1064      LDB   SSPT,X      GET SF PTR
002202 016003 A 1065      LDA   3,B      GET SF REG SEQ CNT
002203 001010 A 1066      JAZ   SCM1      JUMP IF 0
002204 002322 R
002205 025175 A 1067      LDB   SLPT,X      GET LF PTR
002206 146003 A 1068      SUB   3,B      SF REG SEQ CNT MINUS LF REG SEQ CNT
002207 001010 A 1069      JAZ   SCM2      JUMP IF SF REG SEQ CNT
002210 002244 R
002211 001004 A 1070      JAN   SCM2      LESS THAN OR = LF REG SEQ CNT
002212 002244 R
002213 018003 A 1071      LDA   3,B      GET LF REG SEQ CNT
002214 025176 A 1072      LDB   SCPT,X      GET OF PTR
002215 056003 A 1073      STA   3,B      OF REG SEQ CNT = LF REG SEQ CNT
002216 025174 A 1074      LDB   SSPT,X      GET SF PTR
002217 016003 A 1075      LDA   3,B      GET SF REG SEQ CNT
002220 025175 A 1076      LDB   SLPT,X      GET LF PTR
002221 146003 A 1077      SUB   3,B      MINUS LF REG SEQ CNT
002222 025176 A 1078      LDB   SCPT,X      GET OF PTR
002223 056004 A 1079      STA   4,B      OF SHT SEQ CNT= SF REG SEQ CNT- LF REG SEQ
002224 005001 A 1080      TZA
002225 056002 A 1081      STA   2,B      OF DUM SEQ CNT=0
002226 025174 A 1082      LDB   SSPT,X      GET SF PTR

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002364 002421 R
002365 025174 A 1167 SCM5 LDB SSPT,X GET SF PTR 00 01112
002366 016002 A 1168 LDA 2,B SET SF DUM SEQ CNT 00 01113
002367 001010 A 1169 JAZ SCMA JUMP IF NO DUMMYS E.1*****
002370 002453 R
002371 025176 A 1170 LDB SOPT,X GET OF PTR 00 01114
002372 056003 A 1171 STA 3,B OF REG SEQ CNT=SF DUM SEQ CNT 00 01115
002373 005001 A 1172 TZA 00 01116
002374 056004 A 1173 STA 4,B OF SHT SEQ CNT = 0 00 01117
002375 056002 A 1174 STA 2,B OF DUM SEQ CNT = 0 00 01118
002376 025175 A 1175 LDB SLPT,X GET LF PTR 00 01119
002377 016005 A 1176 LDA 5,B GET LF B/S REG SEQ 00 01120
002400 025176 A 1177 LDB SOPT,X GET OF PTR 00 01121
002401 056005 A 1178 STA 5,B OF B/S REG SEQ=LF B/S REG SEQ 00 01122
002402 001000 A 1179 JMP SCMT RETURN 00 01123
002403 002421 R
002404 025174 A 1180 SCM6 LDB SSPT,X GET SF PTR 00 01124
002405 016004 A 1181 LDA 4,B GET SF SHT SEQ CNT 00 01125
002406 025176 A 1182 LDB SOPT,X GET OF PTR 00 01126
002407 056003 A 1183 STA 3,B OF REG SEQ CNT=SF SHT SEQ CNT 00 01127
002410 005001 A 1184 TZA 00 01128
002411 056004 A 1185 STA 4,B OF SHT SEQ CNT = 0 00 01129
002412 056002 A 1186 STA 2,B OF DUM SEQ CNT = 0 00 01130
002413 025174 A 1187 LDB SSPT,X GET SF PTR 00 01131
002414 016006 A 1188 LDA 6,B GET SF B/S SHT SEQ 00 01132
002415 025175 A 1189 LDB SLPT,X GET LF PTR 00 01133
002416 126005 A 1190 ADD 5,B PLUS LF B/S REG SEQ CNT 00 01134
002417 025176 A 1191 LDB SOPT,X GET OF PTR 00 01135
002420 056005 A 1192 STA 5,B OF B/S REG SEQ=SF B/S SHT SEQ+LF B/S REG S 00 01136
002421 025175 A 1193 SCMT LDB SLPT,X GET LF PTR 00 01137
002422 016003 A 1194 LDA 3,B GET REG SEQ CNT LONG FILE 00 01138
002423 126004 A 1195 ADD 4,B PLUS SHT SEQ CNT 00 01139
002424 025174 A 1196 LDB SSPT,X 00 01140
002425 126003 A 1197 ADD 3,B PLUS REG SEQ CNT SHT FILE 00 01141
002426 126004 A 1198 ADD 4,B PLUS SHT SEQ CNT 00 01142
002427 055033 A 1199 STA TSEQ,X STORE AS TOTAL SEQ CNT 00 01143
002430 025176 A 1200 LDB SOPT,X GET OUTPUT FILE PTR 00 01144
002431 016003 A 1201 LDA 3,B GET SHORT SEQ CNT 00 01145
002432 126004 A 1202 ADD 4,B PLUS REG SEQ CNT 00 01146
002433 056001 A 1203 STA 1,B MAKE IT THE OUTPUT TOTAL SEQ CNT 00 01147
002434 025176 A 1204 LDB SOPT,X GET OF PTR 00 01148
002435 016003 A 1205 LDA 3,B GET OF REG SEQ CNT 00 01149
002436 001010 A 1206 JAZ SCM7 JUMP IF 0 00 01150
002437 002445 R
002440 016004 A 1207 SCM9 LDA 4,B GET OF SHT SEQ 00 01151
002441 001010 A 1208 JAZ SCM8 JUMP IF 0 00 01152
002442 002450 R
002443 001000 A 1209 JMP* SCMP RETURN 00 01153
002444 102176 R
002445 056005 A 1210 SCM7 STA 5,B OF B/S REG SEQ = 0 00 01154
002446 001000 A 1211 JMP SCM9 00 01155
002447 002440 R
002450 056006 A 1212 SCM8 STA 6,B OF B/S SHT SEQ = 0 00 01156
002451 001000 A 1213 JMP* SCMP RETURN 00 01157
002452 102176 R
1214 SCMA WRITE SE04,5,0,1 E.1*****
002453 006505 A
002454 000404 A
002455 100000 A
002456 010405 A
002457 002465 R
002460 000000 A
002461 000000 A
1215 EXIT E.1*****
002462 006505 A
002463 000406 A
002464 000200 A
1216 SE04 DCB 3,ST04,0 E.1*****
002465 000003 A
002466 002470 R
002467 000000 A
002470 120240 A 1217 ST04 DATA ' ST04' E.1*****
002471 151724 A
002472 130264 A
1218 EJEC 00 01158
1219 ***** 00 01159
1220 * 00 01160
1221 *SRTC - SORT CONTROL TABLES 00 01161
1222 * 00 01162
1223 * SRTC CONTAINS POINTERS, WORK AREAS AND 00 01163
1224 * FILE MACROS AND CONTROL BLOCKS 00 01164
1225 * 00 01165
1226 ***** 00 01166
1227 NAME IFCA,DFCA,S1CA,S2CA,S3CA 00 01167
1228 NAME IFCB,DFCB,S1CB,S2CB,S3CB 00 01168
1229 NAME XSF1,XSF2,XSF3 00 01169
1230 NAME S1CLS,S2CLS,IFCLS,DFCLS 00 01170
1231 NAME IFRD 00 01171
1232 NAME CLR5,WRT5,LU5,LU5R 00 01172
1233 NAME TLFC,CTLS 00 01173
002473 002473 R 1234 SRTC EQU * START OF SORT CONTROL TABLE 00 01174
002474 000000 A 1235 DATA 0 INPUT RECORD COUNTER IMPT SET BY ASMB 00 01175
002474 000000 A 1236 DATA 0 ACCEPTED RECORD COUNTER ACCP SET BY ASMB 00 01176

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002475	000000	A	1237	DATA	0	INSERTED RECORD COUNTER	INST	SET	BY	ASMB	00	01177
002476	000000	A	1238	DATA	0	DELETED RECORD COUNTER	DLTD	SET	BY	ASMB	00	01178
002477	000000	A	1239	DATA	0	OUTPUT RECORD COUNTER	ORCT	SET	BY	ASMB	00	01179
002500	000000	A	1240	DATA	0	INPUT RECORD LENGTH IN BYTES	INRL	SET	BY	INIT	00	01180
002501	000000	A	1241	DATA	0	OUTPUT RECORD LENGTH IN BYTES	OTRL	SET	BY	INIT	00	01181
002502	000000	A	1242	DATA	0	MERGE RECORD LENGTH IN BYTES	SLGH	SET	BY	INIT	00	01182
002503	000000	A	1243	DATA	0	MERGE BLOCK LENGTH IN WORDS	SBLK	SET	BY	INIT	00	01183
002504	000000	A	1244	DATA	0	OUTPUT RECORD LENGTH IN WORDS	FSDB	SET	BY	INIT	00	01184
002505	000000	A	1245	DATA	0	TOTAL RECS OUTPUT BY SORT PHS	SOUT	SET	BY	ASMB	00	01185
002506	000000	A	1246	DATA	0	SORT SEQUENCE PASS COUNT	SPCT	SET	BY	ASMB	00	01186
002507	000000	A	1247	DATA	0	SORT PASS COUNT PER MERGE BLK	SPWT	SET	BY	INIT	00	01187
002510	000000	A	1248	DATA	0	SORT PHASE INPUT BUFFER PTR	INBF	SET	BY	INIT	00	01188
002511	000000	A	1249	DATA	0	SORT PHASE OUTPUT BUFFER PTR	OUBF	SET	BY	INIT	00	01189
002512	000000	A	1250	DATA	0	INDIRECT PTR TO CURRENT REC	CMBF	SET	BY	ASMB	00	01190
002513	000000	A	1251	DATA	0	PTR TO START OF SORT AREA	SBEG	SET	BY	INIT	00	01191
002514	000000	A	1252	DATA	0	PTR TO LAST WORD OF SORT AREA	SEND	SET	BY	INIT	00	01192
002515	000000	A	1253	DATA	0	CURRENT AVAIL AREA IN SORT AR	SCUR	SET	BY	INIT	00	01193
002516	000000	A	1254	DATA	0	NUMBER OF ENTRIES IN SORT AR	SNUM	SET	BY	INIT	00	01194
002517	000000	A	1255	DATA	0	MERGE RECORD LENGTH IN WORDS	MFLW	SET	BY	INIT	00	01195
002520	000000	A	1256	DATA	0	PTR TO SORT COMPARE REC1	SWK1	SET	BY	ASMB	00	01196
002521	000000	A	1257	DATA	0	PTR TO SORT COMPARE REC2	SWK2	SET	BY	ASMB	00	01197
002522	000000	A	1258	DATA	0	SORT CONTROL FIELD COUNTER	SWK3	SET	BY	ASMB	00	01198
002523	000000	A	1259	DATA	0	NUMBER OF CONTROL FIELDS	NOTL	SET	BY	INIT	00	01199
002524	000000	A	1260	DATA	0	PTR TO SORT AREA END + 1	SND1	SET	BY	INIT	00	01200
002525	002720	R	1261	DATA	(XSF1)	SORT PHASE OUTPUT FILE PTR	SPPT	SET	BY	ASMB	00	01201
002526	000000	A	1262	DATA	0	MERGE PHASE TOTAL SEQ CTR	STOT	SET	BY	ASMB	00	01202
002527	000000	A	1263	DATA	0	FIBONACCI NUMBER	SFIB	SET	BY	ASMB	00	01203
002530	000000	A	1264	DATA	0	N-1ST TERM OF FIBONACCI SERIES	STN1	SET	BY	ASMB	00	01204
002531	000000	A	1265	DATA	0	N-2ND TERM OF SERIES	STN2	SET	BY	ASMB	00	01205
002532	000000	A	1266	DATA	0	RECORD NUMBER FOR LAST SI RD	IPROC	SET	BY	ASMB	00	01206
002533	002543	R	1267	DATA	(TLFC)	PTR TO CTL FLD MOVE PARAMS	CTLI	SET	BY	ASMB	00	01207
002534	000000	A	1268	DATA	0		CTLP	SET	BY	ASMB	00	01208
002535	000000	A	1269	DATA	0	LOOP COUNTER FOR CTL FLDS	LCNT	SET	BY	ASMB	00	01209
002536	000000	A	1270	DATA	0	NUMBER OF CONTROL FIELDS	CTLC	SET	BY	INIT	00	01210
002537	002512	R	1271	DATA	(MBFC)	INDIRECT PTR TO CMBF	CKEY	SET	BY	ASMB	00	01211
002540	000000	A	1272	DATA	0	WORK AREA FOR KEY SORT	CKE1	SET	BY	ASMB	00	01212
002541	002542	R	1273	DATA	(RBLK)	PTR TO READ REC NUMBER	CKE2	SET	BY	ASMB	00	01213
002542	000000	A	1274	DATA	0	READ RECORD NUMBER	CKE3	SET	BY	ASMB	00	01214
002543	000000	A	1275	DATA	0	CTL FLD 1 TGT WD DISP	CTLF	SET	BY	INIT	00	01215
002544	000000	A	1276	DATA	0	CTL FLD 1 TGT BYTE NUM		SET	BY	INIT	00	01216
002545	000000	A	1277	DATA	0	CTL FLD 1 SRC WD DISP		SET	BY	INIT	00	01217
002546	000000	A	1278	DATA	0	CTL FLD 1 SRC BYTE NUM		SET	BY	INIT	00	01218
002547	000000	A	1279	DATA	0	CTL FLD 1 NUM OF BYTES		SET	BY	INIT	00	01219
002550	000000	A	1280	DATA	0,0,0,0,0	POSSIBLE CTL FLD 2		SET	BY	INIT	00	01220
002551	000000	A										
002552	000000	A										
002553	000000	A										
002554	000000	A										
002555	000000	A	1281	DATA	0,0,0,0,0	POSSIBLE CTL FLD 3		SET	BY	INIT	00	01221
002556	000000	A										
002557	000000	A										
002560	000000	A										
002561	000000	A										
002562	000000	A	1282	DATA	0,0,0,0,0	POSSIBLE CTL FLD 4		SET	BY	INIT	00	01222
002563	000000	A										
002564	000000	A										
002565	000000	A										
002566	000000	A										
002567	000000	A	1283	DATA	0,0,0,0,0	POSSIBLE CTL FLD 5		SET	BY	INIT	00	01223
002570	000000	A										
002571	000000	A										
002572	000000	A										
002573	000000	A										
002574	000000	A	1284	DATA	0,0,0,0,0	POSSIBLE CTL FLD 6		SET	BY	INIT	00	01224
002575	000000	A										
002576	000000	A										
002577	000000	A										
002600	000000	A										
002601	000000	A	1285	DATA	0,0,0,0,0	MOVE PARAMS FOR REC/KEY		SET	BY	INIT	00	01225
002602	000000	A										
002603	000000	A										
002604	000000	A										
002605	000000	A										
			1286	*							00	01226
			1287	*							00	01227
			1288	*							00	01228
			1289	*							00	01229
			1290	*							00	01230
002606	002607	R	1291	DATA	(CTPS)	PTR TO CTL FLD COMPARE PTRS	SCPT	SET	BY	ASMB	00	01231
002607	002608	R	1292	DATA	(CTLS+7*5)	PTR TO CTL FLD 5 CMP PARM	SCPT	SET	BY	ASMB	00	01232
002610	002651	R	1293	DATA	(CTLS+7*4)	PTR TO CTL FLD 4 CMP PARM		SET	BY	ASMB	00	01233
002611	002642	R	1294	DATA	(CTLS+7*3)	PTR TO CTL FLD 3 CMP PARM		SET	BY	ASMB	00	01234
002612	002633	R	1295	DATA	(CTLS+7*2)	PTR TO CTL FLD 2 CMP PARM		SET	BY	ASMB	00	01235
002613	002624	R	1296	DATA	(CTLS+7*1)	PTR TO CTL FLD 1 CMP PARM		SET	BY	ASMB	00	01236
002614	002615	R	1297	DATA	(CTLS+7*0)	PTR TO CTL FLD 0 CMP PARM		SET	BY	ASMB	00	01237
002615	000000	A	1298	DATA	0	CTL FLD1 TGT WD DISP IN MRG R	SCPL	SET	BY	INIT	00	01238
002616	000000	A	1299	DATA	0	CTL FLD1 TGT BT NUM IN MRG R		SET	BY	INIT	00	01239
002617	000000	A	1300	DATA	0	CTL FLD1 SRC WD DISP IN MRG R		SET	BY	INIT	00	01240
002620	000000	A	1301	DATA	0	CTL FLD1 SRC BT NUM IN MRG R		SET	BY	INIT	00	01241
002621	000000	A	1302	DATA	0	CTL FLD1 NUMBER OF BYTES		SET	BY	INIT	00	01242
002622	000000	A	1303	DATA	0	CTL FLD1 SEQ IND, 0=ASC, -1=DE		SET	BY	INIT	00	01243
002623	000000	A	1304	DATA	0	CTL FLD1 RESULT CODE		SET	BY	INIT	00	01244
002624	000000	A	1305	DATA	0,0,0,0,0,0,0	CTL FLD 2		SET	BY	INIT	00	01245

CONTROL FIELD MOVE PARAMETERS  
ARE INITIALIZED AS A VARIABLE  
LENGTH LIST

F







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002746 000000 A
002747 000000 A
002750 000000 A
002751 000000 A
002752 000000 A
1346 *
1347 *
1348 *
1349 *
1350 *
1351 *
1352 *
1353 *
1354 *
1355 *
1356 *
1357 *
002753 000000 A 1358 DATA 0 SYSTEM SWITCH SWCH SET BY ASMB F 00 01286
002754 000000 A 1359 DATA 0 LINE PRINTER OUTPUT FILE SW LPSW SET BY INIT 00 01287
002755 000000 A 1360 DATA 0 MERGE PHASE OUTEXIT BUFFER MBUF SET BY INIT 00 01288
1361 *
1362 *
1363 *
1364 *
1365 *
1366 *
1367 *
1368 *
1369 *
1370 *
1371 *
1372 *
1373 *
002756 000000 A 1374 S1CA DATA 0 I/O MACROS FOR SORT WORK 1 00 01289
1375 S1CB OPEN FCB1,0,0,0 00 01290
002757 006505 A
002760 000404 A
002761 100000 A
002762 003000 A
002763 003266 R
002764 000000 A
002765 000000 A
002766 001000 A 1376 JMP* *-8 00 01291
002767 102756 R
002770 000000 A 1377 DATA 0 00 01292
1378 READ FCB1,0,0,1 00 01293
002771 006505 A
002772 000404 A
002773 100000 A
002774 010000 A
002775 003266 R
002776 000000 A
002777 000000 A
003000 001000 A 1379 JMP* *-8 00 01294
003001 102770 R
003002 000000 A 1380 DATA 0 00 01295
1381 WRITE FCB1,0,0,1 00 01296
003003 006505 A
003004 000404 A
003005 100000 A
003006 010400 A
003007 003266 R
003010 000000 A
003011 000000 A
003012 001000 A 1382 JMP* *-8 00 01297
003013 103002 R
003014 000000 A 1383 S1CLS DATA 0 00 01298
1384 CLOSE FCB1,0,0,1 00 01299
003015 006505 A
003016 000404 A
003017 100000 A
003020 013400 A
003021 003266 R
003022 000000 A
003023 000000 A
003024 001000 A 1385 JMP* *-8 00 01300
003025 103014 R
003026 000000 A 1386 S2CA DATA 0 I/O MACROS FOR SORT WORK FILE 2 00 01301
1387 S2CB OPEN FCB2,0,0,0 00 01302
003027 006505 A
003030 000404 A
003031 100000 A
003032 003000 A
003033 003300 A
003034 000000 A
003035 000000 A
003036 001000 A 1388 JMP* *-8 00 01303
003037 103026 R
003040 000000 A 1389 DATA 0 00 01304
1390 READ FCB2,0,0,1 00 01305
003041 006505 A
003042 000404 A
003043 100000 A

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003044	010000	A					
003045	003300	R					
003046	000000	A					
003047	000000	A					
003050	001000	A	1391	JMP*	*-8		00 01330
003051	103040	R					
003052	000000	A	1392	DATA	0		00 01331
			1393	WRITE	FCB2,0,0,1		00 01332
003053	006505	A					
003054	000404	A					
003055	100000	A					
003056	010400	A					
003057	003300	R					
003060	000000	A					
003061	000000	A					
003062	001000	A	1394	JMP*	*-8		00 01333
003063	103052	R					
003064	000000	A	1395	S2CLS	DATA	0	00 01334
			1396	CLOSE	FCB2,0,0,1	CLOSE WITH FILE MARK	00 01335
003065	006505	A					
003066	000404	A					
003067	100000	A					
003070	013400	A					
003071	003300	R					
003072	000000	A					
003073	000000	A					
003074	001000	A	1397	JMP*	*-8		00 01336
003075	103064	R					
003076	000000	A	1398	S3CA	DATA	0	00 01337
			1399	S3CB	OPEN	FCB3,0,0,0	00 01338
003077	006505	A					
003100	000404	A					
003101	100000	A					
003102	003000	A					
003103	003312	R					
003104	000000	A					
003105	000000	A					
003106	001000	A	1400	JMP*	*-8		00 01339
003107	103076	R					
003110	000000	A	1401	DATA	0		00 01340
			1402	READ	FCB3,0,0,1		00 01341
003111	006505	A					
003112	000404	A					
003113	100000	A					
003114	010000	A					
003115	003312	R					
003116	000000	A					
003117	000000	A					
003120	001000	A	1403	JMP*	*-8		00 01342
003121	103110	R					
003122	000000	A	1404	DATA	0		00 01343
			1405	WRITE	FCB3,0,0,1		00 01344
003123	006505	A					
003124	000404	A					
003125	100000	A					
003126	010400	A					
003127	003312	R					
003130	000000	A					
003131	000000	A					
003132	001000	A	1406	JMP*	*-8		00 01345
003133	103122	R					
003134	000000	A	1407	DATA	0		00 01346
			1408	CLOSE	FCB3,0,0,1		00 01347
003135	006505	A					
003136	000404	A					
003137	100000	A					
003140	013400	A					
003141	003312	R					
003142	000000	A					
003143	000000	A					
003144	001000	A	1409	JMP*	*-8		00 01348
003145	103134	R					
003146	000000	A	1410	IFCA	DATA	0	00 01349
			1411	IFCB	OPEN	FCBI,0,0,1	*00 01350
003147	006505	A					
003150	000404	A					
003151	100000	A					
003152	013000	A					
003153	003324	R					
003154	000000	A					
003155	000000	A					
003156	001000	A	1412	JMP*	*-8		00 01351
003157	103146	R					
003160	000000	A	1413	IFRD	DATA	0	00 01352
			1414	READ	FCBI,0,0,1		00 01353
003161	006505	A					
003162	000404	A					
003163	100000	A					
003164	010000	A					
003165	003324	R					
003166	000000	A					
003167	000000	A					
003170	001000	A	1415	JMP*	*-8		00 01354



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003171 103160 R
003172 000000 A 1416 DATA 0 00 01355
1417 WRITE FCBI,0,0,1 00 01356

003173 006505 A
003174 000404 A
003175 100000 A
003176 010400 A
003177 003324 R
003200 000000 A
003201 000000 A
003202 001000 A 1418 JMP* *-8 00 01357
003203 103172 R
003204 000000 A 1419 IFCLS DATA 0 00 01358
1420 CLOSE FCBI,0,0,0 CLOSE WITHOUT FILE MARK *00 01359

003205 006505 A
003206 000404 A
003207 100000 A
003210 003400 A
003211 003324 R
003212 000000 A
003213 000000 A
003214 001000 A 1421 JMP* *-8 00 01360
003215 103204 R
003216 000000 A 1422 DFCA DATA 0 SORT OUTPUT FILE I/O MACROS 00 01361
1423 DFCE OPEN FCBD,0,0,1 OPEN WITHOUT REWINDING *00 01362

003217 006505 A
003220 000404 A
003221 100000 A
003222 013000 A
003223 003336 R
003224 000000 A
003225 000000 A
003226 001000 A 1424 JMP* *-8 00 01363
003227 103216 R
003230 000000 A 1425 DATA 0 00 01364
1426 READ FCBD,0,0,1 00 01365

003231 006505 A
003232 000404 A
003233 100000 A
003234 010000 A
003235 003336 R
003236 000000 A
003237 000000 A
003240 001000 A 1427 JMP* *-8 00 01366
003241 103230 R
003242 000000 A 1428 DATA 0 00 01367
1429 WRITE FCBD,0,0,1 00 01368

003243 006505 A
003244 000404 A
003245 100000 A
003246 010400 A
003247 003336 R
003250 000000 A
003251 000000 A
003252 001000 A 1430 JMP* *-8 00 01369
003253 103242 R
003254 000000 A 1431 DFCLS DATA 0 CLOSE WITH FILE MARK 00 01370
1432 CLOSE FCBD,0,0,1 00 01371

003255 006505 A
003256 000404 A
003257 100000 A
003260 013400 A
003261 003336 R
003262 000000 A
003263 000000 A
003264 001000 A 1433 JMP* *-8 00 01372
003265 103254 R
1434 FCB1 FCB 0,0,1,, ' , ' , ' ' FILE CONTROL BLK SORT WORK FILE 100 01373

003266 000000 A
003267 000000 A
003270 000400 A
003271 000000 A
003272 000000 A
003273 000000 A
003274 000000 A
003275 120240 A
003276 120240 A
003277 120240 A
1435 FCB2 FCB 0,0,1,, ' , ' , ' ' FILE CONTROL BLK SORT WORK FILE 200 01374

003300 000000 A
003301 000000 A
003302 000400 A
003303 000000 A
003304 000000 A
003305 000000 A
003306 000000 A
003307 120240 A
003310 120240 A
003311 120240 A
1436 FCB3 FCB 0,0,1,, ' , ' , ' ' FILE CONTROL BLK SORT WORK FILE 300 01375

003312 000000 A
003313 000000 A
003314 000400 A

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003315 000000 A
003316 000000 A
003317 000000 A
003320 000000 A
003321 120240 A
003322 120240 A
003323 120240 A
1437 FCBI FCB 0,0,1,, ' , ' ' ' FILE CONTROL BLK SORT INPUT FILE 00 01376
003324 000000 A
003325 000000 A
003326 000400 A
003327 000000 A
003330 000000 A
003331 000000 A
003332 000000 A
003333 120240 A
003334 120240 A
003335 120240 A
1438 FCED FCB 0,0,1,, ' , ' ' ' FILE CONTROL BLK SORT OUTPUT FILE00 01377
003336 000000 A
003337 000000 A
003340 000400 A
003341 000000 A
003342 000000 A
003343 000000 A
003344 000000 A
003345 120240 A
003346 120240 A
003347 120240 A
003350 000000 A 1439 CLR5 ENTR MOVE BLANKS TO LIST OUTPUT BUFFER 00 01378
003351 006010 A 1440 LDAR . . 00 01379
003352 120240 A
003353 054026 A 1441 STA LUSB 00 01380
003354 002000 A 1442 CALL MOVE,LUSB+1,0,LUSB,0,78 00 01381
003355 004042 R
003356 003403 R
003357 000000 A
003360 003402 R
003361 000000 A
003362 000116 A
003363 001000 A 1443 JMP* CLR5 00 01382
003364 103350 R
003365 000000 A 1444 WRT5 ENTR WRITE LIST OUTPUT 00 01383
1445 WRITE LUS,5,0;1 00 01384
003366 006505 A
003367 000404 A
003370 100000 A
003371 010405 A
003372 003377 R
003373 000000 A
003374 000000 A
003375 001000 A 1446 JMP* WRT5 00 01385
003376 103365 R
1447 LUS DCB 40,LUSB,0 DCB FOR LIST OUTPUT 00 01386
003377 000050 A
003400 003402 R
003401 000000 A
003402 1448 LUSB BSS 40 00 01387
1449 EJEC 00 01388
1450 ***** 00 01389
1451 * 00 01390
1452 * COMP - VARIABLE-LENGTH COMPARE 00 01391
1453 * 00 01392
1454 * COMP IS AN ALGEBRAIC COMPARE ROUTINE. 00 01393
1455 * IT COMPARES THE TWO STRINGS BY SUBTRACTING THEM 00 01394
1456 * ONE WORD AT A TIME. 00 01395
1457 * 00 01396
1458 * IF THE NUMBER OF BYTES IS ODD, THE LAST BYTES ARE COMPARED 00 01397
1459 * ALGEBRAICALLY (SHIFTED LEFT AND SUBTRACTED), NOT ABSOLUTELY. 00 01398
1460 * 00 01399
1461 * CALLING SEQUENCE 00 01400
1462 * CALL COMP,1,2,3,4,5,6,7 00 01401
1463 * 00 01402
1464 * 1. TARGET FIELD WORD ADDRESS 00 01403
1465 * 2. TARGET FIELD BYTE NUMBER (0 OR 1) 00 01404
1466 * 3. SOURCE FIELD WORD ADDRESS 00 01405
1467 * 4. SOURCE FIELD BYTE NUMBER (0 OR 1) 00 01406
1468 * 5. NUMBER OF BYTES TO BE COMPARED 00 01407
1469 * 6. SEQUENCE INDICATOR, 0-ASCENDING, -1-DESCEND 00 01408
1470 * 7. RESULT 0 - TGT EQ SRC 00 01409
1471 * +1 - TGT GT SRC 00 01410
1472 * -1 - TGT LT SRC 00 01411
1473 * 00 01412
1474 * EXIT PARAMETERS: PARAMETERS 2, 4 AND 6 ARE UNCHANGED 00 01413
1475 * PARAMETERS 1, 3 AND 5 ARE CHANGED 00 01414
1476 * 00 01415
1477 * CALLED BY SINI,SRT1,MERG 00 01416
1478 * 00 01417
1479 ***** 00 01418
000000 A 1480 TW EQU 0 DISPL TO TARGET WORD PTR 00 01419
000001 A 1481 TB EQU 1 DISPL TO TARGET WORD BYTE NUMBER 00 01420
000002 A 1482 SW EQU 2 DISPL TO SOURCE WORD PTR 00 01421
000003 A 1483 SB EQU 3 DISPL TO SOURCE WORD BYTE NUMBER 00 01422

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003452	000004	A	1484	LGH	EQU	4	DISPL TO LENGTH OF MOVE	00	01423
003453	000000	A	1485	COMP	ENTR			00	01424
003454	006037	A	1486		LDXE	*-1	GET PARAM LST PTR IN X REC	00	01425
003455	015004	A	1487		LDA	LGH,X	GET NUMBER OF BYTES	00	01426
003456	001010	A	1488		JAZ	CRTE	RETURN EQUAL IF LGH IS ZERO	00	01427
003460	015001	A	1489		LDA	TB,X	GET TARGET BYTE NUMBER	00	01428
003461	004241	A	1490		LRLA	1	TIMES 2	00	01429
003462	125003	A	1491		ADD	SB,X	ADD SOURCE BYTE NUMBER	00	01430
003463	004241	A	1492		LRLA	1	TIMES 2	00	01431
003464	006120	A	1493		ADDI	CJP2	PLUS START OF JUMP TABLE	00	01432
003465	003471	R							
003466	054001	A	1494		STA	CJP1+1	STORE IN JMP INSTRUCTION	00	01433
003467	001000	A	1495	CJP1	JMP	CJP2	GO TO JUMP TABLE	00	01434
003470	003471	R							
003471	001000	A	1496	CJP2	JMP	C0S0A	TARGET BYTE 0, SOURCE BYTE 0	F	*****
003472	003762	R							
003473	001000	A	1497		JMP	C0S1A	TARGET BYTE 0, SOURCE BYTE 1	F	*****
003474	003776	R							
003475	001000	A	1498		JMP	C1S0A	TARGET BYTE 1, SOURCE BYTE 0	F	*****
003476	004007	R							
003477	001000	A	1499		JMP	C1S1A	TARGET BYTE 1, SOURCE BYTE 1	F	*****
003500	004024	R							
003501	015004	A	1500	C0S0	LDA	LGH,X	GET BYTES FOR COMPARE	00	01439
003502	005311	A	1501	C002	DAR		MINUS 1	00	01440
003503	001010	A	1502		JAZ	C001	GO PROCESS LAST BYTE	00	01441
003504	003530	R							
003505	005311	A	1503		DAR		MINUS 1 MORE	00	01442
003506	055004	A	1504		STA	LGH,X	SAVE REMAINING CNT	00	01443
003507	006015	A	1505		LDAE*	TW,X	GET TARGET WD	00	01444
003510	100000	A							
003511	006145	A	1506		SUBE*	SW,X	MINUS SOURCE WD	00	01445
003512	100002	A							
003513	001010	A	1507		JAZ	*+6		00	01446
003514	003521	R							
003515	001002	A	1508		JAP	CRTG	RETURN FOR TGT HI	00	01447
003516	003743	R							
003517	001004	A	1509		JAN	CRTL	RETURN FOR TGT LESS	00	01448
003520	003746	R							
003521	015004	A	1510		LDA	LGH,X	GET REMAINING LGH	00	01449
003522	001010	A	1511		JAZ	CRTE	RETURN EQUAL IF THATS ALL	00	01450
003523	003740	R							
003524	045002	A	1512		INR	SW,X	INCR SRC WD	00	01451
003525	045000	A	1513		INR	TW,X	INCR TGT WD	00	01452
003526	001000	A	1514		JMP	C002	GO TEST SOME MORE	00	01453
003527	003502	R							
003530	006015	A	1515	C001	LDAE*	SW,X	GET SRC WD	00	01454
003531	100002	A							
003532	150462	A	1516	C003	ANA	LHW	CLEAR BYTE 1	00	01455
003533	054225	A	1517		STA	CSAVE	SAVE IT	00	01456
003534	006015	A	1518		LDAE*	TW,X	GET TGT WD	00	01457
003535	100000	A							
003536	150462	A	1519		ANA	LHW	CLEAR BYTE 1	00	01458
003537	144221	A	1520		SUB	CSAVE	MINUS SRC BYTE	00	01459
003540	001010	A	1521		JAZ	CRTE	EQUAL RETURN	00	01460
003541	003740	R							
003542	001002	A	1522		JAP	CRTG	GREATER RETURN	00	01461
003543	003743	R							
003544	001000	A	1523		JMP	CRTL	LESS RETURN	00	01462
003545	003746	R							
003546	015004	A	1524	C0S1	LDA	LGH,X	GET LENGTH OF COMP	00	01463
003547	005311	A	1525	C012	DAR		MINUS 1	00	01464
003550	001010	A	1526		JAZ	C011	GO TEST LAST BYTE	00	01465
003551	003602	R							
003552	005311	A	1527		DAR		MINUS 1 MORE	00	01466
003553	055004	A	1528		STA	LGH,X	SAVE REMAINING COUNT	00	01467
003554	006015	A	1529		LDAE*	SW,X	GET SRC WD	00	01468
003555	100002	A							
003556	045002	A	1530		INR	SW,X	INCR SRC WD PTR	00	01469
003557	006025	A	1531		LDBE*	SW,X	GET SRC WD + 1	00	01470
003560	100002	A							
003561	004450	A	1532		LLRL	8	PUT TWO SRC BYTES IN A REG	00	01471
003562	005211	A	1533		CPA		COMPLEMENT	00	01472
003563	005111	A	1534		IAR			00	01473
003564	006125	A	1535		ADDE*	TW,X	PLUS TGT WD	00	01474
003565	100000	A							
003566	001010	A	1536		JAZ	*+6	IF EQUAL, CONTINUE TEST	00	01475
003567	003574	R							
003570	001002	A	1537		JAP	CRTG	GREATER RETURN	00	01476
003571	003740	R							
003572	001000	A	1538		JMP	CRTL	LESS RETURN	00	01477
003573	003746	R							
003574	015004	A	1539		LDA	LGH,X	GET REMAINING BYTES	00	01478
003575	001010	A	1540		JAZ	CRTE	RETURN EQUAL IF TEST COMPLETE	00	01479
003576	003740	R							
003577	045000	A	1541		INR	TW,X	INCREMENT TGT WD PTR	00	01480
003600	001000	A	1542		JMP	C012	GO TEST SOME MORE	00	01481
003601	003547	R							
003602	006015	A	1543	C011	LDAE*	SW,X	GET SRC WD	00	01482
003603	100002	A							
003604	004250	A	1544		LRLA	8	PUT SRC BYTE IN LEFT HALF	00	01483
003605	001000	A	1545		JMP	C003	CONTINUE	00	01484







003743	005101	A	1608	CRTG	INCR	1	+1		00	01547	
003744	001000	A	1609		JMP	CRTN			00	01548	
003745	003751	R									
003746	005301	A	1610	CRTL	DECR	1	-1		00	01549	
003747	001000	A	1611		JMP	CRTN			00	01550	
003750	003751	R									
003751	055006	A	1612	CRTN	STA	6,X		SET RETURN CODE	00	01551	
003752	006017	A	1613		LDAE	COMP		COMPUTE	00	01552	
003753	003452	R									
003754	120467	A	1614		ADD	SEVEN			00	01553	
003755	006057	A	1615		STAE	COMP			00	01554	
003756	003452	R									
003757	001000	A	1616		JMP*	COMP		RETURN	00	01555	
003760	103452	R									
003761	000000	A	1617	CSAVE	DATA	0			00	01556	
			1618	*	ALGEBRAIC COMPARE				F	*****	
003762	006015	A	1619	COS0A	LDAE*	TW,X		GET TARGET WORD	F	*****	
003763	100000	A									
003764	006135	A	1620		ERAE*	SW,X		EOR SOURCE WORD	F	*****	
003765	100002	A									
003766	001002	A	1621		JAP	COS0		SAME SIGN	F	*****	
003767	003501	R									
003770	006015	A	1622	TWSIN	LDAE*	TW,X		GET TARGET WORD AGAIN	F	*****	
003771	100000	A									
003772	001002	A	1623		JAP	CRTL			F	*****	
003773	003746	R									
003774	001000	A	1624		JMP	CRTG			F	*****	
003775	003743	R									
003776	006015	A	1625	COS1A	LDAE*	SW,X		GET SOURCE WORD	F	*****	
003777	100002	A									
004000	004250	A	1626		LRLA	8		RIGHT BYTE	F	*****	
004001	006135	A	1627		ERAE*	TW,X		EOR TARGET WORD	F	*****	
004002	100000	A									
004003	001002	A	1628		JAP	COS1		SAME SIGN	F	*****	
004004	003546	R									
004005	001000	A	1629		JMP	TWSIN			F	*****	
004006	003770	R									
004007	006015	A	1630	CIS0A	LDAE*	TW,X		GET TARGET WORD	F	*****	
004010	100000	A									
004011	004250	A	1631		LRLA	8		RIGHT BYTE	F	*****	
004012	006135	A	1632		ERAE*	SW,X		EOR SOURCE WORD	F	*****	
004013	100002	A									
004014	001002	A	1633		JAP	CIS0		SAME SIGN	F	*****	
004015	003607	R									
004016	006015	A	1634		LDAE*	SW,X		GET SOURCE WORD	F	*****	
004017	100002	A									
004020	001002	A	1635		JAP	CRTG			F	*****	
004021	003743	R									
004022	001000	A	1636		JMP	CRTL			F	*****	
004023	003746	R									
004024	006015	A	1637	CIS1A	LDAE*	TW,X		GET TARGET WORD	F	*****	
004025	100000	A									
004026	006135	A	1638		ERAE*	SW,X		EOR SOURCE WORD	F	*****	
004027	100002	A									
004030	004250	A	1639		LRLA	8		RIGHT BYTES	F	*****	
004031	001002	A	1640		JAP	CIS1		SAME SIGN	F	*****	
004032	003661	R									
004033	006015	A	1641		LDAE*	TW,X		GET TARGET WORD	F	*****	
004034	100000	A									
004035	004250	A	1642		LRLA	8		RIGHT BYTE	F	*****	
004036	001002	A	1643		JAP	CRTL			F	*****	
004037	003746	R									
004040	001000	A	1644		JMP	CRTG			F	*****	
004041	003743	R									
			1645		EJEC				00	01557	
			1646	*****						00	01558
			1647	*****						00	01559
			1648	* MOVE - VARIABLE-LENGTH MOVE						00	01560
			1649	* CALLING SEQUENCE CALL,MOVE,1,2,3,4,5						00	01561
			1650	* 1. TARGET FIELD WORD ADDRESS						00	01562
			1651	* 2. TARGET FIELD BYTE NUMBER (0 OR 1)						00	01563
			1652	* 3. SOURCE FIELD WORD ADDRESS						00	01564
			1653	* 4. SOURCE FIELD BYTE NUMBER (0 OR 1)						00	01565
			1654	* 5. NUMBER OF BYTES TO BE MOVED						00	01566
			1655	* CALLED BY SINI, SRT1, MERG						00	01567
			1656	* CALL PARAMETER VALUES ARE UNCHANGED BY MOVE						00	01568
			1657	*****						00	01569
			1658	*****						00	01570
			1659	*****						00	01571
			1660	*****						00	01572
			1661	*****						00	01573
			1662	*****						00	01574
	000000	A	1663	TW	EQU	0		DISPL TO TARGET WORD PTR	00	01575	
	000001	A	1664	TB	EQU	1		DISPL TO TARGET WORD BYTE NUMBER	00	01576	
	000002	A	1665	SW	EQU	2		DISPL TO SOURCE WORD PTR	00	01577	
	000003	A	1666	SB	EQU	3		DISPL TO SOURCE WORD BYTE NUMBER	00	01578	
	000004	A	1667	LGH	EQU	4		DISPL TO LENGTH OF MOVE	00	01579	
004042	000000	A	1668	MOVE	ENTR				00	01580	
004043	006027	A	1669		LABE	*-1		GET PARAMETER LIST PTR	00	01581	
004044	004042	R									
004045	036004	A	1670		LDB	LGH,B		PUT BYTE COUNT IN X REG	00	01582	
004046	001040	A	1671		JRZ	MRTN		RETURN IF LENGTH IS ZERO	00	01583	
004047	004174	R									



004050	016000	A	1672	LDA	TW,B			00	01584
004051	054133	A	1673	STA	MVTW	GET TGT WD PTR		00	01585
004052	016002	A	1674	LDA	SW,B			00	01586
004053	054130	A	1675	STA	MVSW	GET SRC WD PTR		00	01587
004054	016001	A	1676	LDA	TE,B			00	01588
004055	026003	A	1677	LDB	SE,B			00	01589
004056	001010	A	1678	JAZ	*+6			00	01590
004057	004064	R							
004060	001020	A	1679	JBZ	T1S0	TARGET BYTE 1 - SOURCE BYTE 0		00	01591
004061	004146	R							
004062	001000	A	1680	JMP	T1S1	TARGET BYTE 1 - SOURCE BYTE 1		00	01592
004063	004161	R							
004064	001026	A	1681	JBNZ	T0S1	TARGET BYTE 0 - SOURCE BYTE 1		00	01593
004065	004120	R							
004066	005344	A	1682	DXR		BYTE COUNT MINUS 1		00	01594
004067	001040	A	1683	JXZ	T001	GO PROCESS LAST BYTE		00	01595
004070	004104	R							
004071	005344	A	1684	DXR		MINUS 1 MORE		00	01596
004072	006017	A	1685	LDAE*	MVSW	GET SOURCE WORD		00	01597
004073	104204	R							
004074	006057	A	1686	STAE*	MVTW	STORE IN TARGET WORD		00	01598
004075	104205	R							
004076	001040	A	1687	JXZ	MRTN	RETURN IF BYTE COUNT ZERO		00	01599
004077	004174	R							
004100	044103	A	1688	INR	MVSW	INCREMENT SOURCE AND		00	01600
004101	044103	A	1689	INR	MVTW	TARGET INDIRECT PTRS		00	01601
004102	001000	A	1690	JMP	T0S0	GO MOVE SOME MORE		00	01602
004103	004066	R							
004104	006017	A	1691	LDAE*	MVSW	GET SOURCE WORD		00	01603
004105	104204	R							
004106	150462	A	1692	ANA	LHW	LEFT BYTE		00	01604
004107	054073	A	1693	STA	MSAVE	SAVE MODIFIED SOURCE		00	01605
004110	006017	A	1694	LDAE*	MVTW	GET TARGET WORD		00	01606
004111	104205	R							
004112	150463	A	1695	ANA	RHW	RIGHT BYTE		00	01607
004113	114067	A	1696	ORA	MSAVE	OR TOGETHER		00	01608
004114	006057	A	1697	STAE*	MVTW	STORE IN TARGET WORD		00	01609
004115	104205	R							
004116	001000	A	1698	JMP	MRTN	RETURN		00	01610
004117	004174	R							
004120	005344	A	1699	DXR		BYTE COUNT MINUS 1		00	01611
004121	001040	A	1700	JXZ	T011	GO PROCESS LAST BYTE		00	01612
004122	004141	R							
004123	005344	A	1701	DXR		MINUS 1 MORE		00	01613
004124	006017	A	1702	LDAE*	MVSW	GET SOURCE WORD		00	01614
004125	104204	R							
004126	044055	A	1703	INR	MVSW	INCREMENT SRC WD PTR		00	01615
004127	000027	A	1704	LDBE*	MVSW	GET SOURCE WORD PLUS 1		00	01616
004130	104204	R							
004131	004450	A	1705	LLRL	8	LONG LEFT SHIFT 8 BITS		00	01617
004132	006057	A	1706	STAE*	MVTW	STORE IN TARGET FIELD		00	01618
004133	104205	R							
004134	001040	A	1707	JXZ	MRTN	RETURN IF BYTE COUNT ZERO		00	01619
004135	004174	R							
004136	044046	A	1708	INR	MVTW	INCREMENT TGT WD PTR		00	01620
004137	001000	A	1709	JMP	T0S1	GO MOVE SOME MORE		00	01621
004140	004120	R							
004141	006017	A	1710	LDAE*	MVSW	GET SOURCE WORD		00	01622
004142	104204	R							
004143	004259	A	1711	LRLA	8	SHIFT LEFT 8 BITS		00	01623
004144	001000	A	1712	JMP	T003			00	01624
004145	004106	R							
004146	005344	A	1713	DXR		BYTE COUNT MINUS 1		00	01625
004147	006017	A	1714	LDAE*	MVSW	GET SOURCE WORD		00	01626
004150	104204	R							
004151	004350	A	1715	LSRA	8	SHIFT RIGHT 8 BITS		00	01627
004152	054030	A	1716	STA	MSAVE	SAVE MODIFIED SOURCE		00	01628
004153	006017	A	1717	LDAE*	MVTW	GET TARGET WORD		00	01629
004154	104205	R							
004155	150462	A	1718	ANA	LHW	LEFT BYTE		00	01630
004156	114067	A	1719	ORA	MSAVE	OR TOGETHER		00	01631
004157	001000	A	1720	JMP	T013	GO TO T0S1 ROUTINE		00	01632
004160	004132	R							
004161	005344	A	1721	DXR		BYTE COUNT MINUS 1		00	01633
004162	006017	A	1722	LDAE*	MVSW	GET SOURCE WORD		00	01634
004163	104204	R							
004164	150463	A	1723	ANA	RHW	RIGHT BYTE		00	01635
004165	054015	A	1724	STA	MSAVE	SAVE MODIFIED SOURCE		00	01636
004166	006017	A	1725	LDAE*	MVTW	GET TARGET WORD		00	01637
004167	104205	R							
004170	150462	A	1726	ANA	LHW	LEFT BYTE		00	01638
004171	114011	A	1727	ORA	MSAVE	OR TOGETHER		00	01639
004172	001000	A	1728	JMP	T004	GO TO T0S0 ROUTINE		00	01640
004173	004074	R							
004174	006017	A	1729	LDAE	MOVE			00	01641
004175	004042	R							
004176	120465	A	1730	ADD	FIVE			00	01642
004177	006057	A	1731	STAE	MOVE			00	01643
004200	004042	R							
004201	001000	A	1732	JMP*	MOVE	RETURN		00	01644
004202	104042	R							
004203			1733	MSAVE	BSS	1		00	01645
004204			1734	MVSW	BSS	1		00	01646



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004205      1735 MVTW   BSS      1
1736      EJEC
1737 *****
1738 *
1739 *   BTDA - BINARY TO ASCII CONVERSION ROUTINE
1740 *
1741 *   BTDA CONVERTS A BINARY WORD TO ITS
1742 *   5-CHARACTER ASCII DECIMAL EQUIVALENT
1743 *
1744 *   CALLING SEQUENCE   CALL BTDA,BINARYWORD
1745 *
1746 *   EXIT CONDITIONS   B REG CONTAINS ADDRESS OF THE
1747 *                     LEFT-ADJUSTED ASCII NUMBER
1748 *
1749 *   CALLED BY   SINI, SRT1, MERG
1750 *
1751 *****
004206 0000000 A 1752 BTDA   ENTR
004207 0060207 A 1753      LDBE*   BTDA      GET BINARY WORD IN B REG
004210 1042006 R
004211 0050001 A 1754      TZA          PUT 0 IN A REG
004212 1704711 A 1755      DIV      TEN      DIVIDE BY 10
004213 1140307 A 1756      ORA      R260     INSERT ASCII ZONE
004214 0042250 A 1757      LRLA     8         SHIFT LEFT 8 BITS
004215 0540304 A 1758      STA      RSLT+2
004216 0050001 A 1759      TZA          PUT 0 IN A REG
004217 1704711 A 1760      DIV      TEN
004220 1140302 A 1761      ORA      R260
004221 0540207 A 1762      STA      RSLT+1
004222 0050001 A 1763      TZA
004223 1704711 A 1764      DIV      TEN
004224 1140206 A 1765      ORA      R260
004225 0042250 A 1766      LRLA     8
004226 1140202 A 1767      ORA      RSLT+1
004227 0540201 A 1768      STA      RSLT+1
004230 0050001 A 1769      TZA
004231 1704711 A 1770      DIV      TEN
004232 1140200 A 1771      ORA      R260
004233 0540104 A 1772      STA      RSLT
004234 0050001 A 1773      TZA
004235 1704711 A 1774      DIV      TEN
004236 1140104 A 1775      ORA      R260
004237 0042250 A 1776      LRLA     8
004240 1140007 A 1777      ORA      RSLT
004241 0540006 A 1778      STA      RSLT
004242 0060200 A 1779      LDBI     RSLT
004243 0042250 R
004244 0060047 A 1780      INRE     BTDA
004245 0042006 R
004246 0010000 A 1781      JMP*     BTDA
004247 1042006 R
004250 0000000 A 1782 RSLT  DATA  0,0,0
004251 0000000 A
004252 0000000 A
004253 0000260 A 1783 R260  DATA  0260
1784 *****
1785 *
1786 *   XIT1 - DUMMY USER INEXIT ROUTINE
1787 *
1788 *   CALLING SEQUENCE:  CALL XIT1,INBUFFER,OUTBUFFER,FLAG
1789 *                       WHERE  INBUFFER IS THE ADDRESS OF THE INPUT REC
1790 *                               OUTBUFFER IS THE ADDRESS OF THE BUFFER TO
1791 *                               WHICH AN INSERTED RECORD MUST BE MOVED BY XIT1
1792 *                               FLAG IS SET BY SORT BEFORE CALLING XIT1:
1793 *                               -1 IF INPUT EOF JUST OCCURED
1794 *                               +1 OTHERWISE
1795 *                               FLAG IS SET BY XIT1
1796 *                               BIT 0 = 1  ACCEPT INPUT RECORD
1797 *                               = 0  DELETE INPUT RECORD
1798 *                               BIT 1 = 1  INSERT RECORD IN OUTBUFFER
1799 *                                       BEFORE INPUT RECORD AND
1800 *                                       CALL XIT1 AGAIN WITH SAME
1801 *                                       INPUT RECORD
1802 *                               = 0  IGNORE RECORD IN OUTBUFFER
1803 *
1804 *   THIS DUMMY USER INEXIT ROUTINE DOES THE FOLLOWING:
1805 *   1.  IF NO USER INEXIT ROUTINE IS LOADED WITH SORT,
1806 *       THEN THE DUMMY SATISFIES THE EXTERNAL REFERENCE.
1807 *   2.  IF INEXIT=YES IS SPECIFIED ON A CONTROL STATEMENT,
1808 *       BUT NO USER INEXIT ROUTINE IS LOADED WITH SORT,
1809 *       THEN THE DUMMY IS ACTUALLY CALLED FOR EACH INPUT
1810 *       RECORD.  BY DEFAULT, THE DUMMY ACCEPTS EACH INPUT.
1811 *
1812 *   CALLED BY SRT1 FOR EVERY INPUT RECORD IF INEXIT=YES AND
1813 *   NO OTHER XIT1 IS IN FRONT OF IT IN THE SAME LOAD MODULE.
1814 *
1815 *****
004254 0000000 A 1816 XIT1  ENTR
004255 0060107 A 1817      LDRE     XIT1
004256 0042254 R
004257 1204664 A 1818      ADD     THREE
004260 0060507 A 1819      STAE     XIT1
004261 0042254 R

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004262 001000 A 1820      JMP*   XIT1
004263 104254 R
000000 R 1821      END    SDRT
ENTRY NAMES
004206 R BTDA      003350 R CLR5   003452 R COMP  002615 R CTLS
003146 R IFCA      003147 R IFCB   003204 R IFCLS  003160 R IFRD
003377 R LUS       003402 R LUSB   004042 R MOVE  003216 R DFCA
003217 R DFCE      003254 R DFCLS  002756 R S1CA  002757 R S1CB
003014 R S1CLS    003026 R S2CA  003027 R S2CB  003064 R S2CLS
003076 R S3CA      003077 R S3CB   002473 R SRTC  002543 R TLFC
003365 R WRT5      004254 R XIT1   002720 R XSFI  002731 R XSFI
002742 R XSFI
EXTERNAL NAMES
000001 E SINI      000003 E SRT1   000000 E V$EXEC 000000 E V$IDC
000000 E V$IDST  001475 E XIT2
SYMBOLS
000001 A ACCP      000002 A B      000441 A BR0    000442 A BR1
000460 A BR15     000444 A BR3    000450 A BR7    000451 A BR8
000440 A BS15     000424 A BS3    000426 A BS5    000427 A BS6
000430 A BS7      004206 R BTDA   003530 R C001   003502 R C002
003532 R C003    003602 R C011   003547 R C012   003501 R C0S0
003762 R C0S0A   003546 R C0S1   003776 R C0S1A  003641 R C101
003610 R C102    003720 R C111   003662 R C112   003607 R C1S0
004007 R C1S0A   003661 R C1S1   004024 R C1S1A  003467 R CJP1
003471 R CJP2    000045 A CKE1   000046 A CKE2   000047 A CKE3
000044 A CKEY     003350 R CLR5   000017 A CMBF  003452 R COMP
003740 R CRTE     003743 R CRTG   003746 R CRTL  003751 R CRTN
003761 R CSAVE    000043 A CTLC   000050 A CTLF  000040 A CTLI
000041 A CTLP     002615 R CTLS   002607 R CTPS  001776 R CHC
000217 A DCB5     000222 A DILU   000003 A DLTD  000221 A DSI
000424 A EIGHT    002675 R FALS   002700 R FADS  002672 R FASS
003266 R FCB1     003300 R FCB2   003312 R FCB3   003324 R FCB1
003336 R FCB0    000465 A FIVE   001762 R FMOM  001772 R FMOM1
000423 A FOUR     000220 A FSID   000011 A FSOB  000223 A FSD1
003146 R IFCA      003147 R IFCB   003204 R IFCLS  003160 R IFRD
000015 A INBF     000000 A INPT   000005 A INRL  000002 A INST
000037 A INPRC   000042 A LCNT   000004 A LGH   000462 A LHW
000261 A LPSW     002670 R LPTS   002145 R LSAVE  003377 R LUS
003402 R LUSB     002010 R MA1    002012 R MA2    002024 R MA3
002077 R MAEF     002033 R MAER   002512 R MBFC  000010 A MBLH
000262 A MBUF     001570 R MC1    001623 R MC3    001646 R MC4
001666 R MC5      001661 R MC6    001655 R MC7    001652 R MC8
001563 R MCMP     002042 R MER1   002065 R MER2   002070 R MER3
002040 R MER6     000011 R MERG   000024 A MFLH  000036 R MGO
000054 R MG1      000302 R MG10  000207 R MG11A 000203 R MG11B
000304 R MG12     000322 R MG14  000346 R MG15  000331 R MG16
000335 R MG17     000232 R MG2    000225 R MG3    000065 R MG4
000113 R MG5      000267 R MG6    000142 R MG7A  000134 R MG7B
000140 R MG7C    000271 R MG8    000156 R MG9    000522 R MGM2
000554 R MGM3     000507 R MGN0   000571 R MGN1   000602 R MGN2
000632 R MGN3     000633 R MGN4   000502 R MGND  000634 R MGS1
000662 R MGS2     001725 R MIER   002033 R MNEF  002030 R MMEG
001732 R MDMT     001754 R MDMT1 001742 R MDMTA 001750 R MDMTX
004042 R MOVE     001422 R MPAD   001101 R MR1    001167 R MR11
001035 R MR12     001210 R MR13   001047 R MR14   001042 R MR16
001056 R MR17     001065 R MR18   001066 R MR19   001120 R MR2
000354 R MR20     001146 R MR21   001016 R MR22   001230 R MR23
001231 R MR24     001250 R MR25   001240 R MR26   001241 R MR27
001312 R MR28     001262 R MR29   001135 R MR2A  000733 R MR3
001263 R MR30     001323 R MR31   001317 R MR32   001423 R MR33
001003 R MR34     001010 R MR35   001450 R MR36   001161 R MR4
000737 R MR5      000421 R MR50   000446 R MR51   000754 R MR6
000743 R MR7      000760 R MR8    001326 R MR9    001344 R MR9A
001346 R MR9B     001360 R MR9C   002187 R MRER  002151 R MRER7
000721 R MRGE     002174 R MRJMP  000772 R MRM1   001277 R MRM2
001411 R MRM3     002146 R MRD1   002150 R MRD2   002137 R MRD3
002104 R MRDB     001777 R MRRR  001674 R MRR1   004174 R MRTN
004203 R MSAVE    000420 A MT     004204 R MVSU  004205 R MVTU
000030 A NCTL     000461 A NEG    000213 A DCAB  000214 A DCAB
001556 R DEDF     001521 R DEX1   001504 R DEX2   001543 R DEX3
003216 R DFCA     003217 R DFCE   003254 R DFCLS  000421 A DNE
002671 R DPTS     000004 A DRCT   000006 A DTRL  000016 A DUBF
001462 R DEXIT    001463 R DXT0   001474 R DXT1   004253 R R230
000040 A RAO      000000 A RA1    002542 R RELK  000463 A RHW
004250 R RSLT     002756 R S1CA  002757 R S1CB  003014 R S1CLS
000225 A S1ID     003026 R S2CA  003027 R S2CB  003064 R S2CLS
000236 A S2ID     003076 R S3CA  003077 R S3CB  000247 A S3ID
000211 A SALP     000212 A SADP   000210 A SASP  000003 A SB
000020 A SBEG     000010 A SBLK   002302 R SCM1  002244 R SCM2
002276 R SCM3     002314 R SCM4   002365 R SCM5  002404 R SCM6
002445 R SCM7     002450 R SCM8   002440 R SCM9  002453 R SCMA
002176 R SCMP     002421 R SCMT   000113 A SCPT  000102 A SCTL
000114 A SCTP     000022 A SCUR   002465 R SE04  000021 A SEND
000467 A SEVEN    000215 A SFAC   000202 A SFAL  000205 A SFAD
000177 A SFAS     000216 A SFFC   000034 A SFIB  000032 A SFPT
000001 E SINI     000224 A SIDI   000466 A SIX    000007 A SLGH
000175 A SLPT     000031 A SND1   000023 A SNUM  000176 A SDPT
000000 R SDRT     000012 A SDUT   000013 A SFCT  002657 R SPTS
000014 A SPNT     000003 E SRT1   002473 R SRTC  000174 A SSPT
002470 R ST04     000035 A STM1   000036 A STM2  000033 A ST05
000002 A SW       000260 A SNCH   000025 A SNK1  000026 A SNK2
000027 A SHK3     004104 R T001   004106 R T003  004074 R T004
004141 R T011     004132 R T013   004066 R T0S0  004120 R T0S1

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00 01732

00 01733



















E.2 VORTEX LISTING

MERGE

PROGRAM PAGE 35

LISTING PAGE ( 789)

1816	XIT1	151	1817	1819	1820
0	XIT2	152	766		
1343	XSF1	1229	1261	1311	
1344	XSF2	1229	1312		
1345	XSF3	1229	1310		



```

1          TITLE      SORT
2 *****
3 *
4 * VORTEX OPERATING SYSTEM SORT UTILITY - PART 2
5 *
6 *****
7 *
8 * NO LITERALS OR INDIRECT POINTERS MAY BE GENERATED
9 *
10 * SORT MUST BE ASSEMBLED IN TWO PARTS
11 * BECAUSE OF USER EXIT EXTERNAL REFERENCES
12 *
13 *****
14 * * * * *
15 * THE FOLLOWING EQUATES REPRESENT DISPLACEMENTS IN THE SORT CONTROL *
16 * TABLE. FUNCTIONS OF THE VARIOUS CELLS ARE COMMENTED IN THE SORT *
17 * TABLE GENERATION CODE. INDEX FOR THE TABLE IS SYMBOL SORTC *
18 * * * * *
000000 A 19 INPT EQU 0
000001 A 20 ACCP EQU 1
000002 A 21 INST EQU 2
000003 A 22 DLTD EQU 3
000004 A 23 DRCT EQU 4
000005 A 24 INRL EQU 5
000006 A 25 DTRL EQU 6
000007 A 26 SLGH EQU 7
000010 A 27 SBLK EQU 8
000010 A 28 MBLH EQU 8
000011 A 29 FSOB EQU 9
000012 A 30 SOUT EQU 10
000013 A 31 SPCT EQU 11
000014 A 32 SPWT EQU 12
000015 A 33 INBF EQU 13
000016 A 34 DUBF EQU 14
000017 A 35 CMBF EQU 15
000020 A 36 SBEG EQU 16
000021 A 37 SEND EQU 17
000022 A 38 SCUR EQU 18
000023 A 39 SNUM EQU 19
000024 A 40 MFLH EQU 20
000025 A 41 SWK1 EQU 21
000026 A 42 SWK2 EQU 22
000027 A 43 SWK3 EQU 23
000030 A 44 NCTL EQU 24
000031 A 45 SND1 EQU 25
000032 A 46 SFPT EQU 26
000033 A 47 STDT EQU 27
000033 A 48 TSEQ EQU 27
000034 A 49 SFIB EQU 28
000035 A 50 STM1 EQU 29
000036 A 51 STM2 EQU 30
000037 A 52 IPRC EQU 31
000040 A 53 CTLI EQU 32
000041 A 54 CTLP EQU 33
000042 A 55 LCNT EQU 34
000043 A 56 CTLC EQU 35
000044 A 57 CKEY EQU 36
000045 A 58 CKE1 EQU 37
000046 A 59 CKE2 EQU 38
000047 A 60 CKE3 EQU 39
000050 A 61 CTLF EQU 40
000113 A 62 SCPT EQU 75
000114 A 63 SCTP EQU 76
000122 A 64 SCTL EQU 82
000174 A 65 SSPT EQU 124
000175 A 66 SLPT EQU 125
000176 A 67 SOPT EQU 126
000177 A 68 SFAS EQU 127
000202 A 69 SFAL EQU 130
000205 A 70 SFAD EQU 133
000210 A 71 SASP EQU 136
000211 A 72 SALP EQU 137
000212 A 73 SADP EQU 138
000213 A 74 DCAB EQU 139
000214 A 75 DCAC EQU 140
000215 A 76 SFAC EQU 141
000216 A 77 SFFC EQU 142
000217 A 78 DCB5 EQU 143
000220 A 79 FSI0 EQU 144
000221 A 80 BSI EQU 145
000222 A 81 BILU EQU 146
000223 A 82 FSDI EQU 147
000224 A 83 SIDI EQU 148
000225 A 84 SII0 EQU 149
000236 A 85 SRI0 EQU 158
000247 A 86 S3I0 EQU 167
000260 A 87 SWCH EQU 176
000261 A 88 LPSW EQU 177
000262 A 89 MBUF EQU 178
90 * * * * *
91 * END OF SORT CONTROL TABLE DISPLACEMENT EQUATES *
92 * * * * *
000001 A 93 X EQU 1

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000002 A 94 B EQU 2 00 00094
000002 A 95 SI EQU 2 00 00095
000005 A 96 LD EQU 5 00 00096
97 *****
98 *
99 **** BIT TEST BIT DESIGNATION **** 00 00099
100 * 00 00100
101 ***** 00 00101
000040 A 102 RAO EQU 040 BT JUMPS WHEN A REGISTER IS 0 00 00102
000000 A 103 RAI EQU 000 BT JUMPS WHEN A REGISTER IS 1 00 00103
000060 A 104 RBO EQU 060 BT JUMPS WHEN B REGISTER IS 0 00 00104
000020 A 105 RBI EQU 020 BT JUMPS WHEN B REGISTER IS 1 00 00105
106 ***** 00 00106
107 * 00 00107
108 **** MASK TABLE DESCRIPTION **** 00 00108
109 * 00 00109
110 ***** 00 00110
000420 A 111 MT SET 0420 00 00111
000420 A 112 ZERD EQU MT ZERD WORD 00 00112
000423 A 113 BS2 EQU MT+3 BIT MASK CONTENTS 000004 00 00113
000424 A 114 BS3 EQU MT+4 000010 BIT SET 3 00 00114
000425 A 115 BS4 EQU MT+5 000020 00 00115
000431 A 116 BS8 EQU MT+9 000400 00 00116
000435 A 117 BS12 EQU MT+13 010000 00 00117
000440 A 118 BS15 EQU MT+16 010000 BIT SET 15 00 00118
000441 A 119 BR0 EQU MT+17 BIT MASK CONTENTS 0177776 00 00119
000445 A 120 BR4 EQU MT+21 0177757 00 00120
000455 A 121 BR12 EQU MT+29 0167777 00 00121
000460 A 122 BR15 EQU MT+32 0077777 BIT RESET 15 00 00122
000461 A 123 NEG EQU MT+33 0177777 ALL ONES 00 00123
000421 A 124 ONE EQU MT+1 CONTAINS NUMBER 1 00 00124
000422 A 125 TWO EQU MT+2 CONTAINS NUMBER 2 00 00125
000464 A 126 THREE EQU MT+36 CONTAINS NUMBER 3 00 00126
000423 A 127 FOUR EQU MT+3 CONTAINS NUMBER 4 00 00127
000465 A 128 FIVE EQU MT+37 CONTAINS NUMBER 5 00 00128
000466 A 129 SIX EQU MT+38 CONTAINS NUMBER 6 00 00129
000467 A 130 SEVEN EQU MT+39 CONTAINS NUMBER 7 00 00130
000424 A 131 EIGHT EQU MT+4 CONTAINS NUMBER 8 00 00131
000471 A 132 TEN EQU MT+41 CONTAINS NUMBER 10 00 00132
133 * 00 00133
134 EXT NAME XIT2,SRT1,SINI 00 00134
135 EXT SRTC,COMP,MOVE,BTDA,XIT1 00 00135
136 EXT IFCA,DFCA,S1CA,S2CA,S3CA 00 00136
137 EXT IFCB,DFCB,S1CB,S2CB,S3CB 00 00137
138 EXT XSF1,XSF2 00 00138
139 EXT S1CLS,S2CLS 00 00139
140 EXT IFRD 00 00140
141 EXT CLR5,LUS,LUSB 00 00141
142 EXT TLFC,CTLS 00 00142
143 EXT GDFCB 00 00143
144 EXT SIFCB 00 00144
145 EXT WRTS 00 00145
146 ***** 00 00146
147 * XIT2 - DUMMY USER DUTEXIT ROUTINE 00 00147
148 * 00 00148
149 * CALLING SEQUENCE: CALL XIT2,INBUFFER,OUTBUFFER,FLAG 00 00149
150 * WHERE INBUFFER IS THE ADDRESS OF THE BUFFER TO 00 00150
151 * WHICH AN INSERTED RECORD MUST BE MOVED BY XIT2 00 00151
152 * OUTBUFFER IS THE ADDRESS OF THE SORTED OUTPUT 00 00152
153 * RECORD 00 00153
154 * FLAG IS SET BY SORT BEFORE CALLING XIT2: 00 00154
155 * -1 IF OUTPUT EOF JUST OCCURRED 00 00155
156 * +2 OTHERWISE 00 00156
157 * FLAG IS SET BY XIT2 00 00157
158 * BIT 0 = 1 INSERT RECORD IN INBUFFER 00 00158
159 * BEFORE OUTPUT RECORD AND 00 00159
160 * CALL XIT2 AGAIN WITH SAME 00 00160
161 * OUTPUT RECORD 00 00161
162 * = 0 IGNORE RECORD IN INBUFFER 00 00162
163 * BIT 1 = 1 ACCEPT OUTPUT RECORD 00 00163
164 * = 0 DELETE OUTPUT RECORD 00 00164
165 * 00 00165
166 * THIS DUMMY USER DUTEXIT ROUTINE, LIKE THE DUMMY INEXIT, 00 00166
167 * 1. SATISFIES THE EXTERNAL REFERENCE 00 00167
168 * 2. ACCEPTS ALL OUTPUT RECORDS IF DUTEXIT=YES AND NO 00 00168
169 * OTHER XIT2 IS LOADED WITH SORT 00 00169
170 * 00 00170
171 * CALL BY MORG FOR EVERY SORTED OUTPUT RECORD BEFORE IT IS 00 00171
172 * WRITTEN TO THE FINAL OUTPUT FILE, IF DUTEXIT=YES AND 00 00172
173 * NO OTHER XIT2 IS IN FRONT OF IT IN THE SAME LOAD MODULE. 00 00173
174 * 00 00174
175 ***** 00 00175
000000 000000 A 176 XIT2 ENTR 00 00176
000001 006017 A 177 LDAE XIT2 00 00177
000002 000000 R 00 00178
000003 120464 A 178 ADD THREE 00 00179
000004 006057 A 179 STAE XIT2 00 00180
000005 000000 R 00 00181
000006 001000 A 180 JMP* XIT2 00 00182
000007 100000 R 00 00183
181 * 00 00184
182 ***** 00 00185
183 * 00 00186

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E.1 \*\*\*\*\*  
E.1 \*\*\*\*\*  
F \*\*\*\*\*



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184 * MERGE PHASE WORK AREAS START HERE                                00 00181
185 *                                                                    00 00182
186 * *****                                                        00 00183
187 * *****                                                        00 00184
188 *                                                                    00 00185
189 * SORT PHASE ROUTINES                                           00 00186
190 *                                                                    00 00187
191 * SRT1 - SORT PHASE PRIMARY CONTROL                             00 00188
192 *                                                                    00 00189
193 * *****                                                        00 00190
000010 000000 A 194 SRT1 ENTR                                                                    00 00191
000011 002000 A 195 CALL SRID,0 GET NEXT INPUT RECORD                                00 00192
000012 001056 R
000013 000000 A
000014 006017 A 196 LDAE *-1 PUT RETURN CODE IN THE A REGISTER                    00 00193
000015 000013 R
000016 006030 A 197 LDXI SRTC GET SORT CONTROL TABLE                                00 00194
000017 000000 E
000020 001010 A 198 JAZ SR1 A REG 0 MEANS INPUT RECORD AVAILABLE                    00 00195
000021 000027 R
000022 001002 A 199 JAP EOF A REG POSITIVE MEANS END OF FILE ON INPUT                00 00196
000023 000146 R
000024 015221 A 200 LDA DSI,X GET PTR TO SORT INPUT FCB                                00 00197
000025 001000 A 201 JMP ERR6 A REG NEGATIVE MEANS ERROR ON READ                        00 00198
000026 000744 R
000027 045000 A 202 SR1 INR INPT,X ADD 1 TO INPUT RECORD COUNT                        00 00199
000030 015260 A 203 SR2 LDA SWCH,X GET SWITCH IN A REG                                00 00200
000031 150441 A 204 ANA BR0 TURN OFF ACCEPT INPUT SWITCH                            00 00201
000032 055260 A 205 STA SWCH,X SAVE IT                                                    00 00202
000033 006402 A 206 BT 02,USER GO TO USER RTN IF INPUT EXIT SWITCH ON                00 00203
000034 000064 R
000035 045001 A 207 INR ACCP,X ADD 1 TO ACCEPTED INPUT RECORD COUNT                    00 00204
000036 025015 A 208 LDB INBF,X GET IN-BUFFER ADDRESS                                00 00205
000037 065017 A 209 STB CMBF,X MAKE IT THE CURRENT RECORD POINTER                    00 00206
000040 015021 A 210 SR3 LDA SEND,X GET END OF SORT AREA ADDRESS                        00 00207
000041 145022 A 211 SUB SCUR,X MINUS NEXT AVAILABLE RECORD LOCATION                    00 00208
000042 001002 A 212 JAP SR3A
000043 000050 R
000044 002004 A 213 JANM SFB0 GO DETERMINE FILE FOR WRITING                                00 00210
000045 001001 R
000046 002000 A 214 JMPM SSEQ JUMP MINUS TO WRITE OUT THE COMPLETED SEQUENCE          00 00211
000047 001114 R
000050 002000 A 215 SR3A JMPM SMOV GO MOVE THE RECORD TO THE SORT AREA                    00 00212
000051 000573 R
000052 015022 A 216 LDA SCUR,X GET SORT AREA CURRENT PTR                                00 00213
000053 125024 A 217 ADD MFLH,X INCREMENT BY INTERMEDIATE SORT RECORD SIZE                00 00214
000054 055022 A 218 STA SCUR,X SAVE IT                                                    00 00215
000055 015260 A 219 LDA SWCH,X GET SWITCH IN A REG                                00 00216
000056 006403 A 220 BT 03,USER IF INPUT EOF SW IS ON, CK FOR INSERTS                    00 00217
000057 000064 R
000060 006400 A 221 BT 00,SR2 IF ACCEPT INPUT SWITCH IS ON GO CHECK EXIT                00 00218
000061 000030 R
000062 001000 A 222 JMP SRT1+1 GO GET NEXT SORT INPUT RECORD                        00 00219
000063 000011 R
000064 005101 A 223 USER INCR 1 SET OPTION CODE                                        00 00220
000065 054010 A 224 STA USR1+4 DEFAULT TO 1 - ACCEPT INPUT                                00 00221
000066 015015 A 225 LDA INBF,X GET SORT IN AREA PTR                                        00 00222
000067 054004 A 226 STA USR1+2 STORE IN CALL                                        00 00223
000070 015016 A 227 LDA DUBF,X GET SORT IN OUTPUT BUFFER PTR                                00 00224
000071 054003 A 228 STA USR1+3                                        00 00225
000072 002000 A 229 USR1 CALL XIT1,0,0,0 CALL USER INPUT EXIT ROUTINE                    00 00226
000073 000000 E
000074 000000 A
000075 000000 A
000076 000000 A
000077 006017 A 230 LDAE USR1+4                                                                    00 00227
000100 000076 R
000101 150464 A 231 ANA THREE SELECT BITS 0 AND 1 OF RETURN CODE                    00 00228
000102 006057 A 232 STAE USR1+4                                                                    00 00229
000103 000076 R
000104 006030 A 233 LDXI SRTC PUT SORT TABLE AREA BACK IN INDEX                            00 00230
000105 000017 E
000106 015260 A 234 LDA SWCH,X PUT SWITCH IN A REG                                00 00231
000107 006150 A 235 ANAI 0177774 P-1 TURN OFF ACCEPT INPUT/OUTPUT SWITCHES            00 00232
000110 177774 A
000111 006117 A 236 DRAE USR1+4 SET EXIT RETURN CODE SWITCHES                            00 00233
000112 000076 R
000113 055260 A 237 STA SWCH,X SAVE THE SWITCH                                        00 00234
000114 006401 A 238 BT 01,UEX1 JUMP IF OUTPUT ACCEPTED (REC INSERTED)                    00 00235
000115 000125 R
000116 006403 A 239 BT 03,SRDT JUMP IF END OF FILE HAS BEEN REACHED                        00 00236
000117 000162 R
000120 006400 A 240 BT 00,UEX2 JUMP IF INPUT RECORD ACCEPTED                                00 00237
000121 000137 R
000122 045003 A 241 INR DLTD,X ADD 1 TO DELETED RECORD COUNT                            00 00238
000123 001000 A 242 JMP SRT1+1 GO GET NEXT INPUT RECORD                                00 00239
000124 000011 R
000125 045002 A 243 UEX1 INR INST,X ADD 1 TO INSERTED RECORD COUNT                            00 00240
000126 025016 A 244 LDB OUBF,X GET OUTPUT BUFFER ADDRESS PTR                                00 00241
000127 065017 A 245 STB CMBF,X MAKE IT THE CURRENT BUFFER ADDRESS PTR                            00 00242
000130 006403 A 246 BT 03,SR3 IF EOF SWITCH IS ON-GO PUT RECORD IN SORT AREA                00 00243
000131 000040 R
000132 006400 A 247 BT 00,SR3 IF INPUT ACCEPTED GO PUT OUT REC IN SORT AREA            00 00244

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Address	Hex	Op	Label	Op	Description	Page
000133	000040	R				
000134	043003	A	248	INR	DLTD,X	OTHERWISE, ADD 1 TO DELETED RECORD COUNT
000135	001000	A	249	JMP	SR3	AND GO PUT OUT REC IN SORT AREA
000136	000040	R				
000137	043001	A	250	UEX2	INR	ADD 1 TO ACCEPTED INPUT RECORD COUNT
000140	023015	A	251	LDB	INBF,X	GET INPUT BUFFER ADDRESS POINTER
000141	065017	A	252	STB	CMBF,X	MAKE IT CURRENT BUFFER ADDRESS PTR
000142	150441	A	253	ANA	BR0	TURN OFF ACCEPT INPUT SWITCH
000143	055260	A	254	STA	SWCH,X	SAVE THE SWITCH
000144	001000	A	255	JMP	SR3	GO PUT THE INPUT RECORD INTO THE SORT AREA
000145	000040	R				
000146	006030	A	256	EDF	LDXI	GET SORT TABLE AREA
000147	000105	E				
000150	015260	A	257	LDA	SWCH,X	GET SWITCH
000151	006402	A	258	BT	02,*+4	IF NO USER INEXIT GO END SORT PHASE
000152	000155	R				
000153	001000	A	259	JMP	SRDT	
000154	000162	R				
000155	110424	A	260	DRA	BS3	TURN ON EDF SWITCH
000156	055260	A	261	STA	SWCH,X	
000157	005001	A	262	IZA		INDICATE EDF TO USER BY ZERO OPTION CODE
000160	001000	A	263	JMP	USER+1	GO TO USER ROUTINE
000161	000065	R				
000162	006030	A	264	* SRDT	- SORT	PHASE ROUTINE FOR EDF ON SORT INPUT
000163	000147	E	265	SRDT	LDXI	GET SORT CONTROL TABLE
000164	015022	A	266	LDA	SCUR,X	GET CURRENT SORT AREA PTR
000165	145020	A	267	SUB	SBEG,X	IS SORT AREA EMPTY
000166	001010	A	268	JAZ	EDF1	YES, NO PADDING NECESSARY
000167	000256	R				
000170	015127	A	269	LDA	SCOTL+5,X	GET SEQUENCE OF FIRST CONTROL FIELD
000171	005302	A	270	DECR	2	INITIALIZE FOR HIGH VALUES
000172	064052	A	271	STB	SPAD	
000173	001010	A	272	JAZ	EDF2A	GO INSERT PADDING
000174	000200	R				
000175	005002	A	273	IZB		INITIALIZE FOR LOW VALUES
000176	064046	A	274	STB	SPAD	
000177	020420	A	275	LDB	ZFR0	
000200	015031	A	276	EDF2A	LDA	SND1,X
000201	054044	A	277	STA	EDFF	SAVE END OF SORT AREA
000202	006010	A	278	LDAI	SRTC	
000203	000163	E				
000204	006120	A	279	ADDI	SCUR	
000205	000022	A				
000206	005014	A	280	TAX		
000207	035000	A	281	LDX	0,X	
000210	005041	A	282	EDF2	TXA	GET CURRENT SORT AREA PTR
000211	144034	A	283	SUB	EDFF	IS IT AT END OF SORT AREA
000212	001010	A	284	JAZ	EDF5	YES - DONE
000213	000220	R				
000214	065000	A	285	STB	0,X	STORE PAD VALUE
000215	005144	A	286	IXR		
000216	001000	A	287	JMP	EDF2	CONTINUE INSERTING PADDING
000217	000210	R				
000220	006030	A	288	EDF5	LDXI	SRTC
000221	000203	E				
000222	015024	A	289	LDA	MFLH,X	
000223	054023	A	290	STA	EDFR	SAVE MERGE RECORD LENGTH
000224	006010	A	291	LDAI	SRTC	
000225	000221	E				
000226	006120	A	292	ADDI	SCUR	
000227	000022	A				
000230	005010	A	293	TAX		
000231	035000	A	294	LDX	0,X	
000232	024012	A	295	LDB	SPAD	GET FIRST PAD WORD = 077777 OR 0100000
000233	005041	A	296	EDF6	TXA	GET CURRENT SORT AREA PTR
000234	144011	A	297	SUB	EDFF	IS IT AT END OF SORT AREA
000235	001010	A	298	JAZ	EDF3	YES - DONE
000236	000250	R				
000237	065000	A	299	STB	0,X	STORE PAD VALUE
000240	005041	A	300	TXA		
000241	124005	A	301	ADD	EDFR	BUMP TO NEXT MERGE REC
000242	005014	A	302	TAX		
000243	001000	A	303	JMP	EDF6	LOOP
000244	000233	R				
000245	000000	A	304	SPAD	DATA	0
000246	000000	A	305	EDFF	DATA	0
000247	000000	A	306	EDFR	DATA	0
000250	002000	A	307	EDF3	JMPM	CFB0
000251	001001	R				
000252	002000	E	308	JMPM	0SE0	SORT AND WRITE LAST SEQUENCE
000253	001114	R				
000254	006030	A	309	LDXI	SRTC	
000255	000243	E				
000256	015023	A	310	EDF1	LDA	SBEG,X
000257	055022	A	311	STA	SCUR,X	PREPARE TO PAD ENTIRE BUFFER
000260	006020	A	312	LD5I	XSF1	
000261	000000	E				
000262	016001	A	313	LDA	1,B	SEQUENCES ON THE SHORT FILE
000263	006020	A	314	LD5I	XSF2	PLUS
000264	000000	E				
000265	126001	A	315	ADD	1,B	SEQUENCES ON THE LONG FILE
000266	145004	A	316	SUB	SF1B,X	MINUS SEQUENCES REQUIRED



000267	001016	A	317	JANZ	SRDT+6	ADD MORE SEQUENCES IF REQUIRED	E.1*****
000270	000170	R					
000271	015022	A	318	LDA	SCUR,X		00 00307
000272	005311	A	319	DAR			00 00308
000273	055021	A	320	STA	SEND,X	RESET END OF SORT AREA	00 00309
000274	025031	A	321	LDB	SND1,X		00 00310
000275	065022	A	322	STB	SCUR,X	RESET PTR TO SORT EXCHANGE AREA	00 00311
000276	015260	A	323	LDA	SWCH,X	GET SWITCH	E.1*****
000277	006110	A	324	ORAI	040	TURN ON END OF SORT PHASE SWITCH	00 00315
000300	000040	A					
000301	055260	A	325	STA	SWCH,X	SAVE SWITCH	00 00316
000302	006010	A	326	LDAI	XSF1		00 00317
000303	000261	E					
000304	055032	A	327	STA	SFPT,X		00 00318
000305	002000	A	328	CALL	SWRI,0	CHECK STATUS OF LAST SORTFILE1 WRITE	00 00319
000306	000671	R					
000307	000000	A					
000310	006030	A	329	LDXI	SRTC		00 00320
000311	000255	E					
000312	006010	A	330	LDAI	XSF2		00 00321
000313	000264	E					
000314	055032	A	331	STA	SFPT,X		00 00322
000315	002000	A	332	CALL	SWRI,0	CHECK STATUS OF LAST SORTFILE2 WRITE	00 00323
000316	000671	R					
000317	000000	A					
000320	002000	A	333	CALL	S1CLS	CLOSE SORTFILE1	00 00324
000321	000000	E					
000322	002000	A	334	CALL	S2CLS	CLOSE SORTFILE2	00 00325
000323	000000	E					
000324	006030	A	335	LDXI	SRTC		00 00326
000325	000311	E					
000326	015036	A	336	LDA	STM2,X	GET TERM-2 OF FIBONACCI SEQUENCE	00 00327
000327	001010	A	337	JAZ	EDF9	JUMP IF ONLY ONE SEQUENCE	00 00328
000330	000342	R					
000331	006020	A	338	LDBI	XSF1		00 00329
000332	000303	E					
000333	146001	A	339	SUB	1,B	MINUS THE SEQUENCES ON SF1	00 00330
000334	056002	A	340	STA	2,B	STORE NUMBER OF DUMMIES FOR SF1	00 00331
000335	015035	A	341	LDA	STM1,X	GET TERM-1	00 00332
000336	006020	A	342	LDBI	XSF2		00 00333
000337	000313	E					
000340	146001	A	343	SUB	1,B	MINUS THE SEQUENCES ON SF2	00 00334
000341	056002	A	344	STA	2,B	STORE NUMBER OF DUMMIES FOR SF2	00 00335
000342	006020	A	345	LDBI	XSF1		00 00336
000343	000332	E					
000344	016001	A	346	LDA	1,B		00 00337
000345	056004	A	347	STA	4,B	SF1 SHORT FILE SEQ COUNT = SEQ COUNT	00 00338
000346	006020	A	348	LDBI	XSF2		00 00339
000347	000337	E					
000350	016001	A	349	LDA	1,B		00 00340
000351	056003	A	350	STA	3,B		00 00341
000352	025023	A	351	LDB	SNUM,X		00 00342
000353	005001	A	352	TZA			00 00343
000354	175014	A	353	DIV	SPNT,X		00 00344
000355	005021	A	354	TBA			00 00345
000356	006020	A	355	LDBI	XSF1		00 00346
000357	000343	E					
000360	056006	A	356	STA	6,B	SF1 BLKS/SHORT SEQ = BLKS/SORTAREA	00 00347
000361	006020	A	357	LDBI	XSF2		00 00348
000362	000347	E					
000363	056005	A	358	STA	5,B		00 00349
000364	015001	A	359	LDA	ACCP,X	GET ACCEPTED RECORD COUNT	00 00350
000365	125002	A	360	ADD	INST,X	PLUS INSERTED RECORD COUNT	00 00351
000366	055012	A	361	STA	SOUT,X	SAVE FOR MERGE TOTALS	00 00352
000367	054002	A	362	STA	*+3	SAVE AS PARAMETER	00 00353
000370	002000	A	363	CALL	RTDA,0	CONVERT TO ASCII	00 00354
000371	000000	E					
000372	000000	A					
000373	064004	A	364	STB	EDM1+4	SAVE AS SOURCE WORD	00 00355
000374	002000	A	365	CALL	MOVE,MSG1+22,0,0,0,5	MOVE COUNT TO MESSAGE	00 00356
000375	000000	E					
000376	000531	R					
000377	000000	A					
000400	000000	A					
000401	000000	A					
000402	000005	A					
000403	002000	A	366	CALL	CLR5	CLEAR THE LIST OUTPUT BUFFER	00 00357
000404	000000	E					
000405	002000	A	367	CALL	MOVE,LUSB,0,MSG1,0,50	MOVE MSG1 TO BUFFER	00 00358
000406	000375	E					
000407	000000	E					
000410	000000	A					
000411	000503	R					
000412	000000	A					
000413	000062	A	368	WRITE	LUS,5,0,1	WRITE MESSAGE 1	00 00359
000414	006505	A					
000415	000404	A					
000416	100000	A					
000417	010403	A					
000420	000000	E					
000421	000000	A					
000422	000000	A					



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000423 006010 A 369 LDAI SRTC 00 00360
000424 000325 E
000425 006120 A 370 ADDI INPT 00 00361
000426 000000 A
000427 005014 A 371 TAX GET PTR TO FIRST TOTAL 00 00362
000430 054050 A 372 STA EDS1 00 00363
000431 120423 A 373 ADD FOUR 4 TOTALS 00 00364
000432 054047 A 374 STA EDS5 00 00365
000433 014012 A 375 EDF4 LDA EDM3+2 00 00366
000434 120424 A 376 ADD EIGHT BUMP MOVE TGT TO NEXT TOTAL 00 00367
000435 054010 A 377 STA EDM3+2 00 00368
000436 015000 A 378 LDA O,X GET BINARY TOTAL 00 00369
000437 054002 A 379 STA *+3 00 00370
000440 002000 A 380 CALL BTDA,0 CONVERT TO ASCII 00 00371
000441 000371 E
000442 000000 A
000443 064004 A 381 STB EDM3+4 00 00372
000444 002000 A 382 EDM3 CALL MOVE,MSG2-4,0,0,0,5 MOVE TO MSG2 00 00373
000445 000406 E
000446 000530 R
000447 000000 A
000450 000000 A
000451 000000 A
000452 000005 A
000453 044025 A 383 INR EDS1 BUMP PTR TO TOTAL 00 00374
000454 034024 A 384 LDX EDS1 00 00375
000455 005041 A 385 TXA 00 00376
000456 144023 A 386 SUB EDS5 00 00377
000457 001004 A 387 JAN EDF4 IF NOT DONE - GO MOVE NEXT TOTAL 00 00378
000460 000433 R
000461 002000 A 388 CALL MOVE,LU5B,0,MSG2,0,62 MOVE MSG2 TO BUFFER 00 00379
000462 000445 E
000463 000407 E
000464 000000 A
000465 000534 R
000466 000000 A
000467 000076 A 389 WRITE LU5,5,0,1 WRITE MESSAGE 2 00 00380
000470 006505 A
000471 000404 A
000472 100000 A
000473 010405 A
000474 000420 E
000475 000000 A
000476 000000 A
000477 001000 A 390 JMP* SRT1 RETURN 00 00381
000500 100010 R
000501 000000 A 391 EDS1 DATA 0 00 00382
000502 000000 A 392 EDS5 DATA 0 00 00383
000503 120240 A 393 MSG1 DATA * SORT PHASE COMPLETE, TOTAL MERGE RECORDS= XXXXX * 00 00384
000504 151717 A
000505 151324 A
000506 120320 A
000507 144301 A
000510 151703 A
000511 120303 A
000512 147715 A
000513 150314 A
000514 142724 A
000515 142654 A
000516 120324 A
000517 147724 A
000520 140714 A
000521 120315 A
000522 142722 A
000523 143703 A
000524 120322 A
000525 142703 A
000526 147722 A
000527 142323 A
000530 136640 A
000531 154330 A
000532 154330 A
000533 154240 A
000534 120240 A 394 MSG2 DATA * INPUT=XXXXX ACCEPTED=XXXXX * 00 00385
000535 144716 A
000536 150325 A
000537 152275 A
000540 154330 A
000541 154330 A
000542 154240 A
000543 120301 A
000544 141703 A
000545 142703 A
000546 152305 A
000547 142275 A
000550 154330 A
000551 154330 A
000552 154240 A
000553 120311 A 395 DATA * INSERTED=XXXXX DELETED= XXXXX * 00 00386
000554 147323 A
000555 142703 A
000556 152305 A

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000557 142275 A  
 000560 154330 A  
 000561 154330 A  
 000562 154240 A  
 000563 120304 A  
 000564 142714 A  
 000565 142724 A  
 000566 142704 A  
 000567 136640 A  
 000570 154330 A  
 000571 154330 A  
 000572 154240 A

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396      EJECT                                00 00387
397 *****
398 *
399 * SMOV - SORT PHASE ROUTINE TO BUILD WORK RECORD IN SORT AREA      00 00389
400 *
401 * SMOV BUILDS THE FOLLOWING WORK RECORD FROM THE INPUT RECORD:    00 00392
402 *   CONCATENATED SORT CONTROL FIELDS FOLLOWED BY                00 00393
403 *   INPUT RELATIVE REC NO (TAG SORT) OR ENTIRE INPUT RECORD      00 00394
404 *
405 *   CALLING SEQUENCE:  CALL SMOV                                00 00396
406 *   CALLED BY:        SRT1                                     00 00397
407 *   CALLS:           MOVE                                       00 00398
408 *
409 *****
000573 000000 A 410 SMOV  ENTR                                00 00400
000574 006030 A 411      LDXI   SRTC   GET SORT TABLE AREA          00 00402
000575 000424 E
000576 015043 A 412      LDA    CTLC,X   GET NUMBER OF CONTROL FIELDS  00 00403
000577 055042 A 413      STA    LCNT,X   STORE IN LOOP CONTROL COUNTER  00 00404
000600 015040 A 414      LDA    CTLP,X   GET PTR TO CONTROL FIELD TABLE  00 00405
000601 055041 A 415      STA    CTLP,X   STORE AS CONTROL FIELD TABLE PTR  00 00406
000602 015044 A 416      LDA    CKEY,X   GET TARGET WD DISPLACEMENT      00 00407
000603 055045 A 417      STA    CKE1,X   GET TARGET BYTE DISPLACEMENT      00 00408
000604 006015 A 418 SMD1  LDAE*  CTLP,X   GET TARGET WORD DISPLACEMENT      00 00409
000605 100041 A
000606 125022 A 419      ADD    SCUR,X   PLUS CURRENT SORT AREA PTR      00 00410
000607 054025 A 420      STA    MP1+2   STORE IN MOVE PARAMETER        00 00411
000610 045041 A 421      INR    CTLP,X   INCR CONTROL WORD PTR BY 1          00 00412
000611 006015 A 422      LDAE*  CTLP,X   GET TARGET BYTE DISPLACEMENT      00 00413
000612 100041 A
000613 054022 A 423      STA    MP1+3   STORE IN MOVE PARAMETER        00 00414
000614 045041 A 424      INR    CTLP,X   INCR CONTROL WORD PTR BY 1          00 00415
000615 006015 A 425      LDAE*  CTLP,X   GET SOURCE WORD DISPLACEMENT      00 00416
000616 100041 A
000617 006125 A 426      ADDE*  CKE1,X   PLUS START OF SOURCE REC OR REL BLK    00 00417
000620 100045 A
000621 054015 A 427      STA    MP1+4   STORE IN MOVE PARAMETER        00 00418
000622 045041 A 428      INR    CTLP,X   INCR CONTROL WORD PTR BY 1          00 00419
000623 006015 A 429      LDAE*  CTLP,X   GET SOURCE BYTE DISPLACEMENT      00 00420
000624 100041 A
000625 054012 A 430      STA    MP1+5   STORE IN MOVE PARAMETER        00 00421
000626 045041 A 431      INR    CTLP,X   INCR CONTROL WORD PTR BY 1          00 00422
000627 006015 A 432      LDAE*  CTLP,X   GET NUMBER OF BYTES                    00 00423
000630 100041 A
000631 054007 A 433      STA    MP1+6   STORE IN MOVE PARAMETER        00 00424
000632 045041 A 434      INR    CTLP,X   INCR CONTROL WORD PTR BY 1          00 00425
000633 002000 A 435 MP1  CALL    MOVE,1,2,3,4,5  MOVE A CONTROL FIELD      00 00426
000634 000462 E
000635 000001 A
000636 000002 A
000637 000003 A
000640 000004 A
000641 000005 A
000642 006030 A 436      LDXI   SRTC   GET SORT TABLE AREA          00 00427
000643 000575 E
000644 015042 A 437      LDA    LCNT,X   GET CONTROL FIELD COUNT              00 00428
000645 001010 A 438      JAZ    SMD2   THATS ALL                                00 00429
000646 000667 R
000647 005311 A 439      BAR    MINUS 1
000650 055042 A 440      STA    LCNT,X   SAVE IT
000651 001016 A 441      JANZ   SMD1   GO PROCESS NEXT CONTROL FIELD      00 00430
000652 000604 R
000653 015260 A 442      LDA    SWCH,X   GET SWITCH
000654 006404 A 443      BT     04,KEYW  ITS A KEYWORD SORT
000655 000660 R
000656 001000 A 444      JMP    SMD1   GET RECORD
000657 000604 A
000660 006010 A 445 KEYW  LDAI   SRTC   GET SORT TABLE POINTER
000661 000643 E
000662 006120 A 446      ADDI   CKE2   ADD DISPL. TO REL RCD PNTR
000663 000046 A
000664 055045 A 447      STA    CKE1,X   STORE IN SOURCE PTR CELL
000665 001000 A 448      JMP    SMD1   MOVE REL REC NUMBER
000666 000604 A
000667 001000 A 449 SMD2  RETU*  SMOV   RETURN TO CALLING PROG
000670 100573 R
450      EJECT                                00 00441
451 *****
452 *
453 * SWRI - SORT PHASE SEQUENCE WRITE ROUTINE
454 *

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455 * SWRI CHECKS THE STATUS OF THE CURRENT OUTPUT FILE 00 00446
456 * AND IF IT IS ERROR, EOF OR EOD, ABORTS THE JOB 00 00447
457 * IF THE END-OF-SORT-PHASE SWITCH IS OFF, 00 00448
458 * SWRI WRITES THE CURRENT OUTPUT FILE FROM THE SPECIFIED BUFFER 00 00449
459 * 00 00450
460 * CALLING SEQUENCE: CALL SWRI,OUTPUTBUFFERADDRESS 00 00451
461 * CALLED BY: SRT1,SSEQ 00 00452
462 * CALLS: MOVE, SRTC I/O ROUTINES 00 00453
463 ***** 00 00454
000671 000000 A 464 SWRI ENTR 00 00455
000672 006030 A 465 LDXI SRTC GET SORT CONTROL TABLE 00 00456
000673 000661 E
000674 006015 A 466 LDAE* SFPT,X GET CURRENT OUTPUT FILE PTR 00 00457
000675 100032 A
000676 006120 A 467 ADDI 20 00 00458
000677 000024 A
000700 005012 A 468 TAB 00 00459
000701 054002 A 469 STA *+3 STORE IN STAT MACRO 00 00460
470 STAT 0,SWER,SWER7,SWER7,SWER 00 00461

000702 006505 A
000703 000373 A
000704 000000 A
000705 000735 R
000706 000732 R
000707 000732 R
000710 000735 R
000711 006000 A 471 LDXI SRTC 00 00462
000712 000673 E
000713 015260 A 472 LDA SWCH,X 00 00463
000714 006405 A 473 BT 05,SWRT IF END OF SORT PHASE RETURN 00 00464
000715 000726 R
000716 006017 A 474 LDAE* SWRI GET OUTPUT BUFFER ADDRESS 00 00465
000717 100671 R
000720 036004 A 475 LDX 4,B GET THE FCB ADDRESS 00 00466
000721 055001 A 476 STA 1,X STORE BUFFER ADDRESS IN FCB 00 00467
000722 005322 A 477 DBF 00 00468
000723 064001 A 478 STB *+2 STORE IN JUMP 00 00469
000724 002000 A 479 JUMP 0 ISSUE THE WRITE 00 00470
000725 000000 A
000726 006047 A 480 SWRT INRE SWRI COMPUTE RETURN 00 00471
000727 000671 R
000730 001000 A 481 JMP* SWRI RETURN 00 00472
000731 100671 R
000732 006010 A 482 SWER7 LDAI '07' 00 00473
000733 130267 A
000734 054007 A 483 STA ERR06+2 CHANGE ERR MSG TO ST07 FOR WRITE PAST EOF 00 00474
000735 006000 A 484 SWER LDXI SRTC 00 00475
000736 000712 E
000737 006013 A 485 LDAE* SFPT,X GET PTR TO I/O MACROS 00 00476
000740 100032 A
000741 120423 A 486 ADD FOUR 00 00477
000742 005012 A 487 TAB 00 00478
000743 016000 A 488 LDA 0,B GET PTR TO FCB 00 00479
489 * WITH PTR TO FCB IN A REG 00 00480
000744 120467 A 490 ERR6 ADD SEVEN 00 00481
000745 054004 A 491 STA ERRMV+4 STORE AS SOURCE 00 00482
000746 002000 A 492 ERRMV CALL MOVE,ERR06+4,0,0,0,6 MOVE FILENAME TO ERROR MSG 00 00483
000747 000634 E
000750 000776 R
000751 000000 A
000752 000000 A
000753 000000 A
000754 000006 A
493 WRITE ERRMSG,5,0,1 WRITE ERROR MSG 00 00484

000755 006505 A
000756 000404 A
000757 100000 A
000760 010405 A
000761 000767 R
000762 000000 A
000763 000000 A
494 EXIT END THE SORT 00 00485

000764 006505 A
000765 000405 A
000766 000200 A
495 ERRMSG DOB 7,ERR06,0 00 00486

000767 000007 A
000770 000772 R
000771 000000 A
000772 120240 A 496 ERR06 DATA ' ST06,' 00 00487
000773 151721 A
000774 130266 A
000775 126240 A
000776 120240 A
000777 120240 A
001000 120240 A
497 EJECT 00 00488
498 ***** 00 00489
499 * 00 00490
500 * SF80 - SORT PHASE SEQUENCE COMPUTATION ROUTINE 00 00491
501 * 00 00492
502 * SF80 COMPUTES WHICH OF THE TWO SORT WORK FILES IS TO BE THE 00 00493
503 * NEXT OUTPUT FILE FOR A SORTED SEQUENCE AND KEEPS A RUNNING 00 00494

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504 * TOTAL OF THE NUMBER OF SEQUENCES 00 00495
505 * 00 00496
506 * A FIBONACCI SEQUENCE IS USED TO SELECT THE FILE. 00 00497
507 * THE SEQUENCE IS INITIALIZED TO 00 00498
508 * TERM-2 = 0 00 00499
509 * TERM-1 = 1 00 00500
510 * TERM = 1 00 00501
511 * WORKFILE1 IS THE FIRST FILE SELECTED. 00 00502
512 * TERM IS THE TOTAL COUNT OF SORTED BLOCKS (SEQUENCES) 00 00503
513 * WRITTEN TO WORKFILES BEFORE THE NEXT TERM IS COMPUTED BY 00 00504
514 * TERM-2 = TERM-1 00 00505
515 * TERM-1 = TERM 00 00506
516 * TERM = TERM-1 + TERM-2 00 00507
517 * TERM-2 IS THE TOTAL COUNT OF SEQUENCES WRITTEN TO WORKFILE1 00 00508
518 * BEFORE WORKFILE2 IS SELECTED. 00 00509
519 * 00 00510
520 * CALLING SEQUENCE: CALL SFB0 00 00511
521 * CALLED BY: SRT1 00 00512
522 * 00 00513
523 ***** 00 00514
001001 000000 A 524 SFB0 ENTR 00 00515
001002 006030 A 525 LDXI SRTC GET SORT CONTROL TABLE 00 00516
001003 000736 E
001004 015033 A 526 LDA STOT,X GET TOTAL NUMBER OF SEQUENCES WRITTEN 00 00517
001005 001010 A 527 JAZ SFB1 IF 0, INITIALIZE 00 00518
001006 001026 R
001007 045033 A 528 INR STOT,X INCREMENT TOTAL SEQUENCE COUNT 00 00519
001008 015033 A 529 SFB3 LDA STOT,X GET NEW COUNT 00 00520
001009 145034 A 530 SUB SFIB,X MINUS FIBONACCI NUMBER 00 00521
001010 001010 A 531 JAZ SFB2 IF ZERO OR NEGATIVE 00 00522
001011 001036 R
001012 001004 A 532 JAN SFB2 FIBONACCI NUMBER IS OK 00 00523
001013 001036 R
001014 001004 A
001015 001036 R
001016 015035 A 533 LDA STM1,X MOVE TERM -1 TO 00 00524
001017 055036 A 534 STA STM2,X TERM-2 00 00525
001018 015034 A 535 LDA SFIB,X MOVE FIBONACCI NUMBER 00 00526
001019 055035 A 536 STA STM1,X TO TERM-1 00 00527
001020 125036 A 537 ADD STM2,X COMPUTE NEW FIBONACCI 00 00528
001021 055034 A 538 STA SFIB,X NUMBER 00 00529
001022 001000 A 539 JMP SFB3 00 00530
001023 001010 R
001024 005101 A 540 SFB1 INCR 1 MAKE FIBONACCI 00 00531
001025 055034 A 541 STA SFIB,X NUMBER A 1 00 00532
001026 055035 A 542 STA STM1,X MAKE TERM-1 A 1 00 00533
001027 005001 A 543 TZA 00 00534
001028 055036 A 544 STA STM2,X MAKE TERM-2 A 0 00 00535
001029 045033 A 545 INR STOT,X ADD 1 TO TOTAL SEQUENCE COUNT 00 00536
001030 001000 A 546 JMP SFB4 INITIALIZE TO WRITE SEQ TO SF1 00 00537
001031 001042 R
001032 015226 A 547 SFB2 LDA S110+1,X GET SEQUENCE COUNT FOR SF1 00 00538
001033 145036 A 548 SUB STM2,X MINUS TERM-2 00 00539
001034 001002 A 549 JAZ SFB5 IF SEQ CNT SF1 GE TERM-2, SET UP WRITE SF2 00 00540
001035 001050 R
001036 006020 A 550 SFB4 LDBI XSF1 GET PTR FOR SF1 00 00541
001037 000357 E
001038 065032 A 551 STB SFPT,X MAKE IT NEXT WRITE FILE 00 00542
001039 046001 A 552 INR 1,B INCR SEQUENCE COUNT FOR SF1 00 00543
001040 001000 A 553 JMP* SFB0 RETURN 00 00544
001041 101001 R
001042 006020 A 554 SFB5 LDBI XSF2 GET PTR FOR SF2 00 00545
001043 000362 E
001044 065032 A 555 STB SFPT,X MAKE IT NEXT WRITE FILE 00 00546
001045 046001 A 556 INR 1,B INCR SEQUENCE COUNT FOR SF2 00 00547
001046 001000 A 557 JMP* SFB0 RETURN 00 00548
001047 101001 R
001048 006505 A 558 EJEC 00 00549
001049 000373 A 559 ***** 00 00550
001050 000000 E 560 * 00 00551
001051 006010 A 561 * SRID - SORT PHASE INPUT FILE READ ROUTINE 00 00552
001052 001060 E 562 * 00 00553
001053 005111 A 563 * CALLING SEQUENCE: CALL SRID,RETURNCODE 00 00554
001054 054002 A 564 * WHERE RETURNCODE = -1 I/O ERROR 00 00555
001055 006505 A 565 * 0 NORMAL RETURN 00 00556
001056 000373 A 566 * +1 EOF 00 00557
001057 000000 E 567 * CALLED BY: SRT1 00 00558
001058 001106 R 568 * CALLS: SRTC I/O MACROS 00 00559
001059 001111 R 569 * 00 00560
001060 001106 R 570 ***** 00 00561
001061 001106 R 571 SRID ENTR 00 00562
001062 001106 R 572 CALL IFRD READ SORT INPUT 00 00563
001063 001106 R
001064 001106 R 573 LDAI IFRD 00 00564
001065 001106 R
001066 001106 R 574 IAR 00 00565
001067 001106 R 575 STA *+3 00 00566
001068 001106 R 576 STAT 0,SR12,SR13,SR13,SR12 00 00567
001069 001106 R
001070 001106 R
001071 001106 R
001072 001106 R
001073 001106 R

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001074 006030 A 577 LDXI SRTC 00 00568
001075 001003 E
001076 045047 A 578 INR CKE3,X INCREMENT INPUT RECORD NUMBER 00 00569
001077 005001 A 579 TZA NORMAL RETURN CODE = 0 00 00570
001100 006057 A 580 SRI1 STAE* SRID 00 00571
001101 101056 R
001102 006047 A 581 INRE SRID 00 00572
001103 001056 R
001104 001000 A 582 JMP* SRID RETURN 00 00573
001105 101056 R
001106 005301 A 583 SRI2 DECR 1 ERROR RETURN CODE = -1 00 00574
001107 001000 A 584 JMP SRI1 00 00575
001110 001100 R
001111 005101 A 585 SRI3 INCR 1 EOF RETURN CODE = +1 00 00576
001112 001000 A 586 JMP SRI1 00 00577
001113 001100 R
587 EJEC 00 00578
588 ***** 00 00579
589 * 00 00580
590 * SSEQ - SORT PHASE SEQUENCE SORT ROUTINE 00 00581
591 * 00 00582
592 * SSEQ PUTS THE RECORDS IN THE SORT WORK AREA IN ORDER 00 00583
593 * AND WRITES THE SORTED SEQUENCE (ONE OR MORE BLOCKS) 00 00584
594 * 00 00585
595 * SSEQ IS A STRAIGHT SELECTION SORT - SEARCH FOR LOWEST RECORD 00 00586
596 * AND EXCHANGE IT WITH THE FIRST RECORD IN THE SORTAREA, 00 00587
597 * REPEAT, SELECTING THE RECORD WITH THE NEXT LOWEST KEY EACH TIME 00 00588
598 * UNTIL THE ENTIRE SORTAREA IS SORTED. 00 00589
599 * WHEN ONE BLOCK OF RECORDS HAS BEEN SORTED, WRITE IT 00 00590
600 * AND CONTINUE SORTING. 00 00591
601 * WHEN ONLY ONE RECORD IS LEFT TO SORT, WRITE THE LAST BLOCK 00 00592
602 * AND RETURN. 00 00593
603 * 00 00594
604 * SSEQ REQUIRES N(N-1)/2 KEY COMPARISONS AND AT MOST N-1 00 00595
605 * RECORD EXCHANGES TO SORT N RECORDS. 00 00596
606 * 00 00597
607 * CALLING SEQUENCE: CALL SSEQ 00 00598
608 * CALLED BY: SRT1 00 00599
609 * CALLS: COMP, MOVE, SRI1 00 00600
610 * 00 00601
611 ***** 00 00602
001114 000000 A 612 SSEQ ENTR 00 00603
001115 006030 A 613 LDXI SRTC GET SORT CONTROL TABLE 00 00604
001116 001075 E
001117 005001 A 614 TZA 00 00605
001120 055013 A 615 STA SPCT,X 00 00606
001121 015020 A 616 LDA SBEG,X GET START OF SORT AREA 00 00607
001122 054243 A 617 STA SSBF SAVE AS BUFFER PTR 00 00608
001123 145024 A 618 SUB MFLH,X MINUS SORT RECORD LENGTH 00 00609
001124 055025 A 619 STA SWK1,X STORE IN SORT WORK 1 00 00610
001125 015025 A 620 SSI LDA SWK1,X GET SORT WORK 1 00 00611
001126 125024 A 621 ADD MFLH,X 00 00612
001127 055025 A 622 STA SWK1,X 00 00613
001130 054234 A 623 STA SSLO SAVE SORT WORK 1 AS LOW RECORD 00 00614
001131 125024 A 624 ADD MFLH,X PLUS SORT RECORD LENGTH 00 00615
001132 055026 A 625 STA SWK2,X STORE IN SORT WORK 2 00 00616
001133 145021 A 626 SUB SEND,X SEE IF SWK2 IS GT SORT END 00 00617
001134 001002 A 627 JAP SS10 IF SO, SORT IS COMPLETE 00 00618
001135 001352 P
001136 015030 A 628 SS2 LDA NOTL,X GET NUMBER OF CONTROL FIELDS IN A 00 00619
001137 055027 A 629 STA SWK3,X SAVE IN SORT WORK 3 00 00620
001140 015027 A 630 SS3 LDA SWK3,X GET NUMBER OF CONTROL FIELDS 00 00621
001141 005311 A 631 DRR MINUS 1 00 00622
001142 055027 A 632 STA SWK3,X SAVE SORT LOOP CONTROL FIELD CONTROL 00 00623
001143 001004 A 633 JAR SS6 CONTROL FIELDS EQUAL, CONTINUE 00 00624
001144 001200 R
001145 015113 A 634 LDA SCPT,X GET SORT CONTROL FLD TABLE PTR 00 00625
001146 125027 A 635 ADD SWK3,X ADD CTL FIELD COUNTER 00 00626
001147 120466 A 636 ADD SIX 00 00627
001150 145030 A 637 SUB NOTL,X 00 00628
001151 005012 A 638 TAB PUT PARAM LIST PTR IN B REG 00 00629
001152 028000 A 639 LBB 0,B 00 00630
001153 016000 A 640 LIA 0,B GET TARGET WD DISPLACEMENT 00 00631
001154 124210 A 641 ADD SSLO 00 00632
001155 054017 A 642 STA SS4+2 00 00633
001156 016001 A 643 LDA 1,B GET TARGET BYTE DISPLACEMENT 00 00634
001157 054016 A 644 STA SS4+3 00 00635
001160 016002 A 645 LDA 2,B GET SOURCE WD DISPLACEMENT 00 00636
001161 125026 A 646 ADD SWK2,X 00 00637
001162 054014 A 647 STA SS4+4 00 00638
001163 016003 A 648 LDA 3,B GET SOURCE BYTE DISPLACEMENT 00 00639
001164 054013 A 649 STA SS4+5 00 00640
001165 016004 A 650 LDA 4,B GET NUMBER OF BYTES 00 00641
001166 054012 A 651 STA SS4+6 00 00642
001167 016005 A 652 LDA 5,B GET RESULT INDICATOR 00 00643
001170 054011 A 653 STA SS4+7 00 00644
001171 016006 A 654 LDA 6,B 00 00645
001172 054010 A 655 STA SS4+8 00 00646
001173 002000 A 656 SS4 CALL COMP,1,2,3,4,5,6,7 COMPARE THE CONTROL FIELDS 00 00647
001174 000000 E
001175 000001 A
001176 000002 A
001177 000003 A

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001200	000004	A							
001201	000005	A							
001202	000006	A							
001203	000007	A							
001204	006030	A	657	LDXI	SRTC	GET SORT CONTROL TABLE		00	00648
001205	001116	E							
001206	006017	A	658	LDAE	SS4+8			00	00649
001207	001203	R							
001210	001010	A	659	JAZ	SS3	JUMP IF EQUAL		00	00650
001211	001140	R							
001212	001004	A	660	JAN	SS5	JUMP IF SWK1 LT SWK2		00	00651
001213	001222	R							
001214	006017	A	661	LDAE	SS4+7	SWK1 GT SWK2 - GET SEQUENCE INDICATOR		00	00652
001215	001202	R							
001216	001010	A	662	JAZ	SS11	ASCENDING SEQUENCE, EXCHANGE		00	00653
001217	001240	R							
001220	001000	A	663	JMP	SS6	DESCENDING SEQUENCE, OK		00	00654
001221	001230	R							
001222	006017	A	664	SS5	LDAE	SS4+7	SWK1 LT SWK2 - GET SEQUENCE INDICATOR	00	00655
001223	001202	R							
001224	001010	A	665	JAZ	SS6	IF ASCENDING SEQUENCE, NO EXCHANGE NECESSARY	00	00656	
001225	001230	R							
001226	001000	A	666	JMP	SS11	EXCHANGE REQUIRED		E.1*****	
001227	001240	R							
001230	015026	A	667	SS6	LDA	SWK2,X	GET SWK2 LOCATION	00	00659
001231	125024	A	668	ADD	MFLH,X	ADD SORT RECORD LENGTH		00	00660
001232	055026	A	669	STA	SWK2,X			00	00661
001233	145021	A	670	SUB	SEND,X	MINUS END OF SORT AREA		00	00662
001234	001002	A	671	JAP	SS13	YES, GET READY FOR NEXT PASS		E.1*****	
001235	001330	R							
001236	001000	A	672	JMP	SS2	NO,CHECK FOR WRITE		00	00664
001237	001136	R							
001240	015031	A	673	SS11	LDA	SSD1,X	GET RECORD WORK AREA	E.1*****	
001241	054011	A	674	STA	SS7+2			00	00669
001242	015025	A	675	LDA	SWK1,X	GET SOURCE RECORD		00	00670
001243	054011	A	676	STA	SS7+4			00	00671
001244	015007	A	677	LDA	SLGH,X	GET SORT RECORD SIZE		00	00672
001245	054011	A	678	STA	SS7+6			00	00673
001246	005001	A	679	TZA				00	00674
001247	054004	A	680	STA	SS7+3			00	00675
001250	054005	A	681	STA	SS7+5			00	00676
001251	002000	A	682	SS7	CALL	MOVE,1,0,3,0,5	MOVE SWK1 REC TO SAVE AREA	00	00677
001252	000747	E							
001253	000001	A							
001254	000000	A							
001255	000003	A							
001256	000000	A							
001257	000005	A							
001260	006030	A	683	LDXI	SRTC	GET CONTROL TABLE		00	00678
001261	001203	E							
001262	015025	A	684	LDA	SWK1,X	GET TARGET RECORD		00	00679
001263	054011	A	685	STA	SS8+2			00	00680
001264	015026	A	686	LDA	SWK2,X	GET SOURCE RECORD		E.1*****	
001265	054011	A	687	STA	SS8+4			00	00682
001266	015007	A	688	LDA	SLGH,X	GET SORT RECORD LENGTH		00	00683
001267	054011	A	689	STA	SS8+6			00	00684
001270	005001	A	690	TZA				00	00685
001271	054004	A	691	STA	SS8+3			00	00686
001272	054005	A	692	STA	SS8+5			00	00687
001273	002000	A	693	SS8	CALL	MOVE,1,0,3,0,5	MOVE SSLO REC TO SWK1 REC AREA	00	00688
001274	001252	E							
001275	000001	A							
001276	000000	A							
001277	000003	A							
001300	000000	A							
001301	000005	A							
001302	006030	A	694	LDXI	SRTC	GET SORT CONTROL TABLE		00	00689
001303	001261	E							
001304	015026	A	695	LDA	SWK2,X	GET TARGET RECORD		E.1*****	
001305	054011	A	696	STA	SS9+2			00	00691
001306	015031	A	697	LDA	SSD1,X	GET WORK AREA AS SOURCE		00	00692
001307	054011	A	698	STA	SS9+4			00	00693
001310	015007	A	699	LDA	SLGH,X	GET SORT RECORD LENGTH		00	00694
001311	054011	A	700	STA	SS9+6			00	00695
001312	005001	A	701	TZA				00	00696
001313	054004	A	702	STA	SS9+3			00	00697
001314	054005	A	703	STA	SS9+5			00	00698
001315	002000	A	704	SS9	CALL	MOVE,1,0,3,0,5	MOVE SWK1 RECORD TO SSLO RECORD AREA	00	00699
001316	001274	E							
001317	000001	A							
001320	000000	A							
001321	000003	A							
001322	000000	A							
001323	000005	A							
001324	006030	A	705	LDXI	SRTC	GET SORT CONTROL TABLE		00	00700
001325	001303	E							
001326	001000	A	706	JMP	SS6			E.1*****	
001327	001230	R							
001330	045013	A	707	SS13	INR	SPCT,X	INCR SORT PASS COUNT	00	00701
001331	015013	A	708	LDA	SPCT,X	GET SORT PASS COUNT		00	00702
001332	145014	A	709	SUB	SPWT,X	MINUS MERGE ELCKING FACTOR		00	00703
001333	001016	A	710	JANZ	SS1	IF NOT TIME TO WRITE, MAKE NEXT PASS		00	00704
001334	001125	R							



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001335 005001 A 711 TZA
001336 055013 A 712 STA SPCT,X ZERO SORT PASS COUNT
001337 014026 A 713 LDA SSBF GET BUFFER PTR
001340 054004 A 714 STA SS14+2 STORE BUFFER PTR IN CALL
001341 125010 A 715 ADD SBLK,X
001342 054023 A 716 STA SSBF SAVE NEXT BUFFER PTR
001343 002000 A 717 SS14 CALL SWRI,0 WRITE THE MERGE BLOCK
001344 000671 R
001345 000000 A
001346 006030 A 718 LDXI SRTC
001347 001325 E
001350 001000 A 719 JMP SS1
001351 001125 R
001352 014013 A 720 SS10 LDA SSBF
001353 054002 A 721 STA *+3
001354 002000 A 722 CALL SWRI,0
001355 000671 R
001356 000000 A
001357 006030 A 723 LDXI SRTC
001360 001347 E
001361 015020 A 724 LDA SBEG,X
001362 055022 A 725 STA SCUR,X
001363 001000 A 726 JMP* SSEQ
001364 101114 R
001365 000000 A 727 SSLO DATA 0 PTR TO LOW RECORD
001366 000000 A 728 SSBF DATA 0 PTR TO NEXT WRITE BUFFER
729 EJEC
730 *****
731 *
732 * SORT PHASE WORK AREA STARTS HERE
733 *
734 *****
735 *
736 * INITIALIZATION PHASE ROUTINES
737 *
738 * SINI - INITIALIZATION PHASE PRIMARY CONTROL
739 *
740 *****
001367 000000 A 741 SINI ENTR
001370 002000 A 742 CALL FORMOD CHECK FOR FOREGROUND MODIFICATIONS F *****
001371 006113 R 743 DSCF OPEN SIFCB,SI,0,1 F *****
001372 006505 A
001373 000404 A
001374 100000 A
001375 013002 A
001376 000000 E
001377 000000 A
001400 000000 A
001401 006017 A 744 SIMO LDAE SICB RECORD LENGTH F *****
001402 004740 R 745 STA LINK+4
001403 054007 A 746 LDAE SICB+1 BUFFER LOCATION E.1*****
001404 006017 A 747 LINK STA LINK+3 E.1*****
001406 054003 A 748 LINK LDLINK SI,0,0 E.1*****
001407 006505 A
001410 000406 A
001411 001402 A
001412 000000 A
001413 000000 A
749 RSCR READ SIFCB,SI,0,1 READ A SORT CONTROL RECORD E.1*****
001414 006505 A
001415 000404 A
001416 100000 A
001417 010002 A
001420 001376 E
001421 000000 A
001422 000000 A
750 STAT *-7,SRET1,S12A,S12A,SRET1 00 00737
001423 006505 A
001424 000373 A
001425 001416 R
001426 002566 R
001427 001547 R
001430 001547 R
001431 002566 R
001432 006030 A 751 LDXI SICB 00 00738
001433 004740 R
001434 025001 A 752 LDB 1,X 00 00739
001435 005022 A 753 DBR 00 00740
001436 065001 A 754 STB 1,X STORE BUFFER-1 PTR
001437 006017 A 755 LDAE PSCR+5 GET NUMBER OF WORDS READ E.1*****
001440 001421 R
001441 005111 A 756 IAR PLUS 1 00 00743
001442 055000 A 757 STA 0,X 00 00744
001443 016000 A 758 LDA 0,B SAVE 7LD WORD AT BUFFER-1 00 00745
001444 006030 A 759 LDXI ' 00 00746
001445 120200 A
001446 076000 A 760 STX 0,B REPLACE WITH BLANKS 00 00747
001447 006505 A 761 WRITE SICB,LD,0,1 WRITE THE CONTROL RECORD ON LD 00 00748
001450 000404 A

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001451	100000	A							
001452	010405	A							
001453	004740	R							
001454	000000	A							
001455	000000	A	762	STAT	*-7,SRET1,SRET1,SRET1,SRET1			00	00749
001456	006505	A							
001457	000373	A							
001460	001447	R							
001461	002566	R							
001462	002566	R							
001463	002566	R							
001464	002566	R							
001465	056000	A	763	STA	0,B	RESTORE BLANKED WORD		00	00750
001466	006010	A	764	LDAI	40			00	00751
001467	000050	A							
001470	006057	A	765	STAE	SICB	RESTORE RECORD LENGTH		00	00752
001471	004740	R							
001472	006017	A	766	LDAE	SCHE	GET PREVIOUS CONTROL AREA END		00	00753
001473	004705	R							
001474	006127	A	767	ADDE	RSCR+5	PLUS NUMBER OF WORDS READ		E.1	*****
001475	001421	R							
001476	005111	A	768	IAR		PLUS 1		00	00755
001477	006057	A	769	STAE	SICB+1	STORE PTR TO NEW INPUT AREA		00	00756
001500	004741	R							
001501	005311	A	770	DAR		MINUS 1		00	00757
001502	006057	A	771	STAE	SCHE	STORE NEW CONTROL AREA END		00	00758
001503	004705	R							
001504	001000	A	772	S10	JMP	SI1	FIRST TIME SWITCH	00	00759
001505	001506	R							
001506	006010	A	773	S11	LDAI	SI2	GET BYPASS ADDRESS	00	00760
001507	001533	R							
001510	006057	A	774	STAE	SI0+1	STORE IN FIRST TIME SWITCH		00	00761
001511	001505	R							
001512	002000	A	775	CALL	SCAN,TB1	LOOK FOR SORT		00	00762
001513	002743	R							
001514	005275	R							
001515	001010	A	776	JAZ	SI3	SORT VERB FOUND		00	00763
001516	001523	R							
001517	002000	A	777	CALL	SCER,ST01,TB1	PRINT ERROR MSG		00	00764
001520	002635	R							
001521	002727	R							
001522	005275	R							
001523	006017	A	778	S13	LDAE	SCEN	SET START OF	00	00765
001524	004677	R							
001525	006057	A	779	STAE	SCNS	SCAN TO NEXT		00	00766
001526	004701	R							
001527	006017	A	780	LDAE	SCEN	BYTE AFTER		00	00767
001530	004700	R							
001531	006057	A	781	STAE	SCBS	SORT VERB		00	00768
001532	004702	R							
001533	002000	A	782	S12	CALL	SCAN,TB2	LOOK FOR ENDSORT	00	00769
001534	002743	R							
001535	005303	R							
001536	001010	A	783	JAZ	SI4	FOUND, YES		00	00770
001537	001555	R							
001540	006047	A	784	INRE	SCN2	INCREMENT READ COUNT		00	00771
001541	004710	R							
001542	006017	A	785	LDAE	SCN2	TEST FOR		00	00772
001543	004710	R							
001544	140465	A	786	SUB	FIVE	LIMIT OF 5 RECORDS		00	00773
001545	001016	A	787	JANZ	SINO	JUMP TO READ IF LIMIT NOT REACHED	F	*****	
001546	001401	R							
001547	002000	A	788	S12A	CALL	SCER,ST01,TB2	PRINT ERROR MSG	00	00775
001550	002635	R							
001551	002727	R							
001552	005303	R							
001553	001000	A	789	JMP	SI4B	SCAN OTHER CONTROL STATEMENTS		00	00776
001554	001565	R							
001555	006017	A	790	S14	LDAE	SCSN	SET NEW LIMITS	00	00777
001556	004675	R							
001557	006057	A	791	STAE	SCNE	FOR END OF SCAN		00	00778
001560	004705	R							
001561	006017	A	792	LDAE	SCSP	AREA TO FIRST		00	00779
001562	004676	R							
001563	006057	A	793	STAE	SCBE	BYTE OF ENDSORT VERB		00	00780
001564	004706	R							
001565	002000	A	794	S14B	CALL	SCAN,TB3	INPUT	00	00781
001566	002743	R							
001567	005311	R							
001570	054165	A	795	STA	SI4A	SAVE RETURN CODE		00	00782
001571	002000	A	796	CALL	ATOB,(C1),2	INPUT LUN		00	00783
001572	006012	R							
001573	005550	R							
001574	000002	A							
001575	002000	A	797	CALL	ATOB,(C4),3	INPUT RECSIZE		00	00784
001576	006012	R							
001577	005556	R							
001600	000003	A							
001601	024154	A	798	LDB	SI4A			00	00785
001602	001030	A	799	JIF	030,*+6	JUMP IF NO ERRORS		00	00786
001603	001610	R							
001604	002000	A	800	CALL	SCER,ST01,(TB3)	ERROR - INVALID OR MISSING PARAMETER		00	00787



001605	002635	R									
001606	002727	R									
001607	005311	R									
001610	002000	A	801	CALL	SCAN,TB4	OUTPUT				00	00788
001611	002743	R									
001612	005317	R									
001613	054142	A	802	STA	SI4A	SAVE RETURN CODE				00	00789
001614	002000	A	803	CALL	ATOB,(C5),2	OUTPUT LUN				00	00790
001615	006012	R									
001616	005561	R									
001617	000002	A									
001620	002000	A	804	CALL	ATOB,(C8),3	OUTPUT RECSIZE				00	00791
001621	006012	R									
001622	005567	R									
001623	000003	A									
001624	024131	A	805	LDB	SI4A					00	00792
001625	001030	A	806	JIF	030,*+6	JUMP IF NO ERRORS				00	00793
001626	001633	R									
001627	002000	A	807	CALL	SCER,ST01,(TB4)	ERROR				00	00794
001630	002635	R									
001631	002727	R									
001632	005317	R									
001633	002000	A	808	CALL	SCAN,TB5	WORK1				00	00795
001634	002743	R									
001635	005325	R									
001636	054117	A	809	STA	SI4A					00	00796
001637	002000	A	810	CALL	ATOB,(C9),2	WORK1 LUN				00	00797
001640	006012	R									
001641	005572	R									
001642	000002	A									
001643	006017	A	811	LDAE	C9					00	00798
001644	005572	R									
001645	002000	A	812	CALL	RMD	MUST BE RMD				00	00799
001646	005725	R									
001647	114106	A	813	DRA	SI4A					00	00800
001650	001016	A	814	JANZ	SI4W1B	JUMP IF ERRORS				00	00801
001651	001671	R									
001652	006030	A	815	LDXI	ITB3					00	00802
001653	005421	R									
001654	002000	A	816	CALL	SI6	CHECK IF WORK1 SAME AS ANOTHER FILE				00	00803
001655	002140	R									
001656	006404	A	817	BT	RA1+4,SI4W1B	ERR IF SAME AS INPUT				00	00804
001657	001671	R									
001660	006443	A	818	BT	RA0+3,SI4W2A	IF SAME AS OUTPUT				00	00805
001661	001670	R									
001662	006030	A	819	LDXI	SRTC					00	00806
001663	001360	E									
001664	006010	A	820	LDAI	SI0B					00	00807
001665	000000	E									
001666	055220	A	821	STA	FSID,X	SAVE PTR				00	00808
001667	001000	A	822	JMP	SI4W2A					00	00809
001670	001675	R									
001671	002000	A	823	SI4W1B	CALL	SCER,ST01,TB5				00	00810
001672	002635	R									
001673	002727	R									
001674	005325	R									
001675	002000	A	824	SI4W2A	CALL	SCAN,TB6	WORK2			00	00811
001676	002743	R									
001677	005333	R									
001700	054055	A	825	STA	SI4A					00	00812
001701	002000	A	826	CALL	ATOB,(C12),2	WORK2 LUN				00	00813
001702	006012	R									
001703	005600	R									
001704	000002	A									
001705	006017	A	827	LDAE	C12					00	00814
001706	005600	R									
001707	002000	A	828	CALL	RMD	MUST BE RMD				00	00815
001710	003725	R									
001711	114044	A	829	DRA	SI4A					00	00816
001712	001016	A	830	JANZ	SI4W2B	JUMP IF ERRORS				00	00817
001713	001735	R									
001714	006030	A	831	LDXI	ITB4					00	00818
001715	005402	R									
001716	002000	A	832	CALL	SI6					00	00819
001717	002140	R									
001720	006404	A	833	BT	RA1+4,SI4W2B	ERR IF WORK2 SAME AS INPUT				00	00820
001721	001735	R									
001722	006402	A	834	BT	RA1+2,SI4W2B	ERR IF WORK2 SAME AS WORK1				00	00821
001723	001735	R									
001724	006443	A	835	BT	RA0+3,SI4W3A	SAVE PTR IF SAME AS OUTPUT				00	00822
001725	001741	R									
001726	006030	A	836	LDXI	SRTC					00	00823
001727	001600	E									
001730	006010	A	837	LDAI	S20B					00	00824
001731	000000	E									
001732	055220	A	838	STA	FSID,X					00	00825
001733	001000	A	839	JMP	SI4W3A					00	00826
001734	001741	R									
001735	002000	A	840	SI4W2B	CALL	SCER,ST01,TB6				00	00827
001736	002635	R									
001737	002727	R									
001740	005333	R									
001741	002000	A	841	SI4W3A	CALL	SCAN,TB7	WORK3			00	00828



001742	002743	R							
001743	005341	R							
001744	054011	A	842	STA	SI4A			00	00829
001745	002000	A	843	CALL	ATOB,(C15),2	WORK3 LUN		00	00830
001746	006012	R							
001747	005606	R							
001750	000002	A							
001751	006017	A	844	LDAE	C15			00	00831
001752	005606	R							
001753	002000	A	845	CALL	RMD	MUST BE RMD		00	00832
001754	005725	R							
001755	006110	A	846	DRAI	*--*			00	00833
001756	000000	A							
	001756	R	847	SI4A	EQU	*-1		00	00834
001757	001016	A	848	JANZ	SI4W3B	JUMP IF ERRORS		00	00835
001760	002002	R							
001761	006030	A	849	LDXI	ITB5			00	00836
001762	005443	R							
001763	002000	A	850	CALL	SI6			00	00837
001764	002140	R							
001765	006401	A	851	BT	RA1+1,SI4W3B	ERR IF WORK3 SAME AS WORK1		00	00838
001766	002002	R							
001767	006402	A	852	BT	RA1+2,SI4W3B	ERR IF WORK3 SAME AS WORK2		00	00839
001770	002002	R							
001771	006443	A	853	BT	RA0+3,SI4K	SAVE PTR IF SAME AS OUTPUT		00	00840
001772	002006	R							
001773	006030	A	854	LDXI	SRTC			00	00841
001774	001727	E							
001775	006010	A	855	LDAI	S3CB			00	00842
001776	000000	E							
001777	055220	A	856	STA	FSJD,X			00	00843
002000	001000	A	857	JMP	SI4K			00	00844
002001	002006	R							
002002	002000	A	858	SI4W3B	CALL	SCER,ST01,TB7		00	00845
002003	002635	R							
002004	002727	R							
002005	005341	R							
002006	002000	A	859	SI4K	CALL	SCAN,TB8 SORTKEY		00	00846
002007	002743	R							
002010	005347	R							
002011	001010	A	860	JAZ	*+6			00	00847
002012	002017	R							
002013	002000	A	861	CALL	SCER,ST01,(TB8) ERROR			00	00848
002014	002635	R							
002015	002727	R							
002016	005347	R							
002017	002000	A	862	CALL	ATOB,(C18),2	CTL FLD 1 START COLUMN		00	00849
002020	006012	R							
002021	005614	R							
002022	000002	A							
002023	002000	A	863	CALL	ATOB,(C19),2	CTL FLD 1 END COLUMN		00	00850
002024	006012	R							
002025	005616	R							
002026	000002	A							
002027	002000	A	864	CALL	ATOB,(C21),2	CTL FLD 2 START COLUMN		00	00851
002030	006012	R							
002031	005621	R							
002032	000002	A							
002033	002000	A	865	CALL	ATOB,(C22),2	CTL FLD 2 END COLUMN		00	00852
002034	006012	R							
002035	005623	R							
002036	000002	A							
002037	002000	A	866	CALL	ATOB,(C24),2	CTL FLD 3 START COLUMN		00	00853
002040	006012	R							
002041	005626	R							
002042	000002	A							
002043	002000	A	867	CALL	ATOB,(C25),2	CTL FLD 3 END COLUMN		00	00854
002044	006012	R							
002045	005630	R							
002046	000002	A							
002047	002000	A	868	CALL	ATOB,(C27),2	CTL FLD 4 START COLUMN		00	00855
002050	006012	R							
002051	005633	R							
002052	000002	A							
002053	002000	A	869	CALL	ATOB,(C28),2	CTL FLD 4 END COLUMN		00	00856
002054	006012	R							
002055	005635	R							
002056	000002	A							
002057	002000	A	870	CALL	ATOB,(C30),2	CTL FLD 5 START COLUMN		00	00857
002060	006012	R							
002061	005640	R							
002062	000002	A							
002063	002000	A	871	CALL	ATOB,(C31),2	CTL FLD 5 END COLUMN		00	00858
002064	006012	R							
002065	005642	R							
002066	000002	A							
002067	002000	A	872	CALL	ATOB,(C33),2	CTL FLD 6 START COLUMN		00	00859
002070	006012	R							
002071	005645	R							
002072	000002	A							
002073	002000	A	873	CALL	ATOB,(C34),2	CTL FLD 6 END COLUMN		00	00860
002074	006012	R							
002075	005647	R							



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002076 000002 A
002077 002000 A 874 CALL SCAN,(TB9) INEXIT=YES (OR NO. NO IS DEFAULT) 00 00861
002100 002743 R
002101 005355 R
002102 001010 A 875 JAZ *+6 00 00862
002103 002110 R
002104 002000 A 876 CALL SCER,ST01,(TB9) ERROR 00 00863
002105 002635 R
002106 002727 R
002107 005355 R
002110 002000 A 877 CALL SCAN,(TB10) 00 00864
002111 002743 R
002112 005363 R
002113 001010 A 878 JAZ *+6 OUTEXIT=YES (OR NO. NO IS DEFAULT) 00 00865
002114 002121 R
002115 002000 A 879 CALL SCER,ST01,(TB10) ERROR 00 00866
002116 002635 R
002117 002727 R
002120 005363 R
002121 006017 A 880 LDAE C1 GETY INPUT LUN 00 00867
002122 005350 R
002123 002000 A 881 CALL RMD INPUT ON RMD ? 00 00868
002124 005725 R
002125 001016 A 882 JANZ S15 NO - KEYWORD SORT NOT POSSIBLE 00 00869
002126 002230 R
002127 006030 A 883 LDXI ITB1 GET INPUT TABLE 00 00870
002130 005371 R
002131 002000 A 884 CALL S16 IS IT SAME AS ANOTHER FILE 00 00871
002132 002140 R
002133 150445 A 885 ANA BR4 YES - KEYWORD SORT NOT POSSIBLE 00 00872
002134 001016 A 886 JANZ S15 YES - KEYWORD SORT NOT POSSIBLE 00 00873
002135 002230 R
002136 001000 A 887 JMP S17 NO - THIS WILL BE A KEYWORD SORT 00 00874
002137 002223 R
888 * S16 - FILENAME COMPARE 00 00875
889 * 00 00876
890 * CALLING SEQUENCE 00 00877
891 * CALL S16 00 00878
892 * X REGISTER CONTAINS PTR TO FILE TABLE ITB1 00 00879
893 * 00 00880
894 * EXIT CONDITIONS 00 00881
895 * A REGISTER BIT 4 IS SET IF FILE IS SAME AS INPUT 00 00882
896 * 2 OUTPUT 00 00883
897 * 2 WORK1 00 00884
898 * 1 WORK2 00 00885
899 * 0 WORK3 00 00886
002140 000000 A 900 S16 ENTR 00 00887
002141 005001 A 901 TZA 00 00888
002142 054053 A 902 STA S16T 00 00889
002143 006020 A 903 LDBI TB3 00 00890
002144 005311 R
002145 064051 A 904 STB S16B 00 00891
002146 074051 A 905 STX S16X 00 00892
002147 024047 A 906 S16A LDB S16B 00 00893
002150 034047 A 907 LDX S16X GET PTR TO GIVEN FILE TABLE 00 00894
002151 026002 A 908 LDB 2,B GET PTR TO COMPARE FILE TABLE 00 00895
002152 006015 A 909 LDAE* 0,X GET GIVEN LUN 00 00896
002153 100000 A
002154 006146 A 910 SUBE* 0,B IS IT SAME AS ANOTHER FILE 00 00897
002155 100000 A
002156 001016 A 911 JANZ S16A0 NO - CHECK NEXT FILE 00 00898
002157 002201 R
002160 035003 A 912 LDX 0,X GET PTR TO FILENAME 00 00899
002161 026003 A 913 LDB 0,B GET PTR TO FILENAME 00 00900
002162 015000 A 914 LDA 0,X GET FIRS WD OF INPUT FILE NAME 00 00901
002163 146000 A 915 SUB 0,B MINUS FIRST WD OF TEST FILE NAME 00 00902
002164 001016 A 916 JANZ S16A0 NOT EQUAL - CHECK NEXT FILE 00 00903
002165 002201 R
002166 015001 A 917 LDA 1,X CHECK SECOND WD 00 00904
002167 146001 A 918 SUB 1,B OF FILENAME 00 00905
002170 001016 A 919 JANZ S16A0 NOT EQUAL - CHECK NEXT FILE 00 00906
002171 002201 R
002172 015002 A 920 LDA 2,X CHECK THIRD WORD OF 00 00907
002173 146002 A 921 SUB 2,B FILE NAME 00 00908
002174 001016 A 922 JANZ S16A0 NOT EQUAL - CHECK NEXT FILE 00 00909
002175 002201 R
002176 005301 A 923 DECR 1 00 00910
002177 001000 A 924 JMP S16A1 00 00911
002200 002202 R
002201 005001 A 925 S16A0 TZA 00 00912
002202 024016 A 926 S16A1 LDB S16T 00 00913
002203 004441 A 927 LLRL 1 SET BIT IN RETURN CODE 00 00914
002204 064014 A 928 STB S16T 00 00915
002205 014011 A 929 LDA S16B 00 00916
002206 120465 A 930 ADD 0,X 00 00917
002207 054007 A 931 STA S16B 00 00918
002210 144011 A 932 SUB S16B 00 00919
002211 005311 A 933 BAR 00 00920
002212 001004 A 934 JAN S16A LOOP 00 00921
002213 002147 R
002214 014004 A 935 LDA S16T 00 00922
002215 001000 A 936 JMP* S16 DONE - RETURN 00 00923
002216 102140 R

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002217	000000	A	937	SI6B	DATA	0			00	00924
002220	000000	A	938	SI6X	DATA	0			00	00925
002221	000000	A	939	SI6T	DATA	0		RETURN CODE	00	00926
002222	005341	R	940	SI6D	DATA	(TB7)		END	00	00927
002223	006030	A	941	SI7	LDXI	SRTC		GET SORT CONTROL TABLE	00	00928
002224	001774	E								
002225	015260	A	942		LDA	SWCH,X		GET SWITCH	00	00929
002226	110425	A	943		ORA	BS4		TURN ON KEYWORD SORT SWITCH	00	00930
002227	055260	A	944		STA	SWCH,X		SAVE IT	00	00931
002230	006030	A	945	SI5	LDXI	SRTC		GET SORT CONTROL TABLE	F	*****
002231	002224	E								
002232	015260	A	946		LDA	SWCH,X		GET SWITCH	F	*****
002233	006451	A	947		BT	RA0+9,SI5A		MERGE OMIT OFF	F	*****
002234	002237	R								
002235	006444	A	948		BT	RA0+4,ST08E		MERGE OMIT, BUT NO TAG SORT	F	*****
002236	002627	R								
002237	006027	A	949	SI5A	LDDBE	ITB7		GET INEXIT	F	*****
002240	005542	R								
002241	016000	A	950		LDA	0,B		RESPONSE	00	00933
002242	006140	A	951		SUBI	'YE'		IS IT YES	00	00934
002243	154705	A								
002244	001016	A	952		JANZ	SI8		NO	00	00935
002245	002254	R								
002246	006030	A	953		LDXI	SRTC		GET SORT CONTROL TABLE	00	00936
002247	002231	E								
002250	015260	A	954		LDA	SWCH,X		GET SWITCH	00	00937
002251	110423	A	955		ORA	BS2		TURN ON INEXIT SWITCH	00	00938
002252	150445	A	956		ANA	BR4		TURN OFF KEYWORD SORT SWITCH	00	00939
002253	055260	A	957		STA	SWCH,X		SAVE IT	00	00940
002254	006027	A	958	SI8	LDDBE	ITB8		GET DUTEXIT RESPONSE	00	00941
002255	005545	R								
002256	016000	A	959		LDA	0,B			00	00942
002257	006140	A	960		SUBI	'YE'		IS IT YES	00	00943
002260	154705	A								
002261	001016	A	961		JANZ	SI10		NO	00	00944
002262	002270	R								
002263	006030	A	962		LDXI	SRTC		GET SORT CONTROL TABLE	00	00945
002264	002247	E								
002265	015260	A	963		LDA	SWCH,X		GET SWITCH	00	00946
002266	110431	A	964		ORA	BS8		TURN ON DUTEXIT SWITCH	00	00947
002267	055260	A	965		STA	SWCH,X		SAVE IT	00	00948
002270	002000	A	966	SI10	JMPM	SI50		GO INITIALIZE EVERYTHING	00	00949
002271	004151	R								
002272	006017	A	967		LDAE	SERROR		IF ERRORS IN CTL RECORDS	00	00950
002273	002713	R								
002274	001016	A	968		JANZ	SRET		SKIP FILE OPENS - ABORT JOB NOW	00	00951
002275	002563	R								
002276	002000	A	969		CALL	SIFC,ITB1,CL1		PUT REC SIZE,FILENAME,KEY IN CALL	00	00952
002277	004020	R								
002300	005371	R								
002301	002376	R								
002302	006030	A	970		LDXI	SRTC		GET SORT CTL TBL	00	00953
002303	002264	E								
002304	015015	A	971		LDA	INBF,X		GET SORT IN ADDRESS	00	00954
002305	054975	A	972		STA	CL1+5		PUT IN CALL	00	00955
002306	006017	A	973		LDAE	C5		GET OUTPUT LUN	00	00956
002307	005561	R								
002310	002000	A	974		CALL	LP		IS OUTPUT A LINE PRINTER	00	00957
002311	005735	R								
002312	001016	A	975		JANZ	SI11		NO - JUMP	00	00958
002313	002321	R								
002314	006047	A	976		INRE	C8		INC OUT REC LENGTH FOR FCB ONLY	00	00959
002315	005567	R								
002316	006030	A	977		LDXI	SRTC			00	00960
002317	002303	E								
002320	045261	A	978		INR	LPSW,X		TURN ON OUTPUT LP SWITCH	00	00961
002321	002000	A	979	SI11	CALL	SIFC,ITB2,CL2		PUT RECSIZE, FILENAME, KEY IN CALL	00	00962
002322	004020	R								
002323	005405	R								
002324	002406	R								
002325	006030	A	980		LDXI	SRTC		GET SORT CTL TABLE	00	00963
002326	002317	E								
002327	006017	A	981		LDAE	MBEG		GET START OF MERGE WORK AREA	E.1	*****
002330	005274	R								
002331	054071	A	982		STA	CL3+5		STORE IN WORK1 CALL	00	00965
002332	055177	A	983		STA	SFAS,X		STORE IN SF CURR AREA PTR	00	00966
002333	055200	A	984		STA	SFAS+1,X		STORE IN SF BEG AREA PTR	00	00967
002334	125010	A	985		ADD	SBLK,X		GET START OF SECOND MERGE AREA	00	00968
002335	055202	A	986		STA	SFAL,X		STORE IN SL CURR AREA PTR	00	00969
002336	055203	A	987		STA	SFAL+1,X		STORE IN SL BEG AREA PTR	00	00970
002337	054073	A	988		STA	CL4+5		STORE IN WORK2 CALL	00	00971
002340	005311	A	989		DAR			MINUS 1	00	00972
002341	055201	A	990		STA	SFAS+2,X		STORE SF END AREA-1 PTR	00	00973
002342	125010	A	991		ADD	SBLK,X		GET END OF 2ND MRG AREA	00	00974
002343	055204	A	992		STA	SFAL+2,X		STORE IN SL END AREA-1 PTR	00	00975
002344	005111	A	993		LAR			PLUS 1	00	00976
002345	055205	A	994		STA	SFAD,X		STORE SD CURR AREA PTR	00	00977
002346	055206	A	995		STA	SFAD+1,X		STORE SD BEG AREA PTR	00	00978
002347	054043	A	996		STA	CL2+5		STORE IN OUTPUT FILE CALL	00	00979
002350	054072	A	997		STA	CL5+5		STORE IN WORK3 CALL	00	00980
002351	125010	A	998		ADD	SBLK,X		PLUS MRG BLK SIZE	00	00981
002352	005011	A	999		DAR			MINUS 1	00	00982
002353	055207	A	1000		STA	SFAD+2,X		STORE IN SD END AREA-1 PTR	00	00983



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002354 002000 A 1001 CALL SIFW,ITB3,CL3 PUT FILENAME,KEY IN CALL WORK1 00 00984
002355 004063 R
002356 005421 R
002357 002416 R
002360 002000 A 1002 CALL SIFW,ITB4,CL4 PUT FILENAME,KEY IN CALL WORK2 00 00985
002361 004063 R
002362 005432 R
002363 002426 R
002364 002000 A 1003 CALL SIFW,ITB5,CL5 PUT FILENAME,KEY IN CALL WORK3 00 00986
002365 004063 R
002366 005443 R
002367 002436 R
002370 006030 A 1004 LDXI SRTC GET SDRT CTL TABLE 00 00987
002371 002326 E
002372 015010 A 1005 LDA MBLN,X GET MRG REC LENGTH 00 00988
002373 054026 A 1006 STA CL3+4 STORE IN CALL 00 00989
002374 054035 A 1007 STA CL4+4 STORE IN CALL 00 00990
002375 054044 A 1008 STA CL5+4 STORE IN CALL 00 00991
002376 002000 A 1009 CL1 CALL SIFW,IFCB,0,0,0,0 I/O PTR,LU#,SIZE,AREA,KEY,FILENAME P00 00992
002377 004074 R
002400 000000 E
002401 000000 A
002402 000000 R
002403 000000 A
002404 000000 A
002405 000000 A
002406 002000 A 1010 CL2 CALL SIFW,DFCB,0,0,0,0 I/O PTR,LU#,SIZE,AREA,KEY,FILENAME P00 00993
002407 004074 R
002410 000000 E
002411 000000 A
002412 000000 A
002413 000000 A
002414 000000 A
002415 000000 A
002416 002000 A 1011 CL3 CALL SIFW,S1CB,0,0,0,0 I/O PTR,LU#,SIZE,AREA,KEY,FILENAME P00 00994
002417 004074 R
002420 001665 E
002421 000000 A
002422 000000 A
002423 000000 A
002424 000000 A
002425 000000 A
002426 002000 A 1012 CL4 CALL SIFW,S2CB,0,0,0,0 I/O PTR,LU#,SIZE,AREA,KEY,FILENAME P00 00995
002427 004074 R
002430 001731 E
002431 000000 A
002432 000000 A
002433 000000 A
002434 000000 A
002435 000000 A
002436 002000 A 1013 CL5 CALL SIFW,S3CB,0,0,0,0 I/O PTR,LU#,SIZE,AREA,KEY,FILENAME P00 00996
002437 004074 R
002440 001776 E
002441 000000 A
002442 000000 A
002443 000000 A
002444 000000 A
002445 000000 A
002446 006030 A 1014 LDXI SRTC 00 00997
002447 002371 E
002450 015205 A 1015 LDA SFAD,X GET OUTPUT BEG AREA PTR 00 00998
002451 055213 A 1016 STA UCAB,X MAKE IT CURR OUTPUT AREA PTR 00 00999
002452 015207 A 1017 LDA SFAD+2,X GET OUTPUT END AREA PTR 00 01000
002453 055214 A 1018 STA UCAB,X MAKE IT CURR OUTPUT AREA END 00 01001
002454 006017 A 1019 LDAE CL1+3 GET SDRT IN LU# 00 01002
002455 002401 R
002456 055222 A 1020 STA DILU,X 00 01003
002457 002000 A 1021 CALL RMD IS IT RMD 00 01004
002460 003725 R
002461 001014 A 1022 JANZ DIN -NO- *00 01005
002462 002473 R
002463 006030 A 1023 LDXI IFCB *00 01006
002464 002400 E
002465 015003 A 1024 LDA 3,1 MODIFY *00 01007
002466 150455 A 1025 ANA BR12 OPEN TO 00 01008
002467 055003 A 1026 STA 3,1 REWIND *00 01009
002470 015053 A 1027 LDA 43,1 MODIFY *00 01010
002471 110435 A 1028 GRA BR12 CLOSE TO 00 01011
002472 055053 A 1029 STA 43,1 UPDATE *00 01012
002473 002000 A 1030 DIN CALL IFCB OPEN INPUT FILE *00 01013
002474 000000 E
002475 006505 A 1031 STAT IFCB,S1IE,STSIC,S1IE,S1IE 00 01014
002476 000073 A
002477 002464 E
002500 002571 R
002501 002504 R
002502 002571 R
002503 002571 R
002504 002504 R 1032 STSIC EQU * *00 01015
002504 006017 A 1033 LDAE CL2+3 *00 01016
002505 002411 R
002506 002000 A 1034 CALL RMD IS IT RMD 00 01017

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002507 005725 R
002510 001016 A 1035 JANZ DDUT -NO- *00 01018
002511 002517 R R
002512 006030 A 1036 LDXI DFCB *00 01019
002513 002410 E
002514 015003 A 1037 LDA 3,1 MODIFY *00 01020
002515 150455 A 1038 ANA BR12 OPEN TO 00 01021
002516 055003 A 1039 STA 3,1 REWIND *00 01022
002517 002000 A 1040 DDUT CALL DFCB OPEN OUTPUT FILE *00 01023
002520 000000 E
1041 STAT DFCB,SIDE,STSDC,SIDE,SIDE 00 01024
002521 006505 A
002522 000373 A
002523 002513 E
002524 002577 R R
002525 002530 R R
002526 002577 R R
002527 002577 R R
002530 002530 A 1042 STSDC EQU * *00 01025
002530 002000 A 1043 CALL SICA 00 01026
002531 000000 E
1044 STAT S1CB,S11E,S11E,S11E,S11E 00 01027
002532 006505 A
002533 000373 A
002534 002420 E E
002535 002605 R R
002536 002605 R R
002537 002605 R R
002540 002605 A
002541 002000 A 1045 CALL S2CA 00 01028
002542 000000 E
1046 STAT S2CB,S2E,S2E,S2E,S2E 00 01029
002543 006505 A
002544 000373 A
002545 002430 E E
002546 002610 R R
002547 002610 R R
002550 002610 R R
002551 002610 R R
002552 002000 A 1047 CALL S3CA 00 01030
002553 000000 E
1048 STAT S3CB,S3E,S3E,S3E,S3E 00 01031
002554 006505 A
002555 000373 A
002556 002440 E E
002557 002621 R R
002558 002621 R R
002559 002621 R R
002560 002621 R R
002563 014127 A 1049 SRET LDA SERRR 00 01032
002564 001010 A 1050 JNZ* SINI IF NO ERRORS - RETURN 00 01033
002565 101367 R
1051 SRET1 EXIT END THE SDRT 00 01034
002566 006505 A
002567 000400 A A
002570 000270 A A
002571 002000 A 1052 SITE CALL SCER,ST05,(TB3) PRINT ERROR MSG 00 01035
002572 002635 R R
002573 002737 R R
002574 005311 R R
002575 001000 A 1053 JMP SRET 00 01036
002576 002563 R R
002577 002000 A 1054 SIDE CALL SCER,ST05,(TB4) 00 01037
002600 002635 R R
002601 002737 R R
002602 005317 R R
002603 001000 A 1055 JMP SRET 00 01038
002604 002563 R R
002605 002000 A 1056 S11E CALL SCER,ST05,(TB5) 00 01039
002606 002635 R R
002607 002737 R R
002610 005325 R R
002611 001000 A 1057 JMP SRET 00 01040
002612 002563 R R
002613 002000 A 1058 SIZE CALL SCER,ST05,(TB6) 00 01041
002614 002635 R R
002615 002737 R R
002616 005333 R R
002617 001000 A 1059 JMP SRET 00 01042
002620 002563 R R
002621 002000 A 1060 S13E CALL SCER,ST05,(TB7) 00 01043
002622 002635 R R
002623 002737 R R
002624 005341 R R
002625 001000 A 1061 JMP SRET 00 01044
002626 002563 R R
002627 002000 A 1062 ST08E CALL SCER,ST08,0 PRINT ERROR MESSAGE F *****
002630 002635 R R
002631 002741 R R
002632 000000 A
002633 001000 A 1063 JMP S15A CONTINUE F *****
002634 002737 R R
002635 000000 A 1064 SCER ENTR 00 01045
    
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002636 006010 A 1065 LDAI . . . . . 00 01046
002637 120240 A
002640 054061 A 1066 STA SIS2+3 00 01047
002641 002000 A 1067 CALL MOVE,(SIS2+4),0,(SIS2+3),0,8 CLEAR BUFFER 00 01048
002642 001316 E
002643 002723 R
002644 000000 A
002645 002722 R
002646 000000 A
002647 000010 A
002650 006037 A 1068 LDXE SCER 00 01049
002651 002635 R
002652 025000 A 1069 LDB 0,X GET ERR NUMBER 00 01050
002653 016000 A 1070 LDA 0,B 00 01051
002654 054044 A 1071 STA SIS2+2 STORE IN BUFFER 00 01052
002655 016001 A 1072 LDA 1,B 00 01053
002656 054043 A 1073 STA SIS2+3 00 01054
002657 025001 A 1074 LDB 1,X GET SCAN TABLE PTR 00 01055
002660 005144 A 1075 IXR 00 01056
002661 005144 A 1076 IXR 00 01057
002662 006077 A 1077 STXE SCER SAVE RETURN 00 01058
002663 002635 R
002664 001020 A 1078 JBZ SW1 JUMP IF NO CONTROL CONSTANT 00 01059
002665 002701 R
002666 016000 A 1079 LDA 0,B GET PTR TO CONTROL CONSTANT 00 01060
002667 054006 A 1080 STA SWM1+4 STORE IN MOVE 00 01061
002670 016003 A 1081 LDA 3,B GET LENGTH 00 01062
002671 054006 A 1082 STA SWM1+6 STORE IN MOVE 00 01063
002672 002000 A 1083 SWM1 CALL MOVE,(SIS2+4),0,0,0,0 MOVE CONTROL CONSTANT 00 01064
002673 002642 E
002674 002723 R
002675 000000 A
002676 000000 A
002677 000000 A
002700 000000 A
1084 SW1 WRITE SIS1,5,0,1 WRITE THE ERROR MSG 00 01065
002701 006505 A
002702 000404 A
002703 100000 A
002704 010405 A
002705 002714 R
002706 000000 A
002707 000000 A
002710 044002 A 1085 INR SERROR INCREMENT ERROR COUNT 00 01066
002711 001000 A 1086 JMP* SCER RETURN 00 01067
002712 102635 R
002713 000000 A 1087 SERROR DATA 0 00 01068
1088 SIS1 DCB 8,SIS2,0 00 01069
002714 000010 A
002715 002717 R
002716 000000 A
002717 120240 A 1089 SIS2 DATA . ST 00 01070
002720 151724 A
002721 120240 A
002722 120240 A
002723 120240 A
002724 120240 A
002725 120240 A
002726 120240 A
002727 130261 A 1090 ST01 DATA '01,' 00 01071
002730 126240 A
002731 130262 A 1091 ST02 DATA '0?' 00 01072
002732 120240 A
002733 130263 A 1092 ST03 DATA '03' 00 01073
002734 120240 A
002735 130264 A 1093 ST04 DATA '04' 00 01074
002736 120240 A
002737 130265 A 1094 ST05 DATA '05,' 00 01075
002740 126240 A
002741 130270 A 1095 ST08 DATA '08' F *****
002742 120240 A
1096 * 00 01076
1097 * SCAN - SEARCHES CONTROL STATEMENT BUFFER UNTIL A MATCH IS FOUND 00 01077
1098 * FOR THE SPECIFIED CONTROL CONSTANT (SEARCH ARGUMENT). 00 01078
1099 * 00 01079
1100 * STORE THE PARAMETERS IN EXPANSION CELLS, USING THE 00 01080
1101 * SCAN TABLE INFORMATION ABOUT NUMBER, LENGTH AND TYPE 00 01081
1102 * (NUMERIC 0-9 OR ALPHANUMERIC $,A-Z,0-9) OF PARAMETERS 00 01082
1103 * AND WHETHER PARAMETERS ARE OPTIONAL OR REQUIRED. 00 01083
1104 * 00 01084
1105 * CHECKS FOR ERRORS - REQUIRED CONTROL STMT MISSING 00 01085
1106 * REQUIRED PARAMETER MISSING 00 01086
1107 * INVALID PARAMETER 00 01087
1108 * INVALID TERMINATOR 00 01088
1109 * 00 01089
1110 * CALLING SEQ 00 01090
1111 * JMPM SCAN 00 01091
1112 * DATA (PTR TO MAJOR SCAN TABLE) 00 01092
1113 * 00 01093
1114 * RETURN CODE - A REGISTER = 0 IF FOUND, -1 IF NOT FOUND OR ERROR 00 01094
1115 * 00 01095
1116 * NOTE: IF FOUND, STARTING AND ENDING WORD AND BYTE LOCATION+1BYTE 00 01096
1117 * ARE STORED IN SCSW,SCSB,SCEW,SCEB 00 01097

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002743	000000	A	1118	*					00	01098
002743	000000	A	1119	SCAN	ENTR				00	01099
002744	005001	A	1120		TZA				00	01100
002745	054437	A	1121		STA	SCERZ	ZERO ERROR COUNT		00	01101
002746	006017	A	1122		LDAE	SCWS	GET STARTING WORD AND BYTE OF I/O AREA		00	01102
002747	004701	R								
002750	006057	A	1123		STAE	CWSW	FOR THE SCAN AND MAKE THEM THE CURRENT		00	01103
002751	004703	R								
002752	006017	A	1124		LDAE	SCBS	WORD AND BYTE		00	01104
002753	004702	R								
002754	006057	A	1125		STAE	CBSW			00	01105
002755	004704	R								
002756	006017	A	1126	SC1	LDAE	CWSW	GET STRT WD FOR SCAN		00	01106
002757	004703	R								
002760	054037	A	1127		STA	SC2+2	STORE AS TARGET WORD		00	01107
002761	006017	A	1128		LDAE	CBSW	GET STRT BYTE FOR SCAN		00	01108
002762	004704	R								
002763	054035	A	1129		STA	SC2+3	STORE AS TARGET BYTE		00	01109
002764	006017	A	1130		LDAE	SCWE	GET END OF CTL AREA		00	01110
002765	004705	R								
002766	006147	A	1131		SUBE	CWSW	MINUS BEGIN OF CTL AREA		00	01111
002767	004703	R								
002770	005111	A	1132		IAR		PLUS 1		00	01112
002771	004241	A	1133		LRLA	1	TIMES 2		00	01113
002772	006057	A	1134		STAE	SCW1	SAVE		00	01114
002773	004707	R								
002774	006017	A	1135		LDAE	CBSW	GET STARTING BYTE		00	01115
002775	004704	R								
002776	004241	A	1136		LRLA	1	SHIFT LEFT 1		00	01116
002777	006117	A	1137		ORAE	SCBE	OR IN ENDING BYTE		00	01117
003000	004706	R								
003001	005012	A	1138		TAB		MAKE IT AN INDEX		00	01118
003002	006016	A	1139		LDAE	SCCN,B	GET ADJUSTMENT VALUE		00	01119
003003	004711	R								
003004	006127	A	1140		ADDE	SCW1	PLUS SAVED VALUE		00	01120
003005	004707	R								
003006	006057	A	1141		STAE	SCLP	SAVE LENGTH IN		00	01121
003007	004715	R								
003010	006027	A	1142		LDBE*	SCAN	GET MAJOR SCAN TABLE PTR		00	01122
003011	102743	R								
003012	016000	A	1143		LDA	0,B	GET SEARCH ARGUMENT PTR		00	01123
003013	054006	A	1144		STA	SC2+4	MAKE IT SOURCE		00	01124
003014	016001	A	1145		LDA	1,B	GET SRCH ARG LENGTH		00	01125
003015	054006	A	1146		STA	SC2+6	MAKE IT THE COMPARE LENGTH		00	01126
003016	002000	A	1147	SC2	CALL	COMP,0,0,0,0,0,0,0	IS IT THE SEARCH ARGUMENT		00	01127
003017	001174	E								
003020	000000	A								
003021	000000	A								
003022	000000	A								
003023	000000	A								
003024	000000	A								
003025	000000	A								
003026	000000	A								
003027	006017	A	1148		LDAE	SC2+8	GET RESULT		00	01128
003030	003026	R								
003031	001010	A	1149		JAZ	SC12	JUMP IF EQUAL		00	01129
003032	003112	R								
003033	006017	A	1150		LDAE	SCLP	GET SCAN AREA LENGTH		00	01130
003034	004715	R								
003035	006027	A	1151		LDBE*	SCAN	GET TABLE POINTER		00	01131
003036	102743	R								
003037	146001	A	1152		SUB	1,B	MINUS ARGUMENT LENGTH		00	01132
003040	001004	A	1153		JAN	SC4	REQUESTED STRING IS NOT		00	01133
003041	003063	R								
003042	001010	A	1154		JAZ	SC4	IN THE I/O AREA		00	01134
003043	003063	R								
003044	006017	A	1155		LDAE	CBSW	GET START BYTE FOR SCAN PASS		00	01135
003045	004704	R								
003046	001016	A	1156		JANZ	SC5	JUMP IF NOT ZERO		00	01136
003047	003054	R								
003050	006047	A	1157		INRE	CBSW	IF ZERO MAKE IT A 1		00	01137
003051	004704	R								
003052	001000	A	1158		JMP	SC1	RE-SCAN		00	01138
003053	002756	R								
003054	005001	A	1159	SC5	TZA		MAKE IT ZERO		00	01139
003055	006057	A	1160		STAE	CBSW			00	01140
003056	004704	R								
003057	006047	A	1161		INRE	CWSW	INCR START WORD PTR		00	01141
003060	004703	R								
003061	001000	A	1162		JMP	SC1	RE SCAN		00	01142
003062	002756	R								
003063	006027	A	1163	SC4	LDBE*	SCAN	GET SCAN TABLE PTR		00	01143
003064	102743	R								
003065	016005	A	1164		LDA	5,B	GET OPTIONAL SWITCH		00	01144
003066	001004	A	1165		JAN	SCRT	OPTIONAL CTL STMT MISSING - OK		00	01145
003067	003073	R								
003070	005301	A	1166	SCERR	DECR	1	ERROR RETURN CODE = -1		00	01146
003071	001000	A	1167		JMP	SCRT1			00	01147
003072	003077	R								
003073	014311	A	1168	SCRT	LDA	SCERZ			00	01148
003074	001016	A	1169		JANZ	SCERR	IF ANY ERRORS - ERROR RETURN		00	01149
003075	003070	R								
003076	005001	A	1170		TZA		NORMAL RETURN CODE = 0		00	01150







003234	001000	A	1227	JMP	SC3			00	01207
003235	003103	R							
003236	004341	A	1228	SC11	LSRA	1	DIVIDE BY 2	00	01208
003237	006127	A	1229	ADDE	FSWL		PLUS START WD	00	01209
003240	004716	R							
003241	006057	A	1230	STAE	FEWL		IS END WD	00	01210
003242	004720	R							
003243	006057	A	1231	STAE	SCEW			00	01211
003244	004677	R							
003245	005001	A	1232	TZA				00	01212
003246	006057	A	1233	STAE	FEBL		MAKE END BYTE = 0	00	01213
003247	004721	R							
003250	006057	A	1234	STAE	SCEB			00	01214
003251	004700	R							
003252	001000	A	1235	JMP	SC3			00	01215
003253	003103	R							
003254	006017	A	1236	SC8	LDAE	FEWL	GET START WD	00	01216
003255	004720	R							
003256	006057	A	1237	STAE	CMSW		STORE IN WORK AREA	00	01217
003257	004722	R							
003260	006017	A	1238	LDAE	FEBL		GET START BYTE	00	01218
003261	004721	R							
003262	006057	A	1239	STAE	CMSB		STORE IN WORK AREA	00	01219
003263	004723	R							
003264	005001	A	1240	TZA				00	01220
003265	006057	A	1241	STAE	FCNT		ZERO THE FIELD CHAR CNT	00	01221
003266	004734	R							
003267	006027	A	1242	SC16	LDBE	CMSB	GET BYTE NUMBER AS INDEX	00	01222
003270	004723	R							
003271	006017	A	1243	LDAE*	CMSW		GET TARGET WD	00	01223
003272	004722	R							
003273	006156	A	1244	ANAE	CMMK,B		CLEAR UNUSED BYTE	00	01224
003274	004724	R							
003275	006146	A	1245	SUBE	COMA,B		MINUS A COMMA	00	01225
003276	004726	R							
003277	001010	A	1246	JAZ	SCMA		JUMP IF EQUAL	00	01226
003300	003356	R							
003301	006126	A	1247	ADDE	COMA,B		RESTORE	00	01227
003302	004726	R							
003303	006146	A	1248	SUBE	BLNK,B		MINUS A BLANK	00	01228
003304	004730	R							
003305	001010	A	1249	JAZ	SLES		JUMP IF EQUAL	00	01229
003306	003354	R							
003307	006126	A	1250	ADDE	BLNK,B		RESTORE	00	01230
003310	004730	R							
003311	006146	A	1251	SUBE	PARN,B		MINUS A RIGHT PAREN	00	01231
003312	004732	R							
003313	001010	A	1252	JAZ	SLES		JUMP IF EQUAL	00	01232
003314	003354	R							
003315	006017	A	1253	LDAE	CMSB		GET SCAN BYTE	00	01233
003316	004723	R							
003317	006147	A	1254	SUBE	SCBE		MINUS ENDING BYTE OF CONTROL AREA	00	01234
003320	004706	R							
003321	001016	A	1255	JANZ	SC13		JUMP IF NOT END OF SCAN	00	01235
003322	003333	R							
003323	006017	A	1256	LDAE	CMSW		GET SCAN WORD	00	01236
003324	004722	R							
003325	006147	A	1257	SUBE	SCWE		MINUS END OF CONTROL AREA	00	01237
003326	004703	R							
003327	001016	A	1258	JANZ	SC13		JUMP IF NOT END OF SCAN	00	01238
003330	003333	R							
003331	001000	A	1259	JMP	SCERR		JUMP TO ERROR RETURN IF END OF SCAN	00	01239
003332	003070	R							
003333	006017	A	1260	SC13	LDAE	CMSB	GET SCAN BYTE	00	01240
003334	004723	R							
003335	001016	A	1261	JANZ	SC14		JUMP IF 1	00	01241
003336	003343	R							
003337	006047	A	1262	INRE	CMSB		MAKE IT 2	00	01242
003340	004723	R							
003341	001000	A	1263	JMP	SC15			00	01243
003342	003350	R							
003343	005001	A	1264	SC14	TZA			00	01244
003344	006057	A	1265	STAE	CMSB		MAKE BYTE = 0	00	01245
003345	004723	R							
003346	006047	A	1266	INRE	CMSW		INCREMENT SCAN WD PTR	00	01246
003347	004722	R							
003350	006047	A	1267	SC15	INRE	FCNT	INCREMENT FIELD CNT	00	01247
003351	004734	R							
003352	001000	A	1268	JMP	SC16		CONTINUE THE SCAN	00	01248
003353	003267	R							
003354	006047	A	1269	SLES	INRE	SWIT	TURN ON LAST ENTRY SWITCH	00	01249
003355	004735	R							
003356	006027	A	1270	SCMA	LDBE*	SCAN	GET MAJOR SCAN TABLE PTR	00	01250
003357	002743	R							
003360	026004	A	1271	LDB	4,B		GET INTERMEDIATE TABLE PTR	00	01251
003361	016001	A	1272	LBA	1,B		GET LGH OF EXPAND CELL IN WORDS	00	01252
003362	001002	A	1273	JAP	*+4			00	01253
003363	003366	R							
003364	005211	A	1274	CPA			MAKE POSITIVE	00	01254
003365	005111	A	1275	IAR				00	01255
003366	004241	A	1276	LRLA	1		TIMES 2 FOR NUMBER OF BYTES	00	01256
003367	006147	A	1277	SUBE	FCNT		MINUS THE OPERAND BYTES	00	01257
003370	004734	R							



003371	001004	A	1278	JAN	SC17	ERROR IF IT WILL NOT FIT	00	01258
003372	003402	R						
003373	006017	A	1279	LDAE	FCNT	GET THE NUMBER OF OPERAND BYTES	00	01259
003374	004734	R						
003375	001016	A	1280	JANZ	SC18		00	01260
003376	003406	R						
003377	016001	A	1281	LDA	1,B	GET OPTION SWITCH	00	01261
003400	001004	A	1282	JAN	SC19	GO CHECK FOR MORE ENTRIES	00	01262
003401	003703	R						
003402	044002	A	1283	SC17	INR	SCERZ	00	01263
003403	001000	A	1284	JMP	SC19	GO CHECK FOR MORE ENTRIES	00	01264
003404	003703	R						
003405	000000	A	1285	SCFRZ	DATA	0	00	01265
003406	016002	A	1286	SC18	LDA	2,B	00	01266
003407	001004	A	1287	JAN	SC20	RIGHT ADJUST	00	01267
003410	003512	R						
003411	006017	A	1288	LDAE	FEWL	GET START WORD FOR FIELD	00	01268
003412	004720	R						
003413	054014	A	1289	STA	SC21+4	MAKE IT SOURCE	00	01269
003414	006017	A	1290	LDAE	FEBL	GET START BYTE FOR FIELD	00	01270
003415	004721	R						
003416	054012	A	1291	STA	SC21+5	MAKE IT SOURCE BYTE	00	01271
003417	006017	A	1292	LDAE	FCNT	GET MOVE LENGTH	00	01272
003420	004731	R						
003421	054010	A	1293	STA	SC21+6	STORE IN CALL	00	01273
003422	016000	A	1294	LDA	0,B	GET EXPANSION CELL	00	01274
003423	054002	A	1295	STA	SC21+2	STORE AS TARGET	00	01275
003424	002000	A	1296	SC21	CALL	MOVE,0,0,0,0,0 MOVE FIELD TO EXPANSION CELL	00	01276
003425	002673	E						
003426	000000	A						
003427	000000	A						
003430	000000	A						
003431	000000	A						
003432	000000	A						
003433	001000	A	1297	JMP	SC26	DO AN ALPHA CK	00	01277
003434	003600	R						
003435	006027	A	1298	SC27	LDBE*	SCAN	00	01278
003436	102743	R						
003437	026004	A	1299	LDB	4,B	GET INTERMEDIATE TABLE	00	01279
003440	016001	A	1300	LDA	1,B	GET LGH OF EXPAND CELL	00	01280
003441	001002	A	1301	JAP	*+4		00	01281
003442	003447	R						
003443	005211	A	1302	CPA		MAKE POSITIVE	00	01282
003444	005111	A	1303	IAR			00	01283
003445	006057	A	1304	STAE	CKLP	STORE AS LOOP CTR	00	01284
003446	004736	R						
003447	016000	A	1305	LDA	0,B	GET EXPANSION CELL PTR	00	01285
003450	006057	A	1306	STAE	ECPT	SAVE PTR	00	01286
003451	004737	R						
003452	005001	A	1307	SC24	TZA		00	01287
003453	006057	A	1308	STAE	SCW1	INIT BYTE/WORD CNT	00	01288
003454	004707	R						
003455	006027	A	1309	LDBE*	ECPT	GET A WORD OF EXPANDED FIELD	00	01289
003456	104737	R						
003457	005001	A	1310	SC23	TZA		00	01290
003460	004450	A	1311	LLRL	8	PUT 8 BITS IN A REG	00	01291
003461	006140	A	1312	SUBI	0272	IS IT ABOVE 0271	00	01292
003462	000272	A						
003463	001002	A	1313	JAP	SC17	JUMP IF ERROR	00	01293
003464	003402	R						
003465	006120	A	1314	ADDI	0272-0260	BELOW 0260	00	01294
003466	000012	A						
003467	001004	A	1315	JAN	SC17	JUMP IF ERROR	00	01295
003470	003402	R						
003471	006017	A	1316	LDAE	SCW1	GET BYTE/WORD CNT	00	01296
003472	004707	R						
003473	006047	A	1317	INRE	SCW1	INCR BY 1	00	01297
003474	004707	R						
003475	001010	A	1318	JAZ	SC23	GET 2ND BYTE OF WORD	00	01298
003476	003457	R						
003477	006047	A	1319	INRE	ECPT	INCR EXPANDED FIELD PTR	00	01299
003500	004737	R						
003501	006017	A	1320	LDAE	CKLP	GET LOOP CTR	00	01300
003502	004736	R						
003503	005211	A	1321	DAR		MINUS 1	00	01301
003504	006057	A	1322	STAE	CKLP		00	01302
003505	004736	R						
003506	001016	A	1323	JANZ	SC24	LOOK AT NEXT WORD	00	01303
003507	003452	R						
003510	001000	A	1324	JMP	SC19	FIELD IS VALID	00	01304
003511	003703	R						
003512	006027	A	1325	SC20	LDBE*	SCAN	00	01305
003513	102743	R						
003514	026004	A	1326	LDB	4,B	GET INTERM PTR	00	01306
003515	016001	A	1327	LDA	1,B	GET LENGTH	00	01307
003516	001002	A	1328	JAP	*+4		00	01308
003517	003522	R						
003520	005211	A	1329	CPA		MAKE POSITIVE	00	01309
003521	005111	A	1330	IAR			00	01310
003522	126000	A	1331	ADD	0,B	PLUS EXPANSION CELL PTR	00	01311
003523	006057	A	1332	STAE	SCW1	SAVE WD PTR TO END OF EXP CELL	00	01312
003524	004707	R						
003525	006017	A	1333	LDAE	FCNT	GET NUMBER OF BYTES IN FIELD	00	01313



003526	004734	R							
003527	054045	A	1334	STA	SC28+6	STORE AS MOVE LENGTH		00	01314
003530	006400	A	1335	BT	00,SC29			00	01315
003531	003546	R							
003532	005001	A	1336	TZA				00	01316
003533	054036	A	1337	STA	SC28+3	STORE AS TARGET BYTE		00	01317
003534	006017	A	1338	LDAA	FCNT			00	01318
003535	004734	R							
003536	004341	A	1339	LSRA	1	DIVIDE BY 2		00	01319
003537	005211	A	1340	CPA		MAKE NEGATIVE		00	01320
003540	005111	A	1341	IAR				00	01321
003541	006127	A	1342	ADDE	SCW1	PLUS END+1 OF EXP CELL		00	01322
003542	004707	R							
003543	054025	A	1343	STA	SC28+2	MAKE TARGET		00	01323
003544	001000	A	1344	JMP	SC30			00	01324
003545	003561	R							
003546	005101	A	1345	SC29	INCR	1	GET +1	00	01325
003547	054022	A	1346	STA	SC28+3	STORE AS TARGET BYTE		00	01326
003550	006017	A	1347	LDAA	FCNT	GET BYTE CNT		00	01327
003551	004734	R							
003552	004341	A	1348	LSRA	1	DIVIDE BY 2		00	01328
003553	005111	A	1349	IAR		PLUS 1		00	01329
003554	005211	A	1350	CPA		MAKE NEGATIVE		00	01330
003555	005111	A	1351	IAR				00	01331
003556	006127	A	1352	ADDE	SCW1	PLUS END+1 OF EXP CELL		00	01332
003557	004707	R							
003560	054010	A	1353	STA	SC28+2	MAKE IT TARGET WORD		00	01333
003561	006017	A	1354	SC30	LDAA	FEWL	INITIALIZE	00	01334
003562	004720	R							
003563	054007	A	1355	STA	SC28+4	SOURCE		00	01335
003564	006017	A	1356	LDAA	FEBL	WORD AND		00	01336
003565	004721	R							
003566	054005	A	1357	STA	SC28+5	BYTE		00	01337
003567	002000	A	1358	SC28	CALL	MOVE,0,0,0,0	MOVE TO RIGHT OF EXPANSION CELL	00	01338
003570	003425	E							
003571	000000	A							
003572	000000	A							
003573	000000	A							
003574	000000	A							
003575	000000	A							
003576	001000	A	1359	JMP	SC27	CHECK NUMERIC		00	01339
003577	003435	R							
003600	006027	A	1360	SC26	LDBE*	SCAN	GET MAJOR PTR	00	01340
003601	102743	R							
003602	026004	A	1361	LDB	4,B	GET INTERMEDIATE PTR		00	01341
003603	016001	A	1362	LDA	1,B	GET EXP CELL LENGTH		00	01342
003604	001002	A	1363	JAP	*+4			00	01343
003605	003610	R							
003606	005211	A	1364	CPA		MAKE POSITIVE		00	01344
003607	005111	A	1365	IAR				00	01345
003610	006057	A	1366	STAE	CKLP	SAVE		00	01346
003611	004736	R							
003612	016000	A	1367	LDA	0,B	GET EXP CELL PTR		00	01347
003613	006057	A	1368	STAE	ECPT	SAVE		00	01348
003614	004737	R							
003615	005001	A	1369	SC31	TZA			00	01349
003616	006057	A	1370	STAE	SCW1	STORE 0 IN BYTE INDICATOR		00	01350
003617	004707	R							
003620	006027	A	1371	LDBE*	ECPT	GET EXP CELL WD		00	01351
003621	104737	R							
003622	005001	A	1372	SC32	TZA			00	01352
003623	004450	A	1373	LLRL	8	GET A BYTE		00	01353
003624	006140	A	1374	SUBI	0272	IS IT ABOVE 0271		00	01354
003625	000272	A							
003626	001002	A	1375	JAP	SC33	CHECK ALPHA		00	01355
003627	003644	R							
003630	006120	A	1376	ADDI	0272-0260	BELOW 0260		00	01356
003631	000012	A							
003632	001004	A	1377	JAN	SC34	CHECK \$		00	01357
003633	003650	R							
003634	006017	A	1378	SC37	LDAA	SCW1	GET BYTE INDICATOR	00	01358
003635	004707	R							
003636	006047	A	1379	INRE	SCW1	INCR BYTE INDICATOR		00	01359
003637	004707	R							
003640	001010	A	1380	JAZ	SC32	GET 2ND BYTE OF WORD		00	01360
003641	003622	R							
003642	001000	A	1381	JMP	SC35	CHECK IT		00	01361
003643	003670	R							
003644	006120	A	1382	SC33	ADDI	0272-0333	ABOVE 0332=Z	00	01362
003645	177737	A							
003646	001002	A	1383	JAP	SC17	JUMP IF ERROR		00	01363
003647	003402	R							
003650	006120	A	1384	ADDI	0333-0301	BELOW 0301=A		00	01364
003651	000032	A							
003652	001004	A	1385	JAN	SC17	JUMP IF ERROR		00	01365
003653	003402	R							
003654	001000	A	1386	JMP	SC37			00	01366
003655	003634	R							
003656	006120	A	1387	SC34	ADDI	0260-0244	\$	00	01367
003657	000014	A							
003660	001010	A	1388	JAZ	SC37			00	01368
003661	003634	R							
003662	006120	A	1389	ADDI	0244-0240	BLANK		00	01369







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1454 *
1455 * SIFC - PUT RECLEN, FILENAME AND KEY IN CALL TO SIWF
1456 *
1457 * CALLING SEQUENCE -
1458 * JMPM SIFC
1459 * DATA (PTR TO INTERMEDIATE SCAN TABLE)
1460 * DATA (PTR TO CALL TO SIWF)
1461 *
004020 000000 A 1462 SIFC ENTR
004021 006037 A 1463 LDXE SIFC GET PARAM PTR
004022 004020 R
004023 025001 A 1464 LDB 1,X GET CALL PTR
004024 035000 A 1465 LDX 0,X GET INTERMEDIATE TABLE PTR
004025 006015 A 1466 LDAE* 9,X GET RECORD SIZE
004026 100011 A
004027 056004 A 1467 STA 4,B STORE IN CALL
004030 006015 A 1468 SIF2 LDAE* 0,X GET LU#
004031 100000 A
004032 056003 A 1469 STA 3,B STORE IN CALL
004033 006015 A 1470 LDAE* 3,X GET FILE NAME
004034 100003 A
004035 006140 A 1471 SUBT ' ' IS THERE ONE
004036 120240 A
004037 001010 A 1472 JAZ SIF1 NO FILE NAME
004040 004055 R
004041 015003 A 1473 LDA 3,X GET FILE NAME PTR
004042 056007 A 1474 STA 7,B STORE IN CALL
004043 006015 A 1475 LDAE* 6,X GET KEY
004044 100006 A
004045 006140 A 1476 SUBI ' ' IS THERE ONE
004046 120240 A
004047 001010 A 1477 JAZ SIF1 NO, FINISHED
004050 004055 R
004051 006015 A 1478 LDAE* 6,X GET KEY
004052 100006 A
004053 004350 A 1479 LSRA 8 PUT IN LOW ORDER
004054 056006 A 1480 STA 6,B STORE IN CALL
004055 006047 A 1481 SIF1 INRE SIFC
004056 004020 R
004057 006047 A 1482 INRE SIFC
004060 004020 R
004061 001000 A 1483 JMP* SIFC
004062 104020 R

1484 *
1485 * SIFW - PUT FILENAME AND KEY IN CALL TO SIWF
1486 *
1487 * CALLING SEQUENCE -
1488 * JMPM SIFW
1489 * DATA (PTR TO INTERMEDIATE SCAN TABLE)
1490 * DATA (PTR TO CALL TO SIWF)
1491 *
004063 000000 A 1492 SIFW ENTR
004064 006037 A 1493 LDXE SIFW INITIALIZE
004065 004063 R
004066 006077 A 1494 STXE SIFC EXIT
004067 004020 R
004070 025001 A 1495 LDB 1,X GET CALL PTR
004071 035000 A 1496 LDX 0,X GET INTERMED TABLE PTR
004072 001000 A 1497 JMP SIF2
004073 004030 R

1498 *
1499 * SIWF - FILL IN FCB'S
1500 *
1501 * CALLING SEQUENCE -
1502 * JMPM SIWF
1503 * DATA (PTR TO START OF I/O MACROS FOR THIS FILE)
1504 * DATA LUN
1505 * DATA RECLEN
1506 * DATA BUFFER ADDRESS
1507 * DATA KEY
1508 * DATA FILENAME
1509 *
004074 000000 A 1510 SIWF ENTR
004075 006037 A 1511 LDXE SIWF GET PARAM PTR
004076 004074 R
004077 025000 A 1512 LDB 0,X GET I/O MACRO PTR
004100 010423 A 1513 LDA FOUR GET LOOP CTL
004101 054046 A 1514 STA SWF1 SAVE LOOP CTL
004102 016003 A 1515 SWF2 LDA 3,B GET LOGICAL UNIT CELL
004103 115001 A 1516 ORA 1,X OR WITH LOGICAL UNIT NUM
004104 056003 A 1517 STA 3,B PUT IN I/O MACRO
004105 014042 A 1518 LDA SWF1 GET LOOP CTR
004106 005311 A 1519 DAR MINUS 1
004107 054040 A 1520 STA SWF1 SAVE IT
004110 001010 A 1521 JAZ SWF3
004111 004117 R
004112 005021 A 1522 TBA ADD 10
004113 120471 A 1523 ADD TEN TO I/O
004114 005012 A 1524 TAB MACRO PTR
004115 001000 A 1525 JMP SWF2 PROCESS IT
004116 004102 R
004117 026004 A 1526 SWF3 LDB 4,B GET FCB PTR
004120 015002 A 1527 LDA 2,X GET RECORD LENGTH

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004121 056000 A 1528 STA 0,B PUT IT IN FCB/DCB 00 01508
004122 015003 A 1529 LDA 3,X GET AREA PTR 00 01509
004123 056001 A 1530 STA 1,B PUT IT IN FCB/DCB 00 01510
004124 016002 A 1531 LDA 2,B GET KEY 00 01511
004125 115004 A 1532 ORA 4,X OR IN ACTUAL KEY 00 01512
004126 056002 A 1533 STA 2,B SAVE IT 00 01513
004127 015005 A 1534 LDA 5,X GET FILE NAME PTR 00 01514
004130 001010 A 1535 JAZ SWF4 IF 0, DCB, FINISHED 00 01515
004131 004141 R
004132 005014 A 1536 TAX 00 01516
004133 015000 A 1537 LDA 0,X PUT FILE NAME 00 01517
004134 056007 A 1538 STA 7,B IN FCB 00 01518
004135 015001 A 1539 LDA 1,X 00 01519
004136 056010 A 1540 STA 8,B 00 01520
004137 015002 A 1541 LDA 2,X 00 01521
004140 056011 A 1542 STA 9,B 00 01522
004141 006017 A 1543 SWF4 LDAE SIMF GET PARAM PTR 00 01523
004142 004074 R
004143 120466 A 1544 ADD SIX COMPUTE RETURN 00 01524
004144 006057 A 1545 STAE SIMF 00 01525
004145 004074 R
004146 001000 A 1546 JMP* SIMF RETURN 00 01526
004147 104074 R
004150 000000 A 1547 SWF1 DATA 0 WORK CELL 00 01527
1548 * 00 01528
1549 * SI50 - COMPUTE WORK AREA BUFFER LOCATIONS AND SIZES 00 01529
1550 * COMPUTE CONTROL FIELD MOVE AND COMPARE PARAMETERS 00 01530
1551 * 00 01531
1552 * CALLING SEQUENCE - 00 01532
1553 * JMPM SI50 00 01533
1554 * 00 01534
004151 000000 A 1555 SI50 ENTR 00 01535
004152 006017 A 1556 LDAE C4 GET INPUT WORD COUNT *00 01536
004153 005556 R
004154 005012 A 1557 TAB SAVE IN B *00 01537
004155 006147 A 1558 SUBE C8 MINUS OUTPUT WORD COUNT *00 01538
004156 005567 R
004157 001002 A 1559 JAP *+4 JUMP C4>=C8 *00 01539
004160 004163 R
004161 006027 A 1560 LDDE C8 *00 01540
004162 005567 R
004163 006067 A 1561 STBE BUFL SAVE I/O BUFFER SIZE (WORDS) E.1*****
004164 005272 R
004165 004001 A 1562 ASLB 1 MAKE WORD COUNT = 2WORD COUNT *00 01542
004166 006067 A 1563 STBE BUFLB SAVE I/O BUFFER SIZE (BYTES) E.1*****
004167 005273 R
004170 002000 A 1564 SI50A CALL SIGC,0,0 GET AVAILABLE CORE LOCATION AND SIZE 00 01544
004171 006062 R
004172 000000 A
004173 000000 A
004174 006030 A 1565 LDXI SRTC GET SORT CONTROL TABLE 00 01545
004175 002447 R
004176 006017 A 1566 LDAE SI50A+2 GET AVAILABLE CORE LOCATION 00 01546
004177 004172 R
004200 055015 A 1567 STA INBF,X MAKE IT SORT INPUT BUFFER AREA 00 01547
004201 006127 A 1568 ADDE BUFL ADD I/O BUFFER LENGTH E.1*****
004202 005272 R
004203 055016 A 1569 STA DUBF,X MAKE IT THE SORT IN OUTPUT BUFFER 00 01549
004204 006017 A 1570 LDAE* ITB2+9 GET OUTPUT FILE RECORD LENGTH 00 01550
004205 105416 R
004206 001016 A 1571 JANZ SI51 JUMP IF NOT ZERO 00 01551
004207 004216 R
004210 006017 A 1572 LDAE* ITB1+9 GET INPUT FILE RECORD LENGTH 00 01552
004211 105402 R
004212 006057 A 1573 STAE* ITR2+9 MAKE IT THE OUTPUT RECORD LENGTH 00 01553
004213 105416 R
004214 001000 A 1574 JMP SI52 CONTINUE 00 01554
004215 004235 R
004216 006147 A 1575 SI51 SUBE* ITP1+9 MINUS INPUT RECORD LENGTH 00 01555
004217 105402 R
004220 001010 A 1576 JAZ SI52 CONTINUE IF SORT INPUT AND OUTPUT LENGTH EQUA00 01556
004221 004235 R
004222 015260 A 1577 LDA SWCH,X GET THE SYSTEM SWCH 00 01557
004223 006150 A 1578 ANAI 01404 USER EXIT(S) OR SKIP FINAL MERGE F *****
004224 001404 A
004225 001016 A 1579 JANZ SI52 YES - OK 00 01559
004226 004235 R
004227 002000 A 1580 CALL SCER,ST02,0 PRINT ERROR MSG 00 01560
004230 002635 R
004231 002731 R
004232 000000 A
004233 006030 A 1581 LDXI SRTC 00 01561
004234 004170 R
004235 006017 A 1582 SI52 LDAE* ITB1+9 GET INPUT RECORD LENGTH 00 01562
004236 105402 R
004237 004241 A 1583 LRLA 1 TIME 2 = # OF BYTES 00 01563
004240 055003 A 1584 STA INRL,X SET INPUT RECORD LENGTH 00 01564
004241 025260 A 1585 LDR SWCH,X 00 01565
004242 006422 A 1586 BT RB1+02,SI52A JUMP IF INEXIT 00 01566
004243 004250 R
004244 006470 A 1587 BT RB0+010,SI52A JUMP IF NO DUTEXIT 00 01567
004245 004250 R
004246 006057 A 1588 STAE BUFLB DUTEXIT ONLY - WORKRELEN = INLEN E.1*****

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004247	005273	R									
004250	006017	A	1589	SI52A	LDAE*	ITB2+9	GET OUTPUT RECORD LENGTH			00	01569
004251	105416	R									
004252	055011	A	1590		STA	FSOB,X	SET OUTPUT RECORD LENGTH IN WORDS			00	01570
004253	004241	A	1591		LRLA	1	TIMES 2 = # OF BYTES			00	01571
004254	055006	A	1592		STA	DTRL,X	SET OUTPUT RECORD LENGTH IN BYTES			00	01572
004255	006462	A	1593		BT	RB0+02,SI52B	JUMP IF NO INEXIT			00	01573
004256	004263	R									
004257	006430	A	1594		BT	RB1+010,SI52B	JUMP IF DUTEXIT			00	01574
004260	004263	R									
004261	006057	A	1595		STAE	BUFLB	INEXIT ONLY - WORKRECLN = OUTLEN			E.1*****	
004262	005273	R									
004263	006462	A	1596	SI52B	BT	RB0+02,SI53	JUMP IF NO INEXIT			00	01576
004264	004271	R									
004265	006017	A	1597		LDAE	BUFL	GET 2ND BUFFER LENGTH			E.1*****	
004266	005272	R									
004267	001000	A	1598		JMP	SI54				00	01578
004270	004272	R									
004271	005001	A	1599	SI53	TZA		GET A ZERO			00	01579
004272	125016	A	1600	SI54	ADD	DUBF,X	PLUS SORT OUTPUT RECORD PTR			00	01580
004273	055020	A	1601		STA	SBEG,X	MAKE IT THE SORT AREA PTR			00	01581
004274	055022	A	1602		STA	SCUR,X	MAKE IT THE CURRENT SORT AREA PTR			00	01582
004275	006010	A	1603		LDAI	TLFC	GET START OF CTL FLD MOVE PARAM			00	01583
004276	000000	E									
004277	054754	A	1604		STA	SIMP	SAVE IT			00	01584
004300	006010	A	1605		LDAI	CTLS	GET START OF CTL FLD COMP PARAM			00	01585
004301	000000	E									
004302	054752	A	1606		STA	SICP	SAVE IT			00	01586
004303	006020	A	1607		LDBI	C18	GET START OF CTL FLD EXPANSION CELLS			00	01587
004304	005614	R									
004305	064750	A	1608		STB	SICF	SAVE IT			00	01588
004306	034747	A	1609	SI55	LDX	SICF	GET PTR TO CTL FLD-EXPANSION CELLS			00	01589
004307	015002	A	1610		LDA	2,X	GET END COLUMN OF FIELD			00	01590
004310	001010	A	1611		JAZ	SI56	DONE IF ZERO			00	01591
004311	004441	R									
004312	144760	A	1612		SUB	PUFLB				00	01592
004313	005311	A	1613		DAR					00	01593
004314	001002	A	1614		JAP	SI55A	ERRDR IF PAST END OF REC			00	01594
004315	004335	R									
004316	015000	A	1615		LDA	0,X	GET START COL			00	01595
004317	001010	A	1616		JAZ	SI55A	ERROR IF ZERO			00	01596
004320	004335	R									
004321	144751	A	1617		SUB	BUFLB				00	01597
004322	005311	A	1618		DAR					00	01598
004323	001002	A	1619		JAP	SI55A	ERRDR IF PAST END OF REC			00	01599
004324	004335	R									
004325	015002	A	1620		LDA	2,X	GET END COL			00	01600
004326	145000	A	1621		SUB	0,X	MINUS START COLUMN			00	01601
004327	005111	A	1622		IAR		PLUS 1 - COMPUTE LENGTH			00	01602
004330	054730	A	1623		STA	SILG	SAVE FIELD LENGTH			00	01603
004331	001010	A	1624		JAZ	SI55A	IF ZERO, QUIT			00	01604
004332	004335	R									
004333	001002	A	1625		JAP	SI57	IF POSITIVE, CONTINUE			00	01605
004334	004343	R									
004335	002000	A	1626	SI55A	CALL	SCER,ST03,0	PRINT ERROR MSG			00	01606
004336	002635	R									
004337	002733	R									
004340	000000	A									
004341	001000	A	1627		JMP*	SI50	RETURN			00	01607
004342	104151	R									
004343	015000	A	1628	SI57	LDA	0,X	GET CTL FIELD START COLUMN			00	01608
004344	005311	A	1629		DAR					00	01609
004345	005012	A	1630		TAB					00	01610
004346	005001	A	1631		TZA					00	01611
004347	170422	A	1632		DIV	TWO	DIVIDE BY 2			00	01612
004350	034703	A	1633		LDX	SIMP	GET MOVE PARAM PTR			00	01613
004351	065002	A	1634		STB	2,X	STORE QUOTIENT AS SRC WD DISPL			00	01614
004352	055003	A	1635		STA	3,X	STORE REMAINDER AS SRC BYTE DISPL			00	01615
004353	024701	A	1636		LDB	SICP	GET COMP PARAM PTR			00	01616
004354	014702	A	1637		LDA	SITW	GET TARGET WORD			00	01617
004355	055000	A	1638		STA	0,X	STORE AS MOVE TGT WD DISP			00	01618
004356	056000	A	1639		STA	0,B	STORE AS TARGET AND SOURCE			00	01619
004357	056002	A	1640		STA	2,B	WD FOR COMPARE			00	01620
004360	014677	A	1641		LDA	SITB	GET TARGET BYTE			00	01621
004361	055001	A	1642		STA	1,X	STORE AS TARGET BYTE FOR MOVE			00	01622
004362	056001	A	1643		STA	1,B	STORE AS TARGET AND SOURCE			00	01623
004363	056003	A	1644		STA	3,B	BYTE FOR COMPARE			00	01624
004364	014674	A	1645		LDA	SILG	GET CTL FLD LENGTH			00	01625
004365	055004	A	1646		STA	4,X	MAKE IT MOVE LENGTH			00	01626
004366	056004	A	1647		STA	4,B	MAKE IT COMPARE LENGTH			00	01627
004367	005024	A	1648		TBX		PUT COMP PTR IN X			00	01628
004370	005012	A	1649		TAB					00	01629
004371	005001	A	1650		TZA					00	01630
004372	170422	A	1651		DIV	TWO	DIVIDE BY 2			00	01631
004373	124664	A	1652		ADD	SITB	ADD TGT BYTE TO REMAINDER			00	01632
004374	054663	A	1653		STA	SITB	SAVE IT			00	01633
004375	005021	A	1654		TBA					00	01634
004376	124660	A	1655		ADD	SITW	ADD TGT WD TO QUOTIENT			00	01635
004377	054657	A	1656		STA	SITW	SAVE IT			00	01636
004400	014657	A	1657		LDA	SITB	GET TARGET BYTE			00	01637
004401	001010	A	1658		JAZ	SI58	IF ZERO, CONTINUE			00	01638
004402	004411	R									
004403	005311	A	1659		DAR					00	01639



Address	Op	Opnd	Label	Code	Comment	Page	
004404	001010	A	1660	JAZ	S158	IF 1, CONTINUE	00 01640
004405	004411	R					
004406	005001	A	1661	TZA			00 01641
004407	054650	A	1662	STA	SITB	MAKE TARGET BYTE 0	00 01642
004410	044646	A	1663	INR	SITW	INCREMENT TGT WD DISPL BY 1	00 01643
004411	024644	A	1664	LDB	SICF	GET PTR TO CTL FLD EXP CELL	00 01644
004412	016004	A	1665	LDA	4,B	GET SEQUENCE INDICATOR	00 01645
004413	006140	A	1666	SUBI	'D'	IS IT DESCENDING	00 01646
004414	142240	R					
004415	001016	A	1667	JANZ	S159	NO	00 01647
004416	004421	R					
004417	005301	A	1668	DECR	1	YES - SET COMP SEQ	00 01648
004420	055005	A	1669	STA	5,X	SAVE PARAMETER	00 01649
004421	014632	A	1670	LDA	SIMP	GET MOVE PARAM PTR	00 01650
004422	120465	A	1671	ADD	FIVE	BUMP TO NEXT PARAM	00 01651
004423	054630	A	1672	STA	SIMP	SAVE IT	00 01652
004424	014630	A	1673	LDA	SICP	GET COMP PARAM PTR	00 01653
004425	120467	A	1674	ADD	SEVEN	BUMP TO NEXT PARAM	00 01654
004426	054626	A	1675	STA	SICP	SAVE IT	00 01655
004427	014626	A	1676	LDA	SICF	GET EXP CELL PTR	00 01656
004430	120465	A	1677	ADD	FIVE	BUMP TO NEXT PTR	00 01657
004431	054624	A	1678	STA	SICF	SAVE IT	00 01658
004432	044627	A	1679	INR	SICC	INCR CTL FLD CTR BY 1	00 01659
004433	014626	A	1680	LDA	SICC	GET CNT	00 01660
004434	140466	A	1681	SUB	SIX	IS IT 6	00 01661
004435	001010	A	1682	JAZ	S156	YES, THATS ALL THE CTL FLDS	00 01662
004436	004441	R					
004437	001000	A	1683	JMP	S155	NO, PROCESS NEXT CTL FLD	00 01663
004440	004306	R					
004441	014620	A	1684	LDA	SICC	GET CTL FLD CNT	00 01664
004442	006030	A	1685	LDXI	SRTC	GET SORT CTL TABLE	00 01665
004443	004234	R					
004444	055043	A	1686	STA	CTLG,X	SAVE CTL FLD CNT	00 01666
004445	055030	A	1687	STA	NOTL,X	FOR LOOP CONTROL	00 01667
004446	024605	A	1688	LDB	SIMP	GET MOVE PARAM PTR	00 01668
004447	015260	A	1689	LDA	SWCH,X	GET SYSTEM SWITCH	00 01669
004450	006404	A	1690	BT	04,S160	JUMP IF KLYWORD SORT	00 01670
004451	004460	R					
004452	014604	A	1691	LDA	SITW	GET TGT WD DISP	00 01671
004453	056000	A	1692	STA	0,B	MAKE IT TGT WD DISP FOR RECORD	00 01672
004454	014603	A	1693	LDA	SITB	GET TGT WD BYTE	00 01673
004455	056001	A	1694	STA	1,B	MAKE IT TGT BYTE FOR RECORD	00 01674
004456	014614	A	1695	LDA	BUFLB	GET MERGE RECORD LENGTH IN BYTES	00 01675
004457	056004	A	1696	STA	4,B	MAKE IT RECORD MOVE LENGTH	00 01676
004460	054602	A	1697	STA	SIML	SAVE RECORD LENGTH	00 01677
004461	001000	A	1698	JMP	S161		00 01678
004462	004502	R					
004463	014574	A	1699	LDA	SITB	GET NEXT TARGET BYTE	00 01679
004464	001010	A	1700	JAZ	S162	IF ZERO, WD ALIGNED	00 01680
004465	004472	R					
004466	005001	A	1701	TZA			00 01681
004467	054570	A	1702	STA	SITB	MAKE TARGET BYTE 0	00 01682
004470	044566	A	1703	INR	SITW	BUMP WD PTR TO NEXT WD	00 01683
004471	044571	A	1704	INR	SIML	INCR LENGTH BY 1	00 01684
004472	014564	A	1705	LDA	SITW	GET TGT WD DISPL	00 01685
004473	056000	A	1706	STA	0,B	MAKE IT TGT WD DISP FOR RECORD MOVE	00 01686
004474	014563	A	1707	LDA	SITB	GET TGT BYTE DISPL	00 01687
004475	056001	A	1708	STA	1,B	MAKE IT TGT BYTE DISP FOR RECORD MOVE	00 01688
004476	010422	A	1709	LDA	TWO	GET A 2	00 01689
004477	056004	A	1710	STA	4,B	MAKE IT RECNO MOVE LENGTH IN BYTES	00 01690
004500	124062	A	1711	ADD	SIML	ADD POSSIBLE 1	00 01691
004501	054561	A	1712	STA	SIML	SAVE IT	00 01692
004502	014554	A	1713	LDA	SITW	GET TARGET WD	00 01693
004503	004241	A	1714	LRLA	1	TIMES 2	00 01694
004504	124533	A	1715	ADD	SITB	PLUS BYTE NUMBER	00 01695
004505	124535	A	1716	ADD	SIML	PLUS ADJUSTED REC LGH	00 01696
004506	006400	A	1717	BT	00,S163	IF ODD, ADD 1	00 01697
004507	004512	R					
004510	001000	A	1718	JMP	S164		00 01698
004511	004513	R					
004512	005111	A	1719	IAR	S163		00 01699
004513	055007	A	1720	STA	SLGH,X	SAVE MERGE RECORD LENGTH IN BYTES	00 01700
004514	004341	A	1721	LSRA	1	DIVIDE BY 2	00 01701
004515	055024	A	1722	STA	MFLH,X	SAVE MERGE RECORD LENGTH IN WORDS	00 01702
004516	015030	A	1723	LDA	CBEG,X	GET SORT AREA PTR	00 01703
004517	006147	A	1724	SUBE	S150A+2	MINUS START OF AVAIL AREA	00 01704
004520	004172	R					
004521	005211	A	1725	CPA			00 01705
004522	005111	A	1726	IAR			00 01706
004523	006127	A	1727	ARDE	S150A+3	COMPUTE SORT AREA SIZE = AVAIL - BUFFERS	00 01707
004524	004173	R					
004525	005012	A	1728	TAB			00 01708
004526	005001	A	1729	TZA			00 01709
004527	175004	A	1730	DIV	MFLH,X	DIVIDE BY MERGE RECORD SIZE	00 01710
004530	005021	A	1731	TBA			00 01711
004531	005311	A	1732	DAR		SUBTRACT 1 FOR SORT EXCHANGE AREA	00 01712
004532	054531	A	1733	STA	SIBL	SAVE NUM RECS IN SORT AREA	00 01713
004533	140422	A	1734	SUB	TWO	MINUS 2	00 01714
004534	001002	A	1735	JAP	S165	JUMP IF SORT AREA HOLDS AT LEAST TWO RECORDS	00 01715
004535	004544	R					
004536	002000	A	1736	SI64A	CALL	SCER,ST04,0 PRINT ERROR MSG	00 01716
004537	002635	R					
004540	002735	R					



004541	000000	A							
004542	001000	A	1737	JMP*	SI50	RETURN		00	01717
004543	104151	R							
			1738	* COMPUTE BLOCKING FACTOR FOR WORK FILES				00	01718
004544	006010	A	1739	SI65	LDAI	SRT1	GET PTR TO MERGE DUTEXIT BUFFER	00	01719
004545	000010	R							
004546	055262	A	1740	STA	MBUF,X	SAVE IT		00	01720
004547	025260	A	1741	LDB	SWCH,X			00	01721
004550	006470	A	1742	BT	RBO+010,*+3	IF DUTEXIT		00	01722
004551	004553	R							
004552	124517	A	1743	ADD	BUFL	LEAVE SPACE FOR 1ST BUFFER		00	01723
004553	054520	A	1744	STA	MBEG	SAVE BEGINNING OF MERGE WORK AREAS		00	01724
004554	006017	A	1745	LDAE	SI50A+2	GET START OF SORT WORKSPACE		00	01725
004555	004172	R							
004556	144515	A	1746	SUB	MBEG	MINUS START OF MERGE WORKSPACE		00	01726
004557	006127	A	1747	ADDE	SI50A+3	PLUS SIZE OF SORT WORKSPACE		00	01727
004560	004173	R							
004561	005012	A	1748	TAB				00	01728
004562	005001	A	1749	TZA				00	01729
004563	175024	A	1750	DIV	MFLH,X	FIND MAX NUM OF MERGE RECORDS		00	01730
004564	005001	A	1751	TZA				00	01731
004565	170464	A	1752	DIV	THREE	FIND MAX BLK FACTOR FOR 3 MERGE BUFFERS		00	01732
004566	064500	A	1753	STB	MREM	SAVE AS POSSIBLE MRG BLK FACTOR		00	01733
004567	005021	A	1754	TBA				00	01734
004570	140422	A	1755	SUB	TWO	IS IT GREATER THAN 1 ?		00	01735
004571	001002	A	1756	JAP	SI68	JUMP IF YES		00	01736
004572	004601	R							
004573	002000	A	1757	SI67	CALL	SCER,ST04,0	PRINT ERROR MSG	00	01737
004574	002635	R							
004575	002735	R							
004576	000000	A							
004577	001000	A	1758	JMP*	SI50	RETURN		00	01738
004600	104151	R							
004601	014465	A	1759	SI68	LDA	MREM	GET MRG BLK FACTOR	00	01739
004602	144461	A	1760	SUB	SIBL	SUB NUM RECS IN SORT AREA		00	01740
004603	005311	A	1761	DAR				00	01741
004604	001004	A	1762	JAN	*+4	JUMP IF SORT AREA WILL HOLD 1 MRG BLK		00	01742
004605	004610	R							
004606	014455	A	1763	LDA	SIBL	GET NUM RECS IN SORT AREA		00	01743
004607	054457	A	1764	STA	MREM	MAKE IT POSSIBLE BLK FCTR		00	01744
004610	024461	A	1765	LDB	BUFL	GET DUTEXIT BUFFER SIZE		00	01745
004611	015260	A	1766	LDA	SWCH,X			00	01746
004612	006410	A	1767	BT	RA1+8,*+3			00	01747
004613	004615	R							
004614	025011	A	1768	LDB	FSOB,X	OR OUTPUT RECORD LENGTH		00	01748
004615	005001	A	1769	TZA				00	01749
004616	175024	A	1770	DIV	MFLH,X	DIVIDED BY MERGE RECORD LENGTH		00	01750
004617	001010	A	1771	JAZ	*+3			00	01751
004620	004622	R							
004621	005122	A	1772	IBR				00	01752
004622	064446	A	1773	STB	SMIN	SAVE AS MIN MRG BLK FACTOR		00	01753
004623	014443	A	1774	LDA	MREM			00	01754
004624	144444	A	1775	SUB	SMIN			00	01755
004625	001004	A	1776	JAN	SI67	ERROR IF MIN GT MAX BLK FACTOR		00	01756
004626	004573	R							
004627	014434	A	1777	LDA	SIBL			00	01757
004630	144440	A	1778	SUB	SMIN			00	01758
004631	001004	A	1779	JAN	SI67	ERROR IF MIN GT NUM RECS IN SORT AREA		00	01759
004632	004573	R							
004633	024430	A	1780	LDB	SIBL	GET NUM RECS IN SORT AREA		00	01760
004634	005001	A	1781	TZA				00	01761
004635	174431	A	1782	DIV	MREM	DIVIDE BY MAX MERGE BLK		00	01762
004636	001010	A	1783	JAZ	SI72	IF REM=0, USE MAX		00	01763
004637	004632	R							
004640	054427	A	1784	STA	MINR	STORE REMAINDER		00	01764
004641	005122	A	1785	IBR				00	01765
004642	064423	A	1786	STB	SIMM	SAVE QUOT + 1 FOR NUM BLKS		00	01766
004643	024420	A	1787	LDB	SIBL	GET NUM REC IN SORT AREA		00	01767
004644	005001	A	1788	TZA				00	01768
004645	174420	A	1789	DIV	SIMM	DIVIDE BY POSS NUM MRG BLKS		00	01769
004646	144421	A	1790	SUB	MINR	MINUS PREVIOUS LEAST REMAINDER		00	01770
004647	001002	A	1791	JAP	SI72	NEW REM GT OLD REM - USE OLD		00	01771
004650	004652	R							
004651	064415	A	1792	STB	MREM			00	01772
004652	024411	A	1793	SI72	LDB	SIBL	GET NUM RECS IN SORT AREA	00	01773
004653	005001	A	1794	TZA				00	01774
004654	174412	A	1795	DIV	MREM	DIVIDED BY MERGE BLK FACTOR		00	01775
004655	005001	A	1796	TZA				00	01776
004656	164410	A	1797	MUL	MREM	MULT QUOT BY MRG BLK FACTOR		00	01777
004657	065023	A	1798	STB	SNUM,X	STORE AS NUM ENTRIES IN SORT AREA		00	01778
004660	165024	A	1799	MUL	MFLH,X	TIMES WDS PER MRG RECORD		00	01779
004661	005021	A	1800	TBA				00	01780
004662	125020	A	1801	ADD	SBEG,X	PLUS START OF SORT AREA		00	01781
004663	055031	A	1802	STA	SND1,X	SAVE END OF SORT AREA +1		00	01782
004664	005311	A	1803	DAR		MINUS 1		00	01783
004665	055021	A	1804	STA	SEND,X	SAVE END OF SORT AREA		00	01784
004666	024400	A	1805	LDB	MREM	GET MERGE BLK FCTR		00	01785
004667	065014	A	1806	STB	SPWT,X	SAVE MRG BLK FCTR		00	01786
004670	005001	A	1807	TZA				00	01787
004671	165024	A	1808	MUL	MFLH,X	TIMES WDS PER MRG REC		00	01788
004672	065010	A	1809	STB	SBLK,X	STORE WDS PER MRG BLK		00	01789
004673	001000	A	1810	JMP*	SI50	RETURN		00	01790
004674	104151	R							



004675	000000	A	1811	SCSW	DATA	0	WORD ADDRESS FOR START OF LOCATED SEARCH ARGUMENT	00	01791
004676	000000	A	1812	SCSB	DATA	0	BYTE ADDRESS FOR START OF LOCATED SEARCH ARGUMENT	00	01792
004677	000000	A	1813	SCEW	DATA	0	WORD ADDRESS FOR END+1 OF LOCATED SEARCH ARGUMENT	00	01793
004700	000000	A	1814	SCEB	DATA	0	BYTE ADDRESS FOR END+1 OF LOCATED SEARCH ARGUMENT	00	01794
004701	004744	R	1815	SCWS	DATA	(SIBF)	STARTING WORD OF CONTROL AREA TO BEGIN SCAN	00	01795
004702	000000	A	1816	SCBS	DATA	0	STARTING BYTE OF CONTROL CARD AREA TO BEGIN SCAN	00	01796
004703	000000	A	1817	CWSW	DATA	0	STARTING WORD FOR SUCCESSIVE SCAN PASSES	00	01797
004704	000000	A	1818	CBSW	DATA	0	STARTING BYTE FOR SUCCESSIVE SCAN PASSES	00	01798
004705	004743	R	1819	SCWE	DATA	(SIBF-1)	ENDING WORD OF CONTROL CARD AREA	00	01799
004706	000001	A	1820	SCBE	DATA	1	ENDING BYTE OF CONTROL CARD AREA	00	01800
004707	000000	A	1821	SCW1	DATA	0	WORK AREA	00	01801
004710	000000	A	1822	SCW2	DATA	0	READ COUNT	00	01802
004711	177777	A	1823	SCCN	DATA	-1,-1,-2,0	ADJUSTMENT VALUE FOR COMPUTING BYTES	00	01803
004712	177777	A							
004713	177776	A							
004714	000000	A							
004715	000000	A	1824	SCLP	DATA	0	LOOP CONTROL COUNT FOR SCAN	00	01804
004716	000000	A	1825	FSWL	DATA	0	FOUND SCH ARG WORD LOC	00	01805
004717	000000	A	1826	FSBL	DATA	0	FOUND SCH ARG BYTE LOC	00	01806
004720	000000	A	1827	FEWL	DATA	0	FOUND SCH ARG ENDING WORD LOC	00	01807
004721	000000	A	1828	FEBL	DATA	0	FOUND SCH ARG ENDING BYTE LOC	00	01808
004722	000000	A	1829	CMSW	DATA	0	START WD FOR DELIMITER	00	01809
004723	000000	A	1830	CMSB	DATA	0	START BT FOR DELIMITER	00	01810
004724	177400	A	1831	CMMK	DATA	0177400,0377	MASK FOR ELIM UNWANTED CHAR	00	01811
004725	000377	A							
004726	126000	A	1832	COMA	DATA	0126000,0254	A COMMA IN LEFT AND RIGHT BYTE	00	01812
004727	000254	A							
004730	120000	A	1833	BLNK	DATA	0120000,0240	A BLANK IN LEFT AND RIGHT BYTE	00	01813
004731	000240	A							
004732	124400	A	1834	PARN	DATA	0124400,0251	A RIGHT PAREN IN LEFT AND RIGHT BYTE	00	01814
004733	000251	A							
004734	000000	A	1835	FCNT	DATA	0	BYTE COUNT FOR FIELD	00	01815
004735	000000	A	1836	SWIT	DATA	0	LAST ENTRY SWITCH	00	01816
004736	000000	A	1837	CKLP	DATA	0	NUMERIC CHECK LOOP CTR	00	01817
004737	000000	A	1838	ECPT	DATA	0	CURRENT EXPANSION CELL WORD PTR	00	01818
			1839	SICB	DCB	40,SIBF,0		00	01819
004740	000050	A							
004741	004744	R							
004742	000000	A							
004743	000000	A	1840		DATA	0	LD LINE CTL CHAR	00	01820
004744	000000	A	1841	SIBF	BSS	40*5		00	01821
005254	000000	A	1842	SIMP	DATA	0	WORK CELL FOR PTR TO CTL FIELD MOVE PARAM	00	01822
005255	000000	A	1843	SICP	DATA	0	WORK CELL FOR PTR TO CTL FIELD COMP PARAM	00	01823
005256	000000	A	1844	SICF	DATA	0	WORK CELL FOR PTR TO CTL FIELD EXPAN CELL	00	01824
005257	000000	A	1845	SITW	DATA	0	TARGET WD DISPLACEMENT	00	01825
005260	000000	A	1846	SITB	DATA	0	TARGET BYTE DISPLACEMENT	00	01826
005261	000000	A	1847	SILG	DATA	0	COMPUTED LENGTH	00	01827
005262	000000	A	1848	SICC	DATA	0	CONTROL FIELD CNT	00	01828
005263	000000	A	1849	SIML	DATA	0	SAVE LENGTH	00	01829
005264	000000	A	1850	SIBL	DATA	0	NUM OF RECORDS AVAILABLE IN SORT AREA	00	01830
005265	000000	A	1851	SIMB	DATA	0	BLOCKING FACTOR FOR MERGE	00	01831
005266	000000	A	1852	SIMM	DATA	0	MAX BLOCKING FACTOR FOR MERGE	00	01832
005267	000000	A	1853	MREM	DATA	0	POSSIBLE MRG BLK FACTOR	00	01833
005270	000000	A	1854	MINR	DATA	0	LEAST REMAINDER BLK FCOR	00	01834
005271	000000	A	1855	SMIN	DATA	0	MINIMUM BLOCKING FACTOR	00	01835
005272	000000	A	1856	BUFL	DATA	0	SORT I/O BUFFER SIZE (WORDS)	00	01836
005273	000000	A	1857	BUFLB	DATA	0	SORT I/O BUFFER SIZE (BYTES)	00	01837
005274	000000	A	1858	MBEG	DATA	0	PTR TO BEGINNING OF MERGE WORK AREAS	00	01838
			1859	*				00	01839
			1860	*	MAJOR SCAN AND EXPAND TABLES			00	01840
			1861	*				00	01841
			1862	*	TABLE FORMAT	DATA	(PTR TO SEARCH ARGUMENT)	00	01842
			1863	*		DATA	LENGTH OF SEARCH ARGUMENT IN CHAR	00	01843
			1864	*		DATA	(PTR TO INTERMEDIATE EXPAND TABLE) OR	00	01844
			1865	*		(0) REQUESTS RETURN WITH NO EXPANSION	00	01845	
			1866	*		DATA	LENGTH OF COMMENT FOR ERROR MSG	00	01846
			1867	*		DATA	CURRENT INTERM TABLE ENTRY PTR	00	01847
			1868	*		DATA	NUM OF ENTRIES IN INTERM TABLE-MINUS IF OPT	00	01848
			1869	*				00	01849
005275	005656	R	1870	TB1	DATA	(SA1),4,0,4,0,0	SORT	00	01850
005276	000004	A							
005277	000000	A							
005300	000004	A							
005301	000000	A							
005302	000000	A							
005303	005660	R	1871	TB2	DATA	(SA2),7,0,7,0,0	ENDSORT	00	01851
005304	000007	A							
005305	000000	A							
005306	000007	A							
005307	000000	A							
005310	000000	A							
005311	005664	R	1872	TB3	DATA	(SA3),7,(ITB1),5,(ITB1),4	INPUT=(	00	01852
005312	000007	A							
005313	005371	R							
005314	000005	A							
005315	005371	R							
005316	000004	A							
005317	005670	R	1873	TB4	DATA	(SA4),8,(ITB2),6,(ITB2),4	OUTPUT=(	00	01853
005320	000010	A							
005321	005405	R							
005322	000006	A							
005323	005405	R							
005324	000004	A							



005325	005674	R	1874	TB5	DATA	(SA5),7,(ITB3),5,(ITB3),3	WORK1=(	00	01854
005326	000007	A							
005327	005421	R							
005330	000005	A							
005331	005421	R							
005332	000003	A							
005333	005700	R	1875	TB6	DATA	(SA6),7,(ITB4),5,(ITB4),3	WORK2=(	00	01855
005334	000007	A							
005335	005432	R							
005336	000005	A							
005337	005432	R							
005340	000003	A							
005341	005704	R	1876	TB7	DATA	(SA7),7,(ITB5),5,(ITB5),3	WORK3=(	00	01856
005342	000007	A							
005343	005443	R							
005344	000005	A							
005345	005443	R							
005346	000003	A							
005347	005710	R	1877	TB8	DATA	(SA8),9,(ITB6),7,(ITB6),18	SORTKEY=(	00	01857
005350	000011	A							
005351	005454	R							
005352	000007	A							
005353	005454	R							
005354	000022	A							
005355	005715	R	1878	TB9	DATA	(SA9),7,(ITB7),6,(ITB7),-1	INEXIT=	00	01858
005356	000007	A							
005357	005542	R							
005360	000006	A							
005361	005542	R							
005362	177777	A							
005363	005721	R	1879	TB10	DATA	(SA10),8,(ITB8),7,(ITB8),-1	OUTEXIT=	00	01859
005364	000010	A							
005365	005545	R							
005366	000007	A							
005367	005545	R							
005370	177777	A							
1880	*							00	01860
1881	*	INTERMEDIATE TABLE FOR EXPANSION OF SORT PARAMETERS						00	01861
1882	*							00	01862
1883	*	TABLE FORMAT DATA (PTR TO EXPAND CELL)						00	01863
1884	*	DATA LENGTH OF EXPAND CELL IN WORDS-MINUS,OPT						00	01864
1885	*	DATA 0 LEFT ADJUST OR -1 RIGHT ADJUST						00	01865
1886	*							00	01866
005371	005550	R	1887	ITB1	DATA	(C1),2,-1	INPUT LUN	00	01867
005372	000002	A							
005373	177777	A							
005374	005552	R	1888		DATA	(C2),-3,1	INPUT FILENAME	00	01868
005375	177775	A							
005376	000001	A							
005377	005555	R	1889		DATA	(C3),-1,1	INPUT KEY	00	01869
005400	177777	A							
005401	000001	A							
005402	005556	R	1890		DATA	(C4),3,-1	INPUT RECORD SIZE	00	01870
005403	000003	A							
005404	177777	A							
005405	005561	R	1891	ITB2	DATA	(C5),2,-1	OUTPUT LUN	00	01871
005406	000002	A							
005407	177777	A							
005410	005563	R	1892		DATA	(C6),-3,1	OUTPUT FILENAME	00	01872
005411	177775	A							
005412	000001	A							
005413	005566	R	1893		DATA	(C7),-1,1	OUTPUT KEY	00	01873
005414	177777	A							
005415	000001	A							
005416	005567	R	1894		DATA	(C8),-3,-1	OUTPUT RECORD SIZE	00	01874
005417	177775	A							
005420	177777	A							
005421	005572	R	1895	ITB3	DATA	(C9),2,-1	WORK1 LUN	00	01875
005422	000002	A							
005423	177777	A							
005424	005574	R	1896		DATA	(C10),3,1	WORK1 FILENAME	00	01876
005425	000003	A							
005426	000001	A							
005427	005577	R	1897		DATA	(C11),-1,1	WORK1 KEY	00	01877
005430	177777	A							
005431	000001	A							
005432	005600	R	1898	ITB4	DATA	(C12),2,-1	WORK2 LUN	00	01878
005433	000002	A							
005434	177777	A							
005435	005602	R	1899		DATA	(C13),3,1	WORK2 FILENAME	00	01879
005436	000003	A							
005437	000001	A							
005440	005605	R	1900		DATA	(C14),-1,1	WORK2 KEY	00	01880
005441	177777	A							
005442	000001	A							
005443	005606	R	1901	ITB5	DATA	(C15),2,-1	WORK3 LUN	00	01881
005444	000002	A							
005445	177777	A							
005446	005610	R	1902		DATA	(C16),3,1	WORK3 FILENAME	00	01882
005447	000003	A							
005450	000001	A							
005451	005613	R	1903		DATA	(C17),-1,1	WORK3 KEY	00	01883
005452	177777	A							











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1987 * RMD - DETERMINE IF THE LOGICAL UNIT IS ON AN RMD          00 01964
1988 *                                                                00 01965
1989 * CALLING SEQUENCE                                           00 01966
1990 *   A REGISTER CONTAINS LUN                                  00 01967
1991 *   JMPM RMD                                                  00 01968
1992 * RETURN CONDITIONS                                           00 01969
1993 *   A REGISTER = 0 IF LUN ON RMD                             00 01970
1994 *                                                                00 01971
005725 000000 A 1995 RMD ENTR                                     00 01972
005726 002000 A 1996 CALL DNAME GET DEVICE NAME                 00 01973
005727 005744 R
005730 004350 A 1997 LSRA 8                                     00 01974
005731 006140 A 1998 SUBI 0304 D ?                               00 01975
005732 000304 A
005733 001000 A 1999 JMP* RMD RETURN - A REG = 0 IF RMD        00 01976
005734 105725 R
2000 *                                                                00 01977
2001 * LP - DETERMINE IF THE LOGICAL UNIT IS A LINE PRINTER    00 01978
2002 *                                                                00 01979
2003 * CALLING SEQUENCE                                           00 01980
2004 *   A REGISTER CONTAINS LUN                                  00 01981
2005 *   JMPM LP                                                  00 01982
2006 * RETURN CONDITIONS                                           00 01983
2007 *   A REGISTER = 0 IF LINE PRINTER                          00 01984
2008 *                                                                00 01985
005735 000000 A 2009 LP ENTR                                     00 01986
005736 002000 A 2010 CALL DNAME GET DEVICE NAME                 00 01987
005737 005744 R
005740 006140 A 2011 SUBI 'LP' LP ?                               00 01988
005741 146320 A
005742 001000 A 2012 JMP* LP RETURN - A REG = 0 IF LP            00 01989
005743 105735 R
2013 *                                                                00 01990
2014 * DNAME - GET DEVICE NAME                                     00 01991
2015 *                                                                00 01992
2016 * CALLING SEQUENCE                                           00 01993
2017 *   A REGISTER CONTAINS LUN                                  00 01994
2018 *   CALL DNAME                                               00 01995
2019 * RETURN CONDITIONS                                           00 01996
2020 *   A REGISTER CONTAINS FIRST WORD OF DNAME OR 0 IF LUN NOT 0-255 00 01997
2021 *                                                                00 01998
005744 000000 A 2022 DNAME ENTR                                     00 01999
005745 006030 A 2023 LDXI V$LUT1 GET PTR TO PART1 OF LUN TABLE 00 02000
005746 000400 A
005747 125000 A 2024 ADD 0,X PLUS LUN TABLE PTR                    00 02016
005750 005012 A 2025 TAB
005751 016000 A 2026 LDA 0,B GET CURRENT 0ST ENTRY NO.                    00 02017
005752 150463 A 2027 ANA RHW
005753 005311 A 2028 DAR CONVERT
005754 054034 A 2029 STA DSAVE TO
005755 004201 A 2030 ASLA 1 DISPLACEMENT
005756 124032 A 2031 ADD DSAVE IN TABLE
005757 120355 A 2032 ADD V$DSTB ADD TABLE BASE
005760 005012 A 2033 TAB
005761 016001 A 2034 LDA 1,B GET DEVICE NAME - FIRST WORD
005762 006130 A 2035 ERAI 'SP' IS IT A SPOGLER F *****
005763 151720 A
005764 001010 A 2036 JAZ DNMB -YES- F *****
005765 005771 R
005766 016001 A 2037 LDA 1,B -NO- F *****
005767 001000 A 2038 JMP* DNAME RETURN F *****
005770 105744 R
005771 016000 A 2039 DNMB LDA 0,B DEVICE NUMBER (BITS 12-4) F *****
005772 004352 A 2040 LSRA 10 POSITION MSB OF UNIT NUMBER F *****
005773 150467 A 2041 ANA SEVEN F *****
005774 120402 A 2042 ADD V$LUT3 PLUS SPOGLER BASE F *****
005775 005114 A 2043 INCR 014 F *****
005776 015000 A 2044 LDA 0,X F *****
005777 150463 A 2045 ANA RHW F *****
006000 005311 A 2046 DAR F *****
006001 054007 A 2047 STA DSAVE F *****
006002 004201 A 2048 ASLA 1 F *****
006003 124005 A 2049 ADD DSAVE F *****
006004 120355 A 2050 ADD V$DSTB F *****
006005 005014 A 2051 TAB F *****
006006 015001 A 2052 LDA 1,1 F *****
006007 001000 A 2053 JMP* DNAME F *****
006010 105744 R
006011 000000 A 2054 DSAVE DATA 0 00 02028
2055 *                                                                00 02029
2056 * ATOB - ASCII TO BINARY CONVERSION ROUTINE                 00 02030
2057 *                                                                00 02031
2058 * CALLING SEQUENCE                                           00 02032
2059 *   JMPM ATOB                                                 00 02033
2060 *   DATA (PTR TO ASCII WORDS)                               00 02034
2061 *   DATA NUMBER OF WORDS TO BE CONVERTED - 1 TO 3         00 02035
2062 *                                                                00 02036
2063 * RETURN CONDITIONS                                           00 02037
2064 *   BINARY RESULT REPLACES FIRST ASCII WORD                 00 02038
2065 *   A REGISTER = -1 IF OVERFLOW ERROR, 0 OTHERWISE          00 02039
2066 *                                                                00 02040
006012 000000 A 2067 ATOB ENTR                                     00 02041
006013 006027 A 2068 LDDE *-1 GET PARAMETER PTR 00 02042

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006014 006012 R
006015 036000 A 2069 LDX 0,B GET ASCII WORD PTR 00 02043
006016 016001 A 2070 LDA 1,B SAVE NUMBER 00 02044
006017 054041 A 2071 STA ACNT OF WORDS TO BE CONVERTED 00 02045
006020 005002 A 2072 TZB 00 02046
006021 015000 A 2073 ALP LDA 0,X GET WORD FOR CONVERSION 00 02047
006022 004244 A 2074 LRLA 4 GET RID OF ASCII ZONE BITS 00 02048
006023 004354 A 2075 LSRA 12 SHIFT NUMBER TO LOW ORDER 00 02049
006024 160471 A 2076 MUL TEN MULTIPLY BY 10 AND ADD NEXT DIGIT 00 02050
006025 001016 A 2077 JANZ AERR ERROR IF RESULT GREATER THAN 1 WORD 00 02051
006026 006045 R
006027 015000 A 2078 LDA 0,X GET NEXT DIGIT 00 02052
006030 004254 A 2079 LRLA 12 GET RID OF ASCII ZONE BITS 00 02053
006031 004354 A 2080 LSRA 12 SHIFT NUMBER TO LOW ORDER 00 02054
006032 160471 A 2081 MUL TEN MULTIPLY BY 10 AND ADD NEXT DIGIT 00 02055
006033 001016 A 2082 JANZ AERR ERROR IF RESULT GREATER THAN 1 WORD 00 02056
006034 006045 R
006035 014023 A 2083 LDA ACNT GET CNT 00 02057
006036 005311 A 2084 DAR -1 00 02058
006037 054021 A 2085 STA ACNT 00 02059
006040 001010 A 2086 JAZ ARTN RETURN IF 0 00 02060
006041 006050 R
006042 005144 A 2087 IXR BUMP TO NEXT CONVERT WORD 00 02061
006043 001000 A 2088 JMP ALP 00 02062
006044 006021 R
006045 005301 A 2089 AERR DECR 1 ERROR EXIT, RETURN CODE = -1 00 02063
006046 001000 A 2090 JMP ARET 00 02064
006047 006053 R
006050 006037 A 2091 ARTN LDXE* ATOB GET PTR 00 02065
006051 106012 R
006052 065000 A 2092 STB 0,X STORE RESULT 00 02066
006053 006047 A 2093 ARET INRE ATOB 00 02067
006054 006012 R
006055 006047 A 2094 INRE ATOB 00 02068
006056 006012 R
006057 001000 A 2095 JMP* ATOB RETURN 00 02069
006060 106012 R
006061 000000 A 2096 ACNT DATA 0 00 02070
2097 * 00 02071
2098 * SIGC - OBTAIN LOCATION AND SIZE OF AVAILABLE WORKSPACE 00 02072
2099 * 00 02073
2100 * CALLING SEQUENCE 00 02074
2101 * JMPM SIGC 00 02075
2102 * DATA LOCATION OF AVAILABLE SPACE 00 02076
2103 * DATA SIZE IN WORDS 00 02077
2104 * 00 02078
000301 A 2105 V$CPL EQU 0301 PRIORITY LEVEL *00 02079
000317 A 2106 V$LLUP EQU 0317 TOP OF BACKGROUND *00 02080
000415 A 2107 V$BFC EQU 0415 TD OF FOREGROUND *00 02081
006062 000000 A 2108 SIGC ENTR 00 02082
006063 020317 A 2109 LDB V$LLUP B=TOP OF BACKGROUND *00 02083
006064 010301 A 2110 LDA V$CPL GET PRIORITY LEVEL *00 02084
006065 150441 A 2111 ANA BRO STRIP OFF BIT 0 00 02085
006066 001010 A 2112 JAZ SIGC1 IF 0 OR 1 MUST BE BACKGROUND 00 02086
006067 006072 R
006070 006020 A 2113 LDBI ENDSIG B=TOP OF SORT PROGRAM 00 02087
006071 006177 R
006072 005021 A 2114 SIGC1 TBA A= TOP OF AVAILABLE WORKSPACEUND *00 02088
006073 005111 A 2115 IAR PLUS 1 00 02089
006074 006140 A 2116 SUBI SINI MINUS BEGINNING OF INITIALIZATION ROUTINE 00 02090
006075 001367 R
006076 005012 A 2117 TAB SAVE LENGTH IN B REG 00 02091
006077 006010 A 2118 LDAI SINI GET START OF INITIALIZATION ROUTINE 00 02092
006100 001367 R
006101 006057 P 2119 STAE* SIGC STORE LOCATION IN CALL 00 02093
006102 106062 R
006103 006047 A 2120 INRE SIGC POINT TO SIZE CELL 00 02094
006104 006062 R
006105 006067 A 2121 STBE* SIGC STORE NUMBER OF WORDS AVAILABLE 00 02095
006106 106062 R
006107 006047 A 2122 INRE SIGC COMPUTE RETURN 00 02096
006110 006062 R
006111 001000 A 2123 JMP* SIGC RETURN 00 02097
006112 106062 R
006113 000000 A 2124 * F *****
2125 * FORMOD ENTR CHECK FOR FOREGROUND MODIFICATIONS F *****
2126 * F *****
006114 001010 A 2127 JAZ* FORMOD NO MODIFICATIONS F *****
006115 106113 R
006116 054060 A 2128 STA FORFLG SAVE FLAG WORD F *****
006117 150421 A 2129 ANA BS0 SAVE FINAL MERGE BIT F *****
006120 004251 A 2130 LRLA 9 MOVE TO BIT 9 F *****
006121 006030 A 2131 LDXI SRTC F *****
006122 004443 E
006123 055260 A 2132 STA SWCH,X SAVE IN SWITCH F *****
006124 014052 A 2133 LDA FORFLG GET FLAG F *****
006125 150422 A 2134 ANA BS1 SAVE PARAMETER FLAG F *****
006126 001010 A 2135 JAZ* FORMOD EXIT IF OFF F *****
006127 106113 R
006130 006017 A 2136 LDAE DSCF+3 MODIFY OPEN "SI" F *****
006131 001375 R
006132 154043 A 2137 ANA MS10 F *****
006133 116000 A 2138 ORA 0,B F *****

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006134 006057 A 2139 STAE DSCF+3 F *****
006135 001375 R          LDAE RSCR+3      MODIFY READ "SI" F *****
006136 006017 A 2140          ANA  MS10          F *****
006137 001417 R          ORA  0,1          F *****
006140 154035 A 2141          STAE RSCR+3          F *****
006141 115000 A 2142          LDXI SIFCB          MODIFY FCB F *****
006142 006057 A 2143          LDA  2,1          F *****
006143 001417 R          ANA  LHW          F *****
006144 006030 A 2144          ORA  1,2          F *****
006145 001420 E          STA  2,1          KEY F *****
006146 015002 A 2145          LDA  2,2          LENGTH F *****
006147 150462 A 2146          STA  0,1          NAME1 F *****
006150 116001 A 2147          LDA  3,2          2 F *****
006151 055002 A 2148          STA  7,1          3 F *****
006152 016002 A 2149          LDA  4,2          F *****
006153 055000 A 2150          STA  8,1          F *****
006154 016003 A 2151          LDA  5,2          F *****
006155 055007 A 2152          STA  9,1          F *****
006156 016004 A 2153          LDXI WRT5          F *****
006157 055010 A 2154          LDA  4,1          F *****
006160 016005 A 2155          ANA  MS10          F *****
006161 055011 A 2156          STA  4,1          F *****
006162 006030 A 2157          LDAE SICB+3      SKIP ECHO F *****
006163 000000 E          JMP* FORMOD      F *****
006164 015004 A 2158          ANA  MS10          F *****
006165 154010 A 2159          STA  4,1          F *****
006166 055004 A 2160          LDAE SICB+3      F *****
006167 006017 A 2161          ANA  MS10          F *****
006170 004743 R          STAE SICB+3          F *****
006171 154004 A 2162          JMP* FORMOD      F *****
006172 006057 A 2163          ANA  MS10          F *****
006173 004743 R          STAE SICB+3          F *****
006174 001000 A 2164          JMP* FORMOD      F *****
006175 106113 R          MS10 DATA 0177700 F *****
006176 177700 A 2165 FORFLG DATA 0 F *****
006177 000000 A 2166 ENDSIG EQU *-1 TOP OF THE SDRT PROGRAM F *****
006177 006177 R 2167 END          00 02098
                                00 02099

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ENTRY NAMES

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001367 R SINI 000010 R SRT1 000000 R XIT2
EXTERNAL NAMES
000441 E BTDA 000404 E CLRS 003017 E COMP 004301 E CTLS
000000 E GDFCB 002474 E IFCA 002477 E IFCB 001062 E IFRD
000474 E LUS 000463 E LUSB 003570 E MOVE 002520 E DFCA
002523 E DFCE 002531 E S1CA 002534 E S1CB 000321 E S1CLS
002542 E S2CA 002545 E S2CB 000323 E S2CLS 002553 E S3CA
002556 E S3CB 006145 E SIFCB 006122 E SRTC 004276 E TLFC
000000 E V$EXEC 000000 E V$IDC 000000 E V$IDST 006163 E WRT5
000073 E XIT1 001043 E XSF1 001051 E XSF2
SYMBOLS
000001 A ACCP 006061 R ACNT 006045 R AERR 006021 R ALP
006053 R ARET 006050 R ARTN 006012 R ATDB 000002 A B
004730 R BLNK 000441 A BRO 000455 A BR12 000460 A BR15
000445 A BR4 000421 A BS0 000422 A BS1 000435 A BS12
000440 A BS15 000423 A BS2 000424 A BS3 000425 A BS4
000431 A BS8 000441 E BTDA 005272 R BUFL 005273 R BUFLB
005550 R C1 005574 R C10 005577 R C11 005600 R C12
005602 R C13 005605 R C14 005606 R C15 005610 R C16
005613 R C17 005614 R C18 005616 R C19 005552 R C2
005620 R C20 005621 R C21 005623 R C22 005625 R C23
005626 R C24 005630 R C25 005632 R C26 005633 R C27
005635 R C28 005637 R C29 005555 R C3 005640 R C30
005642 R C31 005644 R C32 005645 R C33 005647 R C34
005651 R C35 005652 R C36 005654 R C37 005556 R C4
005561 R C5 005563 R C6 005566 R C7 005567 R C8
005572 R C9 004704 R CBSW 000045 A CKE1 000046 A CKE2
000047 A CKE3 000044 A CKEY 004736 R CKLP 002376 R CL1
002406 R CL2 002416 R CL3 002426 R CL4 002436 R CL5
000404 E CLR5 000017 A CMBF 004724 R CMMK 004723 R CMSE
004722 R CMSW 004726 R COMA 003017 E COMP 000043 A CTLC
000050 A CTLP 000040 A CTLI 000041 A CTLP 004301 E CTLS
004703 R CMSW 000217 A DCB5 000222 A DILU 000003 A DLTD
005744 R DNAME 005771 R DNMS 006011 R DSAVE 000221 A DSI
001737 R ECPT 000424 A EIGHT 006177 R ENDSIG 000146 R EOF
000256 R EOF1 000210 R EOF2 000200 R EOF2A 000250 R EOF3
000433 R EOF4 000220 R EOF5 000230 R EOF6 000342 R EOF9
000246 R EOF7 000247 R EOF8 000374 R EDM1 000444 R EDM3
000501 R EOS1 000502 R EOS5 000772 R ERR06 000744 R ERR6
000767 R ERRMSG 000746 R ERRMV 004734 R FCNT 004721 R FEFL
004720 R FEUL 000465 A FIVE 006177 R FORFLG 006113 R FORMOD
000423 A FOUR 004717 R FSBL 000220 A FSID 000011 A FSDB
000223 A FSOI 004716 R FSNL 000000 E GDFCB 002474 E IFCA
002477 E IFCB 001062 E IFRD 000015 A INBF 000000 A INPT
000005 A INRL 000002 A INST 000037 A IPRC 005371 R ITB1
005405 R ITB2 005421 R ITB3 005432 R ITB4 005443 R ITB5
005454 R ITB6 005542 R ITB7 005545 R ITB8 000660 R KEYW
000042 A LGHT 000462 A LHW 001407 R LINK 000005 A LD
005735 R LP 000261 A LPSW 000474 E LUS 000463 E LUSB
005274 R MBEG 000010 A MBLH 000262 A MBUF 000024 A MFLH
005270 R MINR 003570 E MOVE 000633 R MP1 005267 R NREM
006176 R MS10 000503 R MSG1 000534 R MSG2 000420 A MT
000030 A NCTL 000461 A NEG 000213 A DCAB 000214 A DCAE
002520 E DFCA 002523 E DFCE 002473 R DIN 000421 A ONE

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002517 R DDUT      000004 A DRCT      001372 R DSCF      000006 A DTRL
000016 A DUBF      004732 R PARN      000040 A RAO       000000 A RAI
000060 A RB0       000020 A RB1       000463 A RHM       005725 R RMD
001414 R RSCR      002531 E S1CA      002534 E S1CB      000321 E S1CLS
000225 A S1ID      002542 E S2CA      002545 E S2CB      000323 E S2CLS
000236 A S2ID      002553 E S3CA      002556 E S3CB      000247 A S3ID
005656 R SA1       005721 R SA10      005660 R SA2       005664 R SA3
005670 R SA4       005674 R SA5       005700 R SA6       005704 R SA7
005710 R SA8       005715 R SA9       000211 A SALP      000212 A SAQP
000210 A SA3P      000020 A SBEG      000010 A SBLK      002756 R SC1
003174 R SC10      003236 R SC11      003112 R SC12      003333 R SC13
003343 R SC14      003350 R SC15      003267 R SC16      003402 R SC17
003406 R SC18      003703 R SC19      003016 R SC2       003512 R SC20
003424 R SC21      003457 R SC23      003452 R SC24      003600 R SC26
003435 R SC27      003567 R SC28      003546 R SC29      003103 R SC3
003561 R SC30      003615 R SC31      003622 R SC32      003644 R SC33
003656 R SC34      003670 R SC35      003634 R SC37      003713 R SC38
003720 R SC39      003063 R SC4       003727 R SC40      003751 R SC42
003745 R SC43      003765 R SC44      003774 R SC45      004002 R SC46
003054 R SC5       003254 R SC8       003213 R SC9       002743 R SCAN
004706 R SCBE      004702 R SCBS      004711 R SCCN      004700 R SCEB
002635 R SCER      003070 R SCERR      003405 R SCERZ      004677 R SCEW
003131 R SCGD      004715 R SCLP      003356 R SCMA      000113 A SCPT
003073 R SCRT      003077 R SCRT1      004676 R SCSB      004675 R SCSW
000122 A SCTL      000114 A SCTP      000022 A SCUR      004707 R SCH1
004710 R SCH2      004705 R SCWE      004701 R SCWS      000021 A SEND
002713 R SERR      000467 A SEVEN      000215 P SFAC      000202 A SFAL
000205 A SFAD      000177 A SFAS      001001 R SFB0      001026 R SFB1
001036 R SFB2      001010 R SFB3      001042 R SFB4      001050 R SFB5
000216 A SFFC      000034 A SFIB      000032 A SFPT      003130 R SGGD
000002 A SI        001504 R SI0       001506 R SI1       002270 R SI10
002321 R SI11      002605 R SI1E      001533 R SI2       001547 R SI2A
002613 R SI2E      001523 R SI3       002621 R SI3E      001555 R SI4
001756 R SI4A      001565 R SI4B      002008 R SI4K      001671 R SI4W1B
001675 R SI4W2A    001735 R SI4W2B    001741 R SI4W3A    002002 R SI4W3B
002230 R SI5       004151 R SI50      004170 R SI50A      004216 R SI51
004235 R SI52      004250 R SI52A      004253 R SI52B      004271 R SI53
004272 R SI54      004306 R SI55      004335 R SI55A      004441 R SI56
004343 R SI57      004411 R SI58      004421 R SI59      002237 R SI5A
002140 R SI6       004463 R SI60      004502 R SI61      004470 R SI62
004512 R SI63      004513 R SI64      004536 R SI64A      004544 R SI63
004573 R SI67      004601 R SI69      002147 R SI6A      002201 R SI6A0
002202 R SI6A1      002217 R SI6B      002222 R SI6D      002221 R SI6T
002220 R SI6X      002223 R SI7       004652 R SI72      002254 R SI8
004744 R SIBF      005264 R SIBL      004740 R SICB      005262 R SICC
005256 R SICF      005255 R SICP      004055 R SIF1      004030 R SIF2
004020 R SIFC      006145 E SIFCB      004053 R SIFW      006062 R SIGC
006072 R SIGC1      002571 R SIEE      005261 R SILG      005265 R SIMB
005263 R SIML      005266 R SIMH      005254 R SIMP      001401 R SIN0
001367 R SIN1      002577 R SIME      000224 A SIO1      002714 R SIS1
002717 R SIS2      005260 R SITB      005257 R SITW      004074 R SINW
000466 A SIX       003334 R SLES      000007 A SLGH      000175 A SLPT
005271 R SMIN      000604 R SMD1      000667 R SMD2      000573 R SMDV
000031 A SMD1      000023 A SNUM      000176 A SOPT      000012 A SOUT
0000245 R SPAD      000013 A SPCT      000014 A SPWT      000027 R SR1
000030 R SR2       000040 R SR3       000050 R SR3A      002562 R SRET
002563 R SRET1      001100 R SRI1      001106 R SRI2      001111 R SRI3
001056 R SRI0      000162 R SROT      000019 R SRT1      006122 E SRTC
001125 R SS1       001352 R SS10      001240 R SS11      001330 R SS13
001343 R SS14      001136 R SS2       001140 R SS3       001173 R SS4
001222 R SS5       001230 R SS6       001251 R SS7       001273 R SS8
001015 R SS9       001366 R SSBF      001114 R SSEQ      001365 R SSLO
000174 A SSPT      002727 R ST01      002731 R ST02      002733 R ST03
002735 R ST04      002737 R ST05      002741 R ST08      002627 R ST08E
000035 A STM1      000036 A STM2      000033 A STDT      002504 R STSIC
002530 R STSIC      002701 R SW1       000260 A SWCH      000735 R SWER
000732 R SWER7      004150 R SWF1      004102 R SWF2      004117 R SWF3
004141 R SWF4      004735 R SWIT      000025 A SWK1      000026 A SWK2
000027 A SWK3      002672 R SWM1      000671 R SWRI      000720 R SWRT
005275 R TB1       005363 R TB10      005303 R TB2       005311 R TB3
005317 R TB4       005325 R TB5       005333 R TB6       005341 R TB7
005347 R TB8       005355 R TB9       000471 A TEN      000464 A THREE
004276 E TLFC      000033 A TSEQ      000422 A TWO      000125 R UEX1
000137 R UEX2      000064 R USER      000072 R USR1      000415 A V$BFC
000301 A V$CPL      000355 A V$DSTB    000000 E V$EXEC      000000 E V$IDC
000000 E V$IDST      000317 A V$LLUP    000400 A V$LUT1      000401 A V$LUT2
000402 A V$LUT3      006163 E WRT5      000001 A X         000073 E XIT1
000000 R XIT2      001043 E XSF1      001051 E XSF2      000420 A ZERO
0 ERRORS ASSEMBLY COMPLETE

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20	ACCP	207	250	359						
0	ACNT	2071								
0	ERR	2077	2082							
2867	ATDB	796	797	803	804	810	826	843	862	863
		864	865	866	867	868	869	870	871	872
		873								
94	B	313	315	339	340	343	344	346	347	349
		350	356	358	475	488	552	556	639	640
		643	645	648	650	652	654	758	760	763
		908	910	913	915	918	921	950	959	1070
		1072	1079	1081	1139	1143	1145	1152	1164	1174
		1178	1183	1186	1197	1216	1244	1245	1247	1248











1969	SA2	1871									
1970	SA3	1872									
1971	SA4	1873									
1972	SA5	1874									
1973	SA6	1875									
1974	SA7	1876									
1975	SA8	1877									
1976	SA9	1878									
36	SBEG	267	310	616	724	1601	1723	1801			
27	SBLK	715	985	991	998	1809					
1126	SC1	1158	1162								
1208	SC10	1199									
1228	SC11	1218									
1177	SC12	1149									
1260	SC13	1255	1258								
1264	SC14	1261									
1267	SC15	1263									
1242	SC16	1268									
1283	SC17	1278	1313	1315	1383	1385	1390				
1286	SC18	1280									
1398	SC19	1282	1284	1324	1397						
1147	SC2	1127	1129	1144	1146	1148	1180	1190	1193		
1325	SC20	1287									
1296	SC21	1289	1291	1293	1295						
1310	SC23	1318									
1307	SC24	1323									
1360	SC26	1297									
1298	SC27	1359									
1358	SC28	1334	1337	1343	1346	1353	1355	1357			
1345	SC29	1335									
1173	SC3	1287	1215	1227	1235						
1354	SC30	1344									
1369	SC31	1396									
1372	SC32	1380									
1382	SC33	1375									
1387	SC34	1377									
1392	SC35	1381									
1378	SC37	1386	1388	1391							
1402	SC38	1399									
1405	SC39	1401									
1163	SC4	1153	1154								
1410	SC40	1407									
1423	SC42	1416									
1420	SC43	1418									
1433	SC44	1424									
1439	SC45	1436									
1444	SC46	1453									
1159	SC5	1156									
1236	SC8	1175	1432								
1216	SC9	1196									
1119	SCAN	775	782	794	801	808	824	841	859	874	
		877	1142	1151	1163	1171	1172	1173	1177	1270	
		1298	1325	1360	1405	1452					
1820	SCBE	793	1137	1254							
1816	SCBS	781	1124								
1823	SCCN	1139									
1814	SCCB	780	1206	1214	1226	1234					
1064	SCER	777	788	800	807	823	840	858	861	876	
		879	1052	1054	1056	1058	1060	1062	1068	1077	
		1086	1580	1626	1736	1757					
1166	SCERR	1169	1259	1419	1451						
1285	SCERZ	1121	1168	1283							
1813	SCEN	778	1203	1211	1223	1231					
1187	SCGD	1179	1185								
1824	SCLP	1141	1150								
1270	SCMA	1246									
62	SCPT	634									
1168	SCRT	1165	1176	1422	1448						
1171	SCRT1	1167									
1812	SCSB	792	1195								
1811	SCSN	790	1192								
64	SCTL	269									
38	SCUR	211	216	218	266	279	292	311	318	322	
		419	725	1602							
1821	SCW1	1134	1140	1303	1316	1317	1332	1342	1352	1370	
		1378	1379	1443	1447						
1822	SCW2	784	785								
1819	SCWE	766	771	791	1130	1257					
1815	SCWS	779	1122								
37	SEND	210	320	626	670	1804					
1087	SERROR	967	1049	1085							
130	SEVEN	490	1674	2041							
69	SFAL	986	987	992							
70	SFAD	994	995	1000	1015	1017					
68	SFAS	983	984	990							
524	SFB0	213	307	553	557						
540	SFB1	527									
547	SFB2	531	532								
529	SFB3	539									
550	SFB4	546									
554	SFB5	549									
49	SFIB	516	530	535	538	541					
46	SFPT	327	331	466	485	551	555				







304	SPAD	271	274	295						
31	SPCT	615	707	708	712					
32	SPWT	353	709	1806						
202	SR1	198								
203	SR2	221								
210	SR3	246	247	249	255					
215	SR3A	212								
1049	SRET	968	1053	1055	1057	1059	1061			
1051	SRET1	750	750	762	762	762	762			
580	SR11	584	586							
583	SR12	576	576							
585	SR13	576	576							
571	SR10	195	580	581	582					
265	SROT	239	259	317						
194	SRT1	133	222	242	390	1739				
0	SRTC	134	197	233	256	265	278	288	291	309
		329	335	369	411	436	445	465	471	484
		525	577	613	657	683	694	705	718	723
		819	836	854	941	945	953	962	970	977
		980	1004	1014	1565	1581	1685			
620	SS1	710	719							
720	SS10	627								
673	SS11	662	666							
707	SS13	671								
717	SS14	714								
628	SS2	672								
630	SS3	659								
656	SS4	642	644	647	649	651	653	655	658	661
		664								
664	SS5	663								
667	SS6	633	663	665	706					
682	SS7	674	676	678	680	681				
693	SS8	685	687	689	691	692				
704	SS9	696	698	700	702	703				
728	SSBF	617	713	716	720					
612	SSEQ	214	308	726						
727	SSLO	623	641							
1090	ST01	777	788	800	807	823	840	858	861	876
		879								
1091	ST02	1580								
1092	ST03	1626								
1093	ST04	1736	1757							
1094	ST05	1052	1054	1056	1058	1060				
1095	ST08	1062								
1062	ST08E	948								
50	STM1	341	533	536	542					
51	STM2	336	534	537	544	548				
47	STDT	526	528	529	545					
1032	STSIC	1031								
1042	STSDC	1041								
1084	SW1	1078								
87	SWCH	203	205	219	234	237	254	257	261	323
		325	442	472	942	944	946	954	957	963
		965	1577	1585	1689	1741	1766			
484	SWER	470	470							
482	SWER7	470	470							
1547	SWF1	1514	1518	1520						
1515	SWF2	1525								
1526	SWF3	1521								
1543	SWF4	1535								
1836	SWIT	1269	1417	1421	1423	1434				
41	SWK1	619	620	622	675	684				
42	SWK2	625	646	667	669	686	695			
43	SWK3	629	630	632	635					
1083	SWM1	1080	1082							
464	SWRI	328	332	474	480	481	717	722		
480	SWRT	473								
1870	TB1	775	777							
1879	TB10	877	879							
1871	TB2	782	788							
1872	TB3	794	800	903	1052					
1873	TB4	801	807	1054						
1874	TB5	808	823	1056						
1875	TB6	824	840	1058						
1876	TB7	841	858	940	1060					
1877	TB8	859	861							
1878	TB9	874	876							
132	TEN	1523	2076	2081						
126	THREE	178	231	1430	1445	1752				
0	TLFC	141	1603							
125	TWO	1632	1651	1709	1734	1755	1982			
243	UEX1	238								
250	UEX2	240								
223	USER	206	220	263						
229	USR1	224	226	228	230	232	236			
1978	V\$DSTB	2032	2050							
1983	V\$LUT1	2023								
1985	V\$LUT3	2042								
0	WRT5	144								
93	X	200	202	203	205	207	208	209	210	211
		216	217	218	219	225	227	234	237	241
		243	244	245	248	250	251	252	254	257
		261	266	267	269	276	281	285	289	294



	299	310	311	316	318	320	321	322	323
	325	327	331	336	341	351	353	359	360
	361	378	412	413	414	415	416	417	418
	419	421	422	424	425	426	428	429	431
	432	434	437	440	442	447	466	472	476
	485	526	528	529	530	533	534	535	536
	537	538	541	542	544	545	547	548	551
	555	578	615	616	618	619	620	621	622
	624	625	626	628	629	630	632	634	635
	637	646	667	668	669	670	673	675	677
	684	686	688	695	697	699	707	708	709
	712	715	724	725	752	754	757	821	838
	856	909	912	914	917	920	942	944	946
	954	957	963	965	971	978	983	984	985
	986	987	990	991	992	994	995	998	1000
	1005	1015	1016	1017	1018	1020	1069	1074	1464
	1465	1466	1468	1470	1473	1475	1478	1495	1496
	1512	1516	1527	1529	1532	1534	1537	1539	1541
	1567	1569	1577	1584	1585	1590	1592	1600	1601
	1602	1610	1615	1620	1621	1628	1634	1635	1638
	1642	1646	1669	1686	1687	1689	1720	1722	1723
	1730	1740	1741	1750	1766	1768	1770	1798	1799
	1801	1802	1804	1806	1808	1809	2024	2044	2073
	2078								
0	XIT1	134	229						
176	XIT2	133	177	179	180				
0	XSF1	137	312	326	338	345	355	550	
0	XSF2	137	314	330	342	348	357	554	
112	ZERO	275							



```

1 * THIS IS A COPYRIGHTED PROGRAM. COPYRIGHT 1971 BY VARIAN DATA MACHINES 02 00001
2 ***** 02 00002
3 V.D.M. PART NO. 92L1105-003D 02 00003
4 ***** 02 00004
5 ***** 02 00005
6 ***** 02 00006
7 ***** 02 00007
8 ***** 02 00008
9 * 02 00009
10 TITLE RPGRT REVISION D 02 00010
11 * 02 00011
12 * 02 00012
13 * 02 00013
14 NAME RPGRT 02 00014
15 EXT GDFCB D.1 02 00015
16 ENTRY OPSY ENTR 02 00016
17 EJECT OPSY EJEC 02 00017
18 MERGE OPSY MERG 02 00018
19 * 02 00019
20 LD EQU 5 LD LOGICAL UNIT NUMBER C 02 00020
21 BI EQU 6 BI LOGICAL UNIT NUMBER 02 00021
22 V$LUT1 EQU 0400 START LUN ADDR 02 00022
23 V$DSTB EQU 0355 BASE ADDR. FOR DST BLOCK 02 00023
24 V$LLUP EQU 0317 LOC. OF LAST UNPROTECTED WORD 02 00024
25 V$LCNT EQU 054 LINE COUNT 02 00025
26 V$JCB EQU 0412 JCB BUFFER POINTER 02 00026
27 BM37 EQU 0463 02 00027
28 BS0 EQU 0421 02 00028
29 BS4 EQU 0425 02 00029
30 BS5 EQU 0426 02 00030
31 BS8 EQU 0431 02 00031
32 BS10 EQU 0433 02 00032
33 BS12 EQU 0435 02 00033
34 ONE EQU 0421 02 00034
35 TWO EQU 0422 02 00035
36 FOUR EQU 0423 02 00036
37 FIVE EQU 0465 02 00037
38 SIX EQU 0466 02 00038
39 SEVEN EQU 0467 02 00039
40 EIGHT EQU 0424 02 00040
41 NINE EQU 0470 02 00041
42 LHW EQU 0462 02 00042
43 V$DATE EQU 070 02 00043
44 V$TMN EQU 0344 02 00044
45 RHW EQU 0463 02 00045
46 BM17 EQU 0472 02 00046
47 BM7 EQU 0467 02 00047
48 V$LUT3 EQU 0402 E.2 *****
49 * E.2 *****
50 U DATA 0 RPG UNIT NUMBER 02 00048
51 LUN DATA 0 VORTEX LOGICAL UNIT NUMBER 02 00049
52 FCB1 FCB 120,CRBF,1,'E','BI',' ',' ',' ' 02 00050
000000 000000 A 02 00051
000001 000000 A 02 00052
000002 000170 A
000003 000177 R
000004 000705 A
000005 000000 A
000006 000000 A
000007 000000 A
000010 000000 A
000011 141311 A
000012 120240 A
000013 120240 A
000014 000000 A
53 DATA 0 FCB EXTENSION WORD 02 00051
54 FCB2 FCB 02 00052
000015 000000 A
000016 000000 A
000017 000000 A
000020 000000 A
000021 000000 A
000022 000000 A
000023 000000 A
000024 000000 A
000025 000000 A
000026 000000 A
000027 000000 A
55 DATA 0 02 00053
56 FCB3 FCB 02 00054
THESE FCBS ARE USED BY
000030 000000 A
000031 000000 A
000032 000000 A
000033 000000 A
000034 000000 A
000035 000000 A
000036 000000 A
000037 000000 A
000040 000000 A
000041 000000 A
000042 000000 A
57 DATA 0 RPG UNITS 16 - 22 02 00055
58 FCB4 FCB 02 00056
000043 000000 A
000044 000000 A
000045 000000 A
000046 000000 A
000047 000000 A

```











000511	000027	A	190	027	DATA	027			02	00188
000512	000030	A	191	030	DATA	030			02	00189
000513	000032	A	192	032	DATA	032			02	00190
000514	000033	A	193	033	DATA	033			02	00191
000515	000040	A	194	040	DATA	040			02	00192
000516	000047	A	195	047	DATA	047			02	00193
000517	000050	A	196	050	DATA	050			02	00194
000520	000060	A	197	060	DATA	060			02	00195
000521	000067	A	198		DATA	067			02	00196
			199	* TYPE 3					02	00197
000522	004413	R	200		DATA	LDI	0		02	00198
000523	004444	R	201		DATA	ADNN	1		02	00199
000524	004444	R	202		DATA	ADNN	2		02	00200
000525	004444	R	203		DATA	ADNN	3		02	00201
000526	004444	R	204		DATA	ADNN	4		02	00202
000527	000077	A	205	077	DATA	077			02	00203
000530	104376	R	206		DATA	(STI)*	6		02	00204
000531	104376	R	207		DATA	(STI)*	7		02	00205
000532	104376	R	208		DATA	(STI)*	8		02	00206
000533	104376	R	209		DATA	(STI)*	9		02	00207
000534	000000	A	210		DATA	0			02	00208
000535	005763	R	211		DATA	SK4F	11		02	00209
000536	000100	A	212	0100	DATA	0100			02	00210
000537	000106	A	213	0106	DATA	0106			02	00211
000540	000107	A	214	0107	DATA	0107			02	00212
000541	000110	A	215	0110	DATA	0110			02	00213
			216	* TYPE 4					02	00214
000542	004066	R	217		DATA	LDN	0		02	00215
000543	004477	R	218		DATA	ADD	1		02	00216
000544	004477	R	219		DATA	ADD	2		02	00217
000545	004764	R	220		DATA	MUL	3		02	00218
000546	004634	R	221		DATA	DIV	4		02	00219
000547	004634	R	222		DATA	DIV	5		02	00220
000550	003737	R	223		DATA	GLE	6		02	00221
000551	003737	R	224		DATA	GLE	7		02	00222
000552	003737	R	225		DATA	GLE	8		02	00223
000553	003720	R	226		DATA	GLEN	9		02	00224
000554	003720	R	227		DATA	GLEN	10		02	00225
000555	003720	R	228		DATA	GLEN	11		02	00226
000556	006051	R	229		DATA	UNFR	12		02	00227
000557	006064	R	230		DATA	UNTO	13		02	00228
000560	000400	A	231	0400	DATA	0400			02	00229
000561	177776	A	232	0M2	DATA	-2			02	00230
			233	* TYPE 5					02	00231
000562	106010	R	234		DATA	(BRU)*	2- 0		02	00232
000563	106010	R	235		DATA	(BRUR)*	2- 1		02	00233
000564	005777	R	236		DATA	BRT	2- 2		02	00234
000565	005777	R	237		DATA	BRTR	2- 3		02	00235
000566	005774	R	238		DATA	BRF	2- 4		02	00236
000567	005774	R	239		DATA	BRFR	2- 5		02	00237
000570	106036	R	240		DATA	(PER)*	2- 6		02	00238
000571	106036	R	241		DATA	(PERR)*	2- 7		02	00239
000572	106043	R	242		DATA	(CALL)*	2- 8		02	00240
000573	106135	R	243		DATA	(MVRT)*	2- 9		02	00241
000574	106135	R	244		DATA	(MVRT)*	2-10		02	00242
000575	106271	R	245		DATA	(ADTO)*	2-11		02	00243
000576	106633	R	246		DATA	(ENTO)*	2-12		02	00244
000577	106714	R	247		DATA	(DETO)*	2-13		02	00245
000600	106767	R	248		DATA	(LOOK)*	2-14		02	00246
000601	106613	R	249		DATA	(GTX)*	2-15		02	00247
			250	* TYPE 6					02	00248
000602	107154	R	251		DATA	(\$READ)*	3- 0		02	00249
000603	107507	R	252		DATA	(WRIT)*	3- 1		02	00250
000604	107575	R	253		DATA	(SKIP)*	3- 2		02	00251
000605	107743	R	254		DATA	(SPCE)*	3- 3		02	00252
000606	000120	A	255	0120	DATA	0120			02	00253
000607	000137	A	256	0137	DATA	0137			02	00254
000610	000147	A	257	0147	DATA	0147			02	00255
000611	110137	R	258		DATA	(TYPE)*	3- 7		02	00256
000612	000177	A	259	0177	DATA	0177			02	00257
000613	106610	R	260		DATA	(SF)*	3- 9		02	00258
000614	106602	R	261		DATA	(SFI)*	3-10		02	00259
000615	106077	R	262		DATA	(SAVX)*	3-11		02	00260
000616	106122	R	263		DATA	(SIMX)*	3-12		02	00261
000617	000200	A	264	0200	DATA	0200			02	00262
000620	105267	R	265		DATA	(UNLD)*	3-14		02	00263
000621	105264	R	266		DATA	(UNLN)*	3-15		02	00264
			267	* CONSTANTS FOR NUMERIC OPERATIONS					02	00265
	000512	R	268	NLEN	EQU	030	DATA	NUML	02	00266
	000450	R	269	NUMB	EQU	04	DATA	NWRD	02	00267
	000455	R	270	NDEC	EQU	011	DATA	NUMD	02	00268
	000452	R	271	NLST	EQU	06	DATA	NUML/NWRD	02	00269
	000451	R	272	NLS1	EQU	05	DATA	NUML/NWRD-1	02	00270
	000511	R	273	NLE1	EQU	027	DATA	NUML-1	02	00271
	000505	R	274	NINT	EQU	017	DATA	NUML-NUMD	02	00272
	000502	R	275	NIN1	EQU	016	DATA	NUML-NUMD-1	02	00273
000622	010000	A	276	NSGN	DATA	010000			02	00274
			277	* INSTRUCTION CONSTANTS					02	00275
000623	000131	A	278	MOVZ	DATA	0131		MOVE COMMAND	02	00276
000624	000132	A	279	MOVZ	DATA	0132		MOVE ZONE COMMAND	02	00277
			280	* BIT MASKS					02	00278
000625	077777	A	281	MSKO	DATA	077777		ALL BUT BIT 0	02	00279
000626	100000	A	282	BIT0	DATA	0100000			02	00280



000176	R	283	BYT1	EQU	F8BTS+1		02	00281
000175	R	284	BYT0	EQU	F8BTS		02	00282
000627	A	285	BIT1	DATA	040000	IMPLIED FIELD BIT	02	00283
000630	A	286	BIT2	DATA	020000	NUMERIC FIELD BIT	02	00284
000622	R	287	BIT3	EQU	NSGN		02	00285
000631	A	288	MSKA	DATA	0140000	BITS 0 AND 1	02	00286
000632	A	289	MSKD	DATA	04000	COMPARE INDICATOR IN FDL	02	00287
000405	R	290	MSOP	EQU	MSKD	OPERAND MASK	02	00288
000404	R	291	WMSK	EQU	MSKC	DIGIT MASK FOR 1ST WORD OF ENTRY	02	00289
000505	R	292	DMSK	EQU	D17	DIGIT MASK	02	00290
000633	A	293	RMSK	DATA	0177760	RIGHT HAND DIGIT MASK	02	00291
		294	*		LOGICAL CONSTANTS		02	00292
000626	R	295	TRUE	EQU	BIT0		02	00293
000626	R	296	SIGN	EQU	BIT0		02	00294
000506	R	297	BWRD	EQU	D20	BITS PER WORD	02	00295
		298	*				02	00296
000634	A	299	INTA	DATA	0	TEMP	02	00297
000635	A	300	INTB	DATA	0	TEMP	02	00298
000636	A	301	IND	DATA	0100000	INDICATORS	02	00299
		302		DUP	7		02	00300
000637	A	303		DATA	0		02	00301
000640	A	303		DATA	0		02	00301
000641	A	303		DATA	0		02	00301
000642	A	303		DATA	0		02	00301
000643	A	303		DATA	0		02	00301
000644	A	303		DATA	0		02	00301
000645	A	303		DATA	0		02	00301
000646	A	304	BLNK	DATA	*		02	00302
000647	A	305	UNSG	DATA	0	FIRST NON-ZERO DIGIT	02	00303
000650	A	306	ZIND	DATA	0		02	00304
000651	A	307	NIND	DATA	0		02	00305
000652	A	308	UNEC	DATA	0		02	00306
000653	A	309	UNNO	DATA	0		02	00307
000654	A	310	DCNT	DATA	0		02	00308
000655	A	311	CCNT	DATA	0		02	00309
000656	A	312	REDF	DATA	0	ZERO IS LC	02	00310
000657	A	313	CEDF	DATA	*/**	LAST CARD CHARACTERS	02	00311
000660	A	314	RECS	DATA	0	INDICATOR TO SELECT RECORD (0=FALSE)	02	00312
000661	A	315	RECG	DATA	0	TEMP	02	00313
		316	RBUF	EQU	CRDF-1		02	00314
000662	A	317	CBRA	DATA	0	TEMP FOR CBRK	02	00315
000663	A	318	CBRC	DATA	0	TEMP FOR CBRK	02	00316
000664	A	319	FTSW	DATA	-1	FIRST TIME SWITCH	02	00317
		320	*				02	00318
		321	*		FIELD DIRECTIVE TABLE		02	00319
		322	*				02	00320
000665	R	323	BIAD	DATA	(**+1)*		02	00321
000666	R	324		DATA	PFB1	0 NOP	02	00322
000667	R	325		DATA	PFUR	1 GREATER	02	00323
000670	R	326		DATA	PFLE	2 LESS	02	00324
000671	R	327		DATA	PFEQ	3 EQUAL	02	00325
000672	R	328		DATA	PFCO	4 CONTROL	02	00326
000673	A	329	AUDP	DATA	0	PREVIOUS CHAR	02	00327
000674	A	330	AUDI	DATA	0	AUDIT INDICATOR RESULTS	02	00328
000675	A	331	CMPI	DATA	0	RESULT OF A COMPARE	02	00329
000676	A	332		DATA	PFAU	8 AUDIT	02	00330
000677	A	333	HIND	DATA	0		02	00331
000700	A	334	LNGT	DATA	0	NUMBER OF DIGITS IN AN OPERATION	02	00332
000701	A	335	WQTR	DATA	0	DIGIT POSITION	02	00333
000702	A	336	DPOS	DATA	0	IMPLIED DECIMAL POSITION	02	00334
000703	R	337	IXE1	DATA	IXE2	*** IXE2*2 BYTE LOCATION OF DUMMY FIELD	02	00335
000704	A	338	IXE2	DATA	0	DUMMY FIELD	02	00336
		339	*				02	00337
		340	*		SYSTEM COMMUNICATION		02	00338
		341	*				02	00339
000705	A	342	BIAF	DATA	0	0600 SET BY COMPILER - FIELD TABLE BIAS	02	00340
000706	A	343	BIAA	DATA	0	0601 SET BY COMPILER - ADDRESS TABLE BIAS	02	00341
000707	A	344	BIAG	DATA	0	0602 SET BY COMPILER - GENIC START	02	00342
000710	A	345	PEND	DATA	0	0603 SET BY COMPILER - LIST END+6	02	00343
000711	A	346	INTP	DATA	0	SET BY LOADER (FIRST GENIC BYTE)	02	00344
000712	A	347	TMPR	DATA	0	" (TEMPORARY)	02	00345
000713	A	348	WSTA	DATA	0	" (WORKLIST START)	02	00346
000714	A	349	WO	DATA	0	" (WORKLIST BOTTOM)	02	00347
000715	A	350	LINE	DATA	0	LINES/PAGE	02	00348
000716	A	351	LCNT	DATA	0	CURRENT LINE COUNT	02	00349
000717	R	352	BIAC	DATA	STAB	CALL TABLE BIAS	02	00350
	R	353	BIAR	EQU	BIAF	RECORD TABLE BIAS	02	00351
	R	354	BIAT	EQU	PIAF	TABLE TABLE BIAS	02	00352
000720	R	355	BIAI	DATA	IND	INDICATOR TABLE BIAS	02	00353
000721	R	356	CMND	DATA	CTAB	COMMAND BIAS	02	00354
000722	A	357	INTC	DATA	0	CURRENT COMMAND	02	00355
000723	A	358	INTH	DATA	0	CURRENT BYTE LOCATION	02	00356
000724	A	359	INTD	DATA	0	CURRENT OPERAND	02	00357
000725	A	360	OFFG	DATA	1	SET FIELD PREVIOUS FLAG	02	00358
000726	A	361	RETI	DATA	0	RETURN IMMEDIATE INDICATOR	02	00359
000727	A	362	PSTI	DATA	1	POST INDICATOR	02	00360
000730	A	363	LOBX	DATA	0,0	DUMMY LOC	02	00361
000731	A							
000732	A	364	LFRD	DATA	0	LAST FROM FIELD	02	00362
000733	A	365	LFR1	DATA	0		02	00363
000734	A	366	BYTF	DATA	0	FROM BYTE	02	00364
000735	A	367	PYTT	DATA	0	TO BYTE	02	00365
000736	A	368	TLUK	DATA	0		02	00366

D.1



000737	000001	A	369	INDP	EQU	BIAI			02	00367
000740	000012	A	370	BIDT	DATA	1,10,100,1000			02	00368
000741	000144	A								
000742	001750	A								
			371	*					02	00369
			372	*	ADDITION	TABLE			02	00370
			373	*					02	00371
000743	000000	A	374	TBL1	DATA	0,10,20,30,40,50,60,70,80	INDEX INTO TABLE 2		02	00372
000744	000012	A								
000745	000024	A								
000746	000036	A								
000747	000050	A								
000750	000062	A								
000751	000074	A								
000752	000106	A								
000753	000120	A								
			375	*					02	00373
			376	*	MULTIPLACATION	TABLE			02	00374
			377	*					02	00375
000754	000020	A	378	TBFM	FORM	4,4,4,4			02	00376
000755	020060	A	379	TBL2	TBFM	0,0,1,0	THIS TABLE IS FOR MULTIPLICATION		02	00377
000756	040120	A	380		TBFM	2,0,3,0			02	00378
000757	060160	A	381		TBFM	4,0,5,0			02	00379
000760	100220	A	382		TBFM	6,0,7,0			02	00380
000761	000040	A	383		TBFM	8,0,9,0			02	00381
000762	040140	A	384		TBFM	0,0,2,0			02	00382
000763	100001	A	385		TBFM	4,0,6,0			02	00383
000764	020501	A	386		TBFM	8,0,0,1			02	00384
000765	060601	A	387		TBFM	2,1,4,1			02	00385
000766	000060	A	388		TBFM	6,1,8,1			02	00386
000767	060220	A	389		TBFM	0,0,3,0			02	00387
000770	020521	A	390		TBFM	6,0,9,0			02	00388
000771	100422	A	391		TBFM	2,1,5,1			02	00389
000772	041162	A	392		TBFM	8,1,1,2			02	00390
000773	000100	A	393		TBFM	4,2,7,2			02	00391
000774	100041	A	394		TBFM	0,0,4,0			02	00392
000775	060402	A	395		TBFM	8,0,2,1			02	00393
000776	041202	A	396		TBFM	6,1,0,2			02	00394
000777	021543	A	397		TBFM	4,2,8,2			02	00395
001000	000120	A	398		TBFM	2,3,6,3			02	00396
001001	000521	A	399		TBFM	0,0,5,0			02	00397
001002	001122	A	400		TBFM	0,1,5,1			02	00398
001003	001523	A	401		TBFM	0,2,5,2			02	00399
001004	002124	A	402		TBFM	0,3,5,3			02	00400
001005	000140	A	403		TBFM	0,4,5,4			02	00401
001006	020601	A	404		TBFM	0,0,6,0			02	00402
001007	041003	A	405		TBFM	2,1,8,1			02	00403
001010	061444	A	406		TBFM	4,2,0,3			02	00404
001011	102105	A	407		TBFM	6,3,2,4			02	00405
001012	000160	A	408		TBFM	8,4,4,5			02	00406
001013	040422	A	409		TBFM	0,0,7,0			02	00407
001014	101123	A	410		TBFM	4,1,1,2			02	00408
001015	022224	A	411		TBFM	8,2,5,3			02	00409
001016	062466	A	412		TBFM	2,4,9,4			02	00410
001017	000200	A	413		TBFM	6,5,3,6			02	00411
001020	060502	A	414		TBFM	0,0,8,0			02	00412
001021	021404	A	415		TBFM	6,1,4,2			02	00413
001022	102145	A	416		TBFM	2,3,0,4			02	00414
001023	043047	A	417		TBFM	8,0,6,5			02	00415
001024	000220	A	418		TBFM	4,6,2,7			02	00416
001025	100562	A	419		TBFM	0,0,9,0			02	00417
001026	061524	A	420		TBFM	8,1,7,2			02	00418
001027	042466	A	421		TBFM	6,3,5,4			02	00419
001030	023430	A	422		TBFM	4,5,3,6			02	00420
			423		TBFM	2,7,1,8			02	00421
			424		EJEC				02	00422
001031	000012	A	425	STAB	DATA	10			02	00423
001032	142730	A	426		DATA	'EXIT'	EXIT MUST BE FIRST ENTRY IN STAB		02	00424
001033	144724	A								
001034	120240	A								
001035	002024	R	427		DATA	EXIT			02	00425
001036	151305	A	428		DATA	'READ'			02	00426
001037	140704	A								
001040	120240	A								
001041	001337	R	429		DATA	READ			02	00427
001042	153722	A	430		DATA	'WRITE'			02	00428
001043	144724	A								
001044	142640	A								
001045	001345	R	431		DATA	WRITE			02	00429
001046	153705	A	432		DATA	'WEOF'			02	00430
001047	147706	A								
001050	120240	A								
001051	001463	R	433		DATA	WEOF			02	00431
001052	151305	A	434		DATA	'REWIND'			02	00432
001053	153711	A								
001054	147304	A								
001055	001532	R	435		DATA	REWIND			02	00433
001056	151713	A	436		DATA	'SKIPR'			02	00434
001057	144720	A								
001060	151240	A								
001061	001601	R	437		DATA	SKIPR			02	00435
001062	147720	A	438		DATA	'OPEN'			02	00436







001175	002000	A	505	CALL	FETN	GET RECORD SIZE (IN BYTES)	02	00503
001176	002315	R						
001177	004341	A	506	LSRA	1	CONVERT TO WORDS	02	00504
001200	027000	I	507	LDB	FCBPT		02	00505
001201	056000	A	508	STA	0,2	SAVE IN FCB	02	00506
001202	002000	A	509	CALL	ARGU		02	00507
001203	002257	R						
001204	002000	A	510	CALL	FETN	GET ACCESS METHOD	02	00508
001205	002315	R						
001206	057000	I	511	STA	TMPXX		02	00509
001207	140422	A	512	SUB	TND	CHECK IF < 2	02	00510
001210	001002	A	513	JAP	ARGERR		02	00511
001211	002253	R						
001212	017000	I	514	LDA	TMPXX		02	00512
001213	004210	A	515	ASLA	8	POSITION ACCESS METHOD FIELD	02	00513
001214	027000	I	516	LDB	FCBPT		02	00514
001215	116002	A	517	DRA	2,2	DR IN PROTECT KEY	02	00515
001216	056002	A	518	STA	2,2	INSERT ACCESS METHOD/KEY IN FCB	02	00516
001217	002000	A	519	CALL	ARGU		02	00517
001220	002257	R						
001221	002000	A	520	CALL	FETN	GET MODE FOR OPEN CALL	02	00518
001222	002315	R						
001223	057000	I	521	STA	TMPXX		02	00519
001224	140422	A	522	SUB	TND	CHECK IF < 2	02	00520
001225	001002	A	523	JAP	ARGERR		02	00521
001226	002253	R						
001227	017000	I	524	LDA	TMPXX		02	00522
001230	004214	A	525	ASLA	12	POSITION MODE FIELD	02	00523
001231	006110	A	526	DRAI	03000	DR IN WAIT BIT, OPCODE	02	00524
001232	003000	A						
001233	117000	I	527	DRA	LUN	AND LOGICAL UNIT NUMBER	02	00525
001234	054005	A	528	STA	XOPEN+3	STORE IN OPEN REQUEST BLOCK	02	00526
001235	017000	I	529	LDA	FCBPT		02	00527
001236	054004	A	530	STA	XOPEN+4	PUT FCB ADDRESS IN REQUEST BLOCK	02	00528
			531	XOPEN	OPEN	OPEN FILE	02	00529
001237	006505	A						
001240	000404	A						
001241	100000	A						
001242	003000	A						
001243	000000	A						
001244	000000	A						
001245	000000	A						
001246	006010	A	532	LDAI	XOPEN		02	00530
001247	001237	R						
001250	002000	A	533	CALL	STAT	CHECK STATUS	02	00531
001251	002063	R						
001252	002000	A	534	CALL	EXCP	UPDATE EXCEPTION FIELD	02	00532
001253	002114	R						
001254	001000	A	535	JMP	INT	RETURN TO INTERPRETER	02	00533
001255	002415	R						
			536	*			02	00534
			537	*			02	00535
			538	*	NAME:	CLOSE	02	00536
			539	*	CALL	CALL CLOSE,U,MODE,EXCEPTION	02	00537
			540	*			02	00538
			541	*			02	00539
			542	CLOSE	EQU	*	02	00540
			543		LDAI	CLOSE	02	00541
001256	006010	A						
001257	001256	R						
001260	057000	I	544	STA	REND	INITIALIZE TO NON-NEGATIVE	02	00542
001261	002000	A	545	CALL	ARGUX	INITIALIZE CALL ERROR MESSAGE	02	00543
001262	002265	R						
001263	002000	A	546	CALL	ARGU		02	00544
001264	002257	R						
001265	002000	A	547	CALL	FETN	GET NUMERIC ARGUMENT (U)	02	00545
001266	002315	R						
001267	057000	I	548	STA	U	SAVE RPG UNIT NUMBER	02	00546
001270	002000	A	549	CALL	UCHK	CHECK IF VALID	02	00547
001271	002237	R						
001272	006025	A	550	LDBE	FCBPTT,1	GET POINTER TO FCB	02	00548
001273	000117	R						
001274	067000	I	551	STB	FCBPT		02	00549
001275	002000	A	552	CALL	ARGU		02	00550
001276	002257	R						
001277	002000	A	553	CALL	FETN	GET MODE FOR CLOSE CALL	02	00551
001300	002315	R						
001301	057000	I	554	STA	TMPXX		02	00552
001302	140422	A	555	SUB	TND	CHECK IF < 2	02	00553
001303	001002	A	556	JAP	ARGERR		02	00554
001304	002253	R						
001305	027000	I	557	LDB	FCBPT	GET POINTER TO FCB	02	00555
001306	017000	I	558	LDA	TMPXX		02	00556
001307	004214	A	559	ASLA	12	POSITION MODE FIELD	02	00557
001310	006110	A	560	DRAI	03400	DR IN WAIT BIT, OPCODE	02	00558
001311	003400	A						
001312	006116	A	561	DRAE	10,2	AND LOGICAL UNIT NUMBER FROM FCB EXTENSION	02	00559
001313	000012	A						
001314	054006	A	562	STA	XCLOSE+3		02	00560
001315	064006	A	563	STB	XCLOSE+4	PUT FCB ADDRESS IN REQUEST BLOCK	02	00561
001316	005001	A	564	TZA			02	00562
001317	056012	A	565	STA	10,2	REMOVE LUN FROM FCB EXTENSION	02	00563
			566	XCLOSE	CLOSE	CLOSE FILE	02	00564
001320	006505	A						



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001321 000404 A
001322 100000 A
001323 003400 A
001324 000000 A
001325 000000 A
001326 000000 A
001327 006010 A 567 LDAI XCLOSE 02 00565
001330 001320 R
001331 002000 A 568 CALL STAT CHECK STATUS 02 00566
001332 002063 R
001333 002000 A 569 CALL EXCP UPDATE EXCEPTION FIELD 02 00567
001334 002114 R
001335 001000 A 570 JMP INT RETURN TO INTERPRETER 02 00568
001336 002415 R
571 * 02 00569
572 * 02 00570
573 * NAME: READ 02 00571
574 * CALL: CALL READ,U,RECORD,SIZE,RECORD NUMBER,EXCEPTION 02 00572
575 * 02 00573
576 * 02 00574
001337 R 577 READ EQU * 02 00575
001340 005001 A 578 TZA 02 00576
001341 006010 A 579 STA WRFLG SET WRITE/READ FLAG TO READ 02 00577
001342 001337 R 580 LDAI READ 02 00578
001343 001000 A 581 JMP WRIT1 02 00579
001344 001351 R
582 * 02 00580
583 * 02 00581
584 * NAME: WRITE 02 00582
585 * CALL: CALL WRITE,U,RECORD,SIZE,RECORD NUMBER,EXCEPTION 02 00583
586 * 02 00584
001345 R 587 WRITE EQU * 02 00585
001346 010431 A 588 LDA BSS 02 00586
001347 006010 A 589 STA WRFLG SET WRITE/READ FLAG TO WRITE 02 00587
001350 001345 R 590 LDAI WRITE 02 00588
001351 057000 I 591 WRIT1 STA REND INITIALIZE TO NON-NEGATIVE 02 00589
001352 002000 A 592 CALL ARGUX INITIALIZE CALL ERROR MESSAGE 02 00590
001353 002265 R
001354 002000 A 593 CALL ARGU 02 00591
001355 002257 R
001356 002000 A 594 CALL FETN GET NUMERIC ARGUMENT (U) 02 00592
001357 002315 R
001360 057000 I 595 STA U 02 00593
001361 002000 A 596 CALL UCHK CHECK IF VALID 02 00594
001362 002237 R
001363 006025 A 597 LDBE FCPTT,1 GET POINTER TO FCB 02 00595
001364 000117 R
001365 067000 I 598 STB FCPT 02 00596
001366 016012 A 599 LDA 1,2 CONDITIONALLY GET LUN FROM FCB EXTENSION 02 00597
001367 001010 A 600 JAZ WRIT2 02 00598
001370 001372 R
001371 057000 I 601 STA U AND UPDATE RPG UNIT NUMBER 02 00599
001372 001372 R 602 WRIT2 EQU * 02 00600
001373 002000 A 603 CALL ARGU 02 00601
001374 002257 R
001375 002343 R 604 CALL FETR GET ADDRESS ARGUMENT (RECORD ADDRESS) 02 00602
001376 027000 I 605 LDB FCPT 02 00603
001377 056001 A 606 STA 1,2 STORE IN FCB 02 00604
001400 002000 A 607 CALL ARGU 02 00605
001401 002257 R
001402 002000 A 608 CALL FETN GET RECORD SIZE (IN BYTES) 02 00606
001403 002315 R
001404 004341 A 609 LSRA 1 CONVERT TO WORDS 02 00607
001405 027000 I 610 LDB FCPT 02 00608
001406 056000 A 611 STA 0,2 SAVE IN FCB 02 00609
001407 002000 A 612 CALL ARGU 02 00610
001410 002257 R
001411 002000 A 613 CALL FETN GET RECORD NUMBER 02 00611
001412 002315 R
001413 027000 I 614 LDB FCPT 02 00612
001414 001010 A 615 JAZ WRIT3 IF ZERO, ASSUME SEQUENTIAL ACCESS 02 00613
001415 001417 R
001416 056003 A 616 STA 3,2 IF DIRECT ACCESS, PUT RECORD NUMBER IN FCB 02 00614
001417 R 617 WRIT3 EQU * 02 00615
001420 010435 A 618 LDA BS12 MODE BIT 02 00616
001421 117000 I 619 DRA WRFLG OR IN DPCODE 02 00617
001422 117000 I 620 DRA U AND LUN 02 00618
001423 054024 A 621 STA XWRIT+3 STORE IN REQUEST BLOCK 02 00619
001424 064024 A 622 STB XWRIT+4 PUT FCB ADDRESS IN REQUEST BLOCK 02 00620
001425 017000 I 623 LDA WRFLG WRITE? 02 00621
001426 001010 A 624 JAZ XWRIT 02 00622
001427 001444 R
001428 017000 I 625 LDA U YES, CHECK IF CARD PUNCH 02 00623
001430 002000 A 626 CALL DEVTST 02 00624
001431 010203 R
001432 140422 A 627 SUB TWO 02 00625
001433 001016 A 628 JANE XWRIT 02 00626
001434 001444 R
001435 027000 I 629 LDB FCPT YES, OUTPUT FROM BUFFER 02 00627
001436 017000 I 630 LDA ADRB 02 00628

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001437	036001	A	631	LDX	1,2	GET RECORD ADDRESS	02	00629
001440	056001	A	632	STA	1,2	PUT CARD BUFFER ADDRESS IN FCB	02	00630
001441	026000	A	633	LDB	0,2	GET RECORD LENGTH	02	00631
001442	002000	A	634	CALL	MOBF	BLANK OUT AND FILL	02	00632
001443	010033	R						
			635	XWRIT	WRITE	0,0,0,1	WRITE/READ ASCII RECORD	02 00633
001444	006505	A						
001445	000404	A						
001446	100000	A						
001447	010400	A						
001450	000000	A						
001451	000000	A						
001452	000000	A						
001453	006010	A	636	LDAI	XWRIT		02	00634
001454	001444	R						
001455	002000	A	637	CALL	STAT	CHECK STATUS	02	00635
001456	002063	R						
001457	002000	A	638	CALL	EXCP	UPDATE EXCEPTION FIELD	02	00636
001460	002114	R						
001461	001000	A	639	JMP	INT	RETURN TO INTERPRETER	02	00637
001462	002415	R						
			640	*			02	00638
			641	*			02	00639
			642	*	NAME:	WEOF	02	00640
			643	*	CALL:	CALL WEOF,U,EXCEPTION	02	00641
			644	*			02	00642
			645	*			02	00643
			646	WEOF	EQU	*	02	00644
			647		LDAI	WEOF	02	00645
001463	006010	A						
001464	001463	R						
001465	057000	I	648	STA	REND	INITIALIZE TO NON-NEGATIVE	02	00646
001466	002000	A	649	CALL	ARGUX	INITIALIZE CALL ERROR MESSAGE	02	00647
001467	002265	R						
001470	002000	A	650	CALL	ARGU		02	00648
001471	002257	R						
001472	002000	A	651	CALL	FETN	GET NUMERIC ARGUMENT (U)	02	00649
001473	002315	R						
001474	057000	I	652	STA	U		02	00650
001475	002000	A	653	CALL	UCHK	CHECK IF VALID	02	00651
001476	002237	R						
001477	006025	A	654	LDBE	FCBPPT,1	GET POINTER TO FCB	02	00652
001500	000117	R						
001501	067000	I	655	STB	FCBPT		02	00653
001502	016012	A	656	LDA	10,2	CONDITIONALLY GET LUN FROM FCB EXTENSION	02	00654
001503	001010	A	657	JAZ	WEOF1		02	00655
001504	001506	R						
001505	057000	I	658	STA	U	AND UPDATE RPG UNIT NUMBER	02	00656
	001506	R	659	WEOF1	EQU	*	02	00657
001506	064010	A	660	STB	WEOF2+4	PUT FCB ADDRESS IN WEOF REQUEST BLOCK	02	00658
001507	014006	A	661	LDA	WEOF2+3		02	00659
001510	150462	A	662	ANA	LHW		02	00660
001511	117000	I	663	DRA	U		02	00661
001512	054003	A	664	STA	WEOF2+3	PUT LUN IN REQUEST BLOCK	02	00662
			665	WEOF2	WEOF	0,0,0	02	00663
001513	006505	A						
001514	000404	A						
001515	100000	A						
001516	001000	A						
001517	000000	A						
001520	000000	A						
001521	000000	A						
001522	006010	A	666	LDAI	WEOF2		02	00664
001523	001513	R						
001524	002000	A	667	CALL	STAT	CHECK STATUS	02	00665
001525	002063	R						
001526	002000	A	668	CALL	EXCP	UPDATE EXCEPTION FIELD	02	00666
001527	002114	R						
001530	001000	A	669	JMP	INT	RETURN TO INTERPRETER	02	00667
001531	002415	R						
			670	*			02	00668
			671	*			02	00669
			672	*	NAME:	REWIND	02	00670
			673	*	CALL:	CALL REWIND,U,EXCEPTION	02	00671
			674	*			02	00672
			675	*			02	00673
			676	REWIND	EQU	*	02	00674
			677		LDAI	REWIND	02	00675
001532	006010	A						
001533	001532	R						
001534	057000	I	678	STA	REND	INITIALIZE TO NON-NEGATIVE	02	00676
001535	002000	A	679	CALL	ARGUX	INITIALIZE CALL ERROR MESSAGE	02	00677
001536	002265	R						
001537	002000	A	680	CALL	ARGU		02	00678
001540	002257	R						
001541	002000	A	681	CALL	FETN	GET NUMERIC ARGUMENT (U)	02	00679
001542	002315	R						
001543	057000	I	682	STA	U		02	00680
001544	002000	A	683	CALL	UCHK	CHECK IF VALID	02	00681
001545	002237	R						
001546	006025	A	684	LDBE	FCBPPT,1	GET POINTER TO FCB	02	00682
001547	000117	R						
001550	067000	I	685	STB	FCBPT		02	00683
001551	016012	A	686	LDA	10,2	CONDITIONALLY GET LUN FROM FCB EXTENSION	02	00684
001552	001010	A	687	JAZ	REW1		02	00685



001553	001555	R								
001554	057000	I	688	STA	U		AND UPDATE RPG UNIT NUMBER		02	00686
	001555	R	689	EQU	*				02	00687
001555	064010	A	690	STB	REW2+4		PUT FCB ADDRESS IN REWIND REQUEST BLOCK		02	00688
001556	014006	A	691	LDA	REW2+3				02	00689
001557	150462	A	692	ANA	LHW				02	00690
001560	117000	I	693	DRA	U		PUT LUN IN REQUEST BLOCK		02	00691
001561	054003	A	694	STA	REW2+3				02	00692
			695	REW2	REW	0,0,0	REWIND		02	00693
001562	006505	A								
001563	000404	A								
001564	100000	A								
001565	001400	A								
001566	000000	A								
001567	000000	A								
001570	000000	A								
001571	006010	A	696	LDAI	REW2				02	00694
001572	001562	R								
001573	002000	A	697	CALL	STAT		CHECK STATUS		02	00695
001574	002063	R								
001575	002000	A	698	CALL	EXCP		UPDATE EXCEPTION FIELD		02	00696
001576	002114	R								
001577	001000	A	699	JMP	INT		RETURN TO INTERPRETER		02	00697
001600	002415	R								
			700	*					02	00698
			701	*					02	00699
			702	*	NAME:	SKIPR			02	00700
			703	*	CALL:	CALL SKIPR,U,RECORD COUNT,DIRECTION,EXCEPTION			02	00701
			704	*					02	00702
			705	*					02	00703
			706	*	SKIPR	EQU	*		02	00704
			707	*	LDAI	SKIPR			02	00705
001601	006010	A								
001602	001601	R								
001603	057000	I	708	STA	REND		INITIALIZE TO NON-NEGATIVE		02	00706
001604	002000	A	709	CALL	ARGUX		INITIALIZE ERRDR CALL		02	00707
001605	002265	R								
001606	002000	A	710	CALL	ARGU				02	00708
001607	002257	R								
001610	002000	A	711	CALL	FETN		GET NUMERIC ARGUMENT (U)		02	00709
001611	002315	R								
001612	057000	I	712	STA	U				02	00710
001613	002000	A	713	CALL	UCHK		CHECK IF VALID		02	00711
001614	002237	R								
001615	006025	A	714	LDBE	FCBPTR,1		GET POINTER TO FCB		02	00712
001616	000117	R								
001617	067000	I	715	STB	FCBPT				02	00713
001620	016012	A	716	LDA	10,2		CONDITIONALLY GET LUN FROM FCB EXTENSION		02	00714
001621	001010	A	717	JAZ	SKIPR1				02	00715
001622	001624	R								
001623	057000	I	718	STA	U				02	00716
	001624	R	719	SKIPR1	EQU	*			02	00717
001624	064023	A	720	STB	SKIPR3+4		PUT FCB ADDRESS IN SREC REQUEST BLOCK		02	00718
001625	002000	A	721	CALL	ARGU				02	00719
001626	002257	R								
001627	002000	A	722	CALL	FETN		GET SKIP RECORD COUNT		02	00720
001630	002315	R								
001631	057000	I	723	STA	TMPXX				02	00721
001632	002000	A	724	CALL	ARGU				02	00722
001633	002257	R								
001634	002000	A	725	CALL	FETN		GET SKIP DIRECTION		02	00723
001635	002315	R								
001636	001010	A	726	JAZ	SKIPR2				02	00724
001637	001641	R								
001640	010435	A	727	LDA	BS12		GET MODE BIT (REVERSE)		02	00725
	001641	R	728	SKIPR2	EQU	*			02	00726
001641	110433	A	729	DRA	PS10		ADD OPCODE		02	00727
001642	117000	I	730	DRA	U		AND LUN		02	00728
001643	054003	A	731	STA	SKIPR3+3				02	00729
			732	SKIPR3	SREC	0,0,0	SKIP RECORD		02	00730
001644	006505	A								
001645	000404	A								
001646	100000	A								
001647	002000	A								
001650	000000	A								
001651	000000	A								
001652	000000	A								
001653	006010	A	733	LDAI	SKIPR3				02	00731
001654	001644	R								
001655	002000	A	734	CALL	STAT		CHECK STATUS		02	00732
001656	002063	R								
001657	017000	I	735	LDA	TMPXX				02	00733
001660	005311	A	736	DAR					02	00734
001661	057000	I	737	STA	TMPXX				02	00735
001662	001010	A	738	JAZ	SKIPR4		TERMINATE IF REQUIRED NUMBER SKIPPED		02	00736
001663	001670	R								
001664	001020	A	739	JBNZ	SKIPR4		OR IF ABNORMAL STATUS		02	00737
001665	001670	R								
001666	001000	A	740	JMP	SKIPR3				02	00738
001667	001644	R								
	001670	R	741	SKIPR4	EQU	*			02	00739
001670	002000	A	742	CALL	EXCP		UPDATE EXCEPTION FIELD		02	00740
001671	002114	R								
001672	001000	A	743	JMP	INT		RETURN TO INTERPRETER		02	00741



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001673 002415 R
744 *
745 *
746 * NAME: DATE
747 * CALL: CALL DATE,RECORD-FIELD
748 *
749 *
001674 R 750 DATE EQU *
001674 006010 A 751 LDAI DATE C 02 00748
001675 001674 R 752 STA REND INITIALIZE TO NON-NEGATIVE C 02 00743
001676 057000 I 753 CALL ARGUX INITIALIZE CALL ERROR MESSAGE C 02 00744
001700 002265 R 754 CALL ARGU C 02 00745
001701 002000 A 755 CALL FETR GET POINTER TO FIELD C 02 00746
001702 002257 R 756 LDX TOA C 02 00747
001703 002000 A 757 LDA FTMP C 02 00748
001704 002343 R 758 STA 0,1 PUT BYTE POINTER IN LCB C 02 00749
001705 037000 I 759 LDAI 0177774 -4 C 02 00750
001706 014445 A 760 STA DATEX LOOP INDEX (I) C 02 00751
001707 055000 A 761 DECR 01 C 02 00752
001710 006010 A 762 STA DATESW SET TO -1 C 02 00753
001711 177774 A 763 LDX DATEX DATE1 C 02 00754
001712 054031 A 764 LDA V$DATE+4,1 GET WORD(I) C 02 00755
001713 005301 A 765 LDB DATESW C 02 00756
001714 054030 A 766 JNZ DATE2 LEFT BYTE? C 02 00757
001715 034026 A 767 INR DATESW YES, TOGGLE SWITCH C 02 00758
001716 015074 A 768 LSRA 8 POSITION C 02 00759
001717 024025 A 769 CALL PBAI STORE BYTE(I) C 02 00760
001720 001020 A 770 JMP DATE1 LOOP C 02 00761
001721 001730 R 771 DATE2 DECR 02 C 02 00762
001722 044022 A 772 STB DATESW TOGGLE SWITCH C 02 00763
001723 004350 A 773 ANA RHW EXTRACT RIGHT BYTE C 02 00764
001724 002000 A 774 CALL PBAI STORE BYTE(I) C 02 00765
001725 002740 R 775 LDA DATEX C 02 00766
001726 001000 A 776 IAR I=I+1 C 02 00767
001727 001715 R 777 STA DATEX C 02 00768
001730 005302 A 778 JANZ DATE1 I=0? C 02 00769
001731 064013 A 779 JMP INT YES, EXIT TO INTERPETER C 02 00770
001732 150463 A 780 DATEX DATA 0 C 02 00771
001733 002000 A 781 DATESW DATA 0 C 02 00772
001734 002740 R 782 * C 02 00773
001735 014006 A 783 * C 02 00774
001736 005111 A 784 * NAME: TIME C 02 00775
001737 054004 A 785 * CALL: CALL TIME,RECORD-FIELD C 02 00776
001740 001016 A 786 * C 02 00777
001741 001715 R 787 * C 02 00778
001742 001000 A 788 TIME EQU * C 02 00779
001743 002415 R 789 LDAI TIME C 02 00780
001744 000000 A 790 STA REND INITIALIZE FOR NON-NEGATIVE C 02 00781
001745 000000 A 791 CALL ARGUX INITIALIZE CALL ERROR C 02 00782
001746 001746 R 792 CALL ARGU C 02 00783
001747 001746 R 793 CALL FETR GET POINTER TO FIELD C 02 00784
001750 057000 I 794 LDX TOA C 02 00785
001751 002000 A 795 LDA FTMP C 02 00786
001752 002265 R 796 STA 0,1 PUT BYTE POINTER IN LCB C 02 00787
001753 002000 A 797 LDB V$TMN GET TIME IN MINUTES C 02 00788
001754 002257 R 798 TZA C 02 00789
001755 002000 A 799 DIV TBL1+6 CONVERT TO HOURS C 02 00790
001756 002343 R 800 STA TEMP SAVE MINUTES C 02 00791
001757 037000 I 801 TBA C 02 00792
001760 014373 A 802 CALL BIDE CONVERT TO DECIMAL C 02 00793
001761 055000 A 803 STB TMPB SAVE UNITS POSITION C 02 00801
001762 020344 A 804 TBA C 02 00802
001763 005001 A 805 LSRA 4 C 02 00803
001764 177000 I 806 DRA ZERO MAKE ASCII C 02 00804
001765 057000 I 807 CALL PBAI STORE TENS POSITION C 02 00805
001766 005021 A 808 LDA TMPB UNITS C 02 00806
001767 002000 A 809 ANA BM17 C 02 00807
001770 003036 R 810 DRA ZERO MAKE ASCII C 02 00808
001771 067000 I 811 CALL PBAI STORE UNITS POSITION C 02 00809
001772 005021 A 812 LDA TEMP GET MINUTES C 02 00810
001773 004344 A 813 CALL BIDE CONVERT TO DECIMAL C 02 00811
001774 117000 I 814 STB TMPB SAVE UNITS POSITION C 02 00812
001775 002000 A 815 TBA C 02 00813
001776 002740 R 816 LSRA 4 C 02 00814

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002012 117000 I 817   ORA   ZERO   MAKE ASCII
002013 002000 A 818   CALL  PBAI   STORE TENS POSITION
002014 002740 R
002015 017000 I 819   LDA   TMPB   UNITS
002016 150472 A 820   ANA   BM17
002017 117000 I 821   ORA   ZERO   MAKE ASCII
002020 002000 A 822   CALL  PBAI   STORE UNITS POSITION
002021 002740 R
002022 001000 A 823   JMP   INT    EXIT TO INTERPRETER
002023 002415 R
      824 *
      825 *
      826 *   NAME#   EXIT
      827 *   CALL#   CALL EXIT
      828 *
      829 *
002024 002024 R 830   EXIT   EQU   *
002024 006010 A 831   LDAI  13
002025 000015 A
002026 002000 A 832   CALL  DEVTST   CHECK IF 13 IS A RND
002027 010203 R
002030 005311 A 833   DAR
002031 001016 A 834   JANZ  EXX1    JUMP IF NOT
002032 002042 R
      835   CLOSE  FCB13,13,0,1  CLOSE/UPDATE PI FILE
002033 006505 A
002034 000404 A
002035 100000 A
002036 013415 A
002037 007173 R
002040 000000 A
002041 000000 A
002042 002042 R 836   EXX1   EQU   *
      837   CLOSE  FCB14,14,0,1  AND PD
002042 006505 A
002043 000404 A
002044 100000 A
002045 013416 A
002046 007663 R
002047 000000 A
002050 000000 A
      838   CLOSE  FCB15,15,0,1  AND LD
002051 006505 A
002052 000404 A
002053 100000 A
002054 013417 A
002055 007731 R
002056 000000 A
002057 000000 A
      839   EXIT          RETURN TO VORTEX RTE
002060 006505 A
002061 000406 A
002062 000200 A
      840 *
      841 *
      842 *   I/O STATUS CALL
      843 *
      844 *   ENTER:  AREG=ADDRESS OF I/O REQUEST BLOCK
      845 *   EXIT :  IF NORMAL STATUS, BREG=0
      846 *           IF ABNORMAL STATUS, BREG=STATUS CODE
      847 *           AREG=LOGICAL UNIT NUMBER
      848 *           XREG=ADDRESS OF REQUEST BLOCK
      849 *
      850 *   STATUS CODE : 020=I/O ERROR
      851 *                   040=END OF FILE,BEGINNING OF DEVICE OR TAPE
      852 *                   060=END OF DEVICE OR TAPE
002063 000000 A 853   STAT  0
002064 054002 A 854   STA  STAT1+2
      855   STAT1 STAT  0,EX1,EX2,EX3,STAT1
002065 006505 A
002066 000373 A
002067 000000 A
002070 002077 R
002071 002105 R
002072 002110 R
002073 002063 R
002074 005002 A 856   TZE  STAT
002075 001000 A 857   JMP*  STAT   RETURN
002076 102063 R
002077 020425 A 858   EX1   LDB  B54   I/O ERROR
002100 005014 A 859   EX4   TAX
002101 015003 A 860   LDA  3,1   GET LUN FROM I/O REQUEST BLOCK
002102 150463 A 861   ANA  BM377
002103 001000 A 862   JMP*  STAT
002104 102063 R
002105 020426 A 863   EX2   LDB  B55   END OF FILE
002106 001000 A 864   JMP  EX4
002107 002100 R
002110 006020 A 865   EX3   LDBI  060   END OF DEVICE
002111 000060 A
002112 001000 A 866   JMP  EX4
002113 002100 R
      867 *

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C 02 00815
C 02 00816
C 02 00817
C 02 00818
C 02 00819
C 02 00820
C 02 00821
02 00822
02 00823
02 00824
02 00825
02 00826
02 00827
02 00828
C 02 00829
C 02 00830
C 02 00831
C 02 00832
C 02 00833
C 02 00834
C 02 00835
C 02 00836
C 02 00837
02 00838
02 00839
02 00840
02 00841
02 00842
02 00843
02 00844
02 00845
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02 00847
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02 00854
02 00855
02 00856
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02 00859
02 00860
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02 00862
02 00863
02 00864
02 00865

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      868 *
      869 *      UPDATE EXCEPTION FIELD WITH I/O STATUS CODE
      870 *
002114 000000 A 871 EXCP ENTR 0
002115 067000 I 872 STB TMPXX SAVE STATUS CODE
002116 002000 A 873 CALL ARGU
002117 002257 R
002120 002000 A 874 CALL GETR GET FIELD ADDRESS
002121 010102 R
002122 005014 A 875 TAX
002123 027000 I 876 LDB TMPXX
002124 002000 A 877 CALL STBCD STORE BCD NUMBER
002125 002355 R
002126 017000 I 878 LDA REND
002127 001002 A 879 JAP ARGERR
002130 002253 R
002131 001000 A 880 JMP* EXCP
002132 102114 R
      881 *
      882 * POST I/O ERROR MESSAGE
002133 002133 R 883 $ER EQU *
002134 130261 A 884 $ER LDXI 0130261
002135 004144 A 885 LSRB 4
002136 005322 A 886 DBR TEST I/O ERROR TYPE
002137 001020 A 887 JBZ $ER1
002140 002146 R
002141 005144 A 888 IXR
002142 005322 A 889 DBR
002143 001020 A 890 JBZ $ER1
002144 002146 R
002145 005144 A 891 IXR
002146 074045 A 892 $ER1 STX RPM1+2
002147 002000 A 893 CALL DBTA CONVERT LUN TO ASCII
002150 010314 R
002151 006110 A 894 DRAI 0126000
002152 126000 A
002153 054041 A 895 STA RPM1+3
002154 064041 A 896 STB RPM1+4
002155 006010 A 897 LDAI RPM1
002156 002212 R
002157 006057 A 898 $ER2 STAE FCB15+1 UPDATE MESSAGE POINTER IN FCB
002160 007732 R
002161 002000 A 899 CALL EWR POST ERROR MESSAGE
002162 002174 R
002163 001000 A 900 JMP EXIT
002164 002024 R
      901 *
002165 002163 R 902 $ER3 EQU *
002166 130260 A 903 DRAI 0130260
002167 054033 A 904 STA RPM2+2 CONSTRUCT ERROR CODE
002170 006010 A 905 LDAI RPM2
002171 002221 R
002172 001000 A 906 JMP $ER2
002173 002157 R
      907 *
002174 000000 A 908 EWR ENTRY
002175 006010 A 909 LDAI 7
002176 000007 A
002177 006057 A 910 STAE FCB15
002200 007731 R
      911 EWR1 WRITE FCB15,15,0,1 WRITE RECORD ASCII
002201 006505 A
002202 000404 A
002203 100000 A
002204 010417 A
002205 007731 R
002206 000000 A
002207 000000 A
002210 001000 A 912 JMP* EWR
002211 102174 R
002212 120322 A 913 RPM1 DATA ' RT 01,000 '
002213 152240 A
002214 130261 A
002215 126260 A
002216 130260 A
002217 120240 A
002220 120240 A
002221 120322 A 914 RPM2 DATA ' RT '
002222 152240 A
002223 120240 A
002224 120240 A
002225 120240 A
002226 120240 A
002227 120240 A
002230 120322 A 915 RPM3 DATA ' RT 10, XXXXXX '
002231 152240 A
002232 130660 A
002233 126240 A
002234 154330 A
002235 154330 A
002236 154330 A

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E.2\*\*\*\*\*  
E.2\*\*\*\*\*







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002344 002000 A 991 CALL GETR GET ADDRESS 02 00987
002345 010102 R
002346 005014 A 992 TAX 02 00988
002347 015001 A 993 LDA 1,1 GET BYTE ADDRESS OF FIRST FIELD IN RECORD 02 00989
002350 054003 A 994 STA FTMP 02 00990
002351 004341 A 995 LSRA 1 FORM WORD ADDRESS 02 00991
002352 001000 A 996 RETU* FETR EXIT 02 00992
002353 102343 R
002354 000000 A 997 FTMP DATA 0 02 00993
998 * 02 00994
999 * STORE BCD NUMBER 02 00995
1000 * ENTER: B=BCD NUMBER 02 00996
1001 * X=POINT TO WORD 1 OF 6 WORD BCD NUMBER 02 00997
1002 * EXIT: NUMBER STORED INTO WORD 3, ZEROS STORED INTO 1-2,4-6 02 00998
1003 * 02 00999
002355 000000 A 1004 STBCD ENTR 02 01000
002356 006010 A 1005 LDAI 060000 02 01001
002357 060000 A
002360 055000 A 1006 STA 0,1 SIGN + D1-3 02 01002
002361 005001 A 1007 TZA 02 01003
002362 055001 A 1008 STA 1,1 D4-D7 02 01004
002363 055002 A 1009 STA 2,1 D8-D11 02 01005
002364 065003 A 1010 STB 3,1 D12-D15 (ONLY SIGNIFICANT VALUES) 02 01006
002365 055004 A 1011 STA 4,1 D16-D19 02 01007
002366 055005 A 1012 STA 5,1 D20-D23 02 01008
002367 001000 A 1013 RETU* STBCD EXIT 02 01009
002370 102355 R
1014 * 02 01010
1015 * 02 01011
1016 * 02 01012
1017 * 02 01013
1018 * 02 01014
1019 * 02 01015
002371 000000 A 1020 STF ENTR 0 02 01016
002372 064013 A 1021 STB DTMP+1 02 01017
002373 002000 A 1022 CALL GBAI GET CHAR FROM NAME STRING 02 01018
002374 002721 R
002375 004250 A 1023 LRLA 8 02 01019
002376 054006 A 1024 STA DTMP 02 01020
002377 002000 A 1025 CALL GBAI 02 01021
002400 002721 R
002401 114003 A 1026 DRA DTMP 02 01022
002402 024003 A 1027 LDB DTMP+1 02 01023
002403 001000 A 1028 JMP* STF 02 01024
002404 102371 R
002405 000000 A 1029 DTMP DATA 0,0 02 01025
002406 000000 A
1030 * 02 01026
002407 000000 A 1031 EJECT INDICATORS 02 01027
1032 IDV DATA 0 DV INDICATOR 02 01028
000001 A 1033 IC1 EQU 1 02 01029
000457 R 1034 IX1 EQU 013 OVERFLOW INDICATOR 02 01030
000460 R 1035 IX2 EQU 014 MODE VIOLATION INDICATOR 02 01031
000024 A 1036 IG EQU 20 02 01032
000025 A 1037 IE EQU 21 02 01033
000026 A 1038 IL EQU 22 02 01034
000027 A 1039 IP EQU 23 02 01035
000030 A 1040 IZ EQU 24 02 01036
000031 A 1041 IM EQU 25 02 01037
000513 R 1042 IPRE EQU 032 POUND DITTO INDICATOR 02 01038
000514 R 1043 IF EQU 033 FIRST INDICATOR 02 01039
002410 000034 A 1044 ILC DATA 034 LAST CARD INDICATOR 02 01040
000035 A 1045 I1 EQU 29 02 01041
000177 A 1046 I99 EQU 127 02 01042
002411 177077 A 1047 MS11 DATA 0177077 NOT P,Z,M 02 01043
002412 170777 A 1048 MS12 DATA 0170777 NOT G,E,L 02 01044
002413 001000 A 1049 MSKL DATA 01000 L INDICATOR 02 01045
1050 * 02 01046
1051 * ***** 02 01047
1052 * 02 01048
1053 * RUN-TIME INTERPRETER 02 01049
1054 * JUMPS TO COMMAND SUBROUTINES 02 01050
1055 * ENTRY INT = NORMAL 02 01051
1056 * INTS = RESET SFFG 02 01052
1057 * INTP = NEXT GENIC BYTE LOCATION 02 01053
1058 * INTC = COMMAND DISPLACEMENT 02 01054
1059 * INTH = CURRENT GENIC BYTE LOCATION 02 01055
1060 * INTD = A-REG = B-REG = OPERAND 02 01056
1061 * TYPE 4, LCBF SET WITH FIELD DATA 02 01057
1062 * 02 01058
1063 * ***** 02 01059
002414 047000 I 1064 INTS INR SFFG 02 01060
002415 037000 I 1065 INT LDX INPA 02 01061
002416 017000 I 1066 LDA INTP 02 01062
002417 057000 I 1067 STA INTH CURRENT BYTE LOCATION 02 01063
002420 002000 A 1068 JMPM GBAI GET NEXT GENIC BYTE 02 01064
002421 002721 R
002422 147000 I 1069 SUB 0100 COMMAND CONSTANT 02 01065
002423 001002 A 1070 JAP INT2 TYPE 4,5,6 02 01066
002424 002455 R
002425 127000 I 1071 ADD 020 TYPE 0,1,2,3 02 01067
002426 001004 A 1072 JAN INT1 TYPE 0,1,2 02 01068
002427 002435 R

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002430	057000	I	1073	STA	INTA	TYPE 3	02	01069
002431	002000	A	1074	JMPM	GBAI	GET INDICATOR NUMBER	02	01070
002432	002721	R						
002433	005012	A	1075	TAB			02	01071
002434	017000	I	1076	LDA	INTA		02	01072
002435	127000	I	1077	INT1	ADD	060	02	01073
002436	057000	I	1078	INT4	STA	INTC	02	01074
002437	067000	I	1079		STB	INTD	02	01075
002440	127000	I	1080		ADD	CMMD	02	01076
002441	005014	A	1081		TAX		02	01077
002442	015000	A	1082		LDA	0,1	02	01078
002443	157000	I	1083		ANA	MSK0	02	01079
002444	054007	A	1084		STA	INT5+1	02	01080
002445	015000	A	1085		LDA	0,1	02	01081
002446	157000	I	1086		ANA	BIT0	02	01082
002447	004352	A	1087		LSRB	10	02	01083
002450	117000	I	1088		ORA	IND+1	02	01084
002451	057000	I	1089		STA	IND+1	02	01085
002452	005021	A	1090		TBA		02	01086
002453	001000	A	1091	INT5	JMP*	0	02	01087
002454	100000	A						
002455	127000	I	1092	INT2	ADD	0100	02	01088
002456	004250	A	1093		LRLA	8	02	01089
002457	057000	I	1094		STA	INTA	02	01090
002460	002000	A	1095		JMPM	GBAI	02	01091
002461	002721	R						
002462	117000	I	1096		ORA	INTA	02	01092
002463	004552	A	1097		LLSR	10	02	01093
002464	004146	A	1098		LSRB	6	02	01094
002465	147000	I	1099		SUB	040	02	01095
002466	001002	A	1100		JAP	INT3	02	01096
002467	002477	R						
002470	057000	I	1101		STA	INTA	02	01097
002471	005021	A	1102		TBA		02	01098
002472	067000	I	1103		STB	INTB	02	01099
002473	002000	A	1104		JMPM	STO	02	01100
002474	002523	R						
002475	017000	I	1105		LDA	INTA	02	01101
002476	027000	I	1106		LDB	INTB	02	01102
002477	127000	I	1107	INT3	ADD	0120	02	01103
002500	001000	A	1108		JMP	INT4	02	01104
002501	002436	R						
			1109		EJEC		02	01105
			1110	*			02	01106
			1111	* SETUP 'FROM'	LIST CONTROL BLOCK		02	01107
			1112	* EXIT	LCBF SET		02	01108
			1113	*			02	01109
002502	000000	A	1114	SFRM	ENTRY		02	01110
002503	037000	I	1115		LDX	FRMA	02	01111
002504	017000	I	1116		LDA	LFRO	02	01112
002505	001004	A	1117		JAN	SFR1	02	01113
002506	002513	R						
002507	002000	A	1118		JMPM	SLOC	02	01114
002510	002547	R						
002511	001000	A	1119		JMP*	SFRM	02	01115
002512	102502	R						
002513	127000	I	1120	SFR1	ADD	MSK0	02	01116
002514	055001	A	1121		STA	1,1	02	01117
002515	017000	I	1122		LDA	LFRI	02	01118
002516	055000	A	1123		STA	0,1	02	01119
002517	005001	A	1124		TZA		02	01120
002520	055003	A	1125		STA	3,1	02	01121
002521	001000	A	1126		JMP*	SFRM	02	01122
002522	102502	R						
			1127	*			02	01123
			1128	* SET 'TO' LCB			02	01124
			1129	* ENTRY	A-REG = FIELD NUMBER		02	01125
			1130	*			02	01126
002523	000000	A	1131	STO	ENTRY		02	01127
002524	037000	I	1132		LDX	TOA	02	01128
002525	002000	A	1133		JMPM	SLOC	02	01129
002526	002547	R						
002527	001000	A	1134		JMP*	STO	02	01130
002530	102523	R						
			1135	*			02	01131
			1136	* SET 'TO' LCB WITH 'FROM' FIELD			02	01132
			1137	*			02	01133
002531	000000	A	1138	STDF	ENTRY		02	01134
002532	017000	I	1139		LDA	TO	02	01135
002533	027000	I	1140		LDB	FROM	02	01136
002534	067000	I	1141		STB	TO	02	01137
002535	057000	I	1142		STA	FROM	02	01138
002536	017000	I	1143		LDA	LFRO	02	01139
002537	002000	A	1144		JMPM	STO	02	01140
002540	002523	R						
002541	017000	I	1145		LDA	TO	02	01141
002542	027000	I	1146		LDB	FROM	02	01142
002543	067000	I	1147		STB	TO	02	01143
002544	057000	I	1148		STA	FROM	02	01144
002545	001000	A	1149		JMP*	STDF	02	01145
002546	102531	R						
			1150	*			02	01146
			1151	* SETUP LIST CONTROL BLOCK			02	01147







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002672 017000 I 1232 LDA TRUE
002673 002000 A 1233 JMPM SIN
002674 003214 R
002675 001000 A 1234 JMP* SLCB
002676 102547 R
1235 *
1236 * PUT WORD TO LIST
1237 * ENTRY B-REG = VALUE TO PUT TO LIST
1238 *
002677 000000 A 1239 PUTL ENTRY
002700 017000 I 1240 LDA W0
002701 005311 A 1241 DAR W0 MAKE ROOM IN LIST
002702 057000 I 1242 STA W0
002703 067000 I 1243 STB* W0 STORE VALUE
002704 001000 A 1244 JMP* PUTL
002705 102677 R
1245 *
1246 * UNLOAD INTEGER FROM WORKLIST
1247 * ENTRY NUMERIC VALUE ON WORKLIST
1248 * EXIT A-REG = BCD INTEGER EQUIVALENT
1249 * VALUE REMOVED FROM WORKLIST
1250 *
002706 000000 A 1251 UNLI ENTRY
002707 037000 I 1252 LDX W0
002710 015002 A 1253 LDA 2,1
002711 025003 A 1254 LDB 3,1
002712 004544 A 1255 LLSR 4
002713 005041 A 1256 TXA
002714 127000 I 1257 ADD NLST
002715 057000 I 1258 STA W0
002716 005021 A 1259 TBA
002717 001000 A 1260 JMP* UNLI
002720 102706 R
1261 *
1262 * GET BYTE AND INCREMENT
1263 * ENTRY X-REG = LCB ADDRESS
1264 * EXIT A-REG = BYTE
1265 *
002721 000000 A 1266 GBAI ENTRY
002722 002000 A 1267 JMPM GETB GET BYTE
002723 002730 R
002724 002000 A 1268 JMPM ILCB INCREMENT
002725 003011 R
002726 001000 A 1269 JMP* GBAI
002727 102721 R
1270 *
1271 * GET NEXT BYTE
1272 * ENTRY X-REG = LCB POINTER
1273 * EXIT X-REG = LCB POINTER
1274 * A-REG = CURRENT BYTE
1275 *
002730 000000 A 1276 GETB ENTRY
002731 077000 I 1277 STX TEMP SAVE LCB POINTER
002732 002000 A 1278 JMPM GETW GET CURRENT WORD AND POSITION
002733 002777 R
002734 157000 I 1279 ANA BYT1
002735 037000 I 1280 LDX TEMP
002736 001000 A 1281 JMP* GETB
002737 102730 R
1282 *
1283 * PUT BYTE AND INCREMENT
1284 * ENTRY A-REG = BYTE TO PUT
1285 *
002740 000000 A 1286 PBAI ENTRY
002741 002000 A 1287 JMPM PUTB PUT BYTE
002742 002762 R
002743 002000 A 1288 JMPM ILCB STEP
002744 003011 R
002745 001000 A 1289 JMP* PBAI
002746 102740 R
1290 *
1291 * PUT BYTE AND DECREMENT
1292 * ENTRY A-REG = BYTE TO PUT
1293 *
002747 000000 A 1294 PBAD ENTRY
002750 002000 A 1295 JMPM PUTB PUT BYTE
002751 002762 R
002752 015000 A 1296 LDA 0,1
002753 005311 A 1297 DAR DECREMENT BYTE LOCATION
002754 055000 A 1298 STA 0,1
002755 025001 A 1299 LDB 1,1
002756 005322 A 1300 DBR DECREMENT COUNT
002757 065001 A 1301 STB 1,1
002760 001000 A 1302 JMP* PBAD
002761 102747 R
1303 *
1304 * PUT BYTE
1305 * ENTRY A-REG = BYTE TO PUT IN FIELD
1306 *
002762 000000 A 1307 PUTB ENTRY
002763 057000 I 1308 STA TMPA SAVE BYTE
002764 037000 I 1309 LDX TBA ALWAYS USE 'TD' LCB
002765 002000 A 1310 JMPM GETW GET CURRENT WORD

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002766 002777 R
002767 157000 I 1311 ANA BYTO MASK OUT OLD BYTE 02 01307
002770 117000 I 1312 ORA TMPA IN GOES THE NEW 02 01308
002771 003020 A 1313 XBZ SAL8 POSITION 02 01309
002772 000426 R
002773 055000 A 1314 STA 0,1 02 01310
002774 037000 I 1315 LDX TOA 02 01311
002775 001000 A 1316 JMP* PUTB 02 01312
002776 102762 R
1317 *
1318 * GET CURRENT WORD AND POSITION 02 01313
1319 * ENTRY X-REG = LCB POINTER 02 01314
1320 * EXIT A-REG = CURRENT WORD POSITIONED 02 01315
1321 *
002777 000000 A 1322 GETW ENTRY 02 01316
003000 015000 A 1323 LDA 0,1 CURRENT BYTE LOCATION 02 01317
003001 005002 A 1324 TZB 02 01318
003002 004541 A 1325 LLSR 1 02 01319
003003 005014 A 1326 TAX 02 01320
003004 015000 A 1327 LDA 0,1 CURRENT WORD LOCATION 02 01321
003005 003020 A 1328 XBZ SAL8 CURRENT WORD 02 01322
003006 000426 R 02 01323
003007 001000 A 1329 JMP* GETW POSITION WORD 02 01324
003010 102777 R 02 01325
1330 *
1331 * INCREMENT LCB 02 01326
1332 * ENTRY X-REG = LCB POINTER 02 01327
1333 *
003011 000000 A 1334 ILCB ENTRY 02 01328
003012 045000 A 1335 INR 0,1 STEP BYTE LOCATION 02 01330
003013 025001 A 1336 LDB 1,1 DECREMENT COUNT 02 01331
003014 005322 A 1337 DBR 02 01332
003015 065001 A 1338 STB 1,1 02 01333
003016 001000 A 1339 JMP* ILCB 02 01334
003017 103011 R 02 01335
1340 *
1341 * BINARY MULTIPLY 02 01336
1342 * ENTRY A-REG = MULTIPLICAND 02 01337
1343 * B-REG = MULTIPLIER 02 01338
1344 * EXIT B-REG = PRODUCT 02 01339
1345 *
003020 000000 A 1346 BINX ENTRY 02 01340
003021 117000 I 1347 ORA BIT0 02 01341
003022 057000 I 1348 STA TEMP 02 01342
003023 005001 A 1349 TZA 02 01343
003024 037000 I 1350 LDX BWD 02 01344
003025 004477 A 1351 BIN1 LLRL 31 02 01345
003026 001040 A 1352 JXZ* BINX 02 01346
003027 103020 R 02 01347
003030 005344 A 1353 DXR 02 01348
003031 001002 A 1354 JAP BIN1 02 01349
003032 003025 R 02 01350
003033 127000 I 1355 ADD TEMP 02 01351
003034 001000 A 1356 JMP BIN1 02 01352
003035 003025 R
1357 *
1358 * CONVERT BINARY TO DECIMAL 02 01353
1359 * ENTRY A-REG = BINARY INTEGER 02 01354
1360 * EXIT B-REG = DECIMAL INTEGER 02 01355
1361 *
003036 000000 A 1362 BIDE ENTRY 02 01356
003037 005002 A 1363 TZB 02 01357
003040 037000 I 1364 LDX NUMB 02 01358
003041 001040 A 1365 BID1 JXZ* BIDE 02 01359
003042 103036 R 02 01360
003043 004044 A 1366 LRLB 4 02 01361
003044 005344 A 1367 DXR 02 01362
003045 006145 A 1368 BID2 SUBE BIDT,1 02 01363
003046 000737 R 02 01364
003047 005122 A 1369 IBR 02 01365
003050 001002 A 1370 JAP BID2 02 01366
003051 003045 R 02 01367
003052 005322 A 1371 DBR 02 01368
003053 006125 A 1372 ADDE BIDT,1 02 01369
003054 000737 R
003055 001000 A 1373 JMP BID1 02 01370
003056 003041 R
1374 *
1375 * CONVERT DECIMAL TO BINARY 02 01371
1376 * ENTRY A-REG = BCD INTEGER 02 01372
1377 * EXIT A-REG = BINARY EQUIVALENT 02 01373
1378 *
003057 000000 A 1379 DEBI ENTRY 02 01374
003060 004554 A 1380 LLSR 12 02 01375
003061 127000 I 1381 ADD 050 CONSTANT BETWEEN 33 AND 55 02 01376
003062 057000 I 1382 DEBI STA TEMP 02 01377
003063 004242 A 1383 LRLA 2 D TIMES 4 02 01378
003064 127000 I 1384 ADD TEMP D TIMES 5 02 01379
003065 004241 A 1385 LRLA 1 D TIMES 10 02 01380
003066 057000 I 1386 STA TEMP 02 01381
003067 005001 A 1387 TZA 02 01382
003070 004444 A 1388 LLRL 4 02 01383
003071 127000 I 1389 ADD TEMP PREVIOUS + NEW D 02 01384

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003072 001002 A 1390 JAP DCB1 02 01386
003073 003062 R
003074 144002 A 1391 SUB DA 050 TIMES 1000 02 01387
003075 001000 A 1392 JMP* DEBI 02 01388
003076 103057 R
003077 116100 A 1393 DA DATA 0116100 02 01389
1394 *
1395 * MOVE WORDS 02 01390
1396 * ENTRY X-REG = FROM LOCATION 02 01391
1397 * B-REG = TO LOCATION 02 01392
1398 * A-GET = COUNT (NEG IS LEFT TO RIGHT MOVE) 02 01393
1399 * 02 01394
003100 000000 A 1400 WMOV ENTRY 02 01395
003101 001010 A 1401 W001 JAZ* WMOV 02 01396
003102 103100 R
003103 057000 I 1402 STA TEMP COUNT 02 01398
003104 015000 A 1403 LDA 0,1 MOVE 02 01399
003105 056000 A 1404 STA 0,2 WORD 02 01400
003106 017000 I 1405 LDA TEMP 02 01401
003107 001004 A 1406 JAN W002 02 01402
003110 003116 R
003111 005144 A 1407 IXR STEP TO 02 01403
003112 005122 A 1408 IBR NEXT 02 01404
003113 005311 A 1409 DAR WORD 02 01405
003114 001000 A 1410 JMP W001 02 01406
003115 003101 R
003116 005344 A 1411 W002 DXR STEP TO 02 01407
003117 005322 A 1412 DBR NEXT 02 01408
003120 005111 A 1413 IAR WORD 02 01409
003121 001000 A 1414 JMP W001 02 01410
003122 003101 R
1415 * 02 01411
1416 * INITIALIZE FOR NUMERIC SUBROUTINES 02 01412
1417 * ENTRY A-REG = STARTING POSITION 02 01413
1418 * B - REG = COUNT 02 01414
1419 * 02 01415
003123 000000 A 1420 INUM ENTRY 02 01416
003124 067000 I 1421 STB LNGT 02 01417
003125 004542 A 1422 LLSR 2 02 01418
003126 127000 I 1423 ADD W0 02 01419
003127 004442 A 1424 LLRL 2 02 01420
003130 005111 A 1425 IAR 02 01421
003131 054025 A 1426 STA LNUM 02 01422
003132 002000 A 1427 JMPM INCR 02 01423
003133 003136 P
003134 001000 A 1428 JMP* INUM 02 01424
003135 103123 R
003136 000000 A 1429 INCR ENTRY 02 01425
003137 014017 A 1430 LDA LNUM 02 01426
003140 005311 A 1431 DAR 02 01427
003141 054015 A 1432 STA LNUM 02 01428
003142 004542 A 1433 LLSR 2 02 01429
003143 117000 I 1434 ORA WBIT 02 01430
003144 057000 I 1435 STA TMPX 02 01431
003145 004444 A 1436 LLRL 4 02 01432
003146 157000 I 1437 ANA 014 02 01433
003147 005211 A 1438 CPA 02 01434
003150 127000 I 1439 ADD 015 02 01435
003151 057000 I 1440 STA WQTR 02 01436
003152 017000 I 1441 LDA LNGT 02 01437
003153 005311 A 1442 DAR 02 01438
003154 057000 I 1443 STA LNGT 02 01439
003155 001000 A 1444 JMP* INCR 02 01440
003156 103136 R
003157 000000 A 1445 LNUM DATA 0 02 01441
1446 * 02 01442
1447 * PUT ZERO NUMERIC VALUE ON WORKLIST 02 01443
1448 * EXIT W0 = NEW POSITION OF WORKLIST 02 01444
1449 * X-REG = W0 02 01445
1450 * 02 01446
003160 000000 A 1451 ZWRK ENTRY 02 01447
003161 017000 I 1452 LDA W0 MAKE ROOM IN LIST 02 01448
003162 147000 I 1453 SUB NLST 02 01449
003163 057000 I 1454 STA W0 02 01450
003164 005014 A 1455 TAX 02 01451
003165 005001 A 1456 TZA 02 01452
003166 055000 A 1457 STA 0,1 02 01453
003167 055001 A 1458 STA 1,1 02 01454
003170 055002 A 1459 STA 2,1 02 01455
003171 055003 A 1460 STA 3,1 02 01456
003172 055004 A 1461 STA 4,1 02 01457
003173 055005 A 1462 STO 5,1 02 01458
003174 001000 A 1463 JMP* ZWRK 02 01459
003175 103160 P
1464 * 02 01460
1465 * GET NUMERIC BYTE FROM LIST 02 01461
1466 * ENTRY LNGT = COUNT - 1 02 01462
1467 * TMPX = WORD POINTER 02 01463
1468 * WQTR = SHIFT COUNT 02 01464
1469 * EXIT A-REG = DIGIT 02 01465
1470 * 02 01466
003176 000000 A 1471 GNAI ENTRY 02 01467
003177 002000 A 1472 JMPM INCR 02 01468

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003447	001000	A	1627	JMP*	SCPW		02	01623
003450	103437	R						
			1628	*			02	01624
			1629	*			02	01625
			1630	*			02	01626
003451	000000	A	1631	CMPN	ENTRY		02	01627
003452	005001	A	1632		TZA	INITIALIZE COMPARE RESULT TO =	02	01628
003453	057000	I	1633		STA		02	01629
003454	037000	I	1634		LDX	W0	02	01630
003455	017000	I	1635		LDA	NLS1	02	01631
003456	057000	I	1636		STA	TEMP	02	01632
003457	015000	A	1637	CM01	LDA	0,1	02	01633
003460	004541	A	1638		LLSR	1	02	01634
003461	057000	A	1639		STA	TMPY	02	01635
003462	015006	A	1640		LDA	6,1	02	01636
003463	004541	A	1641		LLSR	1	02	01637
003464	147000	I	1642		SUB	TMPY	02	01638
003465	001010	A	1643		JAZ	CM02	02	01639
003466	003472	R						
003467	057000	I	1644	CM10	STA	CMPI	02	01640
003470	001000	A	1645		JMP*	CMPN	02	01641
003471	103451	R						
003472	004441	A	1646	CM02	LLRL	1	02	01642
003473	004157	A	1647		LSRB	15	02	01643
003474	067000	I	1648		STB	TMPY	02	01644
003475	147000	I	1649		SUB	TMPY	02	01645
003476	001010	A	1650		JAZ	CM03	02	01646
003477	003502	R						
003500	001000	A	1651		JMP	CM10	02	01647
003501	003467	R						
003502	017000	I	1652	CM03	LDA	TEMP	02	01648
003503	005311	A	1653		DAR		02	01649
003504	001004	A	1654		JAN*	CMPN	02	01650
003505	103451	R						
003506	057000	I	1655		STA	TEMP	02	01651
003507	005144	A	1656		IXR		02	01652
003510	001000	A	1657		JMP	CM01	02	01653
003511	003457	R						
			1658	*			02	01654
			1659	*			02	01655
			1660	*			02	01656
003512	000000	A	1661	NCPR	ENTRY	THE NUMERIC COMPARE ROUTINE	02	01657
003513	005001	A	1662		TZA		02	01658
003514	057000	I	1663		STA	DMBF	02	01659
003515	037000	I	1664		LDX	W0	02	01660
003516	015000	A	1665		LDA	0,1	02	01661
003517	004243	A	1666		LRLA	3	02	01662
003520	001004	A	1667		JAN	NC15	02	01663
003521	003550	R						
003522	015006	A	1668		LDA	6,1	02	01664
003523	057000	I	1669		STA	DMBF+1	02	01665
003524	004243	A	1670		LRLA	3	02	01666
003525	001004	A	1671		JAN	NC20	02	01667
003526	003560	R						
003527	002000	A	1672	NC05	JMPM	SCPW	02	01668
003530	003437	R						
003531	002000	A	1673		JMPM	CMPN	02	01669
003532	003451	R						
003533	017000	I	1674		LDA	DMBF	02	01670
003534	001010	A	1675		JAZ	NC10	02	01671
003535	003543	R						
003536	017000	I	1676		LDA	CMPI	02	01672
003537	001010	A	1677		JAZ	NC10	02	01673
003540	003543	R						
003541	127000	I	1678		ADD	MSK0	02	01674
003542	057000	I	1679		STA	CMPI	02	01675
003543	037000	I	1680	NC10	LDX	W0	02	01676
003544	017000	I	1681		LDA	DMBF+1	02	01677
003545	055006	A	1682		STA	6,1	02	01678
003546	001000	A	1683		JMP*	NCPR	02	01679
003547	103512	R						
003550	015006	A	1684	NC15	LDA	6,1	02	01680
003551	057000	I	1685		STA	DMBF+1	02	01681
003552	004243	A	1686		LRLA	3	02	01682
003553	001002	A	1687		JAP	NC20	02	01683
003554	003560	R						
003555	047000	I	1688		INR	DMBF	02	01684
003556	001000	A	1689		JMP	NC05	02	01685
003557	003527	R						
003560	057000	I	1690	NC20	STA	CMPI	02	01686
003561	001000	A	1691		JMP*	NCPR	02	01687
003562	103512	R						
			1692	*			02	01688
			1693	*			02	01689
			1694	*			02	01690
003563	000000	A	1695	CMPR	ENTRY	SET COMPARE WORD EQUAL	02	01691
003564	005001	A	1696		TZA		02	01692
003565	057000	I	1697		STA	CMPI	02	01693
003566	017000	I	1698	CO00	LDA	LCBF+1	02	01694
003567	001002	A	1699		JAP	CO01	02	01695
003570	003577	R						
003571	017000	I	1700		LDA	LCBT+1	02	01696
003572	001004	A	1701		JAN*	CMPR	02	01697







003711	001000	A	1777		JMP*	INDM	*RETURN	*	02	01773
003712	103702	R								
003713	027000	I	1778	IN02	LDB	DMPT+1	*INCREMENT THE WORD POINTER*		02	01774
003714	005322	A	1779		DBR		*	*	02	01775
003715	067000	I	1780		STB	DMPT+1	*	*	02	01776
003716	001000	A	1781		JMP	IN01	*	*	02	01777
003717	003710	R								
			1782	*			GREATER, LESS, EQUAL (NEG)	*	02	01778
			1783	*					02	01779
			1784	*					02	01780
003720	017000	I	1785	GLEN	LDA	SFFG			02	01781
003721	001010	A	1786		JAZ	G025			02	01782
003722	004062	R								
003723	002000	A	1787		JMPM	LDNS			02	01783
003724	004072	R								
003725	017000	I	1788	GLNS	LDA*	W0			02	01784
003726	137000	I	1789		ERA	NSGN	INVERT THE ENTRY'S SIGN		02	01785
003727	057000	I	1790		STA*	W0			02	01786
003730	002000	A	1791		JMPM	TWZE			02	01787
003731	003357	R								
003732	017000	I	1792		LDA	INTC			02	01788
003733	147000	I	1793		SUB	03	RESET THE DPCODE TO NON NEGATIVE OPERATION		02	01789
003734	057000	I	1794		STA	INTC			02	01790
003735	001000	A	1795		JMP	GLES			02	01791
003736	003751	R								
003737	017000	I	1796	GLE	LDA	SFFG			02	01792
003740	001010	A	1797		JAZ	G011			02	01793
003741	004010	R								
003742	002000	A	1798		JMPM	LDNS			02	01794
003743	004072	R								
003744	001000	A	1799		JMP	GLES			02	01795
003745	003751	R								
003746	017000	I	1800	GLEX	LDA	INTC			02	01796
003747	127000	I	1801		ADD	060			02	01797
003750	057000	I	1802		STA	INTC			02	01798
003751	002000	A	1803	GLES	JMPM	NCPR			02	01799
003752	003512	R								
003753	017000	I	1804	G003	LDA	CMPI			02	01800
003754	003002	A	1805		XAP	GI02	SET TO GT		02	01801
003755	004001	R								
003756	003004	A	1806		XAN	GI03	SET TO LT		02	01802
003757	004002	R								
003760	003010	A	1807		XAZ	GI04	SET TO EQUAL TO		02	01803
003761	004003	R								
003762	005021	A	1808		TBA				02	01804
003763	147000	I	1809		SUB	INTC	IF THEY MATCH		02	01805
003764	005002	A	1810	G005	TZB				02	01806
003765	003010	A	1811		XAZ	GI01	SET RESULT TRUE		02	01807
003766	004000	R								
003767	017000	I	1812		LDA	SFFG	IF YOU LOADED NUMERIC		02	01808
003770	001010	A	1813		JAZ	G010			02	01809
003771	004004	R								
003772	017000	I	1814		LDA	W0	RESET THE WORKLIST		02	01810
003773	127000	I	1815		ADD	013			02	01811
003774	057000	I	1816	G007	STA	W0			02	01812
003775	067000	I	1817		STB*	W0			02	01813
003776	001000	A	1818		JMP	INTS	GO RESET THE SFFG		02	01814
003777	002414	R								
004000	027000	I	1819	GI01	LDB	TRUE			02	01815
004001	027000	I	1820	GI02	LDB	0106	GREATER THAN RESULT		02	01816
004002	027000	I	1821	GI03	LDB	0107	SET TO LESS THAN RESULT		02	01817
004003	027000	I	1822	GI04	LDB	0110	SET TO EQUAL RESULT		02	01818
004004	017000	I	1823	G010	LDA	W0			02	01819
004005	005311	A	1824		DAR				02	01820
004006	001000	A	1825		JMP	G007			02	01821
004007	003774	R								
004010	005001	A	1826	G011	TZA				02	01822
004011	057000	I	1827		STA	CNT1			02	01823
004012	002000	A	1828	G012	JMPM	SFRM			02	01824
004013	002502	R								
004014	017000	I	1829		LDA	LCBT+3	GET THE MODE OF THE FIELD		02	01825
004015	004355	A	1830		LSRA	13			02	01826
004016	157000	I	1831		ANA	03	MASK OFF THE REST OF THE WORD		02	01827
004017	057000	I	1832		STA	TEMP			02	01828
004020	017000	I	1833		LDA	LCBF+3			02	01829
004021	004355	A	1834		LSRA	13			02	01830
004022	157000	I	1835		ANA	03	MASK OFF THE REST OF THE WORD		02	01831
004023	127000	I	1836		ADD	TEMP			02	01832
004024	117000	I	1837		DRA	TEMP			02	01833
004025	147000	I	1838		SUB	02			02	01834
004026	001004	A	1839		JAN	G015	ALPHA COMPARE		02	01835
004027	004050	R								
004030	001010	A	1840		JAZ	G020	MODE VIOLATION SET FALSE RESULT		02	01836
004031	004054	R								
004032	002000	A	1841		JMPM	LDNS	LOAD THE NUMERIC VALUES		02	01837
004033	004072	R								
004034	002000	A	1842		JMPM	STUF	SET UP THE OTHER ENTRY		02	01838
004035	002531	R								
004036	002000	A	1843		JMPM	LDNS			02	01839
004037	004072	R								
004040	002000	A	1844		JMPM	XCHW	PLACE IN CORRECT ORDER		02	01840
004041	003375	R								
004042	047000	I	1845		INR	SFFG	RESET THE LOADED FLAG		02	01841



004043	017000	I	1846	LDA*	W0			02	01842
004044	137000	I	1847	ERA	CNT1			02	01843
004045	057000	I	1848	STA*	W0			02	01844
004046	001000	A	1849	JMP	GLES			02	01845
004047	003751	R							
004050	002000	A	1850	G015	JMPM	CMPR	COMPARE THE ALPHA VALUES	02	01846
004051	003563	R							
004052	001000	A	1851	JMP	G003			02	01847
004053	003753	R							
004054	017000	I	1852	G020	LDA	TRUE	SET THE MODE VIOLATION INDICATOR ON	02	01848
004055	027000	I	1853	LDB	IX2			02	01849
004056	002000	A	1854	JMPM	SIN			02	01850
004057	003214	R							
004060	001000	A	1855	JMP	G005		GO SET THE RESULT FALSE	02	01851
004061	003764	R							
004062	017000	I	1856	G025	LDA	NSGN	SET THE ENTRY'S SIGN NEGATIVE	02	01852
004063	057000	I	1857	STA	CNT1			02	01853
004064	001000	A	1858	JMP	G012			02	01854
004065	004012	R							
004066	002000	A	1859	LDN	JMPM	LDNS	*LOAD NUMERIC INSTRUCTION *	02	01855
004067	004072	R							
004070	001000	A	1860	JMP	INT		*RETURN *	02	01856
004071	002415	R							
			1861	*				02	01857
			1862	*				02	01858
			1863	*				02	01859
004072	000000	A	1864	LDNS	ENTRY		THE LOAD NUMERIC SUBROUTINE	02	01860
004073	017000	I	1865	LDA	PEND		IF THE WORKLIST WILL OVERFLOW,	02	01861
004074	147000	I	1866	SUB	W0			02	01862
004075	001002	A	1867	JAP	RTDF		HALT	02	01863
004076	003211	R							
004077	002000	A	1868	JMPM	ZWRK		ZERO 6 WORDS OF THE WORK LIST	02	01864
004100	003160	R							
004101	057000	I	1869	STA	WQTR		INITIALIZE THE POSITION POINTER	02	01865
004102	057000	I	1870	STA	CNT1		INITIALIZE THE NEGATIVE INDICATOR	02	01866
004103	054313	A	1871	STA	LDIS		THE NEGATIVE OVERPUNCH INDICATOR	02	01867
004104	057000	I	1872	STA	TMPI		INITIALIZE THE OVERFLOW INDICATOR	02	01868
004105	057000	I	1873	STA	DMPT			02	01869
004106	005311	A	1874	DAR				02	01870
004107	057000	I	1875	STA	CNT2		INITIALIZE THE DECIMAL POINT INDICATOR	02	01871
004110	057000	I	1876	STA	ALFG		INITIALIZE THE SPECIAL CHARACTER FLAG	02	01872
004111	017000	I	1877	LDA	NLE1		SET THE LENGTH OF THE ENTRY	02	01873
004112	057000	I	1878	STA	LNGT			02	01874
004113	017000	I	1879	LDA	LCBT+3		PICK UP THE MODE INDICATOR	02	01875
004114	001004	A	1880	JAN	L065		JUMP IF ALPHA OR IMPLIED(NORMALIZED)	02	01876
004115	004354	R							
004116	017000	I	1881	LDA	W0			02	01877
004117	127000	I	1882	ADD	NLS1		SET TO THE BOTTOM OF THE ENTRY	02	01878
004120	057000	I	1883	STA	TMPI		INITIALIZE TO LAST WORD OF ENTRY	02	01879
004121	027000	I	1884	LDB	LCBT+2		THE POINTER TO THE FIELD DATA DESCRIPTION	02	01880
004122	016002	A	1885	LDA	2+2			02	01881
004123	004350	A	1886	LSRA	8			02	01882
004124	157000	I	1887	ANA	BMSK		GET THE IMPLIED DECIMAL POSITION	02	01883
004125	057000	I	1888	STA	BPOS			02	01884
004126	037000	I	1889	L005	LDX	TDA	POINTER TO ALPHA LOCATION	02	01885
004127	002000	A	1890	JMPM	GBAI		GET THE NEXT BYTE AND INCREMENT	02	01886
004130	002721	R							
004131	147000	I	1891	SUB	B		IF A BLANK CONTINUE	02	01887
004132	001010	A	1892	JAZ	L015			02	01888
004133	004164	R							
004134	147000	I	1893	SUB	D16		IS IT A DECIMAL POINT..	02	01889
004135	001010	A	1894	JAZ	L060			02	01890
004136	004330	R							
004137	147000	I	1895	SUB	D14		IS IT GREATER THAN 9	02	01891
004140	001002	A	1896	JAP	L040			02	01892
004141	004260	R							
004142	127000	I	1897	ADD	D12		IS IT LEES THAN 0	02	01893
004143	001004	A	1898	JAN	L033			02	01894
004144	004250	R							
004145	057000	I	1899	STA	TMPI			02	01895
004146	017000	I	1900	L010	LDA	LNGT	DECREMENT THE INTEGER COUNT	02	01896
004147	005311	A	1901	DAR				02	01897
004150	057000	I	1902	STA	LNGT			02	01898
004151	017000	I	1903	LDA	CNT2		IF THERE HAS BEEN A DECIMAL POINT, JUMP	02	01899
004152	001002	A	1904	JAP	L030			02	01900
004153	004232	R							
004154	037000	I	1905	LDX	W0			02	01901
004155	002000	A	1906	JMPM	SFTL		SHIFT THE ENTRY ONE DIGIT TO THE LEFT	02	01902
004156	003414	R							
004157	037000	I	1907	LDX	TMPI		SET TO LAST DIGIT	02	01903
004160	002000	A	1908	JMPM	POS0		OUT PUT THE DIGIT	02	01904
004161	003647	R							
004162	005001	A	1909	L014	TZA		SET OFF THE NEGATIVE FLAG	02	01905
004163	057000	I	1910	STA	CNT1			02	01906
004164	017000	I	1911	L015	LDA	LCBT+1	THE COUNT ON THE INPUT	02	01907
004165	001002	A	1912	JAP	L005		IF STILL SOME TO PROCESS, CONTINUE	02	01908
004166	004126	R							
004167	017000	I	1913	LDA	CNT2		IF DECIMAL POIN OCCURED	02	01909
004170	001002	A	1914	JAP	L025		JUMP	02	01910
004171	004212	R							
004172	017000	I	1915	LDA	LNGT		SET OFLOW	02	01911
004173	127000	I	1916	ADD	BPOS			02	01912
004174	147000	I	1917	SUB	NDEC			02	01913



004175	057000	I	1918	STA	TMPY				02	01914
004176	017000	I	1919	LDA	NDEC		SET TO SHIFT ENTRY		02	01915
004177	147000	I	1920	SUB	DPOS				02	01916
004200	001010	A	1921	L021	JAZ	L025	IF NO MORE SHIFTS , JUMP		02	01917
004201	004212	R								
004202	057000	I	1922	STA	LNGT				02	01918
004203	037000	I	1923	LDX	NO				02	01919
004204	002000	A	1924	JMPM	SFTL		SHIFT THE ENTRY ONE DIGIT LEFT		02	01920
004205	003414	R								
004206	017000	I	1925	LDA	LNGT				02	01921
004207	005311	A	1926	DAR			DECREMENT THE SHIFT COUNT		02	01922
004210	001000	A	1927	JMP	L021				02	01923
004211	004200	R								
004212	017000	I	1928	L025	LDA*	NO			02	01924
004213	157000	I	1929	ANA	WMSK		PREPARE TO DR IN SIGN		02	01925
004214	117000	I	1930	DRA	CNT1		THE SIGN		02	01926
004215	114201	A	1931	DRA	LDIS		NEGATIVE OVERPUNCH		02	01927
004216	057000	I	1932	STA*	NO				02	01928
004217	002000	A	1933	L026	JMPM	TWZE	DO NOT ALLOW ANEGATIVE ZERO		02	01929
004220	003357	R								
004221	017000	I	1934	LDA	TMPY				02	01930
004222	001002	A	1935	JAP*	LDNS				02	01931
004223	104072	R								
004224	027000	I	1936	LDB	IX1		SET THE OVERFLOW INDICATOR ON		02	01932
004225	017000	I	1937	LDA	TRUE				02	01933
004226	002000	A	1938	JMPM	SIN		SET THE INDICATOR		02	01934
004227	003214	R								
004230	001000	A	1939	JMP*	LDNS				02	01935
004231	104072	R								
004232	017000	I	1940	L030	LDA	LNGT	DONOT PLACE MORE THAN 9 PLACES AFTER THE		02	01936
004233	001004	A	1941	JAN	L014		DECIMAL POINT		02	01937
004234	004162	R								
004235	005311	A	1942	DAR					02	01938
004236	057000	I	1943	STA	LNGT				02	01939
004237	037000	I	1944	LDX	DMPT+1				02	01940
004240	017000	I	1945	LDA	DMPT				02	01941
004241	057000	I	1946	STA	WQTR				02	01942
004242	002000	A	1947	JMPM	POSD		OUTPUT THE DIGIT		02	01943
004243	003647	R								
004244	002000	A	1948	JMPM	DRDM				02	01944
004245	003666	R								
004246	001000	A	1949	JMP	L014		CONTINUE PROCESSING		02	01945
004247	004162	R								
004250	127000	I	1950	L039	ADD	D3	IS IT A MINUS SIGN		02	01946
004251	001010	A	1951	JAZ	L045		IF A MINUS SIGN SET NEGATIVE FLAG		02	01947
004252	004311	R								
004253	005001	A	1952	L035	TZA		SET OFF THE NEGATIVE FLAG		02	01949
004254	057000	I	1953	STA	CNT1				02	01949
004255	047000	I	1954	L036	INR	ALFG	SET THE SPECIAL CHARACTER FLAG,CONTINUE		02	01950
004256	001000	A	1955	JMP	L015				02	01951
004257	004164	R								
004260	147000	I	1956	L040	SUB	D11			02	01952
004261	001010	A	1957	JAZ	L055		IF A -C-,CHECK FOR AN R		02	01953
004262	004315	R								
004263	057000	I	1958	STA	TMPA				02	01954
004264	017000	I	1959	LDA	LCBT+1		IF IT IS NOT THE LAST CHARACTER		02	01955
004265	001002	A	1960	JAP	L035		INCREMENT THE SPECIAL CHAR. FLAG		02	01956
004266	004253	R								
004267	017000	I	1961	LDA	ALFG		IF A SPEC. CHAR. HAS OCCURED,		02	01957
004270	001002	A	1962	JAP	L015		CONTINUE		02	01958
004271	004164	R								
004272	017000	I	1963	LDA	TMPA				02	01959
004273	147000	I	1964	SUB	D33		IF IT IS A OVER PUNCHED 0 SET NEGATIVE B.2		02	01960
004274	001010	A	1965	JAZ	L044				02	01961
004275	004304	R								
004276	127000	I	1966	ADD	D13				02	01962
004277	001002	A	1967	JAP	L015		IF IT IS GREATER THAN AN OVERPUNCHED 9	D	02	01963
004300	004164	R								
004301	127000	I	1968	ADD	D12		OR LESS THAN AN OVERPUNCHED 1,		02	01964
004302	001004	A	1969	JAN	L015		DONE		02	01965
004303	004164	R								
004304	057000	I	1970	L044	STA	TMPA			02	01966
004305	017000	I	1971	LDA	NSGN				02	01967
004306	054110	A	1972	STA	LDIS		SET THE NEGATIVE OVERPUCH INDICATOR		02	01968
004307	001000	A	1973	JMP	L010		PLACE THE DIGIT		02	01969
004310	004146	R								
004311	017000	I	1974	L045	LDA	NSGN			02	01970
004312	057000	I	1975	STA	CNT1		SET THE NEGATIVE INDICATOR		02	01971
004313	001000	A	1976	JMP	L036		GO SET THE SPEC. CHARACTER FLAG		02	01972
004314	004255	R								
004315	002000	A	1977	L055	JMPM	GBAI	GET THE NEXT CHARACTER		02	01973
004316	002721	R								
004317	147000	I	1978	SUB	R		SET NEGATIVE IF AN R		02	01974
004320	001010	A	1979	JAZ	L045				02	01975
004321	004311	R								
004322	017000	I	1980	LDA	LCBT				02	01976
004323	005311	A	1981	DAR					02	01977
004324	057000	I	1982	STA	LCBT		RESTORE THE POINTER AND THE		02	01978
004325	047000	I	1983	INR	LCBT+1		COUNT		02	01979
004326	001000	A	1984	JMP	L025		SET THE SPECIAL CHARACTER FALG		02	01980
004327	004253	R								
004330	017000	I	1985	L060	LDA	LNGT	SET THE OVERFLOW		02	01981
004331	147000	I	1986	SUB	NDEC				02	01982



Address	Hex	Mode	Year	Label	Op	Op2	Comment	Page	Line
004332	057000	I	1987		STA	TMPY		02	01983
004333	017000	I	1988		LDA	NDEC		02	01984
004334	057000	I	1989		STA	LNGT		02	01985
004335	037000	I	1990	L062	LDX	W0	SHIFT 9 PLACES LEFT	02	01986
004336	057000	I	1991		STA	CNT2		02	01987
004337	002000	A	1992		JMPM	SFTL		02	01988
004340	003414	R							
004341	017000	I	1993		LDA	CNT2		02	01989
004342	005311	A	1994		DAR			02	01990
004343	001010	A	1995		JAZ	L063		02	01991
004344	004347	R							
004345	001000	A	1996		JMP	L062		02	01992
004346	004335	R							
004347	017000	I	1997	L063	LDA	W0	SET TO THE FIRST POSITION AFTER D.P.	02	01993
004350	127000	I	1998		ADD	03		02	01994
004351	057000	I	1999		STA	DMPT+1		02	01995
004352	001000	A	2000		JMP	L035	SET THE SPECIAL CHARACTER FLAG	02	01996
004353	004253	R							
004354	004241	A	2001	L065	LRLA	1		02	01997
004355	001004	A	2002		JAN	L070	IF IT IS NORMALIZED FORM, JUMP	02	01998
004356	004365	R							
004357	027000	I	2003		LDB	IX2	SET THE MODE VIOLATION FLAG	02	01999
004360	017000	I	2004		LDA	TRUE		02	02000
004361	002000	A	2005		JMPM	SIN	SET THE INDICATOR	02	02001
004362	003214	R							
004363	001000	A	2006		JMP*	LDNS	SET THE RESULT TO ZERO	02	02002
004364	104072	R							
004365	027000	I	2007	L070	LDB	W0	SET THE POINTERS TO MOVE THE NORMALIZED	02	02003
004366	017000	I	2008		LDA	LCBT		02	02004
004367	004341	A	2009		LSRA	1		02	02005
004370	005014	A	2010		TAX			02	02006
004371	017000	I	2011		LDA	NLST	MOVE SIX WORDS	02	02007
004372	002000	A	2012		JMPM	WMOV		02	02008
004373	003100	R							
004374	001000	A	2013		JMP	L026		02	02009
004375	004217	R							
2014	*							02	02010
2015	*							02	02011
2016	*							02	02012
004376	017000	I	2017	STI	LDA	INTC	*GET DPCODE	02	02013
004377	004257	A	2018		LRLA	15	*SET NEG BIT	02	02014
004400	157000	I	2019		ANA	SIGN		02	02015
004401	137000	I	2020		ERA*	W0		02	02016
004402	002000	A	2021		JMPM	SIN	*PLACE THE INDICATOR	02	02017
004403	003214	R							
004404	017000	I	2022		LDA	INTC	*IF IT IS AN UNLOAD INST.,	02	02018
004405	004254	A	2023		LRLA	12	*	02	02019
004406	003004	A	2024		XAN	ST01	TAKE THE ENTRY OFF IF UNLOAD	02	02020
004407	004412	R							
004410	001000	A	2025		JMP	INT	*RETURN TO INTERPRETER	02	02021
004411	002415	R							
004412	047000	I	2026	ST01	INR	W0		02	02022
004413	002000	A	2027	LDI	JMPM	LDIS	*LOAD INDICATOR ROUTINE	02	02023
004414	004417	R							
004415	001000	A	2028		JMP	INT	*RETURN	02	02024
004416	002415	R							
2029	*							02	02025
2030	*							02	02026
2031	*							02	02027
004417	000000	A	2032	LDIS	DATA	0	*LOAD INDICATOR SUBROUTINE *	02	02028
004420	017000	I	2033		LDA	W0	*****	02	02029
004421	005311	A	2034		DAR		*INCREMENT WORKLIST POINTER*	02	02030
004422	057000	I	2035		STA	W0	*	02	02031
004423	147000	I	2036		SUB	PEND	*	02	02032
004424	001004	A	2037		JAN	RTUF	*IF OVERFLOW, STOP EXECUTION*	02	02033
004425	003214	R							
004426	005001	A	2038		TZA		*	02	02034
004427	004454	A	2039		LLRL	12	*PLACE WORD COUNT IN XREG. *	02	02035
004430	127000	I	2040		ADD	INDP		02	02036
004431	005014	A	2041		TAX		*	02	02037
004432	004154	A	2042		LSRB	12	*PLACE SHIFT COUNT IN BREG. *	02	02038
004433	017000	I	2043		LDA	SALO	FORM THE LRLA 0 INSTRUCTION	02	02039
004434	005032	A	2044		MERG	032	*	02	02040
004435	064001	A	2045		STB	LD01	*	02	02041
004436	015000	A	2046		LDA	0+1		02	02042
004437	000000	A	2047	LD01	DATA	0	*SHIFT INSTRUCTION	02	02043
004440	157000	I	2048		ANA	TRUE		02	02044
004441	057000	I	2049		STA*	W0	*PLACE INDICATOR VALUE	02	02045
004442	001000	A	2050		JMP*	LDIS	*RETURN	02	02046
004443	104417	R							
2051	*							02	02047
2052	*							02	02048
2053	*							02	02049
004444	002000	A	2054	ADNN	JMPM	LDIS	*LOAD INDICATOR	02	02050
004445	004417	R							
004446	017000	I	2055		LDA	INTC	*	02	02051
004447	127000	I	2056		ADD	013		02	02052
004450	057000	I	2057		STA	INTC	*RESET DPCODE TO LIST INST *	02	02053
2058	*							02	02054
2059	*							02	02055
2060	*							02	02056
004451	017000	I	2061	DNL	LDA	INTC	*GET DPCODE	02	02057
004452	005002	A	2062		TZB		*	02	02058



Address	Op	Opnd	Label	Inst	Description	Line	Page
004453	004541	A	2063	LLSR	1	*INDICATES NOT OPERATION	02 02059
004454	057000	I	2064	STA	INTC	*RESTORE OPCODE	02 02060
004455	005021	A	2065	TBA		*	02 02061
004456	137000	I	2066	ERA*	W0	*RESET IF ANDNOT OR ORNOT	02 02062
004457	057000	I	2067	STA*	W0	*	02 02063
004460	017000	I	2068	LDA	INTC	*	02 02064
004461	150421	A	2069	ANA	BS0		02 02065
004462	004245	A	2070	LRLA	5	FORM OR/AND BIT	02 02066
004463	117000	I	2071	DRA	DRAI	CREATE OR/AND EXTENDED INSTRUCTION	02 02067
004464	054004	A	2072	STA	A001		02 02068
004465	027000	I	2073	LDB	W0		02 02069
004466	064003	A	2074	STB	A001+1	AND OPERAND ADDRESS	02 02070
004467	005122	A	2075	IBR			02 02071
004470	016000	A	2076	LDA	0,2	LOAD A WITH NEXT ELEMENT ON WORKLIST	02 02072
004471	006117	A	2077	A001 DRAE	0	*AND/OR INSTRUCTION	02 02073
004472	000000	A					
004473	067000	I	2078	STB	W0	*RESET THE WORKLIST	02 02074
004474	057000	I	2079	STA*	W0	*BOTTOM STORE RESULT	02 02075
004475	001000	A	2080	JMP	INT		02 02076
004476	002415	R					
			2081	*			02 02077
			2082	*			02 02078
			2083	*			02 02079
			2084	ADD	JMPM LDNS	*LOAD NUMERIC IF NOT STACK	02 02080
004477	002000	A	2084	ADD	JMPM LDNS	*LOAD NUMERIC IF NOT STACK	02 02080
004500	004072	R					
004501	017000	I	2085	ADDS	LDA INTC	*THE OPCODE	02 02081
004502	004256	A	2086	LRLA	14		02 02082
004503	001002	A	2087	JAP	A002	*	02 02083
004504	004510	R					
004505	017000	I	2088	LDA*	W0	*INVERT THE SIGN BIT	02 02084
004506	137000	I	2089	ERA	NSGN		02 02085
004507	057000	I	2090	STA*	W0		02 02086
004510	002000	A	2091	A002 JMPM	ADIT		02 02087
004511	004514	R					
004512	001000	A	2092	JMP	INT	*RETURN	02 02088
004513	002415	R					
004514	000000	A	2093	ADIT	DATA 0		02 02089
004515	017000	I	2094	LDA	NLE1	SET TO LAST DIGIT	02 02090
004516	005012	A	2095	TAB		SET TO PERFORM 24 SUBTRACTS	02 02091
004517	002000	A	2096	JMPM	INUM		02 02092
004520	003123	R					
004521	005001	A	2097	TZA		*SET QUARTER COUNT AND	02 02093
004522	057000	I	2098	STA	CARY	*	02 02094
004523	037000	I	2099	LDX	W0		02 02095
004524	017000	I	2100	LDA*	W0	*IF SECOND ENTRY IS NEG.	02 02096
004525	004243	A	2101	LRLA	3	*	02 02097
004526	001004	A	2102	JAN	A010	* JUMP	02 02098
004527	004536	R					
004530	015006	A	2103	LDA	6,1		02 02099
004531	004243	A	2104	LRLA	3	*IF SECOND ENTRY IS NEG.	02 02100
004532	001004	A	2105	JAN	SUBN	* GO SUBTRACT	02 02101
004533	004603	R					
004534	001000	A	2106	JMP	A011	*	02 02102
004535	004542	R					
004536	015006	A	2107	A010 LDA	6,1	*IF SECOND ENTRY IS NEG.	02 02103
004537	004243	A	2108	LRLA	3	* ALSO, ADD, OTHERWISE,	02 02104
004540	001002	A	2109	JAP	SUBP	* SUBTRACT	02 02105
004541	004605	R					
004542	037000	I	2110	A011 LDX	TMPX	*THE POINTER	02 02106
004543	002000	A	2111	JMPM	POSI	*POSITION THE TWO DIGITS	02 02107
004544	003623	R					
004545	127000	I	2112	ADD	CARY	*ADD THE CARRY	02 02108
004546	127000	I	2113	ADD	TEMP	*ADD THE DIGIT	02 02109
004547	147000	I	2114	SUB	D12	IF NO CARRY,	02 02110
004550	001004	A	2115	JAN	A005	*JUMP	02 02111
004551	004577	R					
004552	005102	A	2116	A001 INCR	2	SET THE CARRY TO 1	02 02112
004553	067000	I	2117	STB	CARY	*	02 02113
004554	057000	I	2118	STA	TMPA		02 02114
004555	005041	A	2119	TXA			02 02115
004556	127000	I	2120	ADD	NLST	SET TO BOTTOM ENTRY	02 02116
004557	005014	A	2121	TAX			02 02117
004560	002000	A	2122	JMPM	POSD	*OUTPUT THE RESULT	02 02118
004561	003647	R					
004562	002000	A	2123	JMPM	INCR	* INCR PTRS	02 02119
004563	003136	R					
004564	001002	A	2124	JAP	A011		02 02120
004565	004542	R					
004566	017000	I	2125	LDA	CARY		02 02121
004567	001010	A	2126	JAZ	S002		02 02122
004570	004616	R					
004571	017000	I	2127	LDA	TRUE	SET THE OVERFLOW INDICATOR	02 02123
004572	027000	I	2128	LDB	IX1		02 02124
004573	002000	A	2129	JMPM	SIN		02 02125
004574	003214	R					
004575	001000	A	2130	JMP	S002		02 02126
004576	004616	R					
004577	127000	I	2131	A005 ADD	D12	RESTORE THE RESULT	02 02127
004600	005002	A	2132	TZB		*SET CARRY TO ZERO	02 02128
004601	001000	A	2133	JMP	A001	*OUT PUT RESULT	02 02129
004602	004553	R					
			2134	*			02 02130
			2135	*			02 02131



004603	002000	A	2136	*						02	02132
004604	003375	R	2137	SUBN	JMPM	XCHW		*EXCHANGE THE ENTRIES	*	02	02133
004605	002000	A	2138	SUBP	JMPM	SCPH		*SET UP FOR COMPARE ROUTINE*		02	02134
004606	003437	R									
004607	002000	A	2139		JMPM	CMFN		COMPARE THE OPERANDS		02	02135
004610	003451	R									
004611	017000	I	2140		LDA	CMPI				02	02136
004612	001004	A	2141		JAN	S003				02	02137
004613	004625	R									
004614	002000	A	2142	S001	JMPM	SUBO		SUBTRACT THE TWO ENTRIES		02	02138
004615	003241	R									
004616	017000	I	2143	S002	LDA	W0		*RESET WORKLIST BOTTOM	*	02	02139
004617	127000	I	2144		ADD	NLST				02	02140
004620	057000	I	2145		STA	W0				02	02141
004621	002000	A	2146		JMPM	THZE				02	02142
004622	003357	R									
004623	001000	A	2147		JMP*	ADIT				02	02143
004624	104514	R									
004625	017000	I	2148	S003	LDA*	W0				02	02144
004626	117000	I	2149		ORA	NSGN				02	02145
004627	057000	I	2150		STA*	W0				02	02146
004630	002000	A	2151		JMPM	XCHW				02	02147
004631	003375	R									
004632	001000	A	2152		JMP	S001				02	02148
004633	004614	R									
			2153	*						02	02149
			2154	*						02	02150
			2155	*						02	02151
004634	002000	A	2156	DIV	JMPM	LDNS		*LOAD NUMERIC IF NOT STACK *		02	02152
004635	004072	R									
004636	005101	A	2157	DIVL	INCR	1		IF IT IS AN INVERTED DIVIDE,		02	02153
004637	157000	I	2158		ANA	INTC				02	02154
004640	001010	A	2159		JAZ	D001				02	02155
004641	004644	R									
004642	002000	A	2160		JMPM	XCHW		* EXCHANGE THE ELEMENTS.	*	02	02156
004643	003375	R									
004644	037000	I	2161	D001	LDX	NLST		ZERO THE BUFFER		02	02157
004645	005002	A	2162		IZB					02	02158
004646	006065	A	2163	D005	STRE	DMBF,1				02	02159
004647	000154	R									
004650	005345	A	2164		DECR	045				02	02160
004651	001002	A	2165		JAP	D005				02	02161
004652	004646	R									
004653	067000	I	2166		STB	DMPT		SET THE MAXIMUM SHIFT FOR THE UNNPER ENTRY		02	02162
004654	017000	I	2167		LDA	NIN1				02	02163
004655	057000	I	2168		STA	CNT2				02	02164
004656	014104	A	2169		LDA	DMB3		SET TO UNITS POSITION	*	02	02165
004657	057000	I	2170		STA	DMPT+1				02	02166
004660	002000	A	2171		JMPM	SETS		SET THE SIGN OF THE RESULT	*	02	02167
004661	003334	R									
004662	002000	A	2172		JMPM	SCPH		* PREPARE TO COMPUTE	*	02	02168
004663	003437	R									
004664	002000	A	2173	D010	JMPM	CMFN		COMPARE THE ENTRIES		02	02169
004665	003451	R									
004666	017000	I	2174		LDA	CMPI				02	02170
004667	001004	A	2175		JAN	D015		*GO SHIFT LOWER BUFFER	*	02	02171
004670	004705	R									
004671	037000	I	2176		LDX	W0		*SET SHIFT LOCATION	*	02	02172
004672	002000	A	2177		JNPM	SETL		*SHIFT THE UPPER BUFFER	*	02	02173
004673	003414	R									
004674	017000	I	2178		LDA	CNT2		*IF DIVISOR TOO SMALL	*	02	02174
004675	005311	A	2179		DAR					02	02175
004676	001004	A	2180		JAN	N060		OVERFLOW IF NEGATIVE	*	02	02176
004677	005252	R									
004700	057000	I	2181		STA	CNT2		*RESET SHIFT COUNT	*	02	02177
004701	002000	A	2182		JMPM	INDM		*INCREMENT THE DM POINTERS	*	02	02178
004702	003702	R									
004703	001000	A	2183		JMP	D010		*CONTINUE SHIFTING	*	02	02179
004704	004664	R									
004705	017000	I	2184	D015	LDA	NLEN		SET THE LIMIT OF SHIFTS FOR THE LOWER ENTR	*	02	02180
004706	147000	I	2185		SUB	CNT2		*PROCESS	*	02	02181
004707	057000	I	2186		STA	CNT2				02	02182
004710	001000	A	2187		JMP	D055		GO SHIFT THE LOWER ENTRY	*	02	02183
004711	004744	R									
004712	017000	I	2188	D030	LDA	NLE1		POSITION AT LOWER RIGHT DIGIT		02	02184
004713	005112	A	2189		INCR	012				02	02185
004714	002000	A	2190		JNPM	INUM		SET UP FOR SUBTRACT		02	02186
004715	003123	R									
004716	047000	I	2191		INF	CNT1		INCREMENT THE SUBTRACT COUNT		02	02187
004717	002000	A	2192		JNPM	SUBO		SUBTRACT THE ENTRIES		02	02188
004720	003241	R									
004721	002000	A	2193		JMPM	CMFN		COMPARE THE ENTRIES		02	02189
004722	003451	R									
004723	017000	I	2194		LDA	CMPI				02	02190
004724	001002	A	2195		JAP	D030		IF STILL GREATER, SUBTRACT AGAIN		02	02191
004725	004712	R									
004726	037000	I	2196		LDX	DMPT+1		* SET PTR TO ACC	*	02	02192
004727	017000	I	2197		LDA	CNT1		*THE SUBTRACT COUNT TO BE	*	02	02193
004730	057000	I	2198		STA	TMPT				02	02194
004731	027000	I	2199		LDX	DMPT		*THE LOCATION IN THE WORD	*	02	02195
004732	067000	I	2200		STB	NOTR				02	02196
004733	002000	A	2201		JMPM	PODD		*OUTPUT THE RESULT	*	02	02197



Address	Label	Op	Op2	Op3	Description	Line
004734	003647	R				
004735	017000	I	2202	D050	LDA CNT2	*THE DIVIDE COUNT *
004736	005311	A	2203		DAR	*RESET *
004737	001010	A	2204		JAZ M050	*IF ZERO, DONE, PLACE RESULT*
004740	005224	R				
004741	057000	I	2205		STA CNT2	* * *
004742	002000	A	2206		JMPM DRDM	RESET THE ACC POINTERS
004743	003666	R				
004744	017000	I	2207	D055	LDA W0	SET TO SHIFT LOWER BUFFER
004745	127000	I	2208		ADD NLST	
004746	005014	A	2209		TAX	*PLACE BUFFER POINTER *
004747	002000	A	2210		JMPM SFTL	*SHIFT LEFT *
004750	003414	R				
004751	002000	A	2211		JMPM CMPN	COMPARE THE ENTRIES
004752	003451	R				
004753	017000	I	2212		LDA CMPI	
004754	001004	A	2213		JAN D050	
004755	004735	R				
004756	005001	A	2214		TZA	
004757	057000	I	2215		STA CNT1	
004760	057000	I	2216		STA CARY	
004761	001000	A	2217		JMP D030	*OTHERWISE GO SUBTRACT *
004762	004712	R				
004763	000157	R	2218	DMB3	DATA DMBF+3	
			2219	*		
			2220	*		
			2221	*		
004764	002000	A	2222	MUL	JMPM LDNS	*THE MULTIPLY ROUTINE, LOAD *
004765	004072	R				
004766	037000	I	2223	MULS	LDX NLST	CLEAR THE ACCUMULATOR
004767	005002	A	2224		TZB	* * *
004770	006065	A	2225	M001	STBE DMBF,1	
004771	000154	R				
004772	005345	A	2226		DECR 045	* * *
004773	001002	A	2227		JAP M001	* * *
004774	004770	R				
004775	067000	I	2228		STB MPPT	*INITIALIZE THE BOTTOM BUFF*
004776	067000	I	2229		STB CARY	*INITIALIZE THE CARRY *
004777	017000	I	2230		LDA W0	*SET BOTTOM WORD POINTER *
005000	005014	A	2231		TAX	* * *
005001	127000	I	2232		ADD 013	
005002	057000	I	2233		STA MPPT+1	* * *
005003	017000	I	2234		LDA NLE1	SET BOTTOM COUNT TO 23
005004	057000	I	2235		STA LNGT	* * *
005005	002000	A	2236		JMPM SETS	SET THE SIGN OF THE RESULT
005006	003334	R				
005007	017000	I	2237	M005	LDA* MPPT+1	*PICK UP THE FIRST DIGIT *
005010	027000	I	2238		LDB MPPT	* OF THE MULTIPLIER *
005011	067000	I	2239		STB WQTR	
005012	002000	A	2240		JMPM SFTR	*ADJUST IT *
005013	003635	R				
005014	001010	A	2241		JAZ M031	*SKIP THE DIGIT IF ZERO *
005015	005155	R				
005016	005014	A	2242		TAX	*OTHERWISE SET UP TBL2 ENTR*
005017	006015	A	2243		LDAE TBL1-1,1	
005020	000742	R				
005021	127000	I	2244		ADD ATB2	*ADD TABLE DISPLACEMENT
005022	057000	I	2245		STA TMPC	
005023	017000	I	2246		LDA LNGT	*SET THE POINTERS TO THE *
005024	144236	A	2247		SUB 022	* * *
005025	001004	A	2248		JAN M040	* * *
005026	005177	R				
005027	057000	I	2249		STA TEMP	* * *
005030	017000	I	2250		LDA NLE1	
005031	147000	I	2251		SUB TEMP	* * *
005032	057000	I	2252		STA CNT1	*COUNT FOR MULTIPLICAND *
005033	005002	A	2253		TZB	* * *
005034	004542	A	2254		LLSR 2	* * *
005035	127000	I	2255		ADD W0	
005036	057000	I	2256		STA MCPT+1	*WORD POINTER TO MULTIPLICA*
005037	005001	A	2257		TZA	* * *
005040	057000	I	2258		STA DMPT	*INITIALIZE ACC. POINTER *
005041	004444	A	2259		LLRL 4	*THE QUARTER COUNT FOR MULC*
005042	057000	I	2260		STA TEMP	* * *
005043	017000	I	2261		LDA 014	
005044	147000	I	2262		SUB TEMP	* * *
005045	057000	I	2263		STA MCPT	* * *
005046	014211	A	2264		LDA EDMF	STARTINGWORD FOR THE ACCUMULATOR
005047	057000	I	2265		STA DMPT+1	* * *
005050	017000	I	2266		LDA 032	
005051	057000	I	2267		STA CNT2	*INDEX FOR ACCUMULATOR *
005052	017000	I	2268	M010	LDA* MCPT+1	*PICK UP THE MULTIPLICAND *
005053	027000	I	2269		LDB MCPT	* DIGIT. *
005054	067000	I	2270		STB WQTR	
005055	002000	A	2271		JMPM SFTR	*ADJUST DIGIT *
005056	003635	R				
005057	127000	I	2272		ADD TMPC	
005060	057000	I	2273		STA TMPB	*BYTE LOCATION SET UP *
005061	034200	A	2274		LDX ATMB	
005062	002000	A	2275		JMPM GETB	*GET THE BYTE, HAS DIGIT *
005063	002730	R				
005064	004544	A	2276		LLSR 4	* AND CARRY *
005065	127000	I	2277		ADD CARY	*ADD THE DIGIT TO THE CARRY*



005066	004154	A	2278	LSRB	12	*PLACE NEW CARRY	*	02	02274
005067	067000	I	2279	STB	CARY	*	*	02	02275
005070	001010	A	2280	JAZ	M015	*IF THE RESULT IS ZERO JUMP*	*	02	02276
005071	005122	R							
005072	057000	I	2281	STA	TMPB	*SAVE	*	02	02277
005073	017000	I	2282	LDA	CNT2	*TEST FOR OVERFLOW	*	02	02278
005074	001004	A	2283	JAN	M060	*GO TO OVERFLOW IF COUNT NE*	*	02	02279
005075	005252	R							
005076	017000	I	2284	LDA*	DMPT+1	*PICK UP ACC. DIGIT	*	02	02280
005077	027000	I	2285	LDB	DMPT	*	*	02	02281
005100	067000	I	2286	STB	WQTR			02	02282
005101	002000	A	2287	JMPM	SFTR	*ADJUST THE DIGIT	*	02	02283
005102	003635	R							
005103	127000	I	2288	ADD	TMPB	*ADD THE MULTIPLY RESULT	*	02	02284
005104	147000	I	2289	SUB	D12	FIND THE CARRY OF THE ADD	*	02	02285
005105	003002	A	2290	XAP	M025	*	*	02	02286
005106	005151	R							
005107	003004	A	2291	XAN	M026	*	*	02	02287
005110	005152	R							
005111	147000	I	2292	SUB	D12			02	02288
005112	003002	A	2293	XAP	M025	*	*	02	02289
005113	005151	R							
005114	003004	A	2294	XAN	M026	*	*	02	02290
005115	005152	R							
005116	037000	I	2295	LDB	DMPT+1	*SET TO OUTPUT RESULT	*	02	02291
005117	057000	I	2296	STA	TMPA			02	02292
005120	002000	A	2297	JMPM	POSD	*PUTPUT THE DIGIT	*	02	02293
005121	003647	R							
005122	017000	I	2298	LDA	CNT1			02	02294
005123	005311	A	2299	DAR		*	*	02	02295
005124	001010	A	2300	JAZ	M030	*IF ZERO INDICATES BUFFER	*	02	02296
005125	005153	R							
005126	057000	I	2301	STA	CNT1	* EXHAUSTED. RESTORE	*	02	02297
005127	017000	I	2302	LDA	CNT2			02	02298
005130	005311	A	2303	DAR				02	02299
005131	057000	I	2304	STA	CNT2			02	02300
005132	017000	I	2305	LDA	MCPT	*INCREMENT THE POINTERS	*	02	02301
005133	127000	I	2306	ADD	NUMB			02	02302
005134	157000	I	2307	ANA	D14			02	02303
005135	001010	A	2308	JAZ	M030	*INDICATES NEW WORD	*	02	02304
005136	005144	R							
005137	057000	I	2309	STA	MCPT	*	*	02	02305
005140	002000	A	2310	JMPM	INBM	*INCREMENT THE ACC. POINTER*	*	02	02306
005141	003702	R							
005142	001000	A	2311	JMP	M010	*CONTINUE PROCESS	*	02	02307
005143	005052	R							
005144	027000	I	2312	LDB	MCPT+1	*INCREMENT THE WORD POINTER*	*	02	02308
005145	005322	A	2313	DBR		*	*	02	02309
005146	057000	I	2314	STB	MCPT+1	*	*	02	02310
005147	001000	A	2315	JMP	M017	*RETURN TO PROCESSING	*	02	02311
005150	005137	R							
005151	047000	I	2316	INR	CARY	*INCREMENT THE DARRY	*	02	02312
005152	127000	I	2317	ADD	D12	RESTORE THE VALUE	*	02	02313
005153	002000	A	2318	JMPM	ACRY	*FINISH PLACING THE CARRY	*	02	02314
005154	003274	R							
005155	017000	I	2319	LDA	LNPT	*TEST FOR END OF BOTTOM BUF*	*	02	02315
005156	005311	A	2320	DAR		*	*	02	02316
005157	001010	A	2321	JAZ	M050	*IF SD , PLACE ANSWER	*	02	02317
005160	005224	R							
005161	057000	I	2322	STA	LNPT	*	*	02	02318
005162	017000	I	2323	LDA	MPPT	*INCREMENT THE BOTTOM POINT*	*	02	02319
005163	127000	I	2324	ADD	NUMB			02	02320
005164	157000	I	2325	ANA	D14			02	02321
005165	001010	A	2326	JAZ	M035	*IF ZERO QUARTER INCR WORD	*	02	02322
005166	005172	R							
005167	057000	I	2327	STA	MPPT	*	*	02	02323
005170	001000	A	2328	JMP	M005	*GO CONTINUE MULTIPLYING	*	02	02324
005171	005007	R							
005172	027000	I	2329	LDB	MPPT+1	*INCREMENT THE WORD POINTER*	*	02	02325
005173	005322	A	2330	DBR		*	*	02	02326
005174	067000	I	2331	STB	MPPT+1	*	*	02	02327
005175	001000	A	2332	JMP	M032	*CONTINUE PROCESSING	*	02	02328
005176	005167	R							
005177	127000	I	2333	ADD	D32			02	02329
005200	057000	I	2334	STA	CNT2	*	*	02	02330
005201	005111	A	2335	IAR				02	02331
005202	005002	A	2336	TZB		*	*	02	02332
005203	004542	A	2337	LLSR	2	*THE WORD DISPLACEMENT FROM*	*	02	02333
005204	124054	A	2338	ADD	TMPF	TOP	*	02	02334
005205	057000	I	2339	STA	DMPT+1	*THE ACC. WORD POINTER	*	02	02335
005206	005001	A	2340	TZA		*	*	02	02336
005207	057000	I	2341	STA	MCPT	*POINTER FOR UPPER BUFFER	*	02	02337
005210	004444	A	2342	LLRL	4	*THE QUARTER COUNT	*	02	02338
005211	057000	I	2343	STA	TEMP	*	*	02	02339
005212	017000	I	2344	LDA	D14			02	02340
005213	147000	I	2345	SUB	TEMP	*	*	02	02341
005214	057000	I	2346	STA	DMPT	*THE QUARTER COUNT OF ACC.	*	02	02342
005215	017000	I	2347	LDA	NLS1			02	02343
005216	057000	I	2348	STA	CNT1			02	02344
005217	017000	I	2349	LDA	WQ			02	02345
005220	127000	I	2350	ADD	NLS1	BOTTOM OF UPPER BUFFER	*	02	02346
005221	057000	I	2351	STA	MCPT+1	*WORD POINTER FOR TOP BUFF	*	02	02347
005222	001000	A	2352	JMP	M010	*CONTINUE PROCESSING	*	02	02348















005640	002000	A	2563	UNPC	JMPM	PBAD	STORE DECIMAL	02	02559
005641	002747	R							
005642	017000	I	2564		LDA	LCBT+1		02	02560
005643	001004	A	2565		JAN	UNP1	END OF FIELD	02	02561
005644	005612	R							
005645	017000	I	2566	UNND	LDA	DM2		02	02562
005646	037000	I	2567		STA	CCNT		02	02563
005647	001000	A	2568		JMP	UNNM		02	02564
005650	005572	R							
005651	014047	A	2569	UNCD	LDA	CMMA	COMMA NEEDED	02	02565
005652	001000	A	2570		JMP	UNPC		02	02566
005653	005640	R							
005654	017000	I	2571	UNFS	LDA	UNEC	EDIT CONTROL	02	02567
005655	157000	I	2572		ANA	D7	ZERO SUPPRESS, S, OR *	02	02568
005656	001010	A	2573		JAZ	UNEX	NO, EXIT	02	02569
005657	005415	R							
005660	017000	I	2574		LDA	UNSG	INITIALIZE FOR BACKWARD SCAN	02	02570
005661	147000	I	2575		SUB	LCBT		02	02571
005662	147000	I	2576		SUB	D2	COUNT TILL NON-ZERO DIGIT	02	02572
005663	001004	A	2577		JAN	UNEX	NONE	02	02573
005664	005415	R							
005665	037000	I	2578		STA	LCBT+1		02	02574
005666	047000	I	2579		INR	LCBT	POINT TO FIRST FIELD POSITION	02	02575
005667	001010	A	2580	UNF1	JAZ	UNF2	LAST POSITION	02	02576
005670	005707	R							
005671	027000	I	2581	UNF4	LDB	B		02	02577
005672	005101	A	2582		INCR	9101		02	02578
005673	157000	I	2583		ANA	UNEC	TEST IF ASTERISK	02	02579
005674	001010	A	2584		JAZ	UNF3	NO	02	02580
005675	005677	R							
005676	024024	A	2585		LDB	ASTR	YES, GET *	02	02581
005677	005021	A	2586	UNF3	TBA			02	02582
005700	002000	A	2587	UNF5	JMPM	PBAI	PUT AWAY BLANK, ASTERICK, OR DOLLAR	02	02583
005701	002740	R							
005702	017000	I	2588		LDA	LCBT+1		02	02584
005703	001002	A	2589		JAP	UNF1		02	02585
005704	005667	R							
005705	001000	A	2590		JMP	UNEX	END OF FIELD	02	02586
005706	005415	R							
005707	017000	I	2591	UNF2	LDA	UNEC	IS \$ REQUESTED	02	02587
005710	157000	I	2592		ANA	D2		02	02588
005711	001010	A	2593		JAZ	UNF4	NO	02	02589
005712	005671	R							
005713	014006	A	2594		LDA	DOLL	YES, OUTPUT IT	02	02590
005714	001000	A	2595		JMP	UNF5		02	02591
005715	005700	R							
005716	060000	A	2596	NNCB	DATA	060000	NORMALIZED NUMERIC CONTROL BITS	02	02592
005717	000260	A	2597	ASCO	DATA	0260	000	02	02593
005720	000256	A	2598	DECI	DATA	0256	0.0	02	02594
005721	000254	A	2599	CMMA	DATA	0254	0.0	02	02595
005722	000244	A	2600	DOLL	DATA	0244	0\$0	02	02596
005723	000252	A	2601	ASTR	DATA	0252	0*0	02	02597
			2602	*				02	02598
			2603	* STOP				02	02599
			2604	* STOP				02	02600
			2605	STOP	SUSPND	0		02	02601
005724	006503	A							
005725	000406	A							
005726	000300	A							
005727	001000	A	2606		JMP	INT	BACK TO INTERPRETER	02	02602
005730	002413	R							
			2607	*				02	02603
			2608	* PERFORM IMMEDIATE				02	02604
			2609	*				02	02605
005731	005301	A	2610	PERI	DECR	0301	SET RETURN IMMED SWITCH	02	02606
005732	037000	I	2611		STA	RETI		02	02607
005733	001000	A	2612		JMP	INT		02	02608
005734	002413	R							
			2613	*				02	02609
			2614	* RETURN				02	02610
			2615	*				02	02611
005735	047000	I	2616	RET	INR	PST1	STEP POST CONTROL	02	02612
005736	017000	I	2617		LDA	PST1	END OF 1ST PASS	02	02613
005737	002010	A	2618		JAZM	CBRK	SET CTL BREAKS	02	02614
005740	006543	R							
005741	017000	I	2619		LDA	PST1		02	02615
005742	001010	A	2620		JAZ	RET2	STARTING 2ND PASS	02	02616
005743	005750	R							
005744	047000	I	2621		INR	RETI		02	02617
005745	017000	I	2622		LDA	RETI	TEST RETURN IMMEDIATE	02	02618
005746	001010	A	2623		JAZ	INT	YES	02	02619
005747	002413	R							
005750	017000	I	2624	RET2	LDA*	NO	RETURN ADDRESS FROM WORKLIST	02	02620
005751	047000	I	2625		INR	NO		02	02621
005752	001000	A	2626		JMP	BRUG		02	02622
005753	006020	R							
			2627	*				02	02623
			2628	* POST				02	02624
			2629	*				02	02625
005754	027000	I	2630	POST	LDB	INTP	SAVE NEXT BYTE LOCATION	02	02626
005755	002000	A	2631		JMPM	PUTL		02	02627
005756	002677	R							
005757	005301	A	2632		DECR	0301	INDICATE POST (1ST PASS)	02	02628







006061	057000	I	2708	STA	FROM	STORE IN 'FROM' INDEX	02	02701
006062	001000	A	2709	JMP	INT		02	02702
006063	002415	R						
			2710	*			02	02703
			2711	*	LOAD INDEX TO		02	02704
			2712	*			02	02705
006064	002000	A	2713	UNTO	JMPM	STO	02	02706
006065	002523	R				SET TO FIELD		
006066	002000	A	2714		JMPM	LDNS	02	02707
006067	004072	R				LOAD NUMERIC		
			2715	*			02	02708
			2716	*	STORE INDEX TO		02	02709
			2717	*			02	02710
006070	002000	A	2718	XLTD	JMPM	UNLI	02	02711
006071	002706	R				GET INTEGER FROM WORKLIST		
006072	002000	A	2719		JMPM	DEBI	02	02712
006073	003037	R				CONVERT TO BINARY		
006074	057000	I	2720	STA	TO	STORE IN 'TO' INDEX	02	02713
006075	001000	A	2721	JMP	INT		02	02714
006076	002415	R						
			2722	*			02	02715
			2723	*	STORE INDEX		02	02716
			2724	*			02	02717
006077	002000	A	2725	SAVX	JMPM	STO	02	02718
006100	002523	R				SETUP TO LCB		
006101	017000	I	2726	LDA	SVTD	GET SAVED 'TO' INDEX	02	02719
006102	002000	A	2727	JMPM	LDXL	LOAD TO LIST	02	02720
006103	006110	R						
006104	002000	A	2728		JMPM	UNLS	02	02721
006105	005313	R				UNLOAD NUMERIC		
006106	001000	A	2729	JMP	INT		02	02722
006107	002415	R						
			2730	*			02	02723
			2731	*	LOAD INDEX TO LIST		02	02724
			2732	*	ENTRY	A-REG = BINARY INTEGER	02	02725
			2733	*	EXIT	WORKLIST LOADED WITH NUMERIC EQUIVALENT	02	02726
			2734	*			02	02727
006110	000000	A	2735	LDXL	ENTRY		02	02728
006111	002000	A	2736	JMPM	BIDE	CONVERT TO DECIMAL	02	02729
006112	003036	R						
006113	002000	A	2737		JMPM	ZWRK	02	02730
006114	003160	R						
006115	004444	A	2738	LLRL	4		02	02731
006116	055002	A	2739	STA	2,1		02	02732
006117	065003	A	2740	STB	3,1		02	02733
006120	001000	A	2741	JMP*	LDXL		02	02734
006121	106110	R						
			2742	*			02	02735
			2743	*	LOAD IMPLIED INDEX		02	02736
			2744	*			02	02737
006122	002000	A	2745	SIMX	JMPM	GTAB	02	02738
006123	007023	R				GET TABLE POINTER		
006124	015005	A	2746	LDA	5,1	HIGH CURRENT INDEX	02	02739
006125	025006	A	2747	LDB	6,1	KEY FIELD NUMBER	02	02740
006126	001020	A	2748	JRZ	SIM1	LIFO, USE HIGH INDEX	02	02741
006127	006131	R						
006130	015002	A	2749	LDA	2,1	SEQUENCED, GET IMPLIED INDEX	02	02742
006131	002000	A	2750	SIM1	JMPM	LDXL	02	02743
006132	006110	R				LOAD TO LIST		
006133	001000	A	2751	JMP	INT		02	02744
006134	002415	R						
			2752	*			02	02745
			2753	*	MOVE TO		02	02746
			2754	*			02	02747
006135	002000	A	2755	MVTD	JMPM	STO	02	02748
006136	002523	R				SET 'TO' LCB		
006137	002000	A	2756		JMPM	SFRM	02	02749
006140	002502	R				SET FROM LCB		
006141	002000	A	2757		JMPM	MVMT	02	02750
006142	006257	R				GET MODE OF MOVE		
006143	002000	A	2758		JMPM	MV	02	02751
006144	006162	R				ALPHA MOVE		
006145	017000	I	2759	LDA	PSTI	END OF FIELD, TEST POST CONTROL	02	02752
006146	001010	A	2760	JAZ	INTS	SECOND PASS	02	02753
006147	002414	R						
006150	017000	I	2761	LDA	D17	SET FIELD DIRECTIVE MASK	02	02754
006151	002000	A	2762	JMPM	F7D	PROCESS FIELD DIRECTIVES	02	02755
006152	006445	R						
006153	017000	I	2763	LDA	PSTI	TEST POST CONTROL	02	02756
006154	001004	A	2764	JAN	INTS	FIRST PASS	02	02757
006155	002414	R						
006156	002000	A	2765		JMPM	CBRK	02	02758
006157	006543	R				SET CONTROL BREAKS		
006160	001000	A	2766	JMP	INTS		02	02759
006161	002414	R						
			2767	*			02	02760
			2768	*	ALPHA MOVE		02	02761
			2769	*			02	02762
006162	000000	A	2770	MV	ENTRY		02	02763
006163	005001	A	2771	TZA		INITIALIZE MOVE INDICATORS	02	02764
006164	057000	I	2772	STA	CMPI		02	02765
006165	057000	I	2773	STA	AUDI		02	02766
006166	014067	A	2774	LDA	D67	FIRST TIME AUDIT	02	02767



006167	057000	I	2775	STA	AUDP			02	02768
006170	017000	I	2776	LDA	LCBF+1	TEST 'FROM' FIELD		02	02769
006171	001002	A	2777	JAP	MV2	CHARACTERS REMAIN		02	02770
006172	006176	R							
006173	017000	I	2778	LDA	B	FIELD EMPTY, GET BLANK		02	02771
006174	001000	A	2779	JMP	MV3			02	02772
006175	006201	R							
006176	037000	I	2780	LDX	FRMA	GET NEXT 'FROM' BYTE		02	02773
006177	002000	A	2781	JMPM	GBAI			02	02774
006200	002721	R							
006201	057000	I	2782	STA	BYTF	SET 'FROM' BYTE		02	02775
006202	037000	I	2783	LDX	TDA			02	02776
006203	002000	A	2784	JMPM	GETB			02	02777
006204	002730	R							
006205	057000	I	2785	STA	BYTT	SET TO BYTE		02	02778
006206	017000	I	2786	LDA	INTC	EDIT CHAR IF MOVE ZONE		02	02779
006207	147000	I	2787	SUB	MOVZ	TEST IF MOVE ZONE		02	02780
006210	001010	A	2788	JAZ	MZT1	YES		02	02781
006211	006214	R							
006212	001000	A	2789	JMP	MZT2	NO, EXIT		02	02782
006213	006231	R							
006214	017000	I	2790	LDA	BYTF			02	02783
006215	002000	A	2791	JMPM	ASHQ			02	02784
006216	010660	R							
006217	157000	I	2792	ANA	MSKZ	GET NEW ZONE		02	02785
006220	057000	I	2793	STA	TEMP			02	02786
006221	017000	I	2794	LDA	BYTT			02	02787
006222	002000	A	2795	JMPM	ASHQ			02	02788
006223	010660	R							
006224	157000	I	2796	ANA	MSKD	SAVE OLD DIGIT		02	02789
006225	117000	I	2797	ORA	TEMP			02	02790
006226	002000	A	2798	JMPM	HOAS			02	02791
006227	010534	R							
006230	057000	I	2799	STA	BYTF	STORE AS SOURCE BYTE		02	02792
	006231	R	2800	EQU	*			02	02793
006231	017000	I	2801	LDA	PSTI	TEST POST CONTROL		02	02794
006232	001010	A	2802	JAZ	MV4	SECOND PASS		02	02795
006233	006244	R							
006234	002000	A	2803	JMPM	CMP	COMPARE OLD VS NEW		02	02796
006235	006352	R							
006236	002000	A	2804	JMPM	AUD			02	02797
006237	006373	R							
006240	037000	I	2805	LDX	TDA			02	02798
006241	017000	I	2806	LDA	PSTI	TEST POST CONTROL		02	02799
006242	001004	A	2807	JAN	MV5	FIRST PASS, NO STORE		02	02800
006243	006247	R							
006244	017000	I	2808	LDA	BYTF	STORE NEW BYTE		02	02801
006245	002000	A	2809	JMPM	PUTB			02	02802
006246	002762	R							
006247	002000	A	2810	JMPM	ILCB	STEP TO NEXT BYTE IN 'TO' FIELD		02	02803
006250	003011	R							
006251	017000	I	2811	LDA	LCBT+1	TEST TO FIELD		02	02804
006252	001002	A	2812	JAP	MV1	CONTINUE, MORE TO COME		02	02805
006253	006170	R							
006254	001000	A	2813	JMP*	MV			02	02806
006255	106162	R							
006256	000067	A	2814	DATA	067			02	02807
			2815	*				02	02808
			2816	* MOVE	MODE TEST			02	02809
			2817	*				02	02810
006257	000000	A	2818	MVMT	ENTRY			02	02811
006260	017000	I	2819	LDA	LCBF+3	FROM MOVE CTL WORD		02	02812
006261	004441	A	2820	LLRL	1			02	02813
006262	001010	A	2821	JAZ	MVM2	ALPHA		02	02814
006263	006317	R							
006264	001004	A	2822	JAN	MVM4	NORMALIZED NUMERIC		02	02815
006265	006335	R							
006266	017000	I	2823	LDA	LCBT+3			02	02816
006267	001010	A	2824	JAZ	MVM2	ALPHA DEST		02	02817
006270	006317	R							
006271	002000	A	2825	JMPM	STQF	NUMERIC MOVE PROCEDURE		02	02818
006272	002531	R							
006273	002000	A	2826	JMPM	LDNS			02	02819
006274	004072	R							
006275	017000	I	2827	LDA	INTC	TEST IF MOVE COMMAND		02	02820
006276	147000	I	2828	SUB	MOVC	MOVE COMMAND (5-9)		02	02821
006277	001010	A	2829	JAZ	MVM6	YES		02	02822
006300	006310	R							
006301	017000	I	2830	LDA	INTD	NO, USED BY 'ADD TO'		02	02823
006302	002000	A	2831	JMPM	STD			02	02824
006303	002523	R							
006304	002000	A	2832	JMPM	LDNS			02	02825
006305	004072	R							
006306	002000	A	2833	JMPM	ADIT	ADD STACK		02	02826
006307	004514	R							
006310	017000	I	2834	MVM6	INTD			02	02827
006311	002000	A	2835	JMPM	STD			02	02828
006312	002523	R							
006313	002000	A	2836	JMPH	UNLS			02	02829
006314	005313	R							
006315	001000	A	2837	JMP	INTS			02	02830
006316	002414	R							
006317	017000	I	2838	MVM2	LDA	LCBT+3	ALPHA MOVE	02	02831



006320	001002	A	2839	JAP*	MVMT	RETURN IF NOT IMPLIED DESTINATION	02	02832
006321	106257	R						
006322	017000	I	2840	LDA	LCBF+1	GET SOURCE LENGTH	02	02833
006323	057000	I	2841	STA	LCBT+1	SET DESTINATION LENGTH	02	02834
006324	117000	I	2842	DRA	BIT1	IMPLIED FIELD BIT	02	02835
006325	037000	I	2843	LDX	LCBT+2		02	02836
006326	055000	A	2844	STA	0+1	NEW IMPLIED CONTROL WORD	02	02837
006327	005041	A	2845	TXA		GENERATE DATA BYTE LOCATION	02	02838
006330	005111	A	2846	IAR			02	02839
006331	004201	A	2847	ASLA	1		02	02840
006332	057000	I	2848	STA	LCBT		02	02841
006333	001000	A	2849	JMP*	MVMT		02	02842
006334	106257	R						
006335	017000	I	2850	MVM4	LDA	LCBT+3	02	02843
006336	001010	A	2851	JAZ	MVM5	ALPHA DEST	02	02844
006337	006342	R						
006340	001000	A	2852	JMP	MVM1		02	02845
006341	006271	R						
006342	005301	A	2853	MVM5	DECR	0301	02	02846
006343	057000	I	2854	STA	LCBF+1	INDICATE SOURCE FIELD	02	02847
006344	017000	I	2855	LDA	TRUE	LENGTH OF -1	02	02848
006345	027000	I	2856	LDB	IX2	SET MODE ERROR INDICATOR	02	02849
006346	002000	A	2857	JMPM	SIN		02	02850
006347	003214	R						
006350	001000	A	2858	JMP*	MVMT		02	02851
006351	106257	R						
			2859	*			02	02852
			2860	*	COMPARE NEW BYTE TO OLD		02	02853
			2861	*	EXIT	CMPI = + FROM FIELD IS GREATER	02	02854
			2862	*		= 0 FROM FIELD IS EQUAL	02	02855
			2863	*		= - FROM FIELD IS LESS	02	02856
			2864	*			02	02857
006352	000000	A	2865	CMP	ENTRY		02	02858
006353	017000	I	2866	LDA	CMPI		02	02859
006354	001010	A	2867	JAZ	CMPI		02	02860
006355	006360	R						
006356	001000	A	2868	JMP*	CMP	DON'T COMPARE IF ALREADY UNEQUAL	02	02861
006357	106352	R						
006360	017000	I	2869	CMP1	BYTT		02	02862
006361	002000	A	2870	JMPM	COLATE		02	02863
006362	010771	R						
006363	057000	I	2871	STA	TEMP		02	02864
006364	017000	I	2872	LDA	BYTF		02	02865
006365	002000	A	2873	JMPM	COLATE		02	02866
006366	010771	R						
006367	147000	I	2874	SUB	TEMP		02	02867
006370	057000	I	2875	STA	CMPI		02	02868
006371	001000	A	2876	JMP*	CMP		02	02869
006372	106352	R						
			2877	*			02	02870
			2878	*	AUDIT TESTING		02	02871
			2879	*			02	02872
006373	000000	A	2880	AUD	ENTRY		02	02873
006374	017000	I	2881	LDA	BYTF		02	02874
006375	005102	A	2882	INCR	0102		02	02875
006376	157000	I	2883	ANA	077	FIND CHARACTER TYPE	02	02876
006377	001010	A	2884	JAZ	AUDS	SPECIAL 00	02	02877
006400	006416	R						
006401	147000	I	2885	SUB	033		02	02878
006402	001004	A	2886	JAN	AUDA	ALPHA 01-32	02	02879
006403	006417	R						
006404	147000	I	2887	SUB	05		02	02880
006405	001010	A	2888	JAZ	AUDB	BLANK 40	02	02881
006406	006441	R						
006407	147000	I	2889	SUB	020		02	02882
006410	001004	A	2890	JAN	AUDS	SPECIAL 33-37,41-57	02	02883
006411	006416	R						
006412	147000	I	2891	SUB	012		02	02884
006413	001004	A	2892	JAN	AUDN	NUMERIC 60-71	02	02885
006414	006420	R						
006415	147000	I	2893	SUB	012	SPECIAL 72-77	02	02886
006416	004041	A	2894	AUDS	LRLB	100 SPECIAL	02	02887
006417	004041	A	2895	AUDA	LRLB	010 ALPHA	02	02888
006420	005021	A	2896	AUDN	TBA	001 NUMERIC	02	02889
006421	117000	I	2897	DRA	060		02	02890
006422	027000	I	2898	LDB	0147		02	02891
006423	157000	I	2899	ANA	0-0P		02	02892
006424	067000	I	2900	STR	AURP		02	02893
006425	005012	A	2901	TAB			02	02894
006426	004241	A	2902	LRLA	1	C IN C-B POSITION	02	02895
006427	157000	I	2903	ANA	AUDI	C-B-C = J	02	02896
006430	004343	A	2904	LSRA	3	POSITION IT	02	02897
006431	157000	I	2905	ANA	010	SAVE ONLY J	02	02898
006432	005032	A	2906	MERGE	032		02	02899
006433	017000	I	2907	LDA	AUDI		02	02900
006434	157000	I	2908	ANA	0137	REMOVE PREVIOUS R	02	02901
006435	005031	A	2909	MERGE	031		02	02902
006436	057000	I	2910	STA	AUDI		02	02903
006437	001000	A	2911	JMP*	AUD		02	02904
006440	106378	R						
006441	017000	I	2912	AUDB	LDA	0100	02	02905
006442	027000	I	2913	LDB	047	PREVIOUS BLANK	02	02906
006443	001000	A	2914	JMP	AUDI		02	02907



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006444 006423 R
2915 *
2916 *
2917 * PROCESS FIELD DIRECTIVES
2918 * ENTRY A-REG = DIRECTIVE MASK
2919 *
006445 000000 A 2920 PFD ENTRY
006446 057000 I 2921 STA PFDC
006447 017000 I 2922 LDA* LCBT+2 FIRST WORD OF FDL
006450 157000 I 2923 ANA 0400 TEST FOR DIRECTIVES
006451 001010 A 2924 JAZ* PFD NO DIRECTIVES
006452 106445 R
006453 017000 I 2925 LDA* LCBT+2 FIRST WORD OF FIELD DATA LIST
006454 157000 I 2926 ANA BIT2 NUMERIC FIELD BIT
006455 004243 A 2927 LRLA 3
006456 127000 I 2928 ADD LCBT+2
006457 127000 I 2929 ADD 02 POINT TO DIRECTIVES
006460 004241 A 2930 LRLA 1 CONVERT TO BYTE ADDRESS
006461 057000 I 2931 STA LCBT
006462 037000 I 2932 PFD1 LDX TOA GET NEXT BYTE IN LIST
006463 002000 A 2933 JMPM GBAI
006464 002721 R
006465 001010 A 2934 JAZ* PFD END
006466 106445 R
006467 004250 A 2935 LRLA 8 TEST IF DIRECTIVE
006470 001002 A 2936 JAP PFD1 NO
006471 006462 R
006472 157000 I 2937 ANA MSK0 YES, CLEAR OUT BIT 0
006473 004350 A 2938 LSRA 8
006474 157000 I 2939 ANA PFDC DIRECTIVE MASK
006475 127000 I 2940 ADD BIAD DIRECTIVE BIAS
006476 054005 A 2941 STA PFD2+1
006477 002000 A 2942 JMPM GBAI GET INDICATOR NUMBER
006500 002721 R
006501 057000 I 2943 STA TMPA SAVE
006502 017000 I 2944 LDA CMPI
006503 001000 A 2945 PFD2 JMP* **
006504 106503 R
006505 017000 I 2946 PFC0 LDA TMPA MAX (IND,HIND)
006506 147000 I 2947 SUB HIND FOR CTL BREAK WHEN POST OR READ
006507 001004 A 2948 JAN PFC1
006510 006513 R
006511 017000 I 2949 LDA TMPA
006512 057000 I 2950 STA HIND
006513 017000 I 2951 PFC1 LDA CMPI
006514 001010 A 2952 JAZ PFLE CONTROL
006515 006525 R
006516 117000 I 2953 PF1 ORA TRUE
006517 001000 A 2954 JMP PFLE
006520 006525 R
006521 001010 A 2955 PFEQ JAZ PF1 EQUAL
006522 006516 R
006523 005001 A 2956 TZA
006524 127000 I 2957 PFGR ADD MSK0 GREATER
006525 027000 I 2958 PFLE LDB TMPA INDICATOR NUMBER
006526 002000 A 2959 JMPM SIN STORE LOGICAL VALUE IN INDICATOR
006527 003214 R
006530 001000 A 2960 JMP PFD1 NEXT DIRECTIVE
006531 006462 R
006532 002000 A 2961 PFAU JMPM GBAI GET AUDIT MASK
006533 002721 R
006534 137000 I 2962 ERA 07 INVERT A,N,S,
006535 057000 I 2963 STA TEMP
006536 017000 I 2964 LDA AUDI AUDIT RESULTS
006537 137000 I 2965 ERA 060 INVERT R AND L
006540 157000 I 2966 ANA TEMP
006541 001000 A 2967 JMP PFEQ
006542 006521 R
000135 R 2968 PFD EQU TMPY FIELD DIRECTIVE TEMP
2969 *
2970 * SET CONTROL BREAKS
2971 *
006543 000000 A 2972 CBRK ENTRY
006544 027000 I 2973 LDB HIND TEST IF CONTROL BREAK DIRECTIVE
006545 001020 A 2974 JBZ* CBRK NO
006546 106543 R
006547 017000 I 2975 LDA FTSH SWITCH = -1 IF FIRST TIME
006550 037000 I 2976 STA CBRA
006551 005211 A 2977 CPA
006552 057000 I 2978 STA CBRC COMPLIMENT OF FTSH
006553 005211 A 2979 CPA
006554 027000 I 2980 LDB IF
006555 002000 A 2981 JMPM SIN
006556 003214 R
006557 027000 I 2982 LDB HIND LOOP THRU INDICATORS HIND TO 1
006560 002000 A 2983 CBR1 JMPM LDIS
006561 004417 R
006562 017000 I 2984 LDA* W0 GET INDICATOR VALUE
006563 047000 I 2985 INR W0
006564 117000 I 2986 ORA CBRA SET ON IF HIGHER INDICATOR ON
006565 157000 I 2987 ANA CBRC ALWAYS RESET IF FIRST TIME
006566 057000 I 2988 STA CBRA
006567 027000 I 2989 LDB HIND SET INDICATOR
    
```







006705	001000	A	3063		JMP	ENTY	SET IMPLIED INDEX	02	03056
006706	007010	R							
006707	057000	I	3064	ENT2	STA	TO		02	03057
006710	017000	I	3065	ENTX	LDA	TO	SAVE 'TO' INDEX	02	03058
006711	057000	I	3066		STA	SYTO		02	03059
006712	001000	A	3067		JMP	INTS		02	03060
006713	002414	R							
			3068	*				02	03061
			3069	*	DELETE			02	03062
			3070	*				02	03063
006714	002000	A	3071	DETO	JMPM	GTAB	GET TABLE POINTER	02	03064
006715	007023	R							
006716	001010	A	3072		JAZ	INTS	TABLE EMPTY	02	03065
006717	002414	R							
006720	017000	I	3073		LDA	SFFG	HAS KEY SPECIFIED	02	03066
006721	001010	A	3074		JAZ	DEL2	YES	02	03067
006722	006760	R							
006723	017000	I	3075		LDA	TO	NO, SUBSCRIPT PROVIDED	02	03068
006724	001010	A	3076		JAZ	INTS	ZERO SUBSCRIPT NOT ALLOWED	02	03069
006725	002414	R							
006726	145005	A	3077		SUB	5,1		02	03070
006727	005311	A	3078		DAR			02	03071
006730	001002	A	3079		JAP	INTS	OUT OF CURRENT RANGE	02	03072
006731	002414	R							
006732	017000	I	3080	DEL1	LDA	TO	COMPUTE MOVE PARAMETERS	02	03073
006733	002000	A	3081		JMPM	GTWL		02	03074
006734	007035	R							
006735	057000	I	3082		STA	TMPY	MOVE TO LOCATION	02	03075
006736	015001	A	3083		LDA	1,1		02	03076
006737	004341	A	3084		LSRA	1		02	03077
006740	127000	I	3085		ADD	TMPY		02	03078
006741	057000	I	3086		STA	TMPX	MOVE TO LOCATION	02	03079
006742	015005	A	3087		LDA	5,1		02	03080
006743	002000	A	3088		JMPM	GTWL		02	03081
006744	007035	R							
006745	147000	I	3089		SUB	TMPY	NUMBER OF WORDS TO MOVE	02	03082
006746	037000	I	3090		LDX	TMPX		02	03083
006747	027000	I	3091		LDB	TMPY		02	03084
006750	002000	A	3092		JMPM	WMOV	COMPRESS TABLE	02	03085
006751	003100	R							
006752	037000	I	3093		LDX	TABP		02	03086
006753	015005	A	3094		LDA	5,1		02	03087
006754	005311	A	3095		DAR		DECREMENT CURRENT HIGH	02	03088
006755	055005	A	3096		STA	5,1		02	03089
006756	001000	A	3097		JMP	INTS		02	03090
006757	002414	R							
006760	015006	A	3098	DEL2	LDA	6,1	FIND ENTRY IN SEQUENCED TABLE	02	03091
006761	002000	A	3099		JMPM	TLU		02	03092
006762	007050	R							
006763	001010	A	3100		JAZ	DEL1	FOUND IT	02	03093
006764	006732	R							
006765	001000	A	3101		JMP	INTS	NO MATCH	02	03094
006766	002414	R							
			3102	*				02	03095
			3103	*	LOOKUP			02	03096
			3104	*				02	03097
006767	002000	A	3105	LOOK	JMPM	GTAB	GET TABLE POINTER	02	03098
006770	007023	R							
006771	001010	A	3106		JAZ	LDD1	TABLE EMPTY	02	03099
006772	007015	R							
006773	015006	A	3107		LDA	6,1	KEY FIELD	02	03100
006774	002000	A	3108		JMPM	TLU		02	03101
006775	007050	R							
006776	027000	I	3109		LDB	MSKL	SET/RESET #G,E,L	02	03102
006777	003002	A	3110		XAP	SBL2	GT	02	03103
007000	007022	R							
007001	003010	A	3111		XAZ	SBR1	EQ	02	03104
007002	000422	R							
007003	037000	I	3112	LDD2	LDX	BIAI		02	03105
007004	015001	A	3113		LDA	1,1		02	03106
007005	157000	I	3114		ANA	MSI2	NOT #G,E,L	02	03107
007006	005031	A	3115		MERGE	031		02	03108
007007	055001	A	3116		STA	1,1		02	03109
007010	037000	I	3117	ENTY	LDX	TABP		02	03110
007011	017000	I	3118		LDA	TO		02	03111
007012	055002	A	3119		STA	2,1	SET IMPLIED INDEX	02	03112
007013	001000	A	3120		JMP	ENTX		02	03113
007014	006710	R							
007015	005101	A	3121	LDD1	INCR	0101		02	03114
007016	057000	I	3122		STA	TO		02	03115
007017	027000	I	3123		LDB	MSKL	RESET #G,E,L	02	03116
007020	001000	A	3124		JMP	LDD2		02	03117
007021	007003	R							
007022	004042	A	3125	SBL2	LRLB	2		02	03118
			3126	*				02	03119
			3127	*	GET TABLE POINTER			02	03120
			3128	*	ENTRY	A-REG = TABLE NUMBER		02	03121
			3129	*	EXIT	TABP = TABLE POINTER		02	03122
			3130	*		X-REG = TABLE POINTER		02	03123
			3131	*		A-REG = HIGHEST CURRENT INDEX		02	03124
			3132	*				02	03125
007023	000000	A	3133	GTAB	ENTRY			02	03126
007024	127000	I	3134		ADD	BIAT	TABLE BIAS	02	03127



007025	005014	A	3135	TAX					02	03128
007026	015000	A	3136	LDA	0,1	TABLE POINTER			02	03129
007027	157000	I	3137	ANA	MSK0				02	03130
007030	005014	A	3138	TAX					02	03131
007031	077000	I	3139	STX	TABP				02	03132
007032	015005	A	3140	LDA	5,1	HIGHEST INDEX			02	03133
007033	001000	A	3141	JMP*	GTAB				02	03134
007034	107023	R								
			3142	*					02	03135
			3143	*	GET TABLE WORD LOCATION				02	03136
			3144	*	ENTRY	A-REG = INDEX			02	03137
			3145	*		X-REG = TABLE POINTER			02	03138
			3146	*	EXIT	A-REG = WORD LOCATION			02	03139
			3147	*					02	03140
007035	000000	A	3148	GTWL	ENTRY				02	03141
007036	005311	A	3149	DAR					02	03142
007037	025001	A	3150	LDB	1,1	BYTES/ENTRY			02	03143
007040	002000	A	3151	JMPM	BINX	BINARY MULTIPLY			02	03144
007041	003020	R								
007042	005021	A	3152	TBA					02	03145
007043	037000	I	3153	LDX	TABP				02	03146
007044	125011	A	3154	ADD	9,1	TABLE DATA FIRST POSITION			02	03147
007045	004341	A	3155	LSRA	1				02	03148
007046	001000	A	3156	JMP*	GTWL				02	03149
007047	107035	R								
			3157	*					02	03150
			3158	*	TABLE LOOKUP				02	03151
			3159	*	ENTRY	A-REG = KEY FIELD NUMBER			02	03152
			3160	*	EXIT	A-REG = CMPI = COMPARE RESULTS			02	03153
			3161	*		X-REG = TABLE POINTER			02	03154
			3162	*					02	03155
007050	000000	A	3163	TLU	ENTRY				02	03156
007051	057000	I	3164	STA	TLUK	KEY			02	03157
007052	005102	A	3165	INCR	2				02	03158
007053	067000	I	3166	STB	TD	START TO INDEX AT 1			02	03159
007054	002000	A	3167	JMPM	STDF	TEST MODE OF LOOKUP			02	03160
007055	002531	R								
007056	017000	I	3168	LDA	LCBT+3				02	03161
007057	157000	I	3169	ANA	MSK0	MASK OUT IMPLIED BIT			02	03162
007060	001010	A	3170	JAZ	TLU1	ZERO IS ALPHA			02	03163
007061	007076	R								
007062	047000	I	3171	INR	SFFG	NUMERIC, SET FOR TLC ROUTINE			02	03164
007063	002000	A	3172	JMPM	LDNS	LOAD FOR LATER COMPARES			02	03165
007064	004072	R								
007065	017000	I	3173	LDA	TLUK	TEST MODE OF KEY FIELD			02	03166
007066	002000	A	3174	JMPM	STD				02	03167
007067	002523	R								
007070	017000	I	3175	LDA	LCBT+3				02	03168
007071	157000	I	3176	ANA	MSK0				02	03169
007072	005302	A	3177	DECR	2				02	03170
007073	067000	I	3178	STB	CMPI				02	03171
007074	001010	A	3179	JAZ	TLU5	NO NUMERIC LOOKUP INTO ALPHA KEY			02	03172
007075	007120	R								
007076	017000	I	3180	TLU1	LDA	TLUK			02	03173
007077	002000	A	3181	JMPM	STD	SET 'TO' FIELD			02	03174
007100	002523	R								
007101	002000	A	3182	JMPM	TLUC	COMPARE FIELDS			02	03175
007102	007131	R								
007103	037000	I	3183	LDX	TABP				02	03176
007104	017000	I	3184	LDA	CMPI				02	03177
007105	001010	A	3185	JAZ	TLU5	EQUAL			02	03178
007106	007120	P								
007107	001004	A	3186	JAN	TLUG	LESS THAN			02	03179
007110	007120	R								
007111	015005	A	3187	LDA	5,1	GREATER			02	03180
007112	147000	I	3188	SUS	TD				02	03181
007113	001010	A	3189	JAZ	TLU5	GT LAST ENTRY			02	03182
007114	007120	R								
007115	047000	I	3190	INR	TD	STEP 'TO' INDEX			02	03183
007116	001000	A	3191	JMP	TLU1				02	03184
007117	007076	R								
007120	017000	I	3192	TLU5	LDA	SFFG	REMOVE LIST ENTRY IF NECESSARY		02	03185
007121	001910	A	3193	JAZ	TLU6				02	03186
007122	007126	R								
007123	017000	I	3194	LDA	NO				02	03187
007124	127000	I	3195	ADD	NLST	RESET WORKLIST			02	03188
007125	057000	I	3196	STA	NO				02	03189
007126	017000	I	3197	TLU6	LDA	CMPI			02	03190
007127	001000	A	3198	JMP*	TLU				02	03191
007130	107050	R								
			3199	*					02	03192
			3200	*	COMPARE FOR TLU				02	03193
			3201	*					02	03194
007131	000000	A	3202	TLUC	ENTRY				02	03195
007132	017000	I	3203	LDA	SFFG				02	03196
007133	001010	A	3204	JAZ	TLU1				02	03197
007134	007146	R								
007135	002000	A	3205	JMPM	LDNS	NUMERIC COMPARE			02	03198
007136	004072	R								
007137	002000	A	3206	JMPM	NOFR				02	03199
007140	003512	R								
007141	017000	I	3207	LDA	NO	RESET WORKLIST			02	03200
007142	127000	I	3208	ADD	NLST				02	03201



Address	Hex	Op	Label	Op	Comment	Line	Page
007143	057000	I	3209	STA	W0		
007144	001000	A	3210	JMP*	TLUC		02 03202
007145	107131	R					02 03203
007146	002000	A	3211	TLC1	JMPM	SFRM	ALPHA COMPARE
007147	002502	R					02 03204
007150	002000	A	3212	JMPM	CMPR		02 03205
007151	003563	R					
007152	001000	A	3213	JMP*	TLUC		02 03206
007153	107131	R					
			3214	*			02 03207
			3215	*			02 03208
			3216	* READ	CARD (LUN=13)		02 03209
			3217	*			02 03210
	007154	R	3218	*READ	EQU	*	02 03211
			3219	READ	FCB13,13,0,1	READ RECORD ASCII	02 03212
007154	006505	A					
007155	000404	A					
007156	100000	A					
007157	010015	A					
007160	007173	R					
007161	000000	A					
007162	000000	A					
007163	006010	A	3220	LDAI	*READ		02 03213
007164	007154	R					
007165	002000	A	3221	CALL	STAT	CHECK STATUS	02 03214
007166	002063	R					
007167	001026	A	3222	JBNZ	*ER		02 03215
007170	002133	R					
007171	001000	A	3223	JMP	REDO		02 03216
007172	007205	R					
			3224	FCB13	FCB	40,RBUF+1,1,, 'PI', ' ', ' ' .	C 02 03217
007173	000050	A					
007174	000177	R					
007175	000400	A					
007176	000000	A					
007177	000000	A					
007200	000000	A					
007201	000000	A					
007202	150311	A					
007203	120240	A					
007204	120240	A					
007205	017000	I	3225	REDO	LDA	RBUF+1	TEST FOR END OF FILE
007206	147000	I	3226	SUB	CEOF	"/"	02 03218
007207	001010	A	3227	JAZ	RED9		02 03219
007210	007477	R					02 03220
007211	017000	I	3228	LDA	SIGN		NO, CONTINUE
007212	057000	I	3229	STA	REDF	ZERO IS EOF	02 03221
007213	002000	A	3230	RED1	JMPM	GETR	02 03222
007214	010102	R					02 03223
007215	127000	I	3231	ADD	D2	REC SELECTION TEST	02 03224
007216	004241	A	3232	LRLA	1	GET BYTE LOCATION	02 03225
007217	057000	I	3233	STA	TMPR	SAVE FOR LATER	02 03226
007220	057000	I	3234	STA	LCBX	RESET ALL SELECTION INDICATORS	02 03227
007221	037000	I	3235	RST3	LXA	POINT TO DUMMY LCB	02 03228
007222	002000	A	3236	JMPM	GBAI	GET NEXT DRED GROUP	02 03229
007223	002721	R					
007224	001010	A	3237	JAZ	RST5	END OF LIST	02 03230
007225	007242	R					
007226	047000	I	3238	RST4	INR	LCBX	STEP PAST POSITION
007227	047000	I	3239	INR	LCBX	AND CHARACTER	02 03231
007230	002000	A	3240	JMPM	GBAI		02 03232
007231	002721	R					02 03233
007232	004250	A	3241	LRLA	8		02 03234
007233	001004	A	3242	JAN	RST4	ANOTHER ANDED GROUP	02 03235
007234	007226	R					
007235	004570	A	3243	LLSR	24		02 03236
007236	002000	A	3244	JMPM	SIN	RESET INDICATOR	02 03237
007237	003214	R					
007240	001000	A	3245	JMP	RST3		02 03238
007241	007221	R					
007242	017000	I	3246	RST5	LDA	REDF	TEST IF LAST CARD
007243	001010	A	3247	JAZ	RMD9	YES	02 03239
007244	007357	R					02 03240
007245	017000	I	3248	LDA	TMPR	IT IS LATER	02 03241
007246	057000	I	3249	STA	LCBX		02 03242
007247	037000	I	3250	LXA	LXA	POINT TO DUMMY LCB	02 03243
007250	002000	A	3251	JMPM	GBAI	GET FIRST BYTE	02 03244
007251	002721	R					
007252	001010	A	3252	JAZ	RMD9	SELECT THIS RECORD	02 03245
007253	007357	R					
007254	005002	A	3253	TZB		NOT ZERO, CRITERIA MUST BE MET	02 03246
007255	067000	I	3254	STB	RECS		02 03247
007256	004250	A	3255	LRLA	8		02 03248
007257	027000	I	3256	RST1	LDB	TRUE	WITHIN PARENS CRITERIA ANDED
007260	064133	A	3257	STB	RSCI		02 03249
007261	004350	A	3258	RST2	LSRA	8	02 03250
007262	157000	I	3259	ANA	D177	BYTE LEFT ADJUSTED	02 03251
007263	005002	A	3260	TZB		GET RID OF BIT 0, BYTE 1	02 03252
007264	004541	A	3261	LLSR	1	'NOT' BIT	02 03253
007265	064125	A	3262	STB	RNOT		02 03254
007266	005012	A	3263	TAB			02 03255
007267	006016	A	3264	LDAE	RTAB,2	GET SELECTION MASK	02 03256
007270	000404	R					02 03257



007271	057000	I	3265	STA	TMFX			02	03258
007272	002000	A	3266	JMPM	GBAI	GET POSITION		02	03259
007273	002721	R							
007274	127000	I	3267	ADD	ADRA	BYTE LOCATION OF ZEROth BYTE IN CARD		02	03260
007275	057000	I	3268	STA	LCBF			02	03261
007276	037000	I	3269	LDX	FRMA			02	03262
007277	002000	A	3270	JMPM	GETH	GET BYTE FROM READ BUFFER		02	03263
007300	002777	R							
007301	002000	A	3271	JMPM	ASHD	CONVERT TO HOLLERITH		02	03264
007302	010660	R							
007303	057000	I	3272	STA	TMFY			02	03265
007304	037000	I	3273	LDX	LXA			02	03266
007305	002000	A	3274	JMPM	GBAI	GET SELECTION BYTE		02	03267
007306	002721	R							
007307	002000	A	3275	JMPM	ASHD	CONVERT TO HOLLERITH		02	03268
007310	010660	R							
007311	137000	I	3276	ERA	TMFY	CHARACTER IN RECORD		02	03269
007312	157000	I	3277	ANA	TMFX	COMPARISON MASK		02	03270
007313	001010	A	3278	JAZ	*+3			02	03271
007314	007316	R							
007315	017000	I	3279	LDA	TRUE	FALSE		02	03272
007316	137000	I	3280	ERA	TRUE	TRUE		02	03273
007317	134073	A	3281	ERA	RNDT	OPPOSITE IF 'NOT'		02	03274
007320	154073	A	3282	ANA	RSCI	AND PREVIOUS		02	03275
007321	054072	A	3283	STA	RSCI			02	03276
007322	037000	I	3284	LDX	LXA			02	03277
007323	002000	A	3285	JMPM	GBAI	NEXT BYTE IN RECORD DATA LIST		02	03278
007324	002721	R							
007325	004250	A	3286	LRLA	8			02	03279
007326	001004	A	3287	JAN	RST2	NEG IS ANOTHER ANDED TEST		02	03280
007327	007261	R							
007330	004350	A	3288	LSRA	8	PDS IS INDICATOR NUMBER		02	03281
007331	005012	A	3289	TAB				02	03282
007332	067000	I	3290	STB	TMFR	SAVE		02	03283
007333	002000	A	3291	JMPM	LDIS	GET CURRENT VALUE OF INDICATOR		02	03284
007334	004417	R							
007335	017000	I	3292	LDA*	W0			02	03285
007336	047000	I	3293	INR	W0			02	03286
007337	027000	I	3294	LDB	TMFR			02	03287
007340	114053	A	3295	LRA	RSCI	INDICATOR VALUE		02	03288
007341	002000	A	3296	JMPM	SIN			02	03289
007342	003214	R							
007343	014050	A	3297	LDA	RSCI			02	03290
007344	117000	I	3298	DRA	RECS			02	03291
007345	057000	I	3299	STA	RECS	RECORD SELECTION INDICATION		02	03292
007346	037000	I	3300	LDX	LXA			02	03293
007347	002000	A	3301	JMPM	GBAI	GET NEXT BYTE IN RECORD DATA LIST		02	03294
007350	002721	R							
007351	004250	A	3302	LRLA	8			02	03295
007352	001004	A	3303	JAN	RST1	ANOTHER DRED TEST		02	03296
007353	007257	R							
007354	017000	I	3304	LDA	RECS	REC MOVE IF SELECTED		02	03297
007355	001002	A	3305	JAP	RMD2	NEGATIVE IS SELECTED		02	03298
007356	007404	R							
007357	047000	I	3306	INR	RECF	GET NEXT FIELD		02	03299
007360	017000	I	3307	LDA*	RECF			02	03300
007361	001002	A	3308	JAP	RMD4	NEG IS START OF NEXT RECORD		02	03301
007362	007415	R							
007363	017000	I	3309	LDA	RECF	TEST IF LAST CARD		02	03302
007364	001010	A	3310	JAZ	RMD2	YES, DON'T MOVE		02	03303
007365	007404	R							
007366	037000	I	3311	LDX	RECF	MOVE CARD TO RECORD AREA		02	03304
007367	015000	A	3312	LDA	0.1	RECORD LENGTH BYTES		02	03305
007370	005111	A	3313	IAR				02	03306
007371	157000	I	3314	ANA	DM2			02	03307
007372	025001	A	3315	LDB	1.1	RECORD START BYTE		02	03308
007373	004541	A	3316	LLSR	1	CONVERT TO WORDS		02	03309
007374	147000	I	3317	SUB	050	MAX LENGTH IS 40 WORDS		02	03310
007375	001004	A	3318	JAN	RMD1			02	03311
007376	007400	R							
007377	005001	A	3319	TZA				02	03312
007400	127000	I	3320	ADD	050			02	03313
007401	037000	I	3321	LDX	ADKB			02	03314
007402	002000	A	3322	JMPM	WMDV			02	03315
007403	003100	R							
007404	017000	I	3323	LDA	REND			02	03316
007405	001002	A	3324	JAP	RED1	NOT LAST RECORD		02	03317
007406	007213	R							
007407	002000	A	3325	JMPM	CRK	SET CONTROL BREAKS		02	03318
007410	006543	R							
007411	001000	A	3326	JMP	INT			02	03319
007412	002413	R							
007413	000000	A	3327	RNDT	DATA	0		02	03320
007414	000000	A	3328	RSCI	DATA	0		02	03321
			3329	*				02	03322
			3330	*	AUDIT AND COMPARE			02	03323
			3331	*				02	03324
007415	017000	I	3332	RMD4	LDA	RECF	GET FIELD NUMBER	02	03325
007416	147000	I	3333	SUB	RIAF			02	03326
007417	002000	A	3334	JMPM	STD	SET 'TO'LCB		02	03327
007420	002523	R							
007421	017000	I	3335	LDA*	LCBT+2	FIRST WORD OF FDL		02	03328
007422	157000	I	3336	ANA	0400			02	03329



007423	001010	A	3337	JAZ	RMD9	NO AUDIT OR COMPARE	02	03330
007424	007357	R						
007425	017000	I	3338	LDA	04	ONLY CONTROL IF LAST CARD	02	03331
007426	027000	I	3339	LDB	REOF	YES IF LAST CARD	02	03332
007427	001020	A	3340	JBZ	RMD6	YES	02	03333
007430	007473	R						
007431	037000	I	3341	LDX	RECF	COMPUTE READ SOURCE BYTE LOCATION	02	03334
007432	017000	I	3342	LDA	LCBT	FIELD START	02	03335
007433	145001	A	3343	SUB	1,1	RECORD START	02	03336
007434	127000	I	3344	ADD	ADRC	RECORD BUFFER BIAD IN BYTES	02	03337
007435	057000	I	3345	STA	LCBF		02	03338
007436	057000	I	3346	STA	RECF	SAVE FOR LATER	02	03339
007437	057000	I	3347	STA	LCBF+1	ARBITRARY LARGE SOURCE FIELD	02	03340
007440	005301	A	3348	DECR	0301		02	03341
007441	057000	I	3349	STA	PSTI	INHIBIT STORE IN MV ROUTINE	02	03342
007442	002000	A	3350	JMPM	MV	AUDIT AND COMPARE SEQUENCE	02	03343
007443	006162	R						
007444	005101	A	3351	INCR	0101		02	03344
007445	057000	I	3352	STA	PSTI	RESTORE POST INDICATOR	02	03345
007446	017000	I	3353	LDA	LCBT+3	MOVE CTL WORD	02	03346
007447	001010	A	3354	JAZ	RMD5	ALPHA FIELD	02	03347
007450	007472	R						
007451	017000	I	3355	LDA	RECF	REINITIALIZE FOR NUMERIC COMPARE	02	03348
007452	147000	I	3356	SUB	BIAF		02	03349
007453	002000	A	3357	JMPM	STO		02	03350
007454	002523	R						
007455	017000	I	3358	LDA	RECF	SETUP FOR CONTENTS OF READ BUFFER	02	03351
007456	057000	I	3359	STA	LCBT		02	03352
007457	002000	A	3360	JMPM	LDNS	LOAD NEW FIELD CONTENTS	02	03353
007460	004072	R						
007461	017000	I	3361	LDA	RECF	SETUP TO COMPARE WITH OLD CONTENTS	02	03354
007462	147000	I	3362	SUB	BIAF		02	03355
007463	002000	A	3363	JMPM	STO		02	03356
007464	002523	R						
007465	002000	A	3364	JMPM	TLUC	NUMERIC COMPARE	02	03357
007466	007131	R						
007467	017000	I	3365	LDA	W0	REMOVE NEW CONTENTS FROM WORKLIST	02	03358
007470	127000	I	3366	ADD	NLST		02	03359
007471	057000	I	3367	STA	W0		02	03360
007472	017000	I	3368	LDA	017	PROCESS ADD DIRECTIVES	02	03361
007473	002000	A	3369	JMPM	PF0	PROCESS FIELD DIRECTIVES	02	03362
007474	006445	R						
007475	001000	A	3370	JMP	RMD9	GET NEXT FIELD	02	03363
007476	007357	R						
007477	057000	I	3371	STA	REOF	LAST CARD	02	03364
007500	017000	I	3372	LDA	TRUE		02	03365
007501	057000	I	3373	STA	CMPI	UNEQUAL	02	03366
007502	027000	I	3374	LDB	ILC		02	03367
007503	002000	A	3375	JMPM	SIN	SET LC INDICATOR	02	03368
007504	003214	R						
007505	001000	A	3376	JMP	RED1		02	03369
007506	007213	R						
			3377	*			02	03370
			3378	*	WRITE TO PUNCH (LUN=14) OR	PRINTER (LUN=15)	02	03371
			3379	*			02	03372
007507	006016	A	3380	WRIT	LDAE	ADDR,2	02	03373
007510	000437	R						
007511	054023	A	3381	STA	WRIO+1		02	03374
007512	002000	A	3382	WRII	JMPM	GETR	02	03375
007513	010102	R						
007514	001004	A	3383	JAN	WRID	DIRECRIVE	02	03376
007515	007566	R						
007516	017000	I	3384	LDA	INTD		02	03377
007517	001010	A	3385	JAZ	PNCH	ZERO FILE IS PUNCH	02	03378
007520	007525	R						
007521	047000	I	3386	INR	LCNT	INCR LINE COUNT	02	03379
007522	017000	I	3387	LDA	LCNT	SET #OV IF PAGE FULL	02	03380
007523	002002	A	3388	JAPM	SDV		02	03381
007524	010130	R						
007525	037000	I	3389	PNCH	LDX	RECF	02	03382
007526	015000	A	3390	LDA	0,1	RECORD POINTER	02	03383
007527	054740	A	3391	STA	TBYT	SAVE BYTE COUNT	02	03384
007530	005111	A	3392	IAR			02	03385
007531	004341	A	3393	LSRA	1	SHIFT BYTE COUNT TO WORD COUNT	02	03386
007532	025001	A	3394	LDB	1,1		02	03387
007533	004141	A	3395	LSRB	1	SHIFT BYTE ADDR TO WORD ADDR	02	03388
007534	002000	A	3396	WRIO	JMPM	**	02	03389
007535	107534	R						
007536	047000	I	3397	WRIS	INR	RECF	02	03390
007537	017000	I	3398	LDA*	RECF	GET NEXT FIELD POINTER	02	03391
007540	001004	A	3399	JAN	WRI4	TIS NEXT RECORD	02	03392
007541	007561	R						
007542	005014	A	3400	TAX			02	03393
007543	015000	A	3401	LDA	0,1	FIELD CONTROL WORD	02	03394
007544	157000	I	3402	ANA	BIT3	BLANK AFTER PRINTING BIT	02	03395
007545	001010	A	3403	JAZ	WRIS	GET NEXT FIELD	02	03396
007546	007536	R						
007547	005301	A	3404	DECR	0301	FORCE BLANKS	02	03397
007550	057000	I	3405	STA	LCBF+1		02	03398
007551	017000	I	3406	LDA	RECF	GET FIELD NUMBER	02	03399
007552	147000	I	3407	SUB	BIAF		02	03400
007553	002000	A	3408	JMPM	STO	INITIALIZE FOR MOVE	02	03401
007554	002523	R						











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010013 000000 A
010014 000000 A
010015 006010 A 3512 LDAI SPC1 02 03504
010016 010006 R
010017 002000 A 3513 CALL STAT CHECK STATUS 02 03505
010020 002063 R
010021 001026 A 3514 JBNZ SER 02 03506
010022 002133 R
010023 017000 I 3515 LDA TMPR 02 03507
010024 005311 A 3516 DAR 02 03508
010025 001010 A 3517 JAZ* SPACE RETURN IF COUNT ZERO 02 03509
010026 110002 R
010027 057000 I 3518 STA TMPR 02 03510
010030 001000 A 3519 JMP SPC1 02 03511
010031 010006 R
010032 177777 A 3520 LDLP DATA -1 C 02 03512
3521 *
3522 * MOVE TO CARD BUFFER 02 03513
3523 * ENTER: B=WORD COUNT 02 03514
3524 * X=LOCATION OF DATA 02 03515
3525 * EXIT: CRBF SET TO BLANKS AND FILLED WITH SOURCE BUFFER 02 03516
3526 * 02 03517
3527 * 02 03518
010033 000000 A 3527 MOBF DATA 0 02 03519
010034 064042 A 3528 STB MOBFT SAVE 02 03520
010035 074042 A 3529 STX MOBFT+1 02 03521
010036 037000 I 3530 LDX ADRB CLEAR BUFFER 02 03522
010037 006010 A 3531 LDAI -40 02 03523
010040 177730 A
010041 027000 I 3532 LDB NA 02 03524
010042 063000 A 3533 MOBF1 STB 0+1 02 03525
010043 005144 A 3534 IXR 02 03526
010044 005111 A 3535 IAR 02 03527
010045 001004 A 3536 JAN MOBF1 THRU? 02 03528
010046 010042 R
010047 024027 A 3537 LDB MOBFT C 02 03529
010050 005021 A 3538 TBA C 02 03530
010051 147000 I 3539 SUB 050 C 02 03531
010052 005311 A 3540 DAR C 02 03532
010053 001004 A 3541 JAN MOBF3 C 02 03533
010054 010056 R
010055 027000 I 3542 LDB 050 LIMIT MOVE TO 40 WORDS C 02 03534
010056 005222 A 3543 MOBF3 CPB C 02 03535
010057 064017 A 3544 STB MOBFT C 02 03536
010060 034017 A 3545 LDX MOBFT+1 02 03537
010061 027000 I 3546 LDB ADRB 02 03538
010062 015000 A 3547 MOBF2 LDA 0+1 MOVE DATA 02 03539
010063 056000 A 3548 STA 0+2 02 03540
010064 005144 A 3549 IXR 02 03541
010065 005122 A 3550 IER 02 03542
010066 014010 A 3551 LDA MOBFT 02 03543
010067 005111 A 3552 IAR 02 03544
010070 054006 A 3553 STA MOBFT 02 03545
010071 001004 A 3554 JAN MOBF2 THRU? 02 03546
010072 010062 R
010073 014005 A 3555 LDA BUFEND YES 02 03547
010074 037000 I 3556 LDX ADRB 02 03548
010075 001000 A 3557 RETU* MOBF 02 03549
010076 110033 R
010077 000000 A 3558 MOBFT DATA 0+0 02 03550
010100 000000 A
010101 000246 R 3559 BUFEND DATA RBUF+40 02 03551
3560 *
3561 * GET RECORD POINTER FROM GENIC 02 03552
3562 * EXIT RECP = LOCATION IN DATA LIST POINTER TABLE 02 03553
3563 * RECP = NEG IF LAST RECORD IN LIST 02 03554
3564 * RECP = RECORD DATA LIST POINTER 02 03555
3565 * A-REG = RECP 02 03556
3566 * 02 03557
3567 * 02 03558
010102 000000 A 3567 GETR ENTRY 02 03559
010103 037000 I 3568 LDX INPA 02 03560
010104 002000 A 3569 JMPM GBRI 02 03561
010105 002721 R
010106 004250 A 3570 LPLA 8 02 03562
010107 057000 I 3571 STA RECP 02 03563
010110 004241 A 3572 LRLA 1 TEST DIRECTIVE BIT 02 03564
010111 001004 A 3573 JAN* GETR 02 03565
010112 110102 R
010113 002000 A 3574 JMPM GBRI 02 03566
010114 002721 R
010115 117000 I 3575 ORA RECP 02 03567
010116 057000 I 3576 STA RECP END OF RECORD LIST INDICATOR 02 03568
010117 157000 I 3577 ORA MSOP 02 03569
010120 127000 I 3578 AND BIAR GET RECORD DATA LIST POINTER 02 03570
010121 057000 I 3579 STA RECP 02 03571
010122 005014 A 3580 TAX 02 03572
010123 015000 A 3581 LDA 0+1 02 03573
010124 157000 I 3582 ANA MSKO 02 03574
010125 057000 I 3583 STA RECP 02 03575
010126 001000 A 3584 JMP* GETR 02 03576
010127 110102 R
3585 *
3586 * SET OVERFLOW INDICATOR 02 03577
3587 * ENTRY A-REG = + IS TRUE 02 03578

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010235	054056	A	3663	STA	DBTA				E.2*****
010236	004201	A	3664	JASLA	1	TIMES 2			E.2*****
010237	124054	A	3665	ADD	DBTA	PLUS 1			E.2*****
010240	120355	A	3666	ADD	VSDSTB				E.2*****
010241	005014	A	3667	TAX					E.2*****
010242	015001	A	3668	DEVTS1 LDA	1,1				E.2*****
010243	150462	A	3669	ANA	LHW				02 03645
010244	006130	A	3670	ERAI	0142000	IS IT AN RMD?			02 03646
010245	142000	A							
010246	001010	A	3671	JAZ	DEVTS4				02 03647
010247	010311	R							
010250	015001	A	3672	LDA	1,1				02 03648
010251	006130	A	3673	ERAI	0141720	IS IT A CARD PUNCH?			02 03649
010252	141720	A							
010253	001010	A	3674	JAZ	DEVTS3				02 03650
010254	010310	R							
010255	015001	A	3675	LDA	1,1				02 03651
010256	006130	A	3676	ERAI	0141722	IS IT A CARD READER?			02 03652
010257	141722	A							
010260	001010	A	3677	JAZ	DEVTS2				02 03653
010261	010307	R							
010262	015001	A	3678	LDA	1,1				02 03654
010263	006130	A	3679	ERAI	0146320	IS IT A LINE PRINTER?			C 02 03655
010264	146320	A							
010265	001010	A	3680	JAZ	DEVST1				C 02 03656
010266	010306	R							
010267	015001	A	3681	LDA	1,1				E.2*****
010270	006130	A	3682	ERAI	'CT'	IS IT A CRT			E.2*****
010271	141724	A							
010272	001010	A	3683	JAZ	DEVST1	GOOD AS A LINE PRINTER			E.2*****
010273	010306	R							
010274	015001	A	3684	LDA	1,1				E.2*****
010275	150462	A	3685	ANA	LHW				E.2*****
010276	006130	A	3686	ERAI	0152000	IS IT A TTY			E.2*****
010277	152000	A							
010300	001010	A	3687	JAZ	DEVST1	GOOD AS A LINE PRINTER			E.2*****
010301	010306	R							
010302	005021	A	3688	DEVST0 TBA					C 02 03657
010303	027000	I	3689	LDB	LUN	RETURN WITH LUN IN B-REG			02 03658
010304	001000	A	3690	JMP*	DEVST				02 03659
010305	110203	R							
010306	005122	A	3691	DEVST1 IBR					C 02 03660
010307	005122	A	3692	DEVTS2 IBR					02 03661
010310	005122	A	3693	DEVTS3 IBR					02 03662
010311	005122	A	3694	DEVTS4 IBR					02 03663
010312	001000	A	3695	JMP	DEVST0				C 02 03664
010313	010302	R							
			3696	*					02 03665
			3697	*					02 03666
			3698	*	BINARY TO ASCII CONVERSION				02 03667
			3699	*					02 03668
010314	000000	A	3700	DBTA ENIR	0				02 03669
010315	074036	A	3701	STX	DBTZ+1	SAVE X			02 03670
010316	005012	A	3702	TAB					02 03671
010317	005001	A	3703	TZA					02 03672
010320	006170	A	3704	DIVI	1000				02 03673
010321	001750	A							
010322	004050	A	3705	LRLB	8	A=REMAINDER, B=QUOTIENT			02 03674
010323	064005	A	3706	STB	DBTC+1	FIRST CHARACTER			02 03675
010324	005012	A	3707	TAB					02 03676
010325	005001	A	3708	TZA					02 03677
010326	006170	A	3709	DIVI	100	FIND HUNDREDS DIGIT			02 03678
010327	000144	A							
010330	006030	A	3710	DBTC LDXI	*				02 03679
010331	010330	R							
010332	005064	A	3711	MERG	064	B OR X TO X, CHARS 1,2			02 03680
010333	005012	A	3712	TAB					02 03681
010334	005001	A	3713	TZA					02 03682
010335	006170	A	3714	DIVI	10				02 03683
010336	000012	A							
010337	004050	A	3715	LRLB	8	POSITION THIRD CHAR			02 03684
010340	005032	A	3716	MERG	032	A OR B TO B, CHARS 3,4			02 03685
010341	005041	A	3717	TAB		GET CHARS 1,2			02 03686
010342	001010	A	3718	JAZ	DBTG	BOTH CHARS 1,2 ARE ZERO			02 03687
010343	010362	R							
010344	150462	A	3719	ANA	LHW	CHECK CHAR 1 FOR ZERO			02 03688
010345	001016	A	3720	JANZ	DBTE	NO			02 03689
010346	010357	R							
010347	014027	A	3721	LDA	DBRZ	YES, SUPPRESS LEADING ZERO			02 03690
010350	005051	A	3722	DBTD	051	X OR A TO A, CHARS 1,2			02 03691
010351	034027	A	3723	LAX	DBRZE				02 03692
010352	005062	A	3724	MERG	062	X OR B TO B, CHARS 3,4			02 03693
010353	006030	A	3725	DBTZ	LDXI	RESTORE X			02 03694
010354	010353	R							
010355	001000	A	3726	JMP*	DBTA				02 03695
010356	110314	R							
			3727	*					02 03696
			3728	*	ENTER IF NO LEADING ZERO				02 03697
			3729	*					02 03698
010357	014021	A	3730	DBTE	LDA	DBRZE			02 03699
010360	001000	A	3731	JMP	DBTD				02 03700
010361	010350	R							
			3732	*					02 03701



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3733 * ENTER IF CHARS 1,2 LEADING ZERDS                                02 03702
3734 *                                                                    02 03703
010362 004450 A 3735 DBTG LLRL 8 CHECK CHAR 3                          02 03704
010363 001016 A 3736 JANZ DBTI NOT ZERO                               02 03705
010364 010373 R
010365 004450 A 3737 DBTF LLRL 8 SUPPRESS CHAR 3, MOVE CHAR 4        02 03706
010366 114010 A 3738 ORA DBBZ                                         02 03707
010367 005012 A 3739 TAB                                             02 03708
010370 014007 A 3740 DBTH LDA DB2BLK B= CHAR 3,4                       02 03709
010371 001000 A 3741 JMP DBTZ SUPPRESS CHARS 3,4                       02 03710
010372 010353 R
010373 114002 A 3742 DBTI ORA DBZERO CHAR 3 IN A                        02 03711
010374 001000 A 3743 JMP DBTF                                         02 03712
010375 010365 R
010376 000260 A 3744 DBZERO DATA 0260                                02 03713
010377 120260 A 3745 DBBZ DATA 0120260                               02 03714
010400 120240 A 3746 DB2BLK DATA 0120240                             02 03715
010401 130260 A 3747 DB2ZE DATA 0130260                             02 03716
3748 *                                                                    02 03717
3749 *                                                                    02 03718
3750 *                                                                    02 03719
3751 *                                                                    02 03720
3752 * APPEND SPACE CHARACTER TO PRINT LINE                            02 03721
3753 *                                                                    02 03722
010402 000000 A 3754 MOPB ENTR 0 SAVE RECORD ORIGIN                    02 03723
010403 064063 A 3755 STB BUFP GET BYTE COUNT                           02 03724
010404 014063 A 3756 LDA TBYT GET BYTE COUNT                           02 03725
010405 005012 A 3757 TAB SAVE BYTE COUNT                               02 03726
010406 150421 A 3758 ANA 850 ODD NUMBER OF BYTES?                       02 03727
010407 001016 A 3759 JANZ MOPB0                                         02 03728
010410 010413 R
010411 006047 A 3760 INRE FCB15 NO. INCREMENT WORD COUNT              02 03729
010412 007731 R
010413 005021 A 3761 MOPB0 TBA                                         02 03730
010414 144116 A 3762 SUB D132                                         02 03731
010415 001004 A 3763 JAN MOPB1                                         02 03732
010416 010420 R
010417 024113 A 3764 LDB D132                                         02 03733
010420 064022 A 3765 MOPB1 STB MOPB3                                    02 03734
010421 005001 A 3766 TZA                                             02 03735
010422 054004 A 3767 STA APK1 RESET BYTE COUNT                         02 03736
010423 017000 I 3768 LDA K240 GET LEADING SPACE                        02 03737
010424 054004 A 3769 MOPB2 STA APK3                                     02 03738
010425 002000 A 3770 CALL PAK INSERT CHAR INTO PRINTER BUFFER        02 03739
010426 010471 R
010427 000000 A 3771 APK1 DATA 0                                       02 03740
010430 011065 R 3772 APK2 DATA RPGLD                                    02 03741
010431 000000 A 3773 APK3 DATA 0                                       02 03742
010432 014010 A 3774 LDA MOPB3                                         02 03743
010433 001010 A 3775 JAZ* MOPB MOVE COMPLETE                           02 03744
010434 110402 R
010435 005311 A 3776 DAR                                             02 03745
010436 054004 A 3777 STA MOPB3                                         02 03746
010437 002000 A 3778 CALL INPC GET BYTE FROM RECORD                   02 03747
010440 010444 R
010441 001000 A 3779 JMP MOPB2                                         02 03748
010442 010424 R
010443 000000 A 3780 MOPB3 DATA 0                                       02 03749
010444 000000 A 3781 INPC ENTR 0                                       02 03750
010445 014021 A 3782 LDA BUFP FIRST CHAR?                               02 03751
010446 001004 A 3783 JAN INP2 ODD/EVEN CHARACTER TEST                 02 03752
010447 010457 R
010450 005012 A 3784 INP1 TAB GET ODD CHAR                               02 03753
010451 016000 A 3785 LDA 0,2 RIGHT JUSTIFY                             02 03754
010452 004350 A 3786 LSRA 8                                             02 03755
010453 005222 A 3787 CPB                                             02 03756
010454 064012 A 3788 STB BUFP RETURN                                    02 03757
010455 001000 A 3789 JMP* INPC                                          02 03758
010456 110444 R
010457 005211 A 3790 INP2 CPA GET EVEN CHAR                             02 03759
010460 005012 A 3791 TAB                                             02 03760
010461 016000 A 3792 LDA 0,2 GET EVEN CHAR                             02 03761
010462 150463 A 3793 ANA BM377                                         02 03762
010463 005122 A 3794 IBR                                             02 03763
010464 064002 A 3795 STB BUFP                                         02 03764
010465 001000 A 3796 JMP* INPC                                         02 03765
010466 110444 R
010467 000000 A 3797 BUFP DATA 0                                       02 03766
010470 000000 A 3798 TBYT DATA 0                                       02 03767
3799 *                                                                    02 03768
3800 *                                                                    02 03769
010471 000000 A 3801 PAK ENTR 0 GET BYTE COUNT                          02 03770
010472 005002 A 3802 TZA                                             02 03771
010473 006017 A 3803 LDAE* PAK INCREMENT IT                             02 03772
010474 110471 R
010475 006047 A 3804 INRE* PAK                                         02 03773
010476 110471 R
010477 006047 A 3805 INRE PAK                                         02 03774
010500 010471 R
010501 004541 A 3806 LLSR 1 ADD BUFFER ORIGIN                          02 03775
010502 006127 A 3807 ADDE* PAK                                         02 03776
010503 110471 R
010504 006047 A 3808 INRE PAK                                         02 03777

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010235 054056 A 3663 STA DBTA
010236 004201 A 3664 ASLA 1 TIMES 2
010237 124054 A 3665 ADD DBTA PLUS 1
010240 120355 A 3666 ADD V&DSTB
010241 005014 A 3667 TAX
010242 015001 A 3668 DEVTS1 LDA 1,1
010243 150462 A 3669 ANA LHM
010244 006130 A 3670 ERAI 0142000 IS IT AN RMD?
010245 142000 A
010246 001010 A 3671 JAZ DEVTS4
010247 010311 R
010250 015001 A 3672 LDA 1,1
010251 006130 A 3673 ERAI 0141720 IS IT A CARD PUNCH?
010252 141720 A
010253 001010 A 3674 JAZ DEVTS3
010254 010310 R
010255 015001 A 3675 LDA 1,1
010256 006130 A 3676 ERAI 0141722 IS IT A CARD READER?
010257 141722 A
010260 001010 A 3677 JAZ DEVTS2
010261 010307 R
010262 015001 A 3678 LDA 1,1
010263 006130 A 3679 ERAI 0146320 IS IT A LINE PRINTER?
010264 146320 A
010265 001010 A 3680 JAZ DEVST1
010266 010306 R
010267 015001 A 3681 LDA 1,1
010270 006130 A 3682 ERAI 'CT' IS IT A CRT
010271 141724 A
010272 001010 A 3683 JAZ DEVST1 GOOD AS A LINE PRINTER
010273 010306 R
010274 015001 A 3684 LDA 1,1
010275 150462 A 3685 ANA LHM
010276 006130 A 3686 ERAI 0152000 IS IT A TTY
010277 152000 A
010300 001010 A 3687 JAZ DEVST1 GOOD AS A LINE PRINTER
010301 010306 R
010302 005021 A 3688 DEVST0 TBA
010303 027000 I 3689 LDB LUN RETURN WITH LUN IN B-REG
010304 001000 A 3690 JMP* DEVTST
010305 110203 R
010306 005122 A 3691 DEVST1 IBR
010307 005122 A 3692 DEVTS2 IBR
010310 005122 A 3693 DEVTS3 IBR
010311 005122 A 3694 DEVTS4 IBR
010312 001000 A 3695 JMP DEVST0
010313 010302 R
3696 *
3697 *
3698 * BINARY TO ASCII CONVERSION
3699 *
010314 000000 A 3700 DBTA ENR 0
010315 074036 A 3701 STX DBTZ+1 SAVE X
010316 005012 A 3702 TAB
010317 005001 A 3703 TZA
010320 006170 A 3704 DIVI 1000
010321 001750 A
010322 004059 A 3705 LRLB 8 A=REMAINDER,B=QUOTIENT
010323 064005 A 3706 STB DBTC+1 FIRST CHARACTER
010324 005012 A 3707 TAB
010325 005001 A 3708 TZA
010326 006170 A 3709 DIVI 100 FIND HUNDREDS DIGIT
010327 000144 A
010330 006030 A 3710 DBTC LDXI *
010331 010330 R
010332 005064 A 3711 MERG 064 B OR X TO X, CHARS 1,2
010333 005012 A 3712 TAB
010334 005001 A 3713 TZA
010335 006170 A 3714 DIVI 10
010336 000012 A
010337 004059 A 3715 LRLB 8 POSITION THIRD CHAR
010340 005032 A 3716 MERG 032 A OR B TO B, CHARS 3,4
010341 005041 A 3717 TZA GET CHARS 1,2
010342 001010 A 3718 JAZ DBTG BOTH CHARS 1,2 ARE ZERO
010343 010362 R
010344 150462 A 3719 ANA LHM CHECK CHAR 1 FOR ZERO
010345 001016 A 3720 JANZ DBTE NO
010346 010357 R
010347 014027 A 3721 LDA DBTZ YES, SUPPRESS LEADING ZERO
010350 005051 A 3722 DBTD MERG 051 X OR A TO A, CHARS 1,2
010351 034027 A 3723 LAX DBPZE
010352 005062 A 3724 MERG 062 X OR B TO B, CHARS 3,4
010353 006030 A 3725 DBTZ LDXI * RESTORE X
010354 010353 R
010355 001000 A 3726 JMP* DBTA
010356 110314 R
3727 *
3728 * ENTER IF NO LEADING ZERO
3729 *
010357 014021 A 3730 DBTE LDA DBPZE
010360 001000 A 3731 JMP DBTD
010361 010350 R
3732 *

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			3733	*	ENTER IF CHARS 1,2 LEADING ZERDS			02	03702
			3734	*				02	03703
010362	004450	A	3735	DBTG	LLRL	8	CHECK CHAR 3	02	03704
010363	001016	A	3736		JANZ	DBTI	NOT ZERO	02	03705
010364	010373	R							
010365	004450	A	3737	DBTF	LLRL	8	SUPPRESS CHAR 3, MOVE CHAR 4	02	03706
010366	114010	A	3738		ORA	DBBZ		02	03707
010367	005012	A	3739		TAB		B= CHAR 3,4	02	03708
010370	014007	A	3740	DBTH	LDA	DB2BLK	SUPPRESS CHARS 3,4	02	03709
010371	001000	A	3741		JMP	DBTZ		02	03710
010372	010353	R							
010373	114002	A	3742	DBTI	ORA	DBZERO	CHAR 3 IN A	02	03711
010374	001000	A	3743		JMP	DBTF		02	03712
010375	010365	R							
010376	000260	A	3744	DBZERO	DATA	0260		02	03713
010377	120260	A	3745	DBBZ	DATA	0120260		02	03714
010400	120240	A	3746	DB2BLK	DATA	0120240		02	03715
010401	130260	A	3747	DB2ZE	DATA	0130260		02	03716
			3748	*				02	03717
			3749	*				02	03718
			3750	*				02	03719
			3751	*				02	03720
			3752	*	APPEND SPACE CHARACTER TO PRINT LINE			02	03721
			3753	*				02	03722
010402	000000	A	3754	MOPB	ENTR	0		02	03723
010403	064063	A	3755		STB	BUFP	SAVE RECORD ORIGIN	02	03724
010404	014063	A	3756		LDA	TBYT	GET BYTE COUNT	02	03725
010405	005012	A	3757		TAB		SAVE BYTE COUNT	02	03726
010406	150421	A	3758		ANA	BS0	ODD NUMBER OF BYTES?	02	03727
010407	001016	A	3759		JANZ	MOPB0		02	03728
010410	010413	R							
010411	006047	A	3760		INRE	FCB15	NO, INCREMENT WORD COUNT	02	03729
010412	007731	R							
010413	005021	A	3761	MOPB0	TBA			02	03730
010414	144116	A	3762		SUB	D132		02	03731
010415	001004	A	3763		JAN	MOPB1		02	03732
010416	010420	R							
010417	024113	A	3764		LDB	D132		02	03733
010420	064022	A	3765	MOPB1	STB	MOPB3		02	03734
010421	005001	A	3766		TZA			02	03735
010422	054004	A	3767		STA	APK1	RESET BYTE COUNT	02	03736
010423	017000	I	3768		LDA	K240	GET LEADING SPACE	02	03737
010424	054004	A	3769	MOPB2	STA	APK3		02	03738
010425	002000	A	3770		CALL	PAK	INSERT CHAR INTO PRINTER BUFFER	02	03739
010426	010471	R							
010427	000000	A	3771	APK1	DATA	0		02	03740
010430	011065	R	3772	APK2	DATA	RPGLD		02	03741
010431	000000	A	3773	APK3	DATA	0		02	03742
010432	014010	A	3774		LDA	MOPB3		02	03743
010433	001010	A	3775		JAZ*	MOPB	MOVE COMPLETE	02	03744
010434	110402	R							
010435	005311	A	3776		DAR			02	03745
010436	054004	A	3777		STA	MOPB3		02	03746
010437	002000	A	3778		CALL	INPC	GET BYTE FROM RECORD	02	03747
010440	010444	R							
010441	001000	A	3779		JMP	MOPB2		02	03748
010442	010424	R							
010443	000000	A	3780	MOPB3	DATA	0		02	03749
010444	000000	A	3781	INPC	ENTR	0		02	03750
010445	014021	A	3782		LDA	BUFP	FIRST CHAR?	02	03751
010446	001004	A	3783		JAN	INP2	ODD/EVEN CHARACTER TEST	02	03752
010447	010457	R							
010450	005012	A	3784	INP1	TAB			02	03753
010451	016000	A	3785		LDA	0,2	GET ODD CHAR	02	03754
010452	004350	A	3786		LSRA	8	RIGHT JUSTIFY	02	03755
010453	005222	A	3787		CPB			02	03756
010454	064012	A	3788		STB	BUFP		02	03757
010455	001000	A	3789		JMP*	INPC	RETURN	02	03758
010456	110444	R							
010457	005211	A	3790	INP2	CPA			02	03759
010460	005012	A	3791		TAB			02	03760
010461	016000	A	3792		LDA	0,2	GET EVEN CHAR	02	03761
010462	150463	A	3793		ANA	BM377		02	03762
010463	005122	A	3794		IBR			02	03763
010464	064002	A	3795		STB	BUFP		02	03764
010465	001000	A	3796		JMP*	INPC		02	03765
010466	110444	R							
010467	000000	A	3797	BUFP	DATA	0		02	03766
010470	000000	A	3798	TBYT	DATA	0		02	03767
			3799	*				02	03768
			3800	*				02	03769
010471	000000	A	3801	PAK	ENTR	0		02	03770
010472	005002	A	3802		TZB			02	03771
010473	006017	A	3803		LDAE*	PAK	GET BYTE COUNT	02	03772
010474	110471	R							
010475	006047	A	3804		INRE*	PAK	INCREMENT IT	02	03773
010476	110471	R							
010477	006047	A	3805		INRE	PAK		02	03774
010500	010471	R							
010501	004541	A	3806		LLSR	1		02	03775
010502	006127	A	3807		ADDE*	PAK	ADD BUFFER ORIGIN	02	03776
010503	110471	R							
010504	006047	A	3808		INRE	PAK		02	03777



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010505 010471 R
010506 005014 A 3809 TAX
010507 004041 A 3810 LRLB 1
010510 015000 A 3811 LDA 0,1
010511 006156 A 3812 ANAE MSKE,2
010512 010531 R
010513 055000 A 3813 STA 0,1 MASK OUT BYTE SLOT
010514 006017 A 3814 LDAE* PAK
010515 110471 R
010516 006047 A 3815 INRE PAK
010517 010471 R
010520 001020 A 3816 JBZ PAK2
010521 010526 R
010522 115000 A 3817 PAK1 ORA 0,1 INSERT BYTE
010523 055000 A 3818 STA 0,1 RESTORE WORD
010524 001000 A 3819 JMP* PAK
010525 110471 R
010526 004250 A 3820 PAK2 LRLA 8
010527 001000 A 3821 JMP PAK1
010530 010522 R
010531 000000 A 3822 MSKE DATA 0.0177400
010532 177400 A
010533 000204 A 3823 D132 DATA 132
3824 *
3825 *
3826 * SUBROUTINE TO CONVERT HOLLERITH TO ASCII
3827 *
3828 * CALLING SEQUENCE
3829 * LDA CARD COL BINARY (HOLLERITH)
3830 * JMP HQAS
3831 * RETURN
3832 *
3833 * RETURNS ASCII IN A REG
3834 * B AND X REGS PRESERVED
3835 *
010534 000000 A 3836 HQAS ENTRY HOLLERITH TO ASCII CONVERSION
010535 064325 A 3837 STB TEM1
010536 074325 A 3838 STX TEM1+1
010537 005002 A 3839 TZB
010540 134054 A 3840 ERA HDA9 CHECK 0-2-8
010541 001010 A 3841 JAZ HDA2
010542 010603 R
010543 134051 A 3842 ERA HDA9
010544 004551 A 3843 LLSR 9 SPLIT OFF ZONE
010545 006120 A 3844 ADDI HDA4 ZONE BASE TABLE ADR
010546 010610 R
010547 005014 A 3845 TAX
010550 005021 A 3846 TBA
010551 035000 A 3847 LDX 0,1 DIGIT PORTION
010552 005112 A 3848 INCR 012 ZONE VALUE
010553 154034 A 3849 ANA HDA4
010554 003010 A 3850 XAZ HDA3 IF NO ROW 1,3,5,7, OR 9
010555 010607 R
010556 005123 A 3851 INCR 023
010557 154033 A 3852 ANA HDA5
010560 003010 A 3853 XAZ HDA3 IF NO ROW 2,3,6, OR 7
010561 010607 R
010562 004401 A 3854 LASL 1
010563 005021 A 3855 TBA
010564 154032 A 3856 ANA HDA8
010565 003010 A 3857 XAZ HDA3 IF NO ROW 4,5,6, OR 7
010566 010607 R
010567 004401 A 3858 LASL 1
010570 005021 A 3859 TBA
010571 154023 A 3860 ANA HDA6
010572 003010 A 3861 XAZ HDA3 IF NO ROW 8 OR 9
010573 010607 R
010574 005041 A 3862 TXA
010575 006030 A 3863 HDA1 LDXI HDA7
010576 010620 R
010577 002000 A 3864 CALL IFETCH
010600 011042 R
010601 001000 A 3865 JMP* HQAS
010602 110534 R
010603 006010 A 3866 HDA2 LDAI 16 B.2 02 03835
010604 000020 A
010605 001000 A 3867 JMP HDA1 02 03836
010606 010575 R
010607 005064 A 3868 HDA3 MERGE 064
3869 *
3870 * SEQUENCE OF HDA CONSTANTS IS CRITICAL B.2 02 03839
3871 * B.2 03 03840
010610 125200 A 3872 HDA4 DATA 0125200,060,040 B.2 02 03841
010611 000060 A
010612 000040 A
010613 063000 A 3873 HDA5 DATA 063000,020 B.2 02 03842
010614 000020 A
010615 003000 A 3874 HDA6 DATA 03000,060 B.2 02 03843
010616 000060 A
010617 036000 A 3875 HDA8 DATA 036000 02 03844
010620 121275 A 3876 HDA9 EQU HDA6 B.2 02 03845
010621 123700 A 3877 HDA7 DATA ' '= ',0123700,' #:987654321 ',0157253,' << . [IHGFEDCBA&' 02 03846
    
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010622 121672 A
010623 134670 A
010624 133666 A
010625 132664 A
010626 131662 A
010627 130640 A
010630 157253 A
010631 124274 A
010632 127333 A
010633 144710 A
010634 143706 A
010635 142704 A
010636 141702 A
010637 140646 A
010640 156273 A 3878 DATA 'Q)*$IRQPONMLKJ-?)',0157645,'JZYXWVUTS/0' 02 03847
010641 124652 A
010642 122241 A
010643 151321 A
010644 150317 A
010645 147315 A
010646 146313 A
010647 145255 A
010650 137676 A
010651 157645 A
010652 126335 A
010653 155331 A
010654 154327 A
010655 153325 A
010656 152323 A
010657 127660 A

3879 * 02 03848
3880 * 02 03849
3881 * 02 03850
3882 * CALLING SEQUENCE 02 03851
3883 * LDA ASCII 02 03852
3884 * JPM ASHD 02 03853
3885 * RETURN 02 03854
3886 * 02 03855
3887 * RETURNS HOLLERITH CARD COL BINARY IN A REG 02 03856
3888 * B AND X REGS PRESERVED 02 03857
3889 * 02 03858
010660 000000 A 3890 ASHD ENTRY 02 03859
010661 157000 I 3891 ANA 077 02 03860
010662 006120 A 3892 ADDI ASHT TABLE BASE ADR 02 03861
010663 010671 R
010664 004460 A 3893 LLRL 16 EXCHANGE AR-BR 02 03862
010665 026000 A 3894 LDB 0,2 HOLLERITH 12 BITS 02 03863
010666 004460 A 3895 LLRL 16 EXCHANGE AR-BR 02 03864
010667 001000 A 3896 JMP* ASHD RETURN 02 03865
010670 110660 R
010671 000042 A 3897 ASHT DATA 00042,04400,04200,04100,04040,04020,04010,04004 02 03866
010672 004400 A
010673 004200 A
010674 004100 A
010675 004040 A
010676 004020 A
010677 004010 A
010700 004004 A
010701 004002 A 3898 DATA 04002,04001,02400,02200,02100,02040,02020,02010 02 03867
010702 004001 A
010703 002400 A
010704 002200 A
010705 002100 A
010706 002040 A
010707 002020 A
010710 002010 A
010711 002004 A 3899 DATA 02004,02002,02001,01200,01100,01040,01020,01010 02 03868
010712 002002 A
010713 002001 A
010714 001200 A
010715 001100 A
010716 001040 A
010717 001020 A
010720 001010 A
010721 001004 A 3900 DATA 01004,01002,01001,04202,02006,01202,03000,01022 B.2 02 03869
010722 001002 A
010723 001001 A
010724 004202 A
010725 002006 A
010726 001202 A
010727 003000 A
010730 001022 A
010731 000000 A 3901 DATA 00000,02202,00006,00102,02102,01042,04000,00022 02 03870
010732 002202 A
010733 000036 A
010734 000102 A
010735 002102 A
010736 001042 A
010737 004000 A
010740 000022 A
010741 004022 A 3902 DATA 04022,02022,02042,04012,01102,02000,04102,01400 02 03871
010742 002022 A
010743 002042 A

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010744 004012 A
010745 001102 A
010746 002000 A
010747 004102 A
010750 001400 A
010751 001000 A 3903 DATA 01000,00400,00200,00100,00040,00020,00010,00004 02 03872
010752 000400 A
010753 000200 A
010754 000100 A
010755 000040 A
010756 000020 A
010757 000010 A
010760 000004 A
010761 000002 A 3904 DATA 00002,00001,00202,02012,04042,00012,01012,01006 02 03873
010762 000001 A
010763 000202 A
010764 002012 A
010765 004042 A
010766 000012 A
010767 001012 A
010770 001006 A
3905 *
3906 * SUBROUTINE TO CONVERT ASCII TO COLLATING SEQUENCE 02 03874
3907 * 02 03875
3908 * CALLING SEQUENCE 02 03876
3909 * LDA ASCII CHAR 02 03877
3910 * JMPM COLA 02 03878
3911 * RETURN 02 03879
3912 * 02 03880
3913 * RETURNS WITH COLLATING VALUE IN A REG 02 03881
3914 * B AND X REGS PRESERVED 02 03882
3915 * 02 03883
010771 000000 A 3916 COLATE ENTR 02 03884
010772 064070 A 3917 STB TEM1 02 03885
010773 074070 A 3918 STX TEM1+1 02 03886
010774 006030 A 3919 LDXI COLT 02 03887
010775 011002 R
010776 002000 A 3920 CALL TFETCH 02 03889
010777 011042 R
011000 001000 A 3921 JMP* COLATE RETURN 02 03890
011001 110771 R
3922 * ASCII TO COLLATING SEQUENCE CONVERSION TABLE 02 03891
011002 R 3923 COLT EQU * 02 03892
3924 SATA FORM 8,8 02 03893
011002 076301 A 3925 SATA 124,193 02 03894
011003 141303 A 3926 SATA 194,195 02 03895
011004 142305 A 3927 SATA 196,197 02 03896
011005 143307 A 3928 SATA 198,199 02 03897
011006 144311 A 3929 SATA 200,201 02 03898
011007 150722 A 3930 SATA 209,210 02 03899
011010 151724 A 3931 SATA 211,212 02 03900
011011 152726 A 3932 SATA 213,214 02 03901
011012 153730 A 3933 SATA 215,216 02 03902
011013 154742 A 3934 SATA 217,226 02 03903
011014 161744 A 3935 SATA 227,228 02 03904
011015 162746 A 3936 SATA 229,230 02 03905
011016 163750 A 3937 SATA 231,232 02 03906
011017 164512 A 3938 SATA 233,74 02 03907
011020 057740 A 3939 SATA 95,224 02 03908
011021 047555 A 3940 SATA 79,109 02 03909
011022 040132 A 3941 SATA 64,90 02 03910
011023 077573 A 3942 SATA 127,123 02 03911
011024 055554 A 3943 SATA 91,108 02 03912
011025 050175 A 3944 SATA 80,125 02 03913
011026 046535 A 3945 SATA 77,93 02 03914
011027 056116 A 3946 SATA 92,78 02 03915
011030 065540 A 3947 SATA 107,96 02 03916
011031 045541 A 3948 SATA 75,97 02 03917
011032 170361 A 3949 SATA 240,241 02 03918
011033 171363 A 3950 SATA 242,243 02 03919
011034 172365 A 3951 SATA 244,245 02 03920
011035 173367 A 3952 SATA 246,247 02 03921
011036 174371 A 3953 SATA 248,249 02 03922
011037 075136 A 3954 SATA 122,94 02 03923
011040 046176 A 3955 SATA 76,126 02 03924
011041 067157 A 3956 SATA 110,111 02 03925
3957 * SUBROUTINE TO FETCH A VALUE FROM A PACKED TABLE 02 03926
011042 000000 A 3958 TFETCH ENTR 02 03927
011043 074004 A 3959 STX TADR 02 03928
011044 157000 I 3960 ANA 077 02 03929
011045 005002 A 3961 TZB 02 03930
011046 004541 A 3962 LLSR 1 HALVE TABLE INCREMENT 02 03931
011047 006120 A 3963 ADDI ** 02 03932
011050 111047 R
011051 011053 R 3964 TADR EQU *-1 02 03933
011052 005014 A 3965 TAX 02 03934
011053 015000 A 3966 LDA 0,1 02 03935
011054 003020 A 3967 XBZ TFER 02 03936
011055 157000 I 3968 ANA BYT1 02 03937
011056 024004 A 3969 LDB TEM1 02 03938
011057 034004 A 3970 LDX TEM1+1 02 03939
011060 001000 A 3971 JMP* TFETCH 02 03940

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011061 111042 R
011062 004350 A 3972 TFER LSRA 8
011063 000000 A 3973 TEM1 DATA 0,0
011064 000000 A
3974 EJEC
3975 *****
3976 *
3977 *
3978 *
3979 *****
011065 R 3980 RPGLD EQU *
011065 014443 A 3981 LDA LDADR STARTING BYTE ADDR FOR LOADING
011066 054433 A 3982 STA CBLC CURRENT BYTE LOC COUNTER
011067 004341 A 3983 LSRA 1 COMPUTE WORD LOC.
011070 057000 I 3984 STA TMP1
011071 144425 A 3985 SUB CORE COMPUTE NEG. LOAD AREA SIZE AND PUT
011072 027000 I 3986 LDB TMP1 WORD LOC COUNTER IN B-REG.
011073 037000 I 3987 LDX NA BLANKS
011074 076000 A 3988 CNLOC STX 0,2 CLEAR PROGRAM AREA FROM LOAD ADDRESS
011075 005122 A 3989 IBR UP TO THE END OF THE WORK SPACE
011076 005111 A 3990 IAR
011077 001004 A 3991 JAN CNLOC CLEAR NEXT LOC
011100 011074 R
011101 001000 A 3992 JMP GNDIR START LOADING OBJECT TEXT
011102 011433 R
011103 177777 A 3993 LORMD DATA -1 C
011104 177777 A 3994 *
011105 000000 A 3995 BIRMD DATA -1
011105 000000 A 3996 BIRF DATA 0 BI LOGICAL RECORD FLAG
011105 000000 A 3997 *
011106 004250 A 4000 AORG LRLA 8 SHIFT BIT TO HIGH 8 BITS
011107 057000 I 4001 STA TMP AND SAVE
011110 002000 A 4002 JMPM GBYT GET A BYTE
011111 011347 R
011112 117000 I 4003 AORG DRA TMP BUILD 16 BIT WORD
011113 054406 A 4004 AORG STA CBLC RESET CURRENT LOC COUNTER
011114 017000 I 4005 LDA TMPXX IS THIS A DORG DIRECTIVE
011115 001002 A 4006 JAP GND1 YES, GO TO SAVE DATA ROUTINE
011116 011437 R
011117 001000 A 4007 JMP GNDIR GET NEXT DIRECTIVE
011120 011433 R
4008 *
4009 * RELATIVE ORIGIN
4010 *
011121 124400 A 4011 XORGR ADD CBLC RESET LOAD ADDR TO PREV + DISPLACEMENT
011122 001000 A 4012 JMP AORG
011123 011113 R
4013 *
4014 * EXTERNAL REFERENCES
4015 *
011124 034376 A 4016 EXREF LDX M3 NEG NAME LENGTH
011125 004250 A 4017 LRLA 8
011126 006055 A 4018 STAE RPM3+7,1 1ST BYTE
011127 002237 R
011130 002000 A 4019 JMPM GBYT GET A BYTE
011131 011347 R
011132 006115 A 4020 DRAE RPM3+7,1
011133 002237 R
011134 006055 A 4021 STAE RPM3+7,1
011135 002237 R
011136 005144 A 4022 IXR
011137 001040 A 4023 JXZ TABSCH TABLE SEARCH
011140 011145 R
011141 002000 A 4024 JMPM GBYT GET A BYTE
011142 011347 R
011143 001000 A 4025 JMP EXREF+1 GET NEXT TWO CHARACTERS
011144 011125 R
4026 *
4027 * TABLE SEARCH ROUTINE
4028 *
011145 005102 A 4029 TABSCH INCR 0102
011146 006017 A 4030 LDAE XSTAB START FOR NAMES IN THE TABLE
011147 000376 R
011150 057000 I 4031 TAB STA TMP
011151 057000 I 4032 STA TMP1
011152 034350 A 4033 LDX M3 NEG NAME LENGTH
011153 017000 I 4034 TABA LDA* TMP
011154 006135 A 4035 ERAE RPM3+7,1 DOES THE TWO CHARACTERS OF THE NAME MATCH
011155 002237 R
011156 001010 A 4036 JAZ TAB2 YES, TRY NEXT 2 CHARS
011157 011162 R
011160 001000 A 4037 JMP TAB1 NO, TRY NEXT ENTRY
011161 011174 R
011162 047000 I 4038 TAB2 INR TMP
011163 005144 A 4039 IXR
011164 001040 A 4040 JXZ TAB3 THRU CHECKING?
011165 011170 R
011166 001000 A 4041 JMP TABA GO COMPARE NEXT TWO CHARACTERS
011167 011150 R
011170 005021 A 4042 TAB3 TBA
011171 004202 A 4043 ASLA 2 YES, COMPUTE DISPLACEMENT FOR CALL INSTRUCTION

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011172	001000	A	4044	JMP	EXR1			02	04013
011173	011223	R							
011174	005021	A	4045	TAB1	TBA		HAVE ALL ENTRIES BEEN COMPARED	02	04014
011175	006147	A	4046		SUBE	STAB		02	04015
011176	001031	R							
011177	001002	A	4047	JAP	PRIN		YES	02	04016
011200	011206	R							
011201	005122	A	4048	IBR			NO, TRY NEXT ENTRY	02	04017
011202	017000	I	4049	LDA	TMP1			02	04018
011203	127000	I	4050	ADD	D4			02	04019
011204	001000	A	4051	JMP	TAB			02	04020
011205	011150	R							
			4052	*				02	04021
			4053	*	PRINT NAMES OF MISSING PROGRAMS			02	04022
			4054	*				02	04023
			4055	PRIN	EQU	*		02	04024
011206	006010	A	4056		LDAI	RPM3		02	04025
011207	002230	R							
011210	006057	A	4057	STAE	FCB15+1			C	02 04026
011211	007732	R							
011212	002000	A	4058	CALL	EWR		REPRT MISSING PROGRAM	C	02 04027
011213	002174	R							
011214	006010	A	4059	LDAI	EWR1			C	02 04028
011215	002201	R							
			4060	*				02	04029
011216	002000	A	4061	CALL	STAT		CHECK STATUS	02	04030
011217	002063	R							
011220	001026	A	4062	JBNZ	SER		I/O ERROR	02	04031
011221	002133	R							
011222	017000	I	4063	LDA	D4		SET EXIT IF INVALID CALL IS EXECUTED	02	04032
			4064	*	BUILD CALL INSTRUCTION WITH DISPLACEMENT IN TMR			02	04033
			4065	*				02	04034
011223	057000	I	4066	EXR1	STA	TMP	DISPLACEMENT	02	04035
011224	014302	A	4067		LDA	K240		02	04036
011225	002000	A	4068	JMPM	FILEB		SAVE CALL INSTRUCTION	02	04037
011226	011377	R							
011227	017000	I	4069	LDA	TMP			02	04038
011230	002000	A	4070	JMPM	FILEB			02	04039
011231	011377	R							
011232	001000	A	4071	JMP	GNDIR		GET NEXT DIRECTIVE	02	04040
011233	011433	R							
			4072	*				02	04041
			4073	*	GET NEXT OBJECT RECORD			02	04042
			4074	*				02	04043
011234	000000	A	4075	RECORD	ENTR	0		02	04044
011235	017000	I	4076		LDA	BIRMD	IS BI A RMD?	02	04045
011236	001010	A	4077	JAZ	REC2		NO	02	04046
011237	011271	R							
011240	017000	I	4078	LDA	BIRF		YES, FIRST LOGICAL RECORD	02	04047
011241	001010	A	4079	JAZ	REC1			02	04048
011242	011260	R							
011243	005211	A	4080	CPA			NO, SECOND LOGICAL RECORD	02	04049
011244	057000	I	4081	STA	BIRF		UPDATE LOGICAL RECORD FLAG	02	04050
011245	006010	A	4082	LDAI	CRBF+60			02	04051
011246	000273	R							
011247	054066	A	4083	STA	SEQ+1		MODIFY POINTERS TO PROCESS	02	04052
011250	006010	A	4084	LDAI	CRBF+120		SECOND LOGICAL RECORD	02	04053
011251	000367	R							
011252	054047	A	4085	STA	CKS1+1			02	04054
011253	054251	A	4086	STA	LLCBF			02	04055
011254	006020	A	4087	LDBI	CRBF+62			02	04056
011255	000275	R							
011256	001000	A	4088	JMP	REC4			02	04057
011257	011316	R							
			4089	*				02	04058
			4090	*				02	04059
011260	005211	A	4091	REC1	CPA			02	04060
011261	057000	I	4092		STA	BIRF	UPDATE LOGICAL RECORD FLAG	02	04061
011262	006010	A	4093		LDAI	CRBF		02	04062
011263	000177	R							
011264	054051	A	4094	STA	SEQ+1		MODIFY POINTERS TO PROCESS	02	04063
011265	006010	A	4095	LDAI	CRBF+60		FIRST LOGICAL RECORD	02	04064
011266	000273	R							
011267	054032	A	4096	STA	CKS1+1			02	04065
011270	054234	A	4097	STA	LLCBF			02	04066
			4098	REC2	READ	FCB1, BI, 0, 0	READ RECORD SYSTEM BINARY	02	04067
011271	006505	A							
011272	000404	A							
011273	100000	A							
011274	000006	A							
011275	000002	R							
011276	000000	A							
011277	000000	A							
011300	006010	A	4099	LDAI	REC2			02	04068
011301	011271	R							
011302	002000	A	4100	CALL	STAT		CHECK STATUS	02	04069
011303	002063	R							
011304	001026	A	4101	JBNZ	SER			02	04070
011305	002133	R							
011306	006020	A	4102	REC3	LDBI	CRBF+2	GET POINTER TO 3RD WORD	02	04071
011307	000201	R							
011310	017000	I	4103	LDA	CRBF			02	04072
011311	157000	I	4104	ANA	MSGN		FIRST RECORD?	02	04073



011312	001010	A	4105	JAZ	REC4			02	04074
011313	011316	R							
011314	006020	A	4106	LDBI	CRBF+11	YES, START AT 12TH WORD		02	04075
011315	000212	R							
011316	064202	A	4107	REC4	STB	PT1		02	04076
011317	034206	A	4108		LDX	M60	COMPUTE CHECKSUM	02	04077
011320	005001	A	4109		TZA			02	04078
011321	006135	A	4110	CKS1	ERAE	CRBF+60,1		02	04079
011322	000273	R							
011323	005144	A	4111		IXR			02	04080
011324	001040	A	4112		JXZ	CKS2		02	04081
011325	011330	R							
011326	001000	A	4113		JMP	CKS1		02	04082
011327	011321	R							
011330	001010	A	4114	CKS2	JAZ	SEQ		02	04083
011331	011335	R							
011332	010466	A	4115		LDA	SIX	CHECKSUM ERROR	02	04084
011333	001000	A	4116		JMP	\$ER3		02	04085
011334	002165	R							
011335	006017	A	4117	SEQ	LDAA	CRBF	TEST SEQUENCE NUMBER	02	04086
011336	000177	R							
011337	157000	I	4118		ANA	BYT1	8 BITS ONLY	02	04087
011340	144167	A	4119		SUB	SEQN		02	04088
011341	044166	A	4120		INR	SEQN	FOR NEXT TIME	02	04089
011342	001010	A	4121		JAZ*	RECORD		02	04090
011343	111234	R							
011344	010467	A	4122		LDA	SEVEN	SEQUENCE ERROR	02	04091
011345	001000	A	4123		JMP	\$ER3		02	04092
011346	002165	R							
			4124	* SAVE INDEX: GET A BYTE FROM CRBF				02	04093
			4125	* GBT				02	04094
011347	000000	A	4126	GBT	PZE			02	04095
011350	077000	I	4127		STX	TMP2	SAVE INDEX	02	04096
011351	014147	A	4128		LDA	PT1	CHECK WD SEE IF LAST WORD	02	04097
011352	144152	A	4129		SUB	LLCBF	OF RECORD HAS BEEN PROCESSED	02	04098
011353	002002	A	4130		JAPM	RECORD	YES	02	04099
011354	011234	R							
011355	027000	I	4131		LDB*	PT1	GET CURRENT WORD	02	04100
011356	014141	A	4132		LDA	HLFWI	DETERMINE WHICH HALF OF THE	02	04101
011357	044140	A	4133		INR	HLFWI	WORD TO EXTRACT	02	04102
011360	157000	I	4134		ANA	BIDT		02	04103
011361	005014	A	4135		TAX			02	04104
011362	001010	A	4136		JAZ	GBT1		02	04105
011363	011365	R							
011364	044134	A	4137		INR	PT1	STEP BUFFER POINTER	02	04106
011365	006015	A	4138	GBT1	LDAA	SHF8,1	LOGICAL RIGHT 8 OR 0	02	04107
011366	000173	R							
011367	054003	A	4139		STA	GBT2		02	04108
011370	005021	A	4140		TBA			02	04109
011371	006155	A	4141		ANAE	FSBTS,1	EXTRACT 1ST OR LAST 8 BITS	02	04110
011372	000175	R							
011373	004340	A	4142	GBT2	LSRA	0	8/0	02	04111
011374	037000	I	4143		LDX	TMP2	RESET INDEX	02	04112
011375	001000	A	4144		JMP*	GBT		02	04113
011376	111347	R							
			4145	* FILE DATA OF CALL INSTRUCTION A BYTE AT A TIME				02	04114
			4146	* FILEB				02	04115
			4147	* FILEB				02	04116
011377	000000	A	4148	FILEB	PZE			02	04117
011400	057000	I	4149		STA	TMP2		02	04118
011401	014120	A	4150		LDA	CBLC	COMPUTE CURRENT WORD LOC	02	04119
011402	004341	A	4151		LSRA	1	FROM CURRENT BYTE LOC	02	04120
011403	057000	I	4152		STA	TMP1		02	04121
011404	144112	A	4153		SUB	CBRE	IS PROGRAM TOO BIG	02	04122
011405	001004	A	4154		JAN	FIL1	NO	02	04123
011406	011412	R							
011407	011407	R	4155	PTB	EQU	*		02	04124
011407	010423	A	4156		LDA	FOUR	PROGRAM TOO BIG	02	04125
011410	001000	A	4157		JMP	\$ER3		02	04126
011411	002165	R							
011412	014107	A	4158	FIL1	LDA	CBLC		02	04127
011413	157000	I	4159		ANA	BIDT		02	04128
011414	024107	A	4160		LDB	SHF8		02	04129
011415	001010	A	4161		JAZ	FIL2		02	04130
011416	011420	R							
011417	027000	I	4162		LDB	SHF0		02	04131
011420	064002	A	4163	FIL2	STB	FIL4		02	04132
011421	017000	I	4164		LDA	BYT1		02	04133
011422	027000	I	4165		LDB	TMP2		02	04134
011423	005000	A	4166	FIL4	NOP			02	04135
011424	004250	A	4167		LRLA	8		02	04136
011425	157000	I	4168		ANA*	TMP1		02	04137
011426	005001	A	4169		MERGE	031		02	04138
011427	057000	I	4170		STA*	TMP1		02	04139
011430	044071	A	4171		INR	CBLC		02	04140
011431	001000	A	4172		JMP*	FILEB		02	04141
011432	111377	R							
			4173	* GET NEXT DIRECTIVE				02	04142
			4174	* GNDIR				02	04143
			4175	* GNDIR				02	04144
011433	002000	A	4176	GNDIR	JMPM	GBT	GET A BYTE FROM CRBF	02	04145
011434	011347	R							
011435	001010	A	4177		JAZ	XHLT	END DIRECTIVE WHEN A-REG. IS ZERO	02	04146



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011436 011503 R
011437 005014 A 4178 GND1 TAX
011440 147000 I 4179 SUB D10 CK FOR VALID DIRECTIVE
011441 001002 A 4180 JAP GARB
011442 011511 R
011443 127000 I 4181 ADD D10
011444 024056 A 4182 LDB M3
011445 147000 I 4183 SUB D5 DORG DIR?
011446 001004 A 4184 JAN GND3 NO
011447 011451 R
011450 027000 I 4185 LDB D3
011451 067000 I 4186 GND3 STB TMPXX
011452 006015 A 4187 LDAE ITMTBL+1 DETERMINE ADDR OF CORRECT DIRECTIVE
011453 000366 R
011454 057000 I 4188 STA TMP ROUTINE AND SAVE
011455 147000 I 4189 SUB ITMTBL+3 IS ADDRESS XDATA
011456 001010 A 4190 JAZ GND2 YES
011457 011465 R
011460 014041 A 4191 LDA CBLC DETERMINE IF LOC COUNTER IS TOO BIG
011461 004341 A 4192 LSRA 1
011462 144034 A 4193 SUB CORE
011463 001002 A 4194 JAP PTB YES
011464 011407 R
011465 002000 A 4195 GND2 JMPM GBYT GET A BYTE FROM CRBF
011466 011347 R
011467 001000 A 4196 JMP* TMP GO TO DIRECTIVE ROUTINE
011470 100130 R
4197 *
4198 * SAVE DATA ITEMS - TMP CONTAINS THE NUMBER OF BYTES TO BE SAVED
4199 *
011471 005014 A 4200 XDATA TAX PUT BYTE COUNT IN INDEX
011472 002000 R 4201 JMPM GBYT GET A BYTE
011473 011347 R
011474 002000 A 4202 JMPM FILEB FILE BYTE IN CURRENT BYTE LOC
011475 011377 R
011476 005344 A 4203 DXR DECREASE BYTE COUNT
011477 001040 A 4204 JXZ GNDIR GET NEXT DIRECTIVE
011500 011433 R
011501 001000 A 4205 JMP XDATA+1 GET NEXT BYTE OF DATA
011502 011472 R
4206 *
4207 * INITIALIZE FOR RUNTIME
4208 *
011503 017000 I 4209 XHLT LDA BIAG
011504 001010 A 4210 JAZ NDTX LOAD OK?
011505 011514 R
011506 057000 I 4211 STA INTP YES
011507 001000 A 4212 JMP INT GO TO RUNTIME INTERPRETER
011510 002415 R
011511 011511 R 4213 GARB EQU *
011512 010465 A 4214 LDA FIVE INVALID OBJECT RECORD
011513 001000 A 4215 JMP SER3
011514 011514 R 4216 NDTX EQU *
011515 010424 A 4217 LDA EIGHT PROGRAM NOT EXECUTABLE
011516 002165 R 4218 JMP SER3
011517 000000 A 4219 CORE DATA 0
011520 000000 R 4220 HLFWI DATA 0 HALF WORD INDICATOR
011521 000273 R 4221 PT1 DATA CRBF+60 BUFFER POINTER
011522 000000 A 4222 CBLC DATA 0 CURRENT BYTE LOCATION
011523 177775 A 4223 M3 DATA -3
011524 004450 A 4224 SHTB DATA 004450 LONG LOGICAL SHIFT LEFT 8
011525 000273 R 4225 LLCBF DATA CRBF+60 LAST BUFFER LOCATION +1
011526 177704 A 4226 M60 DATA -60
011527 000240 A 4227 K240 DATA 0240
011530 000001 A 4228 SEQN DATA 1 SEQUENCE COUNT
4229 EJEJ
4230 *****
4231 *
4232 * NOTE- LOADING OF OBJECT CODE STARTS AT LOCATION 012400. ANY
4233 * MODIFICATION TO THE RUNTIME/LOADER THAT CAUSES THIS
4234 * ADDRESS TO CHANGE REQUIRES THAT 'RTLC' IN THE COMPILER
4235 * BE CHANGED TO A NEW VALUE.
4236 *****
011531 027200 A 4237 LDADR DATA 013500*2 LOAD ADDRESS POINTER C
011531 011531 R 4238 LODPT EQU *-1
4239 *****
4240 *
4241 * RPG IV LOADER INITIALIZATION
4242 * (THE FOLLOWING CODE IS OVERLAID BY OBJECT TEXT)
4243 *
4244 *****
011532 011532 R 4245 RPGRT EQU *
011532 010317 A 4246 LDA V$LLUP GET LAST UNPROTECTED WORD
011533 006057 A 4247 STAE CORE MARK END OF CORE
011534 011517 R
011535 006057 A 4248 STAE WSTA MARK LIMITS OF WORK STACK
011536 000713 R
011537 057000 I 4249 STA W6
011540 157000 I 4250 ANA BIT1
011541 057000 I 4251 STA WBIT
011542 010054 A 4252 LDA V$LCNT

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Address	Op/Opnd	Line	Code	Label	Text	Page
011543	057000 I	4253	STA	LINE		02 04222
011544	057000 I	4254	STA	LCNT		02 04223
011545	006017 A	4255	LDAE	ADRA		02 04224
011546	000434 R					
011547	004201 A	4256	ASLA	1		02 04225
011550	005111 A	4257	IAR			02 04226
011551	006057 A	4258	STAE	ADRA	CREATE BYTE POINTERS	02 04227
011552	000434 R					
011553	005111 A	4259	IAR			02 04228
011554	006057 A	4260	STAE	ADRC		02 04229
011555	000436 R					
011556	006017 A	4261	LDAE	ATB2	FROM WORD POINTERS	02 04230
011557	000441 R					
011560	004201 A	4262	ASLA	1		02 04231
011561	006057 A	4263	STAE	ATB2		02 04232
011562	000441 R					
011563	006017 A	4264	LDAE	IXE1		02 04233
011564	000703 R					
011565	004201 A	4265	ASLA	1		02 04234
011566	006057 A	4266	STAE	IXE1		02 04235
011567	000703 R					
011570	010421 A	4267	LDA	B50		02 04236
011571	006030 A	4268	LDAI	V\$JCB		02 04237
011572	000412 A					
011573	035000 A	4269	LDX	0,1		02 04238
011574	015000 A	4270	LDA	0,1		02 04239
011575	006137 A	4271	ERAE	NA	IS OBJECT ON CATALOGUED FILE?	02 04240
011576	000165 R					
011577	001010 A	4272	JAZ	RPGL1	NO	02 04241
011600	011631 R					
011601	006020 A	4273	LDBI	FCB1+7		02 04242
011602	000011 R					
011603	015000 A	4274	LDA	0,1	YES, MOVE FILE NAME	02 04243
011604	056000 A	4275	STA	0,2	TO FCB	02 04244
011605	015001 A	4276	LDA	1,1		02 04245
011606	056001 A	4277	STA	1,2		02 04246
011607	015002 A	4278	LDA	2,1		02 04247
011610	056002 A	4279	STA	2,2		02 04248
011611	006057 A	4280	STAE	BIRMD	INDICATE OBJECT FILE ON RMD	02 04249
011612	011104 R					
011613	014040 A	4281	LDA	RPGL2+3		02 04250
011614	150462 A	4282	ANA	LHW		02 04251
011615	006110 A	4283	DRAI	105	PUT LUN OF BACKGROUND LIBRARY	02 04252
011616	000151 A					
011617	054034 A	4284	STA	RPGL2+3	IN OPEN REQUEST BLOCK	02 04253
011620	006017 A	4285	LDAE	REC2+3		02 04254
011621	011274 R					
011622	150462 A	4286	ANA	LHW	AND READ REQUEST BLOCK	02 04255
011623	006110 A	4287	DRAI	105		02 04256
011624	000151 A					
011625	006057 A	4288	STAE	REC2+3		02 04257
011626	011274 R					
011627	001000 A	4289	JMP	RPGL2	GO OPEN OBJECT FILE	02 04258
011630	011651 R					
		4290 *				02 04259
		4291 RPGL1	EQU	*		02 04260
011631	006010 A	4292	LDAI	BI		02 04261
011632	000006 A					
011633	002000 A	4293	CALL	DEVTST	CHECK IF BI IS A RMD	02 04262
011634	010203 R					
011635	005311 A	4294	DAR			02 04263
011636	001010 A	4295	JAZ	RPGL2	YES	02 04264
011637	011651 R					
011640	006010 A	4296	LDAI	60		02 04265
011641	000074 A					
011642	006057 A	4297	STAE	FCB1	NO, MODIFY RECORD LENGTH	02 04266
011643	000002 R					
011644	005001 A	4298	TZA			02 04267
011645	006057 A	4299	STAE	BIRMD		02 04268
011646	011104 R					
011647	001000 A	4300	JMP	RPGL2A		C 02 04269
011650	011660 R					
		4301 RPGL2	OPEN	FCB1,BI,0,0	OPEN/REWIND OBJECT FILE	02 04270
011651	006505 A					
011652	000404 A					
011653	100000 A					
011654	003006 A					
011655	000002 R					
011656	000000 A					
011657	000000 A					
		4302 RPGL2A	EQU	*		C 02 04271
011660	006010 A	4303	LDAI	13		C 02 04272
011661	000013 A					
011662	002000 A	4304	CALL	DEVTST	CHECK IF 13 IS A RMD	C 02 04273
011663	010203 R					
011664	005311 A	4305	DAR			C 02 04274
011665	001016 A	4306	JANZ	RPGL4	JUMP IF NDT	C 02 04275
011666	011714 R					
		4307 RPGL3	OPEN	FCB13,13,0,0	OPEN/REWIND PI FILE	C 02 04276
011667	006505 A					
011670	000404 A					
011671	100000 A					
011672	003015 A					



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011673 007173 R
011674 000000 A
011675 000000 A
011676 006010 A 4308 LDAI RPGL3 C 02 04277
011677 011667 R
011700 002000 A 4309 CALL STAT CHECK STATUS C 02 04278
011701 002063 R
011702 004460 A 4310 LLRL 16 C 02 04279
011703 006130 A 4311 ERAI 020 C 02 04280
011704 000020 A
011705 001016 A 4312 JANZ RPGL4 C 02 04281
011706 011714 R
011707 006130 A 4313 ERAI 020 C 02 04282
011710 000020 A
011711 004460 A 4314 LLRL 16 C 02 04283
011712 001000 A 4315 JMP $ER C 02 04284
011713 002133 R
4316 RPGL4 DPEN FC814,14,0,0 AND PD C 02 04285

011714 006505 A
011715 000404 A
011716 100000 A
011717 003016 A
011720 007663 R
011721 000000 A
011722 000000 A
011723 006010 A 4317 LDAI RPGL4 C 02 04286
011724 011714 R
011725 002000 A 4318 CALL STAT C 02 04287
011726 002063 R
011727 004460 A 4319 LLRL 16 C 02 04288
011730 006130 A 4320 ERAI 020 C 02 04289
011731 000020 A
011732 001016 A 4321 JANZ RPGL5 C 02 04290
011733 011741 R
011734 006130 A 4322 ERAI 020 C 02 04291
011735 000020 A
011736 004460 A 4323 LLRL 16 C 02 04292
011737 001000 A 4324 JMP $ER C 02 04293
011740 002133 R
4325 RPGL5 DPEN FC815,15,0,0 AND LD C 02 04294

011741 006505 A
011742 000404 A
011743 100000 A
011744 003017 A
011745 007731 R
011746 000000 A
011747 000000 A
011750 006010 A 4326 LDAI RPGL5 C 02 04295
011751 011741 R
011752 002000 A 4327 CALL STAT C 02 04296
011753 002063 R
011754 004460 A 4328 LLRL 16 C 02 04297
011755 006130 A 4329 ERAI 020 C 02 04298
011756 000020 A
011757 001016 A 4330 JANZ RPGL6 C 02 04299
011760 011766 R
011761 006130 A 4331 ERAI 020 C 02 04300
011762 000020 A
011763 004460 A 4332 LLRL 16 C 02 04301
011764 001000 A 4333 JMP $ER C 02 04302
011765 002133 R
011766 006010 A 4334 RPGL6 LDAI 15 C 02 04303
011767 000017 A
011770 002000 A 4335 CALL DEVTST CHECK IF DEVICE 15 IS AN LP C 02 04304
011771 010203 R
011772 140423 A 4336 SUB FOUR C 02 04305
011773 001010 A 4337 JAZ RPGLD C 02 04306
011774 011065 R
011775 005001 A 4338 TZA C 02 04307
011776 006057 A 4339 STAE L0LP FLAG = 0 IF NOT LP C 02 04308
011777 010032 R
012000 001000 A 4340 JMP RPGLD GO LOAD OBJECT TEXT C 02 04309
012001 011065 R
4341 * C 02 04310
012002 4342 BSS U-#+013777 ADJUST TO 6K C 02 04311
013777 012345 A 4343 ENDMRK DATA 012345 C 02 04312
011532 R 4344 END RPGRT C 02 04313

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ENTRY NAMES
011532 R RPGRT
EXTERNAL NAMES
000000 E GDFCB 000000 E V$EXEC 000000 E V$IDC 000000 E V$IDST
SYMBOLS
007644 R $CPG 002133 R $ER 002146 R $ER1 002157 R $ER2
002165 R $ERO 007703 R $PRO 007712 R $PR1 007154 R $READ
004510 R A002 004536 R A010 004542 R A011 003275 R AC00
003322 R AC01 003331 R AC02 003274 R ACRY 004477 R ADD
004501 R ADDS 004514 R ADIT 000434 R ADRA 000435 R ADRB
000436 R ADRC 000437 R ADRD 006271 R ADTD 000163 R ALFG
004471 R A001 004451 R ADNL 004444 R ADNN 011106 R ADRG
011113 R ADRD 010427 R APK1 010430 R APK2 010431 R APK3
004553 R A001 004577 R A005 002253 R ARGERR 002257 R ARGU
002271 R ARGU1 002302 R ARGU2 002265 R ARGUX 005717 R ASC0
010660 R ASHD 010671 R ASHT 005723 R ASTR 000441 R ATB2

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005262	R	ATMB	006373	R	AUD	006423	R	AUD1	006417	R	AUDA
006441	R	AUDB	000674	R	AUDI	006420	R	AUDN	000673	R	AUDP
006416	R	AUDS	000400	R	B	000006	A	BI	000706	R	BIAA
000717	R	BIAC	000665	R	BIAD	000705	R	BIAF	000707	R	BIAG
000720	R	BIAI	000705	R	BIAR	000705	R	BIAT	003041	R	BIDI
003045	R	BID2	003036	R	BIDE	000737	R	BIDT	003025	R	BINI
003020	R	BINX	011105	R	BIRF	011104	R	BIRMD	000626	R	BITO
000627	R	BIT1	000630	R	BIT2	000622	R	BIT3	000646	R	BLNK
000472	A	BM17	000463	A	BM377	000467	A	BM7	005774	R	BRF
005774	R	BRFR	005777	R	BRT	006000	R	BRT1	005777	R	BRTR
006010	R	BRU	006023	R	BRU2	006020	R	BRU3	006017	R	BRU4
006010	R	BRUR	000421	A	BS0	000433	A	BS10	000435	A	BS12
000425	A	BS4	000426	A	BS5	000431	A	BS8	010101	R	BUFEND
010467	R	BUFP	000506	R	BWRD	000175	R	BYT0	000176	R	BYT1
000734	R	BYTF	000735	R	BYTT	000401	R	C	003566	R	C000
003577	R	C001	003602	R	C002	003611	R	C003	003614	R	C004
006043	R	CALL	000140	R	CARY	011522	R	CBLC	006560	R	CBR1
000662	R	CERA	000663	R	CBRC	006543	R	CBRK	000655	R	CCNT
000657	R	CEBF	011321	R	CKS1	011330	R	CKS2	001256	R	CLOSE
003457	R	CM01	003472	R	CM02	003502	R	CM03	003467	R	CMID
005721	R	CMMA	000721	R	CMMD	006352	R	CMP	006360	R	CMP1
000675	R	CMP1	003451	R	CMPN	003563	R	CMPR	011074	R	CNLOC
000136	R	CNT1	000137	R	CNT2	010771	R	CQLATE	011002	R	COLT
011517	R	CDRE	007624	R	CPAS	000177	R	CRBF	000442	R	CTAB
004644	R	D001	004646	R	D005	004664	R	D010	004705	R	D015
004712	R	D030	004735	R	D050	004744	R	D055	010533	R	D132
001674	R	DATE	001715	R	DATE1	001730	R	DATE2	001745	R	DATESW
001744	R	DATEX	000654	R	DCNT	003062	R	DEB1	003057	R	DEBI
005720	R	DECI	006732	R	DEL1	006760	R	DEL2	006714	R	DETO
010302	R	DEVST0	010306	R	DEVST1	010242	R	DEVTS1	010307	R	DEVTS2
010310	R	DEVTS3	010311	R	DEVTS4	010203	R	DEVTS5	004634	R	DIV
004636	R	DIVL	004763	R	DMB3	000154	R	DMBF	000152	R	DMPT
000505	R	DMSK	005722	R	DOLL	000702	R	DPOS	003700	R	DR01
003701	R	DR02	003666	R	DRDM	005260	R	EDMF	000424	A	EIGHT
013777	R	ENDMRK	006702	R	ENT1	006707	R	ENT2	006633	R	ENTO
006710	R	ENTX	007010	R	ENTY	002174	R	EUR	002201	R	EUR1
002077	R	EX1	002105	R	EX2	002110	R	EX3	002100	R	EX4
002114	R	EXCP	002024	R	EXIT	011223	R	EXR1	011124	R	EXREF
002042	R	EXX1	000175	R	F8BTS	000002	R	FCB1	007173	R	FCB13
007663	R	FCB14	007731	R	FCB15	000015	R	FCB2	000030	R	FCB3
000043	R	FCB4	000056	R	FCB5	000071	R	FCB6	000104	R	FCB7
000126	R	FCBPT	000117	R	FCBPTT	002315	R	FETN	002343	R	FETR
011412	R	FIL1	011420	R	FIL2	011423	R	FIL4	011377	R	FILEB
000465	A	FIVE	000423	A	FOUR	000145	R	FPTR	000430	R	FRMA
000413	R	FROM	002354	R	FTMP	000664	R	FTSW	003753	R	G003
003764	R	G005	003774	R	G007	004004	R	G010	004010	R	G011
004012	R	G012	004050	R	G015	004054	R	G020	004062	R	G025
011511	R	GARB	002721	R	GBAI	011347	R	GBYT	011365	R	GBYT1
011373	R	GBYT2	002730	R	GETB	010102	R	GETR	002777	R	GETW
002607	R	GFD1	002655	R	GFD3	002610	R	GFD4	002652	R	GFD5
002603	R	GFD6	002577	R	GFD7	002632	R	GFD9	004000	R	GI01
004001	R	GI02	004002	R	GI03	004003	R	GI04	003737	R	GLE
003720	R	GLEN	003751	R	GLES	003746	R	GLEX	003725	R	GLNS
003176	R	GNAI	011437	R	GND1	011465	R	GND2	011451	R	GND3
011433	R	GNDIR	000000	E	GDFCB	007023	R	GTAB	007035	R	GTWL
006615	R	GTX	006627	R	GTX1	000677	R	HIND	011520	R	HLFWI
000377	R	HO11	010575	R	HOA1	010603	R	HOA2	010607	R	HOA3
010610	R	HOA4	010613	R	HOA5	010615	R	HOA6	010620	R	HOA7
010617	R	HOA8	010615	R	HOA9	010534	R	HOAC	000035	A	I1
000177	A	I99	000001	A	IC1	000025	A	IE	000514	R	IF
000024	A	IG	000026	A	IL	002410	R	ILC	003011	R	ILCB
000031	A	IM	003710	R	IN01	003713	R	IN02	003136	R	INCR
000636	R	IND	003702	R	INDM	000720	R	INDP	010450	R	INP1
010457	R	INP2	000433	R	INPA	010444	R	INPC	002415	R	INT
002435	R	INT1	002455	R	INT2	002477	R	INT3	002436	R	INT4
002453	R	INT5	000634	R	INTA	000635	R	INTB	000722	R	INTC
000723	R	INTH	000724	R	INTG	000711	R	INTP	002414	R	INTS
003123	R	INUM	002407	R	IDV	000027	A	IP	000513	R	IPRE
000366	R	ITMTBL	000457	R	IX1	000460	R	IX2	000702	R	IXE1
000704	R	IXE2	002660	R	IXER	000030	A	IZ	011527	R	K240
004126	R	L005	004146	R	L010	004162	R	L014	004164	R	L015
004200	R	L021	004212	R	L025	004217	R	L026	004232	R	L030
004253	R	L035	004255	R	L036	004250	R	L039	004260	R	L040
004304	R	L044	004311	R	L045	004315	R	L055	004330	R	L060
004335	R	L062	004347	R	L063	004354	R	L065	004365	R	L070
000407	R	LCBF	000414	R	LCBT	000730	R	LCBX	000716	R	LCNT
004437	R	LD01	011531	R	LDADR	004413	R	LDI	004417	R	LDIC
004066	R	LDN	004072	R	LDNS	006110	R	LDXL	000733	R	LFRI
000732	R	LFRD	000462	A	LHW	000715	R	LINE	011525	R	LLCBF
000700	R	LNGT	003157	R	LNUM	000005	A	LD	011531	R	LDDPT
010032	R	L0LP	007015	R	L001	007003	R	L002	006767	R	LOOK
011103	R	LDRMD	000001	R	LUN	000432	R	LXA	000403	R	M
004770	R	M001	005007	R	M005	005052	R	M010	005122	R	M015
005137	R	M017	005144	R	M020	005151	R	M025	005152	R	M026
005153	R	M030	005155	R	M031	005167	R	M032	005172	R	M035
005177	R	M040	005224	R	M050	005236	R	M055	005252	R	M060
011523	R	M3	011526	R	M60	000150	R	MCPT	010033	R	MOBF
010042	R	MOBF1	010062	R	MOBF2	010056	R	MOBF3	010077	R	MOBFT
010402	R	MOPB	010416	R	MOPB0	010420	R	MOPB1	010424	R	MOPB2
010443	R	MOPB3	000623	R	MOVZ	000624	R	MOVZ	000146	R	MPPT
002411	R	MSI1	002412	R	MSI2	000625	R	MSK0	000631	R	MSKA
000632	R	MSKB	000404	R	MSK0	000405	R	MSK0	010531	R	MSKE
002413	R	MSKL	000406	R	MSK2	000405	R	MSOP	004764	R	MUL



004766	R	MUL3	006162	R	MV	006170	R	MV1	006176	R	MV2
006201	R	MV3	006244	R	MV4	006247	R	MV5	006271	R	MVM1
006317	R	MVM2	006335	R	MVM4	006342	R	MVM5	006310	R	MVM6
006257	R	MVMT	006135	R	MVTD	006214	R	MZT1	006231	R	MZT2
000165	R	NA	003527	R	NC05	003543	R	NC10	003550	R	NC15
003560	R	NC20	003512	R	NCPR	000455	R	NDEC	000502	R	NIN1
000651	R	NIND	000470	A	NINE	000505	R	NINT	000511	R	NLE1
000512	R	NLEN	000451	R	NLS1	000452	R	NLST	005716	R	NNCB
011514	R	NOTX	000622	R	NSGN	000450	R	NUMB	000454	R	O10
000536	R	O100	000537	R	O106	000540	R	O107	000455	R	O11
000541	R	O110	000456	R	O12	000606	R	O120	000457	R	O13
000607	R	O137	000460	R	O14	000610	R	O147	000461	R	O15
000502	R	O16	000505	R	O17	000612	R	O177	000446	R	O2
000506	R	O20	000617	R	O200	005263	R	O22	000510	R	O26
000511	R	O27	000447	R	O3	000512	R	O30	000513	R	O32
000514	R	O33	000450	R	O4	000515	R	O40	000560	R	O400
000516	R	O47	000451	R	O5	000517	R	O50	000452	R	O6
000520	R	O60	006256	R	O67	000453	R	O7	000527	R	O77
003077	R	OA	010400	R	OB2BLK	010401	R	OB2ZE	010377	R	OBZ
010314	R	OBTA	010330	R	OBTC	010350	R	OBTD	010357	R	OBTE
010365	R	OBTF	010362	R	OBTG	010370	R	OBTH	010373	R	OBTI
010353	R	OBTZ	010376	R	OBZERO	000561	R	OM2	000421	A	ONE
001102	R	OPEN	000427	R	ORAI	002405	R	OTMP	010471	R	PAK
010522	R	PAK1	010522	R	PAK2	002747	R	PBAD	002740	R	PBAI
000710	R	PEND	006036	R	PER	005731	R	PERI	006036	R	PERR
006516	R	PF1	006532	R	PFAU	006513	R	PFC1	006505	R	PFCO
006445	R	PFD	006462	R	PFD1	006503	R	PFD2	000135	R	PFDC
006521	R	PFEQ	006524	R	PFGR	006525	R	PFLE	007525	R	PNCH
003656	R	PO01	003661	R	PO02	003623	R	POSI	003647	R	POSD
005754	R	POST	011206	R	PRIN	007675	R	PRNT	000727	R	PSTI
011521	R	PT1	011407	R	PTB	002762	R	PUTB	002677	R	PUTL
000402	R	R	000176	R	RBUF	001337	R	READ	011260	R	REC1
011271	R	REC2	011306	R	REC3	011316	R	REC4	000141	R	RECF
000661	R	RECG	011234	R	RECORD	000142	R	RECP	000660	R	RECS
007205	R	REDO	007213	R	RED1	007477	R	RED9	000143	R	REND
000656	R	REDF	005735	R	RET	005750	R	RET2	000726	R	RETI
001555	R	REW1	001562	R	REW2	001532	R	REWIND	000463	A	RHW
007400	R	RMD1	007404	R	RMD2	007415	R	RMD4	007472	R	RMD5
007473	R	RMD6	007357	R	RMD9	000633	R	RMSK	007413	R	RNDT
011631	R	RPGL1	011651	R	RPGL2	011660	R	RPGL2A	011667	R	RPGL3
011714	R	RPGL4	011741	R	RPGL5	011766	R	RPGL6	011065	R	RPGLD
011532	R	RPGRT	002212	R	RPM1	002221	R	RPM2	002230	R	RPM3
007414	R	RSCI	007257	R	RST1	007261	R	RST2	007221	R	RST3
007226	R	RST4	007242	R	RST5	000404	R	RTAB	003211	R	RTDF
004614	R	S001	004616	R	S002	004625	R	S003	000425	R	SAL0
000426	R	SAL8	000424	R	SAR0	006077	R	SAVX	007022	R	SBL2
000422	R	SBR1	000423	R	SBR2	003437	R	SCPW	003665	R	SDLO
003240	R	SDR0	003350	R	SE01	003353	R	SE02	011335	R	SEQ
011530	R	SEQN	003334	R	SETS	000467	A	SEVEN	006610	R	SF
003423	R	SF01	000725	R	SFFG	006602	R	SFI	002513	R	SFR1
002502	R	SFRM	003414	R	SFTL	003635	R	SFTR	003643	R	SFTR1
000174	R	SHF0	000173	R	SHF8	011524	R	SHT8	000626	R	SIGN
006131	R	SIM1	006122	R	SIMX	003214	R	SIN	000466	A	SIX
005763	R	SK4F	007603	R	SKIO	007610	R	SKI2	007617	R	SKI3
007575	R	SKIP	001601	R	SKIPR	001624	R	SKIPR1	001641	R	SKIPR2
001644	R	SKIPR3	001670	R	SKIPR4	002547	R	SLCB	007754	R	SLEW
007763	R	SLEW1	010130	R	SOV	010002	R	SPACE	010006	R	SPC1
007743	R	SPCE	003242	R	SQ01	003253	R	SQ03	003267	R	SQ05
004412	R	ST01	001031	R	STAB	002063	R	STAT	002065	R	STAT1
002355	R	STBCD	002371	R	STF	004376	R	STI	002523	R	STO
002531	R	STDF	005724	R	STDP	004603	R	SUBN	004605	R	SUBP
003241	R	SUBQ	000421	R	SVTD	003374	R	T001	011150	R	TAB
011174	R	TAB1	011162	R	TAB2	011170	R	TAB3	011153	R	TABA
000144	R	TABP	011145	R	TABSCH	011050	R	TADR	000743	R	TBL1
000754	R	TBL2	010470	R	TBYT	005261	R	TDMF	011063	R	TEM1
000130	R	TEMP	011062	R	TFER	011042	R	TFETCH	001746	R	TIME
007146	R	TLC1	007050	R	TLU	007076	R	TLU1	007120	R	TLUS
007126	R	TLU6	007131	R	TLUC	000736	R	TLUK	000130	R	TMP
000131	R	TMP1	000132	R	TMP2	000131	R	TMPA	000132	R	TMPB
000133	R	TMPC	000712	R	TMPR	000134	R	TMPX	000164	R	TMPXX
000135	R	TMPY	000420	R	TD	000431	R	TDA	000626	R	TRUE
000422	A	TWD	003357	R	TWZE	010137	R	TYPE	010164	R	TYPE1
000000	R	U	002237	R	UCHK	005600	R	UN1	005604	R	UN2
005525	R	UN31	005522	R	UNBL	005651	R	UNCD	005631	R	UNDE
005371	R	UNE1	000652	R	UNEC	003357	R	UNEL	005415	R	UNEX
005667	R	UNF1	005707	R	UNF2	005677	R	UNF3	005671	R	UNF4
005700	R	UNF5	006051	R	UNFR	005654	R	UNFS	005400	R	UNIF
005267	R	UNLD	002706	R	UNLI	005264	R	UNLN	005313	R	UNLS
005355	R	UNMD	005506	R	UNMS	005446	R	UNNC	005645	R	UNND
005422	R	UNNF	005572	R	UNNM	000653	R	UNNO	005532	R	UNOP
005612	R	UNP1	005605	R	UNPB	005640	R	UNPC	000647	R	UNSG
005554	R	UNST	006064	R	UNTD	000070	A	V\$DATE	000355	A	V\$DSTB
000000	E	V\$EXEC	000000	E	V\$IOC	000000	E	V\$IOST	000412	A	V\$JCB
000054	A	V\$LCNT	000317	A	V\$LLUP	000400	A	V\$LUT1	000402	A	V\$LUT3
000344	A	V\$TMN	000714	R	W0	003101	R	W001	003116	R	W002
000172	R	WBIT	001463	R	WEDF	001506	R	WEDF1	001513	R	WEDF2
003100	R	WMDV	000404	R	WMSK	000701	R	WQTR	000127	R	WRFLG
007534	R	WRIO	007536	R	WRI3	007561	R	WRI4	007566	R	WRID
007512	R	WRII	007507	R	WRIT	001351	R	WRIT1	001372	R	WRIT2
001417	R	WRIT3	001345	R	WRITE	000713	R	WSTA	003400	R	XC01
003375	R	XCHW	001320	R	XCLOSE	011471	R	XDATA	011503	R	XHLT
006055	R	XLFR	006070	R	XLTD	001237	R	XOPEN	011121	R	XORGR
000376	R	XSTAB	001444	R	XWRIT	000171	R	ZERO	000650	R	ZIND



003160 R ZWRK  
0 ERRORS ASSEMBLY COMPLETE

892	\$ER1	887	890							
898	\$ER2	906	932							
902	\$ER3	1480								
0	\$READ	251								
1528	AC00	1548								
1544	AC01	1550								
1549	AC02	1541								
1527	ACRY	1529								
0	ADD	218	219							
0	ADDS	167	168							
139	ADRE	630								
0	ADTD	245								
94	ALFG	1876	1954	1961						
2077	AD01	2072	2074							
2061	ADNL	178	179	180	181					
2054	ADNN	201	202	203	204					
0	ADRG	109	109							
930	ARGERR	478	481	513	523	556	879	925	929	936
934	ARGU	468	474	484	496	504	509	519	546	552
		593	603	607	612	650	680	710	721	724
		754	792	873	937					
944	ARGU1	950								
951	ARGU2	946								
941	ARGUX	467	545	592	649	679	709	753	791	960
113	B	1702	1709	1891						
342	BIAF	353	354	1158						
355	BIAI	369								
1365	BID1	1373								
1368	BID2	1370								
1362	BIDE	802	813	1365						
370	BIDT	1368	1372							
1351	BIN1	1354	1356							
1346	BINX	1213	1352							
282	BIT0	295	296	1086	1347	1492				
304	BLNK	1227								
46	BM17	809	820							
27	BM377	861								
0	BRF	238								
0	BRFR	239								
0	ERT	236								
0	BRTR	237								
0	BRU	234								
0	BRUR	235								
28	BS0	2069								
32	BS10	729								
33	BS12	618	727							
29	BS4	858								
30	BS5	863								
31	BS8	477	588							
297	BWRD	1350								
284	BYT0	1311								
283	BYT1	1165	1279							
366	BYTF	1706								
367	BYTT	1713								
1698	C000	1715								
1704	C001	1699								
1706	C002	1703								
1711	C003	1708								
1713	C004	1710								
0	CALL	242								
84	CARY	1508	1512	1528	1539	1545				
542	CLOSE	441	543							
1637	CM01	1637								
1646	CM02	1643								
1652	CM03	1650								
1644	CMID	1651								
356	CMMD	1080								
0	CMP	1714								
331	CMPI	1601	1609	1613	1633	1644	1676	1679	1690	1697
		1804								
1631	CMPN	1645	1654	1673						
1695	CMPR	1701	1716	1859						
82	CNT1	1827	1847	1857	1870	1910	1930	1953	1975	
80	CNT2	1530	1533	1875	1903	1913	1991	1993		
0	CPAS	141								
107	CREP	52	316							
147	CTAB	356								
750	DATE	443	751							
763	DATE1	770	778							
771	DATE2	766								
781	DATESW	762	765	767	772					
780	DATEX	760	763	775	777					
1382	DEB1	1390								
1379	DEBI	974	982	1392						
0	DETD	247								
0	DEVTST	626	832							
0	DIV	221	222							
0	DIVL	170	171							
93	DNEF	1566	1663	1669	1674	1681	1685	1688		



E.2 VORTEX LISTING

RPGRT

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LISTING PAGE ( 901 )

92	DMPT	1535	1536	1546	1760	1764	1766	1772	1776	1778
		1780	1873	1944	1945	1999				
292	DMSK	1737	1887							
336	DFDS	1888	1916	1920						
1766	DR01	1762								
1767	DR02	1763								
1759	DRDM	1765	1948							
0	EJEC	17								
0	ENTD	246								
0	ENTR	16								
908	EWR	899	912							
858	EX1	855								
863	EX2	855								
865	EX3	855								
859	EX4	864	866							
871	EXCP	534	569	638	668	698	742	880		
830	EXIT	427	900							
0	EXREF	109	109							
836	EXX1	834								
106	F8BTS	283	284	973						
52	FCB1	67								
0	FCB13	835								
0	FCB14	837								
0	FCB15	838	898	910	911					
54	FCB2	68								
56	FCB3	69								
58	FCB4	70								
60	FCB5	71								
62	FCB6	72								
64	FCB7	73								
74	FCBPT	473	479	486	502	507	516	529	551	557
		598	605	610	614	629	655	685	715	
66	FCBPTT	472	550	597	654	684	714			
962	FETH	469	475	505	510	520	547	553	594	608
		613	651	681	711	722	725	984		
990	FETR	485	497	604	755	793	970	978	979	983
		996								
36	FOUR	948								
89	FPTR	1159	1189							
134	FRMA	487	498	1115	1704					
122	FROM	1140	1142	1146	1148					
997	FTMP	488	499	757	795	994				
1804	G003	1851								
1810	G005	1855								
1816	G007	1825								
1823	G010	1813								
1826	G011	1797								
1828	G012	1858								
1850	G015	1839								
1852	G020	1840								
1856	G025	1786								
1266	GBAI	501	1022	1025	1068	1074	1095	1269	1705	1712
		1890	1977							
1276	GETB	1267	1281							
0	GETR	874	969	991						
1322	GETW	1278	1310	1329						
1189	GFD1	1180								
1221	GFD3	1182	1188							
1190	GFD4	1192								
1218	GFD5	1206								
1186	GFD6	1184								
1183	GFD7	1176								
1204	GFD9	1201								
1819	GI01	1811								
1820	GI02	1805								
1821	GI03	1806								
1822	GI04	1807								
1796	GLE	223	224	225						
1785	GLEN	226	227	228						
1803	GLES	1795	1799	1849						
1800	GLEX	172	173	174						
1788	GLNS	175	176	177						
1471	GNAI	1473	1477							
0	GDFCB	15								
0	GTX	249								
1834	ILCB	1268	1288	1339						
1776	IN01	1781								
1778	IN02	1775								
1429	INCR	1427	1444	1472	1517					
301	IND	355	1088	1089						
1771	INDM	1534	1777							
369	INDP	1486	2040							
137	INPA	1065								
1065	INT	166	535	570	639	669	699	743	779	823
		1860	2025	2028	2080					
1677	INT1	1072								
1092	INT2	1070								
1107	INT3	1100								
1078	INT4	1108								
1091	INT5	1084								
299	INTA	1073	1076	1094	1096	1101	1105			
300	INTE	1103	1106							
357	INTC	1078	1792	1794	1800	1802	1809	2017	2022	2055











E.2 VORTEX LISTING

RPGR

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LISTING PAGE ( 904)

		1386	1389	1402	1405	1483	1493	1507	1586	1591
788	TIME	1636	1652	1655	1723	1832	1836	1837		
77	TMPA	445	789							
		96	1211	1215	1308	1312	1510	1521	1544	1731
78	TMPB	1735	1751	1899	1958	1963	1970			
80	TMPX	97	803	808	814	819				
98	TMPXX	1210	1216	1435	1474	1505	1513	1883	1907	
		98	511	514	521	524	554	558	723	735
		737	872	876	942	945				
81	TMPY	1639	1642	1648	1649	1872	1918	1934	1987	
124	TD	1139	1141	1145	1147					
135	TOA	756	794	1132	1309	1315	1711	1889		
295	TRUE	1232	1482	1819	1852	1937	2004	2048		
35	TWO	512	522	555	627					
1571	TWZE	1581	1791	1933						
0	TYPE	258								
50	U	470	548	595	601	620	625	652	658	663
		682	688	693	712	718	730			
923	UCHK	471	549	596	653	683	713	928		
0	UNFR	229								
0	UNLD	265								
1251	UNLI	1260								
0	UNLN	266								
0	UNTD	230								
43	V\$DATE	764								
44	V\$TMN	797								
349	WO	1240	1242	1243	1252	1258	1423	1452	1454	1555
		1572	1582	1584	1620	1634	1664	1680	1788	1790
		1814	1816	1817	1823	1846	1848	1866	1881	1905
		1923	1928	1932	1990	1997	2007	2020	2026	2033
		2035	2049	2066	2067	2073	2078	2079		
1401	W001	1410	1414							
1411	W002	1406								
103	WRIT	1434								
646	WEOF	433	647							
659	WEOF1	657								
665	WEOF2	660	661	664	666					
1400	WMOV	1401	2012							
291	WMSK	1574	1622	1625	1929					
335	WQTR	1440	1537	1733	1744	1869	1946			
75	WRFLG	579	589	619	623					
0	WRIT	252								
591	WRIT1	581								
602	WRIT2	600								
617	WRIT3	615								
587	WRITE	431	590							
1586	XCO1	1595								
1583	XCHW	1593	1844							
566	XCLOSE	562	563	567						
0	XDATA	109								
0	XLFR	184								
0	XLTD	185								
531	XOPEN	528	530	532						
0	XORGR	109								
635	XWRIT	621	622	624	628	636				
102	ZERD	806	810	817	821					
1451	ZWRK	1453	1868							