

0001
0002
0003
0004
0005

* NAM MMEXEC DECK-ID M01 MSOS 5.0
* EXECUTIVE FOR MASS MEMORY RESIDENT I/O DRIVERS
* MASS STORAGE OPERATING SYSTEM VERSION 5.0
* SMALL SYSTEMS DIVISION, LA JOLLA, CALIFORNIA
* COPYRIGHT CONTROL DATA CORPORATION 1976

SUMMARY-132*****

M0100002
M0100003
M0100004
M0100005

0007
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0010
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0016
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0018
0019
0020
0021

* THIS ROUTINE IS THE CORE RESIDENT INTERFACE
* FOR ALL I/O DRIVERS WHICH RESIDENT ON
* MASS MEMORY.
* THIS PROGRAM MANAGES 1 OR 2 INTERNAL BUFFERS.
* THE I/O DRIVERS ARE READ INTO THE BUFFER AREA
* WHEN THEY HAVE I/O TO PERFORM, OR QUEUES THE
* DRIVER INTERNALLY WHEN NO BUFFER IS AVAILABLE.
* THE ROUTINE MAY BE ENTERED AT ANY PRIORITY LEVEL.
* THE LEVEL IS ALWAYS CORRECTED, IF REQUIRED,
* TO THE OPERATING LEVEL OF THE PROGRAM.

M0100007
M0100008
M0100009
M0100010
M0100011
M0100012
M0100013
M0100014
M0100015
M0100016
M0100017
M0100018
M0100019
M0100020
M0100021

0023
0024
0025

*
* LOCORE EQU
*

M0100023
M0100024
M0100025

0027
0028
0029
0030
0031
0032

0003
0023
00B5
00FA
00EF
00F4

EQU LPMSK(3)
EQU ONEBIT(\$23)
EQU AFNR(\$B5)
EQU ADISP(\$EA)
EQU PRILVL(\$EF)
EQU AMONI(\$F4)

M0100027
M0100028
M0100029
M0100030
M0100031
M0100032

0035
0036
0037
0038
0039
0040

*
* ENTRY POINTS
*
ENT MASDRV, MASEXT, MASCON, MASERR
ENT MAS300
ENT RELBYQ

M0100035
M0100036
M0100037
M0100038
M0100039
M0100040

0042
0043
0044
0045
0046
0047

*
* EXTERNALS
*
EXT ALTDEV, LOG1A
EXT LOG
EXT BUFF, BUFFE BUFFERS FOR DRIVERS

M0100042
M0100043
M0100044
M0100045
M0100046
M0100047

0049
0050
0051
0052
0053
0054
0055
0056
0057

0005
0007
0008
0009
000D
000E

*
*
*

PHYSICAL DEVICE TABLE EQU

EQU ELU(5)
EQU EWES(7)
EQU EREQST(8)
EQU ESTAT1(9)
EQU MASLGN(13)
EQU MASSEC(14)

M0100049
M0100050
M0100051
M0100052
M0100053
M0100054
M0100055
M0100056
M0100057

0059
0060
0061
0062
0063
0064
0065
0066
0067
0068

001D
0048
0008
0003
0033
0006
0044

*
*
*

INTERNAL EQU

SECNUM

EQU ERCODE(29)
EQU FDDPTH(72)
EQU OPEVL(8)
EQU MSKBNM(LPMSK)
EQU SECNUM(51)
EQU SELCTF(66)
EQU T18335(68)

FDD PHYSICAL DEVICE TABLE THREAD

USEABLE SECTOR CNT IN WORD-ADDR BUFR: 132*5305

M0100059
M0100060
M0100061
M0100062
M0100063
M0100064
M0100065
M0100066
M0100067

0070	P0000	40FF	MASDRV	STQ-	I	INITIATOR FOR MM DRIVERS	M0100069
0071	P0001	585B		RTJ*	LEVLIT	SET LEVEL FOR OPERATION	M0100070
0072	P0002	1805		JMP*	SAMLV1	SAME LEVEL	M0100071
0073	P0003	54F4		RTJ-	(\$E4)	MONI CALL	M0100072
0074	P0004	52F8		ADC	\$52F0+0PLVL	SCHEDULE AT PROPER LEVEL	M0100073
0075	P0005	0007	P.	ADC	SAMLV1		M0100074
0076	P0006	14EA		JMP-	(\$EA)	CALL DISPATCHER	M0100075
0077	P0007	40FF	SAMLV1	STQ-	I	PDT TO I	M0100076
*****UD*****							
*****RL*****							
0078	P0008	5000		RTJ*	FINDIT	FIND IF IN CORE ALREADY	M0100077
0079	P0009	0161		SQP	1		M0100078
0080	P000A	1811		JMP*	NOTIN		M0100079
0081	P000B	CA00		LDA	BFSTAT,Q	STATUS OF DRIVER, Q = INDEX OF BUFFER 0-1	M0100080
	P000C	0078					
0082	P000D	013C		SAM	EXIT	IT IS COMING, NOT THERE YET, EXIT	M0100081
0083	P000E	0115		SAN	TAGY		M0100082
0084	P000F	DA00	IN	RAO	BFSTAT,Q	IN CORE Q = BUFFER INDEX	M0100083
	P0010	0074					
0085	P0011	C0FF	GOTOIT	LDA-	I		M0100084
0086	P0012	6A00		STA	BUFPDT,Q	UPDATE RECORD OF LAST PDT USED	M0100085
	P0013	0073					
0087	P0014	C4FF	TAGY	LDA-	(I)		M0100086
0088	P0015	0500		IIN	0		M0100087
0089	P0016	6802		STA*	DRVLVL		M0100088
0090	P0017	54F4		RTJ-	(AMONI)	SCHEDULE STARTER AT DRIVER LEVEL	M0100089
0091	P0018	520A	DRVLVL	NUM	\$520A	SCHEDULE REQUEST, Q = BUFFER INDEX	M0100090
0092	P0019	0113	P	ADC	STRUP		M0100091
0093	P001A	14EA	EXIT	JMP-	(ADISF)	EXIT	M0100092
0094	P001B	E800	NOTIN	LDQ	NXTBUF	INITIALIZE INDEX	M0100093
	P001C	0075					
0095	P001D	4800		STQ	BUFNUM		M0100094
	P001E	006C					
0096	P001F	CA65		LDA*	BFSTAT,Q	GET BUFFER STATUS	M0100095
0097	P0020	0105		SAZ	GOT1	INACTIVE, CAN USE	M0100096
*****UD*****							
*****RL*****							
0098	P0021	5000		RTJ*	SWITCH	SWITCH	M0100097
0099	P0022	CA62		LDA*	BFSTAT,Q	BUFFER STATUS	M0100098
0100	P0023	0102		SAZ	GOT1	THIS ONE OPEN	M0100099
0101	P0024	1800		JMP	QUEIT		M0100100
	P0025	00CD					
0102	P0026	5800	GOT1	RTJ	CHECKL	CHECK LENGTH	M0100101
	P0027	00FB					
0103	P0028	0AFF		ENA	-1		M0100102
0104	P0029	6A5B		STA*	BFSTAT,Q	SET COMING	M0100103
0105	P002A	C0FF		LDA-	I		M0100104
0106	P002B	6A5B		STA*	BUFPDT,Q	SAVE PDT ADDRESS	M0100105
0107	P002C	C10E		LDA-	MASSEC,I		M0100106
0108	P002D	6A5B		STA*	OCUPNT,Q	SAVE MASS MEMORY ADDRESS OCCUPANT	M0100107
0109	P002E	C10D		LDA-	MASLGN,I	LENGTH	M0100108
0110	P002F	6808		STA*	TEMP	TEMP, NO WORDS	M0100109
0111	P0030	40FF		STQ-	I	INDEX TO I	M0100110

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0112 P0031 295A MUI* SIGN,I * 0 OR -1
0113 P0032 895B ADD* BUFADR,I TO GET START OF DRIVER
0114 P0033 6961 STA* BUFSTR,I
0115 P0034 E95E LDQ* INCRMT,I DETERMINE WHICH FREAD CALL
0116 P0035 6A0D STA* STAR1,Q STARTING ADDRESS
0117 P0036 C000 LDA =NO
      P0037 0000
0118 P0037 0037 P TEMP EQU TEMP(*-1)
0119 P0038 6A0F STA* N1,Q STORE NO WORDS
0120 P0039 C94F LDA* OCURNT,I MM ADDRESS
0121 P003A 6A0A STA* MM1,Q
0122 P003B 1A01 JMP* READ1,Q
0123 P003C 54F4 READ1 RTJ- (AMONI)
0124 P003D 48F8 ADC $48F0+0PLVL FREAD
0125 P003E 0065 P ADC R0CMP CCOMPLETION
0126 P003F 0000 NUM 0 THREAD
0127 P0040 08C2 NUM $8C2 LIB. UNIT IN LOCORE
0128 P0041 0000 N1 NUM 0 NO WORDS
0129 P0042 0000 STAR1 NUM 0 STARTING ADDRESS
0130 P0043 0000 NUM 0 MSB
0131 P0044 0000 MM1 NUM 0 LSB
0132 P0045 180A JMP* SWICUM
0133 P0046 54F4 READ2 RTJ- (AMONI)
0134 P0047 48F8 ADC $48F0+0PLVL FREAD
0135 P0048 0067 P ADC R1CMP COMPLETION
0136 P0049 0000 NUM 0 THREAD
0137 P004A 08C2 NUM $8C2 LIB. UNIT
0138 P004B 0000 N2 NUM 0 NO WORDS
0139 P004C 0000 STAR2 NUM 0 STARTING ADDRESS
0140 P004D 0000 NUM 0 MSB
0141 P004E 0000 MM2 NUM 0 LSB
0142 P004F E0FF SWICUM LDQ- I RESTORE BUFFER INDEX
*****UD*****
*****RL*****
0143 P0050 5000 RTJ* SWITCH
0144 P0051 4840 STQ* NXTBUF PROBABLE NEXT BUFFER TO USE
0145 P0052 14EA JMP- (ADISF) EXIT
      M0100142
      M0100143
      M0100144
0147 *
0148 * SWITCH BUFFER SUBROUTINE
0149 * INDEX IN Q
0150 * INDEX IN Q
0151 * ACCIFFERENCE WITH CURRENT DRIVER
0152 P0053 0113 SAN NOTHIS NO MATCH
0153 P0054 4836 EXTFVD STQ* BUFNUM
0154 P0055 0400 EIN 0
*****UD*****
*****RL*****
0155 P0056 1000 JMP* (FINDIT) RETURN CALLER
*****UD*****
*****RL*****
0156 P0057 5000 NOTHIS RTJ* SWITCH
      M0100146
      M0100147
      M0100148
      M0100149
      M0100150
      M0100151
      M0100152
      M0100153
      M0100154
      M0100155

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0157 P0058 0101 SAZ ALLCHK ALL HAVE BEEN CHECK M0100156
*****UD*****
*****RL*****
0158 P0059 1000 JMP* LOOP1 ONE MORE
0159 P005A 0CFF ALLCHK ENQ -0 NO FIND IN BUFFERS, NOT IN CORE
0160 P005B 18F8 JMP* EXTEND
0161 *
0162 * CORRECT PRIORITY LEVEL IF NECESSARY
0163 *

0165 P005C 0000 LEVLIT NUM 0 ENTRY
0166 P005D 0500 IIN 0
0167 P005E E0FF LDQ- I PDT ADDRESS
0168 P005F C0EF LDA- PRILVL CURRENT SYSTEM LEVEL
0169 P0060 09F7 INA -OPLVL
0170 P0061 0101 SAZ LEVLRT SAME PRIORITY
0171 P0062 D8F9 RAO* LEVLIT NOT SAME, GO TO SCHED CALL
0172 P0063 0400 LEVLRT FIN 0
0173 P0064 1CF7 JMP* (LEVLIT) RETURN

0175 P0065 0A00 R0CMP ENA 0 COMPLETION FOR 0
0176 P0066 1802 JMP* R1CMP+1
0177 P0067 0A01 R1CMP ENA 1 COMPLETION FOR 1
0178 P0068 0176 SQM BA9XFR Q MINUS FOR I/O ERROR
0179 P0069 0822 TRA Q NO ERROR
0180 P006A CA1C LDA* BUFPDT, Q
0181 P006B 60FF STA- I RESTORE PDT ADDRESS
0182 P006C DA18 RAO* BFSTAT, Q IN AN INACTIVE STATE
0183 P006D 1800 JMP IN
P006E FFA0
0184 P006F 0822 BADXFR TRA Q FAILED TRANSFER
0185 P0070 CA16 LDA* BUFPDT, Q
0186 P0071 60FF STA- I RESTORE PDT ADDRESS
0187 P0072 0A00 ENA 0
0188 P0073 6A15 STA* OCUPNT, Q MAKE UNOCCUPIED
0189 P0074 6A10 STA* BFSTAT, Q
0190 P0075 5485 RTJ- (AFNR) FIND NEXT REQUEST, SET UP PDT
0191 P0076 0B00 NOP 0
0192 P0077 C109 LDA- ESTAT1, I
0193 P0078 B032 EOR- ONEBIT+15 SET ERROR BIT
0194 P0079 6109 STA- ESTAT1, I
0195 P007A E105 LDQ- ELU, I LOGICAL UNIT
0196 P007B 0FA6 QLS 6
0197 P007C 0A1D ENA ERCODE ERROR CODE
0198 P007D 0832 AAQ Q TOTAL CODE IN Q FOR ALTDEV
0199 P007E 5400 X RTJ+ LOG GO LOG ERROR
P007F 7FFF X
0200 P0080 54F4 RTJ- (AMONI) SCHEDULE
0201 P0081 52F8 ADC $52F0+OPLVL AT CURRENT LEVEL
0202 P0082 7FFF X ADC ALTDEV ALTERNATE DEVICE HANDLER

0204 *

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M0100157
M0100158
M0100159
M0100160
M0100161
M0100162
M0100164
M0100165
M0100166
M0100167
M0100168
M0100169
M0100170
M0100171
M0100172
M0100174
M0100175
M0100176
M0100177
M0100178
M0100179
M0100180
M0100181
M0100182
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M0100184
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M0100186
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M0100188
M0100189
M0100190
M0100191
M0100192
M0100193
M0100194
M0100195
M0100196
M0100197
M0100198
M0100199
M0100200
M0100201
M0100203

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0205 * CONTINJE AS IF EXIT FROM DRIVER M0100204
0206 * FIND ANY WAITING DRIVERS M0100205
0207 * MC100206
0208 P0083 1824 JMP* MASEXT M0100207

0210 *
0211 * WORKING AREA M0100209
0212 * M0100210
M0100211

0214 P0084 0000 BFSTAT NUM 0 BUFFER STATUS- 0 = INACTIVE M0100213
0215 P0085 0000 NUM 0 1 = COMING OR ACTIVE M0100214

0217 P0086 0000 BUF PDT ADC 0,0 PDT FOR RESPECTIVE BUFFER M0100216
P0087 0000

0219 P0088 0002 OCUPNT BZS OCUPNT(2) MM ADDRESS OF DRIVER IN BUFFER M0100218

0221 P008A 0000 BUFNUM NUM 0 BUFFER BEING PROCESSED, 0-1 M0100220

0223 P008B 0000 SIGN NUM 0,-1 * LENGTH + BUFADR = START OF DRIVER M0100222
P008C FFFE

0225 P008D 7FFF X BUFADR ADC BUFF BUFFER ADDRESSES, M0100224
0226 P008E 7FFF X ADC BUFBE SEE -SIGN- M0100225

0228 P008F 0000 NXTQUE NUM 0 NEXT QUE SLOT M0100227
0229 P0090 0000 NXTXCT NUM 0 NEXT TO EXECUTE M0100228

0231 P0091 0000 NXTBUF NUM 0 NEXT BUFFER TO USE, 0-1 M0100230

0233 P0092 0000 INCRMT ADC 0,READ2-READ1 INCREMENT TO PROPER READ CALL M0100232
P0093 000A

0235 P0094 008D X BUFSTR ADC BUFF,*-* START OF DRIVER M0100234
P0095 0000

0237 P0096 0008 QUE BZS QUE(8) PDT ADDRESSES OF WAITING DRIVERS M0100236

0239 P009E 0008 QUEMM BZS QUEMM(8) MM ADDRESS OF PDT IN QUE M0100238
0240 * M0100239

0242 *
0243 * RELEASE BUFFER OF PDT IN --Q--, USED BY ADEV M0100241
0244 * M0100242
0245 P00A6 40FF RELBYQ STQ- I SAVE Q FOR RELEASE M0100243
M0100244

0247 * DRIVERS EXIT HERE WHEN THEY HAVE SERVICED M0100246
0248 * ALL REQUESTS ON ALL LOGICAL UNITS THEY CONTROL M0100247
0249 * M0100248
0250 * I -- CONTAINS PDT ADDRESS M0100249
0251 * M0100250
0252 P00A7 58B4 MASEXT RTJ* LEVLIT CORRECT PRIORITY LEVEL M0100251
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0253 EQU MAS300(MASEXT)
0254 JMP* SAMLV2 SAME LEVEL
0255 RTJ- ($F4) MONI CALL
0256 P00AA 52F8 ADC $52F0+OPLVL SCHEDULE AT PROPER LEVEL
0257 P00AB 00AD P ADC SAMLV2
0258 P00AC 14EA JMP- ($EA) CALL DISPATCHER
0259 P00AD 40FF SAMLV2 STQ- I PDT TO I
*****UD*****
*****RL*****
0260 P00AF 5000 RTJ* FINDIT FIND BUFFER CONTAINING DRIVER
0261 P00AF 0164 SQP OKIN
0262 P00B0 C0FF LDA- I
0263 P00B1 6802 STA* NOFIND SAVE PDT FOR DEBUG
0264 P00B2 14EA JMP- (ADISF)
0265 P00B3 0000 NOFIND ADC *-* LAST PDT OF DRIVER RELEASING WHEN NOT IN
0266 P00B4 CACF OKIN LDA* BFSTAT,Q
0267 P00B5 48DB STQ* NXTBUF
0268 P00B6 0105 SAZ ALDONE
0269 P00B7 09FE INA -1 DECREMENT REQUEST
0270 P00B8 6ACB STA* BFSTAT,Q
0271 P00B9 0102 SAZ ALDONE NO NEW WAITING
0272 P00BA 1800 OKIN2 JMP GOT0IT
0273 P00BB FF55
0273 P00BC E400 X ALDONE LDQ+ LOG1A GET NO. LOGICAL UNITS
0273 P00BD 7FFF X
0274 P00BE 00BD P ALOGIA EQU ALOGIA(*-1) ADDRESS OF LOGIA
0275 P00BF 4800 LOOP2 STQ TEMP
0276 P00C0 EEFC LDQ* (ALOGIA),Q GET PDT ADDRESS
0277 P00C1 C20E LDA- MASSEC,Q GET SECTOR
0278 P00C2 B10E EOR- MASSEC,I DIFFERENCE OF ONE EXITING
0279 P00C3 B20D EOR- MASLGN,Q CHECK LENGTHS SAME TOO
0280 P00C4 B10D EOR- MASLGN,I
0281 P00C5 0101 SAZ TAG001
0282 P00C6 1817 JMP* NOSAME THIS DEVICE DOES NOT MATCH RELEASING
0283 P00C7 00C7 P TAG001 EQU TAG001(*)
0284 P00C8 0500 IIN 0
0285 P00C9 C205 LDA- ELU,Q
0286 P00CA 0109 SAZ NOASGN SKIP IF UNIT NOT ACTIVE
0287 P00CB C208 LDA- 8,Q GET REQUEST STATUS THIS PDT
0288 P00CC 0137 SAM NOASGN SKIP IF OPERATION IN PROGRESS
0289 P00CD 40FF STQ- I SAVE NEW PDT ADDRESS
0290 P00CE E8C3 LDQ* NXTBUF RESTORE INDEX
0291 P00CF 0AB5 RAO* BFSTAT,Q BUMP INTERNAL ACTIVE STATUS
0292 P00D0 18EA JMP* OKIN2 JUST REACTIVATED, GO TO DRIVER
0293 P00D1 0101 SAZ TAG000 SKIP IF MATCH
0294 P00D2 180C JMP* NOSAME JUMP IF NO MATCH
0295 P00D3 00D3 P TAG000 LDA- MASLGN,Q CHECK LENGTHS SAME TOO
0296 P00D4 0000 NOASGN EQU NOASGN(*) SAME RESET ADDRESS
0297 P00D5 C000 LDA =XMASDRV
0298 P00D6 6201 STA- 1,Q --- INITIATOR
0299 P00D7 014A P LDA =XMASCON

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M0100252
M0100253
M0100254
M0100255
M0100256
M0100257
M0100258
M0100259
M0100260
M0100261
M0100262
M0100263
M0100264
M0100265
M0100266
M0100267
M0100268
M0100269
M0100270
M0100271
M0100272
M0100273
M0100274
M0100275
M0100276
M0100277
M0100278
M0100279
M0100280
M0100281
M0100282
M0100283
M0100284
M0100285
M0100286
M0100287
M0100288
M0100289
M0100290
M0100291
123*4885*****
123*4885*****
123*4885*****
M0100293
M0100294
M0100295
M0100296

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0300 P00D8 6202
 0301 P00D9 C0C0 P
 P00DA 017E
 0302 P00D8 6203
 0303 P00DC 0400
 0304 P00DD E800
 P00DE FF58
 0305 P00DF 0DFE
 0306 P00EQ 0141
 0307 P00E1 18DC
 0308 P00E2 E8AD
 0309 P00E3 CAB2
 0310 P00E4 0115
 0311 P00E5 E8A4
 *****UD*****
 0312 P00E6 5400
 P00E7 0000
 0313 P00E8 48A8
 0314 P00E9 14EA
 0315 P00EA 60FF
 0316 P00EB 0A00
 0317 P00EC 6AA9
 0318 P00ED 582F
 0319 P00EE 68A1
 0320 P00EF E89A
 0321 P00F0 1800
 P00F1 FF34

STA- 2,Q
 LDA =XMASERR
 STA- 3,Q
 EIN 0
 NOSAME LDQ TEMP
 INQ -1
 SQZ DONRES
 JMP* LOOP2
 DONRES LDQ* NXTXCT
 LDA* QUE,Q
 SAN ONEWAT
 LDQ* BUFNUM
 RTJ SWITCH
 STQ* NXTBUF
 JMP- (ADISP)
 ONEWAT STA- I
 ENA 0
 STA* QUE,Q
 RTJ* BUMPQ
 STA* NXTXCT
 LDQ* BUFNUM
 JMP GOT1

--- CONTINUATOR
 --- DIAGNOSTIC TIME OUT
 DECREMENT COUNTER
 ALL SEARCHED
 MORE TO SEARCH
 INDEX OF NEXT TO EXECUTE
 NONE QUED, EXIT
 CLEAR QUEUE SLOT
 UPDATE
 GET BUFFER NUMBER

M0100297
 M0100298
 M0100299
 M0100300
 M0100301
 M0100302
 M0100303
 M0100304
 M0100305
 M0100306
 M0100307
 M0100308
 M0100309
 M0100310
 M0100311
 M0100312
 M0100313
 M0100314
 M0100315
 M0100316
 M0100317
 M0100318

0323
 0324
 0325
 0327 P00F2 E89D
 0328 P00F3 CAA2
 0329 P00F4 0117
 0330 P00F5 C0FF
 0331 P00F6 6A9F
 0332 P00F7 C10E
 0333 P00F8 6AA5
 0334 P00F9 5823
 0335 P00FA 4894
 0336 P00FB 14EA
 0337 P00FC CAA1
 0338 P00FD B10E
 0339 P00FE 0111
 0340 P00FF 14EA
 0341 P0100 581C
 0342 P0101 B88E
 0343 P0102 0101
 0344 P0103 18EF
 0345

*
 * QUE IT ROUTINE
 *
 QUEIT LDQ* NXTXCT
 LOOP3 LDA* QUE,Q
 SAN OCCPID
 LDA- I
 STA* QUE,Q
 LDA- MASSEC, I
 STA* QUEMM,Q
 RTJ* BUMPQ
 STQ* NXTQUE
 JMP- (ADISP)
 OCCPID LDA* QUEMM,Q
 EOR- MASSEC, I
 SAN BMPQUE
 JMP- (ADISP)
 BMPQUE RTJ* BUMPQ
 EOR* NXTXCT
 SAZ NOQUE
 JMP* LOOP3
 *

GET INITIAL INDEX
 UNOCCUPIED QUE SLOT, AND NO PREVIOUS ENTRY
 PUT THIS ONE IN IT
 SAVE MASS MEMORY ADDRESS
 EXIT
 DIFFERENCE OF MM ADDRESSES
 NOT SAME, BUT
 THIS DRIVER ALREADY QUED, EXIT
 TEST ALL SLOTS CHECKED
 ALL CHECKED

M0100320
 M0100321
 M0100322
 M0100324
 M0100325
 M0100326
 M0100327
 M0100328
 M0100329
 M0100330
 M0100331
 M0100332
 M0100333
 M0100334
 M0100335
 M0100336
 M0100337
 M0100338
 M0100339
 M0100340
 M0100341
 M0100342

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0346          *      SHOULD WAIT IN SCHEDULE STACK          M0100343
0347          *
0349 P0104 E0FF  NOQUE LDQ- I          PASS PDT ADDRESS          M0100346
0350 P0105 54F4 DOWN-K RTJ- (AMONI)
0351 P0106 5202          NUM $5202          SCHEDULE LEVEL 2 WAIT M0100347
0352 P0107 0109 P          ADC SCRCHQ
0353 P0108 14EA          JMP- (ADISP)          M0100348
                                M0100349
                                M0100350

0355 P0109 40FF  SCRCHQ STQ- I          LEVEL 2 WAITING FOR QUE SLOT M0100352
0356 P010A E884          LDQ* NXTQUE          M0100353
0357 P010B CA8A          LDA* QUE,Q          M0100354
0358 P010C E0FF          LDQ- I          RESTORE PDT          M0100355
0359 P010D 0101          SAZ BACKUP          OPEN BACK          M0100356
0360 P010E 18F6          JMP* DOWNLK          RESCHEDULE          M0100357
0361 P010F 1800  BACKUP JMP MASDRV          QUEUE OPEN, GO QUE THIS DRIVER M0100358
                                M0100359
0362 P0111 40FF          STQ- I          PDT TO I
0363 P0112 18DF          JMP* QUEIT          GO QUE IT          M0100360
                                M0100361
0364          *      START UP DRIVER
0365          *      Q = PDT ADDR.
0366          *      A = ADDRESS OF DRIVER
0367          *
0368          *
0369          *
0370 P0113 0500  STRTUP IIN 0
0371 P0114 CA00          LDA BUFSTR,Q          GET STARTING ADDRESS M0100366
0372 P0115 FF7E
0373 P0116 6805          STA* GOADR          M0100368
0374 P0117 EA00          LDQ BUFPDT,Q          GET PDT          M0100369
0375 P0118 FF60
0376 P0119 0400          EIN 0
0377 P011A 1400          JMP+ 0          M0100370
0378 P011B 0000          M0100371
0379 P011C 011B P GOADR EQU GOADR(*-1)
0380 P011D 0000  BUMPQ NUM 0
0381 P011E 0814          TRQ A
0382 P011F 0901          INA 1          BUMP INDEX
0383 P0120 A005          AND- LPMSK+2
0384 P0121 0822          TRA Q
0385 P0122 1CFA          JMP* (BUMPQ)
                                M0100376
                                M0100377
                                M0100378

0383          *
0384          *      ROUTINE TO CHECK LENGTH OF ALL DRIVERS
0385          *      USING BUFF
0386          *

0388 P0122 0000  CHECKL NUM 0          SUBROUTINE ENTRY
0389 P0123 C800          LDA BUFADR+1          END ADDRESS          M0100385
0390 P0124 FF69          M0100386
                                M0100387
0390 P0125 9800          SUB BUFADR          = TOTAL AVAIL          M0100387
0391 P0126 FF66

```

0391	P0127	9100	SUB-	MASLGN, I	MINUS LENGTH THIS DRIVER	M0100388	
0392	P0128	0122	SAP	WILFIT	WILL FIT SOME TIME	M0100389	
0393	P0129	1800	JMP	BADXFR+1	REPORT ERROR AS MM FAIL	M0100390	
	P012A	FF45					
0394	P012B	8100	WILFIT	ADD-	MASLGN, I	TOTAL AVAILABLE	M0100391
0395	P012C	EA00	LDQ	BUFPDT, Q	PDT ADDRESS OF CURRENT OCCUPANT	M0100392	
	P012D	FF58					
0396	P012E	981B	SUB*	NUSED	MINUS WORDS IN USE	M0100393	
0397	P012F	0141	SQZ	LABEL1	NOT ASSIGNED TO A DRIVER	M0100394	
0398	P0130	8200	ADD-	MASLGN, Q	PLUS WORDS USED BY OCCUPANT	M0100395	
0399	P0131	9100	LABEL1	SUB-	MASLGN, I	MINUS WORDS FOR NEW DRIVER	M0100396
0400	P0132	0135	SAM	NOTNUF		M0100397	
0401	P0133	C816	LDA*	NUSED	TOTAL USED	M0100398	
0402	P0134	0141	SQZ	LABEL2	BUFFER NOT USED	M0100399	
0403	P0135	9200	SUB-	MASLGN, Q	MINUS CURRENT LENGTH	M0100400	
0404	P0136	8100	LABEL2	ADD-	MASLGN, I	PLUS NEW LENGTH	M0100401
0405	P0137	180E	JMP*	GOTNUF	NEW NUSED	M0100402	
0406	P0138	0A01	NOTNUF	ENA 1	NEW DRIVER BIGGER THAN OLD, OVERLAP	M0100403	
0407	P0139	B800	EOR	BUFNUM	TEST OTHER DRIVER	M0100404	
	P013A	FF4F					
0408	P013B	0822	TRA	Q		M0100405	
0409	P013C	CA00	LDA	BFSTAT, Q	GET ACTIVE STATUS	M0100406	
	P013D	FF46					
0410	P013E	0101	SAZ	LABEL3	INACTIVE	M0100407	
0411	P013F	18B2	JMP*	QUEIT	ACTIVE, NEW ONE NO FIT NOW	M0100408	
0412	P0140	6A00	LABEL3	STA	OCCUPNT, Q	FITS, WILL OVERLAY OTHER PARTIALLY	M0100409
	P0141	FF46					
0413	P0142	6A00	STA	BUFPDT, Q		M0100410	
	P0143	FF42					
0414	P0144	C100	LDA-	MASLGN, I	NEW DRIVER LENGTH TOTAL USED	M0100411	
0415	P0145	6804	GOTNUF	STA*	NUSED	M0100412	
0416	P0146	E800	LDQ	BUFNUM	RESTORE ORIGINAL INDEX	M0100413	
	P0147	FF42					
0417	P0148	1CD9	JMP*	(CHECKL)	RETURN	M0100414	
0418	P0149	0000	NUSED	NUM 0	NUMBER OF WORDS IN USE	M0100415	
0420			*			M0100417	
0421			*		THIS ROUTINE RESPONDS TO INTERRUPTS	M0100418	
0422			*		FOR DRIVERS WHICH ARE NOT CURRENTLY IN CORE	M0100419	
0423			*			M0100420	
0424			*		THIS MUST BE CONSIDERED A GHOST INTERRUPT SITUATION	M0100421	
0425			*			M0100422	
0426			*		OR THE INTERRUPT RESPONSE IS USING A PDT	M0100423	
0427			*		ADDRESS OTHER THAN THE ACTIVE ONE	M0100424	
0429	P014A	0500	MASCON	IIN Q	IIN FOR FINDIT	M0100426	
0430	P014B	40FF	STQ-	I	PDT TO I	M0100427	
0431	P014C	4831	STQ*	LASTPT	DIAG SAVE	M0100428	
	*****UD*****						
0432	P014D	5400	RTJ	FINDIT	DETERMINE IF DRIVER IN CORE	M0100429	
	P014E	0000					

0433	PO14F	0500	IIN	0	IIN AGAIN, FINDIT DOES EIN	MO100 430	
0434	PO150	0171	SQM	NOTINC		MO100 431	
0435	PO151	181D	JMP*	OKIN1	IN, BUT PDT MUST BE OTHER THAN INT RESPONSE	MO100 432	
0437			*	NOT IN CORE		MO100 434	
0439		0152	P	NOTINC	EQU NOTINC(*)	MO100 436	
0440	PO152	0400	EIN	0		MO100 437	
0441	PO153	E107	LDQ-	EWES,I	GET EQUIP CODE	MO100 438	
0442	PO154	0010	LDA-	\$1D		MO100 439	
0443	PO155	0802	LAQ	Q	MASK CONVERTER \$F100	MO100 440	
0444	PO156	F02E	ADQ-	\$2E	ADD \$800	MO100 441	
0445	PO157	0201	INP	1	NMA AND TERMINATE IF BUFFERED	MO100 442	
0446	PO158	0B00	NOP	0		MO100 443	
0447	PO159	E107	LDQ-	EWES,I	GET EQUIP CODE	MO100 444	
0448	PO15A	0A02	ENA	2		MO100 445	
0449	PO15B	0301	OUT	1	ACK INTERRUPT	MO100 446	
0450	PO15C	0B00	NOP	0		MO100 447	
0451	PO15D	081F	RAO*	INTCNT	BUMP COUNT	MO100 448	
0452	PO15E	C108	LDA-	EREQST,I	CHECK TYPE CODE FOR FDD DEVICE	MO100 449	
0453	PO15F	0F44	ARS	4		MO100 450	
0454	PO160	AC09	AND-	LPMSK+6		MO100 451	
0455	PO161	098B	INA	-T18335		MO100 452	
0456	PO162	011A	SAN	NOTFDD	SKIP IF NOT FDD	MO100 453	
0457	PO163	0C06	ENQ	SELCTF	SELECT UNIT AND EOP AND CLEAR INTERRUPT	MO100 454	
0458	PO164	F107	ADQ-	EWES,I	ADD EQUIPMENT CODE FOR UNIT 0	MO100 455	
0459	PO165	0301	OUT	1		MO100 456	
0460	PO166	0B00	NOP	0		MO100 457	
0461	PO167	E148	LDQ-	FDDPTH,I	REPEAT FOR OTHER UNIT IF IT EXIST	MO100 458	
0462	PO168	40FF	STQ-	I		MO100 459	
0463	PO169	0C06	ENQ	SELCTF		MO100 460	
0464	PO16A	F107	ADQ-	EWES,I		MO100 461	
0465	PO16B	0301	OUT	1		MO100 462	
0466	PO16C	0B00	NOP	0		MO100 463	
0467	PO16D	14EA	NOTFDD	JMP-	(ADIS F)	MO100 464	
0469	PO16E	CA00	OKIN1	LDA	BFSTAT,Q	MO100 466	
	PO16F	FF14					
0470	PO170	0111	SAN	1	IS ACTIVE	MO100 467	
0471	PO171	6133	STA-	SECNUM,I	INDICATE WORD-ADDR. BUFFER NOT GOOD 132*5305*****	MO100 468	
0472	PO172	18DF	JMP*	NOTINC	A GHOST TREAT AS NOT IN CORE	MO100 469	
0473	PO173	EA00	LDQ	BUFPDT,Q	USE PDT ADDRESS LAST USED	MO100 470	
	PO174	FF11					
0474	PO175	C202	LDA-	2,Q	GET CONTINUATOR	MO100 471	
0475	PO176	6805	STA*	ADDCON		MO100 472	
0476	PO177	E0FF	LDQ-	I	RESTORE PDT	MO100 473	
0477	PO178	0400	EIN	0		MO100 474	
0478	PO179	6133	STA-	SECNUM,I	INDICATE WORD-ADDR. BUFFER NOT GOOD 132*5305*****	MO100 475	
0479	PO17A	1400	JMP+	0	JMP TO CURRENTLY DEFINED CONTINUATOR	MO100 476	
	PO17B	0000					
0480		017B	P	ADDCON	EQU ADDCON(*-1)	MO100 475	
0481	PO17C	0000	INTCNT	NUM	0	COUNTER OF GI	MO100 476

0482 P0170 0000 LASTPT NUM 0 LAST PDT ADDRESS OF GI M0100477

```

0484 *
0485 * THIS ROUTINE RESPONDS TO A DIAGNOSTIC TIMEOUT
0486 * OF A DRIVER WHICH IS NOT RESIDENT IN THE BUFFER
0487 *
0489 P017E 48 08 MASERR STQ* LASTER
0490 P017F E2 05 LDQ- ELU,Q
0491 P0180 0FA6 QLS 6 ERROR CODE OF 0
0492 P0181 0806 RAO* ERRCNT
0493 P0182 5400 X RTJ+ LOG GO LOG ERROR
    P0183 007F X
0494 P0184 1400 X JMP+ ALTDEV M0100489
    P0185 0082 X
0495 P0186 0000 LASTER NUM 0 PDT ADDRESS OF LAST TIMEOUT
0496 P0187 0000 ERRCNT NUM 0 COUNT OF TIMEOUT ERRORS
0497 END M0100491
      M0100492

```

PGM= 0188 (392) COM = 0000 (0) DAT = 0000 (0)

EQUIVALENCES

DEF. LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0000	I	00FF (000255)	0070, 0077, 0085, 0087, 0105, 0111, 0142, 0167, 0181, 0186, 0245, 0259, 0262, 0289, 0315, 0330
0027	LRMSK	0003 (000003)	0349, 0355, 0358, 0362, 0430, 0462, 0476
0028	ONEBIT	0023 (000035)	0065, 0379, 0454
0029	AFNR	00B5 (000181)	0193
0030	ADISP	00EA (000234)	0190
0031	PRILVL	00EF (000239)	0093, 0145, 0264, 0314, 0336, 0340, 0353, 0467
0032	AMONI	00F4 (000244)	0168
0052	ELU	0005 (000005)	0090, 0123, 0133, 0200, 0350
0053	EWES	0007 (000007)	0195, 0285, 0490
0054	EREQST	0008 (000008)	0441, 0447, 0458, 0464
0055	ESSTAT1	0009 (000009)	0452
0056	MASLGN	000D (000013)	0192, 0194
0057	MASSEC	000E (000014)	0109, 0279, 0280, 0295, 0391, 0394, 0398, 0399, 0403, 0404, 0414
0062	ERCODE	0010 (000029)	0107, 0277, 0278, 0332, 0338
0063	FDDPTH	0048 (000072)	0197
0064	OPLVL	0008 (000008)	0461
0065	MSKBNM	0003 (000003)	0074, 0124, 0134, 0169, 0201, 0256
0066	SECNUM	0033 (000051)	
0067	SELCTF	0006 (000006)	0471, 0478
0068	T18335	0044 (000068)	0457, 0463
			0455

SYMBOLS

DEF.LINE	NAME	ADDRESS	REFERENCED AT LINE NUMBER
0038	MASDRV	0000	0038, 0297, 0361
0038	MASEXT	00A7	0038, 0208, 0253
0038	MASCON	014A	0038, 0299
0038	MASERR	017E	0038, 0301
0039	MAS300	00A7	0039
0040	RELBYQ	00A6	0040
0077	SAMLV1	0007	0072, 0075
0084	IN	000F	0183
0085	GOTOIT	0011	0272
0087	TAGY	0014	0083
0091	DRVLVL	0018	0089
0093	EXIT	001A	0082
0094	NOTIN	001B	0080
0102	GOT1	0026	0097, 0100, 0321
0118	TEMP	0037	0110, 0275, 0304
0123	READ1	003C	0122, 0233
0128	N1	0041	0119
0129	STAR1	0042	0116
0131	MM1	0044	0121
0133	READ2	0046	0233
0138	N2	004B	
0139	STAR2	004C	
0141	MM2	004E	
0142	SWICUM	004F	0132
0153	EXIFND	0054	0160
0156	NOTHIS	0057	0152
0159	ALLCHK	005A	0157
0165	LEVLIT	005C	0071, 0171, 0173, 0252
0172	LEVLRT	0063	0170
0175	ROCMP	0065	0125
0177	R1CMP	0067	0135, 0176
0184	BADXFR	006F	0178, 0393
0214	BFXSTAT	0084	0081, 0084, 0096, 0099, 0104, 0182, 0189, 0266, 0270, 0291, 0409, 0469
0217	BUF PDT	0086	0086, 0106, 0180, 0185, 0372, 0395, 0413, 0473
0219	OCUPNT	0088	0108, 0120, 0188, 0412
0221	BUFNUM	008A	0095, 0153, 0311, 0320, 0407, 0416
0223	SIGN	008B	0112
0225	BUFADR	008D	0113, 0389, 0390
0228	NXTQUE	008F	0335, 0356
0229	NXTXCT	0090	0308, 0319, 0327, 0342
0231	NXTBUF	0091	0094, 0144, 0267, 0290, 0313

0233	INCRMT	0092	0115	
0235	BUFSTR	0094	0114,	0370
0237	QUE	0096	0309,	0317, 0328, 0331, 0357
0239	QUEMM	009E	0333,	0337
0259	SAMLV2	00AD	0254,	0257
0265	NOFIND	0083	0263	
0266	OKIN	00B4	0261	
0272	OKIN2	00BA	0292	
0273	ALDONE	00BC	0268,	0271
0274	ALOG1A	00BD	0276	
0275	LOOP2	00BE	0307	
0283	TAG001	00C7	0281	
0295	TAG000	00D2	0293	
0296	NOASGN	00D3	0286,	0288
0304	NOSAME	00DD	0282,	0294
0308	DONRES	00E2	0306	
0315	ONEWAT	00EA	0310	
0327	QUEIT	00F2	0101,	0363, 0411
0328	LOOP3	00F3	0344	
0337	OCCPID	00FC	0329	
0341	BMPQUE	0100	0339	
0349	NOQUE	0104	0343	
0350	DOWNLK	0105	0360	
0355	SCRCHQ	0109	0352	
0361	BACKUP	010F	0359	
0369	STRTUP	0113	0092	
0375	GOADR	011B	0371	
0376	BUMPQ	011C	0318,	0334, 0341, 0381
0388	CHECKL	0122	0102,	0417
0394	WILFIT	012B	0392	
0399	LABEL1	0131	0397	
0404	LABEL2	0136	0402	
0406	NOTNUF	0138	0400	
0412	LABEL3	0140	0410	
0415	GOTNUF	0145	0405	
0418	NUSED	0149	0396,	0401, 0415
0439	NOTINC	0152	0434,	0472
0467	NOTFDD	016D	0456	
0469	OKIN1	016E	0435	
0480	ADDCON	017B	0475	
0481	INTCNT	017C	0451	
0482	LASTPT	017D	0431	
0495	LASTER	018E	0489	
0496	ERRCNT	0187	0492	

EXTERNALS

DEF. LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0045	ALTDEV	0185	0202, 0494
0045	LOG1A	008D	0273
0046	LOG	0183	0499, 0493
0047	BUFF	0094	0225, 0235
0047	BUFFE	008E	0226

*** ALPHABETICAL SORT OF SYMBOLS ***

ADDCON	0480	ADISP	0030	AFNR	0029	ALDONE	0273	ALLCHK	0159	ALOG1A	0274	ALTDEV	0045	AMQNT	0032	BACKUP	0361
BADXFR	0184	BFSTAT	0214	BMPQUE	0341	BUFADR	0225	BUFF	0047	BUFFE	0047	BUFNUM	0221	BUFPOI	0217	BUFSTR	0235
BUMPQ	0376	CHECKL	0388	DONRES	0303	DCWNLK	0350	DRVLVL	0091	ELU	0052	ERCODE	0062	EREQST	0354	ERRCNT	0496
ESTAT1	0055	EWES	0053	EXIT	0093	EXTFND	0153	FDDPTH	0063	GOADR	0375	GOT1	0102	GOTNUF	0415	GOTOIT	0085
I	0000	IN	0084	INCRMT	0233	INTCNT	0481	LABEL1	0399	LABEL2	0404	LABEL3	0412	LASTER	0495	LASTPT	0482
LEVLIT	0165	LEVRT	0172	LOG	0046	LOG1A	0045	LOOP2	0275	LOOP3	0323	LPMSK	0027	MAS300	0039	MASCON	0038
MASDRV	0038	MASERR	0038	MASEXT	0038	MASLGN	0056	MASSEC	0057	MM1	0131	MM2	0141	MSKBNM	0065	N1	0128
N2	0138	NOASGN	0296	NOFIND	0265	NOQUE	0349	NOSAME	0304	NOTFDD	0467	NOTHIS	0156	NOTIN	0094	NOTINC	0139
NOTNUF	0406	NUSED	0418	NXTBUF	0231	NXTQUE	0228	NXTXCT	0229	OCCPID	0337	OCUPNT	0219	OKIN	0266	OKIN1	0469
OKIN2	0272	ONEBIT	0028	ONEWAT	0315	OPLVL	0064	PRILVL	0031	QUE	0237	QUEIT	0327	QUEMM	0239	RCMP	0175
R1CMP	0177	READ1	0123	READ2	0133	RELBYQ	0040	SAMLV1	0077	SAMLV2	0259	SCRCHQ	0355	SECNUM	0066	SELCTF	0067
SIGN	0223	STAR1	0129	STAR2	0139	STRTUP	0369	SWICUM	0142	T18335	0068	TAG000	0295	TAG001	0283	TAGY	0087
TEMP	0118	WILFIT	0394														

0016 ERRORS

0001
0002
0003
0004

* NAM SNAPOL DECK-ID M02 MSOS 5.0
* MASS STORAGE OPERATING SYSTEM VERSION 5.0
* SMALL SYSTEMS DIVISION, LA JOLLA, CALIFORNIA
* COPYRIGHT CONTROL DATA CORPORATION 1976

SUMMARY-110 M0200001
M0200002
M0200003
M0200004

0006
0007

***** M0200006
* ON - LINE SNAP DUMP ROUTINE M0200007

0009

***** M0200009

0011
0012
0013

***** M0200011
* THIS ROUTINE IS AN OPTIONAL DEBUGGING ROUTINE WHICH M0200012
* MAY BE DELETED FROM MSOS IF IT IS NOT TO BE USED. M0200013

0015
0016
0017
0018
0019

* THE ROUTINE MUST BE CORE RESIDENT AND MAY RESIDE M0200015
* IN PART0 OR PART1. M0200016
* UNPROTECTED PROGRAM COMMUNICATION IS PROVIDED BY AN M0200017
* ENTRY IN THE TABLE OF PRESETS IN THE LOCORE MODULE M0200018
* OF THE FORM SHOWN BELOW- M0200019

0021
0022
0023

* ALF 3,SNAPOL M0200021
* ADC SNAPOL M0200022
* EXT SNAPOL M0200023

0025
0026
0027
0028

* CALLING SEQUENCE- M0200025
* DECLARE SNAPOL AS AN EXTERNAL M0200026
* RETURN JUMP TO SNAPOL M0200027
***** M0200028

0030
0031

***** M0200030
* PROGRAM FUNCTION M0200031

0033
0034
0035
0036
0037
0038
0039

* UP TO 5 PROGRAM REGISTER DUMPS WILL BE STACKED M0200033
* AND DUMPED IN THE FOLLOWING FORMAT- M0200034
* P=HHHH Q=HHHH A=HHHH M=HHHH I=HHHH M0200035
* : : : : : M0200036
* : : : : : M0200037
* : : : : : M0200038
* P=HHHH Q=HHHH A=HHHH M=HHHH I=HHHH M0200039

0041
0042

* OUTPUT IS TO THE STANDARD LIST DEVICE FIRST IN FIRST OUT M0200041
***** M0200042

0044

* PROGRAM CONSTANTS, ETC.

M0200044

0046

* CONSTANT

USE

M0200046

0047

*

M0200047

0048

*

PUT BASE ADDRESS FOR CURRENT DUMP TO BE STORED

M0200048

0049

*

TAKE BASE ADDRESS FOR CURRENT DUMP TO BE OUTPUT

M0200049

0050

*

FIRST START OF STACKING BUFFER

M0200050

0051

*

ENTRYS NUMBER OF DUMPS CURRENTLY STACKED

M0200051

0052

*

LAST END OF STACKING BUFFER

M0200052

0053

M0200053

0055

ENT SNAPOL

M0200055

0057

0005

*

EQU FULL(5) **** NUMBER OF DUMPS STACKED AT ONE TIME-MAXIMUM

M0200057

0058

0022

*

EQU ZERO(\$22) **** EXCESS IGNORED

M0200058

0059

M0200059

0086
0087
0088

```

*****
*                                     *M0200086
*      ENTER HERE                     *M0200087
*                                     *M0200088
*****

```

0090

```

*                                     **** DECIDE IF ROOM TO STACK ****                                     *M0200090

```

0092	P0000	0000	SNAPOL	NUM	0	ENTRY POINT-UNPROT VIA TABLE OF PRESETS	M0200092
0093	P0001	0500		IIN	0	STOP INTERRUPTS	M0200093
0094	P0002	684B		STA*	TEMP	SAVE A	M0200094
0095	P0003	C865		LDA*	ENTRYS		M0200095
0096	P0004	9867		SUB*	SIZE	SIZE = FULL DOES NO. OF ENTRIES = FULL	M0200096
0097	P0005	0113		SAN	STACK--1	IS STACKING BUFFER FULL	M0200097
0098	P0006	C847		LDA*	TEMP	YES, IGNORE CALL AND RETURN	M0200098
0099	P0007	0400		EIN	0	TURN ON INTERRUPTS BEFORE RETURNING	M0200099
0100	P0008	1CF7		JMP*	(SNAPCL)		M0200100

0102
0103
0104

* STACKING ROUTINE -ADD A 5 WORD ENTRY AT PUT TO THE STACK *

M0200102
M0200103
M0200104

0106
0107
0108
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0114
0115
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0123
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0125
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0142
0143
0144
0145
0146

P0009 C8F6
P000A 6C5F
P000B 0814
P000C E85D
P000D 6201
P000E C83F
P000F 6202
P0010 080C
P0011 6203
P0012 00FF
P0013 6204
P0014 0814
P0015 9000
P0016 0063
P0017 0104
P0018 0814
P0019 0905
P001A 684F
P001B 1804
P001C 0000
P001D 004F
P001E 6848
P001F 0849
P0020 C84C
P0021 0104
P0022 C202
P0023 E201
P0024 0400
P0025 1CDA
P0026 D846
P0027 4846
P0028 0400
P0029 54F4
P002A 520D
P002B 0088
P002C 0500
P002D 0162
P002E 0A00
P002F 683D
P0030 E83D
P0031 C622
P0032 68CD
P0033 18EE

STACK LDA* SNAPOL
STA* (PUT)
TRQ A
LDQ* PUT
STA- 1,Q
LDA* TEMP
STA- 2,Q
TRM A
STA- 3,Q
LDA- I
STA- 4,Q
TRQ A
SUB =XLAST

P
SAZ RESET--1
TRQ A
INA 3
STA* PUT
JMP* ADDENT
LDA =XSTART
RESET

P
STA* PUT
RAO* ENTRYS
LDA* WRITBZ
SAZ SCHWRT--1
OUT
LDA- 2,Q
LDQ- 1,Q
EIN 0
JMP* (SNAPOL)
SCHWRT RAO* WRITBZ
STQ* QSAVER
EIN
RTJ- (\$F4)
NUM \$520D
ADC WRITER
IIN
SQP ACCEP--1
ENA 0
STA* WRITBZ
ACCEP LDQ* QSAVER
LDA- (ZERO),Q
STA* SNAPOL
JMP* OUT

SAVE P = RETURN
SAVE Q IN A

SAVE Q
SAVE A

CHECK TO SEE IF WE MUST RESET POINTER
AROUND TO FRONT OF BUFFER

NO, MOVE DOWN TO NEXT
SLOT FOR NEXT DUMP.

ADDED A DUMP ENTRY -RECORD THIS,
CHECK TO SEE IF WRITER IS ACTIVE

YES, WRITER RUNNING, EXIT
RESTORE REGISTERS
TURN ON INTERRUPTS
RETURN TO CALLING PROGRAM
SET WRITER BUSY
KEEP Q INTACT THRU SCHEDULER CALL

SCHEDULE UP TO WRITE AT P.L.=13

SKIP IF WRITER WAS SCHEDULED
NO, SCHED REJECTED, CLR WRITBZ SWITCH

SET UP RETURN

M0200106
M0200107
M0200108
M0200109
M0200110
M0200111
M0200112
M0200113
M0200114
M0200115
M0200116
M0200117
M0200118

M0200119
M0200120
M0200121
M0200122
M0200123
M0200124

M0200125
M0200126
M0200127
M0200128
M0200129
M0200130
M0200131
M0200132
M0200133
M0200134
M0200135
M0200136
M0200137
M0200138
M0200139
M0200140
M0200141
M0200142
M0200143
M0200144
M0200145
M0200146

```

0148 P0034 0000 HEXASC NUM 0
0149 P0035 6819 STA* WRD
0150 P0036 0C03 ENQ 3
0151 P0037 A006 RPT AND- $6
0152 P0038 09F5 INA -$A
0153 P0039 0131 SAM LT10
0154 P003A 0907 INA $7
0155 P003B 093A LT10 INA $3A
0156 P003C 6A0D STA* W4,Q
0157 P003D 0145 SQZ DONE
0158 P003E 0DFF INQ -1
0159 P003F C80F LDA* WRD
0160 P0040 0F44 ARS 4
0161 P0041 680D STA* WRD
0162 P0042 18F4 JMP* RPT
0163 P0043 0FC8 DONE ALS 8
0164 P0044 8806 ADD* W3
0165 P0045 E806 LDQ* W2
0166 P0046 0FA8 QLS 8
0167 P0047 F805 ADQ* W1
0168 P0048 1CEB JMP* (HEXASC)
0169 P0049 0000 W4 NUM 0
0170 P004A 0000 W3 NUM 0
0171 P004B C000 W2 NUM 0
0172 P004C 0000 W1 NUM 0

```

```

CONVERT TO ASCII
SAVE WORD TO CONVERT
CONVERT LOWER 4 BITS TO ASCII
CHARACTER OR NUMBER
IS A NUMBER
STORE CONVERTED WORD

```

```

STORAGE FOR X000
STORAGE FOR 0X00
STORAGE FOR 00X0
STORAGE FOR 000X

```

```

M0200148
M0200149
M0200150
M0200151
M0200152
M0200153
M0200154
M0200155
M0200156
M0200157
M0200158
M0200159
M0200160
M0200161
M0200162
M0200163
M0200164
M0200165
M0200166
M0200167
M0200168
M0200169
M0200170
M0200171
M0200172

```



```

0174 *****M0200174
0175 P004D 0000 TEMP NUM 0 TEMPORARY STORAGE LOCATION M0200175
0176 P004E 0001 BSS WRD M0200176
0177 P004F 0014 BSS START(FULL*5-5),LAST(5) *****DUMP STACKING BUFFER M0200177
P0063 0005
P0068 0000 ENTRYS NUM 0 TOTAL NUMBER OF ENTRIES CURRENTLY STACKED M0200178
* BUT NOT DUMPED TO LIST - YET. M0200179
0180 P0069 004F P PUT ADC START M0200180
0181 P006A 004F P TAKE ADC START M0200181
0182 P006B 0005 * SIZE ADC FULL M0200182
0183 * WRITBZ.. WRITER BUSY SWITCH =1 BUSY, 0= NOT M0200183
0184 P006C 0000 WRITBZ NUM 0 M0200184
0185 P006D 0000 QSAVER NUM 0 M0200185
0186 P006E 2020 BUFST NUM $2020 M0200186
0187 P006F 503D DPBUFF ALF 5,P= PPPP OUTPUT PRINT BUFFER M0200187
P0070 2020
P0071 5050
P0072 5050
P0073 2020
0188 P0074 513D ALF 5,Q= QQQQ M0200188
P0075 2020
P0076 5151
P0077 5151
P0078 2020
0189 P0079 413D ALF 5,A= AAAA M0200189
P007A 2020
P007B 4141
P007C 4141
P007D 2020
0190 P007E 403D ALF 5,M= MMMM M0200190
P007F 2020
P0080 404D
P0081 404D
P0082 2020
0191 P0083 493D ALF 5,I= IIII M0200191
P0084 2020
P0085 4949
P0086 4949
P0087 2020
0192 *****M0200192

```

0194
0195
0196
0197
0198
0199
0200
0201
0202
0203

```

*****
* WRITER ROUTINE
*****
* THIS ROUTINE OUTPUTS TO THE STD. LIST THE STACKED DUMPS
* INITIAL ENTRY WHEN WRITER IS INACTIVE IS BY A SCHEDULER
* REQUEST OF ADDRESS -WRITER- AT PRIORITY 13.
*****
* NOTE.. WRITER RUNS AT PRIORITY 13 WITH EXIT DURING I/O
* WAIT TIME.
*****

```

MJ200194
MJ200195
MJ200196
MJ200197
MJ200198
MJ200199
MJ200200
MJ200201
MJ200202
MJ200203

0205
0206
0207
0208

```

* THIS ROUTINE CALLS A HEX TO ASCII CONVERSION ROUTINE,
* STORES THE CONVERTED NUMBER IN THE OUTPUT BUFFER AND
* INITATES A WRITE. EXIT IS THEN TAKEN. UPON I/O COMPLETE
* SEE IF MORE ENTRIES ARE LEFT TO PRINT.

```

MJ200205
MJ200206
MJ200207
MJ200208

0210 P0088 0C00
0211 P0089 5A02
0212 P008A 60FF
0213 P008B CEDE
0214 P008C 480E
0215 P008D 58A6
0216 P008E 69E0
0217 P008F 00FF
0218 P0090 49DE
0219 P0091 C809
0220 P0092 0901
0221 P0093 0822
0222 P0094 09FA
0223 P0095 0105
0224 P0096 C0FF
0225 P0097 0904
0226 P0098 60FF
0227 P0099 18F1
0228 P009A 0000
0229 P009B 54F4
0230 P009C 4CDD
0231 P009D 00A3 P
0232 P009E 0000
0233 P009F 18FB
0234 P00A0 001A
0235 P00A1 006E P
0236 P00A2 14EA
0237 P00A3 0500
0238 P00A4 E8C5
0239 P00A5 0814
0240 P00A6 9000
0241 P00A8 0103
0242 P00A9 0814
0243 P00AA 0905

```

WRITER ENQ 0
        ENA 2
        STA- $FF
WRTPIK LDA* (TAKE),Q
        STQ* AUXSTO
        RTJ* HEXASC
        STA* DPBUFF,I
        STA- $FF
        STQ* DPBUFF,I
        LDA* AUXSTO
        INA 1
        TRA Q
        INA -5
        SAZ THRU--1
        LDA- $FF
        INA 4
        STA- $FF
        JMP* WRTPIK
AUXSTO NUM 0
THRU RTJ- ($F4)
        NUM $4CDD
        ADC COMP
        NUM 0
        NUM $18FB
        NUM 26
        ADC BUFST
        JMP- ($EA)
COMP IN 0
        LDQ* TAKE
        TRQ A
        SUB =XLAST
        SAZ TOPSET--1
        TRQ A
        INA 5

```

```

SAVE Q WHILE WE CONVERT
CONVERT HEX NUMBER IN A, 4 CHARACTERS
RETURNED UPPER TWO IN A, OTHERS IN Q

LAST REGISTER IN PRINT BUFFER, YES GO TO THRU
CYCLE THRU STORING OF ALL REGISTERS STACKED,
P,Q,A,M,I

DUMP REGISTERS TO STD. LIST.
STACK AT 13, COMP AT 13 FWRITE
COMPLETION ADDRESS
THREAD
TO STD LIST
SIZE OF BUFFER OUTPUT
START OF MSG.
EXIT UNTIL I/O COMP THEN AT COMP
STOP INTERRUPTS

CHECK TO SEE IF WE NEED TO WRAP-AROUND TO
TOP OF BUFFER

```

MJ200210
MJ200211
MJ200212
MJ200213
MJ200214
MJ200215
MJ200216
MJ200217
MJ200218
MJ200219
MJ200220
MJ200221
MJ200222
MJ200223
MJ200224
MJ200225
MJ200226
MJ200227
MJ200228
MJ200229
MJ200230
MJ200231
MJ200232
MJ200233
MJ200234
MJ200235
MJ200236
MJ200237
MJ200238
MJ200239
MJ200240
MJ200241
MJ200242
MJ200243

0244	P00AB	1803		JMP* AHEAD			M0200244
0245	P00AC	C000	TOPSET	LDA =XSTART			M0200245
	P00AD	004F	P				
0246	P00AE	68BB	AHEAD	STA* TAKE			M0200246
0247	P00AF	E8B8		LDQ* ENTRYS	PRINTED AN ENTRY AND REDUCED THOSE STACKED BY		M0200247
0248	P00B0	0DFE		INQ -1	ONE ...SO MARK		M0200248
0249	P00B1	48B6		STQ* ENTRYS			M0200249
0250	P00B2	98B6		SUB* PUT	HAVE WE OUTPUT ALL THAT ARE STACKED		M0200250
0251	P00B3	0102		SAZ EQUAL*-1			M0200251
0252	P00B4	0400		FIN 0	NO, TURN ON INTERRUPTS AND OUTPUT MORE		M0200252
0253	P00B5	18D2		JMP* WRITER			M0200253
0254	P00B6	68B5	EQUAL	STA* WRITBZ	SET WRITER NOT BUSY		M0200254
0255	P00B7	0400		FIN 0	TURN ON INTERRUPTS		M0200255
0256	P00B8	14EA		JMP- (\$EA)	EXIT, ALL DUMPS STACKED HAVE BEEN PRINTED		M0200256
0257				END			M0200257

PGM= 00B9 (185) COM = 0000 (0) DAT = 0000 (0)

EQUIVALENCES

DEF. LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0000	I	00FF	(000255) 0115
0057	FULL	0005	(000005) 0177, 0182
0059	ZERO	0022	(000034) 0144

SYMBOLS

DEF. LINE	NAME	ADDRESS	REFERENCED AT LINE NUMBER
0055	SNAPOL	0000	0055, 0100, 0106, 0132, 0145
0106	STACK	0009	0097
0124	RESET	001C	0119
0126	ADDENT	001F	0123
0129	OUT	0022	0145
0133	SCHWRT	0026	0128
0143	ACCEP	0030	0140
0148	HEXASC	0034	0168, 0215
0151	RPT	0037	0162
0155	LT10	003B	0153
0163	DONE	0043	0157
0169	W4	0049	0156
0170	W3	004A	0164
0171	W2	004B	0165
0172	W1	004C	0167
0175	TEMP	004D	0094, 0098, 0111
0176	WRD	004E	0149, 0159, 0161
0177	START	004F	0124, 0180, 0181, 0245
0177	LAST	0063	0118, 0240
0178	ENTRYS	0068	0095, 0126, 0247, 0249
0180	PUT	0069	0107, 0109, 0122, 0125, 0250
0181	TAKE	006A	0213, 0238, 0246
0182	SIZE	006B	0096
0184	WRITBZ	006C	0127, 0133, 0142, 0254
0185	QSAVER	006D	0134, 0143
0186	BUFST	006E	0235
0187	DPBUFF	006F	0216, 0218
0210	WRITER	0088	0138, 0253
0213	WRTPIK	008B	0227
0228	AUXSTO	009A	0214, 0219
0229	THRU	009B	0223
0237	CGMP	00A3	0231
0245	TOPSET	00AC	0241
0246	AHEAD	00AE	0244
0254	EQUAL	00B6	0251


```

0001 * NAM PARAME DECK-ID M03 MSOS 5.0
0002 * MASS STORAGE OPERATING SYSTEM VERSION 5.0
0003 * SMALL SYSTEMS DIVISION, LA JOLLA, CALIFORNIA
0004 * COPYRIGHT CONTROL DATA CORPORATION 1976

0006 * PARAMETER CONVERSION ROUTINES
0007 ENT PARAME
0008 EQU PARAME(*)

0011 ENT LUABS,SABS,NABS,CABS
0012 EQU PC(1),PS(5)

0013 EQU PLU(3)
0014 EQU LPMSK($2),NZERO($12),ZERO($22)

0015 EQU QNEBIT($23)
0016 EQU PN(4)
0017 EQU ASYSR($EB)

*
*
* ALL ROUTINES ARE ENTERED WITH
* PARAMETER LIST LOCATION IN Q.
*
* ALL ROUTINES EXIT WITH THE TRANSLATED
* PARAMETER IN Q.
* IN ADDITION, SABS EXITS WITH THE LOCATION
* OF S IN THE A REGISTER.
*
* *****
*
* LOGICAL UNIT TO ABSOLUTE
*
0032 P0000 0000 LUABS NUM 0
0033 P0001 0500 IIN 0
0034 P0002 4815 STQ* TLJABS PARAMETER LOC TO TEMP
0035 P0003 C203 LDA- PLU,Q
0036 P0004 A00E AND- LPMSK+12
0037 P0005 0C00 ENQ 0
0038 P0006 0FE6 LLS 6 A PARAMETER TO Q
0039 P0007 0F46 ARS 6 LU IN A9-0
0040 P0008 1A01 JMP* LUTV,Q
0041 P0009 1809 LUTV JMP* A0
0042 P000A 1802 JMP* LUA1
0043 P000B 1804 JMP* LUA2
0044 P000C E80B LUA1 LDQ* TLUABS
* * * * *
0045 P000D 0834 LU2 AAQ A
0046 P000E 1802 JMP* LU1A
*
* PARAMETER A=2, PICK UP CONTENTS OF LOC A9-0

```

```

SUMMARY-11 M0300001
M0300002
M0300003
M0300004

M0300006
M0300007
M0300008

M0300011
M0300012

M0300013
M0300014

M0300015
M0300016
M0300017
M0300018
M0300019
M0300020
M0300021
M0300022
M0300023
M0300024
M0300025
M0300026
M0300027
M0300028
M0300029
M0300030
M0300031
M0300032
M0300033
M0300034
M0300035
M0300036
M0300037
M0300038
M0300039
M0300040
M0300041
M0300042
M0300043
M0300044
M0300045
M0300046
M0300047
M0300048
M0300049

```

***MSOS4.0
*--/77*1887

0050 P000F A00C
 0051 P0010 0822
 0052 P0011 C622
 0053 P0012 0822
 0054 P0013 0161
 0055 P0014 F011
 0056 P0015 0400
 0057 P0016 1CE9
 0058 P0017 0000
 0059
 0060
 0061
 0062
 0063
 0064 P0018 0000
 0065 P0019 0500
 0066 P001A 48FC
 0067 P001B C622
 0068 P001C A031
 0069 P001D 0106
 0070 P001E 0814
 0071 P001F 0905
 0072 PC020 6800
 0073 P0021 FFF5
 0074 P0022 ECF4
 0075 P0023 1819
 0076 P0024 C622
 0077 P0025 A028
 0078 P0026 0101
 0079 P0027 0814
 0080 P0028 6817
 0081 P0029 0121
 0082 P002A B032
 0083 PC02B E205
 0084 P002C 0162
 0085 P002D 0834
 0086 P002E 1803
 0087 P002F C8E7
 0088 P0030 0905
 0089 P0031 A011
 0090 P0032 68E4
 0091 P0033 CCE3
 0092 P0034 0131
 0093 P0035 8032
 0094 P0036 E809
 0095 P0037 0161
 0096 P0038 F011
 0097 P0039 0832
 0098 P003A 0161
 0099 P003B F011
 0100 P003C C8DA
 0101

```

*
LUA2 AND- $C
LU1A TRA Q
      LDA- (ZERO),Q
A0    TRA Q
      SQP LU3--1
      ADQ- LPMSK+15
LU3   EIN 0
      JMP* (LUABS)
TLUABS 0 0
*
***
**
SABS  0 0
      IIN  0
      STQ* SL
      LDA- (ZERO),Q
      AND- ONEBIT+14
      SAZ  S01
      TRQ  A
      INA  S
      STA  SL
      LDQ* (SL)
      JMP* S7
S01   LDA- (ZERO),Q
      AND- ONEBIT+8
      SAZ  S1--1
      TRQ  A
S1    STA* L
      SAP  S2--1
      EOR- ONEBIT+15
S2    LDQ- PS,Q
      SQP  S3--1
      AAQ  A
      JMP* S4
S3    LDA* SL
      INA  S
S4    AND- LPMSK+15
      STA* SL
      LDA* (SL)
      SAM  S5--1
      ADD- ONEBIT+15
S5    LDQ* L
      SQP  S6--1
      ADQ- LPMSK+15
S6    AAQ  Q
      SQP  S7--1
      ADQ- LPMSK+15
S7    LDA* SL
*
*

```

MASK OFF ALL EXCEPT \$3FF

A=0, A9-0 IS ACTUAL UNIT

STARTING ADDRESS TO ABSOLUTE

CHECK D BIT

SKIP IF NO D BIT

S IS ABSOLUTE

SL=ADDRESS OF S PARAM

Q=S PARAM

CHECK X PARAMETER

IF X=1,

THEN L=P

OTHERWISE L=0

15 BIT

ARITHMETIC

GET STARTING ADDRESS

IF S15 = 1

THEN (A)=L+(P+5)

OTHERWISE S15=0, (A)=P+5

THE REST INVOLVES

15 BIT ARITHMETIC

EXIT - A = ADDR OF S PARAMETER

Q=S PARAMETER

*+077*1887

*+077*1887

```

***MSOS+.CM03000667
***MSOS+.CM03000668
***MSOS+.CM03000669
***MSOS+.CM03000670
***MSOS+.CM03000671
***MSOS+.CM03000672

```

```

***MSOS+.CM03000673
***MSOS+.CM03000674
***MSOS+.CM03000675

```

MJ3000050
 MJ3000051
 MJ3000052
 MJ3000053
 MJ3000054
 MJ3000055
 MJ3000056
 MJ3000057
 MJ3000058
 MJ3000059
 MJ3000060
 MJ3000061
 MJ3000062
 MJ3000063
 MJ3000064
 MJ3000065
 MJ3000066
 MJ3000067
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 MJ3000097
 MJ3000098
 MJ3000099
 MJ3000100
 MJ3000101


```

0102 P003D 0400 EIN 0
0103 P003E 1CD9 JMP* (SABS)
0104 P003F 0000 0
L
**
**
**
0106 NUMBER OF WORDS TO ABSOLUTE
0107
0108
0109 P0040 0000 NABS 0 0
0110 P0041 0500 IIN 0
0111 P0042 48D4 STQ* TNABS
0112 P0043 C622 LDA- (ZERO),Q SAVE PARAMETER LIST LOC
0113 P0044 A031 AND- ONEBIT+14 CHECK D BIT
0114 P0045 0102 SAZ N1 SKIP IF NO D BIT
0115 P0046 E204 LDQ- PN,Q Q=N PARAMETER
0116 P0047 180F JMP* N2
0117 P0048 C622 N1 LDA- (ZERO),Q GET FIRST WORD
0118 P0049 E204 LDQ- PN,Q GET PARAMETER N
0119 P004A 0169 SQP NOWXT-*--1 +N=NO. OF WDS
0120 P004B A028 AND- ONEBIT+8 CHECK FOR X SET
0121 P004C 0103 SAZ NOW1-*--1 ZERO=IN. ABS.
0122 P004D C8C9 LDA* TNABS
0123 P004E 0121 SAP NOW1-*--1 15 BIT
0124 P004F B021 EOR- NZERO+15 ARITHMETIC
0125 P0050 0832 NOW1 AAQ Q
0126 P0051 0161 SQP 1
0127 P0052 F011 ADQ- LPMSK+15
0128 P0053 E622 LDQ- (ZERO),Q GET IT
0129 P0054 0161 NOWXT SQP N2-*--1
0130 P0055 F011 ADQ- LPMSK+15
0131 P0056 0400 N2 EIN 0
0132 P0057 1CE8 JMP* (NABS) EXIT - Q= N PARAMETER
*
**
**
0135 COMPLETION ADDRESS TO ABSOLUTE
0136
0137
0138 P0058 0000 CABS 0 0
0139 P0059 0500 IIN 0
0140 P005A 48BC STQ* TCABS
0141 P005B C622 LDA- (ZERO),Q CHECK D BIT SAVE PARAM LOC
0142 P005C A031 AND- ONEBIT+14
0143 P005D 0102 SAZ C01
0144 P005E E201 LDQ- PC,Q Q=C PARAMETER
0145 P005F 1810 JMP* C2
0146 P0060 C201 C01 LDA- PC,Q GET C PARAMETER
0147 P0061 0139 SAM CA1-*--1 -C=SYS.DIR REF
0148 P0062 C622 LDA- (ZERO),Q GET FIRST WORD
0149 P0063 A028 AND- ONEBIT+8 CHECK X
0150 P0064 E201 LDQ- PC,Q GET C
0151 P0065 0107 SAZ CAXT-*--1 EXIT
0152 P0066 C880 LDA* TCABS GET ADDRESS
0153 P0067 0131 SAM C1-*--1
0154 P0068 8032 ADD- ONEBIT+15 15 BIT ARITH.
0155 P0069 0832 C1 AAQ Q

```

```

***MSOS
***MSOS
***MSOS
***MSOS
***MSOS
***MSOS

```

```

**MSOS 4.0
**MSOS 4.0

```

```

***MSOS
***MSOS
***MSOS
***MSOS
***MSOS
***MSOS

```

```

M03000102
M03000103
M03000104
M03000105
M03000106
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M03000153
M03000154

```

```

0155 P006A 1803      JMP* CAXT
0156 P006B 80EB      CA1  ADD- ASYSOR      SYS DIR INDEX
0157 P006C 0822      TRA  Q
0158 P006D 0161      CAXT SQP  C2--1
0159 P006E F011      ADQ- LPMSK+15
0160 P006F 0400      C2  EIN  0
0161 P0070 1CE7      *      JMP* ((CABS)      BACK TO SENDER
                                Q= COMPLETION ADDRESS
0162      0017 P      EQU  TCABS(TLUABS),TNABS(TLUABS),SL(TLUABS)
0163      0017 P
      0017 P
0164      END

```

```

M0300155
M0300156
M0300157
M0300158
M0300159
M0300160
M0300161
M0300162
M0300163

```

M0300164

PGM= 0071 (113) COM = 0000 (0) DAT = 0000 (0)

EQUIVALENCES

DEF.LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0000	I	00FF	(0000255)
0012	PC	0001	(0000001) 0143, 0145, 0149
0012	PS	0005	(0000005) 0082
0013	PLU	0003	(0000003) 0035
0014	LPMSK	0002	(0000002) 0036, 0056, 0088, 0095, 0098, 0127, 0130, 0159
0014	NZERO	0012	(0000018) 0124
0014	ZERO	0022	(0000034) 0053, 0067, 0075, 0112, 0117, 0128, 0140, 0147
0015	ONEBIT	0023	(0000035) 0068, 0076, 0081, 0092, 0113, 0120, 0141, 0148, 0153
0016	PN	0004	(0000004) 0115, 0118
0017	ASYS DR	00EB	(0000235) 0156

SYMBOLS

DEF.LINE	NAME	ADDRESS	REFERENCED AT LINE NUMBER
0007	PARAME	0000	0007
0011	LUABS	0000	0011, 0058
0011	SABS	0018	0011, 0103
0011	NABS	0040	0011, 0132
0011	CABS	0058	0011, 0161
0041	LUTV	0009	0040
0044	LUA1	0000	0042
0046	LU2	0000	
0051	LUA2	000F	0043
0052	LU1A	0010	0047
0054	AJ	0012	0041
0057	LU3	0015	0055
0059	TLUABS	0017	0034, 0044, 0163, 0163, 0163
0075	S01	0024	0069
0079	S1	0028	0077
0082	S2	002B	0080
0086	S3	002F	0083
0088	S4	0031	0085
0093	S5	0036	0091
0096	S6	0039	0094
0099	S7	003C	0074, 0097
0104	L	003F	0079, 0093
0117	N1	0048	0116
0125	NOW1	0050	0121, 0123
0129	NOWXT	0054	0119
0131	N2	0056	0116, 0129
0145	Q01	0060	0142
0154	Q1	0069	0152
0156	CA1	006B	0146
0158	CAXT	006D	0150, 0155
0160	C2	006F	0144, 0158
0163	TCABS	0017	0139, 0151
0163	INA BS	0017	0111, 0122
0163	SL	0017	0066, 0072, 0073, 0086, 0089, 0090, 0099

*** ALPHABETICAL SORT OF SYMBOLS ***

AO	0054	ASYSOR	0017	C01	0145	C1	0154	C2	0160	CA1	0158	CABS	0011	CAXT	0158	I	0000
L	0104	LPMSK	0014	LU1A	0032	LU2	0046	LU3	0057	LUA1	0044	LUA2	0051	LUAES	0011	LJTV	0041
N1	0117	N2	0131	NABS	0011	NOW1	0125	NOWXT	0129	NZERO	0014	ONERIT	0015	PARAME	0007	SS	0012
PLU	0013	PN	0016	PS	0012	S01	0075	S1	0079	S2	0082	S3	0086	S-	0088	SS	0093
S6	0096	S7	0099	SABS	0011	SL	0163	TCABS	0153	TLUABS	0059	TNABS	0153	ZERO	001-		

```

0001 * NAM T16 DECK-ID M04 MSOS 5.0 SUMMARY-11 M0400001
0002 * MASS STORAGE OPERATING SYSTEM VERSION 5.0 M0400002
0003 * SMALL SYSTEMS DIVISION, LA JOLLA, CALIFORNIA M0400003
0004 * COPYRIGHT CONTROL DATA CORPORATION 1975 M0400004

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0006 ENT T16 M0400006
0007 EXT ASC M0400007
0008 * THIS ROUTINE HANDLES INDIRECT REQUESTS FOR PART 1 M0400008
0009 * REQUESTS. IT IS ENTERED WITH THE FOLLOWING PARAMETERS M0400009
0010 * A= PARAMETER LIST M0400010
0011 * M0400011
0012 * I= VOLITALE STORAGE M0400012
0013 * M0400013

```

```

0015 0003 EQU VR(3),VPTR(5),VID(8) M0400015
0005
0016 0008 EQU VTDS(6) M0400016
0017 0006 EQU PL1(1) M0400017
0001

```

```

0019 P0000 0822 T16 TRA Q SAVE PARAMETER LIST ADDRESS IN Q M0400019
0020 P0001 C108 LDA- VID,I CHECK IF THIS IS THE FIRST INDIRECT REQUEST M0400020
0021 P0002 0134 SAM T16A--1 SKIP IF SECOND INDIRECT REQUEST M0400021
0022 P0003 D103 RAO- VR,I FIRST INDIRECT REQUEST M0400022
0023 P0004 D103 RAO- VR,I UPDATE RETURN ADDRESS BY 2 M0400023
0024 P0005 0804 SET A M0400024
0025 P0006 6108 STA- VID,I SET WORD 8 OF VOLITALE TO INDICATE IND. REQ. M0400025
0026 P0007 C106 T16A LDA- VTDS,I GET PARAMETER LIST ADDRESS FOR THE IND REQ M0400026
0027 P0008 6105 STA- VPTR,I SAVE IN WORD 5 OF VOLITALE M0400027
0028 P0009 1400 X JMP ASC GO PROCESS NEW REQUEST - GO BACK TO MONI M0400028
0000A 7FFF X
0029 END M0400029

```

PGM= 000B (11) COM = 0000 (0) DAT = 0000 (0)

EQUIVALENCES

DEF. LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0000	I	00FF (000255)	
0015	VR	0003 (000003)	0022, 0023
0015	VPTR	0005 (000005)	0027
0015	VID	0008 (000008)	0020, 0025
0016	VTDS	0006 (000006)	0026
0017	PL1	0001 (000001)	

S Y M B O L S

DEF.LINE	NAME	ADDRESS	REFERENCED AT LINE NUMBER
0006	T16	0000	0006
0026	T16A	0007	0021

EXTERNALS

DEF. LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0007	ASC	000A	0028

*** ALPHABETICAL SORT OF SYMBOLS ***

ASC 0007 I 0000 PL1 0017 T16 0006 T16A 0026 VID 0015 VPTR 0015 VR 0015 VTDS 001e

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0001 * NAM DTIMER DECK-ID M05 MSOS 5.0 SUMMARY-11 M0500001
0002 * MASS STORAGE OPERATING SYSTEM VERSION 5.0 M0500002
0003 * SMALL SYSTEMS DIVISION, LA JOLLA, CALIFORNIA M0500003
0004 * COPYRIGHT CONTROL DATA CORPORATION 1976 M0500004

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0006 * E006 DIAGNOSTIC TIMER M0500006
0007 ENT DTIMER M0500007
0008 EQU DTIMER(*) M0500008

```

```

0011 * THIS CORE RESIDENT PROGRAM IS OPERATED PERIODICALLY. M0500011
0012 * VIA A TIMER REQUEST. IT IS USED TO DETECT I/O HANGUP. M0500012
0013 * ONLY THE DEVICES LISTED IN TABLE DGNTAB ARE SUPERVISED. M0500013

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0015 * IT CAN BE OPERATED IN MULTIPLES OF 1/10 SECS M0500015

```

```

0017 ENT DTIMER M0500017

```

```

0019 EXT DGNTAB TABLE OF P.D.T. ADRS M0500019
0020 EXT TMRLVL TIMER LEVEL DEFINED IN SYSDAT M0500020
0021 EQU EDCLK(4) DIAGNOSTIC CLOCK LOCATION **MSOS M0500021
0022 EQU EDPGM(3) DIAGNOSTIC ERROR ENTRY M0500022
0023 EQU DELAY(10) DELAY TIME IN 1/10 SECS M0500023
0024 EQU TIMRC(8) TIMER REQUEST CODE M0500024
0025 EQU DBIT($4000) ***MSOS M0500025
0026 EQU AMONI($F4),ADISP($EA) M0500026
0027 EQU ZERO(2) M0500027

```

```

0029 P0000 0A00 DTIMER ENA 0 SET J=1ST LG1A ENTRY M0500029
0030 P0001 6816 STA* J M0500030
0031 P0002 E815 A2 LDQ* J M0500031
0032 P0003 E600 LDQ DGNTAB,Q GET ADR OF P.D.T. M0500032
0033 P0004 7FFF X M0500033
0034 P0005 0161 SQP A7--*-1 IS THIS END OF TABLE M0500034
0035 P0006 1812 JMP* A3 YES EXIT M0500035
0036 P0007 C204 A7 LDA- EDCLK,Q M0500036
0037 P0008 0121 SAP A5--*-1 M0500037
0038 P000A 09FE A5 JMP* A1 GO TO A1. M0500038
0039 P000B 6204 INA -1 DECREMENT DCLK(J) BY 1. M0500039
0040 P000C 0131 SAM A6--*-1 IF DCLK(J) IS NEGATIVE, M0500040
0041 P000D 1808 JMP* A1 M0500041
0042 P000E C602 A6 LDA- (ZERO),Q SCHEDULE DIAGNOSTIC M0500042
0043 P000F 6804 STA- SCHED1 ERROR ENTRY M0500043
0044 P0010 C203 LDA- EDPGM,Q M0500044
0045 P0011 6803 STA* SCHED2 M0500045
0046 P0012 54F4 RTJ- (AMONI) CALL SCHEDULER M0500046
0047 P0013 0000 SCHED1 NUM 0 REQUEST CODE,LEVEL M0500047
0048 P0014 0000 SCHED2 NUM 0 LOCATION IN DRIVER M0500048

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0049
 0051 P0015 0802
 0052 P0016 18EB
 0053 P0017 0000
 0054
 0055 P0018 0805
 0056 P0019 A016
 0057 P001A 8807
 0058 P001B 6802
 0059
 0060 P001C 54F4
 0061 P001D 5010
 0062 P001E 0000 P
 0063 P001F 000A
 0064 P0020 14EA
 0065 P0021 7FFF X DTLVL

*
 *
 A1 RAC* J
 JMP* A2
 J NUM 0
 *
 A3 LDA* RQCOD
 AND- \$16
 ADD* DTLVL
 STA* RQCOD
 *
 RTJ- (AMONI)
 RQCOD ADC TIMRC*\$200+\$10+DBIT
 ADC DTIMER
 ADC DELAY
 JMP- (ADISP)
 X DTLVL ADC TMRLVL

INSERT ANY OTHER PROGRAM
 ACTION IN HERE
 INCREMENT J BY 1.
 TIMER DELAY
 SET DIAGNOSTIC TIMER LEVEL
 \$FFF0 MASK
 CALL DISPATCHER

***MSOS
 ***MSOS
 ***MSOS
 ***MSOS
 ***MSOS
 ***MSOS
 ***MSOS
 ***MSOS

M0500009
 M0500010
 M0500011
 M0500012
 M0500013
 M0500014
 M0500015
 M0500016
 M0500017
 M0500018
 M0500019
 M0500020
 M0500021
 M0500022
 M0500023
 M0500024
 M0500025
 M0500026
 M0500027
 M0500028
 M0500029
 M0500030
 M0500031
 M0500032
 M0500033
 M0500034
 M0500035

0067

END

M0500067

PGM= 0022 (34) COM = 0000 (0) DAT = 0000 (0)

EQUIVALENCES

DEF. LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0000	I	00FF (000255)	
0021	EDCLK	0004 (000004)	0035, 0039
0022	EDPGM	0003 (000003)	0044
0023	DELAY	000A (000010)	0063
0024	TIMRC	0008 (000008)	0061
0025	DBIT	4000 (016384)	0061
0026	AMONI	00F4 (000244)	0046, 0060
0026	ADISP	00EA (000234)	0064
0027	ZERO	0002 (000002)	0042

S Y M B O L S

DEF.LINE	NAME	ADDRESS	REFERENCED AT LINE NUMBER
0007	DTIMER	0000	0007
0017	DTIMER	0000	0017, 0062
0031	A2	0002	0052
0035	A7	0007	0033
0038	A5	000A	0036
0042	A6	000E	0040
0047	SCHED1	0013	0043
0048	SCHED2	0014	0045
0051	A1	0015	0037, 0041
0053	J	0017	0030, 0031, 0051
0055	A3	0018	0034
0061	RQCOD	0010	0055, 0058
0065	DTLVL	0021	0057

EXTERNALS

DEF. LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0019	DGNTAB	0004	0032
0020	TMRLVL	0021	0065

*** ALPHABETICAL SORT OF SYMBOLS ***

A1	0051	A2	0031	A3	0055	A5	0038	A6	0042	A7	0035	ADISP	0026	AMONI	0026	DBIT	0026
DELAY	0023	DGNTAB	0019	DTIMER	0017	DTLVL	0065	DTMER	0007	EDCLK	0021	EDPGM	0022	I	0000	J	0000
RQCOD	0051	SCHED1	0047	SCHED2	0048	TIMRC	0024	TMRLVL	0020	ZERO	0027						0026


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0001      *      NAM  TMINT          DECK-ID M06  MSOS 5.0          SUMMARY-11L*****
0002      *      MASS STORAGE OPERATING SYSTEM VERSION 5.0      M0600002
0003      *      SMALL SYSTEMS DIVISION, LA JOLLA, CALIFORNIA    M0600003
0004      *      COPYRIGHT CONTROL DATA CORPORATION 1976       M0600004

0006      *      MONITOR TIMER REQUEST PROCESSOR                M0600006
0007      ENT  TMINT                                           M0600007
0008      EQU  TMINT(*)                                         M0600008

0010      ENT  TIMEUP          ENTRY FOLLOWING TIMER INT. ACK.   **MSOS 4.1* M0600010
0011      ENT  T8             TIMER REQUEST PROCESSOR          M0600011
0012      ENT  T15           PART 1 TIMER REQUEST              **MSOS 4.0 M0600012
0013      ENT  TMRTHD        TOP OF TIMER THREAD              116*4373*****
0014      EXT  NSCHED        NO. OF SCHEDULE CALLS DURING A    M0600013
0015      EXT  TIMEC         NO. OF TIMER INTERRUPTS * 1/10 - 1 M0600014
0016      EXT  SYFAIL        SITE FAIL LOCATED IN SYSDAT ($18FF) M0600015

0018      EQU  CLOCK($E8)    EQU  PC(1),PT(2),PTIME(3)          M0600017
0019      EQU  PC(1),PT(2),PTIME(3)                             M0600018

0020      EQU  RCSCHD(9)     REQUEST CODE FOR SCHEDULER        M0600019
0021      EQU  VR(3),VPTR(5),VTPE(6),VTMP(7)                   M0600020

0022      EQU  ADISP($EA),ONEBIT($23),LPMSK($2)                M0600021

0023      EQU  AMONI($F4)    EQU  TOMPT($B4) TOP OF EMPTY STACK M0600022
0024      EQU  TOMPT($B4)    EQU  ZERO($22),ACABS($BE),AREQXT($B9) M0600023
0025      EQU  ZERO($22),ACABS($BE),AREQXT($B9)                 M0600024

0026      EQU  T8SIZE(3)     LENGTH OF TIMER REQUEST          M0600025
0027      EQU  P1TIME(15)   EQU  T15(*)                       M0600026
0028      EQU  T15(*)       M0600027
0029      *      M0600028
0030      *      M0600029
0031      *      M0600030
0032      P0000 0822      T8      TRA  Q          TIMER REQUEST PROCESSOR M0600031
0033      P0001 0108      LDA- 8,I          SKIP IF INDIRECT REQUEST   ***MSOS4.0 M0600032
0034      P0002 0133      SAM  TR1X        ***MSOS4.0 M0600033
0035      P0003 0A03      ENA  T8SIZE     LENGTH OF CALLING SEQUENCE. M0600034
0036      P0004 8103      ADD- VR,I      M0600035
0037      P0005 6103      STA- VR,I      M0600036
0038      P0006 C622      TR1X  LDA- (ZERO),0 CHECK FOR PART 1 TIMER REQUEST ***MSOS4.0 M0600037
0039      P0007 0F49      ARS  9          ***MSOS4.0 M0600038
0040      P0008 A007      AND- LPMSK+5   ***MSOS4.0 M0600039
0041      P0009 09F0      INA  -P1TIME   ***MSOS4.0 M0600040

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0042 P000A 0114 SAN TR1C SKIP IF NOT PART 1 TIMER REQ
0043 P000B C201 LDA+ PC,Q
0044 P000C B032 FOR- ONEBIT+15 SET BIT 15 OF COMPLETION IF RC=21
0045 P000D 0822 TRA Q SYSTEM DIRECTORY PART 1
0046 P000E 180A JMP* TR1A+1
0047 * RC=8 GO TO PARAMS AND ABSOLUTIZE
0048 P000F C622 TR1C LDA- (ZERO),Q CHECK FOR PART 0 DIRECTORY CALL
0049 P0010 A031 AND- ONEBIT+14 D BIT SET, NOT PART 0
0050 P0011 0114 SAN NOTDIR
0051 P0012 C201 LDA- PC,Q
0052 P0013 0122 SAP NOTDIR BIT 15 SET = DIRECTORY CALL
0053 P0014 0822 TRA Q DON'T ABSOLUTIZE DIRECTORY CALL
0054 P0015 1803 JMP* TR1A+1
0055 P0016 C201 NOTDIR LDA- PC,Q ABSOLUTIZE COMPLETION ADDRESS
0056 P0017 54BE TR1A RTJ- (ACABS) ABSOLUTIZE COMPLETION ADDRESS.
0057 P0018 4107 STQ- VTMP,I
0058 P0019 E105 LDQ- VPTR,I
0059 P001A C622 LDA- (ZERO),Q
0060 P001B A000 AND- =NS00C0 PICK UP USERS ORIGINAL 'U' FIELD
0061 P001C 00C0
0062 P001D 0102 SAZ CLRB15 NO ERROR 'U' .LT. 4
0063 P001E 5400 X RTJ+ SYFAIL ERROR 'U' .GE. 4 = HANG
0064 P001F 7FFF X CLRB15 LDA- (I) CLEAR BIT 15 IN USERS Q-REG
0065 P0020 C4FF AND- LPMSK+15
0066 P0021 A011 STA- (I)
0067 P0022 64FF LDA- (ZERO),Q
0068 P0023 C622 AND- =NS400F SAVE PL AND D BIT
0069 P0024 A000
0070 P0025 400F ADD =XRCSCHD*$200
0071 P0026 8000
0072 P0027 1200
0073 P0028 0500 IIN 0
0074 P0029 E0B4 LDQ- TOMPT
0075 P002A 0D00 INQ 0
0076 P002B 0152 SQN TR1B-* -1 THREAD IS EMPT, GO TO
0077 P002C 5400 X RTJ+ SYFAIL SCHEDULER STACK OVERFLOW -HANG
0078 P002D 001F X TR1B STA- (ZERO),Q
0079 P002E 6622 LDA- PT,Q REMOVE SLOT FROM EMPTY LIST
0080 P002F C202 STA- TOMPT
0081 P0030 60B4 STQ- VIPE,I SAVE ADDRESS OF EMPTY SLOT
0082 P0031 4106 LDA- VTMP,I
0083 P0032 C107 STA- PC,Q
0084 P0033 6201 LDQ- VPTR,I
0085 P0034 E105 LDA- (ZERO),Q
0086 P0035 C622 ARS +
0087 P0036 0F44 AND- LPMSK+2 USE ONLY LOWER 2 BITS
0088 P0037 A004 TRA Q
0089 P0038 0822 STQ- VTMP,I
0090 P0039 4107 LDA* THREAD,Q THREAD TO THREAD(D)
0091 P003A CA54 LDQ- VIPE,I
0092 P003B E106 STA- PT,Q
0093 P003C 6202 TRQ A
0094 P003D 0814

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**MSOS 4.0 M0600041
***MSOS 4.0 M0600042
***MSOS 4.0 M0600043
**MSOS 4.0 M0600044
**MSOS 4.0 M0600045
**MSOS 4.0 M0600046
**MSOS 4.0 M0600047
**MSOS 4.0 M0600048
**MSOS 4.0 M0600049
**MSOS 4.0 M0600050
**MSOS 4.0 M0600051
**MSOS 4.0 M0600052
**MSOS 4.0 M0600053
**MSOS 4.0 M0600054
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M0600057
M0600058
M0600059
M0600060
M0600061
M0600062
M0600063
M0600064
M0600065
***MSOS 4.0 M0600066
M0600067
M0600068
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M0600082
M0600083
M0600084
M0600085
M0600086
M0600087
M0600088

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0090 P003E E107
 0091 P003F 6A4F
 0092 P0040 E105
 0093 P0041 C202
 0094 P0042 E106
 0095 P0043 6203
 0096 *
 0097 P0044 14B9

LDQ- VTMP,I
 STA* THREAD,Q
 LDQ- VPTR,I
 LDA- 2,Q
 LDQ- VIPE,I
 STA- PTIME,Q
 JMP- (AREQXT)

GET USERS TIME
 FROM USERS CALLING SEQUENCE
 PUT TIME INTO SLOT.
 11 CARDS DELETED
 EXIT

M0600089
 M0600090
 M0600091
 M0600092
 M0600093
 M0600094
 M0600095
 M0600096

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0099 P0045 00E8 TIMEUP RAO- CLOCK INCREMENT CORE CLOCK **MSOS L.1** M0600098
0100 P0046 C400 X LDA NSCHED M0600099
    P0047 7FFF X
0101 P0048 683C STA* NUMSCH SET NUMBER OF SCHEDULER CALLS ALLOWED/PERIOD M0600100
0102 P0049 0C00 ENQ 0 M0600101
0103 *
0104 P004A 4839 NXTTIM STQ* TIMIDX CHECK NEXT TIME COUNTER M0600102
0105 P004B CA3E LDA* TIMCTR,Q M0600103
0106 P004C 0133 SAM EXIT*-1 ALL DONE, EXIT M0600104
0107 P004D 0103 SAZ RESET*-1 TIME COUNTER COUNTED DOWN, RESET M0600105
0108 P004E 09FE INA -1 M0600106
0109 P004F 6A3A STA* TIMCTR,Q DECREMENT TIME COUNTER AND EXIT M0600107
0110 P0050 14EA JMP- (ADISP) M0600109

0112 P0051 CA34 RESET LDA* RSTCTR,Q RESET TIME COUNTER AND CHECK ITS THREAD M0600111
0113 P0052 6A37 STA* TIMCTR,Q M0600112
0114 P0053 F000 ADQ =XTHREAD-2 M0600113
    P0054 008C P
0115 *
0116 P0055 40FF CHKTHR STQ- I CHECK THREAD FOR TIME DELAY REQUESTS M0600114
0117 P0056 E102 LOOP LDQ- PT,I M0600115
0118 P0057 0D00 INQ 0 M0600116
0119 P0058 0153 SQN TDREQ*-1 TIME DELAY REQUEST ENCOUNTERED M0600117
0120 P0059 E82A LDQ* TIMIDX M0600118
0121 P005A 0D01 INQ 1 END OF THREAD, CHECK NEXT TIME COUNTER M0600119
0122 P005B 18EE JMP* NXTTIM M0600121

0124 P005C C203 TDREQ LDA- PTIME,Q TIME DELAY REQUEST M0600123
0125 P005D 0103 SAZ CHKSCH*-1 TIME DELAY HAS EXPIRED M0600124
0126 P005E 09FE INA -1 M0600125
0127 P005F 6203 STA- PTIME,Q DECREMENT TIME DELAY REQUEST AND M0600126
0128 P0060 18F4 JMP* CHKTHR CONTINUE TO CHECK THE THREAD. M0600127
0129 *
0130 P0061 C823 CHKSCH LDA* NUMSCH HAS NO. SCHEDULER CALLS BEEN EXCEEDED M0600128
0131 P0062 0119 SAN SCHEDU*-1 FOR THIS PERIOD. M0600129
0132 P0063 C820 LOP1 LDA* TIMIDX YES, CHECK IF ON COUNTS THREAD M0600130
0133 P0064 0111 SAN PUICNT*-1 M0600131
0134 P0065 18EF JMP* CHKTHR YES, CONTINUE TO CHECK THE THREAD M0600132
0135 *
0136 P0066 C202 PUTCNT LDA- PT,Q NO, PUT THE REQUEST ON THE COUNTS THREAD SO M0600133
0137 P0067 6102 STA- PT,I REQUEST WILL BE SCHEDULED AS SOON AS POSSIBLE. M0600134
0138 P0068 C826 LDA* THREAD M0600135
0139 P0069 6202 STA- PT,Q M0600136
0140 P006A 4824 STQ* THREAD COUNTINUE TO CHECK THE THREAD M0600137
0141 P006B 18EA JMP* LOOP M0600138
0142 *
0143 P006C C201 SCHEDU LDA- PC,Q M0600139
0144 P006D 6807 STA* CALL+1 M0600140
0145 P006E C622 LDA- (ZERO),Q MOVE CALL FROM TIMER THREAD M0600141
0146 P006F 6804 STA* CALL M0600142
0147 P0070 0FF0 LLS 16 PUT Q IN A TO SAVE THROUGH MONITOR M0600143
    M0600144
    M0600145
    M0600146

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0148 P0071 E0E8 LDQ- CLOCK PASS THE CORE CLOCK IN Q M0600147
0149 P0072 54F4 RTJ- (AMONI) M0600148
0150 P0073 0000 CALL ADC 0,0 SCHEDULE THE REQUESTED COMPLETION ADDRESS M0600149
      P0074 0000
0151 P0075 0FF0 LLS 16 RESTORE POINTER TO LIST M0600150
0152 P0076 0121 SAP GOGO M0600151
0153 P0077 18EB JMP* LOP1 BACK TO RETHREADING SECTION IF REJECT M0600152
0154 P0078 C80C LDA* NUMSCH DECREMENT NUMSCH M0600153
0155 P0079 09FE INA -1 M0600154
0156 P007A 680A STA* NUMSCH TIMER DELAY HAS EXPIRED. M0600155
0157 P007B C202 LDA- PT,Q M0600156
0158 P007C 6102 STA- PT,I M0600157
0159 * M0600158
0160 P007D 0500 IIN 0 M0600159
0161 P007E C0B4 LDA- TOMPT RETURN SLOT TO EMPTY THREAD M0600160
0162 P007F 6202 STA- PT,Q M0600161
0163 P0080 40B4 STQ- TOMPT M0600162
0164 * M0600163
0165 P0081 0400 EIN 0 M0600164
0166 P0082 18D3 JMP* LOOP CONTINUE TO CHECK THE THREAD M0600165

0168 P0083 0000 TIMIDX NUM 0 TIME COUNTER INDEX M0600167
0169 P0084 0000 NUMSCH NUM 0 NO SCHEDUER CALLS PER TIME PERIOD M0600168

* TIMER UNITS MAY BE 0 = COUNTS M0600170
* OR 1 = .1 SECONDS M0600171
* OR 2 = SECONDS M0600172
* OR 3 = MINUTUES M0600173
0174 * M0600174
0175 * M0600175
0176 P0085 0000 RSTCTR ADC 1-1 NUMBER OF INTERRUPTS PER COUNT M0600176
0177 P0086 7FFF X ADC TIMEC NUMBER OF COUNTS PER .1 SECOND M0600177
0178 P0087 0009 ADC 10-1 NUMBER OF .1 SECONDS PER SECOND M0600178
0179 P0088 003B ADC 60-1 NUMBER OF SECONDS PER MINUTE M0600179
0180 * M0600180
0181 P0089 0000 TIMCTR ADC 0 TIME COUNTER FOR COUNTS M0600181
0182 P008A 0000 ADC 0 TIME COUNTER FOR .1 SECONDS M0600182
0183 P008B 0000 ADC 0 TIME COUNTER FOR SECONDS M0600183
0184 P008C 0000 ADC 0 TIME COUNTER FOR MINUTES M0600184
0185 P008D FFFF NUM -0 END OF TIME COUNTER TABLE M0600185
0186 * M0600186
0187 P008E FFFF THREAD NUM -0 THREAD FOR COUNT DELAYS M0600187
0188 P008F FFFF NUM -0 THREAD FOR .1 SECONDS DELAYS M0600188
0189 P0090 FFFF NUM -0 THREAD FOR SECOND DELAYS M0600189
0190 P0091 FFFF NUM -0 THREAD FOR MINUTE DELAYS M0600190

0192 008E P EQU TMRTHD(THREAD) 116*4373*****
0193 END M0600190

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EQUIVALENCES

DEF.LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0000	I	00FF	(0000255) 0063, 0065, 0116
0018	CLOCK	00E8	(0000232) 0099, 0148
0019	PC	0001	(0000001) 0043, 0051, 0055, 0079, 0143
0019	PT	0002	(0000002) 0075, 0088, 0117, 0136, 0137, 0139, 0157, 0158, 0162
0019	PTIME	0003	(0000003) 0095, 0124, 0127
0020	RCSCHD	0009	(0000009) 0068
0021	VR	0003	(0000003) 0036, 0037
0021	VPTR	0005	(0000005) 0058, 0080, 0092
0021	VTYPE	0006	(0000006) 0077, 0087, 0094
0021	VTMP	0007	(0000007) 0057, 0078, 0085, 0090
0022	ADISP	00EA	(0000234) 0110
0022	ONEBIT	0023	(0000035) 0044, 0049
0022	LPMSK	0002	(0000002) 0040, 0064, 0083
0023	AMONI	00F4	(0000244) 0149
0024	TOMPT	00B4	(0000180) 0070, 0075, 0161, 0163
0025	ZERO	0022	(0000034) 0038, 0048, 0059, 0066, 0074, 0081, 0145
0025	ACABS	00BE	(0000190) 0056
0025	AREQXT	00B9	(0000185) 0097
0026	T8SIZE	0003	(0000003) 0035
0027	P1TIME	000F	(0000015) 0041

S Y M B O L S

DEF.LINE	NAME	ADDRESS	REFERENCED AT LINE NUMBER
0007	TMINT	0000	0007
0010	TIMEUP	0045	0010
0011	T8	0000	0011
0012	T15	0000	0012
0013	TMRTHD	008E	0013
0038	TR1X	0006	0034
0048	TR1C	000F	0042
0055	NOTDIR	0016	0050, 0052
0056	TR1A	0017	0046, 0054
0063	CLRB15	0020	0061
0074	TR1B	002E	0072
0104	NXTTIM	004A	0122
0110	EXIT	0050	0106
0112	RESET	0051	0107
0116	CHKTHR	0055	0128, 0134
0117	LOOP	0056	0141, 0166
0124	TDREQ	005C	0119
0130	CHKSCH	0061	0125
0132	LOP1	0063	0153
0136	PUTCNT	0066	0133
0143	SCHEDU	006C	0131
0150	CALL	0073	0144, 0146
0154	GOGO	0078	0152
0168	TIMIDX	0083	0104, 0120, 0132
0169	NUMSCH	0084	0101, 0130, 0154, 0156
0176	RSTCTR	0085	0112
0181	TIMCTR	0089	0105, 0109, 0113
0187	THREAD	008E	0086, 0091, 0114, 0138, 0140, 0192

EXTERNALS

DEF. LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0014	NSCHED	0047	0100
0015	TIMEC	0086	0177
0016	SYFAIL	002D	0062, 0073

*** ALPHABETICAL SORT OF SYMBOLS ***

ACABS	0025	ADISP	0022	AMONI	0023	AREQXT	0025	CALL	0150	CHKSCH	0130	CHKTHR	0116	CLOCK	0018	CLRB15	0066
EXIT	0110	GOGO	0154	I	0000	LOOP	0117	LOP1	0132	LPMSK	0022	NOTDIR	0055	NSCHED	0011	NJMSCH	0109
NXTTIM	0104	ONEBIT	0022	P1TIME	0027	PC	0019	PT	0019	PTIME	0019	PUTCNT	0130	RCSCHD	0020	RESET	0112
RSTCTR	0176	SCHEDU	0143	SYFAIL	0016	T15	0012	T8	0011	T8SIZE	0026	TDREQ	0124	THREAD	0187	TIMCTR	0181
TIMEC	0015	TIMEUP	0010	TIMIDX	0168	TMINT	0007	TMRTHD	0013	TOMPT	0024	TR1A	0056	TR1B	0074	TR1C	0048
TR1X	0038	VPTR	0021	VR	0021	VTMP	0021	VTPE	0021	ZERO	0025						

```

0001      *      NAM MINT DECK-ID M07 MSOS 5.0
0002      *      MASS STORAGE OPERATING SYSTEM VERSION 5.0
0003      *      SMALL SYSTEMS DIVISION, LA JOLLA, CALIFORNIA
0004      *      COPYRIGHT CONTROL DATA CORPORATION 1976
                                SUMMARY-116*****
                                M0700002
                                M0700003
                                M0700004

0006      *      MANUAL INTERRUPTS PROCESSOR
0007      ENT MINT
0008      EQU MINT(*)
                                M0700006
                                M0700007
                                M0700008

0011      *      THIS IS THE MANUAL INTERRUPT ROUTINE
0012      *      NO ATTEMPT IS MADE TO INTERRUPT REQUESTS IN PROGRESS
                                M0700011
                                M0700012

0014      ENT MI
0015      ENT MIB
0016      ENT MIBX
0017      ENT RELFLE
0018      ENT S200BS
0019      ENT JOBSTR
0020      *      E X T E R N A L S
                                M0700014
                                M0700015
                                M0700016
                                M0700017
                                116*4377*****
                                M0700019
                                116*4377*****

0022      EXT MIINP 'MI' INPUT BUFFER (IN 'SYSDAT')
0023      EXT TSCNAC TIME SHARE ACTIVE ON
0024      *      COMMENT DEVICE FLAG
0025      EXT TSCNMI TIME SHARE MANUAL INTERRUPT ROUTINE.
0026      EXT SIM200
0027      EXT CCP CURRENT CONTROL POINT
                                116*4377*****
                                116*4377*****
                                116*4377*****
                                116*4377*****
                                116*4377*****
                                116*4377*****

0029      EXT JOBIND
0030      EXT FILE1
0031      EXT SWTCH
0032      EXT JOBENT
0033      EXT BATCLU
0034      EXT JBCNCL
0035      EXT MIPRO
0036      EXT LVLSTR, SWAPON, LEND
0037      EXT RESTOR
0038      EXT JPCHGE
0039      EXT LOADIN LOADER IN CORE FLAG
                                M0700021
                                M0700022
                                M0700023
                                M0700024
                                116*4377*****
                                M0700025
                                M0700026
                                M0700027
                                M0700028
                                M0700029
                                *444*** M0700030

0041      *      S Y S T E M E Q U I V A L E N C E
0042      EQU MONIT($F4) LOCATION CONTAINS MONITOR ADDRESS
0043      EQU LPMSK(2)
0044      EQU ZERO($22) LOCATION CONTAINS ZERO
0045      EQU L0CORE($F7) LOW CORE STARTING ADDRESS
0046      EQU CREXTB($E9) LOCATION CONTAINS CORE EXTENDED TABLE
0047      EQU CHARSK($2A) CHARACTER *
                                116*4377*****
                                116*4377*****
                                116*4377*****
                                116*4377*****
                                116*4377*****
                                116*4377*****

0049      EQU DISP($EA)
0050      EQU L(36) BUFFER LENGTH
0051      EQU RP(1)
0052      EQU HICORE($F6)
                                **MSOS * M0700032
                                M0700033
                                M0700034
                                M0700035

```

```

0054 P0000 C870 MI LDA* MIB M0700037
0055 P0001 8870 ADD* MIBX BOTH LOCK OUT FLAGS MUST BE ZERO M0700038
0056 P0002 0101 SAZ MIGO NOT ZERO, JUST GO AWAY M0700039
0057 P0003 14EA MIGO JMP- (DISP) 116*4377*****
0058 P0004 086C RAQ* MIB M0700041
0059 P0005 54F4 RTJ- (MONIT) OUTPUT 'MI' 116*4377*****
0060 P0006 4CE3 NUM $4CE3 M0700047
0061 P0007 0000 ADC $0,$0,$18FC,$2,MIOUT M0700048
      P0008 0000
      P0009 18FC
      P000A 0002
      P000B 00B6 P
0062 P000C 0AFF ENA -0 M0700049
0063 P000D 0C23 ENQ L-1 **MSOS +.0 M0700050
0064 P000E 6E0A MI1 STA* (MIBFAD),Q 116*4377*****
0065 P000F 0DFE INQ -1 M0700052
0066 P0010 0171 SQM MI2--*-1 M0700053
0067 P0011 18FC JMP* MI1 M0700054

0069 P0012 54F4 MI2 RTJ- (MONIT) INPUT STATEMENT 116*4377*****
0070 P0013 48E7 NUM $48E7 116*4377*****
0071 P0014 0021 P ADC MI2AX COMPLETION ADDRESS TO BE ENTERED 116*4377*****
0072 * AT LEVEL 7 116*4377*****
0073 P0015 0000 THR ADC $0,$18FD,L+1,MIINP **MSOS +.0 M0700058
      P0016 18FD
      P0017 0025
      P0018 7FFF X
0074 0018 P EQU MIBFAD(*-1) 'MI' INPUT BUFFER ADDRESS 116*4377*****
0075 P0019 54F4 RTJ- (MONIT) SCHEDULE DOWN TO 116*4377*****
0076 P001A 5203 NUM $5203 LEVEL 3. 116*4377*****
0077 P001B 001D P ADC MI2AA 116*4377*****
0078 P001C 14EA M2AA JMP- (DISP) 116*4377*****
0079 P001D C8F7 MI2AA LDA* THR THIS LOOP RUNS AT LEVEL 3. ITS 116*4377*****
0080 P001E 0101 SAZ MI2AE PURPOSE IS TO INHIBIT THE BACKGROUND 116*4377*****
0081 P001F 18FD JMP* MI2AA PROGRAMS FROM EXECUTING UNTIL THE MI 116*4377*****
0082 P0020 14EA MI2AE JMP- (DISP) INPUT REQUEST IS COMPLETED 116*4377*****
0083 * (AT LEVEL 7) 116*4377*****

0085 * THE INPUT REQUEST IS SATISFIED. 116*4377*****
0086 * 116*4377*****
0087 P0021 0162 MI2AX SQP MI2A SKIP IF NO INPUT ERROR. 116*4377*****
0088 P0022 1800 JMP MI16 IGNORE INPUT AND EXIT. 116*4377*****
      P0023 008A
0089 P0024 C000 X MI2A LDA =XCCP CURRENT CONTROL POINT 116*4377*****
      P0025 7FFF X
0090 P0026 B011 EOR- LPMSK+15 116*4377*****
0091 P0027 0108 SAZ MI21 SKIP IF NOT TIMESHARE SYSTEM 116*4377*****
0092 P0028 C400 X LDA+ TSCNAC SKIP IF TIME SHARE IS NOT 116*4377*****
      P0029 7FFF X
0093 P002A 0105 SAZ MI21 ACTIVE AT THE COMMENT DEVICE. 116*4377*****

```

```

0094 P0028 E8 EC LDQ* MIBFAD
0095 P002C 54F4 RTJ- (MONIT)
0096 P002D 5205 NUM $5205
0097 P002E 7FFF X ADC TSCNMI
0098 P002F 187E JMP* MI16
0099 P0030 CCE7 MI21 LDA* (MIBFAD)
0100 P0031 0F48 ARS 8
0101 P0032 09D5 INA -CHARSK
0102 P0033 0104 SAZ MI3-* -1
0103 P0034 1800 JMP SIMPRO
0103 P0035 00C5

```

```

SET Q EQUAL TO INPUT BUFFER ADDRESS.
SCHEDULE THE
TIME SHARE MANUAL INTERRUPT ROUTINE.

CLEAR FLAGS AND EXIT.

CHECK FOR '*'

GO TO TEST FOR SIM200 ENTRY

```

```

116*4377*****
116*4377*****
116*4377*****
116*4377*****
116*4377*****
116*4377*****
M0700066
116*4377*****
M0700068
116*4377*****

```

```

0105 P0036 5AFF Z NUM $5AFF
0106 P0037 7FFF X STH ADC SWTCH

```

```

M0700071
M0700072

```

```

0108 P0038 C800 MI3 LDA S200BS
0109 P0039 00F0
0110 P003A 0101 SAZ MI31
0111 P003B 186B JMP* MI12
0111 P003C CC36 MI31 LDA* (JOB1)
0112 P003D 0101 SAZ 1
0113 P003E 1835 JMP* MI5
0114 P003F CCF7 LDA* (STH)
0115 P0040 010C SAZ NLO-* -1
0116 P0041 0C01 ENQ 1
0117 P0042 EED5 LDQ* (MIBFAD),Q
0118 P0043 C0D4 LDA* (MIBFAD)
0119 P0044 0FE8 LLS 8
0120 P0045 98F0 SUB* Z
0121 P0046 0101 SAZ NLA-* -1
0122 P0047 1845 JMP* MI6
0123 P0048 6400 X NLA STA LOADIN
0123 P0049 7FFF X
0124 P004A 0A01 ENA 1
0125 P004B 6CEB STA* (STH)
0126 P004C 182D JMP* MI5AA
0127 P004D 004D P NLO EQU NLO(*)
0128 P004E C0CA LDA* (MIBFAD)
0129 P004F 9000 SUB =A*R
0130 P004F P ASTSKR EQU ASTSKR(*-1)
0131 P0050 0112 SAN 2
0132 P0051 E84A LDQ* MIP
0133 P0052 1844 JMP* MI9B
0134 P0053 0C02 ENQ 2
0135 P0054 CEC3 MORE LDA* (MIBFAD),Q
0136 P0055 9A5B SUB* BATCH,Q
0137 P0056 0113 SAN ERR
0138 P0057 0143 SQZ JOBSTR
0139 P0058 0DFE INQ -1
0140 P0059 18FA JMP* MORE

```

```

IF SIM200 IS RUNNING, DO NOT
ALLOW THE JOB PROCESSOR TO EXECUTE.
GO PRINT A JP05 ERROR MESSAGE.
CHECK IF JOB PROCESSOR IN CORE
IN CORE.

CHECK JP LOCK-OUT SWITCH IF
LIBEDIT OR RECOVERY PROGRAM
IN OPERATION.

CHECK IF *Z

CK FOR *, *R, *K
CLEAR LOADER IN CORE FLAG

FLAG POSITIVE.
GO CANCEL LIBEDT AS ANY OTHER JOB

LET AN *R THRU
FOR FOREGROUND UNITS

```

```

116*4377*****
116*4377*****
116*4377*****
116*4377*****
M0700075
M0700076
M0700077
M0700078
116*4377*****
116*4377*****
116*4377*****
M0700081
M0700082
M0700083
M0700084
*+*+*****M0700085
*+*+***** M0700086
M0700087
116*4377*****
M0700089
**MSOS +.GM0700091
116*4377*****
**MSOS +.GM0700092
**MSOS +.GM0700093
**MSOS +.GM0700094
116*4377*****
116*4377*****
116*4377*****
**MSOS +.GM0700098
116*4377*****
116*4377*****
**MSOS +.GM0700101

```

```

0141 P005A 184C ERR JMP* MI12
0142 P005B ECF9 JOBSTR LDQ- CREXTB
0143 P005C C2CB LDA- 11,Q TEST FOR AND SKIP IF SWAP NOT ALLOWED
0144 P005D 011D SAN SJOB SWAPPING NOT ALLOWED
0145 P005E C20A LDA- 10,Q TEST FOR AND SKIP IF UNPROTEC IN PART
0146 P005F 0108 SAZ JOBA PART 0 SWAPPED
0147 P0060 54F4 RTJ- (MONIT) REQ FOR PARTITION 15
0148 P0061 6200 ADC $6200 BEFORE CALLING IN
0149 P0062 006B P ADC SJOB JOB PROCESSOR
0150 P0063 0000 NUM 0,0
0151 P0064 0000 NUM 10
0152 P0066 0010 NUM 16
0153 P0067 14EA JMP- (DISP)
0154 P0068 54F4 JOBA RTJ- (MONIT) RELEASE PART 0
0155 P0069 1800 NUM $1800
0156 P006A 0000 RELSWP ADC 0

0158 * THE JOB PROCESSOR IS NOW SCHEDULED BUT
0159 * CANNOT RUN UNTIL THE SWAPPED AREA IS
0160 * AVAILABLE AND THE LEVEL 2 LOOP IN THE
0161 * SPACE DRIVER IS TURNED OFF.

0163 P006B E830 SJOB LDQ* MIP
0164 P006C 54F4 RTJ- (MONIT) SCHEDULE JOB PROCESSOR
0165 P006D 2400 NUM $2400 PART 1 DIRECTORY SCHEDULE
0166 P006E 7FFF X ADC JOBENT
0167 P006F 14EA JMP- (DISP)

0169 P0070 0000 MIB NUM 0
0170 P0071 0000 MIBX NUM 0
0171 P0072 7FFF X JOBI ADC JOBIND
0172 P0073 CC01 MI5 ENQ 1 CHECK IF *Z
0173 P0074 EEA3 LDQ* (MIBFAD),Q
0174 P0075 CCA2 LDA* (MIBFAD)
0175 P0076 0FE8 LLS 8
0176 P0077 98BE SUB* Z
0177 P0078 0117 SAN MI5A
0178 P0079 C0FD MI5AA LDA- $FD SET CONTROL LU TO COMMENT DEVICE
0179 P007A 6400 X STA+ BATCLU
0180 P007B 7FFF X
0181 P007C 54F4 RTJ- (MONIT) SCHEDULE JOB CANCEL
0182 P007D 5202 NUM $5202 AT LEVEL TWO
0183 P007E 7FFF X ADC JBCNCL
0184 P007F 182E MI5A JMP* MI16 RESET MIB
0185 P0080 CC97 LDA* (MIBFAD)
0186 P0081 B000 EOR =A*K CHECK FOR *K STATEMENT
0187 P0082 2A4B SAZ MI5B
0188 P0084 09F7 INA -8 *C
0188 P0085 0116 SAN MI6

```

```

**MSOS +.0M0700102
116*4377*****
M0700104
M0700105
M0700106
M0700107
116*4377*****
**MSOS +.0M0700109
**MSOS +.0M0700110
**MSOS +.0M0700111
**MSOS +.0M0700112
**MSOS +.0M0700113
**MSOS +.0M0700114
116*4377*****
M0700116
M0700117

M0700119
M0700120
M0700121
M0700122

**MSOS +.0M0700124
116*4377*****
M0700126
**MSOS +.0M0700127
M0700128

**MSOS +.0M0700130
**MSOS +.0M0700131
**MSOS +.0M0700132
116*4377*****
116*4377*****
116*4377*****
M0700135
M0700136
M0700137
116*4377*****
116*4377*****

116*4377*****
**MSOS +.0M0700139
M0700140
M0700141
116*4377*****
M0700143

**MSOS +.0M0700144
**MSOS +.0M0700145
**MSOS +.0M0700146

```

```

0189 P0086 E815 MI5B LDQ* MIP
0190 P0087 08E9 RAO* MIBX
0191 P0088 54F4 RTJ- (MONIT)
0192 P0089 2403 NUM $2403
0193 P008A 7FFF X ADC JPCHGE
0194 P008B 1822 JMP* MI16
0195 P008C CC8B MI6 LDA* (MIBFAD)
0196 P008D 8000 EOR =X$2AFF CK FOR * CR
      P008E 2AFF
0197 P008F 0111 SAN MI9
0198 P0090 1810 JMP* MI16 * CR - JUST CONTINUE
0199 P0091 E80A MI9 LDQ* MIP Q POINTS TO INPUT BUFFER
0200 P0092 CC85 LDA* (MIBFAD)
0201 P0093 88BB EOR* ASTSKR CHECK FOR RESTORE A DEVICE
0202 P0094 0101 SAZ MI9B YES - SCHEDULE RESTOR
0203 P0095 1811 JMP* MI12 NO - JOB ERROR
0204 P0096 D8DA MI9B RAO* MIBX SET LOCK OUT FLAG
0205 P0097 54F4 RTJ- (MONIT)
0206 P0098 2403 NUM $2403
0207 P0099 7FFF X ADC RESTOR
0208 P009A 1813 JMP* MI16 EXIT
0209 P009B 0018 X MIP ADC MIINP

0211 P009C C808 MI10 LDA* AMIPRO PROCESSOR OTHER THAN J.P.
0212 P009D 8032 ADD- $32 8000
0213 P009E 0900 INA 0
0214 P009F 0106 SAZ MI12--*-1 SKIP IF NOT PRESENT
0215 P00A0 E8FA LDQ* MIP
0216 P00A1 D8CF RAO* MIBX SET MIBX FLAG - RECOVER, MIPRO
0217 P00A2 54F4 RTJ- (MONIT) SCHEDULE PROCESSOR
0218 P00A3 2447 NUM $2447
0219 P00A4 7FFF X AMIPRO ADC MIPRO SYSTEM DIRECTORY ENTRY
0220 P00A5 1808 JMP* MI16

0222 P00A6 54F4 MI12 RTJ- (MONIT) NO PROCESSOR
0223 P00A7 4C00 NUM $4C00 ERROR - JP05
0224 P00A8 0000 ADC $0,$0,$18FC,$2
      P00A9 0000
      P00AA 18FC
      P00AB 0002
0225 P00AC 00B4 P ADC MI14
0226 P00AD 0A00 MI16 ENA 0
0227 P00AE 68C1 STA* MIB SET MI NOT BUSY
0228 P00AF 14EA JMP- (DISP)

0230 *
0231 *-----*
0232 * KEY WORD, ADDRESSES AND STORAGE

0234 P00B0 2A42 BATCH ALF 3,*BATCH
      P00B1 4154
      P00B2 4348

0235 * 1 CARD DELETED

```

```

**MSOS +.0M0700147
**MSOS +.0M0700148
116*4377*****
M0700150
M0700151
**MSOS +.0M0700152
116*4377*****
M0700154
M0700155
M0700156
M0700157
116*4377*****
116*4377*****
M0700160
M0700161
M0700162
116*4377*****
M0700164
M0700165
M0700166
**MSOS +.0M0700167
M0700169
**MSOS +.0M0700170
M0700171
M0700172
M0700173
M0700174
116*4377*****
116*4377*****
**MSOS +.0M0700177
M0700178
116*4377*****
**MSOS +.0M0700181
M0700182
M0700183
M0700184
M0700185
M0700186
116*4377*****
116*4377*****
116*4377*****
**MSOS +.0M0700188
116*4377*****

```

```

0236 P00B3 7FFF X F1 ADC FILE1
0237 P00B4 4A50 MI14 ALF 2,JP05
      P00B5 3035
0238 P00B6 4D49 MIOU ALF 1,MI
0239 P00E7 0DFF NUM $0DFF
0240 P00B8 7FFF X ALVLST ADC LVLSTR
0241 P00B9 7FFF X ADC LEND
0242 P00BA 7FFF X ADC SWAPON
0243 P00BB 0C00 LVLSTV ADC J

```

```

M0700190
**MSOS +..JM0700191

```

```

ADR OF START OF KP=C ALLOCATABLE
ADR OF END OF ALLOCATABLE AREA
ADR OF UNPROTECTED INDICATOR

```

```

M0700192
M0700193
M0700194
M0700195
M0700196
M0700197

```

0245
0246
0247
0248
0249
0250
0251
0252
0253

*
*
*
*
*
*
*
*

THIS ROUTINE IS ENTERED WHEN THE JOB PROCESSOR
IS SIGNED OFF OR CANCELLED.
THE JOB AREA IS MADE AVAILABLE TO THE
PROTECTED PROGRAMS. THIS IS DONE BY
FORCING A CORE-SWAP WHICH WILL NOT BE
TERMINATED UNTIL THE JOB PROCESSOR IS
REQUESTED AGAIN
CORE SWAP IS NOT FORCED IN PART 0 IF
NOSWAP FLAG IS SET

M0700199
M0700200
M0700201
M0700202
M0700203
M0700204
M0700205
M0700206
M0700207
**MSOS +.0
**MSUS - .0

0255 PC0B0 0B00
0256 PC0B0 D8P2
0257 PC0B0 0400
0258 PC0B0 0C00
0259 PC0C0 CEF2
0260 PC0C1 0105
0261 PC0C2 6803
0262 PC0C3 54F4
0263 PC0C4 1800
0264 PC0C5 0000
0265 PC0C6 0A00
0266 PC0C7 6EEB
0267 PC0C8 0DFE
0268 PC0C9 0171
0269 PC0CA 18F5
0270 PC0CB 0AC0
0271 PC0CC 6CA5
0272 PC0CD E0E9
0273 PC0CE C20B
0274 PC0CF 0101
0275 PC0D0 180C
0276 PC0D1 C20A
0277 PC0D2 0101
0278 PC0D3 1814

RELFL0 NOP 0 RELEASE ALL FILES ROUTINE
RAO* MIB SET MIB - LOCK OUT FOR MANUAL INTERRUPT
ENQ 3
RELFL0 LDA* (F1),Q RELEASE LAST FILE FIRST
SAZ RELFL1--*-1 IF ZERO, SKIP RELEASE
STA* RELFL
RTJ- (MONIT) RELEASE FILE
NUM \$1800
RELFL NUM \$0000
ENA 0
STA* (F1),Q ZERO FILE LOCATION
RELFL1 INQ -1
SQM RELFL2--*-1
JMP* RELFL0
RELFL2 ENA 0 ZERO JP IN-CORE SWITCH.
STA* (JOBI)
LDQ- CREXTB
LDA- 11,Q
SAZ RELFL3 SKIP IF SWAP ALLOWED
JMP* MI16 NO SWAP ALLOWED
RELFL3 LDA- 10,Q
SAZ RELFL4 SKIP IF UNPROTECTED IN PART 0
JMP* RELPRT UNPROTECTED IN PART 1

M0700209
M0700210
M0700211
M0700212
M0700213
M0700214
M0700215
11c*4377
M0700217
M0700218
M0700219
M0700220
M0700221
M0700222
M0700223
M0700224
11b*4377
11b*4377
M0700227
M0700228
M0700229
M0700230
M0700231
M0700232

0280

*
FORCE A CORE SWAP

M0700234

0282 P00D4 0C01
0283 P00D5 CEE2
0284 P00D6 68F4
0285 P00D7 0CF6
0286 P00D8 09FA
0287 P00D9 6EDE
0288 P00DA 54F4
0289 P00DB 5413
0290 P00DC 00E1 P
P00DD 00C0
P00DE 0000
P00DF 0000
0291 P00E0 14EA

RELFL4 ENQ RP SET REQUEST PRIORITY
LDA* (ALVLST),Q SAVE START OF ALLOCATABLE FOR THIS RP
STA* LVLSTV
LDA- HICORE
INA -5
STA* (ALVLST),Q
RTJ- (MONIT) SPACE REQUEST
ADC RP*16+\$5403
ADC SWAPPD,0,0,0 LENGTH 0
JMP- (DISP)

M0700235
M0700236
M0700237
M0700238
M0700239
M0700240
M0700241
11c*4377
61*1285 M0700243
M0700244
M0700245


```

03339 P010D 54F4 RTJ- (MONIT) SCHEDULE SIM200 116*4377*****
03340 P010E 2404 NUM $204 GET SIM200 116*4377*****
03341 P010F 7FFF X ADC SIM200 116*4377*****
03342 P0110 14EA JMP- (DISP) RETURN TO DISPATCHER 116*4377*****
03343 P0111 CC89 SLCK LDA* (MIP) NOT RES, SO TEST FOR SLACK (/) 116*4377*****
03344 P0112 0F48 ARS 8 116*4377*****
03345 P0113 99D0 INA -$2F 116*4377*****
03346 P0114 0101 SAZ GO2 116*4377*****
03347 P0115 1886 JMP* MI10 NOT A SIM200 COMMAND, SO RETURN 116*4377*****
03348 P0116 C813 GO2 LDA* S200BS TEST IF SIM200 IS IN CORE 116*4377*****
03349 P0117 0111 SAN GO20 116*4377*****
03350 P0118 1880 JMP* MI12 NOT IN CORE, SO GO TO PRINT ERROR 5 116*4377*****
03351 P0119 E000 X GO20 LDQ =XSIM200 BUILD ADDRESS OF SIM200 DIRECTORY LOC. 116*4377*****
03352 P011A 010F X 116*4377*****
03353 P011B F0EB ADQ- $EB 116*4377*****
03354 P011C C201 LDA- 1,Q PICKUP CORE ADDRESS 116*4377*****
03355 P011D 680A STA* LOC+1 116*4377*****
03356 P011E 4A0F ENA 15 116*4377*****
03357 P011F A622 AND- (ZERO),Q 116*4377*****
03358 P0120 8000 ADD =N$1200 116*4377*****
03359 P0121 1200 116*4377*****
03360 P0122 6804 STA* LOC PICKUP MESSAGE START ADDRESS 116*4377*****
03361 P0123 E800 LDQ MIP 116*4377*****
03362 P0124 FF76 116*4377*****
03363 P0125 54F4 LOC RTJ- (MONIT) 116*4377*****
03364 P0126 1207 NUM $1207 116*4377*****
03365 P0127 0000 NUM 0 116*4377*****
03366 P0128 14EA JMP- (DISP) 116*4377*****
* 116*4377*****
03367 P0129 0000 * S200BS NUM 0 116*4377*****
03368 END 116*4377*****
MG700272

```

EQUIVALENCES

DEF. LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0000 0042	I MONIT	00FF 00FL	(000235) (000247) 0059, 0069, 0073, 0190, 01-7, 010-, 0104, 0105, 0191, 0200, 0217, 0220, 0202, 0200, 300, 300
0043	LPMSK	0002	(000002) 0090
0044	ZERO	0022	(000034) 0356
0045	LOCORE	00F7	(000247) 0300
0046	CPREXTB	00E9	(000233) 0142, 0272
0047	CHARSK	002A	(000042) 0101
0049	DISP	00EA	(000234) 0057, 0078, 0082, 0103, 0167, 0228, 0291, 0313, 0342, 0363
0050	L	0024	(000030) 0003, 0073
0051	RP	0001	(000001) 0282, 0289, 0295
0052	HICORE	00F6	(000240) 0285

SYMBOLS

DEF. LINE	NAME	ADDRESS	REFERENCED AT LINE NUMBER
0007	MINT	0000	0007
0014	MI	0000	0014
0015	MIB	0070	0015, 0054, 0058, 0227, 0250, 0330
0016	MIBX	0071	0016, 0055, 0190, 0204, 0210, 0335
0017	RELFL	0080	0017
0018	S200CBS	0129	0018, 0103, 0332, 0337, 0348
0019	JOBSTR	0050	0019, 0133
0058	MIGO	0004	0058
0064	MI1	000E	0067
0069	MI2	0012	0066
0073	THR	0015	0079
0074	MIBFAD	0018	0064, 0094, 0099, 0117, 0118, 0128, 0130, 0173, 0174, 0184, 0190, 020
0079	MI2AA	0010	0077, 0081
0082	MI2AE	0020	0080
0087	MI2AX	0021	0071
0089	MI2A	0024	0087
0099	MI21	0030	0091, 0093
0105	Z	0030	0120, 017E
0106	STH	0037	0114, 0125
0108	MI3	0038	0102
0111	MI31	0030	0109
0123	NLA	0048	0121
0127	NLO	0040	0115
0130	ASTSKR	004F	0201
0135	MORE	0054	0140
0141	ERR	005A	0137
0154	JOBA	0068	0140
0156	RELSWP	006A	0294
0163	SJOB	006B	0144, 0149
0171	JOBI	0072	0111, 0271
0172	MI5	0073	0113
0178	MI5AA	0079	0126
0184	MI5A	0080	0177
0189	MI5B	0086	0186
0195	MI6	008C	0122, 0188
0199	MI9	0091	0197
0204	MI9B	0096	0133, 0202
0209	MIP	009B	0132, 0163, 0189, 0199, 0210, 0323, 0320, 0338, 0343, 0359
0211	MI10	009C	0347
0219	AMI PRO	00A4	0211
0222	MI12	00A6	0110, 0141, 0203, 0214, 0334, 0350

0226 MI16
 0234 BATCH
 0236 F1
 0237 MI14
 0238 MIOU
 0240 ALVLST
 0243 LVLSTV
 0259 RELFL0
 0264 RELFL
 0267 RELFL1
 0271 RELFL2
 0276 RELFL3
 0282 RELFL4
 0293 SWAPPD
 0300 RELPRT
 0306 RELUP
 0314 RELA
 0316 RELUPA
 0323 SIMPRO
 0327 SPR
 0335 SFRO
 0343 SLOCK
 0348 GO2
 0351 GO20
 0361 LOC

00AD
 00B0
 00B3
 00B4
 00B6
 00B8
 00B8
 00C0
 00C5
 00C8
 00CE
 00D1
 00D4
 00E1
 00E7
 00ED
 00F6
 00F8
 00FA
 00FF
 0107
 0111
 0118
 0119
 0126

0088, 0098, 0183, 0194, 0198, 0208, 0220, 0275, 0297, 0317
 0136
 0259, 0266
 0225
 0061
 0283, 0287, 0296
 0284, 0293
 0269
 0251
 0250
 0258
 0274
 0277
 0290
 0278
 0302
 0309
 0303
 0103
 0325
 0326, 0331
 0346
 0349
 0354, 0358

 E X T E R N A L S

DEF. LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0022	MIINP	009B	0073, 0209
0023	TSCNAC	0029	0092
0025	TSCNMI	002E	0097
0026	SIM200	011A	0341, 0351
0027	CCP	0025	0089
0029	JOBIND	0072	0171
0030	FILE1	00B3	0236
0031	SWTCH	0037	0106
0032	JOBENT	006E	0166
0033	BATCLU	0078	0179
0034	JBCNCL	007E	0182
0035	MIPRO	00A4	0219
0036	LVLSTR	00B8	0240
0036	SWAPON	00BA	0242
0036	LEND	00B9	0241
0037	RESTOR	0099	0207
0038	JPCHGE	008A	0193
0039	LOADIN	0049	0123

*** ALPHABETICAL SORT OF SYMBOLS ***

ALVLST	0240	AMI PRO	J219	ASTSKR	0130	BATCH	0204	BATCLU	0033	CCP	0027	CHARSK	0047	CREXTB	0000	DISP	0049
ERR	0141	F1	0236	FILE1	0030	GO2	0343	GO2	0001	HICORE	0002	I	0000	CRONCL	0000	JULIA	0000
JOENT	0032	JODI	0171	JOBIND	0029	JOBSTR	0019	JPOHGE	0008	L	0000	LEND	0000	LOADIN	0000	LOG	0000
LOCORE	0044	LPMSK	0013	LVLSTR	0006	LVLSTV	0243	MI	0011	MI1	0000	MI1	0211	MI12	0000	MY	0000
MI10	0226	MI2	0069	MI21	0099	MI2A	0089	MI2AA	0079	MI2AE	0082	MI2AX	0087	MI3	0000	MI3A	0000
MI5	0172	MI5A	0184	MI5AA	0178	MI5B	0109	MI6	0190	MI6	0100	MI90	0000	MI6	0000	MI6A	0000
MI8X	0010	MIG0	0058	MIINP	0022	MINT	0007	MIOUT	0000	MIP	0209	MIPRO	0000	MONIT	0000	MI90A	0000
NLA	0123	NLO	0127	RELA	0314	RELFL	0201	RELFL0	0000	RELFL1	0207	RELFL2	0000	RELFL0	0000	MI90B	0000
RELFL	0017	RELPR	0300	RELSW	0156	RELUP	0306	RELUPA	0310	RESTOR	0007	RFP	0000	RELFL1	0000	RELFL2	0000
SIMPRO	0323	SJOB	0103	SLCK	0343	SPP	0027	SPRO	0000	STH	0100	SWAPON	0000	SZCUBD	0000	SIN20	0000
THR	0073	TSCNAC	0023	TSCNMI	0025	Z	0100	ZERO	0000					SWAPPD	0000	SNTCH	0000

```

0001      *      NAM  MAKQ          DECK-ID M08  MSUS 5.0
0002      *      MASS STORAGE OPERATING SYSTEM VERSION 5.0
0003      *      SMALL SYSTEMS DIVISION, LA JOLLA, CALIFORNIA
0004      *      COPYRIGHT CONTROL DATA CORPORATION 1976

0006      *      MAKE ERROR CODE
0007      ENT  MAKQ
0008      EQU  MAKQ(*)

0011      ENT  MAKEQ
0012      EQU  RETURN(15)
0013      EQU  LASTP1(11)
0014      EQU  CORE(10)
0015      EQU  ZERO($22)
0016      EQU  BIT14($31)
0017      EQU  ERRTAB(8)
0018      EQU  STATUS(12)
0019      EQU  X1FFF($F)
0020      EQU  SWITCH(9)
0021      EQU  EPTR(6)      REQUEST POINTER
0022      EQU  LOWBTS(3)
0023      NOP  0
0024      IIN  0
0025      LDA* MAKEQ
0026      EIN  0
0027      STA- RETURN,I
0028      LDQ- EPTR,I      POINTER
0029      LDA- (ZERO),Q    GET REQUEST WORD
0030      ARS  9
0031      AND- LOWBTS+4    MASK REQ CODE
0032      INA  -14
0033      ENQ  0
0034      SAN  LABEL1     NOT NOTION
0035      JMP* NSHORT     IS NOTION, NO STORE IN LUA
0036      LDA- LASTP1,I
0037      SUB-  CORE,I
0038      SAZ  NSHOPT--1
0039      LDA- SWITCH,I   SWITCH SET
0040      ALS  13         FOR LOWER
0041      SAP  1
0042      RAO- CORE,I    YES,TNO ADDRES
0043      ALS  2
0044      SAM  NSHOPT--1
0045      LDA- LASTP1,I   SHORT TRANSFER
0046      SUB-  CORE,I
0047      SAZ  NSHOPT--1
0048      LDQ- LASTP1,I   YES,SET NEXT
0049      INQ  -1         AVAIL.LOC INTO
0050      LDA- CORE,I     END OF BUFFER
0051      STA- (ZERO),Q
0052      STA- LASTP1,I

```

```

SUMMARY-11
M08000001
M08000002
M08000003
M08000004
M08000005
M08000006
M08000007
M08000008
M08000011
M08000012
M08000013
M08000014
M08000015
M08000016
M08000017
M08000018
M08000019
M08000020
M08000021
M08000022
M08000023
M08000024
M08000025
M08000026
M08000027
M08000028
M08000029
M08000030
M08000031
M08000032
M08000033
M08000034
M08000035
M08000036
M08000037
M08000038
M08000039
M08000040
M08000041
M08000042
M08000043
M08000044
M08000045
M08000046
M08000047
M08000048
M08000049
M08000050
M08000051
M08000052

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0053 P001E E031 LDQ- BIT14
0054 P001F C108 NSHORT LDA- ERRTAB,I
0055 P0020 A031 AND- BIT14
0056 P0021 0106 SAZ NOERR-**-1
0057 P0022 0FC1 ALS 1
0058 P0023 0872 EAQ Q
0059 P0024 0A01 ENA 1
0060 P0025 A10C AND- STATUS,I
0061 P0026 0FCD ALS 13
0062 P0027 0872 EAQ Q
0063 P0028 C00F NOERR LDA- X1FFF
0064 P0029 A109 AND- SWITCH,I
0065 P002A 0874 EAQ A
0066 P002B 6109 STA- SWITCH,I
0067 P002C E10F LDQ- RETURN,I
0068 P002D 1622 JMP- (ZERO),Q
0069 END

```

```

M0800003
M0800004
M0800005
M0800006
M0800007
M0800008
M0800009
M0800010
M0800011
M0800012
M0800013
M0800014
M0800015
M0800016
M0800017
M0800018
M0800019

```

PGM= 002E (46) COM = 0000 (0) DAT = 0000 (0)

EQUIVALENCES

DEF.LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0000	I	00FF	(0000255)
0012	RETURN	000F	(0000015) 0027, 0067
0013	LASTP1	000B	(0000011) 0036, 0045, 0048, 0052
0014	CORE	000A	(0000010) 0037, 0042, 0046, 0050
0015	ZERO	0022	(0000034) 0029, 0051, 0068
0016	BIT14	0031	(0000049) 0053, 0055
0017	ERRTA3	0008	(0000008) 0054
0018	STATUS	000C	(0000012) 0060
0019	X1FFF	00CF	(0000015) 0063
0020	SWITCH	0009	(0000009) 0033, 0064, 0066
0021	EPTR	0005	(0000006) 0025
0022	LOWRTS	0003	(0000003) 0031

S Y M B O L S

DEF.LINE	NAME	ADDRESS	REFERENCED AT LINE NUMBER
0007	MAKQ	0000	0007
0011	MAKEQ	0000	0011, 0025
0036	LABEL1	0000	0034
0054	NSHORT	001F	0035, 0038, 0044, 0047
0063	NOERR	0028	0056

*** ALPHABETICAL SORT OF SYMBOLS ***

BIT14	0016	CORE	0014	EPTR	0021	ERRTAB	0017	I	0000	LABEL1	0036	LASTP1	0013	LOWBTS	0022	MAKEQ	0011
MAKQ	0007	NOERR	0063	NSHORT	0054	RETURN	0012	STATUS	0018	SWITCH	0020	X1FFF	0019	ZERO	0019		

```

0001 *      NAM  RW      DECK-ID M09  MSOS 5.0      SJHMARY-11 M0900001
0002 *      MASS STORAGE OPERATING SYSTEM VERSION 5.0 M0900002
0003 *      SMALL SYSTEMS DIVISION, LA JOLLA, CALIFORNIA M0900003
0004 *      COPYRIGHT CONTROL DATA CORPORATION 1975 M0900004

0006 *      READ WRITE REQUEST PROCESSOR M0900006
0007 ENT RW M0900007
0008 0000 P EQU RW(*) M0900008

0011 ENT T0,T1,T2,T4,T6 M0900011
0012 ENT SAVLU,CKTHRD,RPMASK M0900012
0013 EXT LOG2,LOG1,LOG1A M0900013
0014 EXT ALTSUB SUB. TO SET Q=ALT. IF LU IN Q IS DOWN M0900014
0015 EXT CONVER M0900015
0016 EQU H1000($2F) M0900016
0017 EQU VR(3),VPL(4),VPTR(5) M0900017

0018 EQU VTPE(6),VTMP(7) M0900018

0019 EQU VID(8) **MSOS 4.0 M0900019
0020 EQU LIBLU($C2) M0900020
0021 EQU ALUABS($BC),AREQXT($B9) M0900021

0022 EQU PT(2),PS(5) M0900022

0023 EQU AMONI($F4) M0900023
0024 EQU ELU(5),EREQST(8) M0900024

0025 EQU NZERO($12) M0900025
0026 EQU ZERO($22) M0900026
0027 EQU LPMSK(2),ONEBIT($23) M0900027

0028 EQU MCODE(2) M.M. CLASS CODE M0900028
0029 ON ENTRY A, Q, AND I CONTAIN THE FOLLOWING M0900029
0030 A, PARAMETER LIST LOCATION M0900030
0031 Q, PARAMETER GIVING M0900031
0032 ADDRESS OF PROCESSOR M0900032
0033 I, ADDRESS OF VOLATILE M0900033
0034 M0900034
0035 P0000 0822 T1 TRA Q PARAMETER LIST TO Q M0900035
0036 P0001 C108 LDA- 8,I **MSOS 4.0 M0900036
0037 P0002 0133 SAM R1--1 **MSOS 4.0 M0900037
0038 * SKIP IF INDIRECT REQUEST
0039 * INCREMENT RETURN ADDRESS
0040 P0003 0A06 ENA 6 M0900039
0041 P0004 8103 ADD- VR,I M0900040
0042 P0005 6103 STA- VR,I M0900041
0043 * SET UP PRIORITY LEVEL OF THE REQUEST M0900042
0044 P0006 C622 R1 LDA- (ZERO),Q M0900043
0045 P0007 A800 AND RPMASK M0900044
0046 P0008 0080

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0045 P0009 6104 STA- VPL,I
0047 * GET LOGICAL UNIT NUMBER IN Q
0049 P000A C107 LDA- VTMP,I IF THIS IS SYS DIR
0050 P0008 0400 EIN 0
0051 P000C 0112 SAN RWUSER--1
0052 P000D E0C2 LDQ- LIBLU
0053 P000E 1804 JMP* SAVLU
0054 P000F 5800 RWUSER RTJ CKTHRD CHECK THREAD LOC FOR U *+3c
P0010 007E
0055 P0011 54BC SAVLU RTJ- (ALUABS)
0056 P0012 4107 SAVLU STQ- VTMP,I SAVE LOGICAL UNIT NUMBER.
* Q CONTAINS THE ACTUAL LOGICAL UNIT NUMBER.
* IF CALL WAS DIRECT.
0061 P0013 EE34 LDQ* (ALOG1A),Q
0062 P0014 C208 LDA- 8,Q IF CALL IS TO MASS
* MEMMORY AND S15 IS ZERO
* AND IF REQ. IS NOT
* INDIRECT, THEN ADD 2
* TO THE RETURN
0067 P0015 E108 LDQ- VID,I **MSOS +.C
0068 P0016 0FC5 ALS 5
0069 P0017 A005 AND- LPMSK+3 MASK OFF CLASS CODE
0070 P0018 09FD INA -MMCODE IS THIS A MASS STORAGE DEVICE
0071 P0019 0119 SAN THDSTR--1 SKIP IF NOT
0072 P001A 0178 SQM THDSTR--1
0073 P001B E105 LDQ- VPTR,I **MSOS +.C
0074 P001C C622 LDA- (ZERO),Q **MSOS +.C
0075 P001D A031 AND- ONEBIT+14 **MSOS +.C
0076 P001E 0112 SAN R2--1 **MSOS +.C
0077 P001F C205 LDA- PS,Q **MSOS +.C
0078 P0020 0132 SAM THDSTR--1 **MSOS +.C
0079 P0021 0103 R2 RAO- VR,I
0080 P0022 0103 RAO- VR,I
0081 P0023 E107 THDSTR LDQ- VTMP,I
0082 P0024 F000 ADQ =XLOG2
P0025 7FFF X
P0026 00FD X
P0027 0500
* INQ -2
* IIN
* 1-CARD DELETED
* *
* GET NEXT ENTRY FROM THREAD
0089 P0028 4106 THDNXT STQ- VTPE,I PRECEDING ENTRY SAVED
* 10-CARDS DELETED
* NEXT ENTRY ON THREAD
0091 P0029 E202 LDQ- PT,Q
0092 P002A 0D00 INQ 0
0093 P002B 0151 SQN THD1--1
0094 P002C 1808 JMP* RCTHD
0095 P002D C622 THD1 LDA- (ZERO),Q THREAD END. GO THREAD
IF ENTRIES PRIORITY IS

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M0900045
M0900047
M0900049
M0900050
M0900051
M0900052
M0900053
M0900054
M0900055
M0900056
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M0900058
M0900059
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M0900078
M0900079
M0900080
M0900081
M0900082
M0900083
M0900084
M0900085
M0900086
M0900087
M0900088
M0900089
M0900090
M0900091
M0900092
M0900093
M0900094
M0900095

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0096 P002E A85A AND* RPMASK REQUESTS PRIORITY M0900096
0097 P002F 9104 SUB- VPL,I THEN GO THREAD REQ. M0900097
0098 P0030 0133 SAM RCTHD--1 M0900098
0099 P0031 E106 LDQ- VTPE,I M0900099
0100 P0032 E202 LDQ- PT,Q M0900100
0101 P0033 18F4 JMP* THDNXT M0900101
0102 * M0900102
0103 * THREAD NEXT ENTRY M0900103
0104 * M0900104
0105 P0034 E106 RCTHD LDQ- VTPE,I POINTER TO PREVIOUS ENTRY M0900105
0106 P0035 C202 LDA- PT,Q M0900106
0107 P0036 E105 LDQ- VPTR,I POINTER TO NEW LIST M0900107
0108 P0037 6202 STA- PT,Q M0900108
0109 P0038 0814 TRQ A M0900109
0110 P0039 E106 LDQ- VTPE,I M0900110
0111 P003A 6202 STA- PT,Q M0900111
0112 P0038 0400 EIN M0900112
0113 * END OF THREADING M0900113
0114 * IF DEVICE BUSY, RELEASE VOLATILE M0900114
0115 * M0900115
0116 P003C E107 LDQ- VTMP,I ACTUAL LU IN Q M0900116
0117 * M0900117
0118 * IN CASE ALT. TO BE USED, THE M0900118
0119 * FOLLOWING CODE SUBSTITUTES IT. M0900119
0120 * IF NO ALT. AVAILABLE, REQ. REJECTED. M0900120
0121 * M0900121
0122 * 1 CARD DELETED M0900122
0123 P003D 5400 X RTJ ALTSUB 62*117- M0900123
0124 P003E 7FFF X M0900124
0125 P003F 0148 SQZ ALT1--1 M0900125
0125 P0040 1839 JMP* ALT3 M0900125

0127 * M0900127
0128 P0041 4C2C DWNMSG ALF 5,L, DOWN M0900128
0128 P0042 2020
0128 P0043 2044
0128 P0044 4F57
0128 P0045 4E20
0129 P0046 7FFF X ALOG1 ADC LOG1 M0900129
0130 P0047 7FFF X ALOG1A ADC LOG1A *+b5 M0900130
0131 * 1-CARD DELETED M0900131
0132 * 3 CARDS DELETED 62*1174 M0900132
0133 * M0900133
0134 P0048 0500 ALT1 IIN M0900134
0135 P0049 E107 LDQ- VTMP,I REQUESTED LOGICAL UNIT 62*1174 M0900135
0136 P004A 0AFF ENA -0 M0900136
0137 P004B 6E3E STA* (ALOG2),Q CLEAR THREAD IN LOG2 30*534 M0900137
0138 P004C CEF9 LDA* (ALOG1),Q 30*534 M0900138
0139 P004D A02F AND- H1000 CHECK BIT 12 OF LOG1 ENTRY M0900139
0140 P004E 0101 SAZ 1 CHECK MSG. FLAG BIT M0900140
0141 P004F 1817 JMP* GO1 M0900141
0142 P0050 C107 LDA- VTMP,I 62*1174 M0900142

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0143	P0051 5400	X	RTJ	CONVER				MJ900143
	P0052 7FFF	X						
0144	P0053 E80B		LDQ*	THREAD	IF REQUEST CURRENTLY BUSY COMPLETE	62*1174		MJ900144
0145	P0054 0141		SQZ	TODWNM	CURRENT REQUEST WITH ERROR AND OUTPUT			MJ900145
0146	P0055 1811		JMP*	GO1	MESSAGE NEXT TIME LU REQUESTED			MJ900146
0147	P0056 68EB		TODWNM	STA* DWNMSG+1	PUT LU IN MESSAGE			MJ900147
0148			*					MJ900148
0149	P0057 C000		LDA	=N\$4C20	SET UP CP PRIORITY	30*531	***MSOS+.0	MJ900149
	P0058 4C20							
0150	P0059 B0EF		EOR-	\$EF	SET UP CURRENT REQUEST PRIORITY			MJ900150
0151	P005A 6802		STA*	DWN				MJ900151
0152	P005B 54F4		RTJ-	(AMONI)	OUTPUT LU DOWN MESSAGE			MJ900152
0153	P005C 0000		DWN	NUM 0	UPDATED WITH REQ CODE AND CURRENT PRIORITY			MJ900153
0154	P005D 0000		ADC	0		30*531		MJ900154
0155	P005E 0000		THREAD	NUM 0		62*1174		MJ900155
0156	P005F 18FC			NUM \$18FC				MJ900156
0157	P0060 0005			NUM 5				MJ900157
0158	P0061 0041	P	ADC	DWNMSG			***MSOS4.0	MJ900158
0159			*					MJ900159
0160	P0062 E107		COMP	LDQ- VTMP,I		62*1174		MJ900160
0161	P0063 CEE2			LDA* (ALOG1),Q				MJ900161
0162	P0064 B02F			EOR- H1000	SET MESSAGE FLAG BIT			MJ900162
0163	P0065 6EE0			STA* (ALOG1),Q				MJ900163
0164			*					MJ900164
0165	P0066 E105		GO1	LDQ- VPTR,I		62*117-		MJ900165
0166	P0067 C203			LDA- 3,Q				MJ900166
0167	P0068 A00F			AND- LPMSK+13				MJ900167
0168	P0069 B01F			EOR- NZERO+13				MJ900168
0169	P006A 6203			STA- 3,Q	SET ERROR CODE IN REQUEST			MJ900169
0170	P006B C201			LDA- 1,Q				MJ900170
0171	P006C 0112			SAN ALT2	SKIP IF NONZERO COMP. ADDRESS		*MSOS V+.0	MJ900171
0172	P006D 6202			STA- 2,Q	CLEAR REQUEST THREAD		*MSOS V+.0	MJ900172
0173	P006E 180A			JMP* OUT	COMPLETE REQUEST		*MSOS V+.0	MJ900173
0174	P006F C622		ALT2	LDA- (ZERO),Q			**MSOS 4.0	MJ900174
0175	P0070 B032			EOR- ONEBIT+15			**MSOS 4.0	MJ900175
0176	P0071 6622			STA- (ZERO),Q			**MSOS 4.0	MJ900176
0177	P0072 0500			IIN 0				MJ900177
0178	P0073 4804			STQ* ESCHD				MJ900178
0179	P0074 E203			LDQ- 3,Q	ERROR WORD			MJ900179
0180	P0075 54F4			RTJ- (\$F4)				MJ900180
0181	P0076 2000			NUM \$2000	INDIRECT REQUEST(PART 1 TYPE)		**MSOS 4.0	MJ900181
0182	P0077 0000		ESCHD	NUM 0				MJ900182
0183	P0078 14B9		OUT	JMP- (AREQXT)				MJ900183
0185	P0079 EECD		ALT3	LDQ* (ALOG1A),Q	PHYSTB ADDRESS			MJ900185
0186	P007A 0500			IIN 0				MJ900186
0187	P007B C205			LDA- ELU,Q	GET LU ASSIGNED			MJ900187
0188	P007C 011A			SAN RELESV--* -1	IF LU .NE. ZERO, EXIT VIA RELESV			MJ900188
0189			*					MJ900189
0190			*	PUT LU NUMBER	IN EQUIPMENT TABLE			MJ900190
0191			*					MJ900191
0192	P007D C107			LDA- VTMP,I	REQUESTED LU			MJ900192

0246 P00AB 8032
 0247 P00AC 64FF
 0248 P00AD 14B9
 0249 0000 P
 0000 P
 0000 P
 0000 P

EOR- ONEBIT+15 AND EXIT
 STA- (I)
 JMP- (AREQXT)
 EQU T2(T1),T4(T1),T6(T1),T8(T1)

**MSOS +.0 M0900246
 **MSOS +.0 M0900247
 **MSOS +.0 M0900248
 M0900249

0250 END M0900250

PGM= 00AE (174) COM = 0000 (0) DAT = 0000 (0)

EQUIVALENCES

DEF.LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0000	I	00FF (0000255)	0219, 0221, 0245, 0247
0016	H1000	002F (0000047)	0139, 0162
0017	VR	0003 (0000003)	0040, 0041, 0079, 0080, 0243, 0244
0017	VPL	0004 (0000004)	0045, 0097
0017	VPTR	0005 (0000005)	0073, 0107, 0165, 0237
0018	VTPE	0006 (0000006)	0089, 0099, 0105, 0110
0018	VTMP	0007 (0000007)	0049, 0056, 0081, 0116, 0135, 0142, 0160, 0192
0019	VID	0008 (0000008)	0067, 0231
0020	LIBLU	0002 (0000194)	0052
0021	ALUABS	00BC (0000188)	0055, 0228
0021	AREQXT	00B9 (0000185)	0183, 0207, 0248
0022	PT	0002 (0000002)	0091, 0100, 0106, 0108, 0111, 0222, 0225
0022	PS	0005 (0000005)	0077, 0241
0023	AMONI	00F4 (0000244)	0152, 0202
0024	ELU	0005 (0000005)	0187, 0194, 0215
0024	EREQST	0008 (0000008)	
0025	NZERO	0012 (0000018)	0168
0026	ZERO	0022 (0000034)	0043, 0074, 0095, 0174, 0176, 0238
0027	LPMSK	0002 (0000002)	0069, 0167, 0213, 0220, 0233
0027	ONEBIT	0023 (0000035)	0075, 0175, 0239, 0246
0028	MMCODE	0002 (0000002)	0070, 0234

SYMBOLS

DEF.LINE	NAME	ADDRESS	REFERENCED AT LINE NUMBER
0007	RW	0000	0007
0011	T0	0000	0011
0011	T1	0000	0011, 0249, 0249, 0249, 0249
0011	T2	0000	0011
0011	T4	0000	0011
0011	T6	0000	0011
0012	SAVLU	0012	0012, 0053
0012	CKTHRD	008E	0012, 0054, 0227
0012	RPMASK	0088	0012, 0344, 0096
0043	R1	0006	0037
0054	RWUSER	000F	0051
0079	R2	0021	0076
0081	THDSTR	0023	0071, 0072, 0078
0089	THDNXT	0028	0101
0095	THD1	002D	0093
0105	RCTHD	0034	0094, 0098
0128	DWNMSG	0041	0147, 0158
0129	ALOG1	0040	0138, 0161, 0163
0130	ALOG1A	0047	0061, 0185, 0229
0134	ALT1	0048	0124
0147	TODWNM	0056	0145
0153	DWN	005C	0151
0155	THREAD	005E	0144
0160	COMP	0062	
0165	GO1	0066	0141, 0146
0174	ALT2	006F	0171
0182	ESCHD	0077	0178
0183	OUT	0078	0173
0185	ALT3	0079	0125
0204	RSCHD	0084	0200
0207	RELESV	0087	0188
0209	ALOG2	0089	0137
0213	GSK1A	008A	0206
0228	THDUSE	0099	0223
0243	THDA	00A8	0240
0245	THD	00AA	0216, 0235, 0236, 0242

EXTERNALS

DEF.LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0013	LOG2	0089	0082, 0209
0013	LOG1	0046	0129
0013	LOG1A	0047	0130
0014	ALTSUB	003E	0123
0015	CONVER	0052	0143

*** ALPHABETICAL SORT OF SYMBOLS ***

ALOG1	0129	ALOG1A	0130	ALOG2	0209	ALT1	0134	ALT2	0174	ALT3	0185	ALTSUB	0014	ALUABS	0021	AMONI	0023
AREQXT	0021	CKTHRD	0012	COMP	0160	CONVER	0015	DWN	0153	DWNMSG	0128	ELU	0024	EREQST	0022	ESCHD	0182
GO1	0165	GSK1A	0213	H1000	0016	I	0000	LIBLU	0020	LOG1	0013	LOG1A	0013	LOG2	0013	LPMSK	0027
MMCODE	0028	NZERO	0025	ONEBIT	0027	OUT	0183	PS	0022	PT	0022	R1	0043	R2	0079	RCTHD	0100
RELESV	0207	RPMASK	0012	RSCHD	0204	RW	0007	RWUSER	0054	SAVLU	0012	T0	0011	T1	0011	T2	0011
T4	0011	T6	0011	THD	0245	THD1	0095	THDA	0243	THDNXT	0089	THDSTR	0081	THDUSE	0228	T2	0011
TODWNM	0147	VID	0019	VPL	0017	VPTR	0017	VR	0017	VTMP	0018	VTPE	0018	ZERO	0026	THREAD	0150

```

0001      *      NAM NMONI DECK-ID M10 MSOS 5.0 SUMMARY-122*****
0002      *      MASS STORAGE OPERATING SYSTEM VERSION 5.0 M1000002
0003      *      SMALL SYSTEMS DIVISION, LA JOLLA, CALIFORNIA M1000003
0004      *      COPYRIGHT CONTROL DATA CORPORATION 1976 M1000004

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0006      *      MONITOR ENTRY FOR REQUESTS M1000006
0007      *      SPEC ID REFER TO IMS M1000007
0008      *      PROGRAMMING SYSTEMS, A/D SYSTEMS DIVISION, CDC M1000008
0009      *      ENT NMONI M1000009
0010      *      EQU NMONI(*) M1000010

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0012      *      PART NO. E00610AC030S M1000012

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0014      *      ENT RCTV,MONI,REQXT M1000014
0015      *      ENT ASC M1000015
0016      *      EQU AVOLA($BB),AVOLR($BA) M1000016

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0017      *      FQU ZERO($22),ONEBIT($23),LPMSK(2) M1000017

```

```

0018      *      EQU VR(3),VPTR(5),VTDS(6),VTMP(7),VID(8) **MSOS 4.0 M1000018

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0019      *      EQU VPL(4) **MSOS 4.1** M1000019
0020      *      EQU V(10) NUMBER OF WORDS OF VOLATILE. 122*4823*****
0021      *      EQU VCCP(9) REQUESTOR'S CONTROL POINT NUMBER. 122*4823*****
0022      *      EXT CCP LOCATION CONTAINING CURRENT CNTRL POINT 122*4823*****
0023      *      EXT CPSET ROUTINE TO SET A CONTROL POINT. 122*4823*****

```

```

0024      *      EXT T0,T1,T2 M1000021
0025      *      EXT T4,T6 M1000022
0026      *      EXT T8,T9,T10 M1000023
0027      *      EXT T12,T14,T15 M1000024
0028      *      EXT T16,T17,T18,T19 M1000025
0029      *      EQU PC(1) M1000026
0030      *      EQU RCSCHD(9) SCHEDULE REQUEST CODE M1000027

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0031      *      *
0032      *      ENTRY POINT FROM ALL PROGRAMS IS AT MONI M1000028
0033      *      UNPROTECTED MONITOR REQUESTS WILL BE TRAPPED M1000029
0034      *      AT MONI+2. THIS PROGRAM RUNS WITH INTERRUPTS M1000030
0035      *      INHIBITED FOR LESS THAN 25 MICRO SECONDS. M1000031
0036      *      ALL LOCATIONS ARE PROTECTED UNLESS OTHERWISE M1000032
0037      *      INDICATED. M1000033
0038      *      *
0039      *      *

```

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0040      *      MONI 0 0 UNPROTECTED M1000036
0041      *      IIN 0 M1000037
0042      *      RTJ- (AVOLA) ALLOCATE VOLATILE FOR THIS REQUEST M1000038
0043      *      ADC V NO. OF WDS TO ALLOCATE M1000039
0044      *      LDQ* MONI REENRANT PAST HERE M1000040
0045      *      * M1000041

```

```

P0000 0000
P0001 0500
P0002 54BB
P0003 000A
P0004 E8FB

```

```

0046 * SAVE RETRN ADDRESS AND POINTER IN VOLATILE M1000043
0047 * M1000044
0048 P0005 4103 STQ- VR,I M1000045
0049 P0006 4105 STQ- VPTR,I SAVE POINTER TO VOLATILE M1000046
0050 P0007 0A01 ENA 1 M1000047
0051 P0008 68F7 STA* MONI M1000048
0052 P0009 C201 LDA- PC,Q **MSOS 4.0 M1000049
0053 P000A 6106 STA- VTDS,I M1000050
0054 P000B 0400 EIN 0 M1000051
0055 P000C C400 X LDA+ CCP SAVE REQUESTOR'S CONTROL POINT NUMBER 122*4823 *****
P000D 7FFF X
0056 P000E 6109 STA- VCCP,I IN VOLATILE. 122*4823 *****
0057 P000F 0842 CLR Q 122*4823 *****
0058 P0010 5C3B RTJ* (ACPSET) PUT THE MACHINE INTO ABSOLUTE MODE. 122*4823 *****
0059 P0011 E103 LDQ- VR,I SET Q = PARAMETER LIST ADDRESS. 122*4823 *****
0060 P0012 C622 LDA- (ZERO),Q FIRST WORD AFTER RETRN M1000052
0061 * JMP TO MONI. M1000053
0062 P0013 6104 STA- VPL,I SAVE FIRST WORD OF CALL **MSOS 4.1** M1000054
0063 P0014 0131 SAI REPA1 IS INDIRECT CALL **MSOS 4.1** M1000055
0064 P0015 1810 JMP* REPA DIRECT CALL **MSOS 4.1** M1000056
0065 P0016 A011 REPA1 AND- LPMSK+15 MASK 15 LSB, ADDRESS OF CALL **MSOS 4.1** M1000057
0066 P0017 0802 SET Q **MSOS 4.0 M1000058
0067 P0018 4108 STQ- VID,I **MSOS 4.0 M1000059
0068 P0019 6105 STA- VPTR,I PDATE PTR TO PAR. LIST M1000060
0069 P001A D103 RAO- VR,I PDATE RETRN ADDRESS M1000061
0070 P001B 0822 ASC TRA Q IF THIS IS A M1000062
0071 P001C C201 LDA- 1,Q *MSOS V4.0 M1000063
0072 P001D 6106 STA- VTDS,I SAVE 2ND WORD OF PARAMETER LIST **MSOS V4.0 M1000064
0073 * FOR RELEASE REQ. PROCESSOR **MSOS V4.0 M1000065
0074 P001E C622 LDA- (ZERO),Q SECONDARY CALL, M1000066
0075 P001F 6104 STA- VPL,I NEW FIRST WORD OF CALL **MSOS 4.1** M1000067
0076 P0020 0127 SAP REP1 NOT SECONDARY SCHED CALL M1000068
0077 * IS SECONDARY FAKE SCHED CALL -**MSOS 4.1** M1000069
0078 * 1 CARD DELETED M1000070
0079 P0021 B032 EOR- ONEBIT+15 M1000071
0080 P0022 6622 STA- (ZERO),Q RESET PL(0)15 TO 0. M1000072
0081 P0023 0A09 ENA RCSCHD M1000073
0082 P0024 1806 JMP* MSECA M1000074
0083 P0025 0A00 REPA ENA 0 CLEAR INDIRECT INDICATOR **MSOS 4.0 M1000075
0084 P0026 6108 STA- VID,I WHEN FIRST WORD AFTER RTRN TO MONI IS + 4.0 M1000076
0085 P0027 C104 LDA- VPL,I GET REQUEST CODE WORD 0 M1000077
0086 * M1000078
0087 * EXTRACT REQUEST CODE FROM PARAMETER LIST (0). M1000079
0088 * REQUEST CODE=RC IN BITS 14 THR 9. 6BITS. M1000080
0090 P0028 0F49 REP1 ARS 9 M1000082
0091 P0029 A007 AND- LPMSK+5 **MSOS 4.0 M1000083
0092 P002A 0FF0 MSECA LLS 16 M1000084
0093 P002B 4107 STQ- VTMP,I M1000085
0094 P002C EA02 LDQ* RCTV,Q PICK P REQ. CODE ADDRESS M1000086
0095 * ROTINE. M1000087
0096 P002D 1622 JMP- (ZERO),Q M1000088
0097 * M1000089

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EQUIVALENCES

DEF.LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0000	I	00FF (000255)	
0016	AVOLA	008B (000187)	0042
0016	AVOLR	008A (000186)	0129
0017	ZERO	0022 (000034)	0060, 0074, 0080, 0096
0017	ONEBIT	0023 (000035)	0079
0017	LPMSK	0002 (000002)	0065, 0091
0018	VR	0003 (000003)	0048, 0059, 0069, 0126
0018	VPTR	0005 (000005)	0049, 0068
0018	VTDS	0006 (000006)	0053, 0072
0018	VTMP	0007 (000007)	0093
0018	VID	0008 (000008)	0067, 0084
0019	VPL	0004 (000004)	0062, 0075, 0085
0020	V	000A (000010)	0043
0021	VCCP	0009 (000009)	0056, 0123
0029	PC	0001 (000001)	0052
0030	RCSCHD	0009 (000009)	0081

S Y M B O L S

DEF. LINE	NAME	ADDRESS	REFERENCED AT LINE NUMBER
0009	NMONI	0000	0009
0014	RCTV	002E	0014, 0094
0014	MCNI	0000	0014, 0044, 0051
0014	REQXT	0042	0014
0015	ASC	001B	0015
0065	REPA1	0016	0063
0083	REPA	0025	0064
0090	REP1	0028	0076
0092	MSECA	002A	0082
0132	RJMP	004A	0127, 0131
0133	ACPSET	004B	0058, 0124

EXTERNALS

DEF.LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0022	CCP	000D	0055
0023	CPSSET	004B	0133
0024	T0	002E	0102
0024	T1	002F	0103
0024	T2	0030	0104
0025	T4	0032	0106
0025	T6	0034	0108
0026	T8	0036	0110
0026	T9	0037	0111
0026	T10	0038	0112
0027	T12	003A	0114
0027	T14	003C	0116
0027	T15	003D	0117
0028	T16	003E	0118
0028	T17	003F	0119
0028	T18	0040	0120
0028	T19	0041	0121

*** ALPHABETICAL SORT OF SYMBOLS ***

ACPSET	0133	ASC	0015	AVOLA	0016	AVOLR	0015	CCP	0022	CPSET	0023	I	0000	LPMSK	0017	MONI	0014
MSECA	0092	NMONI	0009	ONEBIT	0017	PC	0029	RCSCHD	0030	RCTV	0014	REP1	0090	REPA	0088	REPA1	0001
REQXT	0014	RJMP	0132	T0	0024	T1	0024	T10	0026	T12	0027	T14	0027	T15	0027	T16	0028
T17	0028	T18	0028	T19	0028	T2	0024	T4	0025	T6	0025	T8	0026	T9	0026	V	0020
VCCP	0021	VID	0018	VPL	0019	VPTR	0018	VR	0018	VTDS	0018	VTMP	0018	ZERO	0017		

0001
0002
0003
0004

* NAM LIN1V4 DECK-ID M11 MSOS 5.0
* MASS STORAGE OPERATING SYSTEM VERSION 5.0
* SMALL SYSTEMS DIVISION, LA JOLLA, CALIFORNIA
* COPYRIGHT CONTROL DATA CORPORATION 1976

SUMMARY-110 M1100001
M1100002
M1100003
M1100004

0006

* *****

M1100005

0008
0009
0010
0011
0012
0013
0014
0015
0016
0017
0018
0019
0020

* LIN1V4 PROCESSES ONLY LINE 1 INTERRUPTS.
* IF INTERRUPT IS LINE 1, ALL DEVICE LISTED IN
* LN1TV4 WILL BE CHECKED FOR INTERRUPT STATUS.
* THE DRIVER CONTINUATOR FOR INTERRUPT DEVICE
* WILL BE ENTER. IF NO DEVICE IN LN1TV4 HAS -
* INTERRUPTED, A GHOST INTERRUPT MESSAGE IS
* SCHEDULED, AND CONTROL IS RETURNED TO THE
* DISPATCHER.
* IF THE INTERRUPT IS NOT FROM LINE 1 A JUMP IS
* MADE TO DEBUG CELL 'NOTLN1' (SLS), LINE NUMBER
* WILL BE IN 'Q'. IF STOP SWITCH IS NOT SET,
* THE INTERRUPT WILL BE PROCESSED AS AN INVAL. INTERRUPT.

M1100008
M1100009
M1100010
M1100011
M1100012
M1100013
M1100014
M1100015
M1100016
M1100017
M1100018
M1100019
M1100020

0022
0023

* INVALID INTERRUPTS WILL BE PROCESSED AS
* GHOST INTERRUPTS.

M1100022
M1100023

0025

M1100025

0027
0028

ENT LIN1V4 LINE 1 INTERRUPT PROCESSOR
ENT INVINT INVALID INTERRUPT PROCESSOR

*MSOS V4.0 M1100027
*MSOS V4.0 M1100028

0030
0031
0032
0033

00EA
0023
0002

EXT LN1TV4 TABLE OF LINE 1 DEVICES
EQU DISP(\$EA)
EQU ONEBIT(\$23)
EQU LPMSK(2)

*MSOS V4.0 M1100030
M1100031
M1100032
M1100033

0035 P0000 E0FF
0036 P0001 0F22
0037 P0002 0DBF
0038 P0003 0814
0039 P0004 09FE
0040 P0005 0101
0041 P0006 1814
0042 P0007 60FF
0043 P0008 ED2F
0044 P0009 017A
0045 P000A 0814
0046 P000B B011
0047 P000C 0104
0048 P000D E2G7

LIN1V4 LDQ- I ENTRY I CONTAINS TRAP LOC.
QRS 2
INQ -\$40 Q CONTAINS INTERRUPT LINE
TRQ A NUMBER.
INA -1 CHECK FOR LINE 1
SAZ LN1-* -1 SKIP IF LINE 1 INTERRUPT
JMP* NOTLN1 LINE NUMBER IN 'Q'
LN1 STA- I
CHKDEV LDQ* (DEVTAB), I PHYTAB ADDRESS
SQM ENDT-* -1 SKIP IF END OF TABLE
TRQ A
EOR- LPMSK+15 7FFF MASK
SAZ CHKNXT-* -1 SKIP IF DEVICE NOT PRESENT
LDQ- 7,Q HARDWARE ADDRESS

*MSOS V4.0 M1100035
*MSOS V4.0 M1100036
*MSOS V4.0 M1100037
*MSOS V4.0 M1100038
*MSOS V4.0 M1100039
*MSOS V4.0 M1100040
*MSOS V4.0 M1100041
*MSOS V4.0 M1100042
*MSOS V4.0 M1100043
*MSOS V4.0 M1100044
*MSOS V4.0 M1100045
*MSOS V4.0 M1100046
*MSOS V4.0 M1100047
*MSOS V4.0 M1100048

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0049 P000E 0203 INP CHKNXT-* STATUS *MSOS V4.0 M1100049
0050 P000F A025 AND- ONEBIT+2 *MSOS V4.0 M1100050
0051 P0010 0115 SAN GOTIT-* -1 SKIP IF INTERRUPT STATUS *MSOS V4.0 M1100051
0052 P0011 0800 CHKNXT NOP 0 *MSOS V4.0 M1100052
0053 P0012 D0FF RA0- I INCREMENT INDEX *MSOS V4.0 M1100053
0054 P0013 18F4 JMP* CHKDEV CHECK NEXT DEVICE *MSOS V4.0 M1100054
0055 P0014 0C01 ENDT ENQ 1 GHOST FROM LINE 1 *MSOS V4.0 M1100055
0056 P0015 1805 JMP* SCDPRT *MSOS V4.0 M1100056
0057 P0016 ED21 GOTIT LDQ* (DEVTAB),I GET PHYTAB ADDRESS *MSOS V4.0 M1100057
0058 P0017 C202 LDA- 2,Q CONTINUATOR ADDRESS *MSOS V4.0 M1100058
0059 P0018 60FF STA- I *MSOS V4.0 M1100059
0060 P0019 1522 JMP- ($22),I JUMP TO CONTINUATOR *MSOS V4.0 M1100060
0061 P001A 001A EQU NOTLN1(*) LINE 1 INT. RESP. WAS USED *MSOS V4.0 M1100061
0062 * SCDPRT RTJ- ($F4) FOR INT. LINES 2-15,LINE NO. IS IN. Q *MSOS V4.0 M1100062
0063 P001A 54F4 NUM $5204 *MSOS V4.0 M1100063
0064 P001B 5204 ADC PRINT *MSOS V4.0 M1100064
0065 P001C 001E JMP- (DISP) *MSOS V4.0 M1100065
0066 P001D 14EA

0068 P001E 0814 PRINT TRQ A PRINT ERROR MESSAGE -GI LINE NO. *MSOS V4.0 M1100068
0069 P001F 0D30 INQ $30 M1100069
0070 P0020 09F5 INA -$A M1100070
0071 P0021 0131 SAM PRINT3-* -1 M1100071
0072 P0022 0D07 INQ 7 RECORD ASCII CODE FOR SPACE M1100072
0073 P0023 F030 PRINT3 ADQ- $30 AND LINE NUMBER AT LN M1100073
0074 P0024 480E STQ* LN M1100074
0075 P0025 C808 LDA* PRINT1 M1100075
0076 P0026 A00F AND- $F M1100076
0077 P0027 8030 ADD- $30 M1100077
0078 P0028 6805 STA* PRINT1 M1100078
0079 P0029 54F4 RTJ- ($F4) M1100079
0080 P002A 4C00 NUM $+C00,0,0 *MSOS V4.0 M1100080
0081 P002B 0000
0081 P002C 0000
0081 P002D 18FC PRINT1 NUM $18FC,$0002 M1100081
0082 P002E 0002
0083 P002F 0031 P ADC GI M1100082
0083 P0030 14EA JMP- (DISP) M1100083

0085 P0031 4749 GI ALF 1,GI M1100085
0086 P0032 0000 LN NUM $0000 M1100086

0088 ** INVALID INTERRUPT ROUTINE M1100088
0089 *
0090 P0033 E0FF INVINT LDQ- I *MSOS V4.0 M1100090
0091 P0034 CF22 QRS 2 GET LINE NUMBER *MSOS V4.0 M1100091
0092 P0035 0DBF INQ -$40 *MSOS V4.0 M1100092
0093 P0036 18E3 JMP* SCDPRT USE BALANCE OF LINE 1 GI PATH *MSOS V4.0 M1100093
0094 P0037 7FFF X DEVTAB ADC LN1TV4 TABLE OF LINE 1 DEVICES *MSOS V4.0 M1100094
0095 END M1100095

```

EQUIVALENCES

DEF.LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0000	I	00FF (000255)	0035, 0042, 0053, 0059, 0090
0031	DISP	00EA (000234)	0066, 0083
0032	ONEBIT	0023 (000035)	0050
0033	LPMSK	0002 (000002)	0046

SYMBOLS

DEF.LINE	NAME	ADDRESS	REFERENCED AT LINE NUMBER
0027	LIN1V4	0000	0027
0028	INVINT	0033	0028
0042	LN1	0007	0040
0043	CHKDEV	0008	0054
0052	CHKNXT	0011	0047, 0049
0055	ENDT	0014	0044
0057	GOTIT	0016	0051
0061	NOTLN1	001A	0041
0063	SCDPRT	001A	0056, 0093
0068	PRINT	001E	0065
0073	PRINT3	0023	0071
0081	PRINT1	0020	0075, 0078
0085	GI	0031	0082
0086	LN	0032	0074
0094	DEVTAB	0037	0043, 0057

EXTERNALS

DEF.LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0030	LN1TV4	0037	0094

0001
0002
0003
0004
0005

* NAM NIPROC DECK-ID M12 MSOS 5.0
* INTERNAL INTERRUPT PROCESSOR
* MASS STORAGE OPERATING SYSTEM VERSION 5.0
* SMALL SYSTEMS DIVISION, LA JOLLA, CALIFORNIA
* COPYRIGHT CONTROL DATA CORPORATION 1976

SUMMARY-118*****
M1200002
M1200003
M1200004
M1200005

0007
0008
0009
0010
0011
0012
0013
0014
0015
0016
0017
0018
0019
0020
0021

002B
002B
0032
0002

ENT IPROC, IP1
ENT ASAV A-REGISTER SAVED FROM ENTRY
ENT QSAV Q-REGISTER SAVED FROM ENTRY
ENT MSAV M-REGISTER SAVED FROM ENTRY
ENT PWFOV OVERFLOW SAVED FROM ENTRY
ENT HA GENERALIZED HEX TO ASCII CONV.
ENT PRO
ENT PWFAIL POWER FAILURE INTERRUPT PROCESSOR
ENT PTYERR MEMORY PARITY ERROR PROCESSOR
EXT POWERU USER SUPPLIED POWER RESTORE HAND.
EXT JOBIND, SWTCH
EXT PARITY
EXT SYFAIL SITE FAIL LOCATED IN SYSDAT (\$18FF)
EQU INT(\$2B)
EQU ATEH(\$2B), SIGN(\$32)

**MSOS 4.1*M1200007
**MSOS 4.1*M1200008
**MSOS 4.1*M1200009
**MSOS 4.1*M1200010
**MSOS 4.1*M1200011
**MSOS 4.1*M1200012
M1200013
116*4372*****
116*4372*****
**MSOS 4.1*M1200014
M1200015
M1200016
M1200017
M1200018
M1200019

0022
0023
0024
0025
0026
0027
0028
0029
0030

* EQU LPMASK(2)
* THIS PROCESSOR MUST BE IN RESIDENT IN ORDER TO
* PROCESS MEMORY PARITY. THE PROCESSOR WHICH
* RESPONDS TO PROTECT VIOLATIONS MAY BE IN RES-
* DENT OR ON MASS STORAGE AS PART OF THE JOB
* PROCESSOR. IF THE LATTER IS THE CASE, THEN
* IPROC1 WILL BE REPORTED AS AN UNUSED MODULE AT
* THE END OF SYSTEM INITIALIZATION.

M1200020
M1200021
M1200022
M1200023
M1200024
M1200025
M1200026
M1200027
M1200028

0031
0032
0033

0000 P

ENT NIPROC
EQU NIPROC(*)

M1200029
M1200030
M1200031

0034
0035
0036
0037
0038
0039

P0000 0000
P0001 01E2
P0002 01CE
P0003 184D
P0004 6821
P0005 C400 X
P0006 7FFF X

* IPROC
ADC 0 INTERNAL INTERRUPT PROCESSOR
SPF PRO*-1 PROTECT VIOL
SPE CONVRT*-1 PARITY
JMP* PWFAIL POWER
PRO STA* ASAV
LDA JOBIND TEST FOR JOB-PROCESSOR OR LIBEDT IN

M1200032
M1200033
M1200034
M1200035
M1200036
M1200037

0040
0041

P0007 0116
P0008 C400 X
P0009 7FFF X

SAN PPROC*-1
LDA SWTCH CORE.

M1200038
M1200039

0042
0043

P000A 0113
P000B 0500

SAN PPROC*-1
IIN 0
RTJ+ SYFAIL JOB PROCESSOR NOT IN CORE - HANG

*585

M1200040
M1200041
M1200042

0044

P000C 5400 X
P000D 7FFF X

PPROC LDA* ASAV RESTORE A
JMP* (IP1) GO TO PROTECT PROCESSOR

M1200043
M1200044
M1200045

0045
0046
0047

P000E C817
P000F 1C01
P0010 0000

IP1 ADC 0
EQU PTYERR(*)

118*4372*****

0048

0011 P

0049 P0011 0500 CONVRT IIN 0
 * THE FOLLOWING CODE SHOULD BE IMPLEMENTED TO
 * TYPE OUT THE CORRECT P.E. ADDRESS WHEN
 * 1. THE P.E. WAS GENERATED WHEN P-REG WAS NOT EQ Y-REG
 * 2. THE P.E. WAS GENERATED BY DSATRANSFER

*585 M1200046
 68*1519M1200047
 68*1519M1200048
 68*1519M1200049
 68*1519M1200050

0055 P0012 C0F5 LDA- \$F5 MAXCOR+1 IS NECESSARY FOR
 0056 P0013 0901 INA 1 THE SEARCH THROUGH MAXCOR
 0057 P0014 680F STA* MAXCOR
 0058 P0015 0844 CLR A
 0059 P0016 680E STA* TCPAR
 0060 P0017 CC0D PARMOR LDA* (TCPAR) SCAN ALL CORE FOR PARITY ERROR
 0061 P0018 010D SPE FNDPE-* -1
 0062 P0019 D80B RAO* TCPAR MAKE P.E. PRINTOUT EQ P+1
 0063 P001A C80A LDA* TCPAR
 0064 P001B B808 EOR* MAXCOR DONE WITH SCAN
 0065 P001C 0101 SAZ NOFND-* -1 YES
 0066 P001D 18F9 JMP* PARMOR NO
 0067 P001E E000 NOFND LDQ =N\$4453 OUTPUT PARITY DSA? IF NO
 P001F 4453
 0068 P0020 C000 LDA =N\$413F PARITY ERROR IS FOUND DURING
 P0021 413F
 0069 P0022 1807 JMP* NOPE THE CORE SCAN

70*1519 M1200052
 70*1519 M1200053
 70*1519 M1200054
 68*1519 M1200055
 68*1519 M1200056
 68*1519 M1200057
 72*1519 M1200058
 72*1519 M1200059
 68*1519 M1200060
 70*1519 M1200061
 68*1519 M1200062
 68*1519 M1200063
 M1200064

0071 P0023 0000 MAXCOR NUM 0 HIGHEST CORE ADDRESS + 1
 0072 P0024 0000 TCPAR NUM 0 ADDRESS COUNTER
 0073 P0025 0000 ASAV NUM 0

70*1519 M1200068
 68*1519 M1200069
 68*1519 M1200070

0075 P0026 C8FD FNDPE LDA* TCPAR ADDRESS OF P.E. CELL + 1
 0076 P0027 642B STA- (INT)
 *
 0077
 0078 P0028 584C NOPE RTJ* HA 2 CARDS DELETED
 0079 P0029 01A0 SOV 0 CONVERT PARITY ADDRESS TO ASCII
 0080 P002A 4824 STQ* MESSAG+5 CLEAR OVERFLOW
 0081 P002B 6824 STA* MESSAG+6 SAVED ASCII IN PARITY MESSAGE
 0082 P002C E000 LDQ =N\$91
 P002D 0091

68*1519 M1200072
 68*1519 M1200073
 M1200074
 MSOS 4.1 M1200075
 M1200076
 MSOS 4.1 M1200077
 MSOS 4.1 M1200078
 M1200079

0083 P002E C02B LDA- ATEH
 0084 P002F 03FE OUT -1 SET WRITE MODE
 0085 P0030 0A00 ENA 0
 0086 P0031 60FF STA- I INITIALIZE COUNT
 0087 P0032 C917 MORE LDA* MESSAG,I
 0088 P0033 E000 LDQ =N\$90
 P0034 0090

M1200080
 M1200081
 M1200082
 M1200083
 M1200084
 M1200085

0089 P0035 0FC8 ALS 8
 0090 P0036 03FE OUT -1 SEND UPPER CHARACTER
 0091 P0037 0FC8 ALS 8
 0092 P0038 03FE OUT -1 SEND LOWER HALF
 0093 P0039 D0FF RAO- I INCREMENT COUNT
 0094 P003A C0FF LDA- I

M1200086
 M1200087
 M1200088
 M1200089
 M1200090
 M1200091

```

0095 PC03B 09F8 INA -7 M1200092
0096 P003C 0101 SAZ GOON--1 M1200093
0097 P003D 18F4 JMP* MORE GO DO SOME MORE M1200094
0098 P003E C807 GOON LDA* PAREXT M1200095
0099 P003F 0500 IIN 0 M1200096
0100 P0040 8032 EOR- SIGN M1200097
0101 P0041 0900 INA 0 M1200098
0102 P0042 0103 SAZ NOEXIT--1 SKIP IF USER PGM NOT HERE M1200099
0103 P0043 E02B LDQ- INT GET CONTENTS OF $100 M1200100
0104 P0044 1C01 JMP* (PAREXT) GO TO PROGRAM NAMED PARITY M1200101
0105 P0045 7FFF X PAREXT ADC PARITY M1200102
0106 P0046 0500 X NOEXIT IIN 0 M1200103
0107 P0047 5400 X RTJ+ SYFAIL PARITY ERROR - HANG M1200104
      P0048 0000 X
*
* 1 CARD DELETED
0108 *
0109 *
0110 P0049 0D0A MESSAG NUM $0D0A 68*1519 M1200105
0111 P004A 5041 ALF 6,PARITY, 0000 M1200106
      P004B 5249 M1200107
      P004C 5459 M1200108
      P004D 2C20
      P004E 3030
      P004F 3030
*
0112 *
0113 P0050 0500 PWFALL IIN 0 M1200109
0114 P0051 68D3 STA* ASAV (A) M1200110
0115 P0052 481D STQ* QSAV (Q) M1200111
0116 P0053 0A00 ENA 0 M1200112
0117 P0054 01B1 SNO PWOV--1 CHECK IF OVERFLOW EXISTS **MSOS 4.1 M1200113
0118 P0055 0A01 ENA 1 YES, SET INDICATOR **MSOS 4.1 M1200114
0119 P0056 681B PWOV STA* PWFOV SAVE IND. 0=NO OVERFLOW, 1=OVERFLOW **MSOS 4.1 M1200115
0120 P0057 080C TRM A M1200116
0121 P0058 6818 STA* MSAV (M) M1200117
0122 P0059 C422 LDA- ($22) M1200118
0123 P005A 6818 STA* LZERO (0) M1200119
0124 P005B C001 LDA- 1 M1200120
0125 P005C 6817 STA* LONE (1) M1200121
0126 P005D C000 LDA =NS1400 JMP+ INSTRUCTION M1200122
      P005E 1400 M1200123
0127 P005F 6422 STA- ($22) M1200124
0128 P0060 C000 LDA =XPRFAIL M1200125
      P0061 0064 P
0129 P0062 6001 STA- 1 M1200126
0130 P0063 18FF NUM $18FF HANG UNTIL POWER RETURNS M1200127
0131 P0064 C80E PRFAIL LDA* LZERO M1200128
0132 P0065 6422 STA- ($22) (0) M1200129
0133 P0066 C80D LDA* LONE (1) M1200130
0134 P0067 6001 STA- 1 M1200131
0135 P0068 C806 LDA* UPOWER CHECK IF USER ROUTINE LOADED **MSOS 4.1 M1200132
0136 P0069 B011 EOR- LPMASK+15 **MSOS 4.1 M1200133
0137 P006A 0101 SAZ HANG SKIP IF NO ROUTINE **MSOS 4.1 M1200134
0138 P006B 1C03 JMP* (UPOWER) EXIT TO USER POWER RESTORE ROUTINE **MSOS 4.1 M1200135
0139 P006C 5400 X HANG RTJ+ SYFAIL POWER UP - HANG M1200136
      P006D 0048 X

```

0140	P006E	7FFF	X	UPOWER	ADC	POWERU
0141	P006F	0000		QSAV	ADC	0
0142	P0070	0000		MSAV	ADC	0
0143	P0071	0000		PWFOV	ADC	0
0144	P0072	0000		LZERO	ADC	0
0145	P0073	0000		LONE	ADC	0

ADDRESS OF USER PROGRAM

MSOS - .1M1200137
M1200138
M1200139
**MSUS 4.0M1200140
M1200141
M1200142

0147
0148
0149
0150
0151

```

*****
*                                     ***MSOS 4.1**M1200144
*                                     ***MSOS 4.1**M1200145
*   H E X   T O   A S C I I   C O N V E R S I O N   ***MSOS 4.1**M1200146
*                                     ***MSOS 4.1**M1200147
*****                                     ***MSOS 4.1**M1200148

```

```

0153 P0074 0000 HA
0154 P0075 0500
0155 P0076 0822
0156 P0077 5811
0157 P0078 680E
0158 P0079 5808
0159 P007A 0FC8
0160 P007B 8808
0161 P007C 680A
0162 P007D 5808
0163 P007E 6809
0164 P007F 5809
0165 P0080 0FC8
0166 P0081 8806
0167 P0082 E804
0168 P0083 0FF0
0169 P0084 0400
0170 P0085 1CEE
0171 P0086 0000 C01
0172 P0087 0000 C02
0173 P0088 0000 CHAR
0174 P0089 0844
0175 P008A 0F64
0176 P008B 0FC4
0177 P008C 09F5
0178 P008D 0122
0179 P008E 093A
0180 P008F 1CF8
0181 P0090 0941
0182 P0091 1CF6
0183

```

```

NUM 0
IIN 0
TRA Q
RTJ* CHAR
STA* C01
RTJ* CHAR
ALS 8
ADD* C01
STA* C01
RTJ* CHAR
STA* C02
RTJ* CHAR
ALS 8
ADD* C02
LDQ* C01
LLS 16
EIN 0
JMP* (HA)
NUM 0
C01 NUM 0
C02 NUM 0
CHAR NUM 0
CLR A
LRS 4
ALS 4
INA -10
SAP ATHRUF
INA $3A
JMP* (CHAR)
ATHRUF INA $41
JMP* (CHAR)
END

```

```

HEX-ASCII CONVERSION
ENTRY WITH HEX VALUE IN A-REG.

MAKE LOWER BYTES

MAKE UPPER BYTES

RETURN (Q)=UPPER (A)=LOWER

CHARACTER CONVERSION

```

```

***MSOS 4.1**M1200150
***MSOS 4.1**M1200151
***MSOS 4.1**M1200152
***MSOS 4.1**M1200153
***MSOS 4.1**M1200154
***MSOS 4.1**M1200155
***MSOS 4.1**M1200156
***MSOS 4.1**M1200157
***MSOS 4.1**M1200158
***MSOS 4.1**M1200159
***MSOS 4.1**M1200160
***MSOS 4.1**M1200161
***MSOS 4.1**M1200162
***MSOS 4.1**M1200163
***MSOS 4.1**M1200164
***MSOS 4.1**M1200165
***MSOS 4.1**M1200166
***MSOS 4.1**M1200167
***MSOS 4.1**M1200168
***MSOS 4.1**M1200169
***MSOS 4.1**M1200170
***MSOS 4.1**M1200171
***MSOS 4.1**M1200172
***MSOS 4.1**M1200173
***MSOS 4.1**M1200174
***MSOS 4.1**M1200175
***MSOS 4.1**M1200176
***MSOS 4.1**M1200177
***MSOS 4.1**M1200178
***MSOS 4.1**M1200179
***MSOS 4.1**M1200180

```


EQUIVALENCES

DEF.LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0000	I	00FF	(000255) 0086, 0093, 0094
0020	INT	0028	(000043) 0076, 0103
0021	ATEH	0028	(000043) 0083
0021	SIGN	0032	(000050) 0100
0022	LPMASK	0002	(000002) 0136

SYMBOLS

DIFF.LINE	NAME	ADDRESS	REFERENCED AT LINE NUMBER
0007	IPROC	0000	0007,
0007	IP1	0010	0007, 0046
0008	ASAV	0025	0008, 0038, 0045, 0114
0009	QSAV	006F	0009, 0115
0010	MSAV	0070	0010, 0121
0011	PWFOV	0071	0011, 0119
0012	HA	0074	0012, 0078, 0170
0013	PRO	0004	0013, 0035
0014	PWFAIL	0050	0014, 0037
0015	PTYERR	0011	0015
0031	NIPROC	0000	0031
0045	PPROC	000E	0040, 0042
0049	CONVRT	0011	0036
0060	PARMOR	0017	0066
0067	NOFND	001E	0065
0071	MAXCOR	0023	0057, 0064
0072	TCPAR	0024	0059, 0060, 0062, 0063, 0075
0075	FNDPE	0026	0061
0079	NOPE	0029	0069
0087	MORE	0032	0097
0098	GOON	003E	0096
0105	PAREXT	0045	0098, 0104
0106	NOEXIT	0046	0102
0110	MESSAG	0049	0080, 0081, 0087
0119	PWOV	0056	0117
0131	PRFAIL	0064	0128
0139	HANG	006C	0137
0140	UPOWER	006E	0135, 0138
0144	LZERO	0072	0123, 0131
0145	LONE	0073	0125, 0133
0171	C01	0086	0157, 0160, 0161, 0167
0172	C02	0087	0163, 0166
0173	CHAR	0088	0156, 0158, 0162, 0164, 0180, 0182
0181	ATHRUF	0090	0178

EXTERNALS

DEF.LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0016	POWERU	006E	0140
0017	JOBIND	0006	0039
0017	SWTCH	0009	0041
0018	PARITY	0045	0105
0019	SYFAIL	006D	0044, 0107, 0139

*** ALPHABETICAL SORT OF SYMBOLS ***

ASAV	0008	ATEH	0021	ATHRUF	0181	CD1	0171	CG2	0172	CHAR	0173	CONVRT	0049	FNDPE	0075	SOON	0095
HA	0012	HANG	0139	I	0000	INT	0020	IPI	0007	IPROC	0007	JOBIND	0017	LONE	0145	LPMASK	0022
LZERO	0144	MAXCOR	0071	MESSAG	0110	MORE	0087	MSAV	0010	NIPROC	0031	NOEXIT	0108	NOFND	0067	NOPE	0079
PAREXT	0105	PARITY	0018	PARMOR	0060	POWERU	0016	PPROC	0045	PRFAIL	0131	PRO	0013	PTYERR	0015	PWFAIL	0014
PWFOV	0011	PWOV	0119	QSAV	0009	SIGN	0021	SWTCH	0017	SYFAIL	0019	TCPAR	0072	UPOWER	0140		

0001
0002
0003
0004

NAME COMMON DECK-ID M13 MSOS 5.0
MASS STORAGE OPERATING SYSTEM VERSION 5.0
SMALL SYSTEMS DIVISION, LA JOLLA, CALIFORNIA
COPYRIGHT CONTROL DATA CORPORATION 1976

SUMMARY-11.0M1300001
M1300002
M1300003
M1300004

0006

COMMON INTERRUPT HANDLER

M1300006

0008
0009
0010
0011
0012
0013
0014
0015
0016
0017
0018
0019
0020
0021
0022
0023
0024
0025

00B8
00EF
00B7
0022
0002

ENT ALLIN
EXT PRO ENTRY IN NIPROC
EQU COUNT(\$B8)
EQU PRLVL(\$EF)
EQU AMASK(\$B7)
EQU ZERO(\$22)
EQU LPMSK(2)

M1300008
M1300009
M1300010
M1300011
M1300012
M1300013
M1300014
M1300015
M1300016
M1300017
M1300018
M1300019
M1300020
M1300021
M1300022
M1300023
M1300024
M1300025

**MSOS 4.0

*
* AFTER CONTROL IS TRANSFERRED FROM THE INTERRUPT
* TRAP LOCATION TO THE COMMON INTERRUPT HANDLER,
* THE RETURN LOCATION, A, Q AND I REGISTERS AND
* PRIORITY ARE SAVED IN A PUSH-UP POP-DOWN STACK
* BY PRIORITY LEVEL. THEN THE NEW PRIORITY AND
* MASK ARE SET AND CONTROL IS TRANSFERRED TO THE
* ADDRESS ASSOCIATED WITH THE LINE ON WHICH THE
* INTERRUPT APPEARED.

EQU XA(1),XI(2),XR(3),XPL(4),XL(5)

0026
0027
0028
0029
0030
0031
0032
0033
0034
0035
0036
0037
0038
0039
0040
0041
0042
0043
0044
0045
0046

ALLIN

0 0 LINK TO LEVEL ENTRY
SNF CPMFIX PROTECT FAULT
STQ* QREG YES, SET UP LINKAGE TO IPROC
LDQ* ALLIN SO IT CAN PROCESS THE FAULT
INQ -2
LDQ- (ZERO),Q
STQ- (\$2B)
LDQ- =N\$102

M1300026
M1300027
M1300028
M1300029
M1300030
M1300031
M1300032
M1300033

X
X

QREG
CPMFIX

STQ- (\$F8)
LDQ* QREG
JMP PRO
NUM 0
STQ- (COUNT) SAVE Q IN STACK
LDQ- COUNT STACK COUNTER AS INDEX
STA- XA,Q SAVE A
LDA- PRLVL SAVE PRIORITY
AND- LPMSK+15
SNO ALLA--1
CHECK IF OVERFLOW CONDITION EXISTED
AT THE TIME THE INTERRUPT OCCURRED

M1300034
M1300035
M1300036

M1300037
M1300038
M1300039
M1300040
M1300041
M1300042
M1300043
M1300044
M1300045
M1300046

**MSOS
**MSOS
**MSOS
**MSOS
**MSOS
**MSOS
**MSOS
**MSOS
**MSOS
**MSOS

*

ALLA

EOR- ZERO+15
STA- XPL,Q
SAVE OVERFLOW AS BIT 15 WITH PRIORITY
SAVE OVERFLOW AND PRIORITY LEVEL

M1300046

0047 P0016 C0FF
 0048 P0017 6202
 0049 P0018 40FF
 0050 P0019 0005
 0051 P001A 40B8
 0052 P001B E8E4
 0053 P001C 00FD
 0054 P001D C622
 0055 P001E 6103
 0056 P001F 40FF
 0057 P0020 E202
 0058 P0021 40FF
 0059 P0022 C6B7
 0060 P0023 0400
 0061 P0024 0821
 0062 P0025 E103
 0063 P0026 1622
 0064

LDA- I
 STA- XI,Q
 STQ- I
 INQ XL
 STQ- COUNT
 LDQ# ALLIN
 INQ -2
 LDA- (ZERO),Q
 STA- XR,I
 STQ- I
 LDQ- 2,Q
 STQ- PRLVL
 LDA- (AMASKT),Q
 EIN
 TRA M
 LDQ- 3,I
 JMP- (ZERO),Q
 END

SAVE MEMORY
 INDEX REGISTER
 STACK LOCATION BASE
 UPDATE STACK
 LEVEL LINK
 ADJUST TRAP LOCATION
 RETURN LOCATION
 SAVE TRAP LOCATION IN I
 SET NEW
 PRIORITY LEVEL
 SET NEW MASK I M REGISTER
 JUMP TO PROCESSOR
 LOCATION IN Q

M1300047
 M1300048
 M1300049
 M1300050
 M1300051
 M1300052
 M1300053
 M1300054
 M1300055
 M1300056
 M1300057
 M1300058
 M1300059
 M1300060
 M1300061
 M1300062
 M1300063
 M1300064

PGM= 0027 (39) COM = 0000 (0) DAT = 0000 (0)

EQUIVALENCES

DEF.LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0000	I	00FF	(000255) 0047, 0049, 0050
0010	COUNT	0088	(000184) 0038, 0039, 0051
0011	PRLVL	00EF	(000239) 0041, 0058
0012	AMASKT	00B7	(000133) 0059
0013	ZERO	0022	(000034) 0031, 0045, 0054, 0063
0014	LPMSK	0002	(000002) 0042
0025	XA	0001	(000001) 0040
0025	XI	0002	(000002) 0048
0025	XR	0003	(000003) 0055
0025	XPL	0004	(000004) 0046
0025	XL	0005	(000005) 0050

S Y M B O L S

DEF.LINE	NAME	ADDRESS	REFERENCED AT LINE NUMBER
0008	ALLIN	0000	0008, 0029, 0052
0037	QREG	000D	0028, 0035
0038	CPMFX	000E	0027
0046	ALLA	0015	0043

EXTERNALS

DEF.LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0009	PRO	000C	0036

*** ALPHABETICAL SORT OF SYMBOLS ***

ALLA	0046	ALLIN	0008	AMASKT	0012	COUNT	0010	CPMFX	0038	I	0000	LPMSK	0014	PRLVL	0011	PRO	0009
QREG	0037	XA	0025	XI	0025	XL	0025	XPL	0025	XR	0025	ZERO	0013				

0001
0002
0003
0004

*
*
*

NAM TRVEC DECK-ID M14 MSOS 5.0
MASS STORAGE OPERATING SYSTEM VERSION 5.0
SMALL SYSTEMS DIVISION, LA JOLLA, CALIFORNIA
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SUMMARY-11b *****
M1400002
M1400003
M1400004

0006
0007
0008

0000 P

*

TRANSFER VECTOR
ENT TRVEC
EQU TRVEC(*)

M1400006
M1400007
M1400008

0011
0012
0013
0014
0015
0016
0017
0018
0019
0020
0021
0022
0023
0024
0025
0026
0027
0028
0029
0030
0031
0032
0033
0034
0035
0036
0037
0038
0039
0040
0041
0042
0043
0044
0045
0046
0047
0048
0049

ENT UNPIOF
ENT PARBV4
ENT COMPV4
ENT INPTV4
ENT SCHERR
ENT JOBIND
ENT NSTACK
ENT TRANV
ENT UNPIO
ENT IUP
ENT SPASW
ENT LIBET
ENT FILE1
ENT FILE2
ENT FILE3, FILE4
ENT RECOV
ENT LOCF, L PTRS
ENT SWITCH
ENT LOADIN
ENT UNPTIM
ENT VINPV4
ENT BATCLU
ENT PRORET
ENT MIBUF
ENT JPSWT
ENT JBPROE
ENT TRNVEC
ENT RELS1A
ENT ERRMSG
ENT AUTF9
ENT AUTFA
ENT AUTFB

SCHEDULER ERROR ENTRY

**MSOS 4.0

M1400011
M1400012
M1400013
M1400014
M1400015
M1400016
M1400017
M1400018
M1400019
M1400020
M1400021
M1400022
M1400023
M1400024
M1400025
M1400026
M1400027
M1400028
M1400029
M1400030

**MSOS 4.0
118*4366*****

BATCH CONTROL STATEMENT LU
RETURN LOC TO JPCLOAD FOR PROTEC

M1400031
M1400032
M1400033
M1400034
M1400035
M1400036
M1400037
M1400038
M1400039
M1400040
M1400041
M1400042
M1400043
M1400044
M1400045
M1400046
M1400047
M1400048

ENT JKIN
ENT JBCFGZ
EXT PROTEC
EQU NSTACK(5)
EQU AREQXT(\$B9)
EQU LPMSK(\$2)
EQU ONEBIT(\$23)

JOB ABORT FLAG

MAX NO. OF STACKED REQUESTS

**MSOS 4.0
**MSOS 4.0
**MSOS 4.0

0051 P0000 18FF
0052 P0001 0000

TRANV NUM \$18FF
JBPROE NUM \$0

LOC. IN JOBENT TO PROCESS JOB PROC. MODULES

M1400050
M1400051

0053	P0002	0000	ERRMSG	NUM	0	ABS. ADDR. OF ERRM IN JOBENT	M1400052
0054	P0003	0000	MIBUF	NUM	0	ADDRESS OF MIINP BUFFER IN JOBENT	M1400053
0055	P0004	0000	TRNVEC	NUM	\$0	ABS. ADDR. OF TRANTA BUFFER IN JOBENT	M1400054
0056	P0005	0000	LIBET	NUM	\$0000	ABS. ADDR. IN JOBENT THAT SCHEDULES LIBEDT.	M1400055
0057	P0006	7FFF	RECOV	NUM	\$7FFF	LOC IN JOBENT TO SCHED. RECOV	M1400056
0058	P0007	0000	RELS1A	NUM	0	LOC IN JOBENT TO RELEASE SPECIFIED FILE	M1400057
0059	P0008	0000	PARBV4	NUM	0	PARAMETER BUFFER IN JOBENT FOR FILES	M1400058
0061			***			ANY ENTRIES TO TRVEC MUST BE MADE FOLLOWING THIS STATEMENT,	M1400060
0062			***			AS THE PRECEDING ENTRIES ARE PART OF A TABLE TRANSFER FROM JOBENT.	M1400061
0064			*****			*****	M1400063
0066	P0009	0000	JOBIND	NUM	0		M1400065
0067	P000A	0000	UNPIO	NUM	\$0	SET IF UNPROTECTED I/O IS GOING ON. DOES	M1400066
0068			*			NOT ALLOW JOB TO BE KILLED UNTIL ALL OF THE	M1400067
0069			*			UNPROTECTED I/O REQUESTS ARE COMPLETED.	M1400068
0070			*			AS EACH REQUEST TERMINATES THE COUNT IN UNPIO	M1400069
0071			*			IS DECREMENTED	M1400070
0072	P000B	0000	UNPTIM	NUM	0	NUMBER OF UNPROTECTED TIMER REQ. WAIT	M1400071
0073	P000C	0000	UNPIOF	NUM	0	FLAG FOR BUFFERING I/O REQUESTS	M1400072
0074	P000D	0000	BATCLU	NUM	0	BATCH CONTROL STATEMENT LU,*BATCH,LU 116*4366	*****
0075	P000E	18F9	IUP	NUM	\$18F9	INPUT UNIT POINTER	M1400073
0076	P000F	0000	INPTV4	NUM	0	BOSS INPUT DEVICE-SET BY SPACE	M1400074
0077	P0010	0000	AUTF9	NUM	0	STD INPUT AT AUTOLOAD, SET BY RESTART	M1400075
0078	P0011	0000	AUTFA	NUM	0	STD PUNCH AT AUTOLOAD, SET BY RESTART	M1400076
0079	P0012	0000	AUTFB	NUM	0	STD LIST AT AUTOLOAD, SET BY RESTART	M1400077
0080	P0013	0000	SPASW	NUM	0		M1400078
0081	P0014	0000	VINPV4	NUM	0	INPUT ASSIGNED BY *V **MSOS	M1400079
0082	P0015	0000	PRORET	NUM	\$0	LOC. IN JOBPRO TO RETURN TO FROM PROT5	M1400080
0083	P0016	0000	JPSWT	NUM	\$0	TEMP LOC. FOR MIINP BUFFER ADDR. OR AN INDEX	M1400081
0084			*			TO THE TRANTA TABLE IN JOBPRO OR A NEG.	M1400082
0085			*			VALUE SET BY JOBENT OR JBKILL	M1400083
0086	P0017	0000	FILE1	NUM	\$0000	LOCATION OF JOBENT FILE	M1400084
0087	P0018	0000	FILE2	NUM	\$0000	LOCATION OF JOBPRO FILE	M1400085
0088	P0019	0000	FILE3	NUM	\$0000	LOC. OF THIRD FILE	M1400086
0089	P001A	0000	FILE4	NUM	\$0000	LOC. OF FOURTH FILE	M1400087
0090	P001B	0000	LOCF	NUM	\$0000	LOC. OF F IN PROTECT PROCESSOR	M1400088
0091	P001C	0000	LPTRS	NUM	\$0000	LOC. OF PTRS IN PROTECT PROC.	M1400089
0092	P001D	0000	SWTCH	NUM	\$0000	SWITCH TO LOCK-OUT JOBPROCESSOR	M1400090
0093			*			WHILE LIBEDIT OR THE RECOVERY	M1400091
0094			*			PROGRAM IS IN OPERATION.	M1400092
0095	P001E	0000	LOADIN	NUM	\$0000	PROTECT PROCESSOR FLAG TO LET	M1400093
0096			*			LOADER READ AND WRITE ON MASS	M1400094
0097			*			STORAGE.	M1400095
0099	P001F	0000	JKIN	NUM	0		M1400097
0100			*			THIS CORE RESIDENT PROGRAM IS ENTERED	M1400098
0101			*			TO CANCEL JOB PROCESSING. IT SCHEDULES	M1400099
0102			*			THE MM RESIDENT JBKILL MODULE THEN SETS	M1400100
0103			*			THE JBCNFG NOT ZERO WHICH TELLS THE PROTECT	M1400101
0104			*			PROCESSOR TO QUIT HONORING REQUESTS FROM	M1400102
0105			*			UNPROTECTED CORE.	M1400103

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0107 ENT JBCNCL M1400105
0108 ENT JBCNFG M1400106
0109 P0020 C816 JBCNCL LDA* JBCNFG JOB CANCEL FLAG M1400107
0110 P0021 0116 SAN JKO IF JBKILL HAS BEEN SCHEDULED, DONT REDO M1400108
0111 P0022 0005 INQ 5 **MSOS - . M1400109
0112 P0023 0153 SQN JK THE REQUEST TO CANCEL WAS FROM **MSOS 4. M1400110
0113 P0024 0CFA ENQ -5 T5- DON'T ABORT JOB M1400111
0114 P0025 18C9 JMP* JK1 JOB ABORT FLAG M1400112
0115 P0026 0000 JBCFGZ ADC 0 IF A JOB IS ABORTING, DONT REDO M1400113
0116 P0027 C8FE JK LDA* JBCFGZ M1400114
0117 P0028 011C JKO SAN JBEXIT M1400115
0118 P0029 E8DA LDQ* TRNVEC M1400116
0119 P002A C20C LDA- 12,Q IF NO JOB IN PROGRESS, DONT ABORT M1400117
0120 P002B 0109 SAZ JBEXIT M1400118
0121 P002C 08F9 RAO* JBCFGZ SET JOB ABORT FLAG M1400119
0122 P002D 0802 SET Q M1400120
0123 P002E C8F0 JK1 LDA* JKIN M1400121
0124 P002F 0807 RAO* JBCNFG SET JOB CANCEL FLAG NON ZERO M1400122
0125 P0030 010A SAZ JKNIN **MSOS - . M1400123
0126 P0031 6803 STA* JBJK SCHEDULE MM PROG AT LVL M1400124
0127 P0032 54F4 RTJ- ($F4) TWO **MSOS - . M1400125
0128 P0033 5202 NUM $5202 EXIT TO DISP M1400126
0129 P0034 0000 JBJK NUM 0 JOB CANCEL FLAG M1400127
0130 P0035 14EA JBEXIT JMP- ($EA) M1400128
0131 P0036 0000 JBCNFG ADC 0 M1400129
0132 ENT JPRETN, JPRET1 SET UP BY T7 AND JPLOAD M1400130
0133 P0037 0000 JPRET1 ADC 0 JPRETN MUST BE IN PRESET TABLE FOR PROTECT M1400131
0134 P0038 0000 JPRETN 0 PROCESSOR TO PASS THIS ON TO LOADER REQUESTOR M1400132
0135 P0039 0500 IIN 0 GO TO T7 OR JPLOAD M1400133
0136 P003A 1CFC JMP* (JPRET1) M1400134
0137 P003B 54F4 JKNIN RTJ- ($F4) M1400135
0138 P003C 2402 NUM $2402 M1400136
0139 P003D 7FFF X ADC PROTEC M1400137
0140 P003E 14EA JMP- ($EA) **MSOS - . M1400138

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0142 *****
0143 *
0144 *           SCHEDULER ERROR RETURN TO USER
0145 *
0146 *****
0147 P003F C4FF SCHERR LDA- (I)          SET Q          **MSOS
0148 P0040 A011 AND- LPMSK+15      NEGATIVE      **MSOS
0149 P0041 B032 EOR- ONEBIT+15      ON RETURN    **MSOS
0150 P0042 64FF STA- (I)           TO USER      **MSOS
0151 P0043 14B9 JMP- (AREQXT)      **MSOS
0152 *****
0153 *           ADDRESS COMPATE ROUTINE
0154 *
0155 *           A.GT.Q          DIFFERENCE RETURNED IN A
0156 *           A.EQ.Q          A EQUAL 0
0157 *           A.LT.Q          A SET TO FFFF
0158 *****
0159 P0044 0B00 COMPV4 NOP 0
0160 P0045 0500 IIN 0
0161 P0046 0132 SAM AUPPER A IN UPPER BANK
0162 P0047 0165 SQP BTHSAM BOTH IN LOWER BANK
0163 P0048 1808 JMP* QBIGR A IN LOWER Q IN UPPER
0164 P0049 0173 AUPPER SQM BTHSAM BOTH IN UPPER BANK
0165 P004A 0852 TCQ Q A IN UPPER Q IN LOWER
0166 P004B 0834 AAQ A GET DIFFERENCE IN A
0167 P004C 1805 JMP* ABIGR
0168 P004D 0852 BTHSAM TCQ Q
0169 P004E 0834 AAQ A SUBTRACT Q FROM A
0170 P004F 0121 SAP ABIGR
0171 P0050 0804 QBIGR SET A Q IS BIGGER
0172 P0051 0400 ABIGR EIN 0
0173 P0052 1CF1 JMP* (COMPV4)
0174 *****
0175 END

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M1400140
M1400141
M1400142
M1400143
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M1400167
M1400168
M1400169
M1400170
M1400171
M1400172
M1400173

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EQUIVALENCES

DEF.LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0000	I	00FF	(000255) 0147, 0150
0017	NSTACK	0005	(000005) 0017
0047	AREQXT	0089	(000185) 0151
0048	LPNSK	0002	(000002) 0148
0049	ONEBIT	0023	(000035) 0149

SYMBOLS

DEF.LINE	NAME	ADDRESS	REFERENCED AT LINE NUMBER
0007	TRVEC	0000	0007
0011	UNPIOF	000C	0011
0012	PARBV4	0008	0012
0013	COMPV4	0044	0013, 0173
0014	INPTV4	000F	0014
0015	SCHERR	003F	0015
0016	JOBIND	0009	0016
0018	TRANV	0000	0018
0019	UNPIO	000A	0019
0020	IUP	000E	0020
0021	SPASW	0013	0021
0022	LIBET	0005	0022
0023	FILE1	0017	0023
0024	FILE2	0018	0024
0025	FILE3	0019	0025
0025	FILE4	001A	0025
0026	RECOV	0006	0026
0027	LOCF	001B	0027
0027	LPTRS	001C	0027
0028	SWTCH	001D	0028
0029	LOADIN	001E	0029
0030	UNPTIM	000B	0030
0031	VINPV4	0014	0031
0032	BATCLU	000D	0032
0033	PRORET	0015	0033
0034	MIBUF	0003	0034
0035	JPSWT	0016	0035
0036	JBPROE	0001	0036
0037	TRNVEC	0004	0037, 0118
0038	RELS1A	0007	0038
0039	ERRMSG	0002	0039
0040	AUTF9	0010	0040
0041	AUTFA	0011	0041
0042	AUTFB	0012	0042
0043	JKIN	001F	0043, 0123
0044	JBCFGZ	0026	0044, 0116, 0121
0107	JBCNCL	0020	0107
0108	JBCNFG	0036	0108, 0109, 0124
0116	JK	0027	0112
0117	JK0	0028	0110
0123	JK1	002E	0114

0129	JBJK	0034
0130	JBEXIT	0035
0132	JPRETN	0038
0132	JPRET1	0037
0137	JKNIN	003B
0164	AUPPER	0049
0168	BTHSAM	004D
0171	QBIGR	0050
0172	ABIGR	0051

0126	
0117,	0120
0132	
0132,	0136
0125	
0161	
0162,	0164
0163	
0167,	0170

EXTERNALS

DEF.LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0045	PROTEC	003D	0139

0001		NAM OFVOL	DECK-ID M15	MSQS 5.0	SUMMARY-11	M1500001
0002	*	MASS STORAGE OPERATING SYSTEM VERSION 5.0				M1500002
0003	*	SMALL SYSTEMS DIVISION, LA JOLLA, CALIFORNIA				M1500003
0004	*	COPYRIGHT CONTROL DATA CORPORATION 1976				M1500004

0006	*	VOLATILE STORAGE OVERFLOW				M1500006
0007		ENT OFVOL				M1500007
0008	0000 P	EQU OFVOL(*)				M1500008

0011	*	THIS PROGRAM IS ENTERED WHEN VOLATILE STORAGE				M1500011
0012	*	IS OVER SUBSCRIBED.				M1500012

0014		ENT OVFVOL				M1500014
0015		EXT SYFAIL	SITE FAIL LOCATED IN SYSDAT (\$18FF)			M1500015

0017	P0000	0841	OVFVOL	CLR	M	M1500017
0018	P0001	E000		LDQ	=N\$91	M1500018
	P0002	0091				
0019	P0003	C02B		LDA-	\$2B	M1500019
0020	P0004	03FE		OUT	-1	M1500020
0021	P0005	E000		LDQ	=N\$90	M1500021
	P0006	0090				
0022	P0007	0A4F		ENA	\$+F	M1500022
0023	P0008	03FE		OUT	-1	M1500023
0024	P0009	0A56		ENA	\$56	M1500024
0025	P000A	03FE		OUT	-1	M1500025
0026	P000B	5400	X	RTJ+	SYFAIL	M1500026
	P000C	7FFF	X			
0027				END		M1500027

PGM= 0000 (13) COM = 0000 (0) DAT = 0000 (0)

EQUIVALENCES

DEF.LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0000	I	00FF	(000255)

S Y M B O L S

DEF.LINE	NAME	ADDRESS	REFERENCED AT LINE NUMBER
0007	OFVOL	0000	0007
0014	OVFVOL	0000	0014

EXTERNALS

DEF.LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0015	SYFAIL	000C	0026

*** ALPHABETICAL SORT OF SYMBOLS ***

I 0000 OFVOL 0007 OVFVOL 0014 SYFAIL 0015


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0001 * NAM ALVOL DECK-ID M16 MSOS 5.0 SUMMARY-110M1600001
0002 * MASS STORAGE OPERATING SYSTEM VERSION 5.0 M1600002
0003 * SMALL SYSTEMS DIVISION, LA JOLLA, CALIFORNIA M1600003
0004 * COPYRIGHT CONTROL DATA CORPORATION 1976 M1600004

0006 * VOLATILE STORAGE ALLOCATION AND RETURN M1600006
0007 ENT ALVOL M1600007
0008 0000 P EQU ALVOL(*) M1600008

0011 ENT VOLA,VOLR M1600011
0012 EXT VOLEND **MSOS 4.1** M1600012
0013 EXT OVFLVOL M1600013
0014 00F0 EQU VOLATL($F0),ZERO($22) M1600014
      0022

0015 * VOLATILE STORAGE ALLOCATION M1600015
0016 * M1600016
0017 * M1600017
0018 P0000 0000 VOLA 000 0 M1600018
0019 P0001 44F0 STQ- (VOLATL) SAVE Q IN VOLATILE 0 M1600019
0020 P0002 E000 LDQ =XVOLEND M1600020
      X
0021 P0003 7FFF X M1600021
0022 P0004 0852 TCQ Q M1600022
0023 P0005 F0F0 ADQ- VOLATL M1600023
0024 P0006 FCF9 ADQ* (VOLA) M1600024
0025 P0007 0172 SQM VOLA1-*--1 TEST FOR OVERFLOW M1600025
      X
0026 P0008 1400 JMP+ OVFLVOL M1600026
      X
0027 P0009 7FFF VOLA1 LDQ- VOLATL M1600027
0028 P000A E0F0 STA- VA,Q SAVE A IN (VA) M1600028
0029 P000B 6201 LDA- I M1600029
0030 P000C C0FF STA- VI,Q SAVE I IN (VI) M1600030
0031 P000D 6202 STQ- I ADDRESS OF VOL. IN I M1600031
0032 * M1600032
0033 * M1600033
0034 * M1600034
0035 P000F FCF0 ADQ* (VOLA) M1600035
0036 P0010 40F0 STQ- VOLATL SET ENTRY POINT TO START M1600036
      * OF NEXT VOL. BLOCK M1600037
0037 P0011 08EE RAO* VOLA M1600038
0038 P0012 E4FF LDQ- (I) RESTORE A,Q CONTENTS M1600039
0039 P0013 C101 LDA- 1,I M1600040
0040 P0014 1CEB JMP* (VOLA) M1600041
      *
0041 * M1600042
0042 P0015 0000 VOLR 000 0 RETURN VOLATILE M1600043
0043 P0016 E0FF LDQ- I LOC. OF VOL. RETURNED IN I M1600044
0044 P0017 C202 LDA- VI,Q M1600045
0045 P0018 60FF STA- I RESTORE I M1600046
0046 P0019 C201 LDA- VA,Q RESTORE A M1600047
0047 P001A 40F0 STQ- VOLATL RESTORE POINTER TO VOL. M1600048
0048 P001B E622 LDQ- (ZERO),Q RESTORE Q M1600049
0049 P001C 1CF8 JMP* (VOLR)

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00050
00051
00052
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00055
00056

0001
0002

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VOLATILE STORAGE ASSIGNMENT.
ADDRESS OF VOLATILE ASSUMED IN I.

EQU VA(1) USERS A SAVED AT VA
EQU VI(2) USERS I SAVED AT VI
END

M1600050
M1600051
M1600052
M1600053
M1600054
M1600055
M1600056

PGM= 0010 (29) COM = 0000 (0) DAT = 0000 (0)

E Q U I V A L E N C E S

DEF.LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0000	I	00FF (000255)	0028, 0030, 0038, 0043, 0045
0014	VOLATL	00F0 (000240)	0019, 0022, 0025, 0035, 0047
0014	ZERO	0022 (000034)	0048
0054	VA	0001 (000001)	0027, 0046
0055	VI	0002 (000002)	0029, 0044

SYMBOLS

DEF.LINE	NAME	ADDRESS	REFERENCED AT LINE NUMBER
0007	ALVOL	0000	0007
0011	VOLA	0000	0011, 0023, 0034, 0037, 0040
0011	VOLR	0015	0011, 0049
0026	VOLA1	000A	0024

EXTERNALS

DEF.LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0012	VOLEND	0003	0020
0013	OVFVOL	0009	0025

SUMMARY-110

0001	*	NAM	ALCORE	DECK-ID	M17	MSOS	5.0	M1700001
0002	*	MASS STORAGE OPERATING SYSTEM VERSION 5.0						M1700002
0003	*	SMALL SYSTEMS DIVISION, LA JOLLA, CALIFORNIA						M1700003
0004	*	COPYRIGHT CONTROL DATA CORPORATION 1976						M1700004
0006	*	CORE ALLOCATOR						M1700006
0007		ENT	ALCORE					M1700007
0008		EQU	ALCORE(*)					M1700008
0011		ENT	REQALC, RTNCOR					M1700011
0012		EXT	LVLSTR, LEND, CALTHD					M1700012
0013		EQU	LPMSK(\$2), ZERO(\$22)					M1700013
0014	0002	EQU	MINSIZ (2)					M1700014
0015	0022	EQU	MAXNO (LPMSK+15)					M1700015
0016	0002							M1700016
0017	0011							M1700017
0018		*						M1700018
0019		*	THIS MODULE FINDS AN AVAILABLE AREA IN					M1700019
0020		*	THE SPACE ALLOCATED TO IT AND ASSIGNS					M1700020
0021		*	PART OF IT PER A SPACE REQUEST.					M1700021
0022		*						M1700022
0023		*	THE CORE ALLOCATOR IS ENTERED FROM THE					M1700023
0024		*	CORE ALLOCATOR DRIVER AND FROM THE					M1700024
0025		*	RELEASE REQUEST PROCESSOR.					M1700025
0026		*						M1700026
0027		*	ON ENTRY TO ALLOCATE CORE, A AND Q MUST					M1700027
0028		*	BE AS FOLLOWS.					M1700028
0029		*						M1700029
0030		*	A= REQUESTED LENGTH.					M1700030
0031		*	Q=PRIORITY LEVEL OF THE REQUEST.					M1700031
0032		*						M1700032
0033		*	AN ENTRY TO RETURN CORE PREVIOUSLY					M1700033
0034		*	ALLOCATED MUST HAVE THE ORIGIN OF THE					M1700034
0035		*	BLOCK BEING RETURNED IN Q.					M1700035
0036		*						M1700036
0037		*	ENTRIES TO OBTAIN SPACE ARE MADE					M1700037
0038		*	THROUGH REQALC.					M1700038
0039		*	ENTRIES TO RETURN CORE ARE MADE					M1700039
0040		*	THROUGH RTNCOR.					M1700040
0041		*						M1700041
0042		*	IF AN ALLOCATION CAN NEVER BE MADE, THEN					M1700042
0043		*	A RETURN TO CALLER IS MADE WITH Q=0					M1700043
0044		*	IF NO SPACE IS AVAILABLE NOW, THEN A					M1700044
0045		*	RETURN TO CALLER IS MADE WITH Q=-1					M1700045
0046		*	IF THE ALLOCATION IS SUCCESSFUL, THEN					M1700046
0047		*	A RETURN TO CALLER IS MADE WITH THE					M1700047
0048		*	ORIGIN OF THE AREA IN Q.					M1700048
0049		*						M1700049
0050	P0000 0000		REQALC 000 0					M1700050
0051	P0001 482F		STQ* REQLVL		REQUEST LEVEL			M1700051

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0052 P0002 0902 INA MINSIZ
0053 P0003 682C STA* REQLTH LENGTH=(A)+MINSIZ
0054 P0004 C600 X LDA+ LVLSTR,Q
P0005 7FFF X
0055 P0006 6828 STA* LSTR LEVEL START
0056 P0007 8828 ADD* REQLTH IF LSTR+REQLTH .GE. LEND
0057 P0008 9400 X SUB+ LEND
P0009 7FFF X
0058 P000A 09FD INA -2
0059 P000B 0132 SAM CA2 IF LSTR + REQLTH .GT. LEND
0060 P000C 0C00 ENQ 0 ERROR CODE, Q=0
0061 P000D 1CF2 JMP* (REQALC)
0062 *
0063 * LOOK THROUGH THE AVAILABLE AREA FOR THE
0064 * SMALLEST USEABLE PIECE.
0065 *
0066 P000E C011 CA2 LDA- MAXNO 2**15-1
0067 P000F 6822 STA* MINPCE
0068 P0010 E000 X LDQ =XCALTHD
P0011 7FFF X
0069 P0012 4821 RCORE1 STQ* LTHD
0070 *
0071 * IF THREAD = FFFF, GO TO CEOT
0072 *
0073 P0013 E201 LDQ- 1,Q
0074 P0014 0D00 INQ 0
0075 P0015 0151 SQN 1
0076 P0016 181E JMP* CEOT
0077 P0017 40FF STQ- 1
0078 P0018 C4FF LDA- (I) IF PIECE TOO SMALL
0079 P0019 9816 SUB* REQLTH
0080 P001A 0121 SAP 1 GO GET NEXT PIECE
0081 P001B 1811 JMP* CNXT
0082 P001C 0814 TRQ A
0083 * IF THE START OF THE
0084 P001D 9811 SUB* LSTR PIECE ABOVE LEVEL START
0085 P001E 0131 SAM 1 GO CHECK SIZE
0086 P001F 1805 JMP* CSIZCK
0087 * OTHERWISE, PIECE STARTS
0088 * BELOW START FOR THIS
0089 * LEVEL.
0090 *
0091 * IF START OF PIECE, S1,
0092 * PLUS ITS LENGTH IS
0093 * .GE. THE REQUEST LEVEL
0094 * PLUS LENGTH, GO CHECK SIZ
0095 P0020 84FF ADD- (I)
0096 P0021 980E SUB* REQLTH
0097 P0022 0121 SAP 1
0098 P0023 1809 JMP* CNXT CANT USE PIECE
0099 P0024 C4FF CSIZCK LDA- (I) IF THIS PIECE LARGER THAN
0100 P0025 980C SUB* MINPCE LAST PIECE, CHECK NEXT
0101 P0026 0131 SAM 1

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M1700099
M1700100
M1700101

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0102 P0027 1805 JMP* CNXT
0103 P0028 C4FF LDA- (I)
0104 P0029 6808 STA* MINPCE
0105 P002A C809 LDA* LTHD
0106 P002B 6807 STA* LMINTD
0107 P002C E0FF LDQ- I
0108 P002D 18E4 JMP* RCORE1
0109 P002E 0000 LSTR
0110 P002F 0000 NUM
0111 P0030 0000 REQLTH NUM 0
0112 P0031 0000 REQLVL NUM
0113 P0032 0000 MINPCE NUM 0
0114 P0033 0000 LMINTD NUM 0
0115 P0033 0000 LTHD NUM 0
0116 P0034 C011 CEOT LDA- MAXNO
0117 P0035 98FB SUB* MINPCE
0118 P0036 0101 SAZ 1
0119 P0037 0122 SAP CA4P1--*-1
0120 P0038 0CFE ENQ -1
0121 P0039 1CC6 JMP* (REQALC)
*
*
*
0123 CA4P1 LDQ* LMINTD
0124 LDA- 1,Q
0125 P003A E8F7 STQ* S1
0126 P003B C201 STA* S2
0127 P003C 483A LDA* (S2)
0128 P003D 683B STA* CN
0129 P003E CC3A LDQ* S2
0130 P003F 683C LDA- 1,Q
0131 P0040 E838 STA* S3
0132 P0041 C201
0133 P0042 6838
*
0135 P0043 C8EA LDA* LSTR
0136 P0044 9834 SUB* S2
0137 P0045 0103 SAZ ACA5--*-1
0138 P0046 0132 SAM ACA5--*-1
*
0140 P0047 09FC INA -MINSIZ-1
0141 P0048 0121 SAP 1
0142 P0049 1810 ACA5 JMP* CA5
0143 P004A 0903 INA MINSIZ+1
0144 P004B 682C STA* LS1PRIME
0145 P004C E82C LDQ* S2
0146 P004D 4829 STQ* S1
0147 P004E 40FF STQ- I
0148 P004F E8DE LDQ* LSTR
0149 P0050 4828 STQ* S2
0150 P0051 0101 LDA- 1,I
0151 P0052 6201 STA- 1,Q
0152 P0053 4101 STQ- 1,I
0153 P0054 CC22 LDA* (S1)
0154 P0055 9822 SUB* LS1PRIME

```

SAVE LNPTH AND LOC.

THREAD LOC. FOR SMALLEST
GET THE NEXT PIECE
REPEAT SEARCH OF THREAD.

END OF THREAD.
IF NO PIECE FOUND, THEN

ERROR CODE RETURNED IN Q

A PIECE WAS FOUND

S1 POINTS TO S2
START OF SEGMENTS=S1=S2
CHOSEN PIECE LENGTH = CN

S2 POINTS TO S3

IF NO LOWER PIECE

A LOWER PIECE EXISTS.
IF LOWER PIECE LESS THAN
MINIMUM SIZE PLUS 1

S1,I=S2

POINTER TO S3
PUT INTO S2
POINTER TO S2 PUT IN S1
LTH S2=LS1PRIME-ORIG LTH

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M1700102
M1700103
M1700104
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M1700119
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M1700154

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0155 P0056 6C22
 0156 P0057 C820
 0157 P0058 6C1E
 0158 *
 0159 *
 0160 CA5
 0161 P0059 CC1F
 0162 P005A 98D4
 0163 P005B 0111
 0164 P005C 1811
 0165 P005D 09FC
 0166 P005E 0121
 0167 P005F 180E
 0168 P0060 0903
 0169 P0061 6818
 0170 P0062 E816
 0171 P0063 40FF
 0172 P0064 C8CA
 0173 P0065 6C13
 0174 P0066 F8C8
 0175 P0067 C812
 0176 P0068 6622
 0177 P0069 C101
 0178 P006A 6201
 0179 P006B 4101
 0180 P006C 480E
 0181 *
 0182 *
 0183 *
 0184 P006D E809 CA6
 0185 P006E C80C
 0186 *
 0187 P006F 6201
 0188 P0070 E808
 0189 P0071 0814
 0190 P0072 0902
 0191 *
 0192 *
 0193 *
 0194 P0073 6201
 0195 P0074 0822
 0196 P0075 1C8A
 0197 *
 0198 *
 0199 *
 0200 P0076 0000 S1
 0201 P0077 0001
 0202 P0078 0000 S2
 0203 P0079 0001
 0204 P007A 0000 S3
 0205 P007B 0000 CN
 0206 *
 0207 *

```

    STA* (S2)
    LDA* LS1PRIME
    STA* (S1)
    *
    *         THREAD NOW IS ...S1,S2,S3
    *         IF THERE IS NO UPPER PIECE, THEN GO TO CA6
    *
    CA5
    LDA* (S2)
    SUB* REQLTH
    SAN 1
    JMP* CA6
    INA -MINSIZ-1      GO TO CA6
    SAP 1               IF UPPER PIECE SMALLER
                        THAN MIN SIZE, GO TO CA6
    JMP* CA6
    INA MINSIZ+1
    STA* LS3PRIME      LEFTOVER CALLED S3PRIME
    LDQ* S2             I POINTS TO S2
    SIQ- I
    LDA* REQLTH
    STA* (S2)
    ADQ* REQLTH
    LDA* LS3PRIME      LENTH S3PRIME TO S3PRIME
    STA- (ZERO),Q
    LDA- 1,I           POINTER TO NEW S3 INTO S2
    STA- 1,Q           PTR TO OLD S3 TO S3PRIME
    SIQ- 1,I
    SIQ* S3            S3PRIME IS NEW S3
    *
    *         REMOVE SEGMENT S2 FROM THREAD S1, S2, S3.
    *
    CA6
    LDQ* S1             THREAD S1 TO S3
    LDA* S3
    *
    STA- 1,Q
    LDQ* S2             RETURN TO CALLER WITH
    TRQ A               Q=FIRST USABLE ADDRESS
    INA MINSIZ
    *
    *         STORE LOCATION OF AREA BEFORE THE AREA
    *
    STA- 1,Q
    TRA Q
    JMP* (REQLC)
    *
    *         DATA STORAGE
    *
    S1  NUM
    BSS LS1PRIME(1)
    S2  NUM
    BSS LS3PRIME(1)
    S3  NUM
    CN  NUM 0
    *
    *         LENGTH OF CORE ALLOCATOR REQUEST
  
```

M1700155
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 M1700207

```

0208      * CORE ALLOCATOR - RETURN CORE LOGIC
0209 P007C 0000 RTNCR 0
0210 P007D 4830 STQ* RS2 RETURNED PIECE CALLED RS2
0211 P007E E000 X LDQ =XCALTHD
0212 P007F 0011 X
0212 P0080 482C RCA1 STQ* RTHD REFERENCE TO NEXT ENTRY
0213 P0081 C201 LDA- 1,Q ADDRESS OF ENTRY
0214 P0082 0B00 NOP 0
0215 P0083 0900 INA 0
0216 P0084 0111 SAN 1
0217 P0085 1806 JMP* RCEOT1 END OF THREAD
0218 P0086 60FF STA- I
0219 P0087 9826 SUB* RS2 IF ENTRY ABOVE RS2,
* GO TO RCEOT1
0220
0221 P0088 0122 SAP RCEOT1--1
0222 P0089 E0FF LDQ- I GET NEXT PIECE
0223 P008A 18F5 JMP* RCA1
0224 P008B 40FF RCEOT1 STQ- I REF TO ENTRY WHERE NEW
* PIECE WILL BE PUT IN I
0225
0226 P008C C101 LDA- 1,I CHECK IF RETURNED PIECE ALREADY
0227 P008D 0872 EAQ Q RELEASED
0228 P008E 0151 SQN RCA SKIP IF NOT
0229 P008F 181C JMP* RCAD
0230 P0090 E810 RCA LDQ* RS2
0231 P0091 C101 LDA- 1,I THREAD NEW PIECE IN
0232 P0092 6201 STA- 1,Q LOC. OF NEXT PIECE INTO
* NEW PIECE.
0233
0234 P0093 4101 STQ- 1,I LOC. OF NEW PIECE
* INTO REFERENCE
0235
0236
0237 * IF LOWER PIECE TOUCHES
0238 * NEW PIECE
0239
0239 P0094 C0FF LDA- I
0240 P0095 84FF ADD- (I)
0241 P0096 9817 SUB* RS2
0242 P0097 0117 SAN RCAC--1
0243 P0098 CC15 LDA* (RS2) COMBINE PIECES
0244 P0099 84FF ADD- (I)
0245 P009A 64FF STA- (I)
0246 P009B C201 LDA- 1,Q REF TO NEXT PIECE GOES TO
0247 P009C 6101 STA- 1,I COMBINED PIECE FRONT.
0248 P009D C0FF LDA- I CALL NEW PIECE RS2
0249 P009E 680F STA* RS2
0250 P009F E80E RCAC LDQ* RS2 IF RS2 TOUCHES NEXT PIECE
0251 P00A0 0814 TRQ A
0252 P00A1 8C0C ADD* (RS2)
0253 P00A2 9201 SUB- 1,Q
0254 P00A3 0117 SAN RCAD--1
*
0255
0256 P00A4 C201 LDA- 1,Q COMBINE PIECES
0257 P00A5 60FF STA- I
0258 P00A6 C4FF LDA- (I)
0259 P00A7 8C06 ADD* (RS2)

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```

46*750
46*750
46*750
46*750

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M1700208
M1700209
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M1700259

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0260 P00A8 6C05 STA* (RS2)
0261 P00A9 C101 LDA- 1,I
0262 P00AA 6201 STA- 1,Q
0263 P00AB 1C00 RCAD JMP* (RTNCOR)
0264 P00AC 0000 RTHD NUM 0
0265 P00AD 0000 RS2 NUM
0266 END

```

REFERENCE TO THREAD

```

M1700250
M1700251
M1700252
M1700253
M1700254
M1700255
M1700256

```

```

PGM= 00AE ( 174) COM = 0000 ( 0) DAT = 0000 ( 0)

```

EQUIVALENCES

DEF.LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0000	I	00FF	(000255) 0077, 0078, 0095, 0099, 0103, 0107, 0147, 0171, 0218, 0222, 0224, 0239, 0240, 0244, 0245, 0246
0013	LPMSK	0002	(000002) 0257, 0258
0013	ZERO	0022	(000034) 0015
0014	MINSIZ	0002	(000002) 0176
0015	MAXNO	0011	(000017) 0052, 0140, 0143, 0165, 0168, 0190

SYMBOLS

DEF.LINE	NAME	ADDRESS	REFERENCED AT LINE NUMBER
0007	ALCORE	0000	0007
0011	REQALC	0000	0011, 0061, 0121, 0196
0011	RTNCOR	007C	0011, 0263
0066	CA2	000E	0059
0069	RCORE1	0012	0108
0099	CSIZCK	0024	0086
0107	CNXT	002C	0081, 0098, 0102
0109	LSTR	002E	0055, 0084, 0135, 0148
0110	REQLTH	002F	0053, 0058, 0079, 0096, 0162, 0172, 0174
0111	REQLVL	0030	0051
0112	MINPCE	0031	0067, 0100, 0104, 0117
0113	LMINTD	0032	0106, 0125
0114	LTHD	0033	0069, 0105
0116	CEOT	0034	0076
0125	CA4P1	003A	0119
0142	ACA5	0049	0137, 0138
0161	CA5	0059	0142
0184	CA6	006D	0164, 0167
0200	S1	0076	0127, 0146, 0153, 0157, 0184
0201	LS1PRI	0077	0144, 0154, 0156
0202	S2	0078	0128, 0129, 0131, 0136, 0145, 0149, 0155, 0161, 0170, 0173, 0188
0203	LS3PRI	0079	0169, 0175
0204	S3	007A	0133, 0180, 0185
0205	CN	007B	0130
0212	RCA1	0080	0223
0224	RCEOT1	008B	0217, 0221
0230	RCA	0090	0228
0250	RCAC	009F	0242
0263	RCAD	00AB	0229, 0254
0264	RTHD	00AC	0212
0265	RS2	00AD	0210, 0219, 0230, 0241, 0243, 0249, 0250, 0252, 0259, 0250

EXTERNALS

DEF. LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0012	LVLSTR	0005	0054
0012	LEND	0009	0057
0012	CALTHD	007F	0068, 0211


```

0001 * NAM PRTCDR DECK-ID M18 MSOS 5.0 SUMMARY-11 M1800001
0002 * MASS STORAGE OPERATING SYSTEM VERSION 5.0 M1800002
0003 * SMALL SYSTEMS DIVISION, LA JOLLA, CALIFORNIA M1800003
0004 * COPYRIGHT CONTROL DATA CORPORATION 1976 M1800004

```

```

0006 ENT PRTCDR,K65T12,PTNREL,K65COR M1800006
0007 ENT SPCEV4,RDPTV4,OUTPV4 **MSOS 4.0M1800007
0008 EXT SWAPON,LOG1A,SPASW **MSOS 4.0M1800008
0009 EXT UNPIO,SWAPAR,LOOP **MSOS 4.0M1800009
0010 EXT STLPV4 **MSOS 4.0M1800010
0011 * 1 CARD DELETED M1800011
0012 EXT PARTBL,BUSY,LSTLOC,DIP,RPMASK M1800012
0013 EXT SCHERR M1800013

```

```

0015 * * * * * M1800015
0016 * PARTITIONED CORE ALLOCATOR M1800016
0017 * THIS MODULE IS ENTERED WHENEVER A PARTITION M1800017
0018 * HAS BEEN RELEASED OR WHEN A PARTITION M1800018
0019 * REQUEST IS MADE AND THE PARTITION HAS M1800019
0020 * ALREADY BEEN SCANNED. M1800020
0021 * M1800021
0022 * M1800022
0023 * * * * * M1800023

```

```

0025 EQU ONEBIT($23) M1800025
0026 EQU ADISP($EA),ZERO($22),LPMASK(2) M1800026

```

```

0027 EQU THRDS(17) **MSOS 1.0M1800027
0028 EQU USE(34) **MSOS 4.0M1800028
0029 EQU TIME(4),UNPPRT(16) **MSOS 4.0M1800029

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```

0030 EQU THD(2),LNTH(4) M1800030

```

```

0032 P0000 5820 PRTCDR RTJ* SCAN M1800032
0033 P0001 14EA JMP- (ADISP) NO REQUESTS TO SCHEDULE M1800033
0034 * IF A REQUEST IS FOUND WHICH CAN BE FILLED M1800034
0035 * RETURN IS HERE WITH THE POINTER TO IT IN Q -- M1800035
0036 * I CONTAINS BASE TO PARTN. CORE TABLES M1800036
0037 * M1800037
0038 * M1800038
0039 P0002 C622 LDA- (ZERO),Q M1800039
0040 P0003 A010 AND- LPMASK+14 M1800040
0041 P0004 0F49 ARS 9 CORE REQUEST M1800041
0042 P0005 0116 SAN PTCJR YES M1800042
0043 P0006 4804 STQ* DIRCAL NO, DIRECTORY REQUEST M1800043
0044 P0007 E201 LDQ- PC,Q M1800044
0045 P0008 54F4 RTJ- ($F4) SCHEDULE READ FROM MASS STORAGE M1800045
0046 P0009 6000 NUM $6000 INDIRECT M1800046

```

0047	P000A	0000	DIRCAL	NUM	0				M1800047
0048	P000B	0103		SAZ	FINE				M1800048
0049	P000C	C201	PTCOR	LDA-	PC,Q				M1800049
0050	P000D	0116		SAN	PTCOR1				M1800050
0051	P000E	6202		STA-	THD,Q				M1800051
0052	P000F	C400	X FINE	LDA	DIP				M1800052
	P0010	7FFF	X						
0053	P0011	0131		SAM	1				M1800053
0054	P0012	18ED		JMP*	PRTCDR				M1800054
0055	P0013	14EA		JMP-	(ADISP)				M1800055
0056	P0014	C522	PTCOR1	LDA-	(ZERO),I				M1800056
0057	P0015	6203		STA-	PQ,Q				M1800057
0058	P0016	A622	PACOMP	LDA-	(ZERO),Q				M1800058
0059	P0017	8011		AND-	LPMASK+15				M1800059
0060	P0018	B032		EOR-	ONEBIT+15				M1800060
0061	P0019	6622		STA-	(ZERO),Q				M1800061
0062	P001A	4804		STQ*	COMPAD				M1800062
0063	PC01B	E203		LDQ-	PQ,Q				M1800063
0064	P001C	54F4		RTJ-	(SF4)				M1800064
0065	P001D	6000		NUM	\$6000				M1800065
0066	P001E	0000	COMPAD	NUM	0				M1800066
0067	P001F	18EF		JMP*	FINE				M1800067

THERE IS A COMP. ADDRESS
NO COMP ADDR--CLEAR THREAD
DONE WITH SCAN OF THREADS

NO
YES
PARTITIONED CORE REQUEST
PASS ADDRESS OF CORE ALLOCATED

CREATE A SECONDARY
SCHEDULE REQUEST OF
COMPLETION ROUTINE

INDIRECT ON PARTN. CORE REQ.

STUFF USERS COMP. ADDR.
GO TO CHECK IF SCAN IN PROGRESS

0069	P0020	0B00	SCAN	NOP	0				M1800069
0070	PC021	E84D		LDQ*	TOPBSY				M1800070
0071	P0022	0D00		INQ	0				M1800071
0072	P0023	0157		SQN	INPROG				M1800072
0073	P0024	4400	X SCN0	STQ+	DIP				M1800073
	P0025	0010	X						
0074	P0026	E000	X SCN1	LDQ+	=XPARTBL				M1800074
	P0027	7FFF	X						
0075	P0028	40FF		STQ-	I				M1800075
0076	P0029	EC5B		LDQ*	(AV4A+1)				M1800076
0077	P002A	1803		JMP*	PROG1				M1800077
0078	PC02B	C844	INPROG	LDA*	SAVI				M1800078
0079	P002C	60FF		STA-	I				M1800079
0080	P002D	0F61	PROG1	LRS	1				M1800080
0081	P002E	0128		SAP	AVAIL				M1800081
0082	P002F	D0FF		RAO-	I				M1800082
0083	P0030	DCF4		RAO*	(SCN0+1)				M1800083
0084	P0031	0171		SQM	1				M1800084
0085	P0032	F032		ADQ-	ONEBIT+15				M1800085
0086	P0033	0D00		INQ	0				M1800086
0087	P0034	0151		SQN	CONT1				M1800087
0088	P0035	1810		JMP*	EXIT				M1800088
0089	PC036	18F6	CONT1	JMP*	PROG1				M1800089
0090	P0037	4837	AVAIL	STQ*	TOPBSY				M1800090
0091	P0038	0500		IIN	0				M1800091
0092	P0039	E111		LDQ-	THRDS,I				M1800092

NON-REENTRANT
PICK UP SCAN INDEX
IF NONZERO,SCAN OF THREAD
IN PROGRESS

NEW START,PUT TABLES BASE IN I

POSITIVE BUSY WORD REMAINING
IS NEXT PARTITION AVAILABLE
YES
NO, BUMP PRTHDS POINTER

IF TOP BIT NOT SET
SET IT
ANY MORE PARTNS. AVAIL.

NO
YES, CHECK NEXT ONE
PARTITION AVAILABLE

PICK UP TOP OF THREAD

76*1849M1800087
76*1849M1800088
76*1849M1800089
**MSOS 4.0M1800091
M1800092

0093	P003A	0D00	INQ	0					M1800093
0094	P003B	0141	SQZ	1				**MSOS +.GM	M1800094
0095	P003C	181B	JMP*	AV1	SOMETHING ON THREAD			**MSOS +.GM	M1800095
0096	P003D	0400	EIN						M1800096
0097	P003E	D0FF	RAO-	I	EMPTY THREAD, CONTINUE				M1800097
0098	P003F	DCE5	RAO*	(SCN0+1)					M1800098
0099	P0040	CCE4	LDA*	(SCN0+1)	PICKUP DRIVER IN PROGRESS COUNTER	76*1849			M1800099
0100	P0041	09EF	INA	-16	ARE ALL PROTECTED PART. CHECKED				M1800100
0101	P0042	0122	SAP	EXIT	YES, GO TO CHECK UNPROT. PART.				M1800101
0102	P0043	E82B	LDQ*	TOPBSY					M1800102
0103	P0044	18E8	JMP*	PROG1	SEARCH				M1800103
0104	P0045	4829	STQ*	TOPBSY	CLEAR TOP OF BUSY WORD				M1800104
0105	P0046	0802	SET	Q					M1800105
0106	P0047	4CDD	STQ*	(SCN0+1)					M1800106
0107	P0048	0C0A	ENQ	10				**MSOS +.GM	M1800107
0108	P0049	E6E9	LDQ-	(\$E9),Q	CHECK FOR UNPROTECTED			**MSOS +.GM	M1800108
0109	P004A	0151	SON	1	PARTITION			**MSOS +.GM	M1800109
0110	P004B	180A	JMP*	EXITA	NO UNPROTECTED PARTITION,EXIT			**MSOS +.GM	M1800110
0111	P004C	C8DA	LDA*	SCN1+1					M1800111
0112	P004D	0910	INA	UNPPRT					M1800112
0113	P004E	50FF	STA-	I					M1800113
0114	P004F	0500	IIN	0				**MSOS +.GM	M1800114
0115	P0050	E111	LDQ-	THRDS,I	CHECK IF ANY REQUESTS ON			**MSOS +.GM	M1800115
0116	P0051	0D00	INQ	0	THREAD FOR UNPROTECTED PARTITION				M1800116
0117	P0052	0142	SQZ	EXITA	SKIP IF NO REQUESTS			**MSOS +.GM	M1800117
0118	P0053	1800	JMP	CKSWAP				**MSOS +.GM	M1800118
	P0054	006B							
0119	P0055	0400	EXITA	EIN	0			**MSOS +.GM	M1800119
0120	P0056	1CC9	JMP*	(SCAN)	RETURN				M1800120
0121	P0057	C202	AV1	LDA-	THD,Q	MOVE NEXT REQ. TO TOP			M1800121
0122	P0058	6111	STA-	THRDS,I	OF THREAD				M1800122
0123	P0059	0400	EIN						M1800123
0124	P005A	4816	STQ*	PTR	STORE REQUEST POINTER				M1800124
0125	P005B	C522	LDA-	(ZERO),I					M1800125
0126	P005C	8204	ADD-	LNTH,Q	CALCULATE LAST LOC. OF REQ.				M1800126
0127	P005D	09FE	INA	-1					M1800127
0128	P005E	01A0	SOV	0					M1800128
0129	P005F	6810	STA*	SAVI	SAVE LAST LOC OF REQ.				M1800129
0130	P0060	5C08	RTJ*	(COMP+1)	DOES REQUESTED PTN END BEYOND			**MSOS +.GM	M1800130
0131	P0061	7FFF	X	ADC	LSTLOC	LAST LOCATION OF PTND. CORE			M1800131
0132	P0062	0900	INA	0					M1800132
0133	P0063	0101	SAZ	1	NO				M1800133
0134	P0064	182E	JMP*	REQERR	YES--ERROR				M1800134
0135	P0065	0C01	ENQ	1					M1800135
0136	P0066	C722	AV3	LDA-	(ZERO),B	IS THIS PTN. BEYOND END OF			M1800136
0137	P0067	5400	COMP	RTJ+	COMPAR			**MSOS +.GM	M1800137
	P0068	0156							
0138	P0069	006F	P	ADC	SAVI				M1800138
0139	P006A	0900	P	INA	0				M1800139
0140	P006B	0115	SAN	AV4	YES--ALLOCATE PARTITIONS				M1800140
0141	P006C	0D01	INQ	1					M1800141
0142	P006D	18F8	JMP*	AV3	NO--CHECK NEXT ONE				M1800142
0143	P006E	0001	BZS	TOPBSY, SAVI, PTR					M1800143
	P006F	0001							

0144	P0070	0001							
0145	P0071	0814	AV4	TRQ	A				M1800144
0146	P0072	09FE		INA	-1				M1800145
	P0073	8000		ADD+	=X\$F40		NO. OF PARTNS IN Q		M1800146
0147	P0074	0F40							
0148	P0075	6802		STA*	SHIF1				M1800147
0149	P0076	C8F7		LDA*	TOPBSY		UPDATE AND SAVE SCAN INDEX		M1800148
0150	P0077	0F40	SHIF1	ARS	0				M1800149
0151	P0078	68F5		STA*	TOPBSY				M1800150
0152	P0079	0814		TRQ	A				M1800151
0153	P007A	8CAA		ADD*	(SCN0+1)		UPDATE DRIVER IN PROG. IND.		M1800152
0154	P007B	6CA9		STA*	(SCN0+1)				M1800153
0155	P007C	E202		LDQ-	LPMASK,Q		SET 1 BIT/PARTN.		M1800154
0156	P007D	CC0FF		LDA-	I				M1800155
0157	P007E	98A8		SUB*	SCN1+1		SHIFT BITS TO CORRESPOND		M1800156
0158	P007F	8000		ADD+	=X\$FA0		WITH PARTN. NUMBERS		M1800157
	P0080	0FA0							
0159	P0081	6801		STA*	SHIF2				M1800158
0160	P0082	0FA0	SHIF2	QLS	0				M1800159
	P0083	C400	X AV4A	LDA	BUSY		SEE IF ALL REQUIRED PARTNS.		M1800160
	P0084	7FFF	X						
0161	P0085	08B4		LAQ	A		ARE AVAILABLE		M1800161
0162	P0086	0101		SAZ	AV5		YES		M1800162
0163	P0087	1818		JMP*	RETHD		NO, RETHREAD THE REQUEST		M1800163
0164	P0088	4122	AV5	STQ-	USE,I		SET BITS REQUIRED IN USE TABLE		M1800164
0165	P0089	CCFA		LDA*	{AV4A+1}				M1800165
0166	P008A	0874		EAQ	A				M1800166
0167	P008B	6CF8		STA*	{AV4A+1}		UPDATE BUSY WORD		M1800167
0168	P008C	EC98		LDQ*	(SCN0+1)		COMPUTE TABLE POINTER		M1800168
0169	P008D	F899		ADD*	SCN1+1		TO NEXT PARTITION		M1800169
0170	P008E	48E0		STQ*	SAVI		AND SAVE IT		M1800170
0171	P008F	E8E0		LDQ*	PTR		PUT POINTER TO REQUEST IN Q		M1800171
0172	P0090	D88F		RAO*	SCAN				M1800172
0173	P0091	1C8E		JMP*	{SCAN}		RETURN TO CALLER		M1800173
0174	P0092	CCFF	REQERR	LDA-	I				M1800174
0175	P0093	0901		INA	1				M1800175
0176	P0094	68DA		STA*	SAVI				M1800176
0177	P0095	0844		CLR	A		SET Q TO INDICATE CORE		M1800177
0178	P0096	6203		STA-	PQ,Q		WILL NEVER BE AVAILABLE		M1800178
0179	P0097	CCD8		LDA*	{PTR}		GET REQUEST CODE		M1800179
0180	P0098	A0C0		AND	=NS\$E00		IS IT A DIRECTORY REQUEST		M1800180
	P0099	3E00							
0181	P009A	0112		SAN	TOCOMP		NO		M1800181
0182	P009B	1800		JMP	FINE		YES, GO CHECK REMAINING THREADS		M1800182
	P009C	FF72							
0183	P009D	1800	TOCOMP	JMP	PACOMP		GO COMPLETE REQUEST WITH ERROR		M1800183
	P009E	FF77							
0184	P009F	E8D0	RETHD	LDQ*	PTR				M1800184
0185	P00A0	C622		LDA-	{ZERO},Q				M1800185
0186	P00A1	A00A		AND-	LPMASK+8				M1800186
0187	P00A2	0F44		ARS	4		STORE REQUEST PRIORITY		M1800187
0188	P00A3	681B		STA*	LEVEL		LEVEL TEMPORARILY		M1800188
0189	P00A4	EC80		LDQ*	{SCN0+1}				M1800189

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0190 P00A5 F881 ADQ* SCN1+1
0191 P00A6 48C8 STQ* SAVI
0192 P00A7 0500 IIN
0193 P00A8 00FF LDQ- I
0194 P00A9 000F INQ THRS-THD THREAD: THIS REQUEST
0195 P00AA 40FF RE1 STQ- I
0196 P00AB E202 LDQ- THD,Q BEFORE LOWER OR
0197 P00AC 0814 TRQ A
0198 P00AD 0900 INA 0
0199 P00AE 0107 SAZ HERE
0200 P00AF C622 LDA- (ZERO),Q EQUAL PRIORITY REQUESTS
0201 P00B0 A00A AND- LPMASK+8
0202 P00B1 0F44 ARS 4
0203 P00B2 980C SUB* LEVEL
0204 P00B3 0132 SAM HERE
0205 P00B4 0101 SAZ HERE
0206 P00B5 18F4 JMP* RE1
0207 P00B6 C8B9 HERE LDA* PTR INSERT REQUEST
0208 P00B7 6102 STA- THD,I
0209 P00B8 0FF0 LLS 16
0210 P00B9 0400 EIN
0211 P00BA 6202 STA- THD,Q
0212 P00BB E8B2 LDQ* TOPBSY RESUME SCAN
0213 P00BC 1800 JMP INPROG
0214 P00BD FF6D
0215 P00BE 0001 BZS LEVEL
* * * * *
* * THIS ROUTINE HANDLES THE UNPROTECTED CORE PARTITION.
* * IF REQUEST FOR THIS PARTITION HAS A COMPLETION
* * PRIORITY ^ 2 BACKGROUND PROGRAM WILL BE
* * SWAPPED TO MASS MEMORY.
0221 P00BF C85C CKSWAP LDA* P16BSY
0222 P00C0 0111 SAN 1
0223 P00C1 185C JMP* NOSWAP
0224 P00C2 C400 X ASWAPN LDA SWAPON IF SWAP IS ALREADY ON, EXIT
0225 P00C3 7FFF X
0226 P00C4 0101 SAZ 1
0227 P00C5 14EA JMP- (ADISP)
0228 P00C6 C622 LDA- (ZERO),Q
0229 P00C7 A006 AND- LPMASK+4 EXIT IF COMPLETION PRIORITY OF
0230 P00C8 09FC INA -3 REQUEST IS NOT GR. TH. 3
0231 P00C9 0121 SAP 1
0232 P00CA 14EA JMP- (ADISP)
0233 P00CB 0400 EIN 0
0234 P00CC E000 X XLOG1A LDQ+ =XLOG1A
0235 P00CD 7FFF X
0236 P00CE E201 LDQ- 1,Q
0237 P00CF C204 LDA- TIME,Q
0238 P00D0 0131 SAM 1
0239 P00D1 14EA JMP- (ADISP)
0240 P00D2 C000 LDA =XPRTCDR STORE PART CORE DRIVER
0241 P00D3 0000 P

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M1800190
M1800191
M1800192
M1800193
M1800194
M1800195
M1800196
M1800197
M1800198
M1800199
M1800200
M1800201
M1800202
M1800203
M1800204
M1800205
M1800206
M1800207
M1800208
M1800209
M1800210
M1800211
M1800212
M1800213
M1800214
M1800215
M1800216
M1800217
M1800218
M1800219
M1800220
M1800221
M1800222
M1800223
M1800224
M1800225
M1800226
M1800227
M1800228
M1800229
M1800230
M1800231
M1800232
M1800233
M1800234
M1800235
M1800236
M1800237
M1800238

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**MSOS F.OM1800220
**MSOS F.OM1800221
**MSOS F.OM1800222
**MSOS F.OM1800223
**MSOS F.OM1800224
**MSOS F.OM1800225
**MSOS F.OM1800226
**MSOS F.OM1800227
**MSOS F.OM1800228
**MSOS F.OM1800229
**MSOS F.OM1800230
**MSOS F.OM1800231
**MSOS F.OM1800232
**MSOS F.OM1800233
**MSOS F.OM1800234
**MSOS F.OM1800235
**MSOS F.OM1800236
**MSOS F.OM1800237
**MSOS F.OM1800238

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0239	P0004	6203		STA- 3,0	ADDRESS FOR TIME-OUT	**MSOS	+.0M1800239
0240	P0005	C400	X	LDA+ UNPIO	SCHEDULING OF SWAP	**MSOS	+.0M1800240
	P0006	7FFF	X				
0241	P0007	0103		SAZ WRTOUT	SKIP IF NO UNPROTECTED I/O PENDING	**MSOS	+.0M1800241
0242	P0008	6400	X	STA SPASW	SET WAITING TO SWAP SWITCH		M1800242
	P0009	7FFF	X				
0243	P000A	14EA		JMP- (ADISP)	FOR PROTECT PROCESSOR	**MSOS	+.0M1800243
0244	P000B	C0F6		LDA- \$F6		**MSOS	+.0M1800244
0245	P000C	90F7		SUB- \$F7		**MSOS	+.0M1800245
0246	P000D	09FE		INA -1	STORE LENGTH OF UNPROTECTED	**MSOS	+.0M1800246
0247	P000E	680C		STA* LENGTH			M1800247
0248	P000F	6819		STA* SPCLGN		**MSOS	+.0M1800248
0249	P0010	6820		STA* LEN2		**MSOS	+.0M1800249
0250	P0011	C0F7		LDA- \$F7		**MSOS	+.0M1800250
0251	P0012	0901		INA 1		**MSOS	+.0M1800251
0252	P0013	6808		STA* START		**MSOS	+.0M1800252
0253	P0014	681D		STA* START2		**MSOS	+.0M1800253
0254	P0015	54F4		RTJ- (\$F4)		**MSOS	+.0M1800254
0255	P0016	4CF0		OUTPV4 ADC \$4CF0	WRITE OUT BACKGROUND	**MSOS	+.0M1800255
0256	P0017	00F1	P	ADC CA	TO MASS MEMORY	**MSOS	+.0M1800256
0257	P0018	0000		NUM 0,\$8C2		**MSOS	+.0M1800257
	P0019	08C2					
0258	P001A	0000		LENGTH NUM 0		**MSOS	+.0M1800258
0259	P001B	0000		START NUM 0		**MSOS	+.0M1800259
0260	P001C	0000		NUM 0		**MSOS	+.0M1800260
0261	P001D	7FFF	X	ADC SWAPAR		**MSOS	+.0M1800261
0262	P001E	5400	X	RTJ STLPV4	SUBR IN DRCORE - CLEARS SPASW,	**MSOS	+.0M1800262
	P001F	7FFF	X				
0263			*		SETS UP LEVEL TWO LOOP,	**MSOS	+.0M1800263
0264			*		SETS SWAPON FLAG	**MSOS	+.0M1800264
0265	P00F0	14EA		JMP- (ADISP)		**MSOS	+.0M1800265
0266			*			**MSOS	+.0M1800266
0267			*	ROUTINE ENTERED AT COMPLETION OF SWAP I/O		**MSOS	+.0M1800267
0268	P00F1	0A00	CA	ENA 0		**MSOS	+.0M1800268
0269	P00F2	6829		STA* P16BSY	CLEAR PAR 16 BUSY FLAG	**MSOS	+.0M1800269
0270	P00F3	54F4		RTJ- (\$F4)		**MSOS	+.0M1800270
0271	P00F4	6200		SPCEV4 ADC \$6200	PART 1 PARTITION COREREQUEST	**MSOS	+.0M1800271
0272	P00F5	00FB	P	ADC CB	FOR SWAPPED AREA - WILL	**MSOS	+.0M1800272
0273	P00F6	0000		NUM 0	BE COMPLETED WHEN HIGH	**MSOS	+.0M1800273
0274	P00F7	0000		NUM 0		**MSOS	+.0M1800274
0275	P00F8	0010		SPCLGN ADC 16	PRIORITY PROGRAMS RELEASE	**MSOS	+.0M1800275
0276	P00F9	0010		ADC UNPPRT	PARTITION	**MSOS	+.0M1800276
0277	P00FA	14EA		JMP- (ADISP)		**MSOS	+.0M1800277
0278			*			**MSOS	+.0M1800278
0279			*	ROUTINE ENTERED	AFTER SPACE BECOMES AVAILABLE	**MSOS	+.0M1800279
0280	P00FB	54F4		CB RTJ- (\$F4)		**MSOS	+.0M1800280
0281	P00FC	4800		ROPTV4 ADC \$4800	READ SWAPPED AREA BACK IN	**MSOS	+.0M1800281
0282	P00FD	0105	P	ADC CC		**MSOS	+.0M1800282
0283	P00FE	0000		NUM 0,\$8C2		**MSOS	+.0M1800283
	P00FF	08C2					
0284	P0100	0000		LEN2 NUM 0		**MSOS	+.0M1800284
0285	P0101	0000		START2 NUM 0		**MSOS	+.0M1800285
0286	P0102	0000		NUM 0		**MSOS	+.0M1800286

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0287 P0103 00ED X
0288 P0104 14EA X
0289 P0105 08FE X
0290 P0106 6400 X
      P0107 7FFF X
0291 P0108 E8C4
0292 P0109 E201
0293 P010A C200
0294 P010B 6204
0295 P010C E0F6
0296 P010D C8DC
0297 P010E 0DFE CD
0298 P010F 07C0
0299 P0110 09FE
0300 P0111 0101
0301 P0112 18F8
0302 P0113 0500 CE
0303 P0114 6CAE
0304 P0115 6807
0305 P0116 0A01
0306 P0117 6804
0307 P0118 0400
0308 P0119 1800
      P011A FEE5

0309 *
0310 *
0311 P011B 0000 P16BSY NUM 0
0312 P011C 0000 PRSTAT NUM 0
0313 *
0314 *
0315 P011D C202 NOSWAP LDA- THD,Q
0316 P011E 6111 STA- THRS,I
0317 P011F 0400 EIN 0
0318 P0120 4400 POINT STQ+ PTR
      P0121 0070 P
0319 P0122 C000 LDA =X$F6
      P0123 00F6
0320 P0124 6806 STA* COA
0321 P0125 C522 LDA- (ZERO),I
0322 P0126 8204 ADD- LNTH,Q
0323 P0127 09FE INA -1
0324 P0128 01A0 SOV 0
0325 P0129 582D RTJ* COMPAR
0326 P012A 0000 COA NUM 0
0327 P012B 0900 INA 0
0328 P012C 0102 SAZ 2
0329 P012D 1800 JMP REQERR
      P012E FF63
0330 P012F EC61 LDQ* (POINT+1)
0331 P0130 C622 LDA- (ZERO),Q
0332 P0131 A006 AND- LPMASK+4
0333 P0132 09FC INA -3
0334 P0133 0131 SAM 1

```

TURN OFF LEVEL 2 LOOP

RESET TIME SINCE LAST SWAP

CLEAR PROTECT BITS

STATE FLAGS
SET PARTITION 16 BUSY

PARTITION 16 BUSY FLAG
SET IF PARTITION 16
IN PROTECTED STATE

MOVE NEXT REQ TO
TOP OF THREAD

OF REQ BEYOND LAST
LOCATION OF PARTITION
16

SKIP IF NO ERROE

IF COMP PROOR. OF REQ
IS LT 3 - REQUEST
IS FOR AN
UNPROTECTED PARTITION -

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**MSOS+.0**M1800287
**MSOS+.0**M1800288
M1800289
M1800290

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**MSOS+.0**M1800291
**MSOS+.0**M1800292
**MSOS+.0**M1800293
**MSOS+.0**M1800294
M1800295

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**MSOS+.0**M1800296
**MSOS+.0**M1800297
**MSOS+.0**M1800298
**MSOS+.0**M1800299
**MSOS+.0**M1800300

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**MSOS+.0**M1800301
**MSOS+.0**M1800302
M1800303

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**MSOS+.0**M1800304
**MSOS+.0**M1800305
**MSOS+.0**M1800306
**MSOS+.0**M1800307
**MSOS+.0**M1800308

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**MSOS+.0**M1800309
**MSOS+.0**M1800310
**MSOS+.0**M1800311
**MSOS+.0**M1800312

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**MSOS+.0**M1800313
**MSOS+.0**M1800314
**MSOS+.0**M1800315
**MSOS+.0**M1800316
**MSOS+.0**M1800317
M1800318

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M1800319

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**MSOS+.0**M1800320
**MSOS+.0**M1800321
**MSOS+.0**M1800322
**MSOS+.0**M1800323

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**MSOS+.0**M1800324
**MSOS+.0**M1800325
**MSOS+.0**M1800326
**MSOS+.0**M1800327
**MSOS+.0**M1800328
**MSOS+.0**M1800329

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***MSOS+.0**M1800330
**MSOS+.0**M1800331
**MSOS+.0**M1800332
**MSOS+.0**M1800333
**MSOS+.0**M1800334

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03335 P0134 180E
 03336 P0135 C8FE6
 03337 P0136 010A
 03338 P0137 C0F6
 03339 P0138 90F7
 03340 P0139 09FE
 03341 P013A E0F6
 03342 P013B 0DFE
 03343 P013C 0700
 03344 P013D 09FE
 03345 P013E 0101
 03346 P013F 18FB
 03347 P0140 68DB
 03348 P0141 180E
 03350
 03351 P0142 C8D9
 03352 P0143 011B
 03353 P0144 C0F6
 03354 P0145 90F7
 03355 P0146 09FE
 03356 P0147 E0F6
 03357 P0148 0DFE
 03358 P0149 0600
 03359 P014A 09FE
 03360 P014B 0101
 03361 P014C 18FB
 03362 P014D 0A01
 03363 P014E 68CD
 03364 P014F 0A01
 03365 P0150 68CA
 03366 P0151 0800
 03367 P0152 FECD
 03368 P0153 ECCD
 P0154 1C00
 P0155 FECA

COB

COC

COD

*

PROT

PRA

PRB

PRD

JMP* PROT
 LDA* PRSTAT
 SAZ COD
 LDA- \$F6
 SUB- \$F7
 INA -1
 LDQ- \$F6
 INQ -1
 CPB 0
 INA -1
 SAZ COC
 JMP* COB
 STA* PRSTAT
 JMP* PRD
 IF REQUEST PR IS GT 3-PARTITION MUST BE
 * PROTECTED
 LDA* PRSTAT
 SAN PRD
 LDA- \$F6
 SUB- \$F7
 INA -1
 LDQ- \$F6
 INQ -1
 SPB 0
 INA -1
 SAZ PRB
 JMP* PRA
 ENA 1
 STA* PRSTAT
 ENA 1
 STA* P16BSY
 RAO SCAN

IF PARTITION IS PRESENTLY
 PROTECTED CLEAR
 PROTEC EITS

CLEAR PROT STATE FLAG

SET PROTECT BITS
 IF NOT SET

SET PROT STATE FLAG

SET PART 16 BUSY
 FLAG

LDQ* (POINT+1)
 JMP (SCAN)

**MSOS +.OM1800335
 **MSOS +.OM1800336
 **MSOS +.OM1800337
 **MSOS +.OM1800338
 **MSOS +.OM1800339
 **MSOS +.OM1800340
 **MSOS +.OM1800341
 **MSOS +.OM1800342
 **MSOS +.OM1800343
 **MSOS +.OM1800344
 **MSOS +.OM1800345
 **MSOS +.OM1800346
 **MSOS +.OM1800347
 **MSOS +.OM1800348
 **MSOS +.OM1800349
 **MSOS +.OM1800350
 **MSOS +.OM1800351
 **MSOS +.OM1800352
 **MSOS +.OM1800353
 **MSOS +.OM1800354
 **MSOS +.OM1800355
 **MSOS +.OM1800356
 **MSOS +.OM1800357
 **MSOS +.OM1800358
 **MSOS +.OM1800359
 **MSOS +.OM1800360
 **MSOS +.OM1800361
 **MSOS +.OM1800362
 **MSOS +.OM1800363
 **MSOS +.OM1800364
 **MSOS +.OM1800365
 **MSOS +.OM1800366

**MSOS +.M1800367
 **MSOS +.OM1800368

0370
 0371
 0372
 0373
 0374
 0375
 0376
 0377
 0378

* * * * *
 * SUBROUTINE TO COMPARE TWO 16 BIT ADDRESSES *
 * ENTERED VIA RTJ WITH ONE NUMBER IN A AND THE *
 * ADDRESS OF THE NUMBER TO BE COMPARED WITH IT *
 * FOLLOWING THE RTJ., 'VALUE'. *
 * IF A.GT.'VALUE', THE DIFFERENCE IS RETURNED IN A *
 * IF A.EQ.'VALUE', A IS SET TO ZERO *
 * IF A.LT.'VALUE', A IS SET TO \$FFFF *
 * * * * *

M1800370
 M1800371
 M1800372
 M1800373
 M1800374
 M1800375
 M1800376
 M1800377
 M1800378

0380 P0156 0B00
 0381 P0157 0500
 0382 P0158 4812
 0383 P0159 ECFC

COMPAR NOP 0
 IIN 0
 STQ* SAVQ
 LDQ* (COMPAR)

M1800380
 M1800381
 M1800382
 M1800383

0384	P015A	E622	LDQ-	(ZERO),Q
0385	P015B	0132	SAM	2
0386	P015C	0165	SQP	CMP1
0387	P015D	0177	SQM	QBIGR
0388	P015E	0173	SQH	CMP1
0389	P015F	0852	TCQ	Q
0390	P0160	0834	AAQ	A
0391	P0161	1805	JMP*	ABIGR
0392	P0162	0852	TCQ	Q
0393	P0163	0834	AAQ	A
0394	P0164	0121	SAP	ABIGR
0395	P0165	0804	SET	A
0396	P0166	E804	LDQ*	SAVQ
0397	P0167	D8EE	RAO*	COMPAR
0398	P0168	0400	EIN	0
0399	P0169	1CEC	JMP*	(COMPAR)
0400	P016A	0000	NUM	0

CMP1

QBIGR
ABIGR

SAVQ

GET STORAGE WORD TO COMPARE WITH A
 A IS IN UPPER BANK
 BOTH IN LOWER BANK--COMPARE
 Q IN BANK 1-- A IN BANK 0
 A AND Q BOTH IN UPPER BANK
 A IN BANK 1-- Q IN BANK 0
 GET DIFFERENCE IN A

SUB. Q FROM A

Q IS LARGER--SET A=\$FFFF
 OTHERWISE A CONTAINS DIFFERENCE

M1800384
 M1800385
 M1800386
 M1800387
 M1800388
 M1800389
 M1800390
 M1800391
 M1800392
 M1800393
 M1800394
 M1800395
 M1800396
 M1800397
 M1800398
 M1800399
 M1800400

0402
0403
0404
0405
0406
0407
0408
0409

```

* * * * *
*
*   RELEASE PARTITION REQUEST PROCESSOR
*   THIS MODULE IS ENTERED FROM T12 WITH
*   THE FIRST LOCATION OF VOLATILE IN I
*   AND THE POINTER TO THE PARAMETER LIST IN Q.
*
* * * * *

```

M1800402
M1800403
M1800404
M1800405
M1800406
M1800407
M1800408
M1800409

```

0411 P016B C2G1
0412
0413 P016C 90F7
0414 P016D 09FE
0415 P016E 0112
0416 P016F 0C10
0417 P0170 181B
0418 P0171 0C0F
0419 P0172 C0FF
0420 P0173 0906
0421 P0174 0500
0422 P0175 6804
0423 P0176 C600 X
    P0177 0027 X
    P0178 58DD
0424 P0179 0006
0425 P017A 0105
0426 P017B 0900
0427 P017C 0103
0428 P017D 014A
0429 P017E 0DFE
0430 P017F 18F2
0431 P0180 CC16
0432 P0181 A223
0433 P0182 0105
0434 P0183 F8F3
0435 P0184 C222
0436 P0185 0115
0437 P0186 0DFE
0438 P0187 18FB
0439 P0188 E105
0440 P0189 1400
0441 P018A 7FFF X
    P018B 54F4 X
0442 P018C 5200
0443 P018D 018F P
0444 P018E 14B9
0445 P018F 0814
0446 P0190 09EF
0447 P0191 0112
0448 P0192 6888
0449 P0193 1807
0450 P0194 C222
0451

```

```

K65T12 LDA- PC,Q
*
SUB- $F7
INA -1
SAN TAG1
ENQ UNPPRT
JMP* CHK2
TAG1 ENQ 15
LOCATE LDA- I
INA VTEM
IIN 0
STA* LOC2
LOC1 LDA PARTBL,Q
X
X
LOC2 RTJ* COMPAR
ADC VTEM
SAZ CHKUSE
INA 0
SAZ CHKUSE
SQZ ERR
INQ -1
CHKUSE LDA* (BSY+1)
AND- ONEBIT,Q
SAZ ERR
CHK1 ADQ* LOC1+1
LDA- USE,Q
SAN CHK2
INQ -1
ERR LDO- VPTR,I
JMP SCHERR
X
X
CHK2 RTJ- ($F4)
PTNREL NUM $5200
P
RELEAS ADC RELEAS
JMP- (AREQXT)
RELEAS TRQ A
INA -UNPPRT
SAN RELA
STA* P16BSY
JMP* RELB
RELA LDA- USE,Q

```

```

3 CARDS DELETED
CHECK IF RELEASING
UNPROTECTED PARTITION

SEARCH FOR PARTITION IN WHICH
RELEASE ADDR FALLS

LOCATION OF RELEASE ADDR. STUFFED
IN CALL TO COMPAR

DOES ADDR. TO BE RELEASED FALL
IN THIS PARTITION
YES--RIGHT ON START OF PTN.

YES--WITHIN PTN.
NOT WITHIN ANY PTN.

NO--GO CHECK NEXT PTN.
IS THIS PTN. EVEN ALLOCATED

NO
YES--FIND WHERE BLOCK
ALLOCATED BEGINS
FOUND
NOT FOUND--CHECK NEXT
LOWER PTN.
ILLEGAL REQ.--IGNORE

SCHEDULE SELF AT CORE ALLOC.
PRI.

SET PARTITION 16
FREE

```

```

**MSOS 4.0M1800413
**MSOS 4.0M1800414
76*1349M1800415
**MSOS 4.0M1800416
76*1849M1800417
76*1849M1800418
M1800419
M1800420
M1800421
M1800422
M1800423
M1800424
M1800425
M1800426
M1800427
M1800428
M1800429
M1800430
M1800431
M1800432
M1800433
M1800434
M1800435
M1800436
M1800437
M1800438
M1800439
M1800440
M1800441
M1800442
M1800443
M1800444
M1800445
**MSOS 4.0M1800446
**MSOS 4.0M1800447
**MSOS 4.0M1800448
**MSOS 4.0M1800449
**MSOS 4.0M1800450
**MSOS 4.0M1800451

```

0452 P0195 B400 X BSY EOR BUSY
 P0196 0084 X
 0453 P0197 6CFE STA* (BSY+1)
 0454 P0198 0844 CLR A
 0455 P0199 6222 STA- USE,Q
 0456 P019A 1800 RELB JMP PRTC DR
 P019B FE64

CLEAR THESE BITS IN BUSY WORD
 CLEAR MASK FOR RANGE ASSOC.
 WITH THIS PARTN.
 FIND REQ TO FILL

M1800452
 M1800453
 M1800454
 M1800455
 **MSOS 4.0 M1800456

0458
0459
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0465
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0481
0482
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0484
0485
0486
0487
0488
0489

0001
0002
0003
0004
0005
0006
0007
0008
0009
0010
0011
0012
0013
0014
0015
0016
0017
0018
0019
0020
0021
0022
0023
0024
0025
0026
0027
0028
0029
0030
0031
0032
0033
0034
0035
0036
0037
0038
0039
0040
0041
0042
0043
0044
0045
0046
0047
0048
0049
0050
0051
0052

```

* * * * *
SPECIAL PARTITIONED CORE REQUEST FOR 65K
SYSTEM -- THIS MODULE IS ENTERED IF BIT 14
OF THE FIRST WORD OF A SPACE REQUEST IS SET.
ENTRY IS FROM T10--
      Q = POINTER TO PARAMETER LIST
      I = POINTER TO VOLATILE STORAGE

VOLATILE CONTAINS THE FOLLOWING ON ENTRY--

      0  Q REGISTER OF REQUESTER
      1  A REGISTER OF REQUESTER
      2  I REGISTER OF REQUESTER
      3  RETURN ADDRESS FROM REQ. PROC.
      4  REQUEST PRIORITY
      5  POINTER TO REQUEST
      6  UNUSED
      7  REQUEST CODE
      8  INDIRECT REQ. INDICATOR
* * * * *
ENT K65T10,PTNALC
* * * * *
REQUEST PARAMETER LIST IS AS FOLLOWS--

WORD 0  REQUEST CODE AND PRIORITY LEVELS
WORD 1  COMPLETION ADDRESS
WORD 2  THREAD
WORD 3  REQUESTERS Q
WORD 4  NUMBER OF WORDS
WORD 5  STARTING PARTITION (15 OR LESS)
* * * * *
EQU PC(1),PT(2),PQ(3),PP(5)

```

0490

EQU VR(3),VPL(4),VPTR(5),VTEM(6),VTMP(7),VIND(8)

0491
0492
0493
0494
0495
0496
0497
0498
0499
0500
0501
0502

```

EQU AREQXT($B9)
K65T10 LDA- VIND,I
      SAN 1
      RAO- VR,I
K65COR LDA- (ZERO),Q
      AND- LPMASK+14
      ARS 9
      SAZ 1
      JMP* PTCORE
      STA- VIND,I
      LDA- PC,Q
      STA- VTEM,I

```

```

CHECK FOR INDIRECT REQ.
UPDATE RETURN IF RFQ.
IS DIRECT.

DIRECTORY REQ.

YES
GET PRTN. BDG. ADDR.

```

M1800458
M1800459
M1800460
M1800461
M1800462
M1800463
M1800464
M1800465
M1800466
M1800467
M1800468
M1800469
M1800470
M1800471
M1800472
M1800473
M1800474
M1800475
M1800476
M1800477
M1800478
M1800479
M1800480
M1800481
M1800482
M1800483
M1800484
M1800485
M1800486
M1800487
M1800488
M1800489

M1800490

M1800491
M1800492
M1800493
M1800494
M1800495
M1800496
M1800497
M1800498
M1800499
M1800500
M1800501
M1800502

05003 P01A7 E828
05004 P01A8 C622
05005 P01A9 0900
05006 P01AA 0110
05007 P01AB C0F7
05008 P01AC 0901
05009 P01AD 0822
05010 P01AE 9106
05011 P01AF 0101
05012 P01B0 1863
05013 P01B1 0814
05014 P01B2 0C10
05015 P01B3 6E1C
05016 P01B4 4108
05017 P01B5 E200 X
05018 P01B6 0177 X
05019 P01B7 180A
05020 P01B8 9106
05021 P01B9 0107
05022 P01BA 0D01
05023 P01BB 0108
05024 P01BC 0108
05025 P01BD 09EF
05026 P01BE 0111
05027 P01BF 18EB
05028 P01C0 18E7
05029 P01C1 4106
05030 P01C2 1821
05031 P01C3 C205
05032 P01C4 A007
05033 P01C5 6108
05034 P01C6 0822
05035 P01C7 0DEF
05036 P01C8 0155
05037 P01C9 0822
05038 P01CA C0F7
05039 P01CB 0901
05040 P01CC 6E03
05041 P01CD 0814 X
05042 P01CE 8000 X
05043 P01CF 01B6
05044 P01D0 6106
05045 P01D1 0822
05046 P01D2 C622
05047 P01D3 0900
05048 P01D4 0111
05049 P01D5 183E
05050 P01D6 E105
05051 P01D7 E204
05052 P01D8 0832
05053 P01D9 0131
05054 P01DA 0176
05055 P01DB 0121

FNDPRT LDA- (ZERO),Q
CKUNP LDA- \$F7
INA 0
SAN TRYNXT
LDA- \$F7
INA 1
TRA Q
SUB- VTEM,I
SAZ 1
JMP* SCDERR
TRQ A
ENQ UNPPRT
STA* (ATBL+1),Q
STQ- VIND,I
LDQ =XPARTBL,Q
X
X
TRYNXT JMP* FOUND
SUB- VTEM,I
SAZ FOUND
INQ 1
RAO- VIND,I
LDA- VIND,I
INA -16
SAN 1
JMP* CKUNP
JMP* FNDPRT
STQ- VTEM,I
JMP* THDSTR
LDA- PP,Q
AND- LPMASK+5
STA- VIND,I
TRA Q
INQ -UNPPRT
SQN ATBL
TRA Q
LDA- \$F7
INA 1
STA* (ATBL+1),Q
TRQ A
ADD+ =XPARTBL
X
X
ATBL STA- VTEM,I
TRA Q
LDA- (ZERO),Q
INA 0
SAN 1
JMP* SCDERR
LDQ- VPTR,I
LDQ- LNTH,Q
AAQ Q
SAM 1
SQM NOWRAP
SAP 1

GET BASE OF TABLES
FIND PARTN. NO.
CHECK IF UNPROTECTED PART
IS START OF PARTITION
STORE (\$F7+1) INTO PARTITION 16
START ADDRESS
SAVE NUMBER OF PARTITION
PRTN. FOUND
BUMP INDEX AND NO.
TRY NEXT PRTN.
SAVE INDEX TO TABLES
PICK UP PARTITION NUMBER
ADD TABLE BASE TO IT
STORE TEMPORARILY
PICK UP STARTING ADDR OF
PARTITION
CHECK FOR POSSIBLE WRAP AROUND
IF A IS IN BANK 0 AND
Q IS IN BANK 1, NO WRAPAROUND
IF A IS IN BANK 1 AND

**MSOS +.OM1800503
M1800504
M1800505
**MSOS +.OM1800506
M1800507
**MSOS +.OM1800508
**MSOS +.OM1800509
**MSOS +.OM1800510
**MSOS +.OM1800511
M1800512
**MSOS +.OM1800513
**MSOS +.OM1800514
**MSOS +.OM1800515
**MSOS +.OM1800516
**MSOS +.OM1800517
**MSOS -..M1800518
M1800519
M1800520
M1800521
M1800522
M1800523
M1800524
M1800525
M1800526
M1800527
M1800528
M1800529
M1800530
**MSOS +.OM1800531
M1800532
**MSOS +.OM1800533
M1800534
**MSOS +.OM1800535
**MSOS +.OM1800536
**MSOS +.OM1800537
**MSOS +.OM1800538
**MSOS +.OM1800539
**MSOS +.OM1800540
M1800541
M1800542
M1800543
M1800544
M1800545
M1800546
M1800547
M1800548
M1800549
M1800550
M1800551
M1800552
M1800553

05557 P01DC 0163
 05558 P01DD 0852
 05559 P01DE 0832
 05560 P01DF 0171
 05561 P01E0 1833
 05562 P01E1 E105
 05563 P01E2 6203
 05564 P01E3 E106
 05565 P01E4 C211
 05566 P01E5 0D0F
 05567 P01E6 4107
 05568 P01E7 0900
 05569 P01E8 0111
 05570 P01E9 181A
 05571 P01EA 0500
 05572 P01EB 4816
 05573 P01EC 4107
 05574 P01ED E814
 05575 P01EE 0400
 05576 P01EF C202
 05577 P01F0 0B00
 05578 P01F1 0500
 05579 P01F2 480F
 05580 P01F3 9202
 05581 P01F4 0101
 05582 P01F5 18ED
 05583 P01F6 E107
 05584 P01F7 E202
 05585 P01F8 0D00
 05586 P01F9 0151
 05587 P01FA 1808
 05588 P01FB C622
 05589 P01FC A400
 05590 P01FD 7FFF
 05591 P01FE 9104
 05592 P01FF 0132
 05593 PC200 18EB
 05594 P0201 0000
 05595 P0202 E107
 05596 P0203 C202
 05597 P0204 E105
 05598 P0205 6202
 05599 P0206 0814
 06000 P0207 E107
 06001 P0208 6202
 06002 P0209 0400
 06003
 06004
 06005

WRAP
NOWRAP

THDSTR

SCHTHD

TOP
THRDIT

X
X

SQP WRAP
 TCQ Q
 AAQ Q
 SQM 1
 JMP* SCDERR
 LDQ- VPTR,I
 STA- PQ,Q
 LDQ- VTEM,I
 LDA- THRDS,Q
 INQ 15
 STQ- VTMP,I
 INA Q
 SAN 1
 JMP* THRDIT+1
 IIN 0
 STQ* TOP
 *
 * SEARCH DOWN THREAD FOR APPROPRIATE POSITION
 *
 STQ- VTMP,I
 LDQ* TOP
 EIN 0
 LDA- PT,Q
 NOP 0
 IIN 0
 STQ* TOP
 SUB- PT,Q
 SAZ 1
 JMP* THDSTR
 LDQ- VTMP,I
 LDQ- PT,Q
 INQ 0
 SQN 1
 JMP* THRDIT
 LDA- (ZERO),Q
 AND+ RPMASK
 SUB- VPL,I
 SAM THRDIT
 JMP* SCHTHD
 NUM 0
 LDQ- VTMP,I
 LDA- PT,Q
 LDQ- VPTR,I
 STA- PT,Q
 TRQ A
 LDQ- VTMP,I
 STA- PT,Q
 EIN 0

Q IS IN BANK 0, WRAPAROUND
 IS START OF PTN. BELOW END
 YES, NO WRAPAROUND
 NO, MUST BE WRAPAROUND
 STORE IN Q RETN. OF REQ.
 TOP OF THIS PARTN. THREAD
 EMPTY THREAD
 YES, THREAD THIS REQ.
 SAVE LOG. OF THREAD
 SAVE PREVIOUS ENTRY LOC.
 CHECK IF TOP OF THREAD
 ALTERED WHILE
 INTERRUPTS
 ENABLED
 YES, RESTART SEARCH
 NO, CONTINUE
 NEXT ENTRY ON THREAD
 END OF THREAD
 YES, PUT REQ. HERE
 NO, LOWER PRI. LEVEL
 YES, PUT REQ. HERE
 NO, EXAMINE NEXT REQ. ON THD.
 POINTER TO FOLLOWING REQ.
 TO THREAD OF CURRENT REQ.
 POINTER TO CURRENT REQ.
 TO THREAD OF PREVIOUS REQ.
 CHECK TO SEE WHETHER THREADS ARE BEING SCANNED
 AND WHETHER THIS PARTN THREAD HAS BEEN PASSED
 BY THE SCAN

**MSOS 4.9

M1800 354
 M1800 355
 M1800 356
 M1800 357
 M1800 358
 M1800 359
 M1800 360
 M1800 361
 M1800 362
 M1800 363
 M1800 364
 M1800 365
 M1800 366
 M1800 367
 M1800 368
 M1800 369
 M1800 370
 M1800 371
 M1800 372
 M1800 373
 M1800 374
 M1800 375
 M1800 376
 M1800 377
 M1800 378
 M1800 379
 M1800 380
 M1800 381
 M1800 382
 M1800 383
 M1800 384
 M1800 385
 M1800 386
 M1800 387
 M1800 388
 M1800 389
 M1800 390
 M1800 391
 M1800 392
 M1800 393
 M1800 394
 M1800 395
 M1800 396
 M1800 397
 M1800 398
 M1800 399
 M1800 400
 M1800 401
 M1800 402
 M1800 403
 M1800 404
 M1800 405

```

0606
0607 P020A C400 X *
      P020B 0025 X
0608 P020C 0132
0609 P020D 9108
0610 P020E 0133
0611 P020F 54F4
0612 P0210 5200
0613 P0211 0000 P
0614 P0212 1489
0615 P0213 E105
0616 P0214 C8F8
0617 P0215 6802
0618 P0216 54F4
0619 P0217 0000 RC
0620 P0218 0092 P
0621 P0219 14B9
0622

```

```

      SCHDRV RTJ- ($F4)
      PTNALC NUM $5200
      ADC PRTCDR
      RETURN JMP- (AREQXT)
      SCDErr LDQ- VPTR,I
      SIA* RC
      RTJ- ($F4)
      NUM 0
      ADC REQERR
      JMP- (AREQXT)
      END

```

SCAN IN PROGRESS

```

NO
YES, PAST THIS PARTN
NO
YES, SCHEDULE PARTITIONED
CORE DRIVER

```

```

REQ. POINTER TO Q
STUFF REQ. CODE AND PRIORITY

```

```

M1800606
M1800607
M1800608
M1800609
M1800610
M1800611
M1800612
M1800613
M1800614
M1800615
M1800616
M1800617
M1800618
M1800619
M1800620
M1800621
M1800622

```

```

PGM= 021A ( 538) COM = 0000 ( 0) DAT = 0000 ( 0)

```

EQUIVALENCES

DEF.LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0000	I	00FF (000255)	0075, 0079, 0082, 0097, 0113, 0155, 0174, 0193, 0195, 0419
0025	ONEBIT	0023 (000035)	0060, 0085, 0433
0026	ADISP	00EA (000234)	0033, 0055, 0225, 0231, 0237, 0243, 0265, 0277, 0288
0026	ZERO	0022 (000034)	0039, 0055, 0058, 0061, 0125, 0136, 0185, 0200, 0227, 0321, 0331, 0384, 0495, 0504, 0544, 0588
0026	LPMASK	0002 (000002)	0040, 0059, 0154, 0188, 0201, 0228, 0332, 0490, 0531
0027	THRDS	0011 (000017)	0092, 0115, 0122, 0194, 0316, 0562
0028	USE	0022 (000034)	0164, 0436, 0451, 0455
0029	TIME	0004 (000004)	0235, 0294
0029	UNPPRT	0010 (000016)	0112, 0276, 0416, 0447, 0514, 0534
0030	THD	0002 (000002)	0051, 0121, 0194, 0196, 0208, 0211, 0315
0030	LNTH	0004 (000004)	0126, 0322, 0549
0489	PC	0001 (000001)	0044, 0049, 0411, 0501
0489	PT	0002 (000002)	0576, 0580, 0584, 0595, 0597, 0600
0489	PQ	0003 (000003)	0057, 0063, 0178, 0560
0489	PP	0005 (000005)	0530
0490	VR	0003 (000003)	0494
0490	VPL	0004 (000004)	0590
0490	VPTR	0005 (000005)	0440, 0548, 0559, 0595, 0615
0490	VTEM	0006 (000006)	0420, 0425, 0502, 0510, 0519, 0528, 0542, 0561
0490	VIMP	0007 (000007)	0564, 0573, 0583, 0594, 0599
0490	VIND	0008 (000008)	0492, 0500, 0516, 0522, 0523, 0532, 0609
0491	AREQXT	00B9 (000185)	0445, 0614, 0621

SYMBOLS

DEF.LINE	NAME	ADDRESS	REFERENCED AT LINE NUMBER
0006	PRTCDR	0000	0006, 0054, 0238, 0308, 0456, 0613
0006	K65T12	016B	0006
0006	PTNREL	018C	0006
0006	K65COR	019F	0006
0007	SPCEV4	00F4	0007
0007	RDPTV4	00FC	0007
0007	OUTPV4	00E6	0007
0047	DIRCAL	000A	0043
0049	PTCOR	000C	0042
0052	FINE	000F	0048, 0067, 0182
0056	PTCOR1	0014	0050
0058	PACOMP	0016	0183
0066	SCMPAD	001E	0062
0069	SCAN	0020	0032, 0120, 0172, 0173, 0366, 0368
0073	SCN0	0024	0083, 0098, 0099, 0106, 0152, 0153, 0168, 0189
0074	SCN1	0026	0111, 0156, 0169, 0190
0078	INPROG	0028	0072, 0213
0080	PROG1	002D	0077, 0289, 0103
0089	CONT1	0036	0087
0090	AVAIL	0037	0081
0104	EXIT	0045	0088, 0101
0119	EXITA	0039	0110, 0117
0121	AV1	0057	0095
0136	AV3	0066	0142
0137	COMPRES	0067	0130
0143	TOPBSY	006E	0070, 0090, 0102, 0104, 0148, 0150, 0212
0143	SAVI	006F	0078, 0129, 0138, 0170, 0176, 0191
0143	PTR	0070	0124, 0171, 0179, 0184, 0207, 0318
0144	AV4	0071	0140
0149	SHIF1	0077	0147
0159	SHIF2	0082	0158
0160	AV4A	0083	0076, 0165, 0167
0164	AV5	0088	0162
0174	REQERR	0092	0134, 0329, 0620
0183	TOCOMP	009D	0181
0184	RETHD	009F	0163
0195	RE1	00AA	0206
0207	HERE	00B6	0199, 0204, 0205
0214	LEVEL	00BE	0188, 0203
0221	CKSWAP	00BF	0118
0224	ASWAPN	00C2	0303

0233 XLOG1A 00CC
 0244 WRTOUT 00DB
 0258 LENGTH 00EA
 0259 START 00FB
 0268 SPCA 00F1
 0275 SPCLGN 00F8
 0280 CB 00FB
 0284 LEN2 0100
 0285 START2 0101
 0288 AJD ISP 0104
 0289 CCC 0105
 0297 CDE 010E
 0302 CE 0113
 0311 P16BSY 011B
 0312 PRSTAT 011C
 0315 NOSWAP 011D
 0318 POINT 0120
 0326 COA 012A
 0342 COB 013B
 0347 COC 0140
 0348 COD 0141
 0351 PROT 0142
 0357 PRA 0148
 0362 PRB 014D
 0364 PRD 014F
 0380 COMPAR 0156
 0392 CMP1 0162
 0395 QBIGR 0165
 0396 ABIGR 0166
 0400 SAVQ 016A
 0418 TAG1 0171
 0419 LOCATE 0172
 0423 LOC1 0176
 0425 LOC2 0179
 0432 CHKUSE 0180
 0435 CHK1 0183
 0440 ERR 0188
 0442 CHK2 018B
 0446 RELEAS 018F
 0451 RELA 0194
 0452 BSY 0195
 0456 RELB 019A
 0478 K65T10 019C
 0478 PTNALC 0210
 0504 FNDPRT 01A8
 0507 CKUNP 01AB
 0519 TRYNEXT 01B8
 0528 FOUND 01C1
 0530 PTCORE 01C3
 0541 ATBL 01CE
 0558 WRAP 01ED
 0559 NOWRAP 01E1
 0561 THDSTR 01E3

0291
 0241
 0247, 0295
 0252
 0256
 0248
 0272
 0249
 0253
 0289
 0282
 0301
 0300
 0221, 0269, 0306, 0365, 0449
 0304, 0336, 0347, 0351, 0363
 0223
 0330, 0367
 0320
 0346
 0345
 0337
 0335
 0361
 0360
 0348, 0352
 037, 0323, 0383, 0397, 0399, 0424
 0385, 0388
 0387
 0391, 0394
 0382, 0396
 0415
 0431
 0435
 0422
 0426, 0428
 0439
 0429, 0434
 0417, 0437
 0444
 0448
 0432, 0453
 0450
 0478
 0478, 0616
 0527
 0526
 0506
 0518, 0520
 0499
 0503, 0515, 0535, 0539
 0554
 0552
 0529, 0582

0573 SCHTHD 01EC
0593 TOP 0201
0594 THRDIT 0202
0611 SCHDRV 020F
0614 RETURN 0212
0615 SCDERR 0213
0619 RC 0217

0592
0569, 0574, 0579
0567, 0587, 0591
0608
0610
0512, 0547, 0558
0617

EXTERNALS

DEF.LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0008	SWAPON	00C3	0224
0008	LOG1A	00CD	0233
0008	SPASW	00D9	0242
0009	UNPIO	00D6	0240
0009	SWAPAR	0103	0261, 0287
0009	LOOP	0107	0290
0010	STLPV4	00EF	0262
0012	PARTBL	01CF	0074, 0423, 0517, 0541
0012	BUSY	0196	0160, 0452
0012	LSTLOC	0061	0131
0012	DIP	020B	0052, 0073, 0607
0012	RPMASK	01FD	0589
0013	SCHERR	018A	0441

0001
0002
0003
0004

* NAM DCORE DECK-ID M19 MSOS 5.0
* MASS STORAGE OPERATING SYSTEM VERSION 5.0
* SMALL SYSTEMS DIVISION, LA JOLLA, CALIFORNIA
* COPYRIGHT CONTROL DATA CORPORATION 1976

SUMMARY-110 M1900001
M1900002
M1900003
M1900004

0006
0007
0008
0009

* SPACE DRIVER, DRIVES CORE ALLOCATOR MODULE
* 1700 MASS STORAGE OPERATING SYSTEM VERSION 4.1
* SMALL COMPUTER DEVELOPMENT DIVISION, LA JOLLA, CALIFORNIA
* COPYRIGHT CONTROL DATA CORPORATION 1973

M1900006
M1900007
M1900008
M1900009

0013
0014

* THIS MODULE DRIVES THE CORE ALLOCATOR IN ASSIGNING
* AND RELEASING SPACE. IT ALSO CONTROLS SWAPPING.

M1900013
M1900014

0016
0017
0018

* REVISED TO PERMIT USE BY REQUESTS FROM ABOVE DRCORE PRIORITY LEVEL
* TO AVOID DELAYING REQUESTS, ENTIRE DRIVER RUNS AT THE PRIORITY
* LEVEL THAT'S IN THE PHSTAB.

M1900016
M1900017
M1900018

0020
0021
0022

* DRCORE LOOPS AT LEVEL = PRI FOR 6 * KSIZE MILLISECS
* DURING SET AND CLEAR OF SWAP AREA PROTECT BITS
* WHERE KSIZE IS THE SIZE OF UNPROTECTED CORE / 1000

M1900020
M1900021
M1900022

0024
0025
0026
0027
0028
0029
0030
0031
0032
0033
0034
0035
0036
0037
0038

* ENT ICORE,T12,ECORE,LEND
ENT SWAPON
ENT STLPV4,LOOP
ENT OUTPUT,SPACE4,NOG30A,REL,SCH
* 1 CARD DELETED
EXT RTNCOR,SWAPAR,PCORE
EXT UNPIO,SPASW,LOG2,REQALC,LVLSTR,AREAC
EXT SCHERR ENTRY POINT IN SCHEDULER
EXT PTNALC
EXT PTNREL
EXT K65T12
EXT SPCEV4,RDPTV4,OUTPV4
EXT PRTCDR
EXT IDLER IDLE LOOP IN SYSDAT
EQU LU(5),ADISP(\$EA),ZERO(\$22),ACOMPR(\$B6)

MSOS 4.1 M1900024
M1900025
**MSOS . . . M1900026
M1900027
M1900028
M1900029
M1900030
*43L** M1900031
**MSOS 4.0M1900032
**MSOS 4.0M1900033
**MSOS 4.0M1900034
**MSOS 4.0M1900035
**MSOS 4.0M1900036
MSOS 4.1 M1900037
M1900038

0039

0005
000EA
00022
000B6
00002
00012
000B5
000BF
000B
000BA
000F7
000F6
0004

EQU LPMSK(2),NZERO(\$12),AFNR(\$B5),ANA BS(\$BF)

M1900039

0040

EQU AVOLA(\$BB),AVOLR(\$BA)

M1900040

0041

EQU LOCORE(\$F7),HICORE(\$F6),TIME(+)

M1900041

```

0042 0001 EQU CORELU(1) CORE ALLOCATOR LOGICAL UNIT M1900042
0043 0005 EQU ELU(5) M1900043
0044 0002 EQU PT(2) M1900044
0045 * SWAPS. SET TO -1 WHEN M1900045
0046 * NO TIMER PACKAGE USED. M1900046
0047 00B9 EQU REQXT($B9) M1900047
0048 0023 EQU ONEBIT($23) M1900048

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0050 * ENTRY FOR ALLOCATION M1900050

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0052 P0000 FFFF WAIT NUM -0 TOP OF WAIT THREAD **MSOS 4.0 M1900052
0053 P0001 FFFF BOTTOM NUM -0 **MSOS 4.1 M1900053
0054 P0002 40FF ICORE STQ- I **MSOS 4.1* M1900054
0055 * 38 CARDS DELETED
0056 P0003 54B5 COR1 RTJ- (AFNR) GET NEXT REQUEST FOR SPACE M1900055
0057 P0004 1849 JMP* WAIT2 M1900056
0058 P0005 F106 TRY LDQ- 6,I GET LOC. OF REQUEST M1900057
0059 P0006 C622 LDA- (ZERO),Q REQUEST M1900058
0060 P0007 CF49 ARS 9 M1900059
0061 P0008 A007 AND- LPMSK+5 ISOLATE CODE M1900060
0062 P0009 09F1 INA -14 M1900061
0063 P000A 0113 SAN NOTMOT NO MOTION M1900062
0064 P000B 610A STA- 10,I ZERO FIRST M1900063
0065 P000C 610B STA- 11,I LAST M1900064
0066 P000D 1832 JMP* ASWAPD-2 GO COMPLETE REQUEST M1900065
0067 P000E 000E P NOTMOT EQU NOTMOT(*) AND GET NO. OF WORDS TO Q. M1900066
0068 P000F 4863 STQ* TEMP M1900067
0069 P0010 54BF RTJ- (ANABS) M1900068
0070 P0011 CC31 LDA* (ASWAPD) M1900069
0071 P0012 0104 SAZ OK0-* -1 SKIP IF NOT SWAPPED **MSOS 4.0 M1900070
0072 P0013 CC5F LDA* (TEMP) M1900071
0073 P0014 A006 AND- LPMSK+4 M1900072
0074 P0015 09FC INA -3 M1900073
0075 P0016 0131 SAM NOTOK-* -1 SKIP IF COMPLETION PRIORITY LT 3 **MSOS 4.0 M1900074
0076 P0017 180D JMP* OK1 GO ALLOCATE **MSOS 4.1 M1900075
0077 P0018 C85A LDA* TEMP POINTER TO NEW REQUEST **MSOS 4.1 M1900076
0078 P0019 E8E8 LDQ* BOTTOM POINTER TO LAST REQUEST ON THREAD **MSOS 4.1 M1900077
0079 P001A 0D00 INQ 0 **MSOS 4.1 M1900078
0080 P001B 0141 SQZ 1 NOTHING ON THREAD **MSOS 4.1 M1900079
0081 P001C 6202 STA- PT,Q POINTER TO NEW REQ. IN THD. OF LAST **MSOS 4.1 M1900080
0082 P001D 0151 SQN 1 **MSOS 4.1 M1900081
0083 P001E 68E2 STA* WAIT ONLY ENTRY ON THREAD,SO BOTH TOP- **MSOS 4.1 M1900082
0084 P001F 68E2 STA* BOTTOM BOTTOM OF THREAD **MSOS 4.1 M1900083
0085 P0020 0822 TRA Q **MSOS 4.1 M1900084
0086 P0021 0804 SET A **MSOS 4.1 M1900085
0087 P0022 6202 STA- PT,Q IN THREAD OF NEW REQ. **MSOS 4.1 M1900086
0088 P0023 18E0 JMP* COR1 GO CHECK FOR ANOTHER REQUEST **MSOS 4.1 M1900087
0089 * 3 CARDS DELETED M1900088
0090 P0024 CC4E OK1 LDA* (TEMP) GET 1ST WORD OF PAR. LIST M1900089
0091 P0025 0F44 ARS 4 AND UNPACK REQUEST PRIORITY M1900090

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0092 PC025 A006 AND- LPMSK+4 M1900092
0093 P0026 OFF0 LLS 16 M1900093
0094 P0027 3400 X RTJ RECALC GO TO ALLOCATE CORE SPACE M1900094
      P0028 7FFF X
0095 * Q = START OF ALLOCATED AREA, IF REQUEST WAS SUCCESSFUL M1900095
0096 * Q = 0 IF SUFFICIENT CORE CAN NEVER BE AVAILABLE M1900096
0097 * Q = -1 IF THE AVAILABLE CORE IS INSUFFICIENT AT PRESENT M1900097
      * ***** M1900098
0098 P0029 0B00 NOP 0 M1900099
0099 P002A 0177 SQM JNOGOT-*--1 M1900100
0100 P002B 0158 SQN ONE-*--1 ALLOCATION WAS SUCCESSFUL M1900101
0101 P002C E0E9 LDQ- $E9 IF UNPROTECTED IN PART1 M1900102
0102 P002D C20A LDA- 10,Q OR SWAPS INHIBITED M1900103
0103 P002E 820B ADD- 11,Q IN PART0 M1900104
0104 P002F 0113 SAN JNOGOT+1 REQUEST IMPOSSIBLE M1900105
0105 P0030 CC11 LDA* (ASWAPD) M1900106
0106 P0031 0111 SAN 1 IF SWAP IS IN EFFECT, REQUEST IS IMPOSSIBLE M1900107
0107 P0032 1827 JNOGOT JMP* NOGOT UNSUCCESSFUL ALLOCATION M1900108
0108 P0033 F032 ADQ- ONEBIT+15 IF ALLOCATION IS IMPOSSIBLE, SET Q15 = 1 M1900109
      * AND COMPLETE REQUEST WITH ERROR FIELD SET M1900110
0110 P0034 CC3D ONE LDA* (TEMP) M1900111
0111 P0035 A01B AND- NZERO+9 M1900112
0112 P0036 010B SAZ DIRCAL-*--1 SKIP IF DIRECTORY CALL M1900113
0113 P0037 0814 TRQ A M1900114
0114 P0038 E839 LDQ* TEMP STORE ORIGIN OF ALLOCATED M1900115
0115 P0039 6203 STA- 3,Q SPACE IN CALL M1900116
0116 P003A E800 LDQ XCORE M1900117
      P003B 0080 M1900118
0117 P003C A01F AND- NZERO+13 STORE ORIGIN IN PHYSTB FOR M1900119
0118 P003D 6209 STA- 9,Q USE BY COMPRQ M1900120
0119 P003E 40FF STQ- I M1900121
0120 P003F 54B6 RTJ- (ACOMPR) M1900122
0121 P0040 18C2 JMP* COR1 GO GET NEXT REQUEST M1900123
0122 P0041 00B7 P ASWAPD ADC SPACE4+2 ADDR. OF THREAD TO RETURN SWAPPED CORE M1900124
0124 P0042 0178 DIRCAL SQM DIR1+1-*--1 IF CORE NOT ALLOCATED, IGNORE REQUEST M1900125
0125 P0043 0814 TRQ A M1900126
0126 P0044 E82D LDQ* TEMP M1900127
0127 P0045 6201 STA- 1,Q STORE ORIGIN AS COMP. ADDRESS M1900128
0128 P0046 F021 ADQ- NZERO+15 M1900129
0129 P0047 4803 STQ* DIR1 M1900130
0130 P0048 0822 TRA Q M1900131
0131 P0049 54F4 RTJ- ($F4) START I/O M1900132
0132 P004A 0000 DIR1 NUM 0 M1900133
0133 P004B E870 LDQ* XCORE RESTORE PHYSTB ADDRESS M1900134
0134 P004C 18B5 JMP* ICORE GO GET NEXT ONE **MSOS 4.1**M1900136
0136 * M1900136
0137 WAIT2 LDQ* WAIT MOVE THE WAIT THREAD BACK TO CORE LU THREAD M1900137
0138 P004D E8B2 INQ 0 M1900138
0139 P004E 0000 SQN WAIT3 M1900139
0140 P004F 0153 SET A NOTHING LEFT ON THREAD **MSOS 4.0M1900140
0141 P0050 0804 STA* BOTTOM SET BOTH THD POINTERS TO -0 **MSOS 4.0M1900141

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0142 P0052 14EA JMP- ($EA) AND EXIT
0143 P0053 C202 WAIT3 LDA- PT,Q POINTER TO NEXT ENTRY ON THD.
0144 P0054 68AB STA* WAIT UPDATE TOP OF THD.
0145 P0055 0814 TRQ A
0146 P0056 5C13 RTJ* (GTHDIT) MOVE TO CORE LU THD.
0147 P0057 18F5 JMP* WAIT2 REPEAT UNTIL WAIT THREAD IS EMPTY
0148 P0058 7FFF X XLOG2 ADC LOG2

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**MSOS 4.0M1900142
**MSOS 4.0M1900143
**MSOS 4.0M1900144
**MSOS 4.0M1900145
**MSOS 4.0M1900146
M1900147
M1900148

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0150 * THE FOLLOWING IS ENTERED ON UN-SUCCESSFUL ALLOCATION M1900150

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0152 P0059 C862 NOGOT LDA* XCORE M1900152
0153 P005A 60FF STA- I RESTORE PHYSTB ADDRESS M1900153
0154 P005B CC16 LDA* (TEMP) IF COMPLETION PRIORITY IS M1900154
0155 P005C A006 AND- LPMSK+4 NOT GREATER THAN 2, M1900155
0156 P005D 09FC INA -3 DONOT TRY TO SWAP. M1900156
0157 P005E 0138 SAM NOG1--1 M1900157
0158 P005F E0E9 LDQ- $E9 IF SWAP INHIBITED, DO NOT M1900158
0159 P0060 C20A LDA- 10,Q ATTEMPT SWAP, RE-THREAD **MSOS 4.0M1900159
0160 P0061 820B ADD- 11,Q **MSOS 4.0M1900160
0161 P0062 0101 SAZ 1 REQUEST **MSOS 4.0M1900161
0162 P0063 1804 JMP* NOG1 M1900162
0163 P0064 C858 LDA* SWAPON M1900163
0164 P0065 0111 SAN 1 M1900164
0165 P0066 180C JMP* NOG2 GO TO NOG2 IF NOT SWAPPED M1900165
0166 P0067 C80A NOG1 LDA* TEMP M1900166
0167 P0068 5400 RTJ+ THRDIT **MSOS 4.0M1900167
0168 P0069 0149 P GTHDIT EQU GTHDIT(*+1) **MSOS 4.0M1900168
0169 P006A 0C01 ENQ CORELU M1900169
0170 P006B CEEC LDA* (XLOG2),Q M1900170
0171 P006C 9805 SUB* TEMP M1900171
0172 P006D 0101 SAZ 1 IF TOP OF THREAD CHANGED M1900172
0173 P006E 1894 JMP* COR1 TRY AGAIN M1900173
0174 P006F 6105 STA- ELU,I CLEAR SPACDR BUSY FLAG M1900174
0175 P0070 14EA JMP- (ADISP) M1900175
0176 P0071 0000 TEMP ADC 0 ADDRESS OF CURRENT REQUEST M1900176

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0179 P0072 C1C4 NOG2 LDA- TIME,I IF INTERVAL SINCE LAST SWAP M1900179
0180 P0073 0131 SAM NOG4--1 HAS PASSED, SKIP TO NOG4 M1900180
0181 P0074 18F2 JMP* NOG1 M1900181
0182 P0075 CC4A NOG4 LDA* (XUNPIO) M1900182
0183 P0076 0102 SAZ NOG5--1 SKIP IF NO UNPROTECTED I/O M1900183
0184 P0077 6C49 STA* (XSPASW) SET WAITING TO SWAP SWITCH M1900184
0185 P0078 18EE JMP* NOG1 M1900185

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0187 P0079 C0F6 NOG5 LDA- HICORE SET UP SWAP WRITE BLOCK M1900187
0188 P007A 90F7 SUB- LOCORE SIZE AND START M1900188

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0189 P007B 09FE INA -1
0190 P007C 6809 STA* LENGTH
0191 P007D C0F7 LDA- LOCORE
0192 P007E 0901 INA 1
0193 P007F 6807 STA* START
0194 P0080 54F4 RTJ- ($F4)
0195 P0081 4CF0 P OUTPUT ADC $4CF0 PART 1 FWRITE
0196 P0082 0098 P ADC NOG20
0197 P0083 0000 NUM 0,$8C2
0198 P0084 08C2
0199 P0085 0000 LENGTH NUM 0
0200 P0086 0000 START NUM 0
0201 P0087 0000 NUM 0
0202 P0088 7FFF X ADC SWAPR
0203 P0089 5802 RTJ* STLPV4
0204 P008A 18DC JMP* NOG1
0205 *
0206 *
0207 P008B 0B00 STLPV4 NOP 0
0208 P008C 0A00 ENA 0 TELL PROTECT PROCESSOR
0209 P008D 6C33 STA* (XSPASW) SWAP IS NOT WAITING.
0210 P008E C83A LDA* LOOP1
0211 P008F 6834 STA* LOOP SET UP AND SCHEDULE LEVEL
0212 P0090 C839 LDA* LOOPFG IF LOOP NEVER RAN
0213 P0091 0114 SAN TURNON *-1 DO NOT RESCHEDULE IT.
0214 P0092 D837 RAO* LOOPFG SET FLAG
0215 P0093 54F4 RTJ- ($F4) 2 LOOP SO AS TO LOCK OUT
0216 P0094 5202 VFD N1/0,N1/1,N5/9,N1/0,N4/0,N4/2 JOB PROCESSING
0217 P0095 00C1 P ADC LOOPEN
0218 P0096 D826 RAO* SWAPON TURN ON SWAP INDICATOR
0219 P0097 1CF3 JMP* (STLPV4)

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M1900189
M1900190
M1900191
M1900192
M1900193
M1900194
M1900195
M1900196
M1900197
M1900198
M1900199
M1900200
M1900201
**MSOS 4.0 M1900202
**MSOS 4.0 M1900203
**MSOS 4.0 M1900204
**MSOS 4.0 M1900205
**MSOS 4.0 M1900206
M1900207
M1900208
M1900209
M1900210
M1900211
M1900212
M1900213
M1900214
**MSOS 4.0 M1900215
M1900216
M1900217
**MSOS 4.0 M1900218

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0221 * THIS ROUTINE IS ENTERED ON COMPLETION OF SWAP I/O M1900221
0223 P0098 C0F6 NOG20 LDA- HICORE M1900223
0224 P0099 09FE INA -1 M1900224
0225 P009A 6823 STA* LEND UPDATE TOP OF ALLOCATABLE AREA M1900225
0226 P009B E0F7 LDQ- LOCORE M1900226
0227 P009C 0001 INQ 1 M1900227
0228 P009D C400 X NOG6 LDA+ LVLSTR UPDATE START OF LEVEL ZERO M1900228
0229 P009E 7FFF X
0230 P009F 4CFE STQ* (NOG6+1) PGMS IN LVLSTR TABLE M1900229
0231 P00A0 681E STA* TEMPL M1900230
0232 P00A1 0814 TRQ A M1900231
0233 P00A2 0902 INA 2 M1900232
0234 P00A3 6201 STA- 1,Q M1900233
0235 P00A4 C8E0 LDA* LENGTH SET UP PSEUDO THREAD FOR ALLOCATOR M1900234
0236 P00A5 6622 STA- (ZERO),Q M1900235
0237 P00A6 5400 X RTJ+ RTNCOR M1900236
0238 P00A7 7FFF X

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0237 P00A8 E0F6 LDQ- HICORE M1900237
0238 P00A9 C8DB LDA* LENGTH M1900238
0239 P00AA 0DFE NOG21 INQ -1 SET PROTECT BITS FOR THE AREA M1900239
0240 P00AB 0600 SPB 0 M1900240
0241 P00AC 09FE INA -1 M1900241
0242 P00AD 0101 SAZ NOG22--*-1 M1900242
0243 P00AE 18FB JMP* NOG21 M1900243
0244 P00AF E80C NOG22 LDQ* XCORE M1900244
0245 P00B0 40FF STQ- I M1900245
0246 P00B1 C8D3 LDA* LENGTH SET UP SPACE REQUEST TO M1900246
0247 P00B2 09FD INA -2 GET CORE BACK + PUT M1900247
0248 P00B3 6806 STA* SPACE1 IT ON WAIT THREAD M1900248
0249 P00B4 54F4 RTJ- ($F4) SPACE REQUEST M1900249
0250 P00B5 5400 SPACE4 VFD N1/0,N1/1,N5/10,N1/0,N6/0 M1900250
0251 P00B6 00CA P ADC NOG30,, ***MSOS-..UM1900251
P00B7 0000
P00B8 0000
0252 P00B9 0000 SPACE1 NUM 0 SIZE M1900252
0253 P00BA 1869 JMP* REL1 RESTART DRIVER IF NOT BUSY M1900253

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0255 P00BB 7FFF X XCORE ADC PCORE M1900255
0256 P00BC 0000 SWAPON NUM 0 ZERO WHEN NOT SWAPPED M1900256
0257 P00BD 0000 LEND ADC 0 LWA OF ALLOCATABLE - STUFFED BY SPACE M1900257
0258 P00BE 0001 TEMPL BSS TEMPL TEMPORARY HOLD FOR LVLSTR M1900258
0259 P00BF 7FFF X XUNPIO ADC UNPIO UNPROTECTED I/O REQUEST COUNT ADR M1900259
0260 P00C0 7FFF X XSPASW ADC SPASW SWAP WAITING SWITCH ADR M1900260
0261 P00C1 0844 LOOPEN CLR A M1900261
0262 P00C2 6807 STA* LOOPFG M1900262
0263 P00C3 C800 LOOP NOP 0 **MSOS 4.1**M1900263
0264 P00C4 0B00 NOP 0 MATCH CYCLES IN LEVEL -1 LOOP **MSOS 4.1**M1900264
0265 P00C5 5400 X RTJ+ IDLER USE SYSDAT IDLE LOOP **MSOS -..1**M1900265
P00C6 7FFF X
0266 P00C7 18FB JMP* LOOP **MSOS -..1**M1900266
0267 P00C8 0B00 LOOP1 NOP 0 **MSOS 4.1**M1900267
0268 P00C9 0000 LOOPFG NUM 0 FLAG TO PREVENT MORE THAN ONE LEVEL 2 LOOP SCHM1900258

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0270 * ENTER HERE WHEN SWAPPED M1900270
0271 * SPACE BECOMES AVAILABLE AGAIN M1900271

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0273 P00CA C8BA NOG30 LDA* LENGTH STUFF PARAMTERS ***MSOS4..UM1900273
0274 P00CB 6808 STA* LGTH ***MSOS4..UM1900274
0275 P00CC C8B9 LDA* START ***MSOS4..UM1900275
0276 P00CD 6807 STA* STRT ***MSOS4..UM1900276
0277 * ***MSOS4..UM1900277
0278 P00CE 54F4 NOG30A RTJ- ($F4) READ SWAPPED AREA BACK IN ***MSOS4..UM1900278
0279 P00CF 4800 VFD N1/0,N1/1,N5/4,N1/0,N4/0,N4/0 ***MSOS4..UM1900279
0280 P00D0 00D8 P ADC NOG33 M1900280
0281 P00D1 0000 NUM 0 M1900281
0282 P00D2 08C2 NUM $8C2 M1900282

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0283 P00D3 0000 LGTH ADC 0
0284 P00D4 0000 STRT ADC 0
0285 P00D5 0000 ADC 0 MSB
0286 P00D6 0088 X ADC SWAPAR LSB
0287 P00D7 14EA AJDISP JMP- (ADISP)
0288 P00D8 C8FE NOG33 LDA* AJDISP
0289 P00D9 68E9 STA* LOOP TURN OFF LEVEL 2 LOOP
0290 P00DA C8E3 LDA* TEMPL
0291 P00DB CCCC STA* (NOG6+1) RESTORE LVLSTR
0292 P00DC C0F7 LDA- LOCORE
0293 P00DD 68DF STA* LEND RESTORE END OF ALLOCATABLE CORE
0294 P00DE E8DC LDQ* XCORE
0295 P00DF C20D LDA- 13,Q DELAY TIME
0296 P00E0 6204 STA- TIME,Q RESET TIME SINCE LAST SWAP
0297 P00E1 E0F6 LDQ- HICORE
0298 P00E2 C8A2 LDA* LENGTH
0299 P00E3 0DFE NOG32 INQ -1 CLEAR PROTECT BITS IN THE AREA
0300 P00E4 0700 CPB 0
0301 P00E5 09FE INA -1
0302 P00E6 0101 SAZ NOG35--*-1
0303 P00E7 18FB JMP* NOG32
0304 P00E8 0500 NOG35 IIN 0
0305 P00E9 68D2 STA* SWAPON TURN OFF SWAP INDICATOR
0306 P00EA 1839 JMP* REL1 IF DRIVER NOT RUNNING, RESTART IT

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***MSOS+.GM1900283
***MSOS+.GM1900284
***MSOS+.GM1900285
***MSOS+.GM1900286
M1900287
M1900288
M1900289
M1900290
M1900291
M1900292
M1900293
M1900294
M1900295
M1900296
M1900297
M1900298
M1900299
M1900300
M1900301
M1900302
M1900303
M1900304
M1900305
M1900306

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0308 * THIS IS ENTERED FROM RELEASE REQUESTS M1900308
0310 P00EB C108 T12 LDA- 8,I
0311 P00EC 0132 SAM R1A--*-1 SKIP IF INDIRECT REQUEST **MSOS+.GM1900310
0312 P00ED D103 RAO- 3,I UPDATE RETURN FOR DIRECT CALL **MSOS+.GM1900311
0313 P00EE D103 RAO- 3,I M1900312
0314 P00EF E105 R1A LDQ- 5,I M1900313
0315 P00F0 C622 LDA- (ZERO),Q CHECK BIT 0 (R) M1900314
0316 P00F1 A023 AND- $23 OF FIRST WORD OF REQUEST M1900315
0317 P00F2 01C2 SAZ R1--*-1 CHECK RETURN INDICATOR M1900316
0318 P00F3 C0EA LDA- ADISP IF NOT ZERO M1900317
0319 P00F4 6103 STA- 3,I RETURN TO ADR OF DISPATCHER M1900318
0320 P00F5 C622 R1 LDA- (ZERO),Q CHECK THE D PARAMETER OF THE REQUEST **MSOS+.GM1900320
0321 P00F6 A031 AND- ONEBIT+14 TO DETERMINE WHICH AREA TO RELEASE **MSOS+.GM1900321
0322 P00F7 0102 SAZ R11--*-1 SKIP IF PART 0 RELEASE REQUEST **MSOS+.GM1900322
0323 P00F8 1400 X JMP K55T12 GO RELEASE PART 1 AREAS **MSOS+.GM1900323
0324 P00FA C106 X R11 LDA- 6,I **MSOS+.GM1900324
0325 P00FB 012C SAP R29--*-1 M1900325
0326 P00FC C622 LDA- (ZERO),Q M1900326
0327 P00FD A02B AND- ZERO+9 M1900327
0328 P00FE 0115 SAN R2--*-1 M1900328
0329 P00FF E106 LDQ- 6,I **MSOS+.GM1900329
0330 P0100 C011 LDA- NZERO-1 MASK INDIRECT BIT FROM 'S' PARAMETER M1900330
0331 P0101 08B2 LAQ Q SAVE IN Q-REG M1900331

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0332 P0102 C622 LDA- (ZERO),Q
0333 P0103 1805 JMP* R29
0334 P0104 0814 R2 TRQ A
0335 P0105 A011 AND- NZERO-1
0336 P0106 8106 ADD- 6,I
0337 P0107 A011 AND- NZERO-1
0338 P0108 09FD R29 INA -2
0339 P0109 0822 TRA Q
0340 P010A 9000 X SUB =XAREAC
0341 P010B 7FFF X
0341 P010C 013E SAM ERROR
0342 P010D 0814 TRQ A
0343 P010E 8622 ADD- (ZERO),Q
0344 P010F 0500 IIN 0
0345 P0110 9800 SUB LEND
0346 P0111 FFAB
0346 P0112 09FD INA -2
0347 P0113 0127 SAP ERROR
0348 P0114 0814 TRQ A
0349 P0115 0902 INA 2
0350 P0116 9201 SUB- 1,Q
0351 P0117 0113 SAN ERROR
0352 P0118 C622 LDA- (ZERO),Q
0353 P0119 09FD INA -2
0354 P011A 0122 SAP R41
0355 P011B 1400 X ERRCR JMP SCHERR
0355 P011C 7FFF X
0356 P011D 54F4 R41 RTJ- ($F4)
0357 P011E 5200 REL ADC $5200
0358 P011F 0121 P ADC RELEAS
0359 P0120 14B9 R6 JMP- (REQXT)

```

AREA RETURNED BELOW AREAC IS IN ERROR*+34****

OK TO RETURN BLOCK THAT ENDS AT LEND 63*1213
END OF AREA RETURNED ABOVE LEND IS AN ERROR**

HEADER WORD NOT POINTING TO 1ST WORD OF AREA

LENGTH LESS THAN TWO IS AN ERROR
SET BIT 15 OF Q AND RETURN TO REQUESTOR

RELEASE AT DRIVER PRIORITY LEVEL

```

0361 * ENTERED AT LEVEL OF ALLOCATOR TO RELEASE SPACE
0363 P0121 5400 X RELEAS RTJ+ RTNCOR
0363 P0122 00A7 X
0364 P0123 E897 REL1 LDQ* XCORE SET ALLOCATOR BUSY
0365 0123 P EQU ECORE(REL1) ENTRY FROM DIAGNOSTIC TIMER
0366 P0124 0500 IIN 0 INHIBIT INTERRUPTS
0367 P0125 C205 LDA- LU,Q
0368 P0126 0101 SAZ REL2--1
0369 P0127 14EA JMP- (ADISP)
0370 P0128 0A01 REL2 ENA CORELU
0371 P0129 6205 STA- LU,Q
0372 P012A 1800 JMP ICORE CHECK FOR WAITING REQUESTS
0373 P012B FED6 EQU R5(R6)
0375 * THE SWAPCK SUBROUTINE IS ENTERED TO DECREMENT UNPIO
0376 * WHEN UNPROTECTED I/O IS COMPLETED, BY JOBPRO AND LIBEDT

```

```

M1900332
M1900333
M1900334
M1900335
M1900336
M1900337
M1900338
M1900339
M1900340
M1900341
M1900342
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M1900344
M1900345
M1900346
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M1900348
M1900349
M1900350
M1900351
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M1900355
M1900356
M1900357
M1900358
M1900359
M1900361
M1900363
M1900364
M1900365
M1900366
M1900367
M1900368
M1900369
M1900370
M1900371
M1900372
M1900373
M1900375
M1900376

```

```

0377 * IF UNPIO EQ 0 AND SPASW NE 0, DRCORE IS RESTARTED M1900377
0379 ENT SWAPCK M1900379
0380 P012C 0000 SWAPCK NUM 0 ENTERED WHEN UNPROTECTED I/O IS COMPLETED M1900380
0381 P012D 0500 IIN 0 M1900381
0382 P012E 5488 RTJ- (AVOLA) GET VOLATILE M1900382
0383 P012F 0004 NUM 4 M1900383
0384 P0130 C8FB LDA* SWAPCK M1900384
0385 P0131 0400 EIN 0 M1900385
0386 P0132 6103 STA- 3,I SAVE RETURN ADDRESS M1900386
0387 P0133 CC8B LDA* (XUNPIO) DECREMENT UNPIO BY 1 M1900387
0388 P0134 010E SAZ SWCKEX--1 M1900388
0389 P0135 09FE INA -1 M1900389
0390 P0136 6C88 STA* (XUNPIO) M1900390
0391 P0137 011B SAN SWCKEX EXIT IF SWAP NOT POSSIBLE 63*1578 M1900391
0392 P0138 CC87 LDA* (XSPASW) M1900392
0393 P0139 0109 SAZ SWCKEX--1 SKIP IF NOT WAITING TO SWAP M1900393
0394 P013A 0C0A ENQ 10 M1900394
0395 P013B C6E9 LDA- ($E9),Q GET RESIDENCY OF UNPROTECTED FROM M1900395
0396 * EXTENDED CORE TABLE M1900396
0397 P013C 0103 SAZ SCH A SCHEDULE PARTITION CORE **MSOS 4.0M1900397
0398 P013D CC00 X LDA =XPRTCDR DRIVER IF UNPROTECTED **MSOS 4.0M1900398
0399 P013E 7FFF X P STA* SCH+1 IS IN PART 1 **MSOS 4.0M1900399
0400 P0140 54F4 SCH RTJ- ($F4) **MSOS 4.0M1900400
0401 P0141 5200 SCH VFD N1/0,N1/1,N5/9,N1/0,N8/0 SCHEDULE DRIVER IF NOT BUSY*** M1900401
0402 P0142 0123 P SWCKEX ADC REL1 ***MSOS 4.0M1900402
0403 P0143 0500 IIN 0 M1900403
0404 P0144 C103 LDA- 3,I M1900404
0405 P0145 68E6 STA* SWAPCK RESTORE RETURN ADDRESS M1900405
0406 P0146 548A RTJ- (AVOLR) RELEASE VOLATILE M1900406
0407 P0147 0400 EIN 0 M1900407
0408 P0148 1CE3 JMP* (SWAPCK) RETURN TO USER M1900408
0409 * 2 CARDS DELETED M1900409

0411 THRDIT 0 0 THREAD REQUEST IN A TO CORE LU M1900411
0412 P014A 681E STA* TEMP1 M1900412
0413 P014B CC1D LDA* (TEMP1) M1900413
0414 P014C A811 AND* RPMSK M1900414
0415 P014D 6811 STA* REQ M1900415
0416 P014E E800 LDQ XLOG2 M1900416
0417 P014F FF08 P014F M1900417
0418 P0150 0DFE INQ CORELU-2 M1900418
0419 P0151 0500 IIN 0 M1900419
0420 THDNXT STQ* THDX M1900420
0421 P0152 480D LDQ- PT,Q CHECK FOR END OF THREAD M1900421
0422 P0153 E202 INQ 0 M1900422
0423 P0154 0000 INQ 0 M1900423
0424 P0155 0151 SQN 1 M1900424
0425 P0156 180A JMP* THDTHS M1900425
0426 P0157 C622 LDA- (ZERO),Q SEARCH FOR LOWER RP M1900426
0427 P0158 A805 AND* RPMSK M1900427

```

```

0426 P0159 9805 SUB* REQP
0427 P015A 0135 SAM THDTHS *-1
0428 P015D 0104 SAZ THDTHS *-1
0429 P015C 18F5 JMP* THDNXT
0430 P015D 00F0 RPMSK NUM $F0
0431 P015E 0000 REQP NUM 0
0432 P015F 0000 THDX NUM 0
0433 P0160 E8FE THDTHS LDQ* THDX
0434 P0161 C202 LDA- PT,Q
0435 P0162 E806 LDQ* TEMP1
0436 P0163 6202 STA- PT,Q
0437 P0164 0814 TRQ A
0438 P0165 E8F9 LDQ* THDX
0439 P0166 6202 STA- PT,Q
0440 P0167 1CE1 JMP* (THRDIT)
0441 P0168 0000 TEMP1 ADC 0

```

```

THREAD ENTRY IF NEGATIVE
THREAD ENTRY IF EQUAL RP
GET NEXT ENTRY

```

POINTER TO PREVIOUS ENTRY

```

POINTER TO ENTRY TO ADD
POINTER TO NEXT ENTRY

```

POINTER TO PREVIOUS ENTRY

```

M1900 +2
M1900 +27
M1900 +28
M1900 +29
M1900 +30
M1900 +31
M1900 +32
M1900 +33
M1900 +34
M1900 +35
M1900 +36
M1900 +37
M1900 +38
M1900 +39
M1900 +40
M1900 +41

```

0443 END

M1900 443

PGM= 0169 (361) COM = 0000 (0) DAT = 0000 (0)

EQUIVALENCES

DEF.LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0000	I	00FF	(0000255) 0054, 0119, 0153, 0245
0038	LU	0005	(0000005) 0367, 0371
0038	ADISP	00EA	(0000234) 0175, 0287, 0318, 0369
0038	ZERO	0022	(0000034) 0059, 0235, 0315, 0320, 0326, 0327, 0332, 0343, 0352, 0424
0038	ACOMPR	00B6	(0000182) 0120
0039	LPMSK	0002	(0000002) 0061, 0073, 0092, 0155
0039	NZERO	0012	(0000018) 0111, 0117, 0128, 0330, 0335, 0337
0039	AFNR	00B5	(0000181) 0056
0039	ANABS	00BF	(0000191) 0069
0040	AVOLA	00BB	(0000187) 0382
0040	AVOLR	00BA	(0000186) 0406
0041	LOCORE	00F7	(0000247) 0188, 0191, 0226, 0292
0041	HICORE	00F6	(0000246) 0187, 0223, 0237, 0297
0041	TIME	0004	(0000004) 0179, 0296
0042	CORELU	0001	(0000001) 0169, 0370, 0417
0043	ELU	0005	(0000005) 0174
0044	PT	0002	(0000002) 0081, 0087, 0143, 0425, 0434, 0436, 0439
0047	REQXT	00B9	(0000185) 0359
0048	ONEBIT	0023	(0000035) 0108, 0321

SYMBOLS

DEF. LINE	NAME	ADDRESS	REFERENCED AT LINE NUMBER
0024	ICORE	0002	0024, 0134, 0372
0024	T12	00EB	0024
0024	ECORE	0123	0024
0024	LEND	00BD	0024, 0225, 0293, 0345
0025	SWAPON	008C	0025, 0163, 0217, 0305
0026	STLPV4	008B	0026, 0202, 0218
0026	LOOP	00C3	0026, 0210, 0266, 0289
0027	OUTPUT	0081	0027
0027	SPACE4	0085	0027, 0122
0027	NOG30A	00CF	0027
0027	REL	011E	0027
0027	SCH	0141	0027, 0399
0052	WAIT	0000	0083, 0137, 0144
0053	BOTTOM	0001	0078, 0084, 0141
0056	COR1	00G3	0088, 0121, 0173
0058	TRY	0005	
0067	NOTMOT	000E	0063
0076	OK0	0016	0071
0077	NOTOK	0017	0075
0090	OK1	0023	0076
0107	JNOGOT	0032	0099, 0104
0110	ONE	0034	0100
0122	ASWAPD	0041	0066, 0070, 0105
0124	DIRCAL	0042	0112
0132	DIR1	004A	0124, 0129
0137	WAIT2	004D	0057, 0147
0143	WAIT3	0053	0139
0148	XLOG2	0058	0170, 0416
0152	NOGOT	0059	0107
0166	NOG1	0067	0157, 0162, 0181, 0185, 0203
0168	GTHDIT	0069	0146
0175	TEMP	0071	0068, 0072, 0077, 0090, 0110, 0114, 0126, 0134, 0166, 0171
0179	NOG2	0072	0165
0182	NOG4	0075	0180
0187	NOG5	0079	0183
0198	LENGTH	0085	0190, 0234, 0238, 0246, 0273, 0298
0199	START	0086	0193, 0275
0217	TURNON	0096	0212
0223	NOG20	0098	0196
0228	NOG6	009D	0229, 0291
0239	NOG21	00AA	0243

0244	NOG22	00AF	0242
0252	SPACE1	00B9	0248
0255	XCORE	00BB	0116, 0133, 0152, 0244, 0294, 036-
0258	TEMPL	00BE	0230, 0290
0259	XUNPIO	00BF	0182, 0387, 0390
0260	XSPASW	00C0	0184, 0208, 0392
0261	LOOPEN	00C1	0216
0267	LOOP1	00C8	0209
0268	LOOPFG	00C9	0211, 0213, 0262
0273	NOG30	00CA	0251
0283	LGTH	00C3	0274
0284	STRT	00D4	0276
0287	AJDISP	00D7	0288
0288	NOG33	00D8	0280
0299	NOG32	00E3	0303
0304	NOG35	00E8	0302
0314	R1A	00F1	0311
0320	R1	00F5	0317
0324	R11	00FA	0322
0334	R2	0104	0328
0338	R29	0108	0325, 0333
0355	ERROR	011B	0341, 0347, 0351
0356	RR41	011D	0354
0359	R6	0120	0373
0363	RELEAS	0121	0358
0364	REL1	0123	0253, 0306, 0365, 0402
0370	REL2	0128	0368
0373	R5	0120	
0379	SWAPCK	012C	0379, 0384, 0405, 0408
0400	SCHA	0140	0397
0403	SWCKEX	0143	0388, 0391, 0393
0411	THRDIT	0149	0167, 0440
0419	THDNXT	0152	0429
0430	RPMSK	015D	0414, 0425
0431	REQP	015E	0415, 0420
0432	THDX	015F	0419, 0433, 0438
0433	THDTHS	0160	0423, 0427, 0428
0441	TEMP1	0168	0412, 0413, 0435

EXTERNALS

DEF.LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0029	RTNCOR	0122	0236, 0363
0029	SWAPAR	00D6	0201, 028E
0029	PCORE	00BB	0255
0030	UNPIO	00BF	0259
0030	SPASW	00C0	0260
0030	LOG2	0G58	0148
0030	REQALC	0028	0094
0030	LVLSTR	009E	0228
0030	AREAC	0108	0340
0031	SCHERR	011C	0355
0032	PTNALC	7FFF	
0033	PTNREL	7FFF	
0034	K65T12	00F9	0323
0035	SPCEV4	7FFF	
0035	RDPTV4	7FFF	
0035	OUTPV4	7FFF	
0036	PRTCDR	013E	0398
0037	IDLER	00C6	0265

*** ALPHABETICAL SORT OF SYMBOLS ***

ACOMPR	0038	ADISP	0038	AFNR	0039	AJDISP	0287	ANABS	0039	AREAC	0030	ASWAPD	0122	AVOLA	0040	AVOLR	0040
BOTTOM	0053	COR1	0056	CORELU	0042	DIR1	0132	DIRCAL	0124	ECORE	0024	ELU	0043	ERROR	0059	GTHDIT	0100
HICORE	0041	I	0000	ICORE	0024	IDLER	0037	JNOGOT	0107	K65T12	0034	LEND	0024	LENGTH	0198	LGTH	0086
LOCORE	0041	LOG2	0030	LOOP	0026	LOOP1	0267	LOOPEN	0261	LOOPFG	0268	LPMSK	0039	LU	0038	LVLSTR	0030
NOG1	0166	NOG2	0179	NOG20	0223	NOG21	0239	NOG22	0244	NOG30	0273	NOG30A	0127	NOG32	0299	NOG33	0288
NOG35	0304	NOG4	0182	NOG5	0187	NOG6	0228	NOGOT	0152	NOTMOT	0067	NOTOK	0077	NZERO	0039	OKO	0070
OK1	0090	ONE	0110	ONEBIT	0048	OUTPUT	0027	OUTPV+	0035	PCORE	0029	PRTCDR	0036	PT	0041	PTNALC	0031
PTNREL	0033	R1	0320	R11	0324	R1A	0314	R2	0334	R29	0338	R41	0356	R5	0373	R6	0383
RDPTV4	0035	REL	0027	REL1	0364	REL2	0370	RELEAS	0363	REQALC	0030	REQP	0431	REQXT	0077	RPMSK	0199
RTNCOR	0029	SCH	0027	SCHA	0400	SCHERR	0031	SPACE1	0252	SPACE+	0027	SPASW	0030	SPCEV+	0065	START	0199
STL PV4	0026	STRT	0284	SWAPAR	0029	SWAPCK	0379	SWAPON	0025	SWCKEX	0403	T12	0027	TEMP	0176	TEMP1	0171
TEMPL	0258	THDNXT	0419	THDTHS	0433	THDX	0432	THROIT	0411	TIME	0041	TRY	0058	TURNON	0217	UNPIO	0030
WAIT	0052	WAIT2	0137	WAIT3	0143	XCORE	0255	XLOG2	0148	XSPASW	0260	XUNPIO	0259	ZERO	0038		

```

0001      *      NAM  NCMPRQ      DECK-ID M20  MSOS 5.0
0002      *      MASS STORAGE OPERATING SYSTEM VERSION 5.0
0003      *      SMALL SYSTEMS DIVISION, LA JOLLA, CALIFORNIA
0004      *      COPYRIGHT CONTROL DATA CORPORATION 1976

0006      *      COMPLETE REQUEST FOR DRIVERC
0007      ENT  NCMPRQ
0008      EQU  NCMPRQ(*)

0011      ENT  COMPRQ
0012      EXT  LOG1
0013      *
0014      *      PHYSICAL DEVISE TABLE INDECES.
0015      *
0016      EQU  EDCLK(4)
0017      EQU  ELJ(5)
0018      EQU  EPTR(6)
0019      EQU  EREQST(8)
0020      EQU  ESTAT1(9)
0021      EQU  RETURN(15)
0022      *
0023      *
0024      EQU  LPMSK(2)
0025      EQU  ONEBIT($23)
0026      EQU  NZERO($12)
0027      EQU  ZERO($22)
0028      EQU  AMONI($F4)
0029      *
0030      *
0031      *      THIS MODULE SCHEDULES COMPLETION
0032      *      ROUTINES AND HOUSEKEEPS FOR DRIVERS.
0033      *
0034      *      ON ENTRY FROM A DRIVER, THE I REGISTER
0035      *      MUST CONTAIN THE CORE LOCATION OF THE
0036      *      PHYSICAL DEVICE TABLE SLOT OF THE
0037      *      SUBJECT EQUIPMENT.
0038      *
0039      *      I IS SAVED AND RETURNED TO THE CALLER AT
0040      *      CALL+1
0041      *
0042      *
0043      P0000 0000  COMPRQ 0 0
0044      P0001 0500  IIN 0
0045      P0002 E8FD  LDQ*  COMPRQ  SAVE RETURN.
0046      P0003 0400  EIN 0
0047      P0004 410F  STQ- RETURN,I
0048      P0005 0AFF  ENA -0 SET DIAGNOSTIC
0049      P0006 6104  STA- EDCLK,I CLOCK IDLE.
0050      P0007 E106  LDQ- EPTR,I
0051      P0008 C622  LDA- (ZERO),Q DO NOT SET ERROR FIELD IF
0052      P0009 0F49  ARS 9 THE REQUEST WAS A MAS STORAGE

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```

SUMMARY-115 M2000001
M2000002
M2000003
M2000004

M2000005
M2000007
M2000008

M2000011
M2000012
M2000013
M2000014
M2000015
M2000016
M2000017
M2000018
M2000019
M2000020
M2000021
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M2000049
M2000050
M2000051
M2000052

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0053 P000A A007
 0054 P000B 0107
 0055 P000C C203
 0056 P000D A00F
 0057 P000E 6203
 0058 P000F C109
 0059 P0010 A01F
 0060 P0011 B203
 0061 P0012 6203
 0062 P0013 C201
 0063 P0014 0112
 0064 P0015 6202
 0065 P0016 1800
 0066 P0017 C622
 0067 P0018 A011
 0068 P0019 B032
 0069 P001A 6622
 0070 P001B 0814
 0071 P001C E203
 0072 P001D 0500
 0073 P001E 6803
 0074 P001F 54F4
 0075 P0020 6000
 0076 P0021 0000
 0077 P0022 C108
 0078 P0023 A010
 0079 P0024 6108
 0080 P0025 E105
 0081 P0026 C600
 0082 P0027 7FFF
 0083 P0028 0FC1
 0084 P0029 0123
 0085 P002A 0804
 0086 P002B 0500
 0087 P002C 6105
 0088 P002D 0400
 0089 P002E E10F
 0090 P002F 1622

CC

CD

CE

EE

X
X

HH

AND- LPMSK+5
 SAZ CC--1
 LDA- 3,Q
 AND- LPMSK+13
 STA- 3,Q
 LDA- ESTAT1,I
 AND- NZERO+13
 EOR- 3,Q
 STA- 3,Q
 LDA- 1,Q
 SAN CD--1
 STA- 2,Q
 JMP* EE
 LDA- (ZERO),Q
 AND- LPMSK+15
 EOR- ONEBIT+15
 STA- (ZERO),Q
 TRQ A
 LDQ- 3,Q
 IIN 0
 STA* CE
 RTJ- (AMONI)
 VFD N1/5,N1/1,N5/16,N1/8,N8/0
 0
 LDA- EREQST,I
 AND- LPMSK+14
 STA- EREQST,I
 LDQ- ELU,I
 LDA+ LOG1,Q
 ALS 1
 SAP HH--1
 SET A
 IIN 0
 STA- ELU,I
 EIN 0
 LDQ- RETURN,I
 JMP- (ZERO),Q
 END

DIRECTORY CALL

CLEAR ERROR FIELD
 IN REQUEST AND
 REPLACE WITH
 SAME FROM PHYSTB

IF COMP. ADDR. EQUAL ZERO
 CLEAR THREAD AND
 GO TO EE.

SET BIT 15 OF WORD ZERO
 OF THE REQUEST

GET ERROR WORD FROM REQ.

REQUEST AN INDIRECT
 SECONDARY SCHED. CALL
 IF E IS EQUAL TO 1
 OTHERWISE,
 ZERO THE FIELD

TEST L.U. TYPE

**MSOS

***MSOS-

M20000053
 M20000054
 M20000055
 M20000056
 M20000057
 M20000058
 M20000059
 M20000060
 M20000061
 M20000062
 M20000063
 M20000064
 M20000065
 M20000066
 M20000067
 M20000068
 M20000069
 M20000070
 M20000071
 M20000072
 M20000073
 M20000074
 M20000075
 M20000076
 M20000077
 M20000078
 M20000079
 M20000080
 M20000081
 M20000082
 M20000083
 M20000084
 M20000085
 M20000086
 M20000087
 M20000088
 M20000089
 M20000090

EQUIVALENCES

DEF.LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0000	I	00FF	(000255)
0016	EDCLK	0004	(000004) 0049
0017	ELU	0005	(000005) 0080, 0086
0018	EPTR	0006	(000006) 0050
0019	EREQST	0008	(000008) 0077, 0079
0020	ESTAT1	0009	(000009) 0058
0021	RETURN	000F	(000015) 0047, 0088
0024	LPMSK	0002	(000002) 0053, 0056, 0067, 0078
0025	ONEBIT	0023	(000035) 0068
0026	NZERO	0012	(000018) 0059
0027	ZERO	0022	(000034) 0051, 0066, 0069, 0089
0028	AMONI	00F4	(000244) 0074

S Y M B O L S

DEF.LINE	NAME	ADDRESS	REFERENCED AT LINE NUMBER
0007	NCMPRQ	0000	0007
0011	COMPRQ	0000	0011, 0045
0062	CC	0013	0054
0066	CD	0017	0063
0076	CE	0021	0073
0077	EE	0022	0065
0087	HH	0020	0083

EXTERNALS

DEF. LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0012	LOG1	0027	0081

0001
0002
0003
0004

NAM NFNR DECK-ID: M21 MSOS 5.0
MASS STORAGE OPERATING SYSTEM VERSION 5.0
SMALL SYSTEMS DIVISION, LA JOLLA, CALIFORNIA
COPYRIGHT CONTROL DATA CORPORATION 1976

M2100002
M2100003
M2100004

0006
0007
0008

0000 P

FIND NEXT REQUEST-NON-BUFFERED
ENT NFNR
EQU NFNR(*)

M2100005
M2100007
M2100008

0011
0012
0013
0014
0015
0016
0017
0018
0019
0020
0021
0022
0023
0024
0025
0026
0027
0028
0029

*
*
*
*
*
*
*
*
*
*
*
*
*
*
*
*
*
*

THIS PROGRAM FINDS THE NEXT REQUEST
FOR A GIVEN PHYSICAL DEVICE.
IT IS ENTERED FROM ALL DRIVERS AND
RETURNS AS FOLLOWS

CALL+1 IMPLIES NO REQUEST FOUND
CALL+2 IMPLIES A REQUEST IS READY

WHEN A REQUEST IS FOUND, FNR SETS
ALL POSSIBLE INFORMATION IN THE
PHYSICAL TABLE SLOT BEFORE RETURNING.

FNR IS ENTERED WITH THE CORE LOCATION
OF THE PHYSICAL DEVICE TABLE SLOT IN I.

M2100011
M2100012
M2100013
M2100014
M2100015
M2100016
M2100017
M2100018
M2100019
M2100020
M2100021
M2100022
M2100023
M2100024
M2100025
M2100026
M2100027
M2100028
M2100029

0030
0031
0032
0033
0034
0035
0036
0037
0038
0039
0040
0041
0042
0043
0044
0045
0046
0047
0048
0049
0050

0005
0006
0008
0009
000A
000B
000C

ENT FNR
ENT FINDRQ
EXT LOG1,LOG1A,LOG2
EXT ALTSUB SUB. TO SET Q=ALT. IF LU IN Q IS DOWN

PHYSICAL DEVICE TABLE.
EQU ELU(5) LOGICAL UNIT=L.U.
EQU EPTR(6) CALL PARAMETER LIST LOC.
EQU EREQST(8)
EQU ESTAT1(9) STATUS WD.1.
EQU ECCOR(10) CURRENT I/O WD.LOC.
EQU ELSTWD(11) LAST+1 WD.LOC.
EQU RETURN(15)

*632

M2100030
M2100031
M2100032
M2100033
M2100034
M2100035
M2100036
M2100037
M2100038
M2100039
M2100040
M2100041
M2100042
M2100043
M2100044
M2100045
M2100046
M2100047
M2100048
M2100049
M2100050

0051
0052

P0000 0800
P0001 0500

FNR

NOP
IIN 0

M2100041
M2100042
M2100043
M2100044
M2100045
M2100046
M2100047
M2100048
M2100049
M2100050
M2100051
M2100052

0053	P0002	C8FD		LDA* FINDRQ	SAVE RETURN ADR		M2100053
0054	P0003	610F		STA- RETURN, I		*632	M2100054
0055	P0004	0C00		ENQ 0			M2100055
0056	P0005	410A		STQ- ECCOR, I	LU ASSIGNED TO DEVICE		M2100056
0057	P0006	E105		LDQ- ELJ, I			M2100057
0058	P0007	0D00		INQ 0			M2100058
0059	P0008	0147		SQZ AD-*-1			M2100059
0060	P0009	181A		JMP* CAA			M2100060
0062	P000A	5400	X AC	RTJ ALTSUB	IF LU = Q IS DOWN, SET Q = ALTERNATE LU		M2100062
	P000B	7FFF	X				
0063	P000C	C600	X	LDA LOG1A, Q	INTERRUPTS ARE ENABLED		M2100063
	P000D	7FFF	X				
0064	P000E	90FF		SUB- I			M2100064
0065	P000F	0107		SAZ AE-*-1	IF THIS L.U. USES THIS DEVICE, GO TO AE		M2100065
0066	P0010	C10A	AD	LDA- ECCOR, I	SEARCH ALL LU FOR THIS DEVICE		M2100066
0067	P0011	0822		TRA Q			M2100067
0068	P0012	9C49		SUB* (ALOG1)	MAX LU NO		M2100068
0069	P0013	0129		SAP EXIT-*-1	IF SEARCH IS COMPLETED, GO TO EXIT		M2100069
0070	P0014	0D01		INQ 1			M2100070
0071	P0015	41CA		STQ- ECCOR, I	SAVE LU NO FOR SEARCH		M2100071
0072	P0016	18F3		JMP* AC			M2100072
0074	P0017	E10A	AE	LDQ- ECCOR, I	REQUESTED LOGICAL UNIT		M2100074
0075	P0018	0500		IIN 0			M2100075
0076	P0019	4105		STQ- ELU, I	ASSIGN THIS L.U. TO THE DEVICE		M2100076
0077	P001A	C10F		LDA- RETURN, I		*632	M2100077
0078	P001B	68E4		STA* FINDRQ			M2100078
0079	P001C	1807		JMP* CAA			M2100079
0081	P001D	0500	EXIT	IIN 0	NO FURTHER REQUESTS FOR THIS DEVICE		M2100081
0082	P001E	0A00		ENA 0	FREE THE DEVICE		M2100082
0083	P001F	6105		STA- ELJ, I			M2100083
0084	P0020	E10F		LDQ- RETURN, I		*632	M2100084
0085	P0021	0400		EIN 0			M2100085
0086	P0022	1622		JMP- (ZERO), Q	RETURN TO ADR. OF CALL +1		M2100086
0088			*		DEVICE IS ASSIGNED TO A L.U. (I.E., THE L.U. ADDRESS IS IN		M2100088
0089			*		WORD ELU IN THE PHYS DEV TABLE, AND IN Q).		M2100089
0091	P0023	C600	X CAA	LDA+ LOG2, Q			M2100091
	P0024	7FFF	X				
0092	P0025	0900		INA 0			M2100092
0093	P0026	0116		SAN CB-*-1	IF THE THREAD IS NOT EMPTY, GO TO CB		M2100093
0095			*		THE THREAD IS EMPTY		M2100095

0097 P0027 CE34
 0098 P0028 QFC1
 0099 P0029 G122
 0100 P002A 0400
 0101 P002B 18E4
 0102 P002C 18F0

LDA* (ALOG1),Q
 ALS 1
 SAP 2
 EIN 0
 JMP* AD
 JMP* EXIT

CHECK THE TYPE 0/1 BIT

 CONTINUE SEARCH IF LU SHARES A DEVICE

M2100097
 M2100098
 M2100099
 M2100100
 M2100101
 M2100102

0104 P002D 6106
 0105 P002E 0822
 0106 P002F C202
 0107 P0030 E105
 0108 P0031 0400
 0109 P0032 6EF1
 0110 P0033 C108
 0111 P0034 A010
 0112 P0035 B032
 0113 P0036 6108
 0114 P0037 C109
 0115 P0038 A02C
 0116 P0039 0109
 0117 P003A E106
 0118 P003B C622
 0119 P003C A000
 P003D 3E00
 0120 P003E 0117
 0121 P003F C201
 0122 P0040 610A
 0123 P0041 C204
 0124 P0042 E10F
 0125 P0043 810A
 0126 P0044 6108
 0127 P0045 1201
 0128 P0046 E203
 0129 P0047 0F69
 0130 P0048 A007
 0131 P0049 0FF0
 0132 P004A A026
 0133 P004B 0DFE
 0134 P004C 014D
 0135 P004D 0DFE
 0136 P004E 014A
 0137 P004F 0DFD
 0138 P0050 0147
 0139 P0051 0DFD
 0140 P0052 0144
 0141 P0053 0DF7
 0142 P0054 0159
 0143 P0055 1800
 P0056 0010

CB

STA- EPTR,I
 TRA Q
 LDA- 2,Q
 LDQ- ELU,I
 EIN 0
 STA* (CAA+1),Q
 LDA- EREQST,I
 AND- LPMSK+14
 EOR- ONEBIT+15
 STA- EREQST,I
 LDA- ESTAT1,I
 AND- ONEBIT+9
 STA- ESTAT1,I
 LDQ- EPTR,I
 LDA- (ZERO),Q
 AND =N\$3E00

SAVE ADDRESS OF TOP REQUEST IN THREAD

 UPDATE THE THREAD

 SET REQUEST IN PROGRESS BIT

 CLEAR STATUS WORD EXCEPT FOR M.M. BIT

 EXTRACT REQUEST CODE

M2100104
 M2100105
 M2100106
 M2100107
 M2100108
 M2100109
 M2100110
 M2100111
 M2100112
 M2100113
 M2100114
 M2100115
 M2100116
 M2100117
 M2100118
 M2100119

CCX

SAN CCX--*-1
 LDA- 1,Q
 STA- ECCOR,I
 LDA- 4,Q
 LDQ- RETURN,I
 ADD- ECCOR,I
 STA- ELSTWD,I
 JMP- 1,Q
 LDQ- 3,Q
 LRS 9
 AND- LPMSK+5
 LLS 16
 AND- ONEBIT+3
 INQ -1
 SQZ CBG--*-1
 INQ -1
 SQZ CBF--*-1
 INQ -2
 SQZ CBE--*-1
 INQ -2
 SQZ CBD--*-1
 INQ -8
 SQN CD
 JMP CD1

DIRECTORY CALL

 SET STARTING AND FINISHING ADDRESSES FROM THE DIRECTORY *632

 MASK FOR REQUEST CODE **MSOS 4.0

 READ
 WRITE
 FREAD
 FWRITE
 MOTION
 ALL OTHERS

M2100120
 M2100121
 M2100122
 M2100123
 M2100124
 M2100125
 M2100126
 M2100127
 M2100128
 M2100129
 M2100130
 M2100131
 M2100132
 M2100133
 M2100134
 M2100135
 M2100136
 M2100137
 M2100138
 M2100139
 M2100140
 M2100141
 M2100142
 M2100143

```

0145 P0057 0901 CBO INA 1          FORMAT WRITE CODE = 3      M2100145
0146 P0058 0901 CBE INA 1          FORMAT READ CODE = 2     M2100146
0147 P0059 0901 CBF INA 1          WRITE CODE = 1          M2100147
0148 P005A 1802 CBG JMP* CBJ        READ CODE = 0          M2100148

0150 P005B 7FFF X ALOG1 ADC LOG1          M2100150

0152 P005C B109 CBJ EOR- ESTAT1,I      M2100152
0153 P005D 6109 STA- ESTAT1,I      M2100153

0155 *                GET THE ABSOLUTE VALUE OF N AND S FROM THE REQUEST M2100155

0157 P005E E106 CO LDQ- EPTR,I          M2100157
0158 P005F C622 LDA- (ZERO),Q        GET FIRST WORD OF REQUEST **MSOS M2100158
0159 P0060 A031 AND- ONEBIT+14      MASK FOR D PARAMETER **MSOS M2100159
0160 P0061 0106 SAZ CDA--*-1      A=0 D PARAMETER NOT SET--PART 0 **MSOS M2100160
0161 P0062 C205 LDA- 5,Q          GET THE STARTING ADDRESS **MSOS M2100161
0162 P0063 610A STA- ECCOR,I      SAVE IN PDT **MSOS M2100162
0163 P0064 8204 ADD- 4,Q          ADD NO OF WORDS TO FORM LAST+1 **MSOS M2100163
0164 P0065 610B STA- ELSTWD,I     SAVE IN PDT **MSOS M2100164
0165 P0066 E10F CD1 LDQ- RETURN,I     PICK UP RETURN ADDRESS M2100165
0166 P0067 1201 JMP- 1,Q          RETURN TO CALL+2 **MSOS M2100166
0167 P0068 54BD CDA RTJ- (ASABS)          M2100167
0168 P0069 410A STQ- ECCOR,I      M2100168
0169 P006A E106 LDQ- EPTR,I      M2100169
0170 P006B 54BF RTJ- (ANABS)          M2100170
0171 P006C C10F LDA- RETURN,I     PICK UP THE RETURN ADDRESS *632 M2100171
0172 P006D 410B STQ- ELSTWD,I     M2100172
0173 P006E 0822 TRA Q            M2100173
0174 P006F C10B LDA- ELSTWD,I     PLACE LAST+1 ADDRESS IN ELSTWD M2100174
0175 P0070 810A ADD- ECCOR,I     M2100175
0176 P0071 0121 SAP DAA--*-1     M2100176
0177 P0072 A011 AND- LPMSK+15    M2100177
0178 P0073 610B DAA STA- ELSTWD,I     M2100178
0179 P0074 1201 JMP- 1,Q          RETURN TO CALL * 2. M2100179
0180 *                M2100180
0181 0000 P EQU FINDRQ(FNR) M2100181
0182 END M2100182

```

PGM= 0075 (117) COM = 0000 (0) DAT = 0000 (0)

EQUIVALENCES

DEF. LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0000	I	00FF	(000255) 0064
0035	ELU	0005	(000005) 0057, 0076, 0083, 0107
0036	EPTR	0006	(000006) 0104, 0117, 0157, 0169
0037	EREQST	0008	(000008) 0110, 0113
0038	ESTAT1	0009	(000009) 0114, 0116, 0152, 0153
0039	ECCOR	000A	(000010) 0056, 0066, 0071, 0074, 0122, 0125, 0162, 0168, 0175
0040	ELSTWD	000B	(000011) 0126, 0164, 0172, 0174, 0178
0041	RETURN	000F	(000015) 0054, 0077, 0084, 0124, 0163, 0171
0044	LPMSK	0002	(000002) 0111, 0130, 0177
0045	ZERO	0022	(000034) 0086, 0118, 0158
0047	ONEBIT	0023	(000035) 0112, 0115, 0132, 0159
0048	ASABS	00BD	(000189) 0167
0049	ANABS	00BF	(000191) 0170

S Y M B O L S

DEF.LINE	NAME	ADDRESS	REFERENCED AT LINE NUMBER
0007	NFNR	0000	0007
0029	FNR	0000	0029, 0181
0030	FINDRQ	0000	0030, 0053, 0078
0062	AC	000A	0072
0066	AD	0010	0059, 0101
0074	AE	0017	0065
0081	EXIT	001D	0069, 0102
0091	CAA	0023	0060, 0079, 0109
0104	CB	002D	0093
0128	CCX	0045	0120
0145	CBD	0057	0140
0146	CBE	0058	0138
0147	CBF	0059	0136
0148	CBG	005A	0134
0150	ALOG1	005B	0068, 0097
0152	CBJ	005C	0148
0157	CD	005E	0142
0165	CD1	0066	0143
0167	CDA	0068	0160
017R	DAA	0073	0176

EXTERNALS

DEF.LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0031	LOG1	005B	0150
0031	LOG1A	000D	0063
0031	LOG2	0024	0091
0032	ALTSUB	000B	0062

0001
0002
0003
0004
0005

*
*
*
*

NAM ADEV DECK-ID M22 MSOS 5.0
ALTERNATE DEVICE HANDLER
MASS STORAGE OPERATING SYSTEM VERSION 5.0
SMALL SYSTEMS DIVISION, LA JOLLA, CALIFORNIA
COPYRIGHT CONTROL DATA CORPORATION 1976

SJMMARY-132*****

M2200002
M2200003
M2200004
M2200005

0007
0008

0000 P

ENT ADEV
EQU ADEV(*)

M2200007
M2200008

0010
0011
0012
0013
0014
0015
0016
0017
0018
0019
0020
0021
0022
0023
0024
0025

000A

*

ENT DEVERR,ALTDEV
ENT CONVER HEX TO ASCII CONVERSION ROUTINE
EXT JBCNCL
EXT ALTERR TABLE USED TO SAVE ERROR WORDS
ENT ALTSUB ALTERNATE LOGICAL UNIT SUB.
EXT DUMALT DUMMY ALTERNATE LU NO.
EXT LOG1,LOG1A,LOG2
EXT RELBYQ
EXT SWITCH
EXT UNPIO,UNPIOF UNPROTECTED I/O FLAFS
EXT SYFAIL SITE FAIL LOCATED IN SYSDAT (\$18FF)
EQU NN(10) MAX NO OF ALTERNATES IN A SINGLE CHAIN
COMMUNICATION REGION ADRS

MSOS +.1
MSOS 4.1

M2200010
M2200011
M2200012
M2200013
M2200014
M2200015
M2200016
M2200017
M2200018
M2200019
M2200020
M2200021
M2200022
M2200023
M2200024
M2200025

0026
0027

000B5
000E
0012
00EA
0046
0033
00B6
00F4
0002
0023

*

EQU FNR(\$B5)
EQU LEVEL(14)
EQU NZERO(\$12),DISP(\$EA)
EQU TEN(\$46),ZROBIT(\$33),COMP(\$B6)
EQU AMONI(\$F4),LPMSK(2),ONEBIT(\$23)

M2200026
M2200027

0028
0029

0005
0006
0009

*

EQU ELU(5),EPTR(6),ESTAT1(9)
PHYSICAL DEV TABLE WORDS

M2200028
M2200029

0030
0031
0032
0033
0034
0035
0036

0002

*
*
*
*
*
*

CALL PARAMETER WORDS
EQU PT(2)
THIS MODULE IS ENTERED FROM A DRIVER WHEN A
DEVICE HAS FAILED. IT ATTEMPTS TO SWITCH TO AN
ALTERNATE IF POSSIBLE. FAILING THAT, IT REQUESTS
OPERATOR ACTION. IT IS ENTERED VIA A JUMP WITH
Q SET AS FOLLOWS

M2200030
M2200031
M2200032
M2200033
M2200034
M2200035
M2200036

0038
0039
0040
0041
0042
0043
0044
0045

*
*
*
*
*
*
*

BITS 0-5 ERROR CODE
BITS 6-15 LOGICAL UNIT NUMBER

THE ABOVE DOES NOT APPLY IF Q IS MINUS. CERTAIN DRIVERS HAVE
EXCEEDED THE ERROR CODE FIELD IN Q, SO THESE DRIVERS NOW PASS IN
Q THE LOGICAL UNIT IN THE UPPER 8 BITS AND THE ERROR CODE IN
THE LOWER 8 BITS. BIT 15 IS SET AS A FLAG.

M2200038
M2200039
M2200040
M2200041
M2200042
M2200043
M2200044
M2200045

```

0046
0047
0049 P0000 54F4 ALTDEV RTJ- (AMONI) SCHEDULER REQUEST
0050 P0001 520E VFD N1/0,N1/1,N5/9,N1/0,N4/0,X4/LEVEL ***MSOS+.0
0051 P0002 0004 P ADC ALTGO ***MSOS+.0
0052 P0003 14EA JMP- (DISP)

```

```

* THE ERROR CODE AND LU ARE IN ONE OF TWO FORMATS,SO THE FOLLOWING
* CODE ARRANGES THE Q REGISTER TO HAVE THE LU IN THE UPPER 8 BITS
* AND THE ERROR CODE IN THE LOWER 8 BITS.
0054 P0004 0163 ALTGO SQP ALTO
0055 P0005 0814 TRQ A
0056 P0006 8032 EOR- ONEBIT+15 STRIP FLAG
0057 P0007 1806 JMP* ALT1
*
0058 P0008 0A3F ALT0 ENA $3F SEQ FOR LU AND ERROR CODE IN Q
0059 P0009 08B4 LAQ A
0060 P000A 0F26 QRS 6
0061 P000B 0FA8 QLS 8
0062 P000C 0874 EAQ A
*
0063 P000D 685F ALT1 STA* SAVERR SAVE LOGICAL UNIT AND ERROR CODE
0064 P000E 0F48 ARS 8
0065 P000F 0111 SAN ALT2 CHECK FOR LU 00
0066 P0010 14EA JMP- (DISP)
0067 P0011 E85E ALT2 LDQ* Q1SAV
0068 P0012 CE5C LDA* (ATAB),Q
0069 P0013 0102 SAZ ALT5-* -1 CHECK FOR SPACE IN ERROR WORD TABLE

```

```

0076 P0014 5400 X RTJ+ SYFAIL IRRECOVERABLE ERROR - HANG
0077 P0015 7FFF X * INCREASE SIZE OF TABLE ALTERR

```

```

0079 P0016 40FF ALT5 STQ- I I = Q1SAV
0080 P0017 E855 LDQ* SAVERR
0081 P0018 0F28 QRS 8 IF LU SPECIFIED IS ALREADY DOWN
0082 P0019 4859 STQ* HASRLU
0083 P001A 5C53 RTJ* (XALTSB) THEN GET LU OF ALTERNATE THAT FAILED
0084 P001B 4856 STQ* HASHLD
0085 P001C C850 LDA* SAVERR Q = LU THAT FAILED, A = ERROR WORD
0086 P001D 0FC8 ALS 8
0087 P001E 0F68 LRS 8 CHANGE LU NO IN ERROR WORD
0088 P001F 684D STA* SAVERR SAVE ERROR WORD
0089 P0020 E851 LDQ* HASHLD
*
0091 P0021 CE52 LDA* (ALOG1),Q MARK THIS LU DOWN
0092 P0022 6838 STA* HAS7
0093 P0023 A000 AND =N$9FFF
0094 P0024 9FFF

```

0094	P0025	B000	EOR	=N\$6000	MARK LU DOWN AND SET TO TYPE 1	M2200094
0095	P0026	6000	STA*	(ALOG1),Q		M2200095
0096	P0027	6E4C	RTJ*	(XALTSB)	IF LU = Q IS DOWN, SET Q = ALTERNATE LU	M2200096
0097	P0028	5C45	SQN	HAS+*-1		M2200097
0098	P002A	E847	LDQ*	HASHLD	FAILED LU	M2200098
0099	P002B	C82F	LDA*	HAS7	RESTORE LU LOG1 STATUS	M2200099
0100	P002C	6E47	STA*	(ALOG1),Q		M2200100
0101	P002D	CE65	LDA*	(ALOG1A),Q		M2200101
0102	P002E	60FF	STA-	I		M2200102
0103	P002F	182C	JMP*	SCHNC	NO ALTERNATE ASSIGNED	M2200103
0104	P0030	4860	STQ*	HASLU	SAVE ALTERNATE LU	M2200104

HAS4

MSOS 4.1

0106	*			HASLU NOW CONTAINS THE LU OF THE ALTERNATE	M2200106
0107	*			HASRLU CONTAINS THE ORIGINAL REQUESTED LU	M2200107
0108	*			AND HASHLD CONTAINS THE LU THAT FAILED	M2200108

0110	P0031	E840	LDQ*	HASHLD		M2200110
0111	P0032	EE60	LDQ*	(ALOG1A),Q		M2200111
0112	P0033	C206	LDA-	EPTR,Q	LOCATION OF CURRENT REQUEST	M2200112
0113	P0034	60FF	STA-	I	REQUESTED LU	M2200113
0114	P0035	E83D	LDQ*	HASRLU		M2200114
0115	P0036	6500	IIN	0	RETHREAD THE REQUEST	M2200115
0116	P0037	CE5C	LDA*	(ALOG2),Q		M2200116
0117	P0038	6102	STA-	PT,I		M2200117
0118	P0039	C0FF	LDA-	I		M2200118
0119	P003A	6E59	STA*	(ALOG2),Q		M2200119

0121	P003B	0400	EIN	0	LU THAT FAILED	M2200121
0122	P003C	E835	LDQ*	HASHLD		M2200122
0123	P003D	CE55	LDA*	(ALOG1A),Q		M2200123
0124	P003E	60FF	STA-	I	I = PDT ADR OF FAILED DEV.	M2200124
0125	P003F	0844	CLR	A		M2200125
0126	P0040	6105	STA-	ELJ,I	CLEAR FAILED DEVICE TABLE	M2200126

0128	P0041	E84F	LDQ*	HASLU		M2200128
0129	P0042	CE31	LDA*	(ALOG1),Q	SET ALTERNATE TO TYPE 1	M2200129
0130	P0043	A041	AND-	ZROBIT+14		M2200130
0131	P0044	B031	EOR-	ONEBIT+14		M2200131
0132	P0045	6E2E	STA*	(ALOG1),Q		M2200132

HAS3

0134	P0046	EC28	LDQ*	(ATAB)	SEARCH TABLE FOR THIS ERROR	M2200134
0135	P0047	C825	LDA*	SAVERR		M2200135
0136	P0048	9E26	SUB*	(ATAB),Q		M2200136
0137	P0049	0103	SAZ	HAS3A*-1		M2200137
0138	P004A	0DFE	INQ	-1	SKIP IF END OF SEARCH	M2200138
0139	P004B	0142	SQZ	HAS3B*-1		M2200139
0140	P004C	18FA	JMP*	HAS3		M2200140

```

0141 P004D 681F HAS3A STA* SAVERR SET SAVERR = 0 IF ERROR IS ALREADY IN TABLE M2200141
0143 P004E E842 HAS3B LDQ* HASLU LU OF ALTERNATE M2200143
0144 P004F EE43 LDQ* (ALOG1A),Q M2200144
0145 P0050 0500 IIN 0 M2200145
0146 P0051 0205 LDA- ELU,Q IF THE ALT DEV IS NOT BUSY M2200146
0147 P0052 0101 SAZ HAS6--1 SCHEDULE THE DRIVER, M2200147
0148 P0053 1808 JMP* SCHNC GO TO SCHDL LVL 4 SECTION ***MSOS 4.1** M2200148
0149 P0054 0814 HAS6 TRQ A ***MSOS+. M2200149
0150 * M2200150
0151 P0055 6805 STA* HAS7 SET DEVICE BUSY M2200151
0152 P0056 C810 LDA* HASRLU M2200152
0153 P0057 6205 STA- ELU,Q M2200153
0154 P0058 54F4 RTJ- (AMONI) M2200154
0155 P0059 2000 ADC $2000 SCHEDULE DRIVER VIA PHYSTB ***MSOS+. M2200155
0156 P005A 0000 HAS7 NUM 0 M2200156

0158 P005B C834 SCHNC LDA* FLAGX M2200158
0159 P005C 0115 SAN SCHNX--1 IF NOALT SECTION NOT BUSY M2200159
0160 P005D 0804 SET A SCHEDULE IT AT LEVEL 4 M2200160
0161 P005E 6831 STA* FLAGX SET BUSY FLAG M2200161
0162 * M2200162
0163 P005F 54F4 RTJ- (AMONI) M2200163
0164 P0060 52+4 VFD N1/0,N1/1,N5/9,N1/0,N-/7,N4/4 ***MSOS+. M2200164
0165 P0061 0074 P ADC NOALT SEARCH FOR MORE ENTRIES ON COMP ***MSOS+. M2200165
0166 * M2200166
0167 P0062 E800 SCHNX LDQ* Q1SAV INDEX TO ALTERR TABLE M2200167
0168 P0063 C809 LDA* SAVERR M2200168
0169 P0064 0111 SAN 1 M2200169
0170 P0065 14EA JMP- (DISP) EXIT IF SAVERR = 0 M2200170
0171 P0066 6E08 STA* (ATAB),Q SAVE ERROR WORD IN TABLE M2200171
0172 P0067 0DFE INQ -1 UPDATE AND SAVE INDEX TO ALTERR TABLE M2200172
0173 P0068 0151 SQN 1 SKIP IF NOT END OF TABLE M2200173
0174 P0069 EC05 LDQ* (ATAB) SIZE OF TABLE M2200174
0175 P006A 4805 STQ* Q1SAV M2200175
0176 P006B 14EA JMP- (DISP) M2200176

0178 P006C 0000 SAVERR ADC 0 M2200178
0179 P006D 015E P XALTSB ADC ALTSUB SUB. TO SET Q=ALT. IF LU IN Q IS DOWN M2200179
0180 P006E 7FFF X ATAB ADC ALTERR ADR OF ERROR WORD BUFFER TABLE M2200180
0181 P006F 0001 Q1SAV NUM 1 INDEX FOR READING IN TO ALTERR TABLE M2200181
0182 P0070 0001 Q2SAV NUM 1 INDEX FOR READING OUT OF ALTERR TABLE M2200182
0183 P0071 0001 HASHLD BSS HASHLD(1) M2200183
0184 P0072 0001 HASRLU BSS HASRLU(1) M2200184
0185 P0073 7FFF X ALOG1 ADC LOG1 M2200185

0187 * MESSAGE OUTPUT AND HANDLING OF DRIVERS THAT M2200187
0188 * HAVE NO ALTERNATE IS DONE AT LEVEL 4 M2200188
    
```

0190	P0074	E8FB	NOALT	LDQ*	Q2SAV	GET NEXT ENTRY FROM ALTERR TABLE	M2200190
0191	P0075	0500		IIN	0	INHIBIT INTERRUPTS	M2200191
0192	P0076	CEFF		LDA*	(ATAB),Q		M2200192
0193	P0077	0112		SAN	NOALTX-*--1	SKIP IF ENTRY FOUND	M2200193
0194			*			OTHERWISE	M2200194
0195	P0078	6817		STA*	FLAGX	CLEAR BUSY FLAG	M2200195
0196	P0079	14EA		JMP-	(DISP)	EXIT	M2200196

0198	P007A	6800	NOALTX	STA	NOHOLD		M2200198
	P007B	J078					
0199	P007C	0400		EIN	0		M2200199
0200	P007D	0F48		ARS	8	SAVE LU	M2200200
0201	P007E	686A		STA*	NOLU		M2200201
0202	P007F	0A00		ENA	0	CLEAR ENTRY FROM TABLE	M2200202
0203	P0080	6EED		STA*	(ATAB),Q		M2200203
0204	P0081	C8EE		LDA*	Q2SAV	UPDATE INDEX TO ALTERR TABLE	M2200204
0205	P0082	09FE		INA	-1		M2200205
0206	P0083	0111		SAN	1	SKIP IF NOT END OF TABLE	M2200206
0207	P0084	CCF9		LDA*	(ATAB)	SIZE OF TABLE	M2200207
0208	P0085	68EA		STA*	Q2SAV		M2200208
0209	P0086	E862		LDQ*	NOLU		M2200209
0210	P0087	CE0B		LDA*	(ALOG1A),Q	SET UP	M2200210
0211	P0088	60FF		STA-	I	BASE PDT IN I	M2200211
0212	P0089	AEE9		LDA*	(ALOG1),Q		M2200212
0213	P008A	000C		AND-	LPMSK+10		M2200213
0214	P008B	0822		TRA	Q	Q = LU OF FIRST ALTERNATE	M2200214
0215	P008C	5CF0		RTJ*	(XALTSB)	SET Q= ALT. IF LU IN Q IS DOWN	M2200215
0216	P008D	0156		SQN	NOA-*--1		M2200216
0217	P008E	1822		JMP*	NO3	NO ALTERNATE ASSIGNED	M2200217

0219	P008F	0001	FLAGX	BZS	FLAGX(1)		M2200219
0220	P0090	0001	HASLJ	BSS	HASLU(1)		M2200220
0221	P0091	0001	HOLDAL	BSS	HOLDAL(1)		M2200221
0222	P0092	7FFF	X ALOG1A	ADC	LOG1A		M2200222
0223	P0093	7FFF	X ALOG2	ADC	LOG2		M2200223

0225			*	THIS SECTION OUTPUTS THE MSG IF THE ALT IS OK			M2200225
0227	P0094	48FC	NOA	STQ*	HOLDAL	SAVE ALTERNATE LU	M2200227
0228	P0095	C808		LDA*	MAS300		M2200228
0229	P0096	8011		EOR-	LPMSK+15		M2200229
0230	P0097	0106		SAZ	NOB		M2200230
0231	P0098	C4FF		LDA-	(I)		M2200231
0232	P0099	6803		STA*	MRINA		M2200232
0233	P009A	E0FF		LDQ-	I	GET PDT ADDRESS	M2200233
0234	P009B	54F4		RTJ-	(SF4)		M2200234
0235	P009C	5200	MRINA	NUM	\$5200	SCHEDULE MAS300 AT DRIVER PL (MASDRV) **MSOS	M2200235
0236	P009D	7FFF	X MAS300	ADC	RELBYQ	RELEASE DRIVERS CORE IF ANY	M2200236
0237	P009E	C84A	NOB	LDA*	NOLU	LU THAT FAILED	M2200237

```

0238 P009F 584A RTJ* CONVRT CONVERT LU TO ASCII AND M2200238
0239 P00A0 6855 STA* HASMS1+1 STORE IN MESSAGE M2200239
0240 P00A1 C852 LDA* NOHOLD ERROR WORD M2200240
0241 P00A2 A00A AND- NZERO-8 M2200241
0242 P00A3 5846 RTJ* CONVRT CONVERT ERROR CODE TO ASCII M2200242
0243 P00A4 6856 STA* HASMS1+6 AND STOR IN MESSAGE M2200243
0244 P00A5 C8EB LDA* HOLDAL ALTERNATE LU M2200244
0245 P00A6 5843 RTJ* CONVRT CONVERT ALTERNATE TO ASCII M2200245
0246 P00A7 6857 STA* HASMS2+2 AND STORE IN MESSAGE M2200246
0247 P00A8 54F4 RTJ- (AMONI) ALTERNATE LU MESSAGE M2200247
0248 P00A9 4CF4 VFD N1/0,N1/1,N5/6,N1/0,N4/15,N4/4 ***MSOS+.CM2200248
0249 P00AA 0074 P ADC NOALT SEARCH FOR MORE ENTRIES ON COMP ***MSOS+.CM2200249
0250 P00AB 0000 NUM 0,$18FC,12 M2200250
P00AC 18FC
P00AD 000C
0251 P00AE 00F4 P ADC HASMS1 ***MSOS+.CM2200251
0252 P00AF 14EA JMP- (DISP) WAIT FOR COMPLETION M2200252
* THIS SECTION IS ENTERED AT LEVEL 4 M2200254
* WHEN NO OPERATIONAL ALTERNATE EXISTS M2200255
0257 P00B0 C838 NO3 LDA* NOLU ***MSOS+.1**M2200257
0258 P00B1 5838 RTJ* CONVRT CONVERT LU TO ASCII AND M2200258
0259 P00B2 6843 STA* NOMES1+1 STORE IN MESSAGE M2200259
0260 P00B3 C840 LDA* NOHOLD M2200260
0261 P00B4 A00A AND- NZERO-8 M2200261
0262 P00B5 5834 RTJ* CONVRT CONVERT ERROR CODE TO ASCII M2200262
0263 P00B6 6844 STA* NOMES1+6 AND STORE IN MESSAGE M2200263
0264 P00B7 54F4 RTJ- (AMONI) TELL THE OPERATOR M2200264
0265 P00B8 4CF4 VFD N1/0,N1/1,N5/6,N1/0,N4/15,N4/4 ***MSOS+.CM2200265
0266 P00B9 0000 ADC 0 M2200266
0267 P00BA 0000 NUM 0,$18FC,7 M2200267
P00BB 18FC
P00BC 0007
0268 P00BD 00F4 P ADC NOMES1 ***MSOS+.CM2200268
* REQUEST ACTION BY THE OPERATOR M2200270
0272 P00BE 0AFF NO2 ENA -0 M2200272
0273 P00BF 6845 STA* BUF M2200273
0274 P00C0 54F4 RTJ- (AMONI) M2200274
0275 P00C1 4CF4 VFD N1/0,N1/1,N5/6,N1/0,N4/15,N4/4 ***MSOS+.CM2200275
0276 P00C2 0000 ADC 0 M2200276
0277 P00C3 0000 NUM 0,$18FC,4 M2200277
P00C4 18FC
P00C5 0004
0278 P00C6 0100 P ADC NOMES2 ***MSOS+.CM2200278

```



```

0280 * GET OPERATOR INPUT VIA COMMENT INPUT MEDIUM M2200280
0282 P00C7 54F4 RTJ- (AMONI) M2200282
0283 P00C8 48F4 VFD N1/0,N1/1,N5/4,N1/0,N4/15,N4/4 ***MSOS+.0 M2200283
0284 P00C9 00CF P ADC N05 ***MSOS4.0 M2200284
0285 P00CA 0000 NUM 0,$18FD,1 M2200285
P00CB 18FD
P00CC 0001
0286 P00CD 0104 P ADC BUF ***MSOS-.0 M2200286
0287 P00CE 14EA JMP- (DISP) M2200287

```

```

0289 * AT THIS TIME, THE LEGAL OPTIONS IN BUF CAN BE M2200289
0290 * 1. RP - REPEAT REQUEST M2200290
0291 * 2. CU - CONTINUE - KEEP DEVICE UP M2200291
0292 * 3. CD - CONTINUE - MARK DEVICE DOWN M2200292
0293 * 4. DU - DELETE JOB - KEEP DEVICE UP M2200293
0294 * 5. DD - DELETE JOB - MARK DEVICE DOWN M2200294
0295 * M2200295
0296 * ANYTHING ELSE CAUSES REPETITION OF THE ACTION M2200296
0297 * PRINTOUT. M2200297

```

```

0299 P00CF 0161 N05 SQP 1 NO IO ERROR ***MSOS +.1** M2200299
0300 P00D0 18ED JMP* N02 IO ERROR OR TIMEOUT, REPEAT ***MSOS +.1** M2200300
0301 P00D1 C833 LDA* BUF CHECK DATA INPUT M2200301
0302 P00D2 9833 SUB* RP M2200302
0303 P00D3 0112 SAN N06--*-1 M2200303
0304 P00D4 1800 JMP A ITS REPEAT M2200304
P00D5 0033
0305 P00D6 8830 N06 ADD* CU M2200305
0306 P00D7 0112 SAN N07--*-1 M2200306
0307 P00D8 1800 JMP B CONTINUE M2200307
P00D9 0043
0308 P00DA 0911 N07 INA $11 M2200308
0309 P00DB 0112 SAN N08--*-1 M2200309
0310 P00DC 1800 JMP C CONTINUE DEVICE DOWN M2200310
P00DD 0048
0311 P00DE 9829 N08 SUB* DU M2200311
0312 P00DF 0112 SAN N09--*-1 M2200312
0313 P00E0 1800 JMP D JOB DELETE M2200313
P00E1 0065
0314 P00E2 0911 N09 INA $11 M2200314
0315 P00E3 0112 SAN N010--*-1 M2200315
0316 P00E4 1800 JMP E JOB DELETE DEVICE DOWN M2200316
P00E5 0073
0317 P00E6 0800 N010 NOP 0 DONT KNOW - TRY AGAIN M2200317
0318 P00E7 18D6 JMP* N02 M2200318

```

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0320 P00E8 0001 NOLU BSS NOLU(1) ***MSOS4.0** M2200320

```

```

0322 *
0323 *
0324 *
0325 *
0326 *

```

```

HEX TO ASCII CONVERSION
A-REG = $00 TO $63 ON ENTRY.
ROUTINE CONVERTS TO DECIMAL
AND RETURNS WITH ASCII CHARS IN A
THE Q-REGISTER IS NOT SAVED

```

```

M2200 322
M2200 323
M2200 324
M2200 325
M2200 326

```

```

0328 P00E9 0000 CONVRT NUM 0 HEX TO ASC CONVERSION
0329 P00EA 0500 IIN 0
0330 P00EB 0C00 ENQ 0
0331 P00EC 3046 DVI- TEN MSB IN A, LSB IN Q
0332 P00ED 0FC8 ALS 8
0333 P00EE 0834 AAQ A
0334 P00EF 8000 ADD =N$3030 TWO ASCII CHARS IN A-REG
P00F0 3030
0335 P00F1 0400 EIN 0
0336 P00F2 1CF6 JMP* (CONVRT)

```

```

M2200 328
M2200 329
M2200 330
M2200 331
M2200 332
M2200 333
M2200 334
M2200 335
M2200 336

```

```

0338 P00F3 0001 NOHOLD BSS NOHOLD(1)
0339 P00F4 4C2C HASMS1 ALF 7,L, FAILED
P00F5 2020
P00F6 2046
P00F7 4149
P00F8 4C45
P00F9 4420
P00FA 2020

```

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M2200 338
M2200 339

```

```

0340 P00FB 2000
0341 P00FC 414C HASMS2 NUM $2000
P00FD 542C ALF 3,ALT,
P00FE 2020
P00FF 2000
0342 P00FF EQU NOMES1 NUM $2000
0343 P0100 00F4 P NOMES1 EQU NOMES1 (HASMS1)
0344 P0101 4143 NOMES2 ALF 3,ACT ION
P0102 4F4E

```

```

M2200 340
M2200 341

```

```

0345 P0103 2000 NUM $2000
0346 P0104 0001 BUF BSS BUF(1)
0347 P0105 5250 RP ALF 1,RP
0348 P0106 0EFB CU NUM $EFB
0349 P0107 0111 DU NUM $111
0350 * THIS ROUTINE PROCESSES THE REPEAT OPTION.

```

```

M2200 342
M2200 343
M2200 344
M2200 345
M2200 346
M2200 347
M2200 348
M2200 349
M2200 350

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0352 P0108 E800 A LDQ NOLU
P0109 FFD7
0353 P010A CE51 LDA* (BLOG1A),Q
0354 P010B 0822 TRA Q
0355 P010C 680E STA* A1 P.D.T. ADDRESS TO Q
0356 P010D C206 LDA- EPTR,Q SCHEDULE DRIVER DIRECTLY
0357 P010E 60FF STA- I REQUEST PARAMETER ADDRESS
0358 P010F E800 LDQ NOLU LOGICAL UNIT
P0110 FFD7

```

```

M2200 352
M2200 353
65*1417 M2200 354
65*1417 M2200 355
65*1417 M2200 356
65*1417 M2200 357
65*1417 M2200 358

```

0359	P0111	0500		IIN 0		65*1417	M2200359
0360	P0112	CE4A		LDA* (BLOG2),Q	RETHREAD THIS REQUEST	65*1417	M2200360
0361	P0113	6102		STA- PT,I	TO THE TOP OF THE THREAD	65*1417	M2200361
0362	P0114	C0FF		LDA- I		65*1417	M2200362
0363	P0115	0400		EIN 0		65*1417	M2200363
0364	P0116	6E46		STA* (BLOG2),Q		65*1417	M2200364
0365	P0117	EE44		LDQ* (BLOG1A),Q	PYSTAE ADDRESS TO Q	65*1417	M2200365
0367	P0118	54F4	A0	RTJ- (AMONI)	REPEAT THE REQUEST		M2200367
0368	P0119	20C0		ADC \$2000	INDIRECT	***MSOSL	M2200368
0369	P011A	0000	A1	NUM 0			M2200369
0370	P011B	1C42		JMP* (ANOALT)	RETURN TO SEARCH ALTERR FOR MORE ENTRIES		M2200370
0372			*		THIS ROUTINE IS ENTERED VIA THE CONTINUE OPTION		M2200372
0374	P011C	E800	B	LDQ NOLU			M2200374
	P011D	FFCA					
0375	P011E	CE3D		LDA* (BLOG1A),Q			M2200375
0376	P011F	60FF		STA- I			M2200376
0377	P0120	54B6		RTJ- (COMP)	COMPLETE THE REQUEST		M2200377
0378	P0121	C0FF		LDA- I			M2200378
0379			*			*****	M2200379
0380	P0122	68F7		STA* A1			M2200380
0381	P0123	E0FF		LDQ- I	Q = ADR OF P.D.T.		M2200381
0382	P0124	18F3		JMP* A0	SCHEDULE THE DRIVER INITIATOR		M2200382
0384			*		THIS ROUTINE IS ENTERED TO MARK DEVICE DOWN AND		M2200384
0385			*		REPORT THE ERROR TO ALL CALLERS.		M2200385
0387	P0125	F8C2	C	LDQ* NOLU	LOGICAL UNIT NO. TO Q	126*5051*****	
0388	P0126	0500		IIN 0			M2200388
0389			*		4 CARDS DELETED	126*5051*****	
0390	P0127	CE34		LDA* (BLOG1A),Q			M2200393
0391	P0128	60FF		STA- I			M2200394
0392	P0129	C109		LDA- ESTAT1,I	SCHEDULE ALL COMPLETION		M2200395
0393			*		ADDRESSES IN THE THREAD		M2200396
0394	P012A	68C0		STA NOHOLD	WITH ERROR INDICATORS		M2200397
	P012B	FFC7					
0395	P012C	54B6	C1	RTJ- (COMP)			M2200398
0396	P012D	54B5		RTJ- (FNR)			M2200399
0397	P012E	1805		JMP* C2			M2200400
0398	P012F	C800		LDA NOHOLD			M2200401
	P0130	FFC2					
0399	P0131	6109		STA- ESTAT1,I			M2200402
0400	P0132	18F9		JMP* C1			M2200403
0401		0133	P C2	EQU C2(*)		126*5051*****	

0402	P0133	E8B4		LDQ*	NOLU	LOGICAL UNIT NO. TO Q	126*5051	*****
0403	P0134	CE26		LDA*	(BLOG1),Q	TURN ALTERNATE INDICATOR ON.	126*5051	*****
0404	P0135	A040		AND-	ZROBIT+13	THIS EFFECTIVELY MARKS THE	126*5051	*****
0405	P0136	B030		EOR-	ONEBIT+13	DEVICE DOWN SINCE THERE	126*5051	*****
0406	P0137	6E23		STA*	(BLOG1),Q	IS NO ALTERNATE.	126*5051	*****
0407	P0138	C800		LDA	MAS300		132*5051	*****
	P0139	FF63						
0408	P013A	6809		STA*	MRIN+1		M2200	405
0409	P013B	B011		EOR-	LPMSK+15		M2200	406
0410	P013C	0108		SAZ	C3-**-1	SKIP IF NOT IN CORE.	M2200	407
0411	P013D	C4FF		LDA-	(I)	(A) = 1ST WORD OF PDT.	M2200	408
0412	P013E	6804		STA*	MRIN		M2200	409
0413	P013F	0814		TRQ	A	SAVE Q	**MSOS	4.1**M2200
0414	P0140	E0FF		LDQ-	I	GET PDT ADDRESS	**MSOS	4.1**M2200
0415	P0141	54F4		RTJ-	(\$F4)			M2200
0416	P0142	5200	MRIN	NUM	\$5200	SCHEDULE MAS300	***MSOS	4.1**M2200
0417	P0143	0000	*	ADC	*-*	PROGRAM MODIFIED		M2200
0418						***** IN MMEXC *****	**MSOS	4.1**M2200
0419	P0144	0822		TRA	Q	RESTORE Q	**MSOS	4.1**M2200
0420	P0145	1C18	C3	JMP*	(ANOALT)			M2200

0422			*			THIS ROUTINE IS ENTERED TO KILL A JOB ON THE	M2200	419
0423			*			BASIS OF THE ERROR. THE DEVICE IS LEFT UP.	M2200	420

0425	P0146	5802	D	RTJ*	JKSJB	SCHEDULE JBKILL	M2200	422
0426	P0147	18D4		JMP*	B	GO TO CU ROUTINE	M2200	423

0428	P0148	0000	JKSUB	NUM	0		M2200	425
0429	P0149	C400	X	LDA	UNPIO	DU AND DD ONLY LEGAL	**MSOS	4.1**M2200
	P014A	7FFF	X					M2200
0430	P014B	8400	X	ADD	UNPIOF	FOR UNPROTECTED I/O REQUESTS	**MSOS	4.1**M2200
	P014C	7FFF	X					M2200
0431	P014D	0112		SAN	D1-**-1	IF JOB PROCESSOR NOT IN, GO	M2200	428
0432	P014E	1800	D0	JMP	N02	BACK TO ACTION TYPEOUT	M2200	429
	P014F	FF6E						
0433	P0150	C400	X	LDA	SWTCH	IS LIBEDT IN	M2200	430
	P0151	7FFF	X					
0434	P0152	C101		SAZ	1	NO	M2200	431
0435	P0153	18FA		JMP*	D0		M2200	432
0436	P0154	54F4		RTJ-	(AMONI)	SCHEDULE JOBKIL AT LEVEL 2	M2200	433
0437	P0155	5202		NUM	\$5202		M2200	434
0438	P0156	7FFF	X	ADC	JBCNCL		M2200	435
0439	P0157	1CF0		JMP*	(JKSUB)	RETURN	M2200	436

0441			*			THIS ROUTINE IS ENTERED WHEN THE DEVICE IS TO	M2200	438
0442			*			BE SET DOWN AND THE JOB DELETED.	M2200	439

0444 P0158 58EF E RTJ* JKSUB
 0445 P0159 18CB JMP* C

SCHEDULE JBKILL
 GO TO DU ROUTINE

M2200 441
 M2200 442

0447 P015A 0073 X BLOG1 ADC LOG1
 0448 P015B 0092 X BLOG1A ADC LOG1A
 0449 P015C 0093 X BLOG2 ADC LOG2
 0450 P015D 0074 P ANOALT ADC NOALT

M2200 444
 M2200 445
 M2200 446
 M2200 447

0452 0000 P DEVERR EQU DEVERR(ALTDEV)
 0453 00E9 P EQU CONVER(CONVRT)

M2200 449
 M2200 450

```

0456 * THIS SUBROUTINE IS ENTERED TO DETERMINE
0457 * IF A GIVEN LOGICAL UNIT (IN Q) IS OPERATIVE
0458 * RETJRN IS WITH Q = INITIAL LU OR ITS FIRST
0459 * OPERATIVE ALTERNATE.
0460 * IF THE INITIAL LU IS MARKED DOWN (INOPERATIVE)
0461 * 1) Q = LU OF THE OPERATIVE ALTERNATE, OR
0462 * 2) Q = 0 IF NO ALTERNATE IS ASSIGNED, OR
0463 * 3) Q = DUMALT(0 OR DUMMY) IF ALL ALTERNATES ARE DOWN
M2200 453
M2200 454
M2200 455
M2200 456
M2200 457
M2200 458
M2200 459
M2200 460

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0465 P015E 0000 ALTSUB NUM 0 Q = INITIAL LU ON ENTRY, I IS SAVED M2200 462
0466 P015F 0500 IIN 0 M2200 463
0467 P0160 0A0A ENA NN SET INITIAL VALUE OF COUNT M2200 464
0468 P0161 6810 STA* COUNT M2200 465
0469 P0162 014B LOOP SQZ EXIT*-1 EXIT IF NO ALT LU EXISTS, Q=0 M2200 466
0470 P0163 CEF6 LDA* (BLOG1),Q M2200 467
0471 P0164 CFC2 ALS 2 M2200 468
0472 P0165 0128 SAP EXIT*-1 EXIT IF LU Q IS OPERATIVE M2200 469
0473 P0166 0F42 ARS 2 M2200 470
0474 P0167 A00C AND- LPMSK+10 M2200 471
0475 P0168 0822 TRA Q Q = ALTERNATE LU M2200 472
0476 P0169 C808 LDA* COUNT M2200 473
0477 P016A 09FE INA -1 M2200 474
0478 P016B 6806 STA* COUNT M2200 475
0479 P016C 0113 SAN OK*-1 CONTINUE IF MAX NO OF ALTERNATES NOT EXCEEDED M2200 476
0480 P016D E805 LDQ* M OTHERWISE SET Q = 0, OR DUMMY LU M2200 477
0481 P016E 0400 EXIT EIN 0 M2200 478
0482 P016F 1CEE JMP* (ALTSUB) M2200 479
0483 P0170 18F1 OK JMP* LOOP M2200 480
0484 P0171 0000 COUNT NUM 0 M2200 481
0485 P0172 7FFF X M ADC DUMALT LU TO BE USED IF ALL ALTERNATES ARE DOWN M2200 482
0486 END M2200 483

```

PGM= 0173 (371) COM = 0000 (0) DAT = 0000 (0)

EQUIVALENCES

DEF. LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0000	I	00FF (000255)	0079, 0102, 0113, 0118, 0124, 0211, 0231, 0233, 0357, 0362, 0370, 0370, 0381, 0391, 0-11, 0-1-
0021	NN	000A (000010)	0467
0023	FNR	00B5 (000181)	0396
0024	LEVEL	000E (000014)	0050
0025	NZERO	0012 (000018)	0241, 0261
0025	DISP	00EA (000234)	0052, 0071, 0170, 0176, 0196, 0252, 0287
0026	TEN	0046 (000070)	0331
0026	ZROBIT	0033 (000051)	0130, 0+04
0026	COMP	00B8 (000182)	0377, 0395
0027	AMONI	00F4 (000244)	0049, 0154, 0163, 02-7, 026+, 0274, 0282, 0367, 0-30
0027	LPMSK	0002 (000002)	0213, 0229, 0+09, 047+
0027	ONEBIT	0023 (000035)	0059, 0131, 0405
0029	ELU	0005 (000005)	0126, 0146, 0153
0029	EPTR	0006 (000006)	0112, 0356
0029	ESTAT1	0009 (000009)	0392, 0399
0031	PT	0002 (000002)	0117, 0361

SYMBOLS

DEF.LINE	NAME	ADDRESS	REFERENCED AT LINE NUMBER
0007	ADEV	0000	0007
0010	DEVERR	0000	0010
0010	ALTDEV	0000	0010, 0452
0011	CONVER	00E9	0011
0014	ALTSUB	015E	0014, 0179, 0482
0057	ALTGO	0004	0051
0062	ALTO	0008	0057
0068	ALT1	000D	0060
0072	ALT2	0011	0070
0079	ALT5	0016	0074
0104	HAS4	003C	0097
0135	HAS3	0047	0140
0141	HAS3A	004D	0137
0143	HAS3B	004E	0139
0149	HAS6	0054	0147
0156	HAS7	005A	0092, 0099, 0151
0158	SCHNC	005B	0103, 0148
0167	SCHNX	0062	0159
0178	SAVERR	006C	0068, 0080, 0085, 0088, 0135, 0141, 0168
0179	XALTSB	006D	0083, 0096, 0215
0180	ATAB	006E	0073, 0134, 0138, 0171, 0174, 0192, 0203, 0207
0181	Q1SAV	006F	0072, 0167, 0175
0182	Q2SAV	007C	0190, 0204, 0208
0183	HASHLD	0071	0084, 0089, 0098, 0110, 0122
0184	HASRLU	0072	0082, 0114, 0152
0185	ALOG1	0073	0091, 0095, 0100, 0129, 0132, 0212
0190	NOALT	0074	0165, 0249, 0450
0198	NOALTX	007A	0193
0219	FLAGX	008F	0158, 0161, 0195
0220	HASLU	0090	0104, 0128, 0143
0221	HOLDAL	0091	0227, 0244
0222	ALOG1A	0092	0101, 0111, 0123, 0144, 0210
0223	ALOG2	0093	0116, 0119
0227	NOA	0094	0216
0235	MRI NA	009C	0232
0236	MAS300	009D	0228, 0407
0237	NOB	009E	0230
0257	NO3	00BB	0217
0272	NO2	00BE	0300, 0318, 0432
0299	NO5	00CF	0284
0305	NO6	00D6	0303

0308 NO7 000DA
 0311 NO8 000DE
 0314 NO9 000EN
 0317 NO10 000FN
 0320 NO11 000GN
 0328 CONVRT 000HN
 0338 NOHOLD 000IN
 0339 HASMS1 000JN
 0341 HASMS2 000KN
 0343 NOMES1 000LN
 0344 NOMES2 000MN
 0346 RUF 0104
 0347 RUF 0105
 0348 CU 0106
 0349 DU 0107
 0352 A 0108
 0367 AC 0118
 0369 A1 011A
 0374 B 011C
 0387 C 0125
 0395 C1 012C
 0401 C2 0133
 0416 MRIN 0142
 0420 C3 0145
 0425 D 0146
 0428 JKSUB 0148
 0432 D0 014E
 0433 D1 0150
 0444 E 0158
 0447 BLOG1 015A
 0448 BLOG1A 015B
 0449 BLOG2 015C
 0450 ANOALT 015D
 0469 LOOP 0162
 0481 EXIT 016E
 0483 OK 0170
 0484 COUNT 0171
 0485 M 0172

0306
 0309
 0312
 0315
 0201, 0209, 0237, 0257, 0352, 0358, 0374, 0387, 0402
 0238, 0242, 0245, 0258, 0262, 0338, 0453
 0198, 0240, 0267, 0394, 0398
 0239, 0243, 0251, 0343
 0224, 0263, 0268
 0278
 0273, 0286, 0301
 0302
 0305
 0311
 0304
 0382
 0355, 0380
 0307, 0426
 0310, 0445
 0400
 0397
 0408, 0412
 0410
 0313
 0425, 0439, 0444
 0435
 0431
 0316
 0403, 0406, 0470
 0353, 0365, 0375, 0390
 0360, 0364
 0370, 0420
 0483
 0469, 0472
 0479
 0468, 0476, 0478
 0480

EXTERNALS

DEF.LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0012	JBCNCL	0156	0438
0013	ALTERR	006E	0180
0015	DUMALT	0172	0485
0016	LOG1	015A	0185, 0447
0016	LOG1A	015B	0222, 0448
0016	LOG2	015C	0223, 0449
0017	RELBYQ	009D	0236
0018	SWTCH	0151	0433
0019	UNPIO	014A	0429
0019	UNPIOF	014C	0430
0020	SYFAIL	0015	0076

*** ALPHABETICAL SORT OF SYMBOLS ***

A	0352	A0	0367	A1	0369	ADEV	0007	ALOG1	0185	ALOG1A	0222	ALOG2	0223	ALT	0062	ALT1	0066
ALT2	0072	ALT5	0079	ALTDEV	0010	ALTERR	0013	ALTGO	0057	ALTSUB	0014	AMONI	0027	ANGALT	0030	ATAB	0066
B	0374	BLOG1	0447	BLOG1A	0448	BLOG2	0449	BUF	0346	C	0387	C1	0393	C2	0411	C3	0420
COMP	0026	CONVER	0011	CONVRT	0328	COUNT	0484	CU	0348	D	0425	DL	0432	D1	0433	JEVERR	0010
DISP	0025	DU	0349	DUMALT	0015	E	0444	ELU	0029	EPTR	0029	ESTAT1	0029	EXIT	0481	FLAGX	0219
FNR	0023	HAS3	0135	HAS3A	0141	HAS3B	0143	HAS+	0104	HAS6	0149	HAS7	0156	HASHLD	0183	HASLU	0220
HASMS1	0339	HASMS2	0341	HASRLU	0184	HOLDAL	0221	I	0000	JBCNCL	0012	JKSUB	0428	LEVEL	0021	LOG1	0016
LOG1A	0016	LOG2	0016	LOOP	0469	LPMSK	0027	M	0485	MAS300	0236	MRIN	0410	MRINA	0235	NV	0021
NO10	0317	NO2	0272	NO3	0257	NO5	0299	NO6	0305	NO7	0308	NO8	0311	NO9	0314	NOA	0227
NOALT	0190	NOALTX	0198	NOB	0237	NOHOLD	0338	NOLU	0320	NOMES1	0343	NOMES2	0344	NZERO	0022	OK	0183
ONEBIT	0027	PT	0031	Q1SAV	0181	Q2SAV	0182	RELBYQ	0017	RP	0347	SAVERR	0178	SCHNC	0158	SCHNX	0187
SWTCH	0018	SYFAIL	0020	TEN	0026	UNPIO	0019	UNPIOF	0019	XALTSB	0179	ZROBIT	0026				

0001
0002
0003
0004
0005

* NAM RDISP DECK-ID M23 MSOS 5.0
* SCHEDULER-DISPATCHER FOR REENRANT FORTRAN LIBRARY
* MASS STORAGE OPERATING SYSTEM VERSION 5.0
* SMALL SYSTEMS DIVISION, LA JOLLA, CALIFORNIA
* COPYRIGHT CONTROL DATA CORPORATION 1970

SUMMARY-11 M2300001
M2300002
M2300003
M2300004
M2300005

0007
0008
0009
0010
0011
0012
0013
0014
0015
0016

* THIS VERSION OF THE SCHEDULER/DISPATCHER IS THE SAME **MSOS 4.1**M2300007
* AS THE NDISP PROGRAM WITH THE ADDITIONAL CAPABILITY **MSOS 4.1**M2300008
* TO SAVE OR RESTORE THE FORTRAN SCRATCH AREA (\$05 TO **MSOS 4.1**M2300009
* \$E5) AND THE FORTRAN LIBRARY TEMPORARY CELLS THAT **MSOS 4.1**M2300010
* MUST BE SAVED FOR REENTRANCY. THIS PROCESS OCCURS **MSOS 4.1**M2300011
* ON CHANGES OF PRIORITY LEVEL WHICH WOULD GIVE CONTROL **MSOS 4.1**M2300012
* TO ANOTHER FORTRAN USER. THE FMASK AND FLIST **MSOS 4.1**M2300013
* SECTIONS OF SYSDAT MUST BE PRESENT IN THE SYSTEM. **MSOS 4.1**M2300014

0018
0019
0020
0021
0022
0023
0024
0025

0000 P

ENT RDISP M2300018
EQU RDISF(*) M2300019
ENT DISPXX,SCHTOP M2300020
ENT T9 M2300021
ENT T18 **MSOS 4.1**M2300022
ENT T19 ***MSOS 4.1**M2300023
EXT SYFAIL SITE FAIL LOCATED IN SYSDAT (\$18FF) M2300024
EXT SCHERR SCHEDULER ERROR ENTRY IN TRVEC **MSOS 4.1**M2300025

0027
0028
0029
0030
0031
0032
0033
0034
0035
0036
0037
0038
0039

* EXT SCHSTK,SCHLNG M2300027
* FLIST (0) CONTAINS LENGTH OF LIST M2300028
EXT FLIST LIST OF LOCATIONS TO BE SAVED ON LEVEL CHANGE M2300029
* EXT FMASK MASK CONTIANING BITS SET FOR EACH LEVEL USING M2300030
* PSUEDO REENRANT CODE. M2300031
EXT SAVLU,CKTHRD *+33*** M2300032
EXT K65COR **MSOS 4.1**M2300033
EXT E17811 1781-1 WES M2300034
EXT F17811 1781-1 OPERATING MODE M2300035
EQU SV781L(\$08) LOCATION USED TO SAVE 1781-1 REGISTERS M2300036
EQU RCSCHD(9) M2300037
EQU P1SCHD(18) REQ CODE FOR SYS DIRECTORY FROM PART 1 M2300038
EQU XA(1),XI(2),XR(3),XPL(4),XL(5) M2300039

0008
0009
0012
0001
0002
0003
0004
0005
0001
0002
0003
0004
0005
0006
0007

0040

EQU PC(1),PT(2),PQ(3) M2300040

0041

EQU VI(2),VR(3),VPL(4),VPTR(5) M2300041

0042

EQU VTPE(6),VTMP(7) M2300042

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0043      0J02      EQU LPMSK($2),NZERO($12),ZERO($22),ONEBIT($23)      M2300043
          0J012
          0022
          0023
0044      00BB      EQU AVOLA($BB),AVOLR($BA)      M2300044
          00BA
0045      00EF      EQU PRLVL($EF),TOMPT($B4),AREQXT($B9)      M2300045
          00B4
          00B9
0046      00B8      EQU COUNT($B8),AMASKT($B7)      M2300046
          00B7
0047      00C5      EQU FCOM($C5),F1($E5-FCOM+1)      M2300047
          0021
          00EB
0048      EQU ASYSR($E8)      M2300048
0049      EQU COMEXT($104)      M2300049
0050      M2300050
0051      * UPON COMPLETION OF A PROGRAM, THE DISPATCHER      M2300051
0052      * DETERMINES THE PROGRAM OF HIGHEST PRIORITY      M2300052
0053      * WAITING FOR EXECUTION. IT MAY EITHER BE IN THE      M2300053
0054      * INTERRUPT STACK OR THE SCHEDULER STACK.      M2300054
0055      *
0056      P0000 FFFF      SHTOP NUM $FFFF      SCHEDULE STACK TOP      M2300055
0057      P0001 5800      DISFXX RTJ RESRTN      RESTORE COMM REGION IF A FORTRAN USER HAS      M2300056
          P0002 0170      JUST TERMINATED.      M2300057
          *
0058      P0003 E0B8      LDQ- COUNT      M2300058
0059      P0004 0DFA      INQ -XL      ADJUST STACK      M2300059
0060      P0005 0500      IIN 0      M2300060
0061      P0006 C204      LDA- XPL,Q      M2300061
0062      P0007 0FC1      ALS 1      M2300062
0063      P0008 0F41      ARS 1      REMOVE BIT 15      M2300063
0064      P0009 60EF      STA- PRLVL      M2300064
0065      P000A C8F5      LDA* SHTOP      IF SCHEDLER STACK IS      M2300065
0066      P000B 0900      INA 0      M2300066
0067      P000C 0107      SAZ RESINT-* -1      EMPTY, CHECK INT. STACK      M2300067
0068      P000D CCF2      LDA* (SHTOP)      LOAD FIRST WORD      M2300068
0069      P000E A006      AND- LPMSK+4      ISOLATE PRIORITY      M2300069
0070      P000F 0821      TRA M      SAVE TEMP. IN M      M2300070
0071      P0010 90EF      SUB- PRLVL      M2300071
0072      P0011 0102      SAZ RESINT-* -1      GO TO INTERRUPT STACK      M2300072
0073      P0012 0131      SAM RESINT-* -1      M2300073
          * GO TO SCHEDULER STACK REMOVAL      M2300074
0074      *
0075      *
0076      P0013 1812      JMP* SCHSTC      M2300075
          *
0077      *
0078      * HIGHEST PROGRAM IS IN THE INTERRUPT STACK.      M2300076
0079      *
0080      *
0081      * IF DISPATCHER IS RETURNING CONTROL TO AN INTERRUPTED      M2300077
0082      * PSEUDO REENRANT LEVEL, COMM REGION MUST BE RESTORED BEFORE      M2300078
0083      * LEVEL CHANGE      M2300079
0084      RESINT LDA- XR,Q      M2300080
0085      P0014 C203      STA* (ACOMEX)      M2300081
0086      P0015 6C3A      LDA- XI,Q      RESTORE I      M2300082
          P0016 C202      STA- I      M2300083
          P0017 60FF      M2300084
          M2300085
          M2300086

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0087 *
0088 P0018 C204 LDA- XPL,Q 7 CARDS DELETED
0089 P0019 A032 AND- ONEBIT+15 GET PRIORITY LEVEL + OV
0090 P001A 01A0 SOV 0 CLEAR OVERFLOW FAULT
0091 P001B 0102 SAZ RESA--1
0092 P001C 0A10 ENA 16
0093 P001D 8011 ADD- LPMSK+15
0094 P001E 40B8 RESA STQ- COUNT RESTORE TOP OF INTERRUPT STACK
0095 P001F C201 LDA- XA,Q RESTORE VALUE OF A
0096 P0020 E0EF LDQ- PRLVL GET NEW PRIORITY LEVEL
0097 P0021 E6B7 LDQ- (AMASKT),Q RESTORE MASK
0098 P0022 0811 TRQ M
0099 P0023 E4B8 LDQ- (COUNT) RESTORE Q
0100 P0024 0E04 EXI COMEXT-$100
0101 *
0102 * HIGHEST PROGRAM IS IN THE SCHEDULER THREAD.
0103 *
0104 P0025 080A SCHSTC TRM Q PRIORITY TO Q
0105 P0026 40EF STQ- PRLVL SET NEW PRIORITY
0106 P0027 C6B7 LDA- (AMASKT),Q AND MASK
0107 P0028 0821 TRA M
0108 P0029 E8D6 LDQ* SHTOP STORE NEW POINTER
0109 P002A C202 LDA- PT,Q TOP OF SCHEDLER
0110 P002B 68D4 STA* SHTOP THREAD
0111 P002C 40FF STQ- I
0112 P002D 5800 RTJ SAVE
0113 P002E 0103
0114 P002F 0500 IIN 0
0115 P0030 E0FF LDQ- I
0116 P0031 0814 TRQ A TEST IF PRIMARY SCHEDULER
0117 P0032 981E SUB* ASCHD CALL WAS MADE.
0118 P0033 0138 SAM SCHSEC--1
0119 P0034 981D SUB* ASCLNG
0120 P0035 0126 SAP SCHSEC--1
0121 P0036 C0B4 LDA- TOMPT IF PRIMARY CALL RELEASE
0122 P0037 6202 STA- PT,Q STACK POSITION AND PLACE
0123 P0038 40B4 STQ- TOMPT ON EMPTY THREAD.
0124 P0039 C201 LDA- PC,Q LOAD ABSOLUTE ADDRESS
0125 P003A 6C15 STA* (ACOMEX) STORE INTO COMEXT
0126 P003B 1811 JMP* SCHXIT
0127 P003C C622 SCHSEC LDA- (ZERO),Q TEST IF ABSOLUTE OR
0128 P003D A031 AND- ONEBIT+14
0129 P003E 0102 SAZ SCHA--1
0130 P003F C201 LDA- PC,Q
0131 P0040 1809 JMP* SCH1A
0132 P0041 C622 SCHA LDA- (ZERO),Q
0133 P0042 A02B AND- ONEBIT+8
0134 P0043 0101 SAZ SCH1--1
0135 P0044 0814 TRQ A
0136 P0045 A011 SCH1 AND- LPMSK+15
0137 P0046 8032 ADD- ONEBIT+15
0138 P0047 8201 ADD- PC,Q
0138 P0048 A011 AND- LPMSK+15 ADD REL. ADDRESS OR IF

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M2300087
**MSOS +.CM2300088
**MSOS +.CM2300089
**MSOS +.CM2300090
**MSOS +.CM2300091
**MSOS +.CM2300092
**MSOS +.CM2300093
**MSOS +.CM2300094
**MSOS +.CM2300095
**MSOS +.CM2300096
M2300097
M2300098
M2300099
M2300100
M2300101
M2300102
M2300103
M2300104
M2300105
M2300106
M2300107
M2300108
M2300109
M2300110
M2300111
M2300112
M2300113
M2300114
M2300115
M2300116
M2300117
M2300118
M2300119
M2300120
M2300121
M2300122
M2300123
M2300124
M2300125
M2300126
**MSOS +.CM2300127
**MSOS +.CM2300128
**MSOS +.CM2300129
**MSOS +.CM2300130
**MSOS +.CM2300131
M2300132
M2300133
M2300134
M2300135
M2300136
M2300137
M2300138

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0139 P0049 6C06 SGH1A STA* (ACOMEX)
0140 P004A 0844 CLR A
0141 P004B 6202 STA- PT,Q
0142 P004C 0814 SCHXIT TRQ A
0143 P004D E203 LDQ- PQ,Q
0144 P004E 0E04 EXI COMEXT-$100
0145 P004F 0104 ACOMEX ADC COMEXT
0146 P0050 7FFF X ASCHD ADC SCHSTK
0147 P0051 7FFF X ASCLNG ADC SCHLNG

                                SCHED. STACK LOCATION
                                SCHED. STACK LENGTH LOC.

0149 *
0150 *
0151 *
0152 *
0153 *
0154 *
0155 *
0156 *
0157 *
0158 *
0159 *
0160 *
0161 P 0052 EQU T18(*)
0162 P0053 C822 T9 TRA Q
0163 P0054 C108 LDA- 8,I
0164 P0055 0132 SAM SCHD1-* -1
0165 P0056 D103 RAO- VR,I
0166 P0057 D103 RAO- VR,I
0167 P0058 C106 SCHD1 LDA- VTPE,I
0168 P0059 6107 STA- VTMP,I
0169 P005A C104 LDA- VPL,I
0170 P005B 6106 STA- VTPE,I
0171 P005C A006 AND- LPMSK+4
0172 P005D 6104 STA- VPL,I
0173 P005E C106 LDA- VTPE,I
0174 P005F 0F49 ARS 9
0175 P0060 A007 AND- LPMSK+5
0176 P0061 09ED INA -P1SCHD
0177 P0062 0105 SAZ SO-1
0178 P0063 C107 LDA- VTMP,I
0179 P0064 0125 SAP S1-* -1
0180 P0065 C106 LDA- VTPE,I
0181 P0066 A031 AND- ONEBIT+14
0182 P0067 C107 SAN S1-* -1
0183 P0068 1843 SO LDA- VTMP,I
0184 P0069 C0EF S1 JMP* DIRCAL
0185 P006A 9104 SUB- VPL,I
0186 P006B 0122 SAP S2-* -1
0187 P006C 1800 JMP HILVL
0188 P006D 008F
0189 P006E C106 S2 LDA- VTPE,I
0190 P006F 0F49 ARS 9

```

ZERO INTO THREAD
COMPLETION INDICATION
PASS POINTER TO CALL IN A
PASS,Q

SCHDLE REQUEST PROCESSOR (T9)

ON ENTRY A POINTER TO THE PARAMETER
LIST MUST BE IN THE A REGISTER

IF THE SIGN BIT OF THE POINTER
IS ONE, THE REFERENCE IS INDIRECT.

SKIP IF INDIRECT REQUEST

WAS INDIRECT

GET WORD TWO
SAVE
GET WORD ONE
TEMPORARILY AND STORE
PRIORITY OF REQUEST

MASK REQUEST CODE
CHECK IF SYS DIR REQ FROM PART 1

GET WORD TWO
REQUEST WORD

WORD TWO
JUMP IF DIRECTORY CALL
IF REQ PRIORITY HIGHER
THAN CURRENT PRIORITY
GO TO HILVL

REQUEST WORD
A PRIMARY

**MSOS +.0M2300139
M2300140
M2300141
M2300142
M2300143
M2300144
M2300145
M2300146
M2300147
M2300149
M2300150
M2300151
M2300152
M2300153
M2300154
M2300155
M2300156
M2300157
M2300158
M2300159
M2300160
**MSOS +.0M2300161
M2300162
**MSOS +.0M2300163
**MSOS +.0M2300164
M2300165
M2300166
MSOS +.1M2300167
MSOS +.1M2300168
MSOS +.1M2300169
M2300170
M2300171
M2300172
MSOS +.1M2300173
**MSOS +.0M2300174
**MSOS +.0M2300175
**MSOS +.0M2300176
M2300177
MSOS +.1M2300178
M2300179
MSOS +.1M2300180
**MSOS +.0M2300181
**MSOS +.0M2300182
MSOS +.1M2300183
**MSOS +.0M2300184
M2300185
M2300186
M2300187
**MSOS +.0M2300188
MSOS +.1M2300189
M2300190

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0191 P0070 A007 AND- LPMSK+5
0192 P0071 09F6 INA -RCSCHD CALL
0193 P0072 0102 SAZ SCH2--*-1 GO
0194 P0073 0500 IIN 0 TO
0195 P0074 181C JMP* SCHED2 SCHED2
0196
0197
0198
0199
0200
0201 P0075 C106 SCH2 LDA- VTPE,I REQUEST WORD BIT 14 **MSOS 4.1**
0202 P0076 A031 AND- ONEBIT+14 **MSOS 4.0M
0203 P0077 011B SAN ABS--*-1 **MSOS 4.UM
0204 P0078 C106 LDA- VTPE,I REQUEST WORD BIT 8 **MSOS 4.1**
0205 P0079 A02B AND- ONEBIT+8
0206 P007A 0108 SAZ ABS--*-1 SKIP ON ABS CALL
0207 P007B 8106 EOR- VTPE,I **MSOS 4.1**
0208 P007C 6106 STA- VTPE,I
0209 P007D 0814 TRQ A
0210 P007E A011 AND- LPMSK+15
0211 P007F 8032 ADD- ONEBIT+15
0212 P0080 8107 ADD- VTMP,I ADD REL COMPLETION **MSOS 4.1**
0213 P0081 A011 AND- LPMSK+15
0214 P0082 6107 STA- VTMP,I
0215 P0083 0500 ABS IIN 0
0216 P0084 E0B4 LDQ- TOMPT FIND EMPTY IN STACK
0217 P0085 0D00 INQ 0
0218 P0086 0152 SQN S3--*-1
0219 P0087 5400 X RTJ+ SYFAIL SCHEDULER STACK HAS OVERFLOWED - HANG
0220 P0088 7FFF X
0221 P0089 C202 S3 LDA- PT,Q
0222 P008A 60B4 STA- TOMPT
0223 P008B 4105 STQ- VPTR,I STORE NEW POINTER TO
0224 P008C C106 LDA- VTPE,I PARAMETER LIST
0225 P008D 6622 STA- (ZERO),Q
0226 P008E C107 LDA- VTMP,I
0227 P008F 6201 STA- PC,Q
0228 P0090 C4FF SCHED2 LDA- (I) STORE Q
0229 P0091 6203 STA- PQ,Q
0230
0231
0232
0233 P0092 0500 IIN 0
0234 P0093 E000 LDQ =XSCHTOP POINTER TO SCHTOP IN Q
0235 P0094 0000 P
0236 P0095 0DFD INQ -2
0237 P0096 4106 THRED1 STQ- VTPE,I STORE POINTER
0238 P0097 C202 LDA- PT,Q POINTER TO NEXT ENTRY
0239 P0098 0900 INA 0
0240 P0099 0106 SAZ THREAD
0241 P009A 0822 * TRA Q THREAD INTO Q

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M2300191
M2300192
M2300193
M2300194
M2300195
M2300196
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M2300239
M2300240
M2300241

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0293 P00C5 A007 AND- LPMSK+5
0294 P00C6 010C SAZ MASCAL-*--1 GO TO DIRECTORY CALL
0295
0296
0297
0298
0299 P00C7 0804 SET A
0300 P00C8 6202 STA- PT,Q
0301 P00C9 0400 EIN 0
0302 P00CA C0EF LDA- PRLVL
0303 P00CB 9104 SUB- VPL,I
0304 P00CC 0125 SAP S5-*--1
0305 P00CD C622 LDA- (ZERO),Q SAVE WORD 0 OF DIRECTORY ENTRY
0306 P00CE 6106 STA- VTPE,I
0307 P00CF C201 LDA- PC,Q SAVE SCHEDULED ADDRESS
0308 P00D0 6107 STA- VTMP,I
0309 P00D1 182B JMP* HILVL
0310 P00D2 18ED JMP* SCHED2
0311
0312
0313
0314 P00D3 C4FF MASCAL LDA- (I)
0315 P00D4 6104 STA- VPL,I SAVE Q TEMP IN VOLATILE
0316 P00D5 5400 X RTJ CKTHRD CHECK THREAD - BUSY, REJECT REQUEST (Q15=1)
0317 P00D6 7FFF X
0318 P00D7 C104 LDA- VPL,I
0319 P00D8 6203 STA- 3,Q MOVE PARAM TO DIRECTORY SLOT 3
0320 P00D9 C622 LDA- (ZERO),Q
0321 P00DA A000 AND =N&F0 SAVE REQ PRIORITY
0322 P00DB 00F0
0323 P00DC 6104 STA- VPL,I SET UP REQUEST PRIORITY IN VOLATILE
0324 P00DD C622 LDA- (ZERO),Q
0325 P00DE A031 AND- ONEBIT+14
0326 P00DF 0102 SAZ MASCO-*--1
0327 P00E0 1400 X JMP K65COR
0328 P00E1 7FFF X
0329 P00E2 0C01 X MASCO ENQ 1
0330 P00E3 1400 X JMP SAVLU SET UP THREAD TO CORE ALLOCATOR
0331 P00E4 7FFF X
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**MSOS +.CM2300293
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03334 P00E5 00E5 P EQU T19(*)
03335 P00E6 0822 TRA Q
03336 P00E7 0132 LDA- 8,I PICK UP INDIRECT FLAG
03337 P00E8 D103 SAM ENSCH SKIP IF INDIRECT
03338 P00E9 D103 RAO- VR,I UPDATE RETURN ADDRESS
03339 P00EA C622 ENSCH LDA- (ZERO),Q
03340 P00EB A00A AND- LPMSK+8
03341 P00EC 0116 SAN DISCH DISABLE REQUEST
03342 P00ED E201 LDQ- PC,Q GET SYS DIR INDEX
03343 P00EE F0EB ADQ- ASYSDR CALCULATE ADDRESS
03344 P00EF C622 LDA- (ZERO),Q
03345 P00F0 A011 AND- LPMSK+15 CLEAR DISABLE BIT IN DIRECTORY
03346 P00F1 6022 STA- (ZERO),Q
03347 P00F2 14B9 JMP- (AREQXT)
03348
03349
03350
03351 P00F3 E201 DISCH LDQ- PC,Q GET DIRECTORY INDEX
03352 P00F4 F0EB ADQ- ASYSDR CALCULATE ADDRESS
03353 P00F5 C622 LDA- (ZERO),Q
03354 P00F6 0500 IIN 0
03355 P00F7 A011 AND- LPMSK+15
03356 P00F8 0400 EIN 0
03357 P00F9 8032 EOR- ONEBIT+15 SET DISABLE BIT IN DIRECTORY
03358 P00FA 6022 STA- (ZERO),Q
03359 P00FB 14B9 JMP- (AREQXT)
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03366
03367 P00FC 0500 HILVL IIN 0
03368 P00FD E0B8 LDQ- COUNT
03369 P00FE C0EF LDA- PRLVL
03370 P00FF 6204 STA- XPL,Q SAVE PRESENT LEVEL
03371
03372 P0100 C0B9
03373 P0101 6203 ADJUST VR TO RETURN TO REQUEST EXIT
03374 P0102 C0FF LDA- I
03375 P0103 6202 STA- XI,Q SAVE I
03376 P0104 0D05 INQ XL
03377 P0105 40B8 STQ- COUNT SET NEW BASE
03378 P0106 E104 LDQ- VPL,I
03379 P0107 40EF STQ- PRLVL
03380 P0108 C6B7 LDA- (AMASKT),Q SET NEW LEVEL AND
03381 P0109 0821 TRA M MASK
03382 P010A 0400 EIN 0

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0383 * NOW AT REQUESTED LEVEL, SAVE COMMON DATA, IF REQUEST AT
0384 * LEVEL JSING PSUEDO REENRANT LIBRARY
0385 P010B 5826 RTJ* SAVE
0386 *** IF SECONDARY CALL,
0387 P010C E105 LDQ- VPTR,I
0388 P010D 0500 IIN 0
0389 P010E C622 LDA- (ZERO),Q
0390 P010F 0F49 ARS 9 EXTRACT REQUEST CODE
0391 P0110 A0G7 AND- LPMSK+5 **MSOS 4.0
0392 P0111 09F6 INA -RCSCHD IF SECONDARY CALL,(RC.NE.9)
0393 P0112 G102 SAZ PRIMARY-* -1
0394 P0113 0844 CLR A CLEAR THREAD IN CALL
0395 P0114 6202 STA- PT,Q
0396 P0115 C106 PRIMRY LDA- VTPE,I FIND PLACE TO GO
0397 P0116 A031 AND- ONEBIT+14 **MSOS 4.1**
0398 P0117 0102 SAZ S6A-* -1 **MSOS 4.0
0399 P0118 C107 LDA- VTMP,I **MSOS 4.1**
0400 P0119 1809 JMP* S6B **MSOS 4.0
0401 P011A C106 S6A LDA- VTPE,I
0402 P011B A02B AND- ONEBIT+8 FOR REL AND ABS MODE
0403 P011C 0101 SAZ S6-* -1
0404 P011D 0814 TRQ A
0405 P011E A011 S6 AND- LPMSK+15 15 BIT ARITHMETIC
0406 P011F 8032 ADD- ONEBIT+15
0407 PG120 8107 ADD- VTMP,I **MSOS 4.1**
0408 P0121 A011 AND- LPMSK+15
0409 P0122 6C00 S6B STA (ACOMEX) **MSOS 4.0
0410 P0123 FF2B
0411 P0124 4807 STQ* PASSA 624
0412 P0125 E4FF LDQ- (I) 624
0413 P0126 C4FF LDA- (I) 624
0414 P0127 A011 AND- LPMSK+15 MASK OFF UPPER BIT *624
0415 P0128 64FF STA- (I) 624
0416 P0129 C802 LDA* PASSA 624
0417 P012A 0E04 EXI COMEXT-$100 CLEAR OVERFLOW AND GO TO NEXT PGM
0418 P012B 0000 PASSA NUM 0
0419 P012C FFFE FTOP NUM -1
0420 P012D FFFE FLEVEL NUM -1
0421 P012E 7FFF X ALIST ADC FLIST
0422 P012F 7FFF X AFMASK ADC FMASK
0423 P0130 0000 TEMP ADC 0
0424 *** SAVE PERSIHABLE REGION IN PUSHDOWN STACK
0425 P0131 0000 * RETURNS I UNCHANGED , Q CONAINS I
0426 P0132 0500 SAVE 0
0427 P0133 E0EF LDQ- PRLVL
0428 P0134 CCFA LDA* (AFMASK)
0429 P0135 A223 AND- ONEBIT,Q
0430 P0136 0104 SAZ JEXIT-* -1
0431 P0137 0814 TRQ A
0432 P0138 98F4 SUB* FLEVEL
0433 P0139 0101 SAZ JEXIT-* -1
0434 P013A 0121 SAP SAVO-* -1

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0435 P013B 1CF5 JEXIT JMP* (SAVE)
0436 P013C CCF1 SAVO LDA* (ALIST)
0437 P013D 0926 INA F1+5
0438 P013E 6804 STA* CALL
0439 P013F E8ED LDQ* FLEVEL
0440 P0140 C8EB LDA* FTOP
0441 P0141 54BB RTJ- (AVOLA)
0442 P0142 0000 CALL ADC 0
0443 P0143 C8ED LDA* SAVE
0444 P0144 6103 STA- 3,I
0445 P0145 C0EF LDA- PRLVL
0446 P0146 68E6 STA* FLEVEL
0447 *
0448 *
0449 P0147 C0FF LDA- I
0450 P0148 68E3 STA* FTOP
0451 P0149 0904 INA 4
0452 P014A 60FF STA- I
0453 *
0454 *
0455 ***
0456 **
0457 *
0458 P014B 0400 EIN 0
0459 *
0460 * IF 1781-1 ON SYSTEM, STOP IT AND SAVE IT'S REGISTERS
0461 *
0462 P014C C400 X LDA E17811 PICK UP 1781-1 WES.
0463 P014D 7FFF X
0464 P014E 0822 TRA Q
0465 P014F B011 EOR- $11
0466 P0150 0106 SAZ SV781E
0467 P0151 0006 INQ 6
0468 P0152 C000 LDA =XSV781L
0469 P0153 00C8
0470 P0154 0B00 NOP 0
0471 P0155 03FE OUT -1
0472 P0156 5854 RTJ* DL1781
0473 P0157 0157 P SV781E EQU SV781E(*)
0474 P0158 0C20 ENQ F1-1
0475 P0159 C2C5 SAV1 LDA- FCOM,Q
0476 P015A 0DFE STA- (I),Q
0477 P015B 0171 INQ -1
0478 P015C 18FB SQM SAV2--1
0479 * JMP* SAV1
0480 P015D EC00 SAV2 LDQ* (ALIST)
0481 P015E 1809 JMP* SAV4
0482 P015F 0500 SAV3 IIN 0
0483 P0160 48CF STQ* TEMP
0484 P0161 FECC LDQ* (ALIST),Q
0485 P0162 C622 LDA- (ZERO),Q
0486 P0163 E8CC LDQ* TEMP

```

SAVE OLD FLEVEL FTOP IN VOLATILE

ACQUIRE VOLATILE
NO WORDS = F1+F2+4
VOLATILE WILL BE RETURNED BY
THE DISPATCHER BEFORE DROPPING LEVEL)
SET UP NEW PRIORITY LEVEL

SET UP NEW FTOP

IF 1781-1 ON SYSTEM, STOP IT AND SAVE IT'S REGISTERS

PICK UP 1781-1 WES.

SAVE IN Q
CHECK FOR UNPATCHED
BYPASS SAVE IF NO 1781-1
SET Q FOR 1781-1 STOP COMMAND (\$XXX9)
SET A FOR 1781-1 SAVE LOCATION

STOP 1781-1
EXECUTE DELAY

MOVE PART1 OF LIST TO VOLATILE(4).

MOVE PART 2 OF LIST TO VOLATILE

LOCATION

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0486 P0164 6320
 0487 P0165 0400
 0488 P0166 0DFE
 0489 P0167 0142 SAV4
 0490 P0168 0171
 0491 P0169 18F5 SAV6
 0492 P016A E0FF
 0493 P016B 0DFB
 0494 PC16C C203
 0495 P016D 0500
 0496 P016E 68C2
 0497 P016F E202
 0498 P0170 40FF
 0499 P0171 10BF
 0500
 0501
 0502
 0503 P0172 0000
 0504 P0173 0500
 0505
 0506 P0174 E8B7
 0507 P0175 0174
 0508 P0176 E0EF
 0509 P0177 CC87
 0510 P0178 A223
 0511 P0179 0111
 0512 P017A 1CF7 RXIT
 0513
 0514
 0515
 0516 P017B C8F6 RES0
 0517 P017C E8AF
 0518 P017D 6203
 0519 P017E 0D04
 0520 P017F 40FF
 0521 P0180 0400
 0522
 0523
 0524
 0525 P0181 0C20 RES1
 0526 P0182 06FF
 0527 P0183 62C5
 0528 P0184 0DFE
 0529 P0185 0171
 0530 P0186 18F5
 0531
 0532
 0533
 0534 P0187 C400 X RES2
 0535 P0188 0140 X
 0536 P0189 0822
 0537 P018A B011
 0538 P018B 0106

STA- F1-1,B
 EIN 0
 INQ -1
 SQZ SAV6
 SQM SAV6
 JMP* SAV3
 LDQ- I
 INQ -4
 LDA- 3,Q
 IIN 0
 STA* SAVE
 LDQ- VI,Q
 STQ- I
 JMP* (SAVE)
 * RESTORE AND RETURN ROUTINE
 * RESTORE COMM REGION ONLY IF A FORTRAN USER LEVEL JUST
 * TERMINATED.
 RESRTN 0
 IIN 0
 *
 LDQ* FTOP
 SQM RXIT--1
 LDQ- PRLVL
 LDA* (AFMASK)
 AND- ONEBIT,Q
 SAN RES0--1
 JMP* (RESRTN)
 RXIT
 *** RESTORE PERISHABLE REGION FROM PJSHDOWN STACK
 *
 RES0 LDA* RESRTN
 LDQ* FTOP
 STA- 3,Q
 INQ +
 STQ- I
 EIN 0
 *
 *
 *
 ENQ F1-1 MOVE PART 1 OF LIST
 LDA- (I),Q COMMUNICATION REGION
 STA- FCOM,Q
 INQ -1
 SQM RES2--1
 JMP* RES1
 *
 * IF 1781-1 ON SYSTEM, RESTART IT
 *
 RES2 LDA E17811 PICK UP 1781-1 EQUIPMENT CODE
 TRA Q SAVE IN Q
 EOR- \$11 CHECK FOR UNPATCHED
 SAZ LD781E BYPASS RESTORE IF UNPATCHED

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0538 P018C 0D02      INQ  2      SET Q FOR 1781-1 RESTART COMMAND
0539 P018D C000      LDA  =XSV781L SET A TO ADDRESS OF SAVE LOCATION
0540 P018E 00C8
0541 P018F 0800      NOP  0
0542 P0190 03FE      OUT  -1      RESTART 1781-1
0543 P0191 5819      RTJ* DL1781 EXECUTE DELAY ROUTINE
0544 P0192 EC9B      LD781E LDQ* (ALIST)
0545 P0193 1809      JMP* RES4 MOVE PART 2 OF LIST
0546 P0194 0500      RES3 IIN  0 LENGTH IS IN FLIST(0)
0547 P0195 489A      STQ* TEMP
0548 P0196 C320      LDA- F1-1,B START OF PART2 IN VOLATILE
0549 P0197 EFF9      LDQ* (ALIST),Q LOCATION OF DATA
0550 P0198 6622      STA- (ZERO),Q RESTORE DATA
0551 P0199 E896      LDQ* TEMP
0552 P019A 0400      EIN  0
0553 P019B 0DFE      INQ  -1
0554 P019C 0142      RES4 SQZ  RESTT
0555 P019D 0171      SQM  RESTT
0556 P019E 18F5      JMP* RES3
*
0557 P019F 0500      RESTT IIN  0
0558 P01A0 E0FF      LDQ- I
0559 P01A1 0DFB      INQ  -4
0560 P01A2 40FF      STQ- I
0561 P01A3 C203      LDA- 3,Q
0562 P01A4 68CD      STA* RESRTN
0563 P01A5 54BA      RTJ- (AVOLR)
0564 P01A6 4886      STQ* FLEVEL
0565 P01A7 6884      STA* FTOP
0566 P01A8 0400      EIN  0
0567 P01A9 1CC8      JMP* (RESRTN)
*
*
* DELAY ROUTINE FOR 1781-1 STOP/RESTART
*
0571 P01AA 0B00      DL1781 NOP  0
0572 P01AB 6500      IIN  0
0573 P01AC 0A10      ENA  16
0574 P01AD 09FE      DELAY INA -1
0575 P01AE 0131      SAM  1
0576 P01AF 18FD      JMP* DELAY
0577 P01B0 0400      EIN  0
0578 P01B1 1CF8      JMP* (DL1781)
0580 END

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**MSGS 4.0

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EQUIVALENCES

DEF.LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0000	I	00FF (000255)	0086, 0111, 0114, 0227, 0239, 0261, 0314, 0374, 0411, 0412, 0414, 0419, 0452, 0474, 0492, 0498
0036	SV781L	00C8 (000200)	0520, 0526, 0558, 0560
0037	RCSCHD	0009 (000009)	0467, 0539
0038	P1SCHD	0012 (000018)	0192, 0274, 0276, 0392
0039	XA	0001 (000001)	0176, 0276
0039	XI	0002 (000002)	0095
0039	XR	0003 (000003)	0085, 0375
0039	XPL	0004 (000004)	0083, 0373
0039	XL	0005 (000005)	0062, 0088, 0370
0040	PC	0001 (000001)	0060, 0376
0040	PT	0002 (000002)	0123, 0129, 0137, 0226, 0307, 0342, 0351
0040	PQ	0003 (000003)	0109, 0121, 0141, 0220, 0237, 0253, 0255, 0258, 0279, 0300, 0395
0041	VI	0002 (000002)	0143, 0228
0041	VR	0003 (000003)	0497
0041	VPL	0004 (000004)	0165, 0166, 0337, 0338
0041	VPTR	0005 (000005)	0169, 0172, 0180, 0245, 0290, 0303, 0315, 0317, 0321, 0373
0042	VTPE	0006 (000006)	0222, 0254, 0270, 0280, 0387
0042	VTMP	0007 (000007)	0167, 0170, 0173, 0180, 0189, 0201, 0204, 0207, 0208, 0223, 0230, 0252, 0257, 0306, 0390, 0401
0043	LPMSK	0002 (000002)	0168, 0178, 0183, 0212, 0214, 0225, 0308, 0399, 0407
0043	NZERO	0012 (000018)	0070, 0093, 0135, 0138, 0171, 0175, 0191, 0210, 0213, 0244, 0260, 0267, 0273, 0293, 0340, 0345
0043	ZERO	0022 (000034)	0355, 0391, 0405, 0408, 0413
0043	ONEBIT	0023 (000035)	0289
0044	AVOLA	00B8 (000187)	0126, 0131, 0224, 0243, 0271, 0284, 0291, 0305, 0319, 0322, 0333, 0344, 0345, 0353, 0358, 0369
0044	AVOLR	00BA (000186)	0484, 0549
0045	PRLVL	00EF (000239)	0089, 0127, 0132, 0136, 0181, 0202, 0205, 0211, 0323, 0357, 0397, 0402, 0406, 0429, 0431
0045	TOMPT	00B4 (000180)	0441
0045	AREQXT	00B9 (000185)	0563
0046	COUNT	00B8 (000184)	0065, 0072, 0096, 0105, 0185, 0302, 0369, 0379, 0427, 0445, 0508
0046	AMASKT	00B7 (000183)	0065, 0072, 0096, 0105, 0185, 0302, 0369, 0379, 0427, 0445, 0508
0047	FCOM	00C5 (000197)	0120, 0122, 0210, 0221
0047	F1	0021 (000033)	0262, 0347, 0359, 0372
0048	ASYSOR	00EB (000235)	0059, 0094, 0099, 0368, 0377
0049	COMEXT	0104 (000260)	0097, 0106, 0380
			0047, 0473, 0527
			0437, 0472, 0486, 0525, 0547
			0268, 0343, 0352
			0100, 0144, 0145, 0416

SYMBOLS

DEF.LINE	NAME	ADDRESS	REFERENCED AT LINE NUMBER
0018	RDISP	0000	0018
0020	DISPXX	0001	0020
0020	SCHTOP	0000	0020, 0066, 0069, 0108, 0110, 0234
0021	T9	0052	0021
0022	T18	0052	0022
0023	T19	0055	0023
0083	RESINT	0014	0068, 0073, 0074
0094	RESA	001E	0091
0104	SCHSTC	0025	0076
0126	SCHSEC	003C	0117, 0119
0131	SCHA	0041	0128
0135	SCH1	0045	0133
0139	SCH1A	0049	0130
0142	SCHXIT	004C	0125
0145	ACOMEX	004F	0084, 0124, 0139, 0409
0146	ASCHD	0050	0116
0147	ASCLNG	0051	0118
0167	SCHD1	0057	0164
0184	SO	0068	0177
0185	S1	0069	0179, 0182
0189	S2	006E	0187
0201	SCH2	0075	0193
0215	ABS	0083	0203, 0206
0220	S3	0089	0218
0227	SCHED2	0090	0195, 0310
0236	THRED1	0096	0247
0252	THREAD	00A0	0239, 0246
0267	DIRCAL	00AB	0184
0280	DIR2	00B8	0275, 0277
0284	DIR1	00BD	0282
0289	DIR1A	00C1	0285
0310	S5	00D2	0304
0314	MASCAL	00D3	0294
0326	MASCO	00E2	0324
0339	ENSCH	00EA	0336
0351	DISCH	00F3	0341
0367	HILVL	00FC	0188, 0309
0396	PRIMRY	0115	0393
0401	S6A	011A	0398
0405	S6	011E	0403
0409	S6B	0122	0400

0417	PASSA	012B	0410,	0415			
0418	FTOP	012C	0440,	0450,	0506,	0517,	0565
0419	FLEVEL	012D	0432,	0439,	0440,	0504	
0420	ALIST	012E	0436,	0479,	0483,	0543,	0548
0421	AFMASK	012F	0428,	0509,			
0422	TEMP	0130	0482,	0485,	0546,	0550	
0425	SAVE	0131	0112,	0385,	0435,	0443,	0490, 0499
0435	JEXIT	013B	0430,	0433			
0436	SAVG	013C	0434				
0442	CALL	0142	0438				
0471	SV781E	0157	0465				
0473	SAV1	0158	0477				
0479	SAV2	015D	0476				
0481	SAV3	015F	0491				
0489	SAV4	0167	0480				
0492	SAV6	016A	0489,	0490			
0503	RESRTN	0172	0507,	0512,	0516,	0562,	0567
0512	RXIT	017A	0507				
0516	RES0	017B	0511				
0526	RES1	0182	0530				
0534	RES2	0187	0529				
0543	LD781E	0192	0537				
0545	RES3	0194	0555				
0553	RES4	019C	0544				
0557	RESIT	019F	0553,	0554			
0572	DL1781	01AA	0470,	0542,	0579		
0575	DELAY	01AD	0577				

EXTERNALS

DEF.LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0024	SYFAIL	0088	0219
0025	SCHERR	00C0	0283, 0286
0027	SCHSTK	0030	0146
0027	SCHLNG	0051	0147
0029	FLIST	012E	0420
0030	FMASK	012F	0421
0032	SAVLU	00E4	0327
0032	CKTHRD	00D6	0316
0033	X65COR	00E1	0325
0034	F17811	0188	0462, 0534
0035	F17811	7FFF	

0001
0002
0003
0004
0005

*
*
*
*

NAM NDISP DECK-ID M24 MSOS 5.0
NON-FORTRAN SCHEDULER/DISPATCHER
MASS STORAGE OPERATING SYSTEM VERSION 5.0
SMALL SYSTEMS DIVISION, LA JOLLA, CALIFORNIA
COPYRIGHT CONTROL DATA CORPORATION 1976

SUMMARY-11 M2400001
M2400002
M2400003
M2400004
M2400005

0007
0009
0010
0011
0012
0013
0014
0015
0016

ENT SCHEDJ,NDISP
ENT T9,JIS^XX,SCHTOP
ENT T18
ENT T19
EXT K55COR ENTRY IN PARTITION CORE DRIVER
EXT SCHERR SCHEDULER ERROR ENTRY IN TRVEC
EXT SYFAIL SITE FAIL LOCATED IN SYSDAT (\$18FF)
EXT SAVLJ,CKTHRJ,SCHSTK,SCHLNG
EQU PRLVL(\$EF),TOMPT(\$B+),AREQXT(\$B9)

MSOS 4.1M2400007
MSOS 4.1M2400009
***MSOS+..M2400010
***MSOS4..M2400011
***MSOS+..M2400012
**MSOS +..M2400013
**MSOS +..M2400014
**MSOS +..M2400015
M2400016

00EF
00B4
00B9
00B8
0104
0009

0017

EQU CONT(\$B8),COMEXT(\$104)
EQU RCSCHD(9)

MSOS 4.1M2400017
M2400018
***MSOS+..M2400019
***MSOS+..M2400020
***MSOS+..M2400021

*
*

0012
00EB
00B8
00B7
0002

0018
0019
0020
0021
0022
0023

EQU P1SCHD(18) SYS DIR REQ FROM PART 1
EQU ASYSDR(\$EB)
EQU COJNT(\$B8),AMASKT(\$B7)
EQU LPMASK(\$2),NZERO(\$12),ZERO(\$22)

M2400022
M2400023
M2400024

0012
0022

0025

EQU ONEBIT(\$23),ZROBIT(\$33)

M2400025

0023
0033

0026

EQU VR(3),VPL(4),VPTR(5)

M2400026

0004
0005

0027

EQU VTPE(6),VTMP(7)

M2400027

0007
0001

0028

EQU PC(1),PT(2),PQ(3)

M2400028

0002
0003
0001

0029

EQU XA(1),XI(2),XR(3),XPL(4),XL(5)

M2400029

0002
0003
0004
0005

00331
00332
00333

```

*****MSOS 4.1**M2400031
* DISPATCHER SECTION **MSOS 4.1**M2400032
*****MSOS 4.1**M2400033

```

00335
00336
00337
00338
00339
00340

```

* UPON COMPLETION OF A PROGRAM, THE DISPATCHER M2400035
* DETERMINES THE PROGRAM OF HIGHEST PRIORITY M2400036
* WAITING FOR EXECUTION. IT MAY EITHER BE IN THE M2400037
* INTERRUPT STACK OR THE SCHEDULER STACK. M2400038
* M2400039

```

```

00341 P 0000 EQU NDISP(*)
00342 P0000 FFFF SCHTOP NUM $FFFF SCHEDULE STACK TOP
00343 P0001 E0B8 DISPPX LDQ- CONT
00344 P0002 00FA INQ -XL ADJUST STACK
00345 P0003 0500 IIN 0
00346 P0004 C204 LDA- XPL,Q
00347 P0005 0FC1 ALS 1
00348 P0006 0F41 ARS 1 REMOVE BIT 15
00349 P0007 60EF STA- PRLVL
00350 P0008 C8F7 LDA* SCHTOP IF SCHEDLER STACK IS
00351 P0009 0900 INA 0
00352 P000A 0107 SAZ RESINT--1 EMPTY, CHECK INT. STACK
00353 P000B CCF4 LDA* (SCHTOP) LOAD FIRST WORD
00354 P000C A006 AND- LPMASK+ ISOLATE PRIORITY
00355 P000D 0821 TRA M SAVE TEMP. IN M
00356 P000E 90EF SUB- PRLVL
00357 P000F 0102 SAZ RESINT--1 GO TO INTERRUPT STACK
00358 P0010 0131 SAM RESINT
00359 P0011 1812 JMP* SCHSTC GO TO SCHEDULE STACK

```

```

**MSOS 4.1**M2400041
***M2400042
***M2400043
M2400044
M2400045
M2400046
M2400047
M2400048
M2400049
M2400050
M2400051
M2400052
M2400053
M2400054
M2400055
M2400056
M2400057
M2400058
**MSOS 4.1**M2400059
**MSOS 4.1**M2400060
M2400061
M2400062
M2400063
M2400064
M2400065
M2400066
M2400067
**MSOS 4.1**M2400068
**MSOS 4.1**M2400069
M2400070
M2400071
M2400072
M2400073
**MSOS 4.1**M2400074
**MSOS 4.1**M2400075
M2400076
M2400077
M2400078
M2400079
M2400080
M2400081
M2400082

```

00360
00361
00362
00363
00364
00365
00366
00367

```

* HIGHEST PROGRAM IS IN THE INTERRUPT STACK.
* RESINT LDA- XR,Q SET RETRN LOCATION
STA* (ACOMEX)
LDA- XI,Q RESTORE I
STA- I

```

```

00368 P0016 C204 LDA- XPL,Q
00369 P0017 A032 AND- ONEBIT+15
00370 P0018 01A0 SOV 0 CLEAR OVERFLOW FAULT
00371 P0019 0102 SAZ RESA
00372 P001A 0A10 ENA 16
00373 P001B 0A11 ADD- LPMASK+15
00374 P001C 40B8 RESA STQ- CONT RESTORE TOP OF INTERRUPT STACK
00375 P001D C201 LDA- XA,Q RESTORE VALUE OF A
00376 P001E E0EF LDQ- PRLVL SET NEW PRIORITY LEVEL
00377 P001F E6B7 LDQ- (AMASKT),Q RESTORE MASK
00378 P0020 C811 TRQ M
00379 P0021 E4B8 LDQ- (CONT) RESTORE Q
00380 P0022 0E04 EXI COMEXT-255

```

```

7-CARDS DELETED
GET PL + OVF
**MSOS 4.1**M2400068
**MSOS 4.1**M2400069
**MSOS 4.1**M2400070
**MSOS 4.1**M2400071
**MSOS 4.1**M2400072
**MSOS 4.1**M2400073
**MSOS 4.1**M2400074
**MSOS 4.1**M2400075
M2400076
M2400077
M2400078
M2400079
M2400080
M2400081
M2400082

```

00381
00382

```

* HIGHEST PROGRAM IS IN THE SCHEDULER THREAD.

```

```

0083  P0023 080A *
0084  P0024 40EF SCHSTC TRM Q
0085  P0025 C6B7 STQ- PRLVL
0086  P0026 0821 LDA- (AMASKT),Q
0087  P0027 E8D8 TRA M
0088  P0028 C202 LDQ* SHTOP
0089  P0029 68D6 LDA- PT,Q
0090  P002A 0814 STA* SHTOP
0091  P002B 981E TRQ A
0092  P002C 0138 SUB* ASCHD
0093  P002D 981D SAM SCHSEC-*--1
0094  P002E 0126 SUB* ASCLNG
0095  P002F C0B4 SAP SCHSEC-*--1
0096  P0030 6202 LDA- TOMPT
0097  P0031 40B4 STA- PT,Q
0098  P0032 C201 STQ- TOMPT
0099  P0033 6C15 LDA- PC,Q
0100  P0034 1811 STA* (ACOMEX)
0101  P0035 C622 JMP* SCHXIT
0102  P0036 A031 SCHSEC LDA- (ZERO),Q
0103  P0037 0102 AND- ONEBIT+1-
0104  P0038 C201 SAZ SCHA
0105  P0039 1809 LDA- PC,Q
0106  P003A C622 JMP* SCH1A
0107  P003B A02B SCHA LDA- (ZERO),Q
0108  P003C 0101 AND- ONEBIT+8
0109  P003D 0814 SAZ SCH1-*--1
0110  P003E A011 TRQ A
0111  P003F 8032 SCH1 AND- LPMSK+15
0112  P0040 8201 ADD- ONEBIT+15
0113  P0041 A011 ADD- PC,Q
0114  P0042 6C06 AND- LPMSK+15
0115  P0043 0844 SCH1A STA* (ACOMEX)
0116  P0044 6202 CLR A
0117  P0045 0814 STA- PT,Q
0118  P0046 E203 SCHXIT TRQ A
0119  P0047 0E04 LDQ- PQ,Q
0120  P0048 0104 EXI COMEXT-256
0121  P0049 7FFF X ACOMEX ADC COMEXT
0122  P004A 7FFF X ASCHD ADC SCHSTK
0123  P004A 7FFF X ASCLNG ADC SCHLNG

```

```

PRIORITY TO Q
SET NEW PRIORITY
AND MASK

STORE NEW POINTER
TOP OF SCHEDLER
THREAD

TEST IF PRIMARY SCHEDLER
CALL WAS MADE.

IF PRIMARY CALL RELEASE
STACK POSITION AND PLACE
ON EMPTY THREAD.
LOAD ABSOLTE ADDRESS
STORE INTO COMEXT

TEST IF ABSOLTE OR
CHECK THE D BIT

MUST BE ABSOLUTE

RELATIVE
CALL. SKIP IF ABSOLUTE
ADDRESS 1ST WD OF CALL

ADD REL. ADDRESS OR IF
A=0, ABS ADDR(SS AND STORE
ZERO INTO THREAD
COMPLETION INDICATION
PASS POINTER TO CALL IN A
PASS,Q

SCHED. STACK LOCATION
SCHED. STACK LENGTH LOC.

```

```

M2400083
M2400084
M2400085
M2400086
M2400087
M2400088
M2400089
M2400090
M2400091
M2400092
M2400093
M2400094
M2400095
M2400096
M2400097
M2400098
M2400099
M2400100
M2400101
M2400102
M2400103
M2400104
M2400105
M2400106
M2400107
M2400108
M2400109
M2400110
M2400111
M2400112
M2400113
M2400114
M2400115
M2400116
M2400117
M2400118
M2400119
M2400120
M2400121
M2400122
M2400123

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***MSOS+.
***MSOS+.
***MSOS+.
***MSOS+.
***MSOS+.

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***MSOS+.

```

0125
0126
0127

*****MSOS 4.1**M2400125
* SCHEDULER SECTION **MSOS 4.1**M2400126
*****MSOS 4.1**M2400127

0129
0130
0131
0132
0133
0134
0135
0136
0137
0138
0139

* M2400129
* M2400130
* M2400131
* M2400132
* M2400133
* M2400134
* M2400135
* M2400136
* M2400137
* M2400138
* M2400139

0140 004B P
0141 004B P

EQU T18(*) ***MSOS-. M2400140
EQU SCHEDU(*) M2400141

0142 T9
0143 PC004B 0822
0144 PC004C C108
0145 PC004D 0132
0146 PC004E D103
0147 PC004F D103
0148 PC0050 C106
0149 PC0051 6107
0150 PC0052 C104
0151 PC0053 C106
0152 PC0054 A006
0153 PC0055 3104
0154 PC0056 C106
0155 PC0057 0F49
0156 PC0058 A007
0157 PC0059 09ED
0158 PC005A 0105
0159 PC005B C107
0160 PC005C 0125
0161 PC005D C106
0162 PC005E A031
0163 PC005F 0112
0164 PC0060 C107
0165 PC0061 1846
0166 PC0062 C0EF
0167 PC0063 9104
0168 PC0064 0122
0169 PC0065 1800
0170 PC0066 0D92
0171 PC0067 C106
0172 PC0068 0F49
0173 PC0069 A007
0174 PC006A 09F6
0175 PC006B 3102
0176 PC006C 0500

TRA Q M2400142
LDA- 8,I M2400143
SAM SCH1X M2400144
RAC- VR,I M2400145
RAC- VR,I M2400146
LDA- VTPE,I M2400147
STA- VTMP,I M2400148
LDA- VPL,I M2400149
STA- VTPE,I M2400150
AND- LPMSK+5 M2400151
STA- VPL,I M2400152
LDA- VTPE,I M2400153
ARS 9 M2400154
AND- LPMSK+5 M2400155
INA -P1SCHD M2400156
SAZ SP1 M2400157
LDA- VTMP,I M2400158
SAP S1-*--1 M2400159
LDA- VTPE,I M2400160
AND- ONEBIT+14 M2400161
SAN S1 M2400162
LDA- VTMP,I M2400163
JMP* DIRCAL M2400164
LDA- PRLVL M2400165
SUB- VPL,I M2400166
SAP S2-*--1 M2400167
JMP HILVL M2400168
LDA- VTPE,I M2400169
ARS 9 M2400170
AND- LPMSK+5 M2400171
INA -RCSCHD M2400172
SAZ SCH2-*--1 M2400173
IIN 0 M2400174
M2400175

SCHDLE REQUEST PROCESSOR (T9)

ON ENTRY A POINTER TO THE PARAMETER LIST MUST BE IN THE A REGISTER

IF THE SIGN BIT OF THE POINTER IS ONE, THE REFERENCE IS INDIRECT.

SKIP IF INDIRECT

WAS INDIRECT

GET SECOND PARAMETER

GET FIRST PARAMETER TEMPORARILY AND STORE PRIORITY OF REQUEST

SKIP IF REQ CODE OF 18

CHECK IF 0 BIT SET
SKIP IF SET

JMP IF DIRECTORY CALL

IF REQ PRIORITY HIGHER THAN CURRENT PRIORITY
GO TO HILVL

IF NOT

A PRIMARY SCHEDULER CALL GO TO

***MSOS-. M2400140
M2400141
M2400142
M2400143
***MSOS-. M2400144
MSOS +.1 M2400145
M2400146
MSOS -.1 M2400147
MSOS +.1 M2400148
MSOS +.1 M2400149
MSOS -.1 M2400150
M2400151
M2400152
M2400153
MSOS +.1 M2400154
***MSOS+. M2400155
***MSOS+. M2400156
***MSOS+. M2400157
***MSOS+. M2400158
MSOS +.1 M2400159
M2400160
MSOS +.1 M2400161
***MSOS+. M2400162
***MSOS+. M2400163
MSOS +.1 M2400164
M2400165
M2400166
M2400167
M2400168
***MSOS+. M2400169
MSOS +.1 M2400170
M2400171
***MSOS+. M2400172
M2400173
M2400174
M2400175


```

0176 P006D 181C          JMP* SCHED2          SCHED2          M2400176
0177 *                   *                   *                   M2400177
0178 *                   *                   *                   M2400178
0179 *                   *                   *                   M2400179
0180 *                   *                   *                   M2400180
0181 *                   *                   *                   M2400181
0182 P006E C106          SCH2    LDA- VTPE,I          **MSOS .1** M2400182
0183 P006F A031          AND- ONEBIT+14      CHECK D BIT      ***MSOS+.UM M2400183
0184 P0070 011B          SAN ABS-*--1        T                   ***MSOS+.UM M2400184
0185 P0071 C106          LDA- VTPE,I          **MSOS .1** M2400185
0186 P0072 A02B          AND- ONEBIT+8          M2400186
0187 P0073 0108          SAZ ABS-*--1        SKIP ON ABS CALL M2400187
0188 P0074 B106          EOR- VTPE,I          **MSOS .1** M2400188
0189 P0075 6106          STA- VTPE,I          M2400189
0190 P0076 C814          TRQ A               M2400190
0191 P0077 A011          AND- LPMASK+15      M2400191
0192 P0078 8032          ADD- ONEBIT+15      M2400192
0193 P0079 8107          ADD- VTMP,I          **MSOS .1** M2400193
0194 P007A A011          AND- LPMASK+15      M2400194
0195 P007B 6107          STA- VTMP,I          M2400195
0196 P007C 0500          ABS    IIN 0          M2400196
0197 P007D E0B4          LDQ- TOMPT          FIND EMPTY IN STACK M2400197
0198 P007E 0D00          INQ 0               M2400198
0199 P007F 0152          SQN S3-*--1        M2400199
0200 P0080 5400          X      RTJ+ SYFAIL      SCHEDULER STACK HAS OVERFLOWED - HANG M2400200
0201 P0081 7FFF          X      M2400201
0202 P0082 C202          S3    LDA- PT,Q          M2400202
0203 P0083 60B4          STA- TOMPT          M2400203
0204 P0084 4105          STQ- VPTR,I          STORE NEW POINTER TO M2400204
0205 P0085 C106          LDA- VTPE,I          PARAMETER LIST     M2400205
0206 P0086 6622          STA- (ZERO),Q       M2400206
0207 P0087 C107          LDA- VTMP,I          M2400207
0208 P0088 6201          STA- PC,Q           M2400208
0209 P0089 C4FF          SCHED2 LDA- (I)          STORE Q            M2400209
0210 P008A 6203          STA- PQ,Q           M2400210
0211 *                   *                   *                   M2400211
0212 *                   *                   *                   M2400212
0213 *                   *                   *                   M2400213
0214 P008B 0500          IIN 0               M2400214
0215 P008C E000          LDQ =XSCHTOP        POINTER TO SCHTOP IN Q M2400215
0216 P008D 0000          P      M2400216
0217 P008E 00FD          INQ -2              M2400217
0218 P008F 0400          THRED1 EIN 0           ALLOW INTERRUPT     **MSOS M2400218
0219 P0090 4106          STQ- VTPE,I          **MSOS M2400219
0220 P0091 0B00          NOP 0               **MSOS M2400220
0221 P0092 0500          IIN 0               **MSOS M2400221
0222 P0093 C202          LDA- PT,Q           POINTER TO NEXT ENTRY M2400222
0223 P0094 0900          INA 0               M2400223
0224 P0095 0106          SAZ THREAD          THREAD INTO Q      M2400224
0225 *                   *                   *                   M2400225
0226 P0096 0822          TRA Q               M2400226

```

1 CARD DELETED

```

02277 P0097 C622 LDA- (ZERO),Q SKIP TO THREAD NEW ENTRY
02278 P0098 A306 AND- LPMSK+4 IF ITS PRIORITY HIGHER
02279 P0099 9104 SUB- VPL,I
02280 P009A 0131 SAM THREAD--1
02281 P009B 18F3 JMP* THRED1
*
* THREAD NEW ENTRY
*
* 1 CARD DELETED
02282 P009C E106 THREAD LDQ- VTPE,I POINTER TO PRECEDING ENTRY
02283 P009D C202 LDA- PT,Q POINIER TO NEXT ENTRY
02284 P009E E105 LDQ- VPTR,I STORE INTO NEW ENTRY
* ALLOW 16 BIT ADDRESSING ***MSOS+...
02285 P009F 6202 STA- PT,Q
02286 P00A0 0814 TRQ A
02287 P00A1 E106 LDQ- VTPE,I STORE NEW POINTER
02288 P00A2 6202 STA- PT,Q IN PRECEDING ENTRY
02289 P00A3 C4FF LDA- (I) PICK-UP USERS Q REGISTER
02290 P00A4 A011 AND- LPMSK+15 REMOVE THE SIGN BIT
02291 P00A5 64FF STA- (I) PUT IT BACK
02292 P00A6 14B9 JMP- (AREQXT)
*
** PROCESS DIRECTORY CALLS
*
*
* DIRCAL AND- LPMSK+15 GET SYSJIR ADDRESS
02293 P00A7 A011 DIRCAL ADD- ASYSDR
02294 P00A8 80EB IIN 0
02295 P00A9 0500 STA- VPTR,I
02296 P00AA 0105 LDA- (ZERO),Q PICK UP REQUEST CODE
02297 P00AB C622 ARS 9
02298 P00AC 0F49 AND- LPMSK+5 ***MSOS+...
02299 P00AD A007 INA -RCSCHD
02300 P00AE 09F6 SAZ DIR2--1 IF NOT SCHEDULE REQUEST CODE
02301 P00AF 0104 INA -P1SCHD+RCSCHD ***MSOS+...
02302 P00B0 09F6 SAZ DIR2 ***MSOS+...
02303 P00B1 C102 ENA 0 SKIP IF REQ CODE 10
02304 P00B2 0A00 STA- PT,Q MUST BE A SECONDARY CALL
02305 P00B3 6202 LDQ- VPTR,I CLEAR THRELD IN USERS REQUEST
02306 P00B4 E105 LDA- 2,Q Q = SYSTEM DIRECTORY ADR.
02307 P00B5 C202 SAZ DIR1--1
02308 P00B6 0102 JMP SCHERR **MSOS -...
02309 P00B7 1400 X
02310 P00B8 7FFF X
02311 P00B9 C622 DIR1 LDA- (ZERO),Q CHECK IF OK TO SCHEDULE
02312 P00BA 0122 SAP DIR1A OK, CONTINUE
02313 P00BB 1400 X
02314 P00BC 00B8 X JMP SCHERR
*
* REPLACE PRIORITY
02315 P00BD A016 DIR1A AND- NZERO+4 IN DIRECTORY WITH
02316 P00BE 8104 ADD- VPL,I CALL PRIORITY
02317 P00BF 0622 STA- (ZERO),Q
02318 P00C0 0F49 ARS 9 IF MASS NEMMORY CALL

```

```

M2400227
M2400228
M2400229
M2400230
M2400231
M2400232
M2400233
M2400234
M2400235
M2400236
M2400237
M2400238
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M2400240
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M2400243
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M2400251
M2400252
M2400253
M2400254
M2400255
M2400256
M2400257
M2400258
M2400259
M2400260
M2400261
M2400262
M2400263
M2400264
M2400265
M2400266
M2400267
M2400268
M2400269
M2400270
M2400271
M2400272
M2400273
M2400274
M2400275
M2400276
M2400277

```



```

0315
0316
0317
0318
0319 P 00E1 EQU T19(*)
0320 P00E2 0822 TRA Q
0321 P00E3 C108 LDA- 8,I PICK UP INDIRECT FLAG
0322 P00E4 0132 SAM ENSCH SKIP IF INDIRECT
0323 P00E5 0103 RAO- VR,I
0324 P00E6 C622 RAO- VR,I UPDATE RETURN ADDRESS
0325 P00E7 A00A ENSCH LDA- (ZERO),Q
0326 P00E8 0116 AND- LPMSK+3
0327 P00E9 E201 SAN DISCH DISABLE REQUEST
0328 P00EA F0EB LDQ- PC,Q GET SYS DIR INDEX
0329 P00EB C622 ADQ- ASYSDR CALCULATE ADDRESS
0330 P00EC A011 LDA- (ZERO),Q
0331 P00ED 0822 AND- LPMSK+15 CLEAR DISABLE BIT IN DIRECTORY
0332 P00EE 14B9 STA- (ZERO),Q
0333 JMP- (AREQXT)
*
*
*
0334 PROCESS DISABLE SCHEDULE CALL
*
*
0335 P00EF E201 DISCH LDQ- PC,Q GET DIRECTORY INDEX
0336 P00F0 F0EB ADQ- ASYSDR CALCULATE ADDRESS
0337 P00F1 C622 LDA- (ZERO),Q
0338 P00F2 0500 IIN 0
0339 P00F3 A011 AND- LPMSK+15
0340 P00F4 0400 EIN 0
0341 P00F5 0032 EOR- ONEBIT+15 SET DISABLE BIT IN DIRECTORY
0342 P00F6 6622 STA- (ZERO),Q
0343 P00F7 14B9 JMP- (AREQXT)

```

```

***MSOS+.CM2+J000315
***MSOS+.CM2+J000316
***MSOS+.CM2+J000317
***MSOS+.CM2+J000318
***MSOS+.CM2+J000319
***MSOS+.CM2+J000320
***MSOS+.CM2+J000321
***MSOS+.CM2+J000322
***MSOS+.CM2+J000323
***MSOS+.CM2+J000324
***MSOS+.CM2+J000325
***MSOS+.CM2+J000326
***MSOS+.CM2+J000327
***MSOS+.CM2+J000328
***MSOS+.CM2+J000329
***MSOS+.CM2+J000330
***MSOS+.CM2+J000331
***MSOS+.CM2+J000332
***MSOS+.CM2+J000333
***MSOS+.CM2+J000334
***MSOS+.CM2+J000335
***MSOS+.CM2+J000336
***MSOS+.CM2+J000337
***MSOS+.CM2+J000338
09*1.000 M2+J000339
09*1.000 M2+J000340
09*1.000 M2+J000341
***MSOS+.CM2+J000342
***MSOS+.CM2+J000343
***MSOS+.CM2+J000344

```

0346
0347
0348
0349
0350
0351
0352
0353
0354
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0356
0357
0358
0359
0360
0361
0362
0363
0364
0365
0366
0367
0368
0369
0370
0371
0372
0373
0374
0375
0376
0377
0378
0379
0380
0381
0382
0383
0384
0385
0386
0387
0388
0389
0390
0391
0392
0393
0394
0395
0396
0397
0398

```

*
* SCHJLE REQUEST IS OF HIGHER PRIORITY
* THAN CURRENT LEVEL.
*
HILV- LDQ- VPTR,I GET POINTER
      IIN 0
      LDA- (ZERO),Q REQUEST CODE/LEVEL
      ARS 9 EXTRACT REQUEST CODE
      AND- LPMSK+5 ***MSOS+...
      INA -RCSCHJ IF SECONDARY CALL,(RC.NE.9)
      SAZ PRIMRY-*--1
      CLR A CLEAR THREAD IN CALL
      STA- PT,Q
PRIMRY LDA- VIPE,I FIND PLACE TO GO
      AND- ONEBIT+1+ PART 1 REQUEST
      SAZ S6A
      LDA- VTMP,I
      JMP* S6B1
S6A LDA- VIPE,I FOR REL AND ABS MODE
      AND- ONEBIT+8
      SAZ S6-*--1
      TRQ A
S6 AND- LPMSK+15 15 BIT ARITHMETIC
      ADD- ONEBIT+15
      ADD- VTMP,I
      AND- LPMSK+15
S6B1 IIN 0
      STA* JMP+1
*
* 1 CARD DELETED
* STQ* PASSA LOC OF PARAMETER LIST
*
* PUT RQJESTOR ON INTERRUPT STACK
*
LDQ- COUNT
LDA- PRLVL
STA- XPL,Q SAVE PRESENT LEVEL
LDA- AREQXT
STA- XR,Q
LDA- I
STA- XI,Q SAVE I
INQ XL
STQ- COUNT SET NEW BASE
LDQ- VPL,I
STQ- PRLVL
LDA- (AMASKT),Q SET NEW LEVEL AND
      TRA M MASK
LDQ- (I)
      625
      TRQ A
      625
AND- LPMSK+15 MASK OFF UPPER BIT
STA- (I)
LDA* PASSA
SOV 0
EIN 0
TURN OFF OVERFLOW IND.

```

M2400346
M2400347
M2400348
M2400349
M2400350
M2400351
M2400352
M2400353
M2400354
M2400355
M2400356
M2400357
M2400358
M2400359
M2400360
M2400361
M2400362
M2400363
M2400364
M2400365
M2400366
M2400367
M2400368
M2400369
M2400370
M2400371
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M2400375
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M2400378
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M2400380
M2400381
M2400382
M2400383
M2400384
M2400385
M2400386
M2400387
M2400388
M2400389
M2400390
M2400391
M2400392
M2400393
M2400394
M2400395
M2400396
M2400397
M2400398

0399 PG125 1400 JMP JMP+ 0
PG126 0000
0400 PG127 0000 PASSA NUM 0
0401 END

GO

M2400399

M2400400
M2400401

PGM= 0128 (290) COM = 0000 (0) DAT = 0000 (0)

EQUIVALENCES

DEF.LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0000	I	00FF (000255)	0166, 0208, 0217, 0218, 0299, 0384, 0392, 0395
0016	PRLVL	00EF (000239)	0049, 0058, 0070, 0089, 0150, 0287, 0380, 0339
0016	TOMPT	00B4 (000180)	0096, 0098, 0197, 0202
0016	AREQXT	00B9 (000185)	0247, 0332, 0344, 0382
0017	CONT	00B8 (000184)	0143, 0171, 0079
0017	COMEXT	0104 (000260)	0080, 0120, 0121
0018	RCSCHD	0009 (000009)	0170, 0259, 0261, 0305
0020	P1SCHD	0012 (000018)	0157, 0261
0022	ASYSDR	00EB (000235)	0233, 0328, 0337
0023	COUNT	00B8 (000184)	0379, 0387
0023	AMASKT	00B7 (000183)	0077, 0086, 0390
0024	LPMSK	0002 (000002)	0054, 0073, 0111, 0114, 0152, 0150, 0172, 0191, 0194, 0228, 0240, 0250, 0258, 0261, 0262, 0308
0024	NZERO	0012 (000018)	0074, 0354, 0354, 0368, 0371, 0394
0024	ZERO	0022 (000034)	0274, 0102, 0107, 0200, 0227, 0250, 0269, 0270, 0291, 0304, 0307, 0320, 0329, 0331, 0335, 0341, 0350
0025	ZNEBIT	0023 (000035)	0069, 0103, 0108, 0112, 0162, 0183, 0186, 0192, 0303, 0342, 0360, 0360, 0389
0025	ZROBIT	0033 (000051)	
0026	VR	0033 (000003)	0145, 0147, 0322, 0323
0026	VPL	0034 (000004)	0150, 0153, 0107, 0229, 0270, 0288, 0301, 0302, 0300, 0388
0026	VPTR	0005 (000005)	0203, 0238, 0250, 0260, 0300
0027	VTPE	0000 (000000)	0148, 0151, 0154, 0161, 0170, 0182, 0185, 0198, 0189, 0204, 0210, 0231, 0242, 0291, 0309, 0300
0027	VTMP	0007 (000007)	0149, 0159, 0164, 0193, 0190, 0200, 0293, 0302, 0370
0028	PC	0001 (000001)	0099, 0105, 0113, 0207, 0292, 0300
0028	PT	0002 (000002)	0089, 0097, 0117, 0201, 0221, 0237, 0240, 0246, 0264, 0285, 0358
0028	PQ	0003 (000003)	0119, 0209
0029	XA	0001 (000001)	0070
0029	XI	0002 (000002)	0165, 0385
0029	XR	0003 (000003)	0063, 0383
0029	XPL	0004 (000004)	0040, 0068, 0381
0029	XL	0005 (000005)	0041, 0386

S Y M B O L S

DEF. LINE	NAME	ADDRESS	REFERENCED AT LINE NUMBER
0007	SCHEDU	004B	0007
0007	NDISP	0000	0007
0009	T9	004B	0009
0009	DISPXX	0001	0009, 0050, 0053, 0088, 0090, 0215
0009	SCHTOP	0000	0009
0010	T18	004B	0010
0011	T19	00E1	0011
0063	RESINT	0012	0052, 0057, 0058
0074	RESA	001C	0071
0084	SCHSTC	0023	0059
0102	SCHSEC	0035	0093, 0095
0107	SCHA	003A	0104
0111	SCH1	003E	0109
0115	SCH1A	0042	0106
0118	SCHXIT	0045	0101
0121	ACOMEX	0048	0064, 0100, 0115
0122	ASCHD	0049	0092
0123	ASCLNG	004A	0094
0148	SCH1X	0050	0145
0164	SP1	0060	0158
0166	S1	0062	0160, 0163
0170	S2	0067	0168
0182	SCH2	006E	0174
0196	ABS	007C	0184, 0187
0201	S3	0082	0199
0208	SCHED2	0089	0170, 0295
0217	THRED1	008F	0231
0236	THREAD	009C	0223, 0230
0252	DIRCAL	00A7	0165
0265	DIR2	00B4	0260, 0262
0269	DIR1	00B9	0267
0274	DIR1A	00BD	0270
0295	S5	00CE	0289
0299	MASCAL	00CF	0279
0311	MASCO	00DE	0309
0324	ENSCH	00EF	0321
0336	JISCH	00EF	0326
0350	HILVL	00F8	0169, 0294
0359	PRIMRY	0101	0350
0364	S6A	0106	0361
0368	S6	010A	0366

0372	S6B1	010E
0399	JMP	0125
0400	PASSA	0127

0365
0373
0375, 0396

EXTERNALS

DEF.LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0012	K65COR	00DD	0310
0013	SCHERR	00BC	0268, 0271
0014	SYFAIL	0081	0200
0015	SAVLU	00E0	0312
0015	CKTHRD	00D2	0301
0015	SCHSTK	0049	0122
0015	SCHLNG	004A	0123

*** ALPHABETICAL SORT OF SYMBOLS ***

ABS	0196	ACOMEX	0121	AMASKT	0023	AREQXT	0015	ASCHD	0122	ASCLNG	0123	ASYSOR	0022	CKTHRU	0115	COMEXT	0117
CONT	0017	COUNT	0023	DIR1	0269	DIR1A	0274	DIR2	0255	DIRCAL	0252	DISCH	0330	DISLXX	0109	ENSCH	0021
HILVL	0350	I	0000	JMP	0399	K65COR	0012	LPMSK	0024	MASCAL	0299	MASCO	0311	NDISP	0107	NZERO	0021
ONEBIT	0025	P1SCHD	0020	PASSA	0400	PC	0028	PQ	0028	PRIMRY	0359	PRLV	0310	PT	0120	RCSCHD	0010
RESA	0074	RESINT	0063	S1	0165	S2	0175	S3	0201	S5	0295	SS	0350	SSA	0304	SSB1	0072
SAVLU	0015	SCH1	0111	SCH1A	0115	SCH1X	0148	SCH2	0182	SCHA	0107	SCHED2	0200	SCHLDU	0307	SCHERR	0010
SCHLNG	0015	SCHSEC	0102	SCHSTC	0084	SCHSTK	0015	SCHTOP	0009	SCHXIT	0118	SPI	0104	SYFAIL	0111	T18	0001
T19	0011	T9	0009	THREAD	0236	THRED1	0217	TOMPT	0016	VPL	0020	VPTR	0020	VR	0120	VTMF	0002
VTYPE	0027	XA	0029	XI	0029	XL	0029	XPL	0029	XR	0029	ZERO	0124	ZROBIT	0020		

```

0001          NAM TOD          DECK-ID M25  MSOS 5.0          SUMMARY-11 M2500001
0002          *          MASS STORAGE OPERATING SYSTEM VERSION 5.0 M2500002
0003          *          SMALL SYSTEMS DIVISION, LA JOLLA, CALIFORNIA M2500003
0004          *          COPYRIGHT CONTROL DATA CORPORATION 1976 M2500004

0005          *          TIME OF DAY CALCULATIONS M2500006
0006          *          1700 MASS STORAGE OPERATING SYSTEM VERSION 4.1 M2500007
0007          *          SMALL COMPUTER DEVELOPMENT DIVISION, LA JOLLA, CALIFORNIA M2500008
0008          *          COPYRIGHT CONTROL DATA CORPORATION 1973 M2500009

0011          *          THIS PROGRAM IS USED TO UPDATE THE SYSTEM TIME OF DAY. THERE ARE M2500011
0012          *          TWO BASIC MODES OF PROGRAM OPERATION...PERIODIC TIME UPDATES ON A M2500012
0013          *          SELF SCHEDULING BASIS OR USER CALLED FOR A DEMAND TIME UPDATE. M2500013
0014          *          THE PERIODIC TIME UPDATES ARE INITIATED BY THE SPACE PROGRAM. M2500014
0015          *          USER REQUEST IS RTJ+ TOD OR CALL TOD WITH THE USER A,Q, AND I M2500015
0016          *          REGISTERS PRESERVED. A HARDWARE TIME SOURCE MUST BE PRESENT IN M2500016
0017          *          THE SYSTEM FOR PROPER OPERATION OF THIS PROGRAM. THE BASIC M2500017
0018          *          SYSTEM TIME AND DATE PARAMETERS ARE CONTAINED IN SYSDAT. THE M2500018
0019          *          PRIORITY LEVEL OF THIS PROGRAM IS DETERMINED BY THE TODLVL M2500019
0020          *          EQUATE IN SYSDAT. PROGRAM IS RE-ENTRANT. M2500020
0021          *          THE TIME/DATE FUNCTION PROGRAM (ORDINAL TDFUNC) MUST BE PRESENT M2500021
0022          *          IN THE SYSTEM TO ALLOW FOR THE CALENDAR UPDATE FUNCTION M2500022
0023          *          THAT IS PERFORMED AT THE BEGINNING OF EACH DAY. M2500023

0025          *          PROGRAM ENTRY POINTS M2500025
0026          *          ENT UPTOD PERIODIC OPERATION INITIATION M2500026
0027          *          ENT TOD USER OPERATION INITIATION M2500027

0029          *          PROGRAM EXTERNAL POINTS M2500029
0030          *          EXT TIMCPS CYCLES/SECOND ON SYSTEM CLOCK M2500030
0031          *          EXT TOJLVL TIMER CALL REQUEST WORD M2500031
0032          *          EXT TDFJNC CALENDAR UPDATE ORDINAL M2500032
0033          *          EXT HORTO CURRENT HOUR M2500033
0034          *          EXT MINTO CURRENT MINUTE M2500034
0035          *          EXT SECON CURRENT SECOND M2500035
0036          *          EXT CONTA CURRENT COUNT M2500036
0037          *          EXT HORMIN CURRENT 24-HOUR TIME M2500037
0038          *          EXT TOTMIN CURRENT ELAPSED MINUTES M2500038

0040          *          PROGRAM EQUIVALENCES M2500040
0041          *          EQU AMONI($F4) ADDRESS OF MONITOR M2500041
0042          *          EQU ADISP($EA) ADDRESS OF DISPATCHER M2500042
0043          *          EQU QCLK($E8) CORE CLOCK M2500043
0044          *          EQU UPCTS(30) FREQUENCY AT WHICH PROGRAM RUNS (COUNTS) M2500044
0045          *          EQU AVOLA($BB) VOLATILE STORAGE ACQUISITION ADDRESS M2500045
0046          *          EQU AVOLR($BA) VOLATILE STORAGE RELEASE ADDRESS M2500046

```

0048
0049
0050
0051
0052

```

*****
*                                     M2500048
*                                     M2500049
* TIME OF DAY PERIODIC OPERATION ENTRY
*                                     M2500050
*                                     M2500051
*****

```

0054 P0000 5800
0055 P0001 54F4
0056 P0002 7FFF X
0057 P0003 0000 P
0058 P0004 001E
0059 P0005 14EA

```

UPTOD RTJ* TOD
RTJ- (AMONI)
ADC TOJ_VL
ADC UPTOD
ADC UPTOD
JMP- (AJISP)

```

TIMER CALL
FOR
UPTOD
IN SPECIFIED
NUMBER OF COUNTS

M2500054
M2500055
M2500056
M2500057
M2500058
M2500059

00061
00062
00063
00064
00065

```

*****
*                                     M25000061
*                                     M25000062
*   TIME OF DAY UPDATE USER ENTRY   M25000063
*                                     M25000064
*****
*                                     M25000065

```

```

00057 P00006 00000
00058 P00007 05000
00059 P00008 54888
00070 P00009 00007
00071 P0000A C8FB
00072 P0000B 6103
00073 P0000C C83F
00074 P0000D 6104
00075 P0000E CC39
00076 P0000F 6105
00077 P00010 CC36
00078 P00011 6106
00079 P00012 0400
00080 P00013 E0E8
00081 P00014 0814
00082 P00015 9104
00083 P00016 4104
00084 P00017 8105
00085 P00018 0842
00086 P00019 3831
00087 P0001A 4105
00088 P0001B 8106
00089 P0001C 6106
00090 P0001D 0903
00091 P0001E 0121
00092 P0001F 1811
00093 P00020 0500
00094 P00021 6106
00095 P00022 DC23
00096 P00023 CC22
00097 P00024 0903
00098 P00025 013A
00099 P00026 6C1F
01000 P00027 DC1D
01001 P00028 CC1C
01002 P00029 09E7
01003 P0002A 0135
01004 P0002B 6C19
01005
01006
01007
01008 P002C 0842
01009
01009 P002D 54F4
01009 P002E 2404
01009 P002F 7FFF X

```

```

TOD NUM 0 SUBROUTINE CALL ENTRY
IIN 0
RTJ- (AVJLA) VOLATILE STORAGE - 0 Q
NUM 7 1 A
LDA* TOD 2 I
STA- 3,I 3 RETURN ADDRESS
LDA* PATSO 4 PAST COUNTS
STA- 4,I
LDA* (XCONTA) 5 CURRENT COUNTS
STA- 5,I
LDA* (XSECON) 6 CURRENT SECONDS
STA- 6,I
EIN 0
LDQ- QCLK GET CURRENT COUNTS
TRQ A
SUB- 4,I SUBTRACT PAST TO GET ELAPSED COUNTS
STQ- 4,I PRESENT BECOMES PAST
ADD- 5,I ADD ELAPSED COUNTS TO CURRENT COUNTS
CLR Q THEN
DVI* PARA DIVIDE BY COUNTS/SEC
STQ- 5,I SET PRESENT VALUE OF COUNTS
ADD- 6,I UPDATE SECONDS
STA- 6,I
INA -60 HAVE 60 SECONDS ELAPSED
SAP ESEC YES
JMP* EX NO
IIN 0
STA- 6,I YES, SAVE EXCESS OF 60
RAO* (XMINT0) AND BUMP MINUTES
LDA* (XMINT0)
INA -60 HAVE 60 MINUTES ELAPSED
SAM EX NO
STA* (XMINT0) YES, SAVE EXCESS OF 60
RAO* (XHORT0) AND BUMP HOURS
LDA* (XHORT0)
INA -24 HAVE 24 HOJRS ELAPSED
SAM EX NO
STA* (XHORT0) YES, SAVE EXCESS OF 24

*
* SCHEDULE CALENDAR PROGRAM
*
CLR Q ENTRY VECTOR = 0
SYSCHD TJFUNC,4

```

```

M25000057
M25000058
M25000059
M25000070
M25000071
M25000072
M25000073
M25000074
M25000075
M25000076
M25000077
M25000078
M25000079
M25000080
M25000081
M25000082
M25000083
M25000084
M25000085
M25000086
M25000087
M25000088
M25000089
M25000090
M25000091
M25000092
M25000093
M25000094
M25000095
M25000096
M25000097
M25000098
M25000099
M25000100
M25000101
M25000102
M25000103
M25000104
M25000105
M25000106
M25000107
M25000108
M25000109

```

```

0110 P0030 CC14 EX LDA* (XHORTO) SET UP 24-HOUR TIME
0111 P0031 281C MUI* HUNDRD
0112 P0032 8C13 ADD* (XMINTO)
0113 P0033 6C15 STA* (XHORMN)
0114 P0034 CC10 LDA* (XHORTO) SET UP TOTAL ELAPSED MINUTES
0115 P0035 2817 MUI* SIXTY
0116 P0036 8C0F ADD* (XMINTO)
0117 P0037 6C12 STA* (XTOTMN)
0118 P0038 C500 IIN 0
0119 P0039 C103 LDA- 3,I OBTAIN RETURN ADDRESS
0120 P003A 6814 STA* RTURN SAVE
0121 P003B C104 LDA- 4,I
0122 P003C 680F STA* PATSO
0123 P003D C105 LDA- 5,I
0124 P003E 6C09 STA* (XCONTA)
0125 P003F C106 LDA- 6,I
0126 P0040 6C06 STA* (XSECON)
0127 P0041 548A RTJ- (AVOLR) RETURN VOLATILE STORAGE
0128 P0042 0400 EIN 0
0129 P0043 1C0B JMP* (RTJRN) RETURN TO CALLER

```

```

M2500110
M2500111
M2500112
M2500113
M2500114
M2500115
M2500116
M2500117
M2500118
M2500119
M2500120
M2500121
M2500122
M2500123
M2500124
M2500125
M2500126
M2500127
M2500128
M2500129

```

0131 * TIME PARAMETERS

M2500131

```

0133 P0044 7FFF X XHORTO ADC HORTO HOURS
0134 P0045 7FFF X XMINTO ADC MINTO MINUTES
0135 P0046 7FFF X XSECON ADC SECON SECONDS
0136 P0047 7FFF X XCONTA ADC CONTA COUNTS
0137 P0048 7FFF X XHORMN ADC HORMIN 24-HOUR TIME
0138 P0049 7FFF X XTOTMN ADC TOTMIN ELAPSED MINUTES

```

```

M2500133
M2500134
M2500135
M2500136
M2500137
M2500138

```

0140 * STORAGE AND CONSTANTS

M2500140

```

0142 P004A 7FFF X PARA ADC TIMCPS TIMER COUNTS PER SECOND
0143 P004B 0000 PATSO NUM 0 PAST QCLK
0144 P004C 003C SIXTY NUM 60
0145 P004D 0064 HUNDRD NUM 100
0146 P004E 0000 RTURN ADC 0 RETURN ADDRESS
0147 END

```

```

M2500142
M2500143
M2500144
M2500145
M2500146
M2500147

```

E Q U I V A L E N C E S

DEF.LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0000	I	00FF	(000255)
0041	AMONI	00F4	(000244) 0055
0042	ADISP	00EA	(000234) 0059
0043	QCLK	00E8	(000232) 0080
0044	JPCTS	001E	(000030) 0058
0045	AVOLA	00BB	(000187) 0069
0046	AVOLR	00BA	(000186) 0127

S Y M B O L S

DEF.LINE	NAME	ADDRESS	REFERENCED AT LINE NUMBER
0026	JPTOD	0000	0020, 0057
0027	TOD	0006	0027, 0054, 0071
0093	ESEC	0020	0091
0110	EX	0030	0092, 0098, 0103
0133	XHORTO	0044	0100, 0101, 0104, 0110, 0114
0134	XMINTO	0045	0093, 0095, 0099, 0112, 0116
0135	XSECON	0046	0077, 0126
0136	XCONTA	0047	0072, 0124
0137	XHORMN	0048	0116
0138	XTOTMN	0049	0117
0142	PARA	004A	0085
0143	PATSO	004B	0073, 0122
0144	SIXTY	004C	0115
0145	HUNDRD	004D	0111
0146	RTURN	004E	0123, 0129

E X T E R N A L S

DEF.LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0030	TINCPS	004A	0142
0031	TODLVL	0002	0053
0032	TDFUNC	002F	J109
0033	HORTO	0044	0133
0034	MINTO	0045	0134
0035	SECON	0046	0135
0036	CONTA	0047	J136
0037	HORMIN	0048	0137
0038	TCTMIN	0049	0138


```

0001      *      NAM T14          DECK-ID M26 HSOS 5.0          SUMMARY-11 M2600001
0002      *      MASS STORAGE OPERATING SYSTEM VERSION 5.0    M2600002
0003      *      SMALL SYSTEMS DIVISION, LA JOLLA, CALIFORNIA  M2600003
0004      *      COPYRIGHT CONTROL DATA CORPORATION 1975      M2600004

0006      *      TAPE MOTION CONTROL REQUEST PROCESSOR        M2600005

0008      ENT T14          M2600006
0009      EXT SAVLU        M2600009
0010      EXT CKTHRD      M2600010
0011      EQU RPMASK($F0) M2600011
0012      EQU ALJABS($BC),VPL(4),VR(3) M2600012
0013      EQU VIND(8)    M2600013

0015 P0000 0822 T14 TRA Q          M2600015
0016 P0001 C108      LDA- VIND,I    M2600016
0017 P0002 0135      SAM INDIRT--1    M2600017
0018 P0003 5A05      ENA 3          M2600018
0019 P0004 8103      ADD- VR,I     M2600019
0020 P0005 6103      STA- VR,I     M2600020
0021 P0006 0804      SET  A          M2600021
0022 P0007 6108      STA- VIND,I   M2600022
0023      *          SET INDIRT FLAG TO LOCKOUT *4.0/78*1893 M2600023
0024      *          INCREMENTING RETURN ADDRESS FOR *4.0/78*1893 M2600024
0025      *          MASS MEMORY DEVICES IN *1.0/78*1893 M2600025
0026      *          RW (CKTHRD) *1.0/78*1893 M2600026
0027 P0008 5400 X INDIRT RTJ CKTHRD M2600027
0028 P0009 7FFF X          *          1 CARD DELETED *4.0/78*1892 M2600028
0029      *          ENT CARDRD      M2600029
0030      *          EQU CARDRD(*)    M2600030
0031 P000A C622 P LDA- ($22),Q      M2600031
0032 P000B A000      AND  =XRPMASK    STORE REQUEST PRIORITY IN VOLATILE M2600031
0033 P000C 00F0      STA- VPL,I     M2600032
0034 P000D 6104      RTJ- (ALJABS) ABS LOGICAL UNIT *4.0/78*1892 M2600033
0035 P000E 54BC      JMP+ SAVLU    EXIT TO RW PROCESSOR M2600034
0036 P000F 1400 X          M2600034
0037 P0010 7FFF X          M2600035
0038      *          END          M2600035

```

PGM= 0011 (17) COM = 0000 (0) DAT = 0000 (0)

EQUIVALENCES

DEF.LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0000	I	00FF (000255)	
0011	RPMASK	00FG (000240)	0031
0012	ALUABS	00BC (000188)	0033
0012	VPL	0004 (000004)	0032
0012	VR	0003 (000003)	0019, 0020
0013	VIND	0008 (000008)	0016, 0022

S Y M B O L S

DEF.LINE	NAME	ADDRESS	REFERENCED AT LINE NUMBER
0008	T14	0000	0008
0026	INDIRT	0008	0017
0028	CARDRD	000A	0028

EXTERNALS

DEF.LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0009	SAVLU	0010	003+
0010	CKTHRD	0009	0026


```

0001 NAM EFDATA DECK-ID H27 MSOS 5.0 SJMNARY-11 M2700001
0002 * PROGRAM TO STACK ENGINEERING FILE DATA AND PRINT MM DIAGNOSTIC M2700002
0003 * MASS STORAGE OPERATING SYSTEM VERSION 5.0 M2700003
0004 * SMALL SYSTEMS DIVISION, LA JOLLA, CALIFORNIA M2700004
0005 * COPYRIGHT CONTROL DATA CORPORATION 1976 M2700005

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0007 ***** M2700007
0008 * THIS PROGRAM IS ENTERED FROM EACH DRIVER PROGRAM TO LOG SYSTEM *M2700008
0009 * DEVICE FAILJRES. LABEL LOG IS ENTERED WITH THE Q-REGISTER *M2700009
0010 * CONTAINING THE ERROR CODE/LOGICAL UNIT WORD AS WILL BE PASSED *M2700010
0011 * TO THE ALTERNATE DEVICE HANDLER. THIS PROGRAM WILL ADD TO *M2700011
0012 * THIS, HARDWARE STATUS, DATE, AND TIME RELEVANT TO THE FAILURE. *M2700012
0013 * THE DATA WILL THEN BE SAVED INTERNALLY IN ONE OF TWO PLACES, *M2700013
0014 * IF A MASS MEMORY DEVICE IN A 10 ENTRY PUSH DOWN TABLE, OTHERWISE *M2700014
0015 * IN A 5 ENTRY PJSH DOWN/POINTER TABLE. MASS MEMORY FAILURES *M2700015
0016 * ARE PERMANENTLY SAVED INTERNALLY ON THE PRESUMPTION MASS *M2700016
0017 * MEMORY IS NOT RELIABLE. WITH THE EXCEPTION BEING THE FLOPPY DISK *M2700017
0018 * ITS ERRORS WILL BE LOGGED TO MASS MEMORY. OTHER ERRORSS CAUSE THEM *M2700018
0019 * THE LOG / STORE *M2700019
0020 * ORDINAL TO BE SCHEDULED TO MOVE DATA TO THE MASS MEMORY FILE. *M2700020
0021 * NEWLY ACCUMULATED MASS MEMORY ERRORS WILL BE MOVED AT THIS TIME. *M2700021
0022 * DATA FORMAT IS THE SAME FOR EACH TABLE AS FOLLOWS.... *M2700022
0023 * WORD 1 LOGICAL UNIT *M2700023
0024 * WORD 2 DATE (DAY=15-11, MONTH=10-7, YEAR=6-0) *M2700024
0025 * WORD 3 MILITARY TIME *M2700025
0026 * WORD 4 SECONDS(15-8), ERROR CODE(7-0) *M2700026
0027 * WORD 5 HARDWARE STATUS *M2700027
0028 * THIS PROGRAM IS RE-ENTRANT. SINCE VOLATILE STORAGE IS USED, *M2700028
0029 * CALLERS Q AND I REGISTERS ARE PRESERVED. *M2700029
0030 * IF THE FAILED DEVICE IS A MASS MEMORY DEVICE, THE MASS MEMORY *M2700030
0031 * ERROR DIAGNOATIC WILL BE PRINTED USING STACK DATA. *M2700031
0032 ***** M2700032

```

```

0034 * PROGRAM ENTRY POINTS M2700034
0035 ENT LOG DRIVER ENTRY TO LOG ERRORS M2700035
0036 ENT BSYEFS EFSTOR BUSY FLAG M2700036
0037 ENT CEFJTA WAITING TABLE POINTER M2700037
0038 ENT EFLOCK SPACE ERROR LOCKOUT M2700038
0039 ENT EFCOVL WAITING TABLE OVERFLOW INDICATOR M2700039
0040 ENT EFDATA WAITING DATA STACK M2700040
0041 ENT MMEF MASS MEMORY DATA STACK M2700041

```

```

0043 * PROGRAM EXTERNALS M2700043
0044 EXT EFSTOR ENG. FILE DATA STORAGE ORDINAL M2700044
0045 EXT DAYTO CURRENT DAY M2700045
0046 EXT MONTO CURRENT MONTH M2700046
0047 EXT YERTO CURRENT YEAR M2700047
0048 EXT HORMIN CURRENT MILITARY TIME M2700048
0049 EXT SECON CURRENT SECONDS M2700049
0050 EXT LOG1A PHYSTB ADDRESSES M2700050

```

0031
0032

EXT CONVER
EXT HA

DECIMAL TO ASCII CONVERSION (IN ADEV)
HEX TO ASCII CONVERSION (IN NIPROC)

M2700051
M2700052

0033
0034
0035
0036
0037
0038
0039
0040
0041
0042
0043
0044
0045
0046
0047
0048
0049
0050
0051
0052
0053
0054
0055
0056
0057
0058
0059
0060
0061
0062
0063
0064
0065
0066
0067
0068
0069
0070
0071
0072
0073
0074

0022
0088
008A
008C
0008
0008
0008
0000
0000
0000
0004
0043
00FA
00FC
000A
0031
00F4
0001
0006
00C2
0005
0009

* PROGRAM EQUIVALENCES

EQU ZERO(\$22) CELL CONTAINING ZERO
EQU AVOLA(\$BB) VOLATILE STORAGE ACQUISITION ADDRESS
EQU AVOLR(\$BA) VOLATILE STORAGE RELEASE ADDRESS
EQU ESTAT2(12) PDT HARDWARE STATUS
EQU EREQST(8) PDT REQUEST STATUS
EQU M003F(\$8) \$003F MASK
EQU M03FF(\$C) \$03FF MASK
EQU M0007(\$5) \$0007 MASK
EQU P(.) EFSTOR PRIORITY
EQU FIVE(\$43) CELL CONTAINING NUMBER FIVE
EQU ADISP(\$EA) ADDRESS OF DISPATCHER
EQU LUCMNT(\$FC) ADDRESS OF COMMENT LU
EQU M00FF(\$A) \$00FF MASK
EQU M4000(\$31) \$4000 MASK
EQU AMONI(\$F4) ADDRESS OF MONITOR
EQU PC(1) POINTER TO REQUEST
EQU EPTR(6) PHYSTB POINTER TO REQUEST
EQU LIBJNT(\$C2) MASS MEMORY LIBRARY UNIT
EQU ELU(5) PHYSTB LOGICAL UNIT WORD
EQU M007F(\$9)

M2700054
M2700055
M2700056
M2700057
M2700058
M2700059
M2700060
M2700061
M2700062
M2700063
M2700064
M2700065
M2700066
M2700067
M2700068
M2700069
M2700070
M2700071
M2700072
M2700073
M2700074

0076 P00000 0000
0077 P00001 0500
0078 P00002 C862
0079 P00003 1102
0080 P00004 0400
0081 P00005 10FA
0082 P00006 3488
0083 P00007 000A

LOG NUM 0
IIN 0
LDA* EFLCK
SAZ NOLOCK
EIN 0
JMP* (LOG)
NOLOCK RTJ- (AVOLA)
NUM 10

BASIC ENTRY FROM DRIVERS
CHECK SPACE ERROR LOCK OUT
ZERO SAYS NO LOCK OUT
DO NOT LOG ERRORS FROM SPACE
REQUEST VOLATILE
REQUEST 10 WORDS OF VOLATILE STORAGE

M2700075
M2700077
M2700078
M2700079
M2700080
M2700081
M2700082
M2700083

0085
0086
0087
0088
0089
0090
0091
0092
0093
0094
0095
0096
0097

* ORGANIZATION OF VOLATILE STORAGE ----
* WORD 01 Q-REGISTER
* WORD 02 A-REGISTER
* WORD 03 I-REGISTER
* WORD 04 SUBROUTINE RETURN
* WORD 05 FAILED LOGICAL UNIT
* WORD 06 JAY/MONTH/YEAR
* WORD 07 MILITARY TIME
* WORD 08 SECONDS/ERROR CODE
* WORD 09 HARDWARE STATUS
* WORD 10 TYPE CODE, USED TO DETERMINE IF FLOPPY DISK

*M2700085
*M2700086
*M2700087
*M2700088
*M2700089
*M2700090
*M2700091
*M2700092
*M2700093
*M2700094
*M2700095
*M2700096
*M2700097

0099 P00008 C8F7
0100 P00009 0400
0101 P0000A 6103

LDA* LOG
EIN 0
STA- 3,I

SAVE RETURN IN VOLATILE

M2700099
M2700100
M2700101

0102	P000B	0842	CLR Q	MAKE UP DATE WORD	M2700102
0103	P000C	E400	LDQ+ DAYTO		M2700103
	P000D	7FFF	X		
0104	P000E	0FA4	QLS 4		M2700104
0105	P000F	C400	LDA+ MDNTO		M2700105
	P0010	7FFF	X		
0106	P0011	0872	EAQ Q		M2700106
0107	P0012	0FA7	QLS 7		M2700107
0108	P0013	C400	LDA+ YERTO		M2700108
	P0014	7FFF	X		
0109	P0015	C872	EAQ Q		M2700109
0110	P0016	4105	STQ- 5,I	SAVE DATE IN VOLATILE	M2700110
0111	P0017	C400	LDA+ HORMIN	GET MILITARY TIME	M2700111
	P0018	7FFF	X		
0112	P0019	6106	STA- 6,I	AND SAVE IN VOLATILE	M2700112
0113	P001A	C400	LDA+ SECON	GET SECONDS	M2700113
	P001B	7FFF	X		
0114	P001C	0FC8	ALS 8	POSITION IN WORD	M2700114
0115	P001D	6107	STA- 7,I	AND SAVE IN VOLATILE	M2700115
0116	P001E	C522	LDA- (ZERO), I	GET PASSED LOGICAL UNIT/ERROR CODE	M2700116
0117	P001F	0132	SAM EFDA1	IS FLAG SET TO INDICATE THAT ERROR CODE IS IN	M2700117
0118			*	THE Q REGISTER (ANY DRIVER THAT USES AN	M2700118
0119			*	ERROR CODE LARGER THAN 63 WILL HAVE THE ERROR	M2700119
0120			*	CODE IN Q WITH THE UPPER 8 BITS CONTAINING	M2700120
0121			*	THE LOGICAL UNIT AND THE LOWER 8 BITS WILL	M2700121
0122			*	THE ERROR CODE. BIT 15 WILL BE SET AS A FLAG)	M2700122
0123	P0020	A008	AND- M003F	EXTRACT ERROR CODE	M2700123
0124	P0021	1802	JMP* EFDA2		M2700124
0125	P0022	A00A	AND- M00FF	GET THE ERROR CODE	M2700125
0126	P0023	B107	EOR- 7,I	MERGE WITH SECONDS	M2700126
0127	P0024	6107	STA- 7,I	AND SAVE IN VOLATILE	M2700127
0128	P0025	C522	LDA- (ZERO), I	EXTRACT LOGICAL UNIT	M2700128
0129	P0026	0F46	ARS 6		M2700129
0130	P0027	0121	SAP EFDA3	OLD FORMAT	M2700130
0131	P0028	0F42	ARS 2	NEW FORMAT FOR LU	M2700131
0132	P0029	A009	AND- M007F		M2700132
0133	P002A	0822	TRA Q	USE AS INDEX	M2700133
0134	P002B	6104	STA- 4,I	SAVE IN VOLATILE	M2700134
0135	P002C	E600	LDQ+ LOG1A,Q	GET PDT ADDRESS	M2700135
	P002D	7FFF	X		
0136	P002E	C20C	LDA- ESTAT2,Q	GET LAST HARDWARE STATUS	M2700136
0137	P002F	0108	STA- 8,I	AND SAVE IN VOLATILE	M2700137
0138	P0030	C208	LDA- EREQST,Q	EXTRACT TYPE CODE	M2700138
0139	P0031	0F44	ARS 4		M2700139
0140	P0032	A009	AND- M007F		M2700140
0141	P0033	6109	STA- 9,I	SAVE TYPE CODE	M2700141
0142	P0034	C208	LDA- EREQST,Q	EXTRACT CLASS CODE	M2700142
0143	P0035	0FC5	ALS 5		M2700143
0144	P0036	A005	AND- M0007		M2700144
0145	P0037	09FD	INA -2		M2700145
0146	P0038	0500	IIN 0		M2700146
0147	P0039	E0FF	LDQ- I	SAVE POINTER TO VOLATILE STORAGE	M2700147
0148	P003A	4800	STQ ISAVE		M2700148
	PC03B	0083			

0149	PG003C	0114	SAN	NMASS	SKIP IF DEVICE NOT MASS STORAGE	M2700149	
0150	PG003D	0109	LDA-	9,I	SEE IF FLOPPY DISK	M2700150	
0151	PG003E	090B	INA	-68	TYPE CODE OF FLOPPY	M2700151	
0152	PG003F	0101	SAZ	NMASS	IS FLOPPY, LOG ON MASS MEMORY	M2700152	
0153	PG0040	182E	JMP*	MASS	MASS STORAGE DEVICE FAILED	M2700153	
0154	PG0041	C87F	NMASS	LDA* CEFDTA	GET POINTER TO HOLDING STACK	M2700154	
0155	PG0042	G9FA	INA	-5	CHECK IF STACK FULL	M2700155	
0156	PG0043	6112	SAN	NOOVFL	SKIP IF VACANCIES EXIST	M2700156	
0157	PG0044	D87D	RAO*	EFCOVL	FULL - BUMP ERROR INDICATOR	M2700157	
0158	PG0045	1814	JMP*	MOVED	EXIT -- ERROR DATA WILL BE LOST	M2700158	
0159	PG0046	C87A	NOOVFL	LDA* CEFDTA	COMPUTE INDEX INTO NEXT VACANT SLOT	M2700159	
0160	PG0047	2043	MUI-	FIVE		M2700160	
0161	PG0048	8000	ADD	=XEFDATA		M2700161	
	PG0049	0002					
	PG004A	0822	P	TRA	Q	Q POINTS TO NEW SLOT	M2700162
0162	PG004B	08FF	LDA-	I		M2700163	
0163	PG004C	0904	INA	4		M2700164	
0165	PG004D	60FF	STA-	I	I POINTS TO NEW DATA IN VOLATILE	M2700165	
0166	PG004E	0AFA	ENA	-5	LOOP INDEX	M2700166	
0167	PG004F	686E	STA*	TEMP		M2700167	
0168	PG0050	D870	RAO*	CEFDTA	BUMP SLOT POINTER	M2700168	
0169	PG0051	C522	LOOPA	LDA- (ZERO),I	MOVE DATA INTO HOLDING STACK	M2700169	
0170	PG0052	6622	STA-	(ZERO),Q		M2700170	
0171	PG0053	D86A	RAO*	TEMP		M2700171	
0172	PG0054	C869	LDA*	TEMP		M2700172	
0173	PG0055	0103	SAZ	MOVED	SKIP IF MOVE DONE	M2700173	
0174	PG0056	D0FF	RAO-	I	INCREMENT INDICIES	M2700174	
0175	PG0057	0D01	INQ	1		M2700175	
0176	PG0058	18F8	JMP*	LOOPA		M2700176	
0177	PG0059	C866	MOVED	LDA* BSYEFS	CHECK IF EFSTOR BUSY	M2700177	
0178	PG005A	011B	SAN	NOSCH	SKIP IF BUSY	M2700178	
0179	PG005B	D864	RAO*	BSYEFS	SET EFSTOR BUSY FLAG	M2700179	
0180	PG005C	C862	LDA*	ISAVE	PRESERVE I-REG IN THIS PATH FOR REENTRANCY	M2700180	
0181	PG005D	6808	STA*	SAVEI		M2700181	
0182			*	SCHEDULE EFSTOR ORDINAL		M2700182	
0183				SYSCHD EFSTOR,P		M2700183	
0183	PG005E	54F4					
0183	PG005F	2+04					
0183	PG0060	7FFF	X				
0184	PG0061	0500	IIN	0	RESTORE TEMPORARY I-REG	M2700184	
0185	PG0062	C803	LDA*	SAVEI		M2700185	
0186	PG0063	1804	JMP*	EXITA		M2700186	
0187	PG0064	0000	EFLOCK	NUM	0	M2700187	
0188	PG0065	G000	SAVEI	NUM	0	M2700188	
0189	PG0066	C858	NOSCH	LDA* ISAVE	RESTORE VOLATILE POINTER	M2700189	
0190	PG0067	60FF	EXITA	STA-	I	M2700190	
0191	PG0068	C103	LDA-	3,I	FIX RETURN ADDRESS	M2700191	
0192	PG0069	6101	STA-	1,I		M2700192	
0193	PG006A	54BA	RTJ-	(AVOLR)	RLLEASE VOLATILE	M2700193	
0194	PG006B	6894	STA*	LOG		M2700194	
0195	PG006C	0400	EIN	0		M2700195	
0196	PG006D	1C92	JMP*	(LOG)		M2700196	

0198
0199
0200
0201
0202

```

*****
* THIS SECTION WILL SAVE DATA FOR MASS MEMORY ERRORS IN THE
* PROGRAM RATHER THAN CAUSING POSSIBLE MASS STORAGE ERRORS
* TO FURTHER DEGRADE THE SYSTEM.
*****

```

```

M2700198
M2700199
M2700200
M2700201
M2700202

```

```

0205+
0205+
0205+
0206
0206
0207
0208
0209
0210
0211
0212
0213
0214
0215
0216
0217
0218
0219
0220
0221
0222
0223
0224
0225
0226
0227
0228
0229
0230
0231
0232
0233
0234
0235
0236
0237
0238
0239
0240
0241
0242
0242
0242
0242
0243

```

```

PG006E 0A05
PG006F 60FF
PG0070 0C2C
PG0071 CA6A
PG0072 5B69
PG0073 0DFE
PG0074 0171
PG0075 18FB
PG0076 C848
PG0077 0904
PG0078 60FF
PG0079 0C04
PG007A C722
PG007B 6A60
PG007C 0DFE
PG007D 0171
PG007E 18FB
PG007F C83F
PG0080 50FF
PG0081 C103
PG0082 6101
PG0083 54BA
PG0084 6800
PG0085 FF7A
PG0086 C833
PG0087 09F5
PG0088 0101
PG0089 D830
PG008A C82E
PG008B 0103
PG008C 0400
PG008D 1C00
PG008E FF71
PG008F 0829
PG0090 C800
PG0091 FF6E
PG0092 6828
PG0093 C0FF
PG0094 6828
PG0095 4826
PG0096 54F4
PG0097 5204
PG0098 010D
PG0099 C823

```

```

MASS ENA 5
STA- I
ENQ 44
LOOPM LDA* MMEF,Q
STA* MMEF,B
INQ -1
SQM MMVED
JMP* LOOPM
NMOVED LDA* ISAVE
INA 4
STA- I
ENQ 4
LOOPQ LDA- (ZERO),B
STA* MMEF,Q
INQ -1
SQM EXIT
JMP* LOOPQ
EXIT LDA* ISAVE
STA- I
LDA- 3,I
STA- 1,I
RTJ- (AVOLR)
STA LOG
LDA* MPTR
INA -10
SAZ BURST
RAO* MPTR
LDA* BSYMER
SAZ NBSY
EIN 0
JMP (LOG)
NBSY RAO* BSYMER
LDA LOG
STA* TLOG
LDA- I
STA* LISAVE
STQ* QSAVE
* SCHEDULE ERROR PRINTING SECTION
SCHDLE MM DIAG,P,0,1
LDA* LISAVE

```

```

MOVE MASS MEMORY DATA DOWN ONE SLOT
OLDEST ONE FALLS OFF

```

```

MOVE NEW DATA TO TOP OF TABLE

```

```

RESTORE VOLATILE POINTER

```

```

MOVE RETURN ADDRESS

```

```

RELEASE VOLATILE STORAGE
PLUG IN RETURN

```

```

CHECK IF MORE ERRORS ARE STACKED THAN
ROOM IN THE TABLE
SITUATION IS SOMEWHAT HOPELESS SO LOSE SOME
INCREMENT NEW ENTRY POINTER
IS MM ERROR MESSAGE BUSY
SKIP IF NOT BUSY

```

```

RETURN TO CALLER

```

```

SET BUSY FLAG
SAVE RETURN TO CALLER

```

```

SAVE DRIVER I-REGISTER

```

```

SAVE DRIVER Q-REGISTER

```

```

RESTORE I-REGISTER

```

```

M2700204
M2700205
M2700206
M2700207
M2700208
M2700209
M2700210
M2700211
M2700212
M2700213
M2700214
M2700215
M2700216
M2700217
M2700218
M2700219
M2700220
M2700221
M2700222
M2700223
M2700224
M2700225
M2700226
M2700227
M2700228
M2700229
M2700230
M2700231
M2700232
M2700233
M2700234
M2700235
M2700236
M2700237
M2700238
M2700239
M2700240
M2700241
M2700242
M2700243

```

02244	P0009A	60FF	STA-	I			M2700244
02245	P0009B	C105	LDA-	ELU,I	GET LOGICAL UNIT THAT FAILED		M2700245
02246	P0009C	90C2	SUB-	LIBJNT	COMPARE TO LIBRARY UNIT		M2700246
02247	P0009D	C102	SAZ	LIBARY	SKIP IF LIBRARY UNIT		M2700247
02248	P0009E	E81D	LDQ*	QSAVE	RESTORE Q-REGISTER		M2700248
02249	P0009F	1C1B	JMP*	(TLOG)	RETURN TO CALLER		M2700249
02250	P000A0	E106	LIBARY	LDQ-	EPTR,I	GET REQUEST ADDRESS	M2700250
02251	P000A1	C622	LDA-	(ZERO),Q	GET REQUEST CODE		M2700251
02252	P000A2	A000	AND	=N\$3E00	CHECK IF SYSTEM DIKREKTORY REQUEST (RC=0)		M2700252
02253	P000A3	3E00					
02254	P000A4	011A	SAN	MEXIT	SKIP IF NOT		M2700253
02255	P000A5	C622	LDA-	(ZERO),Q	GET REQUEST CODE		M2700254
02256	P000A6	A031	AND-	M4000	CHECK IF PART 1		M2700255
02257	P000A7	011A	SAN	E6	SKIP IF PART 1 REQUEST		M2700256
02258			*				M2700257
02259	P000A8	C201	LDA-	PC,Q	YES,		M2700258
02260	P000A9	6803	STA*	RELCOR			M2700259
02261	P000AA	54F4	RTJ-	(AMONI)	RELEASE ALLOCATED CORE		M2700260
02262	P000AB	1800	NUM	\$1800	RELEASE REQUEST		M2700261
02263	P000AC	0000	RELRCR	NUM 0	COMPLETION ADDRESS		M2700262
02264			*				M2700263
02265	P000AD	0A00	ENA	J	CLEAR COMPLETION ADJRFSS		M2700264
02266	P000AE	6201	STA-	PC,Q			M2700265
02267	P000AF	C80D	MMEXIT	LDA* LISAVE	RESTORE I-REGISTER		M2700266
02268	P000B0	60FF	STA-	I			M2700267
02269	P000B1	18EC	JMP*	EXITB			M2700268
02270	P000B2	C201	E6	LDA- PC,Q	GET START OF PARTITION		M2700269
02271	P000B3	68C3	STA*	RELPAR			M2700270
02272	P000B4	54F4	RTJ-	(AMONI)			M2700271
02273	P000B5	5800	NUM	\$5800	RELEASE PARTITION		M2700272
02274	P000B6	0000	RELPAR	NUM 0			M2700273
02275	P000B7	18F7	JMP*	MEXIT	RETURN TO DRIVER		M2700274
02276	P000B8	0000	BSYNER	NUM 0			M2700275
02277	P000B9	0000	MPTR	NUM 0			M2700276
02278	P000BA	0000	TLOG	NUM 0			M2700277
02279	P000BB	0000	QSAVE	NUM 0			M2700278
02280	P000BC	0000	LISAVE	NUM 0			M2700279
02281	P000BD	0000	TEMP	NUM 0			M2700280
02282	P000BE	0000	ISAVE	NUM 0			M2700281
02283	P000BF	0000	BSYEFS	NUM 0	EFSTOR BUSY FLAG		M2700282
02284	P000C0	0000	CEFDIA	NUM 0	SLOT COUNTER FOR EFDATA		M2700283
02285	P000C1	0000	EFCOVL	NUM 0	EFDATA FILLED INDICATOR		M2700284
02286	P000C2	0019	EFDATA	BZS	5 SLOT HOLDING STACK		M2700285
02287	P000DB	0032	MMEF	BZS	10 SLOT MASS MEMORY STACK		M2700286

0288
0289
0290
0291
0292
0293
0294
0295
0296
0297
0298
0299
0300
0301

```

*****
* THIS SECTION RUNS AT A LOW PRIORITY LEVEL TO PRINT MASS
* MEMORY DIAGNOSTIC MESSAGES. DATA IS TAKEN FROM THE ERROR
* STACK AND REFORMATTED INTO THE ERROR MESSAGE.
* THE ERROR MESSAGE IS....
* MM ERR XX LU=YY T=HHMM:SS S=ZZZZ
* WHERE....
* XX = ERROR CODE (SEE DIAGNOSTIC HANDBOOK)
* YY = LOGICAL UNIT
* HH = HOUR
* MM = MINUTE
* SS = SECOND
* ZZZZ = HARDWARE STATUS
*****

```

*M2700288
*M2700289
*M2700290
*M2700291
*M2700292
*M2700293
*M2700294
*M2700295
*M2700296
*M2700297
*M2700298
*M2700299
*M2700300
*M2700301

0303 PG10D 0560
0304 PG10E C8AA
0305 PG10F 09FE
0306 PG110 68A8
0307 PG111 2043
0308 PG112 60FF
0309 PG113 C0C4
0310 PG114 CRC6
0311 PG115 6A53
0312 PG116 0DFE
0313 PG117 0171
0314 PG118 18FB
0315 PG119 0400
0316 PG11A C84E
0317 PG11B 5C4B
0318 PG11C 6838
0319 PG11D C84F
0320 PG11E 5400
0321 PG120 683C
0322 PG121 0814
0323 PG122 0C3D
0324 PG123 0FE8
0325 PG124 4837
0326 PG125 0920
0327 PG126 0FC8
0328 PG127 E835
0329 PG128 0FF8
0330 PG129 4833
0331 PG12A 6833
0332 PG12B C840
0333 PG12C A00A
0334 PG12D 5C39
0335 PG12E 6823
0336 PG12F C83C
0337 PG130 0FC8
0338 PG131 A00A

```

MMDIAG IIN 0
LDA* MPTR
INA -1
STA* MPTR
MUI- FIVE
STA- I
ENQ 4
MLOCAL LDA* MMEF,B
STA* LOCAL,2
INQ -1
SQM DLOCAL
JMP* MLOCAL
DLOCAL EIN 0
LDA* LOCAL
RTJ* (XCONV)
STA* MSG+7
LDA* LOCAL+4
RTJ+ HA
STA* MSG+15
TRQ A
ENQ $3D
LLS 8
STQ* MSG+14
INA $20
ALS 8
LDQ* MSG+15
LLS 24
STQ* MSG+15
STA* MSG+16
LDA* LOCAL+3
AND- MDOFF
RTJ* (XCONV)
STA* MSG+4
LDA* LOCAL+3
ALS 8
AND- MDOFF

```

```

DECREMENT AND RESTORE POINTER TO MASS
MEMORY ERROR TABLE. POINTS TO ENTRIES IN
MMEF NEEDING MESSAGE OUTPUT.
COMPUTE INDEX
MOVE 5 WORD ENTRY TO LOCAL BUFFER
FOR PROCESSING
GET FAILED LOGICAL UNIT
CONVERT TO ASCII
PUT IN MESSAGE
GET HARDWARE STATUS
CONVERT TO ASCII
FORMAT AND PUT IN MESSAGE
GET ERROR CODE
CONVERT TO ASCII
PUT IN MESSAGE
GET SECONDS

```

M2700303
M2700304
M2700305
M2700306
M2700307
M2700308
M2700309
M2700310
M2700311
M2700312
M2700313
M2700314
M2700315
M2700316
M2700317
M2700318
M2700319
M2700320
M2700321
M2700322
M2700323
M2700324
M2700325
M2700326
M2700327
M2700328
M2700329
M2700330
M2700331
M2700332
M2700333
M2700334
M2700335
M2700336
M2700337
M2700338

03339 PG132 5C34
 03340 PG133 6826
 03341 PG134 0842
 03342 PG135 0835
 03343 PG136 3831
 03344 PG137 4832
 03345 PG138 5C2E
 03346 PG139 0C3D
 03347 PG13A 0FE8
 03348 PG13B 481B
 03349 PG13C 681B
 03350 PG13D 082C
 03351 PG13E 5C28
 03352 PG13F 0842
 03353 PG140 0FE8
 03354 PG141 093A
 03355 PG142 6816
 03356 PG143 F814
 03357 PG144 4813
 03359 PG145 54F4
 03360 PG146 4C44
 03361 PG147 015E
 PG148 0000
 03362 PG149 18FC
 03363 PG14A 0011
 PG14B 014D
 03364 PG14C 14EA
 03365 PG14D 204D
 PG14E 4D20
 PG14F 4552
 PG150 5220
 PG151 5858
 PG152 204C
 PG153 5530
 PG154 5858
 PG155 2054
 PG156 3048
 PG157 484D
 PG158 4D3A
 PG159 5353
 PG15A 2053
 PG15B 3D58
 PG15C 5858
 PG15D 5820
 03366 PG15E 0500
 03367 PG15F C8C0
 PG160 FF58
 03368 PG161 0101
 03369 PG162 18AA
 03370 PG163 6800
 PG164 FF53

RTJ* (XCONV) CONVERT TO ASCII
 STA* MSG+12 PUT IN MESSAGE
 CLR Q
 LDA* LOCAL+2 GET MILITARY TIME
 DVI* N100 CONVERT TO HOURS/MINUTES
 STQ* LOCAL+1 SAVE MINUTES
 RTJ* (XCONV) CONVERT HOURS
 ENQ \$3D FORMAT HOURS/MINUTES AND PUT IN MESSAGE
 LLS 8
 STQ* MSG+9
 STA* MSG+10
 LDA* LOCAL+1
 RTJ* (XCONV) CONVERT MINUTES
 CLR Q
 LLS 8
 INA \$3A
 STA* MSG+11
 ADQ* MSG+10
 STQ* MSG+10
 PRINT ERROR MESSAGE
 FWRITE LUCMNT,CYMER,MSG,17,A,P,P,I,.,1
 *
 JMP- (ADISP) WAIT FOR COMPLETION
 ALF 17, MM ERR XX LU=XX T=HHMM:SS S=XXXX
 MSG
 CHMER IIN 0
 LDA MPTR POINTER = 0 IF NO MORE MESSAGES
 SAZ DONE SKIP IF NO MORE
 JMP* MMDIAG GO TO PROCESS NEXT MESSAGE
 DONE STA BSYMER ZERO MESSAGE BUSY FLAG

M2700339
 M2700340
 M2700341
 M2700342
 M2700343
 M2700344
 M2700345
 M2700346
 M2700347
 M2700348
 M2700349
 M2700350
 M2700351
 M2700352
 M2700353
 M2700354
 M2700355
 M2700356
 M2700357
 M2700358
 M2700359

M2700360
 M2700361

M2700362
 M2700363

M2700364
 M2700365
 M2700366


```
0357 P0165 14EA      JMP- (ADISP)      EXIT
0358 P0166 7FFF X XCONV  ADC  CONVER
0369 P0167 0064      N100  NUM  100
0370 P0168 0005      LOCAL BZS  LOCAL(5)
0371                               END
```

```
M27J0357
M27J0368
M27J0369
M27J0370
M27J0371
```

```
PGM= 0160 ( 365)  COM = 0000 ( 0)  DAT = 0000 ( 0)
```

EQUIVALENCES

DEF. LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0000	I	00FF (000255)	0147, 0163, 0169, 0174, 0190, 0205, 0214, 0222, 0238, 0244, 0267, 0308
0055	ZERO	0022 (000034)	0116, 0128, 0169, 0170, 0216, 0251, 0254
0056	AVOLA	00BB (000187)	0082
0057	AVOLR	00BA (000186)	0193, 0225
0058	ESTAT2	00CC (000012)	0136
0059	EREQST	0008 (000008)	0138, 0142
0060	M003F	0008 (000008)	0123
0061	M03FF	000C (000012)	
0062	M0067	0009 (000009)	0144
0063	P	0004 (000004)	0183, 0242, 0359, 0359
0064	FIVE	00+3 (000067)	0161, 0307
0065	ADISP	00EA (000234)	0360, 0367
0066	LUCMNT	00FC (000252)	0359
0067	Y00FF	000A (000010)	0123, 0333, 0338
0068	M4000	0031 (000049)	0255
0069	AMONI	00F4 (000244)	0260, 0271
0070	PC	0001 (000001)	0258, 0265, 0269
0071	EPTR	0006 (000006)	0250
0072	LIBUNT	00C2 (000194)	0240
0073	ELU	0005 (000005)	0245
0074	M007F	0009 (000009)	0132, 0140

SYMBOLS

DEF.LINE	NAME	ADDRESS	REFERENCED AT LINE NUMBER
J035	LOG	0000	J035, 0081, 0099, 0194, 0196, 0226, 0234, 0236
0036	BSYEFS	00BF	0036, 0177, 0179
0037	EFDDTA	00C0	0037, 0154, 0159, 0168
0038	EFLOCK	0064	0038, 0078
0039	EFCCVL	00C1	0039, 0157
0040	EFDATA	00C2	0040, 0161
0041	MNEF	00DB	0041, 0207, 0208, 0217, 0310
0082	NOLOCK	0006	0079
J125	EFD1	0022	J117
0126	EFD2	0023	0124
0132	EFD3	0029	0130
0154	VMASS	0041	J149, 0152
0159	VOOVFL	0040	0150
0169	LOOPA	0051	0170
0177	MOVED	0059	J158, 0173
0188	SAVEI	0055	J181, 0185
0189	NOSCH	0066	J178
J190	EXITA	0067	0186
0204	MASS	006E	0153
0207	LOOPM	0071	0211
0212	MMOVED	0070	J210
0216	LOOPQ	007A	J220
0221	EXIT	007F	J219
0231	BURST	008A	J229
0235	NBSY	008F	0232
0248	EXITB	009E	0268
0250	LIBARY	00AC	0247
0262	RELCOR	00AC	0259
0266	MMEXIT	00AF	J253, 0274
0269	E6	00B2	0256
0273	REL PAR	00B6	0270
0275	BSYMER	00B8	J231, 0235, 0365
J276	MPTR	00B9	J227, 0230, 0304, 0300, 0303
0277	TLOG	00BA	0237, 0249
0278	QSAVE	00BB	0250, 0248
0279	LISAVE	00BC	J239, 0243, 0266
0280	TEMP	00BD	0167, 0171, 0172
0281	ISAVE	00BE	J148, 0180, 0189, 0212, 0221
0303	MMDIAG	010D	J242, 0365
0310	MLOCAL	0114	J314
J315	JLOCAL	0119	J313

0361 MSG 014D
0362 CMMER 015E
0366 DONE 0163
0368 XCONV 0166
0369 N100 0167
0370 LOCAL 0168

0318, 0321, 0325, 0328, 0330, 0331, 0335, 0340, 0348, 0349, 0355, 0356, 0357, 0359
0359
0364
0317, 0334, 0339, 0345, 0251
0343
0311, 0316, 0319, 0332, 0335, 0342, 0344, 0350

EXTERNALS

DEF. LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0044	EFSTOR	006C	0183
0045	DAYTO	000D	0103
0046	MONTO	J010	J105
0047	YERTO	0014	J108
0048	HORMIN	0018	J111
0049	SECON	001B	J113
0050	LOG1A	002D	J135
0051	CONVER	0166	0368
0052	HA	011F	0320

0001
0002
0003
0004
0005

* NAM ALAQ DECK-ID M28 MSOS 5.0
* A/Q CHANNEL USAGE ALLOCATOR
* MASS STORAGE OPERATING SYSTEM VERSION 5.0
* SMALL SYSTEMS DIVISION, LA JOLLA, CALIFORNIA
* COPYRIGHT CONTROL DATA CORPORATION 1976

SUMMARY-11 M2800001
M2800002
M2800003
M2800004
M2800005

0007
0008
0009
0010
0011
0012
0013
0014
0015
0016
0017
0018
0019
0020
0021
0022
0023

* EACH DRIVER RESPONSIBLE FOR A DEVICE REQUIRING A/Q ALLOCATION MUST
* REQUEST CONTROL OF THE A/Q CHANNEL AND FOLLOWING COMPLETION OF
* ONE TRANSFER, RELEASE CONTROL.
*
* A SAMPLE OPERATION IS AS FOLLOWS.....
* DRIVER REQUEST 1706 ACCESS...RTJ+ RQAQ
* DRIVER COMPLETES OPERATION...RTJ+ RLAQ
* RETURN IS MADE TO THE DRIVER FOR CONTINUATION
*
* IF ACESS IS REQUESTED AND THE A/Q CHANNEL IS BUSY, THE RETURN ADDRESS
* PRIORITY LEVEL, AND I-REGISTER IS SAVED IN A CIRCULAR STACK UNTIL
* IT IS AVAILBLE WHEN THE REQUESTOR IS SCHEDULED AT HIS ENTRY
* PRIORITY WITH THE I-REGISTER IN Q. THE STACK IS FIRST IN, FIRST OUT
*
* ON ENTRY TO RELEASE THE A/Q CHANNEL THE I-REGISTER IS RETURNED IN Q.

M2800007
M2800008
M2800009
M2800010
M2800011
M2800012
M2800013
M2800014
M2800015
M2800016
M2800017
M2800018
M2800019
M2800020
M2800021
M2800022
M2800023

0025
0026
0027

* PROGRAM ENTRY POINTS
ENT RQAQ ACESS ENTRY FOR A/Q CHANNEL
ENT RLAQ RELEASE ENTRY FOR A/Q CHANNEL

MSOS 4.1 M2800025
MSOS 4.1 M2800026
MSOS 4.1 M2800027

0029
0030
0031
0032

* PROGRAM EXTERNALS
EXT AQSTCK REQUEST STACK
EXT AQSSIZ REQUEST STACK SIZE TABLE
EXT SYFAIL SITE FAIL LOCATED IN SYSDAT (\$18FF)

MSOS 4.1 M2800029
MSOS 4.1 M2800030
MSOS 4.1 M2800031
M2800032

0035
0036
0037
0038

0022
00EF
00EA
00F4

* PROGRAM EQUIVALENCES
EQU ZERO(\$22) ZERO ADDRESS
EQU PRIOR(\$EF) SYSTEM PRIORITY LEVEL
EQU ADISP(\$EA) DISPATCHER
EQU AMONI(\$F4) MONITOR REQUEST ENTRY

M2800034
M2800035
M2800036
M2800037
M2800038

0041
0042
0043
0044
0045
0046
0047

```

*****
* THIS SECTION IS THE A/Q CHANNEL REQUEST ENTRY. IF THE A/Q CHANNEL
* IS NOT ACTIVE, RETURN IS MADE IMMEDIATELY TO THE DRIVER. IF THE
* A/Q CHANNEL IS BUSY, THE DRIVERS I-REGISTER, PRIORITY, RETURN
* ARE SAVED IN THE WAITING STACK. IF THE QUANTITY OF ENTRIES EXCEEDS
* THE STACK SIZE, THERE IS NO ALTERNATIVE BUT TO STOP THE SYSTEM.
*****

```

0049 P0000 0000
0050 P0001 0000
0051 P0002 0000
0052 P0003 0000
0053 P0004 0000
0054 P0005 0000
0055 P0006 0000
0056 P0007 0000
0057 P0008 0000
0058 P0009 0000
0059 P000A 0000
0060 P000B 0000
0061 P000C 0000
0062 P000D 0000
0063 P000E 0000
0064 P000F 0000
0065 P0010 0000
0066 P0011 0000
0067 P0012 0000
0068 P0013 0000
0069 P0014 0000
0070 P0015 0000
0071 P0016 0000
0072 P0017 0000
0073 P0018 0000
0074 P0019 0000
0075 P001A 0000
0076 P001B 0000
0077 P001C 0000
0078 P001D 0000
0079 P001E 0000
0080 P001F 0000
0081 P0020 0000
0082 P0021 0000
0083 P0022 0000
0084 P0023 0000
0085 P0024 0000
0086 P0025 0000
0087 P0026 0000
0088 P0027 0000
0089 P0028 0000
0090 P0029 0000
0091 P002A 0000
0092 P002B 0000

```

RQAQ NUM 0 ACCESS ENTRY **MSOS 4.1** M2800049
      IIN 0 INHIBIT INTERRUPTS M2800050
      LDA* BUSYAQ CHECK BUSY STATUS **MSOS 4.1** M2800051
      SAN THREAD SKIP IF BUSY M2800052
      RAO* BUSYAQ SET BUSY FLAG **MSOS 4.1** M2800053
RTNGJT LDQ- I PUT I-REG. INTO Q-REG. FOR RETURN M2800054
      STQ* GOTAQ SAVE PDI ADDRESS OF CURRENT USER M2800055
      EIN 0 ENABLE INTERRUPTS M2800056
      JMP* (RQAQ) RETURN TO CALLER **MSOS 4.1** M2800057
THREAD LDA- I CREATE TEMPORARY HOLDING AREA FOR STACK DATA M2800058
      LDQ* GOTAQ SEE IF THIS DRIVER ALREADY HAS AQ M2800059
      EAQ Q M2800060
      SQN NOGOT SKIP IF NOT CURRENT USER M2800061
      JMP* RTNGJT RETURN TO DRIVER - ALREADY HAS IT M2800062
NOGOT STA* TEMPII SAVE DRIVER I-REG. M2800063
      LDQ* STKADD PICK UP POINTER TO STACK ADDRESS **MSOS 4.1** M2800064
      LDA* AQIN PICK UP POINTER FOR NEXT IN **MSOS 4.1** M2800065
      AAQ Q M2800066
      LDA- (ZERO), Q PICK UP FIRST VACANT LOCATION M2800067
      SAZ GOOD M2800068
      RTJ+ SYFAIL A/Q TABLE IN SYSDAT NOT LARGE ENOUGH - HANG M2800069
X
GOOD LDA* RQAQ ASSEMBLE STACK ENTRYRETURN ADDRESS **MSOS -.1** M2800070
      STA- (ZERO), Q M2800071
      INQ 1 M2800072
      LDA* TEMPII DRIVER I-REGISTER M2800073
      STA- (ZERO), Q M2800074
      INQ 1 M2800075
      LDA- PRIOR DRIVER PRIORITY M2800076
      STA- (ZERO), Q M2800077
      LDA* AQIN **MSOS 4.1** M2800078
      LDQ* (XST<SZ) OBTAIN STACK SIZE M2800079
      TCQ Q M2800080
      INA 3 M2800081
      AAQ Q M2800082
      SQN NOOVER M2800083
      TRQ A M2800084
NOOVER STA* AQIN **MSOS 4.1** M2800085
      EIN 0 ENABLE INTERRUPTS M2800086
      JMP- (ADISP) EXIT TO DISPATCHER M2800087
      TEMPII NUM 0 M2800088
      BUSYAQ NUM 0 M2800089
      AQIN NUM 0 M2800090
      AQOUT NUM 0 **MSOS -.1** M2800091

```


ALAQ

PAGE 3

DATE: 01/27/99

0092	PG02C	0000	ITAQ	NUM	0
0093	PG02D	0000	TIAQ	NUM	0
0094	PG02E	0000	GOTAQ	NUM	0

MSOS 4.1M28J0092
MSOS 4.1M28J0093
M28J0094

0097
0098
0099
0100
0101
0102
0103
0104

```

* THIS SECTION IS ENTERED BY THE DRIVER TO RELEASE THE A/Q CHANNEL *M2800097
* IF NO OTHER DRIVER IS WAITING, RETURN IS MADE IMMEDIATELY TO *M2800098
* DRIVER. OTHERWISE, THE STACK ENTRY IS MOVED INTO THIS PROGRAM *M2800099
* IF NO OTHER DRIVER IS WAITING, RETURN IS MADE IMMEDIATELY TO *M2800100
* DRIVER. OTHERWISE, THE STACK ENTRY IS MOVED INTO THIS PROGRAM *M2800101
* AND THE RELEASING DRIVER AND REQUESTING DRIVER ARE BOTH *M2800102
* SCHEDULED *M2800103
*****M2800104

```

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0107
0108
0109
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0112
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0115
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0117
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0123
0124
0125
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0127
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0145
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0147
0148

```

P002F 0000
P0030 0500
P0031 C0FF
P0032 E8FB
P0033 C872
P0034 0143
P0035 0822
P0036 0400
P0037 1CF7
P0038 68F3
P0039 E8F0
P003A C8F0
P003B 0872
P003C 015A
P003D E825
P003E 0832
P003F E622
P0040 0156
P0041 0A00
P0042 08E6
P0043 08EA
P0044 E8E7
P0045 0400
P0046 1CE8
P0047 E81B
P0048 0832
P0049 C622
P004A 681E
P004B 0844
P004C 6622
P004D 0001
P004E C622
P004F 680E
P0050 0844
P0051 6622
P0052 0001
P0053 C622
P0054 880F
P0055 6812
P0056 0844
P0057 6622
P0058 C8D2

```

```

RLAQ NUM 0 RELEASE ENTRY **MSOS +.1** M2800106
IIN 0 INHIBIT INTERRUPTS M2800107
LDA- I SAVE DRIVER I-REG. M2800108
LDQ* GOTAQ SEE IF RELEASING DRIVER REALLY HAS AQ M2800109
EAQ Q SKIP IF SAME **MSOS +.1** M2800110
SQZ GOTNO M2800111
TRA Q M2800112
EIN 0 M2800113
JMP* (RLAQ) IGNORE RELEASE - NOT ACQUIRED M2800114
GOTNO STA* ITAQ **MSOS +.1** M2800115
LDQ* AQIN **MSOS +.1** M2800116
LDA* AQOUT **MSOS +.1** M2800117
EAQ Q M2800118
SQN DOIT SKIP IF PTRS NOT EQUAL M2800119
LDQ* STKADD PTRS= IS STACK FULL OR EMPTY **MSOS +.1** M2800120
AAQ Q M2800121
LDQ- (ZERO),Q M2800122
SQN DOIT SKIP IF STACK FULL M2800123
ENA 0 STACK CLEARED, ZERO BUSY FLAG M2800124
STA* BUSYAQ AND RETURN **MSOS +.1** M2800125
STA* GOTAQ CLEAR CURRENT USER PDT ADDRESS M2800126
LDQ* ITAQ RESTORE DRIVER I-REG. **MSOS +.1** M2800127
EIN 0 M2800128
JMP* (RLAQ) RETURN TO DRIVER **MSOS +.1** M2800129
DOIT LDQ* STKADD MOVE STACK ENTRY TO TEMP **MSOS +.1** M2800130
AAQ Q M2800131
LDA- (ZERO),Q M2800132
STA* SKD11 SET LOCATION TO SCHEDULE M2800133
CLR A M2800134
STA- (ZERO),Q M2800135
INQ 1 M2800136
LDA- (ZERO),Q M2800137
STA* GOTAQ NEW DEVICE HAS AQ M2800138
CLR A M2800139
STA- (ZERO),Q M2800140
INQ 1 M2800141
LDA- (ZERO),Q M2800142
ADD* SKDMSK M2800143
STA* SKD01 SET SCHEDULE CODE + PRIORITY M2800144
CLR A M2800145
STA- (ZERO),Q M2800146
LDA* AQOJT UPDATE STACK PTR **MSOS +.1** M2800147
* 1 CARD DELETED M2800148

```

0149 P0059 EC08
 0150 P005A 6852
 0151 P005B 6903
 0152 P005C 0832
 0153 P005D 0151
 0154 P005E 0814
 0155 P005F 68CB
 0156 P0060 C8CE
 0157 P0061 1804

OVERNO

LDQ* (XSTKSZ)
 TCQ Q
 INA 3
 AAQ Q
 SQN OVERNO
 TRQ A
 STA* AQQJT
 LDA* RLAQ
 JMP* SKDL

PICK UP STACK SIZE

 UPDATE STACK POINTER
 PICK UP RETURN ADDRESS
 GO TO SCHEDULER ROUTINE

MSOS 4.1M2800149
 M2800150
 M2800151
 M2800152
 M2800153
 M2800154
 MSOS 4.1M2800155
 MSOS 4.1M2800156
 MSOS 4.1M2800157

0159
0150
0161

```

*****M2800159
*   TABLE OF ADDRESSES AND CONSTANTS   *M2800160
*****M2800161

```

```

0153 P0062 7FFF X STKADD ADC AQSTCK
0154 P0063 5200 X SKDMSK NUM $5200
0155 P0064 7FFF X XSTKSZ ADC AQSSIZ

```

DATA STACK ADDRESSES

```

**MSOS 4.1**M2800163
M2800164
**MSOS 4.1**M2800165

```

```

0167 *****M2800167
0168 * THIS SECTION SCHEDULES THE REQUESTING AND RELEASING DRIVERS *M2800168
0169 * AT THEIR PRIORITIES. *M2800169
0170 *****M2800170

```

```

0172 P0065 E8C8 SKDL LDQ* GOTAQ M2800172
0173 P0066 54F4 RTJ- (AMONI) SCHEDULE NEXT USER M2800173
0174 P0067 0000 SKD01 NUM 0 M2800174
0175 P0068 0000 SKD11 NUM 0 M2800175
0176 P0069 0500 IIN 0 M2800176
0177 P006A 68C4 STA* RLAQ RESTORE RETURN ADDRESS M2800177
0178 P006B E0FF LDQ- I RESTORE PRT ADDRESS M2800178
0179 P006C 0400 EIN 0 M2800179
0180 P006D 1CC1 JMP* (RLAQ) RETURN M2800180
0181 P006E 14EA JMP- (ADISP) EXIT TO DISPATCHER M2800181
0182 END M2800182

```

PSM= 006F (111) COM = 0000 (0) DAT = 0000 (0)

E Q U I V A L E N C E S

DEF.LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0000	I	00FF	(000255) 0054, 0058, 0108, 0178
0035	ZERO	0022	(000034) 0067, 0071, 0074, 0077, 0122, 0132, 0135, 0137, 0140, 0142, 0146
0036	PRIOR	00EF	(000239) 0076
0037	ADISP	00EA	(000234) 0087, 0181
0038	AMONI	00F4	(000244) 0173

SYMBOLS

DEF. LINE	NAME	ADDRESS	REFERENCED AT LINE NUMBER
0026	RQAQ	0000	0026, 0057, 0070
0027	RLAQ	002F	0027, 0114, 0129, 0156, 0177, 0180
0054	RTNGOT	0005	0062
0058	THREAD	0009	0052
0063	NOGOT	000E	0061
0070	GOOD	0016	0068
0085	NOOVER	0025	0083
0088	TEMPII	0028	0063, 0073
0089	BUSYAQ	0029	0051, 0053, 0125
0090	AQIN	002A	0065, 0078, 0085, 0116
0091	AQOUT	002B	0117, 0147, 0155
0092	ITAQ	002C	0115, 0127
0093	TIAQ	002D	
0094	GOTAQ	002E	0055, 0059, 0109, 0126, 0138, 0172
0115	GOTNO	0038	0111
0130	DOIT	0047	0119, 0123
0155	OVERNO	005F	0153
0163	STKADD	0062	0064, 0120, 0130
0164	SKDMSK	0063	0143
0165	XSTKSZ	0064	0079, 0149
0172	SKDL	0065	0157
0174	SKDC1	0067	0144
0175	SKD11	0068	0133

EXTERNALS

DEF.LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0030	AQSTCK	0062	0163
0031	AQSSIZ	0064	0165
0032	SYFAIL	0015	0069

0001
0002
0003
0004
0005

```

NAM SPACE DECK-ID M29 MSOS 5.0 SUMMARY-122*****
* SPACE REQUEST PRCESSOR, ALLOCATABLE SPACE AND RESTART M2900002
* MASS STORAGE OPERATING SYSTEM VERSION 5.0 M2900003
* SMALL SYSTEMS DIVISION, LA JOLLA, CALIFORNIA M2900004
* COPYRIGHT CONTROL DATA CORPORATION 1976 M2900005

```

0007
0008

0000 P

```

ENT SPACE M2900007
EQU SPACE(*) M2900008

```

0011
0012
0013
0014
0015
0016
0017
0018
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0020
0021
0022
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0024
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0026
0027
0028
0029
0030
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0032
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0038
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0040
0041
0042
0043
0044
0045
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0050
0051
0052

```

*****
* ENTRY POINTS
*****
ENT T10 SPACE REQUEST PRCESSOR M2900011
ENT STMSV+ START OF SPACE PROGRAM M2900012
ENT T17 PARTITION CORE REQUEST PRCESSOR M2900013
ENT AREA3 TOTAL LENGTH OF ALLOCATABLE M2900014
ENT ALCLGH ALLOCATABLE CORE LENGTH TABLE M2900015
*****
* EXTERNALS
*****
EXT UBPROT CONTAINS UPPER BOUND REGISTER DATA 116*4381*****
EXT LBPROT CONTAINS LOWER BOUND REGISTER DATA 116*4381*****
EXT LPBDTB UPPER BOUND REGISTER DATA TABLE BASE 116*4381*****
EXT LOBDTB LOWER BOUND REGISTER DATA TABLE BASE 116*4381*****
EXT CCP CURRENT CONTROL POINT 116*4381*****
EXT SYFAIL SYSTEM FAILURE ROUTINE 122*4381*****
EXT ENJOV4 ADDRESS OF LAST LOCATION IN PART C 122*4381*****
EXT CKTHRD CHECK THREAD FOR NON-ZERO ENTRY(RW SUB.) M2900022
EXT SAVLU ENTRY IN RW PROGRAM FOR SPACE PRCESSOR M2900023
EXT RPMASK REQUEST PRIORITY MASK M2900024
EXT LVLSTR LEVEL START TABLE M2900025
EXT LENJ LOCATION CONTAINING END OF ALLOCATABLE M2900026
EXT CALTHU LOCATION CONTAINING NO. OF AVAIL ALLOCATABLE M2900027
EXT DTIMER DIAGNOSTIC TIMER PROGRAM M2900028
EXT IDLE IDLE PROGRAM M2900029
EXT MFFLAG POINTER TO EXTENDED INTRPT STACK NP MSOSM2900030
EXT DMICOD DEFINE MICRO-INTRPT CODE NP MSOSM2900031
EXT TBLADR ADT TABLE ADDRESS NP MSOSM2900032
EXT EMPSRT RESET/START FUNCTION CODE NP MSOSM2900033
EXT UPTOD TIME OF DAY PROGRAM **MSOS 4.1**M2900034
EXT E15761 1576-1 BASIC W,E,S WORD - FUNCTION **MSOS 4.1**M2900035
EXT H15721 1572-1 HISTORY TABLE **MSOS 4.1**M2900036
EXT O15721 1572-1 BASIC W,E,S WORD - DATA **MSOS 4.1**M2900037
EXT E15721 1572-1 BASIC W,E,S WORD - FUNCTION **MSOS 4.1**M2900038
EXT E1573 1573 BASIC W,E,S WORD **MSOS 4.1**M2900039
EXT O1572 1572 OSCILLATOR FREQ./CLOCK FREQ. **MSOS 4.1**M2900040
EXT E1572F FUNCTION CODE TO ENABLE 1572 **MSOS 4.1**M2900041
EXT E1572 1572 BASIC W,E,S WORD **MSOS 4.1**M2900042
EXT EQ3644 FUNCTION CODE FOR COMM. MUX **MSOS 4.1**M2900043
EXT E10336 10336-1 W,E,S WORD M2900044
EXT O10336 10336-1 CLOCK REGISTER VALUE M2900045

```

0053	EXT	F10336	ENABLE 10336-1		M2900043
0054	EXT	TMRTYP	TIMER TYPE DESIGNATOR	**MSOS 4.1**	M2900047
0055	EXT	LOG1A	TABLE OF P.D.T. ADDRESSES	**MSOS 4.1**	M2900048
0056	EXT	E17811	1781-1 W.E.S.		M2900049
0058	EXT	F17811	1781-1 INITIAL FUNCTION		M2900050
0059	EXT	JOBENT	INDEX TO JOBENT DIRECTORY ENTRY		M2900051
0060	EXT	LIBEDT	INDEX TO LIBEDT DIRECTORY ENTRY		M2900052
0061	EXT	PROTEC	INDEX TO PROTEC DIRECTORY ENTRY		M2900053
0062	EXT	SYSLVL	SYSTEM LEVEL (*S STATEMENT)		M2900054
0063	EXT	K65T10	ENTRY TO PARTITION CORE DRIVER (PRTCDR)		M2900055
0064	EXT	IUP	STANDARD INPUT (TRVEC)		M2900056
0065	EXT	INPTV4	INPUT UNIT FOR JOB PROCESSOR (TRVEC)		M2900057
0066	EXT	AUTF9	AUTOLOAD STD INPUT (TRVEC)		M2900058
0067	EXT	AUTFA	AUTOLOAD STD PUNCH (TRVEC)		M2900059
0068	EXT	AUTFB	AUTOLOAD STD LIST (TRVEC)		M2900060
0069	EXT	N1,N2,N4,N5,N6,N7,N8,N9,N10,N11,N12,N13,N14,N15	**MSOS 4.1**	M2900061	
0070	EXT	LSIZV4	OVERLAY LENGTH OF LIBEDT	**MSOS +.0M	M2900062
0071	EXT	PSIZV4	OVERLAY LENGTH OF PROTECT PROCESSOR	**MSOS +.0M	M2900063
0072	EXT	JBFLV4			M2900064
0073	EXT	EFLOCK	LOCK OUT LOGGER FLAG	**MSOS 4.1**	M2900065
0074	EXT	HIBX	LOCK OUT MIPRO		M2900066
0075	EXT	TDFUNC	TIME/DATE FUNCTION ORDINAL	**MSOS 4.1**	M2900067
0076	EXT	SYSMON	MONTH SYSTEM WAS LAST BUILT	**MSOS 4.1**	M2900068
0077	EXT	SYSJAY	DAY SYSTEM WAS LAST BUILT	**MSOS 4.1**	M2900069
0078	EXT	SYSYER	YEAR SYSTEM WAS LAST BUILT	**MSOS 4.1**	M2900070
0079	EXT	SYSID	SYSTEM IDENTIFICATION BUFFER	**MSOS 4.1**	M2900071
0080	EXT	FSLIST	START OF FILE SPACE LIST	**MSOS 4.1**	M2900072
0081	EXT	ADRFMS	BEGINNING OF FILE SPACE-LIB. UNIT	**MSOS 4.1**	M2900073
0082	EXT	BEGLU1	BEGINNING OF FILE SPACE-UNIT 1	**MSOS 4.1**	M2900074
0083	EXT	BEGLU2	BEGINNING OF FILE SPACE-UNIT 2	**MSOS 4.1**	M2900075
0084	EXT	BEGLU3	BEGINNING OF FILE SPACE-UNIT 3	**MSOS 4.1**	M2900076
0085	EXT	BEGLU4	BEGINNING OF FILE SPACE-UNIT 4	**MSOS 4.1**	M2900077
0086	EXT	BEGLU5	BEGINNING OF FILE SPACE-UNIT 5	**MSOS 4.1**	M2900078
0087	EXT	BEGLU6	BEGINNING OF FILE SPACE-UNIT 6	**MSOS 4.1**	M2900079
0088	EXT	BEGLU7	BEGINNING OF FILE SPACE-UNIT 7	**MSOS 4.1**	M2900080
0089	EXT	BEGLU8	BEGINNING OF FILE SPACE-UNIT 8	**MSOS 4.1**	M2900081
0090	EXT	NUMFS0	LENGTH OF FILE SPACE-LIB. UNIT	**MSOS 4.1**	M2900082
0091	EXT	NUMFS1	LENGTH OF FILE SPACE-UNIT 1	**MSOS 4.1**	M2900083
0092	EXT	NJMF02	LENGTH OF FILE SPACE-UNIT 2	**MSOS 4.1**	M2900084
0093	EXT	NJMF03	LENGTH OF FILE SPACE-UNIT 3	**MSOS 4.1**	M2900085
0094	EXT	NUMFS4	LENGTH OF FILE SPACE-UNIT 4	**MSOS 4.1**	M2900086
0095	EXT	NUMFS5	LENGTH OF FILE SPACE-UNIT 5	**MSOS 4.1**	M2900087
0096	EXT	NUMFS6	LENGTH OF FILE SPACE-UNIT 6	**MSOS 4.1**	M2900088
0097	EXT	NJMF07	LENGTH OF FILE SPACE-UNIT 7	**MSOS 4.1**	M2900089
0098	EXT	NUMFS8	LENGTH OF FILE SPACE-UNIT 8	**MSOS 4.1**	M2900090
0099	EXT	OUTPUT	SWAP ROUTINE WRITE REQUEST (DCORE)		M2900091
0100	EXT	SPACE4	SPACE REQUEST TO UNSWAP (DCORE)		M2900092
0101	EXT	NS330A	SWAP ROUTINE READ REQUEST (DCORE)		M2900093
0102	EXT	REL	RELEASE ROUTINE (DCORE)		M2900094
0103	EXT	SCH	SCHEDULE ROUTINE (DCORE)		M2900095
0104	EXT	PTNALC	SCHEDULE PRTCDR (PRTCDR)		M2900096
0105	EXT	PTNREL	RELEASE PRTCDR (PRTCDR)		M2900097
0106	EXT	SPCEV4	PRT 16 PARTITION CORE REQ. (PRTCDR)		M2900098

SPACE

PAGE 3

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0106
0107
0108
0109
0110
0111
0112
0113
0114

00F7
00F6

EXT RDPTV4
EXT OUTPV4
EXT PCORE
EXT P18ECM
EXT P18PGA
EXT P18ADD
EQU LOCORE (\$F7)
EQU HICORE (\$F6)
EXT P18MXP

PRT 16 SWAP AREA READ REQ. (PRTCDR)
PRT 16 SWAP AREA WRITE REQ. (PRTCDR)
PHYSTAB FOR CORE DRIVER (SYSDAT)
POINTER TO ECM DRIVER (SYSDAT)
PAGE FILE ADDRESS
PAGE MEMORY ADDRESS
SYSTEM LOW CORE DATA
SYSTEM HIGH CORE DATA
MAXIMUM PAGE

M2900099
M2900100
M2900101
M2900102
M2900103
M2900104
116*4381*****
116*4381*****
M2900105

0110
0117
0118
0119
0120
0121
0122
0123
0124
0125
0126
0127
0128

0001
0003
0004
0022
0023
0007
0002
00F4
0025
00FB

```

*****
*
*****
EQU LUCORE(1) LOGICAL UNIT OF CORE ALLOCATOR
EQU VR(3) RETURN IN VOLATILE
EQU VPL(4) PRIORITY IN VOLATILE
EQU ZERO($22) ZERO
EQU ONEBIT($23)
EQU VTMP(7) TEMP IN VOLATILE
EQU LPMSK(2)
EQU AMONI($F4)
EQU FOUR($25)
EQU SYDIR($EB)

```

M2900107
M2900108
M2900109
M2900110
M2900111
M2900112
M2900113
M2900114
M2900115
M2900116
M2900117
M2900118
M2900119

```

0130 *
0131 * RW REQUEST PROCESSOR MUST BE PRESENT
0132 * FOR OPERATION OF THIS MODULE.
0133 *
0134 * LUCORE MUST BE EQUATED TO THE LOGICAL
0135 * UNIT ASSIGNED TO THE CORE ALLOCATOR.

```

```

M2900121
M2900122
M2900123
M2900124
M2900125
M2900126

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```

0137 0000 P EQU T17(*) **MSOS 4.0M2900128
0138 P0000 0822 T10 TRA Q M2900129
0139 P0001 C108 LDA- 8,I **MSOS 4.0M2900130
0140 P0002 0133 SAM COR1 SKIP IF INDIRECT REQ **MSOS 4.0M2900131
0141 P0003 CA05 ENA 5 INCREMENT RETURN ADDRESS
0142 * FOR DIRECT CALL
0143 P0004 8103 ADD- VR,I M2900132
0144 P0005 6103 STA- VR,I M2900133
0145 P0006 C622 LDA- (ZERO),Q GET REQUEST PRIORITY M2900134
0146 P0007 A400 X AND RPMASK M2900135
0147 P0008 7FFF X COR1
0148 P0009 6104 STA- VPL,I M2900136
0149 P000A 5400 X RTJ CKTHRD CHK FOR ZERO THREAD LOC. M2900137
0150 P0008 7FFF X
0149 P000C C107 LDA- VTMP,I CHECK REQ CODE **MSOS 4.0M2900138
0150 P000D 09F5 INA -10 **MSOS 4.0M2900139
0151 P000E 0102 SAZ CORZ SPACE REQUEST **MSOS 4.0M2900140
0152 P000F 1400 X JMP K65T10 A PARTITIONED REQ **MSOS 4.0M2900141
0153 P0010 7FFF X
0153 P0011 0C01 X CORZ ENQ LUCORE **MSOS 4.0M2900142
0154 P0012 1400 X JMP SAVLU SET UP LU FOR ALLOCATOR M2900143
0154 P0013 7FFF X

```

```

0147 P0009 6104 STA- VPL,I M2900138
0148 P000A 5400 X RTJ CKTHRD CHK FOR ZERO THREAD LOC. M2900139
0149 P0008 7FFF X

```

```

0149 P000C C107 LDA- VTMP,I CHECK REQ CODE **MSOS 4.0M2900140
0150 P000D 09F5 INA -10 **MSOS 4.0M2900141
0151 P000E 0102 SAZ CORZ SPACE REQUEST **MSOS 4.0M2900142
0152 P000F 1400 X JMP K65T10 A PARTITIONED REQ **MSOS 4.0M2900143
0153 P0010 7FFF X
0153 P0011 0C01 X CORZ ENQ LUCORE **MSOS 4.0M2900144
0154 P0012 1400 X JMP SAVLU SET UP LU FOR ALLOCATOR M2900145
0154 P0013 7FFF X

```

```

0156 P0014 0C01 TOIDLE ENQ 1 ENTER TIME/DATE Q CODE **MSOS 4.1**M2900147
0157 SCHDLE (TDFUNC),4 **MSOS 4.1**M2900148
0157 P0015 54F4
0157 P0016 1204
0157 P0017 FFFF X
0158 P0018 1400 X JMP+ IDLE GO TO IDLE LOOP **MSOS 4.1**M2900149
0158 P0019 7FFF X

```

```

0160 ***** M2900151
0161 P001A 0000 AREAC ADC 0 TOTAL LENGTH OF ALLOCATABLE CORE M2900152
0162 P001B FFFF ADC ($7FFF) THREAD M2900153
0163 ***** M2900154

```

```

0165 * THIS IS THE RESTART ROUTINE. ITS PURPOSE IS - M2900156
0166 * M2900157
0167 * 1. SET UP THE CORE ALLOCATION TABLE M2900158
0168 * 2. PROTECT AND UNPROTECT APPROPRIATE CORE LOCATIONS M2900159
0169 * 3. SET UP THE SYSTEM DIRECTORY ENTRY OF CERTAIN JOB M2900160
0170 * PROCESSOR MODULES M2900161
0171 * 4. START THE SYSTEM TIMER, AND INITIATE THE DIAGNOSTIC M2900162
0172 * TIMER AND TIME-OF-DAY PROGRAMS M2900163
0173 * 5. PRINT THE SYSTEM PSR LEVEL MESSAGE M2900164
0174 * 6. REQUEST THAT THE PROGRAM PROTECT SWITCH BE ENABLED M2900165
0175 * IF IT IS NOT M2900166
0176 * 7. PRINT THE SYSTEM IDENTIFICATION M2900167
0177 * 8. PRINT THE SYSTEM CORE SIZE MODE M2900168
0178 * 9. PERFORM A VALIDITY CHECK ON THE SYSTEM FILES (IF ANY) M2900169
0179 * 10. INITIATE A REQUEST FOR THE TIME AND DATE M2900170
0180 * 11. TRANSFER CONTROL TO THE SYSTEM IDLE LOOP M2900171
    
```

```

0182 * SET UP THE CORE ALLOCATION TABLE M2900173
0183 * M2900174
0184 P001C C800 RESTRT LDA ALCLGH 122*4381*****
    P001D 049F
0185 P001E 0902 INA 2 ALLOW ROOM FOR THREAD BETWEEN AREA 0-1 M2900177
0186 P001F 6800 STA ALCLGH M2900178
    P0020 049C
0187 P0021 0C0F RST1 ENQ 15 122*4381*****
0188 P0022 C000 LDA =XAREAC M2900179
    P0023 001A P
0189 P0024 0DFE P SETTBL INQ -1 SETUP ALLOCATION TABLE (LVLSTR) M2900180
0190 P0025 60FF STA -I M2900181
0191 P0026 CA00 LDA ALCLGH,Q M2900182
    P0027 0495
0192 P0028 0101 SAZ CHKEND NO ALLOCATION, SEE IF DONE M2900183
0193 P0029 0902 INA 2 M2900184
0194 P002A 80FF CHKEND ADD -I M2900185
0195 P002B 0143 SQZ SETEND M2900186
0196 P002C 6600 STA LVLSTR,Q M2900187
    P002D 7FFF X
0197 P002E 18F5 JMP* SETTBL M2900188
    
```

SPACE

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0199 PG02F 0901 SETEND INA 1
0200 PG030 6400 X STA LEND
PG031 7FFF X

SETUP END OF PROTECTED ALLOCATABLE AREA

M2900190
M2900191

0202	PG032	0C0A	ENQ	10		**MSOS 4.1**M2900193
0203	PG033	E6E9	LDQ-	(\$E9),Q	IS UNPROTECTED IN PART 1	**MSOS 4.1**M2900194
0204	PG034	0151	SN	FIX4	YES	122*4381*****
0205	PG035	180F	JMP*	FIX4Y	NO	122*4381*****
0206	PG036	C862	TCA	Q	-(END OF ALLOCATABLE) TO Q	122*4381*****
0207	PG037	C000	LDA	=XENDOV4	ADDR OF LAST LOCATION IN PART 0 TO A	122*4381*****
	PG038	7FFF				
0208	PG039	0834	AAQ	A	COMPUTE # EXTRA LOCATIONS	122*4381*****
0209	PG03A	0121	SAP	FIX4A	SKIP IF EXTRA.GE.ZERO	122*4381*****
0210	PG03B	1819	JMP*	NTENUF	GO AWAY IF NOT ENOUGH ROOM	122*4381*****
0211	PG03C	0105	SAZ	FIX4X	SKIP IF ZERO EXTRA MEMORY	122*4381*****
0212	PG03D	EC00	LDO	=XALCLGH	START OF LENGTH TABLE TO A	122*4381*****
	PG03E	04BC				
0213	PG03F	8203	ADD-	3,Q	ADD EXTRA TO REQUESTED AREA 4	122*4381*****
0214	PG040	6203	STA-	3,Q	STORE BACK IN TABLE	122*4381*****
0215	PG041	18DF	JMP*	RST1	SET UP ALLOCATABLE WITH NEW AREA 4	122*4381*****
0216	PG042	0854	TCQ	A	SET A TO END OF ALLOCATABLE	122*4381*****
0217	PG043	1807	JMP*	SKIPI T		122*4381*****
0218	PG044	0822	TRA	Q	IS THE SIZE OF ALLOCATABLE GREATER	122*4381*****
0219	PG045	90F7	SUB-	\$F7	THAN SPECIFIED BY THE INITIALIZER	M2900197
0220	PG046	0132	SAM	SKIPI T-1	NO	M2900198
0221	PG047	40F7	STQ-	\$F7	YES, SPECIFY THE NEW SIZE	M2900199
0222	PG048	40ED	STQ-	\$ED		M2900200
0223	PG049	0814	TRQ	A		M2900201
0224	PG04A	9000	SKIPI T SUB	=XAREAC-1		M2900202
	PG04B	0019				
0225	PG04C	6800	STA*	AREAC	SETUP TOTAL AVAILABLE PROTECTED ALLOCATABLE	M2900203
0226	PG04D	6400	STA	CALTHD		M2900204
	PG04E	7FFF				
0227	PG04F	6400	STA	MIBX	LOCK OUT MIPRO	M2900205
	PG050	7FFF				
0228	PG051	6400	STA	EFLOCK	LOCK OUT LOGGER	**MSOS 4.1**M2900206
	PG052	7FFF				
0229	PG053	1810	JMP*	INIT		122*4381*****

```

0231 P0054 54F4 NTENJF RTJ- (AMONI)
0232 P0055 0C00 ADC $0C00
0233 P0056 0000 ADC 0
0234 P0057 0000 NTETHD ADC 0
0235 P0058 18FC NUM $18FC
0236 P0059 0010 ADC NTEM SL
0237 P005A 0C60 P ADC NTEM SG

```

PRINT INSUFFICIENT MEMORY MESSAGE

```

122*4381*****
122*4381*****
122*4381*****
122*4381*****
122*4381*****
122*4381*****
122*4381*****

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```

0239 P005B C8FB NTEWAT LDA* NTETHD
0240 P005C 0101 SAZ 1
0241 P005D 18FD JMP* NTEWAT
0242 P005E 5400 X RTJ SYFAIL
0242 P005F 7FFF X

```

WAIT FOR COMPLETION
KILL SYSTEM

```

122*4381*****
122*4381*****
122*4381*****
122*4381*****

```

```

024+ P0060 494E NTEM SG ALF *,INSUFFICIENT ALLOCATABLE MEMORY*

```

122*4381*****

```

P0061 5355
P0062 4846
P0063 4943
P0064 4945
P0065 4E54
P0066 2041
P0067 4C40
P0068 4F43
P0069 4154
P006A 4142
P006B 4C45
P006C 204D
P006D 434D
P006E 4F52
P006F 5920

```

```

0245 P006F 0010 NTEM SL EQU NTEM SL (*-NTEM SG)

```

122*4381*****


```

0293 XFA 2 116*4381*****
0293 P0084 07C2
0294 P0085 C864 LDA* LOC0 DATA TO WRITE IN REG A ($18FF) 116*4381*****
0295 0086 P NXTPSE EQU NXTPGE(*) REPEAT 116*4381*****
0296 WPR 1 WRITE CURRENT PAGE IN PAGE REG $10 116*4381*****
0296 P0086 0B23 LR3* H7FF TOTAL NO. OF LOCATIONS IN ONE 116*4381*****
0297
0297 P0087 0483
0297 P0088 C062
0298 * PAGE = $800 (2K) 116*4381*****
0299 P0089 E0FF LDQ- I 116*4381*****
0300 P008A F00D ADQ- LPMSK+11 REG Q CONTAINS THE LOGICAL ADDRESS 116*4381*****
0301 * OF LOCATIONS IN PAGE, LAST LOC=$7FF 116*4381*****
0302 P NXTLOC EQU NXTLOC(*) REPEAT 116*4381*****
0303 P008B 6622 STA- (ZERO),Q WRITE 16 BIT DATA 116*4381*****
0304 P008C 6600 SPB 0 SET PROTECT BIT TO ONE 116*4381*****
0305 P008D 0DFE INQ -1 DECREMENT LOGICAL ADDRESS BY ONE 116*4381*****
0306 D3P *-NXTLOC UNTIL ALL LOCATIONS IN A PAGE WERE 116*4381*****
0307 P008E 0663 * WRITTEN ENDREPEAT 116*4381*****
0308 * SB1- LPMSK+1 DECREMENT PAGE NUMBER BY ONE 116*4381*****
0308 P008F 0401
0308 P0090 9003
0309 D2P *-NXTPGE UNTIL ALL 96 PAGES HAS BEEN WRITTEN 116*4381*****
0309 P0091 064B *
0310 * ENDREPEAT 116*4381*****
0311 P0092 0100 * CLEAR PARITY ERRORS WHICH MIGHT BE 116*4381*****
0312 * CAUSED BY WRITING INTC NON-EXISTING 116*4381*****
0313 * MEMORY 116*4381*****

*
*
*
*
0315 * 116*4381*****
0316 * FILL PAGE REGS 16-31 WITH 16-31 SUCH THAT PHYSICAL 116*4381*****
0317 * ADDRESS = LOGICAL ADDRESS F3R LOWEST 65K OF MEMORY 116*4381*****
0318 * 116*4381*****
0319 * 116*4381*****
0319 P0093 0B0B APM 0 116*4381*****
0320 P0094 3C0F ENQ 15 116*4381*****
0321 P0095 C000 LDA =N$8010 116*4381*****
0321 P0096 8010
0322 SETUP1 WPR A 116*4381*****
0322 P0097 0BC3
0323 P0098 8000 ADD =N$0801 116*4381*****
0323 P0099 0801
0324 DQP *-SETUP1 116*4381*****
0324 P009A 06A3

```



```

0373 P00C1 6EFC STA* (UP3DAD),Q
0374 P00C2 00C2 P NOTTS EQU NOTTS(*)
0375 P00C2 0BA1 NUM $0BA1
0376 P00C3 E0F6 LDQ- $F6
0377 P00C4 0BA0 NUM $0BA0
0378 P00C5 1808 JMP* RSTRT2

0380 P00C6 0D01 NOTMP INQ 1
0381 P00C7 0700 RSTRT1 CPB 0
0382 P00C8 0D01 INQ 1
0383 P00C9 C0F6 LDA- $F6
0384 P00CA 0874 EAQ A
0385 P00CB 0101 SAZ RSTRT2
0386 P00CC 18FA JMP* RSTRT1

0388 P00CD E000 RSTRT2 LDQ =N$F3
0389 P00CE 00F3
0390 P00CF 0700 CPB 0
0391 P00D0 0D0C INQ $C
0392 P00D1 0700 CPB 0
0393 P00D2 0D05 INQ -$3A
0394 P00D3 0700 RSTRT3 CPB 0
0395 P00D4 C000 LDA =N$E5
0396 P00D5 00E5
0397 P00D6 0874 EAQ A
0398 P00D7 0D01 INQ 1
0399 P00D8 0101 SAZ 1
0400 P00D9 18F9 JMP* RSTRT3
0401 P00DA E0F4 LDQ- $F4
0402 P00DB 0700 CPB 0

0403 P00DC C0F2 LDA- $F2
0404 P00DD 60FF STA- I
0405 P00DE 0C02 ENQ 2
0406 P00DF 0854 RSTRT4 TCQ A
0407 P00E0 80F1 ADD- $F1
0408 P00E1 013C SAM RSTRT5
0409 P00E2 4806 STQ* RSTRT5
0410 P00E3 E301 LDQ- 1,B
0411 P00E4 0700 CPB 0
0412 P00E5 E803 LDQ* RSTRT5
0413 P00E6 C004 INQ 4
0414 P00E7 18F7 JMP* RSTRT4

0415 P00E8 0000 RSTRT5 NUM 0
0416 P00E9 18FF LOC0 ADC $18FF
0417 P00EA 07FF H7FF NUM $7FF

```

```

LOAD LOWER BOUNDS REG(ENH INSTR LLB, Q)
TOP OF AREA + 1
LOAD UPPER BOUNDS REG(ENH INSTR LUB, Q)
SKIP OVER OLD CODE

```

```

DO IT THE OLD WAY
CLEAR JOB AREA PROTECT BITS

```

```

END OF AREA + 1

```

```

CLEAR SPECIAL COMMUNICATION AREA

```

```

UNPROTECT FORTRAN AREA ($C5-$E5)

```

```

UNPROTECTED REQUEST ENTRY
POINT

```

```

UNPROTECT PRESET LOCATIONS

```

```

LENGTH OF TABLE OF PRESETS

```

```

COUNTER

```

```

CONSTANT

```

```

116*4381*****
116*4381*****
MP MSOSM2900218
MP MSOSM2900219
MP MSOSM2900220
MP MSOSM2900221

```

```

MP MSOSM2900223
M2900224
M2900225
M2900226
M2900227
M2900228
M2900229

```

```

M2900231

```

```

M2900232
M2900233
M2900234
M2900235
M2900236
M2900237

```

```

M2900238
M2900239
M2900240
M2900241
M2900242
M2900243

```

```

M2900245
M2900246
M2900247
M2900248
M2900249
M2900250
M2900251
M2900252
M2900253
M2900254
M2900255
M2900256

```

```

M2900258
116*4381*****
116*4381*****

```

0419			*	SET UP SYSTEM DIRECTORY FOR JOBENT, LIBEDT, AND PROTEC	M2900260
0421	P00EB	7FFF	X	SDJOB ADC JOBENT	M2900262
0422	P00EC	7FFF	X	SDLI3 ADC LIBEDT	M2900263
0423	P00ED	7FFF	X	SDPRO ADC PROTEC	M2900264
0425	P00EE	E0EB		RSTRT6 LDQ- SYDIR	M2900266
0426	P00EF	F8FB		ADQ* SDJOB	M2900267
0427	P00F0	CA10		ENA \$10 SET PRIORITY OF JOBENT TO 1	M2900268
0428	P00F1	6622		STA- (ZERO),Q	M2900269
0429	P00F2	E0EB		LDQ- SYDIR	M2900270
0430	P00F3	F8F8		ADQ* SDLIB SET LIMITS FOR INITIAL LOAD	M2900271
0431	P00F4	C000	X	LDA =XLSIZV4 LIBEDT LOAD LENGTH	**MSOS 4.0M2900272
	P00F5	7FFF	X		
0432	P00F6	6625		STA- (FOUR),Q	**MSOS 4.1* M2900273
0433	P00F7	E0EB		LDQ- SYDIR	M2900274
0434	P00F8	F8F4		ADQ* SDPRO SET LIMITS FOR INITIAL LOAD	M2900275
0435	P00F9	C000	X	LDA =XPSIZV4 PROTEC LOAD LENGTH	**MSOS 4.0M2900276
	P00FA	7FFF	X		
0436	P00FB	6625		STA- (FOUR),Q	M2900277
0437	P00FC	C0FB		LDA- \$FB GET STANDARD LIST	M2900278
0438	P00FD	6400	X	STA+ AUTFB SAVE IN TRVEC	M2900279
	P00FE	7FFF	X		
0439	P00FF	C0FA		LDA- \$FA GET STD PUNCH	M2900280
0440	P0100	6400	X	STA+ AUTFA SAVE IN TRVEC	M2900281
	P0101	7FFF	X		
0441	P0102	C0F9		LDA- \$F9 GET STANDARD INPUT	**MSOS 4.0M2900282
0442	P0103	6400	X	STA+ AUTF9 SAVE IN TRVEC	M2900283
	P0104	7FFF	X		
0443	P0105	802F		ADD- \$2F ADD ASCII MODE	**MSOS 4.0M2900284
0444	P0106	6400	X	STA IUP	**MSOS 4.0M2900285
	P0107	7FFF	X		
0445	P0108	6400	X	STA INPTV4 SET UP FOR JOB PROCESSOR INPUT	**MSOS 4.0M2900286
	P0109	7FFF	X		
0447			*	DISABLE THE 1576-1 STALL ALARM INTERRUPT, IF PRESENT.	M2900288
0449	P010A	C000	X	LDA =XE15761	M2900290
	P010B	7FFF	X		
0450	P010C	B011		EOR- LPMSK+15 IS THE STALL PRESENT IN THE SYSTEM	M2900291
0451	P010D	0104		SAZ TIMSRT NO	M2900292
0452	P010E	F400	X	LDQ+ E15761 YES, DISABLE THE INTERRUPT	M2900293
	P010F	010B	X		
0453	P0110	0A05		ENA 5	M2900294
0454	P0111	0350		OUT SREJ-*	M2900295

0456 * START THE SYSTEM TIMER M2900297

TIMER INITIATION CODING

TIMER STARTING SEQUENCE IS BASED ON THE TIMER TYPE

TYPE	CODE
NONE	0
1572	1
1573	2
1572-1 LST	3
1572-1 SRG	4
364-4 COMM. MUX.	5
PSEUDO	6
10336-1	7
MP17 REAL-TIME CLOCK	8

```

**MSOS 4.1**M2900299
**MSOS 4.1**M2900300
**MSOS 4.1**M2900301
**MSOS 4.1**M2900302
**MSOS 4.1**M2900303
**MSOS 4.1**M2900304
**MSOS 4.1**M2900305
**MSOS 4.1**M2900306
**MSOS 4.1**M2900307
**MSOS 4.1**M2900308
**MSOS 4.1**M2900309
**MSOS 4.1**M2900310
**MSOS 4.1**M2900311
**MSOS 4.1**M2900312
**MSOS 4.1**M2900313
**MSOS 4.1**M2900314

```

0473 PG112 E400 X TIMSRT LDQ+ TMRTYP GET TIMER TYPE

0474 PG113 7FFF X LDQ* TIMVCT,Q GET VECTOR FOR JUMP

0475 PG114 EA02 JMP- (ZERO),Q GO TO PROPER PROCESSOR

0476 PG115 1622 * TIMER PROCESSOR VECTOR TABLE

PG	HEX	PERM	OP	REG	COND	DESC	CODE
PG116	0180	P	ADC	REJ		0 = NO TIMER	
PG117	011F	P	ADC	T1572		1 = 1572	
PG118	012A	P	ADC	T1573		2 = 1573	
PG119	012F	P	ADC	T72LST		3 = 1572-1 LST	
PG11A	013A	P	ADC	T72SRG		4 = 1572-1 SRG	
PG11B	014A	P	ADC	T36+4		5 = 364-4 COMM. MUX.	
PG11C	015F	P	ADC	CHKTMR		6 = PSEUDO TIMER	
PG11D	014E	P	ADC	T10336		7 = 10336-1	
PG11E	0157	P	ADC	MP17CK		8 = MP17 REAL-TIME CLOCK	

```

**MSOS 4.1**M2900315
**MSOS 4.1**M2900316
**MSOS 4.1**M2900317
**MSOS 4.1**M2900318
**MSOS 4.1**M2900319
**MSOS 4.1**M2900320
**MSOS 4.1**M2900321
**MSOS 4.1**M2900322
**MSOS 4.1**M2900323
**MSOS 4.1**M2900324
**MSOS 4.1**M2900325
**MSOS 4.1**M2900326
**MSOS 4.1**M2900327
**MSOS 4.1**M2900328
**MSOS 4.1**M2900329

```

0488 * 1572 TIMER STARTING CODE

0492 PG11F E400 X T1572 LDQ+ E1572 FUNCTION CODE

0493 PG120 7FFF X LDA+ E1572F ENABLE 1572

0494 PG121 C400 X OUT REJ-*

0495 PG122 7FFF X INQ -1 DATA CODE

0496 PG123 C400 X LDA+ 01572 REGISTER COUNTS

0497 PG124 0DFE X TOUT OUT REJ-*

0498 PG125 C400 X CLR Q SET NO ACTION FLAG

0499 PG126 7FFF X JMP* CHKTMR START DIAGNOSTIC TIMER

```

**MSOS 4.1**M2900330
**MSOS 4.1**M2900331
**MSOS 4.1**M2900332
**MSOS 4.1**M2900333
**MSOS 4.1**M2900334
**MSOS 4.1**M2900335
**MSOS 4.1**M2900336
**MSOS 4.1**M2900337
**MSOS 4.1**M2900338
**MSOS 4.1**M2900339
**MSOS 4.1**M2900340

```



```

0501 * 1573 TIMER STARTING CODE
0502 *
0503 P012A E400 X T1573 LDQ+ E1573 FUNCTION CODE
      P012B 7FFF X
0504 P012C 0DFE INQ -1
0505 P012D C032 LDA- ONEBIT+15 $8000 = ENABLE
0506 P012E 18F8 JMP* TOUT GO TO OUTPUT
0507 *
0508 * 1572-1 LST STARTING CODE
0509 *
0510 P012F E400 X T72LST LDQ+ E15721 FUNCTION CODE
      P0130 7FFF X
0511 P0131 0A3C AND MASK FOR SRG FUNCTION BITS
0512 P0132 0500 ENA $3C
0513 P0133 A400 X AND+ H15721
      P0134 7FFF X
0514 P0135 0902 INA 2 2 = ENABLE INTERRUPT
0515 P0136 6400 X STA+ H15721 RESTORE HISTORY WORD
      P0137 0134 X
0516 P0138 0400 EIN 0
0517 P0139 18ED JMP* TOUT GO TO OUTPUT
0518 *
0519 * 1572-1 SRG STARTING CODE
0520 *
0521 P013A E400 X T72SRG LDQ+ E15721 FUNCTION CODE
      P013B 0130 X
0522 P013C 0A27 AND MASK FOR LST FUNCTION BITS
0523 P013D 0500 ENA $27
0524 P013E A400 X AND+ H15721
      P013F 0137 X
0525 P0140 0910 INA $10 $10 = ENABLE INTERRUPT
0526 P0141 6400 X STA+ H15721 RESTORE HISTORY WORD
      P0142 013F X
0527 P0143 0400 EIN 0
0528 P0144 033C OUT REJ-*
0529 P0145 E400 X LDQ+ D15721 DATA CODE
0530 P0146 7FFF X
      P0147 C400 X LDA+ 015721 REGISTER COUNTS
      P0148 7FFF X
0531 EXT 015721 SRG TIME BASE/CLOCK FREQ.
0532 P0149 18DD JMP* TOUT GO TO OUTPUT
0533 *
0534 * 36+-4 COMMUNICATIONS MUX. TIMER
0535 *
0536 P014A E400 X T36+-4 LDQ+ EQ3644 FUNCTION CODE
      P014B 7FFF X
0537 P014C 0A06 ENA 6 6 = ENABLE CLOCK
0538 P014D 18D9 JMP* TOUT GO TO OUTPUT
0539 * PSR 85*2236 DELETED FOR PSR 93*3177
0540 *
0541 * 10336-1 STARTING CODE
0542 *
0543 P014E E400 X T10336 LDQ+ E10336 FUNCTION CODE
      P014F 7FFF X

```

```

**MSOS 4.1**M2900342
**MSOS 4.1**M2900343
**MSOS 4.1**M2900344
**MSOS 4.1**M2900345
**MSOS 4.1**M2900346
**MSOS 4.1**M2900347
**MSOS 4.1**M2900348
**MSOS 4.1**M2900349
**MSOS 4.1**M2900350
**MSOS 4.1**M2900351
**MSOS 4.1**M2900352
**MSOS 4.1**M2900353
**MSOS 4.1**M2900354
**MSOS 4.1**M2900355
**MSOS 4.1**M2900356
**MSOS 4.1**M2900357
**MSOS 4.1**M2900358
**MSOS 4.1**M2900359
**MSOS 4.1**M2900360
**MSOS 4.1**M2900361
**MSOS 4.1**M2900362
**MSOS 4.1**M2900363
**MSOS 4.1**M2900364
**MSOS 4.1**M2900365
**MSOS 4.1**M2900366
**MSOS 4.1**M2900367
**MSOS 4.1**M2900368
**MSOS 4.1**M2900369
**MSOS 4.1**M2900370
**MSOS 4.1**M2900371
**MSOS 4.1**M2900372
**MSOS 4.1**M2900373
**MSOS 4.1**M2900374
**MSOS 4.1**M2900375
**MSOS 4.1**M2900376
**MSOS 4.1**M2900377
**MSOS 4.1**M2900378
**MSOS 4.1**M2900379
**MSOS 4.1**M2900380
**MSOS 4.1**M2900381
**MSOS 4.1**M2900382
**MSOS 4.1**M2900383
**MSOS 4.1**M2900384

```

0544	P0150	C400	X	LDA+	F10336	ENABLE CODE	M2900385
	P0151	7FFF	X				
0545	P0152	032E		OUT	REJ-*		M2900386
0546	P0153	0DFE		INQ	-1	DATA CODE	M2900387
0547	P0154	C400	X	LDA+	010336	CLCOK REGISTER VALUE	M2900388
	P0155	7FFF	X				
0548	P0156	18D0		JMP*	TOJT		M2900389
0549						PSR 85*2236 DELETED FOR PSR 93*3177	M2900390
0550							MP MSOSM2900391
0551				MP17	REAL-TIME ADT CLOCK		MP MSOSM2900392
0552							MP MSOSM2900393
0553	P0157	E400	X	MP17CK	LDQ+	DMICOD	MP MSOSM2900394
	P0158	7FFF	X			ENABLE ADT/MICRO-INT NUMBER	
0554	P0159	C400	X	LDA+	TBLADR	ADT TABLE ADDRESS	MP MSOSM2900395
	P015A	7FFF	X				
0555	P015B	0B06		NUM	\$B06	DEFINE MICRO-INTRPT (ENH INSTR DMI)	MP MSOSM2900396
0556	P015C	E400	X	LDQ+	EMPSRT	RESET AND START FUNCTION CODE	MP MSOSM2900397
	P015D	7FFF	X				
0557	P015E	18C8		JMP*	TOUT	'A' REG NOT USED	MP MSOSM2900398

```

0559          *      INITIATE THE DIAGNOSTIC TIMER AND TIME-OF-DAY PROGRAMS          M2900400

0551 P015F C806   CHKTMR LDA* RSTRTA                                     M2900402
0552 P0160 B011   EOR- LPMSK+15                                       M2900403
0553 P0161 0111   SAN 1                                           M2900404
0554 P0162 1804   JMP* RSTRTT      SKIP IF DTIMER NOT PRESENT      ***MSOS 4.1**M2900405

0556 P0163 54F4   RTJ- (AMONI)      START DIAG TIMER          M2900407
0557 P0164 5206   NUM $5206          ***MSOS4.0M2900408
0558 P0165 7FFF X RSTRTA ADC DTIMER      M2900409

0570 P0166 C806   RSTRTT LDA* TTRSTR          **MSOS 4.1**M2900411
0571 P0167 B011   EOR- LPMSK+15          **MSOS 4.1**M2900412
0572 P0168 0111   SAN 1                SKIP IF TOD PRESENT      **MSOS 4.1**M2900413
0573 P0169 1833   JMP* RSTRT9          **MSOS 4.1**M2900414

0575 P016A 54F4   RTJ- (AMONI)      START TOD PROGRAM        **MSOS 4.1**M2900416
0576 P016B 5206   NUM $5206          **MSOS 4.1**M2900417
0577 P016C 7FFF X TTRSTR ADC UPTOD      **MSOS 4.1**M2900418
0578 P016D 182F   JMP* RSTRT9          **MSOS 4.1**M2900419

0580          *      STALL ALARM REJECT MESSAGE          M2900421

0582 P016E 0B00   SREJ  NOP 0                                           M2900423
0583 P016F 54F4   RTJ- (AMONI)      PRINT STALL REJECT MESSAGE M2900424
0584 P0170 0C00   ADC $0C00          M2900425
0585 P0171 0000   ADC 0              M2900426
0586 P0172 0000   SRJTH ADC 0        M2900427
0587 P0173 18FC   ADC $18FC          M2900428
0588 P0174 0006   ADC 6              M2900429
0589 P0175 017A P ADC SRJMSG      M2900430

0591 P0176 C8FB   SRJCK LDA* SRJTH          M2900432
0592 P0177 0101   SAZ 1              M2900433
0593 P0178 18FD   JMP* SRJCK          M2900434
0594 P0179 1898   JMP* TIMSRT        WAIT FOR COMPLETION      M2900435

0596 P017A 5354   SRJMSG ALF 6,STALL REJECT          M2900437
      P017B 414C
      P017C 4C20
      P017D 5245
      P017E 4A45
      P017F 4354

```

0598

* TIMER REJECT MESSAGE

M2900 439

0500 P0180 0B00
 0501 P0181 E000 X
 P0182 7FFF X
 0502 P0183 E201
 0503 P0184 C200
 0504 P0185 A011
 0505 P0186 8032
 0506 P0187 6200
 0507 P0188 0A00
 0508 P0189 6400 X
 P018A 0113 X

REJ NOP 0
 LDQ =XLOG1A
 LDQ- 1,Q
 LDA- 13,Q
 AND- LPMSK+15
 EOR- ONEBIT+15
 STA- 13,Q
 ENA 0
 STA+ TMRTYP

DISABLE DELAYED CORE SWAPS
 INDICATE NO TIMER

M2900 441
 MSOS 4.1M2900 442
 MSOS 4.1M2900 443
 MSOS 4.1M2900 444
 MSOS 4.1M2900 445
 MSOS 4.1M2900 446
 MSOS 4.1M2900 447
 MSOS 4.1M2900 448
 MSOS 4.1M2900 449

0510 P018A 54F4
 0511 P018C 0C00
 0512 P018D 0000
 0513 P018E 00C0
 0514 P018F 18FC
 0515 P0190 0006
 0516 P0191 0196 P

REJTH RTJ- (AMONI)
 ADC \$UCC0
 ADC 0
 ADC 0
 ADC \$18FC
 ADC 6
 ADC REJMSG

PRINT TIMER REJECT MSG

M2900 451
 M2900 452
 M2900 453
 M2900 454
 M2900 455
 M2900 456
 M2900 457

0518 P0192 C8FB
 0519 P0193 0101
 0520 P0194 18FD
 0521 P0195 1307

REJCK LDA* REJTH
 SAZ 1
 JMP* REJCK
 JMP* RSTRT9

WAIT FOR COMPLETION

M2900 459
 M2900 460
 M2900 461
 M2900 462

0623 P0196 5449
 P0197 4D45
 P0198 5220
 P0199 5245
 P019A 4A45
 P019B 4354

REJMSG ALF 6,TIMER REJECT

MSOS 4.1M2900 464

```

0525 * IF SYSTEM CONTAINS A 1781-1 HARDWARE FLOATING POINT UN M2900466
0626 * CLEAR THE UNIT AND SET IT'S INITIAL OPERATING MODE M2900467

0528 P019C C400 X RSTR9 LDA E17811 PICKUP 1781-1 EQUIPMENT CODE M2900469
      P019D 7FFF X
0629 P019E 0822 TRA Q SAVE IN Q M2900470
0530 P019F 0011 EOR- $11 ($7FFF) CHECK FOR UNPATCHED M2900471
0631 P01A0 0111 SAN RSTR9A SKIP IF PATCHED M2900472
0532 P01A1 1818 JMP* RSTR10 BYPASS STARTUP IF UNPATCHED M2900473
0533 P01A2 0DFC RSTR9A INQ -3 SET Q FOR 1781-1 FSR LOAD M2900474
0634 P01A3 0A01 ENA 1 M2900475
0635 P01A4 0305 OUT HFPREJ-* CLEAR 1781-1 M2900476
0636 P01A5 C400 X LDA F17811 PICK UP INITIAL OPERATING FUNCTION M2900477
      P01A6 7FFF X
0537 P01A7 0302 OUT HFPREJ-* OUTPUT TO UNIT M2900478
0638 P01A8 1811 JMP* RSTR10 CONTINUE M2900479

0540 P01A9 0B00 HFPREJ NOP 0 M2900481
0641 FWRITE $FC,0,HFPRJM,HFPRJL,A,0,C,I M2900482
0641 P01AA 54F4
0541 P01AB 0C00
0641 P01AC 0000
      P01AD 0000
0541 P01AE 18FC
0541 P01AF 0007 P
0642 P01B0 01B2 JMP* RSTR10 CONTINUE M2900483
      P01B1 1808

0644 P01B2 3137 HFPRJM ALF *,1781-1 REJECT* M2900485
      P01B3 3831
      P01B4 2031
      P01B5 2052
      P01B6 454A
      P01B7 4543
      P01B8 5420
0645 0007 HFPRJL EQU HFPRJL(*-HFPRJM) M2900486

```

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0647 * PRINT THE SYSTEM PSR LEVEL AND DATE OF BUILD M2900488

0649 P01B9 C8J0 RSTR10 LDA MONTH M2900490
      P01BA 0129
0650 P01BB 8011 EOR- LPMSK+15 IS THE BUILD DATE PATCHED **MSOS 4.1**M2900491
0651 P01BC 0111 SAN 1 **MSOS 4.1**M2900492
0652 P01BD 1817 JMP* PSRMSG NO **MSOS 4.1**M2900493
0653 P01BE C800 LDA MONTH **MSOS 4.1**M2900494
      P01BF 0124
0654 P01C0 0C20 ENQ $20 ADD LEADING SPACE **MSOS 4.1**M2900495
0655 P01C1 0FE8 LLS 8 **MSOS 4.1**M2900496
0656 P01C2 092F INA $2F ADD TRAILING SLASH **MSOS 4.1**M2900497
0657 P01C3 4800 STQ DATE+1 **MSOS 4.1**M2900498
      P01C4 00FF
0658 P01C5 5800 STA DATE+2 FORM SYSTEM BUILD DATE **MSOS 4.1**M2900499
      P01C6 00FE
0659 P01C7 C800 LDA DAY **MSOS 4.1**M2900500
      P01C8 011C
0660 P01C9 6800 STA DATE+3 **MSOS 4.1**M2900501
      P01CA 00FB
0661 P01CB C800 LDA YEAR **MSOS 4.1**M2900502
      P01CC 0119
0662 P01CD 0C2F ENQ $2F ADD LEADING SLASH **MSOS 4.1**M2900503
0663 P01CE 0FE8 LLS 8 **MSOS 4.1**M2900504
0664 P01CF 0920 INA $20 ADD TRAILING SPACE **MSOS 4.1**M2900505
0665 P01D0 4800 STQ DATE+4 **MSOS 4.1**M2900506
      P01D1 00F5
0666 P01D2 6800 STA DATE+5 **MSOS 4.1**M2900507
      P01D3 00F4

0668 P01D4 54F4 PSRMSG RTJ- (AMONI) PRINT THE MESSAGE **MSOS 4.1**M2900509
0669 P01D5 0C01 ADC $0C01 M2900510
0670 P01D6 0000 ADC 0 M2900511
0671 P01D7 0000 TX ADC 0 M2900512
0672 P01D8 18FC ADC $18FC M2900513
0673 P01D9 0014 ADC LSJMLV M2900514
0674 P01DA 02B5 P ADC SUMLVL M2900515

0676 P01DB C8FB LTX LDA* TX M2900517
0677 P01DC 0101 SAZ A101M M2900518
0678 P01DD 18FD JMP* LTX WAIT FOR COMPLETION M2900519

```

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0580 * DETERMINE THE POSITION OF THE PROGRAM PROTECT SWITCH M2900521

0682 P01DE 0500 A101M IIN 0 **MSOS 4.1**M2900523
0683 P01DF C400 A101 LDA+ $101 SAVE THE CONTENTS OF THE TRAP 50*919 M2900524
      P01E0 0101
0684 P01E1 681D A102 STA* S101+1 50*919 M2900525
0685 P01E2 C400 LDA+ $102 50*919 M2900526
      P01E3 0102
0686 P01E4 681D STA* S102+1 50*919 M2900527
0687 P01E5 0300 TRM A SAVE THE CONTENTS OF 'M' 50*919 M2900528
0688 P01E6 681E STA* SM+1 50*919 M2900529
0689 P01E7 C000 LDA =N$1400 SET UP RETURN 50*919 M2900530
      P01E8 1400
0690 P01E9 6CF6 STA* (A101+1) 50*919 M2900531
0691 P01EA E000 LDQ =XFAULT 50*919 M2900532
      P01EB 01F2 P
0692 P01EC 0700 CPB 0 50*919 M2900533
0693 P01ED 0AC1 ENA 1 50*919 M2900534
0694 P01EE 0821 TRA M ALLOW ONLY A PP FAULT 50*919 M2900535
0695 P01EF 0D06 INQ 6 **MSOS 4.1**M2900536
0696 P01F0 4CF2 STQ* (A102+1) 50*919 M2900537
0697 P01F1 0400 EIN 0 51*919 M2900538
0698 P01F2 4CF0 FAULT STQ* (A102+1) 50*919 M2900539
0699 P01F3 C800 LDA PFLAG IS THIS THE FIRST PASS M2900540
      P01F4 0DAF
0700 P01F5 0103 SAZ HANGIT NO. HANG WAITING FOR PP SET **MSOS 4.1**M2900541
0701 P01F6 0800 RAO FLAGIT SET FLAG FOR SET PP MESSAGE M2900542
      P01F7 00AD
0702 P01F8 1802 JMP* GOPP GO TO RESTORE PROTECT SETUP **MSOS 4.1**M2900543
0703 P01F9 18F8 HANGIT JMP* FAULT WAIT FOR PP FAULT **MSOS 4.1**M2900544
0704 P01FA 01E0 GOPP SPF 0 CLEAR PROTECT FAULT **MSOS 4.1**M2900545
0705 P01FB 0DF9 INQ -6 **MSOS 4.1**M2900546
0706 P01FC 0600 SPB 0 RETURN TO PRIOR STATUS 50*919 M2900547

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0708 P01FD C000 S101 LDA =NO
      P01FE 6000
0709 P01FF 6CE0 S102 STA* (A101+1)
0710 P0200 C000 LDA =NO
      P0201 0000
0711 P0202 6CE0 SM STA* (A102+1)
0712 P0203 C000 LDA =NO
      P0204 0000
0713 P0205 0821 TRA M
0714 P0206 0400 EIN 0
0715 P0207 C800 LDA PFLAG
      P0208 009B
0716 P0209 0111 SAN S103
0717 P020A 1812 JMP* OUTID
0718 P020B C800 S103 LDA FLAGIT
      P020C 0098
0719 P020D 010E SAZ OUTID
0720 P020E 0844 CLR A
0721 P020F 6800 STA PFLAG
      P0210 0093

0723 P0211 54F4 RTJ- (AMONI)
0724 P0212 0C01 ADC $0C01
0725 P0213 0000 ADC 0
0726 P0214 0000 PPTH ADC 0
0727 P0215 18FC ADC $18FC
0728 P0216 000C ADC 12
0729 P0217 02C9 P ADC PP

0731 P0218 C8FB PPWAIT LDA* PPTH
0732 P0219 0101 SAZ OUTPP
0733 P021A 18FD JMP* PPWAIT
0734 P021B 18C2 OUTPP JMP* A101M

```

```

IS THIS FIRST TIME THROUGH
SECOND PASS
IS THIS FIRST TIME BUT NEED MSG
SKIP IF NO MSG NEEDED
NEED TO SET PP
SECOND TIME FLAG
WRITE PP MESSAGE
WAIT FOR COMPLETION
GO WAIT FOR PP SET

```

```

50*919 M2900549
50*919 M2900550
50*919 M2900551
50*919 M2900552
50*919 M2900553
50*919 M2900554
50*919 M2900555
M2900556
M2900557
M2900558
M2900559
**MSOS 4.1**M2900560
**MSOS 4.1**M2900561
M2900562
**MSOS 4.1**M2900564
**MSOS 4.1**M2900565
**MSOS 4.1**M2900566
**MSOS 4.1**M2900567
**MSOS 4.1**M2900568
**MSOS 4.1**M2900569
**MSOS 4.1**M2900570
**MSOS 4.1**M2900572
**MSOS 4.1**M2900573
**MSOS 4.1**M2900574
**MSOS 4.1**M2900575

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0736          *      PRINT THE SYSTEM IDENTIFICATION          **MSOS 4.1**M2900577

0738 PG21C C000 X OUTID LDA =XSYSID          **MSOS 4.1**M2900579
      PG21D 7FFF X
0739 PG21E B011          EOR- LPMSK+15      IS THE IDENTIFICATION PATCHED **MSOS 4.1**M2900580
0740 PG21F 0111          SAN ID1
0741 PG220 1822          JMP* MODE        NO, DONT PRINT IT          **MSOS 4.1**M2900581
0742 PG221 C400 X ID1  LDA+ SYSID          **MSOS 4.1**M2900582
      PG222 021D X          **MSOS 4.1**M2900583
0743 PG223 6800          STA SAVID          M2900584
      PG224 0084
0744 PG225 A009          AND- LPMSK+7      **MSOS 4.1**M2900585
0745 PG226 B000          EOR =N$JD00      ADD AN EXTRA CARRIAGE RETURN **MSOS 4.1**M2900586
      PG227 0D00
0746 PG228 6400 X          STA+ SYSID          **MSOS 4.1**M2900587
      PG229 0222 X

0748 PG22A 0C0F          ENQ 15          FIND THE END OF THE TRAILING **MSOS 4.1**M2900589
0749 PG22B C600 X ID2  LDA+ SYSID,Q        BLANKS IN THE IDENTIFICATION **MSOS 4.1**M2900590
      PG22C 0229 X
0750 PG22D 9000          SUB =A          **MSOS 4.1**M2900591
      PG22E 2020
0751 PG22F 0113          SAN ID3          FOUND THE END          **MSOS 4.1**M2900592
0752 PG230 0DFE          INQ -1          **MSOS 4.1**M2900593
0753 PG231 017D          SQM ID4          ALL BLANK, DONT PRINT **MSOS 4.1**M2900594
0754 PG232 18F8          JMP* ID2          **MSOS 4.1**M2900595
0755 PG233 0D01          INQ 1          **MSOS 4.1**M2900596
0756 PG234 4806          STQ* IDL        FORM THE MESSAGE LENGTH **MSOS 4.1**M2900597

0758 PG235 54F4          RTJ- (AMONI)    PRINT THE IDENTIFICATION **MSOS 4.1**M2900599
0759 PG236 0C01          ADC $0C01      **MSOS 4.1**M2900600
0760 PG237 0000          ADC 0          **MSOS 4.1**M2900601
0761 PG238 0000          IDTH ADC 0      **MSOS 4.1**M2900602
0762 PG239 18FC          ADC $18FC     **MSOS 4.1**M2900603
0763 PG23A 0000          IDL ADC 0      **MSOS 4.1**M2900604
0764 PG23B 022C X          ADC SYSID     **MSOS 4.1**M2900605

0766 PG23C C8FB          IDWAIT LDA* IDTH   **MSOS 4.1**M2900607
0767 PG23D 0101          SAZ ID4       **MSOS 4.1**M2900608
0768 PG23E 18FD          JMP* IDWAIT    WAIT FOR COMPLETION **MSOS 4.1**M2900609

0770 PG23F C869          ID4 LDA* SAVID  **MSOS 4.1**M2900611
0771 PG240 6400 X          STA+ SYSID    RESTORE LEADING BLANK IN THE ID **MSOS 4.1**M2900612
      PG241 023B X

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0773          *      DETERMINE THE CORE SIZE MODE, AND PRINT IT                      M2900614

0775 PG242 CC63   MODE   LDA* (I1)      CHECK MULTI-LEVEL INDIRECT      **MSOS 4.1**M2900616
0776 PG243 B864   EOR* I3          FOR MODE                          **MSOS 4.1**M2900617
0777 PG244 0101   SAZ M32K          **MSOS 4.1**M2900618
0778 PG245 1804   JMP* M65K         **MSOS 4.1**M2900619
0779 PG246 C000   M32K   LDA =XX32K  SETUP 32K MODE                **MSOS 4.1**M2900620
      PG247 0205   P
0780 PG248 1805   JMP* STJ          **MSOS 4.1**M2900621
0781 PG249 C000   M65K   LDA =XX65K  SETUP 65K MODE                **MSOS 4.1**M2900622
      PG24A 02DC   P
0782 PG24B 0C01   ENQ 1          **MSOS 4.1**M2900623
0783 PG24C 44E9   STQ- ($E9)     **MSOS 4.1**M2900624
0784 PG24D 6807   STQ  STA* MM0JE   SET MODE FLAG                **MSOS 4.1**M2900625

0786 PG24E 54F4   RTJ- (AMONI)    WRITE MODE MESSAGE          **MSOS 4.1**M2900627
0787 PG24F 0C01   ADC $0C01      **MSOS 4.1**M2900628
0788 PG250 0000   ADC 0          **MSOS 4.1**M2900629
0789 PG251 0000   MODETH ADC 0    **MSOS 4.1**M2900630
0790 PG252 18FC   ADC $18FC     **MSOS 4.1**M2900631
0791 PG253 0007   ADC 7         **MSOS 4.1**M2900632
0792 PG254 0000   MMODE ADC 0   **MSOS 4.1**M2900633

0794 PG255 C8FB   MODWAT LDA* MODETH **MSOS 4.1**M2900635
0795 PG256 0101   SAZ FILCLS     M2900636
0796 PG257 18FD   JMP* MOJWAT    **MSOS 4.1**M2900637
0797 PG258 C000   X FILCLS LDA =XJBFLV4 M2900638
      PG259 7FFF   X
0798 PG25A 0102   SAZ FILCHK     M2900639
0799 PG25B 5800   RTJ CLSFIL     M2900640
      PG25C 01B3

0801 PG25D 5800   FILCHK RTJ BONES GO CHECK FOR FILE ERRORS M2900642
      PG25E 0088
0802 PG25F 0500   IIN 0          INHIBIT WHILE SETTING PRIORITIES M2900643
0803 PG260 E849   LDQ* ATC       LOAD Q WITH COUNT VALUE          M2900644
0804 PG261 EA49   LDQ* T,Q       GET ADDRESS FROM TABLE          M2900645
0805 PG262 0814   IRQ A          DO NOT SET PRIORITY IF           M2900646
0806 PG263 B011   EOR- LPMSK+15 EXTERNAL IS UNPATCHED          M2900647
0807 PG264 0107   SAZ T1B       M2900648
0808 PG265 C622   LDA- (ZERO),Q IF VALUE OF ADDRESS IS ZERO M2900649
0809 PG266 0107   SAZ SETPF     TABLE IS COMPLETED             M2900650
0810 PG267 C400   X LDA PCORE    GET CORE DRIVER COMPLETION PRIORITY M2900651
      PG268 7FFF   X
0811 PG269 A006   AND- LPMSK+4   M2900652
0812 PG26A B622   EOR- (ZERO),Q M2900653
0813 PG26B 6622   STA- (ZERO),Q M2900654
0814 PG26C D83D   T1B RAO* ATC    STORE BACK INTO REQUEST          M2900655
0815 PG26D 18F2   JMP* T1        CONTINUE SETTING PRIORITIES     M2900656

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0817 * CHECK IF NEED TO SET UP PAGE FILE FOR EXTENDED CORE STORAGE M2900658
0818 * M2900659
0819 P026E C000 X SETPF LDA =XP18ECM FETCH EXTENDED CORE POINTER M2900660
      P026F 7FFF X
0820 P0270 B011 EOR- LPMSK+15 M2900661
0821 P0271 C111 SAN SPF SKIP IF ECM IN THE SYSTEM M2900662
0822 P0272 1829 JMP* T1AA M2900663
0823 P0273 0C1F SPF ENQ 31 SET LAST PAGE FILE ADDRESS M2900664
0824 P0274 0814 SPF1 TRQ A M2900665
0825 P0275 0FCB ALS 11 PAGE FILE SELECTED. BITS 11-15 M2900666
0826 P0276 0874 EAQ A VALUE SET . BITS 0-8 M2900667
0827 * BITS 0-8 OF A GO INTO PAGE FILE SPECIFIED BY BITS 11-15 OF A M2900668
0828 * BIT 10 SPECIFIES FILE 0 OR 1 0 FOR PAGE FILE ZERO M2900669
0829 P0277 0BC3 NUM $0BC3 HARD CODE ENHANCED INSTRUCTION M2900670
0830 * WPR A SET UP THIS PAGE FILE M2900671
0831 P0278 0142 SQZ SPF5 SKIP IF ALL FILE ENTRIES SET M2900672
0832 P0279 0DFE INQ -1 M2900673
0833 P027A 18F9 JMP* SPF1 CONTINUE SETTING PAGE FILES M2900674
0834 P027B 0B0C SPF5 NUM $0B0C SET PAGE MODE TO ZERO M2900675
0835 * WANT TO RESET UPPER CORE IN CASE OF PARITY IN MOS MEMORY. M2900676
0836 * FETCH AND RESTORE WILL CLEAR ANY PARITY AND NOT CHANGE UPPER CORE M2900677
0837 P027C 0A20 ENA $20 BIAS TO FIRST 65K OF UPPER CORE M2900678
0838 P027D 681D STA* PFCNT M2900679
0839 P027E 0500 IIN 0 M2900680
0840 P027F 9400 X RSET1 SUB P18MXP MINUS MAXIMUM PAGE IN SYSTEM M2900681
      P0280 7FFF X
0841 P0281 0133 SAM RSET2 SKIP IF NOT END M2900682
0842 P0282 C102 SAZ RSET2 SKIP IF NOT DONE M2900683
0843 P0283 0100 SPE 0 CLEAR PARITY INT AND STATUS M2900684
0844 P0284 1817 JMP* T1AA M2900685
0845 P0285 C815 RSET2 LDA* PFCNT M2900686
0846 P0286 B400 X EOR P18PGA BRING IN ECM PAGE ADDRESS BITS 10-15 M2900687
      P0287 7FFF X
0847 P0288 0BC3 NUM $0BC3 HARD CODE ENHANCED INSTRUCTION M2900688
0848 * WPR A SET UP THIS PAGE FILE M2900689
0849 P0289 C00D LDA- LPMSK+11 $7FF LAST ADDRESS IN 2K BLOCK M2900690
0850 P028A B400 X RSET4 EOR P18ADD OR IN BLOCK ADDRESS M2900691
      P028B 7FFF X
0851 P028C 6803 STA* LRSET M2900692
0852 P028D 6804 STA* SRSET M2900693
0853 P028E C400 LDA+ 0000 M2900694
      P028F 0000
0854 P0290 028F P LRSET EQU LRSET (*-1) M2900695
0855 P0291 0000 STA+ 0000 M2900696
0856 P0292 C8FE P SRSET EQU SRSET (*-1) M2900697
0857 P0293 A00D LDA* SRSET M2900698
0858 P0294 0102 AND- LPMSK+11 SAVE 2K ADDRESS ONLY M2900699
0859 P0295 09FE SAZ RSET5 M2900700
0860 P0296 18F3 INA -1 M2900701
0861 P0297 D803 RSET5 JMP* RSET4 M2900702
0862 P0298 C802 RAO* PFCNT M2900703
0863 LDA* PFCNT M2900704

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0854 P0299 18E5 JMP* RSET1
0855 P029A 0000 PFCNT NUM 0

M2900705
M2900706

0857 P029B 0400 T1AA EIN 0
 0858 P029C 0A00 ENA 0
 0859 P029D 6400 X STA MIBX
 P029E 0050 X
 0870 P029F 6400 X STA EFLOCK
 P02A0 0052 X
 0871 P02A1 1800 JMP TOIDLE
 P02A2 FD71

CLEAR MIPRO AND
 LOGGER LOCKOUT FLAGS
 GO TO IDLE EXIT

M2900708
 MSOS 4.1M2900709
 M2900710
 MSOS 4.1M2900711
 MSOS 4.1M2900712

0873 P02A3 0001 PPFLAG NUM 1
 0874 P02A4 0000 FLAGIT NUM 0

MSOS 4.1M2900714
 MSOS 4.1M2900715

0876 P02A5 82A6 P I1 ADC (I2)
 0877 P02A6 02A7 P I2 ADC I3
 0878 P02A7 7F9C I3 NUM \$7F9C
 0879 P02A8 0000 SAVID NUM 0

MSOS 4.1M2900717
 MSOS 4.1M2900718
 MSOS 4.1M2900719
 MSOS 4.1M2900720

0881 P02A9 0000 ATC NUM 0
 0882 P02AA 7FFF X T ADC OUTPUT
 0883 P02AB 7FFF X ADC SPACE4
 0884 P02AC 7FFF X ADC NOG30A
 0885 P02AD 7FFF X ADC REL
 0886 P02AE 7FFF X ADC SCH
 0887 P02AF 7FFF X ADC PTNALC
 0888 P02B0 7FFF X ADC PTNREL
 0889 P02B1 7FFF X ADC SPCEV4
 0890 P02B2 7FFF X ADC RDPTV4
 0891 P02B3 7FFF X ADC OUTPV4
 0892 P02B4 0022 ADC ZERO

INDEX FOR TABLE

M2900722
 M2900723
 M2900724
 M2900725
 M2900726
 M2900727
 M2900728
 M2900729
 M2900730
 M2900731
 M2900732
 M2900733

THIS IS USED TO INDICATE THE END

0894	P02B5	0D0A	SUMLVL	NUM	\$000A				M2900735
0895	P02B6	4D53		ALF	10,MSOS	5.0--PSR LEVEL			M2900736
	P02B7	4F53							
	P02B8	2035							
	P02B9	2E30							
	P02BA	2D2D							
	P02BB	5053							
	P02BC	5220							
	P02BD	4C45							
	P02BE	5645							
	P02BF	4C20							
0896	P02C0	2031		NUM	\$2031				M2900737
0897	P02C1	7FFF	X	ADC	SYSLVL				M2900738
0898	P02C2	2020	DATE	ALF	6,			**MSOS	4.1**M2900739
	P02C3	2020							
	P02C4	2020							
	P02C5	2020							
	P02C6	2020							
	P02C7	2020							
0899	P02C8	200D		NUM	\$200D				M2900740
0900		0014		EQU	LSUMLV(*-SUMLVL)			**MSOS	4.1**M2900741
0902	P02C9	200D	PP	NUM	\$200D				M2900743
0903	P02CA	5345		ALF	10,SET PROGRAM PROTECT			**MSOS	4.1**M2900744
	P02CB	5420							
	P02CC	5052							
	P02CD	4F47							
	P02CE	5241							
	P02CF	4D20							
	P02D0	5052							
	P02D1	4F54							
	P02D2	4543							
	P02D3	5420							
0904	P02D4	200D		NUM	\$200D			**MSOS	4.1**M2900745
0906	P02D5	0D0A	X32K	NUM	\$000A			**MSOS	4.1**M2900747
0907	P02D6	3332		ALF	4,32K MODE			**MSOS	4.1**M2900748
	P02D7	4820							
	P02D8	4D4F							
	P02D9	4445							
0908	P02DA	000A		NUM	\$000A			**MSOS	4.1**M2900749
0909	P02DB	200D		NUM	\$200D			**MSOS	4.1**M2900750
0911	P02DC	0D0A	X65K	NUM	\$000A			**MSOS	4.1**M2900752
0912	P02DD	3635		ALF	4,65K MODE			**MSOS	4.1**M2900753
	P02DE	4820							
	P02DF	4D4F							
	P02E0	4445							
0913	P02E1	0D0A		NUM	\$000A			**MSOS	4.1**M2900754
0914	P02E2	200D		NUM	\$200D			**MSOS	4.1**M2900755
0916	P02E3	7FFF	X MONTH	ADC	SYSMON			**MSOS	4.1**M2900757
0917	P02E4	7FFF	X DAY	ADC	SYSDAY			**MSOS	4.1**M2900758

SPACE

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DATE: 01/27/99

0913 P02E5 7FFF X YEAR ADC SYSYER

MSOS 4.1M2900759

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0920      *      SUBROUTINE TO CHECK ALL FILE MANAGER SPACE THREADS      M2900761

0922      P02E6 0B00      BONES  NOP  0      M2900763
0923      P02E7 C861      LDA*  FSPNT      M2900764
0924      P02E8 9011      SUB-  LPMSK+15      IS THERE A FILE MANAGER IN THIS SYSTEM M2900765
0925      P02E9 0111      SAN   1      YES      M2900766
0926      P02EA 1CFB      JMP*  (BONES)      NO, RETURN      M2900767

0928      P02EB 0C00      ENQ  0      M2900769
0929      P02EC 5800      RTJ  MESSAG      PRINT INITIAL MESSAGE      M2900770
0930      P02ED 00EC      P02EE C400      LDA+ ADRFMS      M2900771
0931      P02EF 7FFF      X
0932      P02F0 6864      X
0933      P02F1 CC57      BONES0 STA*  SECTOR      INITIALIZE THE LIBRARY UNIT SPACE ADDRESS M2900772
0934      P02F2 0900      LDA*  (FSPNT)      GET FSLIST POINTER      M2900773
0935      P02F3 0114      INA  0      IS THIS THE END OF THE LIST      M2900774
0936      P02F4 0C01      SAN  BONES1      NO      M2900775
0937      P02F5 5800      ENQ  1      YES, PRINT FINAL MESSAGE      M2900776
0938      P02F6 00E3      RTJ  MESSAG      M2900777
0939      P02F7 1CEE      BONES1 JMP*  (BONES)      AND RETURN      M2900778
0940      P02F8 0842      CLR  Q      M2900779
0941      P02F9 4853      STQ* ACCUM      CLEAR LU AVAILABLE ACCUMULATOR      M2900780
0942      P02FA 0FE9      LLS  9      SHIFT LU ENTRY LENGTH INTO Q      M2900781
0943      P02FB 0FC7      ALS  7      SHIFT LU NUMBER INTO A      M2900782
0944      P02FC 484E      STQ* LUENTL      SAVE LU ENTRY LENGTH      M2900783
0945      P02FD 687A      STA* MMLU      SET UP LU FOR READ      M2900784
0946      P02FE E84A      LDQ* FSPNT      GET LIST POINTER INTO Q      M2900785
0947      P0300 6848      LDA- 1,Q      GET START OF FILE SPACE POOL      M2900786
0948      P0301 C202      STA* BGSCPL      AND SAVE IT      M2900787
0949      P0302 6848      LDA- 2,Q      GET NUMBER OF AVAILABLE SECTORS      M2900788
0950      P0303 6D04      STA* FSENT0      AND SAVE IT      M2900789
0951      P0304 4845      INQ  +      INCREASE POINTER AROUND HEADER WORDS      M2900790
0952      P0305 0116      STQ* FSLUPT      AND SAVE AS LU ENTRY POINTER      M2900791
0953      P0306 C842      SAN  BONES2      SKIP IF FSLIST HAS BEEN SET UP      M2900792
0954      P0307 8843      LDA* FSPNT      GET POINTER TO CURRENT LU ENTRY      M2900793
0955      P0308 6840      ADD* LUENTL      INCREMENT IT BY LENGTH OF THE ENTRY      M2900794
0956      P0309 0844      STA* FSPNT      AND STORE IT AS THE CURRENT LU ENTRY POINTER      M2900795
0957      P030A 6842      CLR  A      M2900796
0958      P030B 1825      STA* ACCJM      CLEAR ACCUMULATOR      M2900797
0959      P030C 1825      JMP* BONES7      GO PROCESS NEXT LU      M2900798

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0959	P0300	C83F	BONES2	LDA*	BGSCPL	GET POINTER TO NEXT FILE SPACE POOL HEADER	M2900800
0960	P0300	010F		SAZ	BONES3	IF IT IS ZERO WE ARE DONE WITH SPACE POOL	M2900801
0961	P030E	5858		RTJ*	RDMASS	READ HEADER	M2900802
0962	P030F	C844		LDA*	MMBUFF+2	GET BLOCK SIZE	M2900803
0963	P0310	683F		STA*	BLKSIZ	AND SAVE IT	M2900804
0964	P0311	883B		ADD*	ACCUM	INCREMENT ACCUMULATOR	M2900805
0965	P0312	683A		STA*	ACCJM	BY THE SIZE OF THIS BLOCK	M2900806
0966	P0313	C83F		LDA*	MMBJFF+1	GET POINTER TO NEXT HEADER	M2900807
0967	P0314	9837		SUB*	BGSCPL	DOES THE THREAD POINT TO ITSELF	M2900808
0968	P0315	0111		SAN	BONES6	NO	M2900809
0969	P0316	186F		JMP*	ERROR	YES, ERROR	M2900810
0970	P0317	C83B	BONES6	LDA*	MMBUFF+1	SAVE HEADER POINTER	M2900811
0971	P0318	6833		STA*	BGSCPL	GET THREAD POINTER	M2900812
0972	P0319	C838		LDA*	MMBUFF	AND SET UP TO ANALIZE IT	M2900813
0973	P031A	6834		STA*	THDPNT	ANALIZE THREAD	M2900814
0974	P031B	5817		RTJ*	ANATHD	GO GET NEXT HEADER AND SET IT UP FOR ANALYSIS	M2900815
0975	P031C	18EF		JMP*	BONES2	LOAD LU POINTER	M2900816
0976	P031D	C82C	BONES3	LDA*	FSLJPT	SUBTRACT POINTER TO FIRST WORD FOR THIS LU	M2900817
0977	P031E	982A		SUB*	FSPNT	SUBTRACT LENGTH OF THIS LUS ENTRY	M2900818
0978	P031F	982B		SUB*	LUENTL	IF NEGATIVE SET UP TO ANALIZE NEXT CORE THREAD	M2900819
0979	P0320	0137		SAM	BONES4	GET OUR TOTAL	M2900820
0980	P0321	C82B		LDA*	ACCUM	SUBTRACT THEIR TOTAL	M2900821
0981	P0322	982B		SUB*	FSENTO	SHOULD BE EQUAL	M2900822
0982	P0323	0101		SAZ	BONES5	NOT EQUAL, ERROR EXIT	M2900823
0983	P0324	1861		JMP*	ERROR	GET CURRENT LU POINTER	M2900824
0984	P0325	C824	BONES5	LDA*	FSLUPT	AND USE IT AS HEADER POINTER FOR NEXT ENTRY	M2900825
0985	P0326	6822		STA*	FSPNT	GO ANALIZE NEXT LUS ENTRY	M2900826
0986	P0327	1809		JMP*	BONES7	GET THREAD POINTER	M2900827
0987	P0328	CC21	BONES4	LDA*	(FSLUPT)	AND STORE IT	M2900828
0988	P0329	6825		STA*	THDPNT	INCREMENT LU POINTER	M2900829
0989	P032A	D81F		RAO*	FSLUPT	GET THIS THREADS BLOCK SIZE	M2900830
0990	P032B	CC1E		LDA*	(FSLUPT)	AND SAVE IT	M2900831
0991	P032C	6823		STA*	BLKSIZ	INCREMENT LU POINTER	M2900832
0992	P032D	D81C		RAO*	FSLJPT	GO ANALIZE THREAD	M2900833
0993	P032E	5804		RTJ*	ANATHD	GO SEE IF WE ARE DONE	M2900834
0994	P032F	18ED		JMP*	BONES3	INCREMENT THE LU COUNT	M2900835
0995	P0330	D820	BONES7	RAO*	LUVJ	AND CONTINUE	M2900836
0996	P0331	18BF		JMP*	BONES0		M2900837

0998		*				M2900839
0999		*	ROUTINE TO ANALIZE THREADS			M2900840
1000		*				M2900841
1001	P0332	0000	ANATHD	NUM 0	ENTRY POINT	M2900842
1002	P0333	C81B	ANATH0	LDA* THPNT	GET THREAD POINTER	M2900843
1003	P0334	0111		SAN ANATH1	IF NONZERO GO ANALIZE IT	M2900844
1004	P0335	1CFC		JMP* (ANATHD)	FINISHED WITH THIS THREAD, EXIT	M2900845
1005	P0336	C819	ANATH1	LDA* BLKSIZ	GET BLOCK SIZE	M2900846
1006	P0337	8815		ADD* ACCJM	INCREMENT ACCUMULATOR	M2900847
1007	P0338	6814		STA* ACCJM		M2900848
1008	P0339	9814		SUB* FSENT0	SUBTRACT THEIR AVAILABLE SPACE FOR THIS LU	M2900849
1009	P033A	0132		SAM ANATH2	SKIP IF NOT BEYOND IT	M2900850
1010	P033B	0101		SAZ ANATH2	SKIP IF NOT BEYOND IT	M2900851
1011	P033C	1849		JMP* ERROR	ALREADY TO MUCH, ERROR EXIT	M2900852
1012	P033D	C811	ANATH2	LDA* THPNT	GET SECTOR FOR READ	M2900853
1013	P033E	5828		RTJ* RDMASS	READ UP NEXT ENTRY IN THREAD	M2900854
1014	P033F	C812		LDA* MMBUFF	GET THREAD	M2900855
1015	P0340	980E		SUB* THPNT	DOES IT POINT TO ITSELF	M2900856
1016	P0341	0111		SAN ANATH3	NO	M2900857
1017	P0342	1843		JMP* ERROR	YES, ERROR	M2900858
1018	P0343	C80E	ANATH3	LDA* MMBJFF		M2900859
1019	P0344	680A		STA* THPNT	SAVE THE NEW THREAD	M2900860
1020	P0345	18ED		JMP* ANATH0	GO INCREMENT ACCUMULATOR	M2900861


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1057
1058
1059
1060 P0366 0000
1061 P0367 6814
1062 P0368 E8E7
1063 P0369 CAEA
1064 P036A 9811
1065 P036B J101
1066 P036C 0125
1067 P036D CAE6
1068 P036E 8AEE
1069 P036F 09FE
1070 P0370 9808
1071 P0371 0121
1072 P0372 1813

*
* ROUTINE TO READ THREE WORDS FROM MASS MEMORY
*
RDMASS NUM 0
STA* SEC SAVE THE CURRENT SECTOR
LDQ* LUNO
LDA* SECTOR,Q
SUB* SEC IS THE CURRENT SECTOR IN RANGE
SAZ SAMOK YES, SAME SECTOR
SAP RDM0 NO
LDA* SECTOR,Q CALCULATE THE END SECTOR FOR THIS UNIT
ADD* LENGTH,Q
INA -1
SUB* SEC IS THE CURRENT SECTOR IN RANGE
SAP RDM1 YES
JMP* ERROR NO, ERROR

RDM0

RDM1 RTJ- (AMONI) READ THE THREAD
ADC $0801
ADC 0
RDTHD ADC 0
MMLU ADC 0
ADC 3
ADC MMBUFF
SEC ADC 0

RDWAIT LDA* RDTHD
SAZ RDMIN
JMP* RDWAIT WAIT FOR COMPLETION

RDMIN SQM ERROR I/O ERROR
RAO* NJMRD
LDA* NUMRD
SUB* MAXRD HAS THE READ CYCLE BEEN EXCEEDED
SAP ERROR YES, ERROR
JMP* (RDMASS)

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M2900898
M2900899
M2900900
M2900901
M2900902
M2900903
M2900904
M2900905
M2900906
M2900907
M2900908
M2900909
M2900910
M2900911
M2900912
M2900913

M2900915
M2900916
M2900917
M2900918
M2900919
M2900920
M2900921
M2900922
M2900923

M2900925
M2900926
M2900927

M2900929
M2900930
M2900931
M2900932
M2900933
M2900934

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1095		*	ROUTINE TO PROCESS FILE THREAD ERRORS		M2900936
1097	P0385	0002	ERROR ENQ 2		M2900938
1098	P0386	5853	RTJ* MESSAG	PRINT ERROR MESSAGE	M2900939
1100	P0387	54F4	RTJ- (AMONI)	READ THE REPLY	M2900941
1101	P0388	0801	ADC \$0801		M2900942
1102	P0389	0000	ADC 0		M2900943
1103	P038A	0000	ERTHD ADC 0		M2900944
1104	P038B	18FD	ADC \$18FD		M2900945
1105	P038C	0003	ADC 3		M2900946
1106	P038D	0351	P ADC MMBUFF		M2900947
1108	P038E	C8FB	ERWAIT LDA* ERTHD		M2900949
1109	P038F	0101	SAZ ER1	INPUT IS COMPLETE	M2900950
1110	P0390	18FD	JMP* ERWAIT		M2900951
1112	P0391	C8BF	ER1 LDA* MMBUFF		M2900953
1113	P0392	9000	SUB =AYE	IS THE ANSWER YES	M2900954
	P0393	5945			
1114	P0394	0109	SAZ CLJFIL	YES, CLEAR THE FILE TABLES	M2900955
1115	P0395	C8BB	LDA* MMBUFF		M2900956
1116	P0396	9000	SUB =ANJ	IS THE ANSWER NO	M2900957
	P0397	4E4F			
1117	P0398	0101	SAZ ER2	YES, EXIT	M2900958
1118	P0399	18EB	JMP* ERROR	NEITHER, REPEAT THE REQUEST	M2900959
1119	P039A	0003	ENQ 3		M2900960
1120	P039B	583E	RTJ* MESSAG	PRINT LF/CR	M2900961
1121	P039C	1000	JMP (BONES)	EXIT	M2900962
	P039D	FF48			
1123	P039E	E0E9	CLJFIL LDQ- \$E9		M2900964
1124	P039F	0844	CLR A	CLEAR JOB TABLE INITIALIZATION FLAG	M2900965
1125	P03A0	6213	STA- 19,Q	SO JOB FILES WILL BE CLEARED	M2900966

1127		*	ROUTINE TO CLEAR ALL SYSTEM FILES		M2900968
1129	P03A1	E000	X CLFILE LDQ =XFSLIST		M2900970
	P03A2	0348	X		
1130	P03A3	0DFC	INQ -3		M2900971
1131	P03A4	482B	STQ* CLADR	SAVE THE BASE ADDRESS	M2900972
1132	P03A5	JA00	ENA 0		M2900973
1133	P03A6	6622	STA- (ZERO),Q	CLEAR FIDSEC	M2900974
1134	P03A7	6201	STA- 1,Q	CLEAR FIBLSA	M2900975
1135	P03A8	6202	STA- 2,Q	CLEAR FIBNIX	M2900976
1135	P03A9	0D03	INQ 3		M2900977
1137	P03AA	40FF	STQ- I	SFT UP THE BASE ADDRESS OF FLIST	M2900978
1138	P03AB	0C00	ENQ 0		M2900979
1140	P03AC	CAA7	CLFIL1 LDA* SECTOR,Q		M2900981
1141	P03AD	6101	STA- 1,I	INITIALIZE THE FILE MANAGER TABLE	M2900982
1142	P03AE	0A00	ENA 0		M2900983
1143	P03AF	6102	STA- 2,I		M2900984
1144	P03B0	CAAC	LDA* LENGTH,Q		M2900985
1145	P03B1	6103	STA- 3,I		M2900986
1146	P03B2	C4FF	LDA- (I)		M2900987
1147	P03B3	0F47	ARS 7	LENGTH OF THIS UNIT	M2900988
1148	P03B4	80FF	ADD- I		M2900989
1149	P03B5	60FF	STA- I	POINT TO NEXT UNIT	M2900990
1150	P03E0	C4FF	LDA- (I)		M2900991
1151	P03B7	0900	INA 0	IS THE LIST COMPLETE	M2900992
1152	P03B8	J102	SAZ CLFIL2	YES	M2900993
1153	P03B9	0D01	INQ 1		M2900994
1154	P03BA	18F1	JMP* CLFIL1	CONTINUE	M2900995

1156	P03BB	0A60	CLFIL2	ENA	96	CALCULATE THE WORD ADDRESS OF	M2900997
1157	P03BC	0C04		ENQ	+	THE CORE IMAGE	M2900998
1158	P03BD	26E9		MUI-	(\$E9),2		M2900999
1159	P03BE	0FE1		LLS	1		M2901000
1160	P03BF	0FCF		ALS	15		M2901001
1161	P03C0	880F		ADD*	CLADR	CALCULATE THE ADDRESS OF THE FILE TABL	M2901002
1162	P03C1	0122		SAP	CLFIL3	IN THE CORE IMAGE	M2901003
1163	P03C2	0D01		INQ	1		M2901004
1164	P03C3	A011		AND-	LPMSK+15		M2901005
1165	P03C4	480C	CLFIL3	STQ*	FLMSB		M2901006
1167	P03C5	680C		STA*	FLLSB	SAVE FOR THE TRANSFER	M2901008
1168	P03C6	C0FF		LDA-	I		M2901009
1169	P03C7	9808		SUB*	CLADR		M2901010
1170	P03C8	6806		STA*	CLEN	LENGTH OF THE TRANSFER	M2901011
1172	P03C9	54F4		RTJ-	(AMONI)		M2901013
1173	P03CA	0401		ADC	\$0401	WRITE CLEARED TABLE TO CORE IMAGE	M2901014
1174	P03CB	0000		ADC	0		M2901015
1175	P03CC	0000	CLTHD	ADC	0		M2901016
1176	P03CD	08C2		ADC	\$08C2		M2901017
1177	P03CE	0000	CLEN	ADC	0		M2901018
1178	P03CF	0000	CLADR	ADC	0		M2901019
1179	P03D0	0000	FLMSB	ADC	0		M2901020
1180	P03D1	0000	FLLSB	ADC	0		M2901021
1182	P03D2	C8F9	CLFIL4	LDA*	CLTHD		M2901023
1183	P03D3	0161		SAZ	CLFIL5	THE WRITE IS COMPLETE	M2901024
1184	P03D4	18FD		JMP*	CLFIL4		M2901025
1186	P03D5	0C03	CLFIL5	ENQ	3		M2901027
1187	P03D6	5803		RTJ*	MESSAG	PRINT LF/CR	M2901028
1188	P03D7	1C00		JMP	(BONES)	RETURN	M2901029
	P03D8	FF00					

1190			*	MESSAGE SUBROUTINE		M2901031
1192	P03D9	JB00		MESSAG NOP 0		M2901033
1193	P03DA	CA0F		LDA* MESSAD,Q		M2901034
1194	P03DB	6809		STA* MESSADD	SET UP THE MESSAGE ADDRESS	M2901035
1195	P03DC	CA11		LDA* MESSLN,Q		M2901036
1196	P03DD	68C6		STA* MESLEN	SET UP THE MESSAGE LENGTH	M2901037
1198	P03DE	54F4		RTJ- (AMONI)	PRINT THE MESSAGE	M2901039
1199	P03DF	0401		ADC \$0401		M2901040
1200	P03E0	0000		ADC 0		M2901041
1201	P03E1	0000	MESTHD	ADC 0		M2901042
1202	P03E2	18FC		ADC \$18FC		M2901043
1203	P03E3	0000	MESLEN	ADC 0		M2901044
1204	P03E4	0000	MESADD	ADC 0		M2901045
1206	P03E5	C8FB	MESCHK	LDA* MESTHD		M2901047
1207	P03E6	0101		SAZ MESSJUN	OUTPUT COMPLETE	M2901048
1208	P03E7	18FD		JMP* MESCHK		M2901049
1209	P03E8	1CF0	MESDUN	JMP* (MESSAG)	RETURN	M2901050
1211	P03E9	03F1	P	MESSAD ADC MESSG1	MESSAGE ADDRESS	M2901052
1212	P03EA	03FA	P	ADC MESSG2		M2901053
1213	P03EB	03FC	P	ADC MESSG3		M2901054
1214	P03EC	040E	P	ADC MESSG4		M2901055
1215	P03ED	0009		MESSLN ADC LMESS1	MESSAGE LENGTH	M2901056
1216	P03EE	0002		ADC LMESS2		M2901057
1217	P03EF	0012		ADC LMESS3		M2901058
1218	P03F0	0001		ADC LMESS4		M2901059

1220 * FILE CHECK MESSAGES M2901061

1222 P03F1 4348 MESSG1 ALF \$,CHECKING FILES - \$ M2901063

P03F2 4543
P03F3 4849
P03F+ 4E47
P03F5 2046
P03F6 494C
P03F7 4553
P03F8 202D
P03F9 202D

1223 EQU LMESS1(*-MESSG1) M2901064

1224 P03FA 4F4B MESSG2 ALF \$,OK\$ M2901065

1225 P03FB 0A0A NUM \$0A0A M2901066

1226 EQU LMESS2(*-MESSG2) M2901067

1227 MESSG3 ALF \$,ERRORS\$ M2901068

P03FC 4552
P03FD 524F
P03FE 5253

1228 P03FF 000A NUM \$000A M2901069

1229 P0400 434C ALF \$,CLEAR ALL FILES? (YES/NO) S M2901070

P0401 4541
P0402 522D
P0403 414C
P0404 4C2D
P0405 4649
P0406 4C45
P0407 533F
P0408 2028
P0409 5945
P040A 532F
P040B +E4F
P040C 292D
P040D 202D

1230 EQU LMESS3(*-MESSG3) M2901071

1231 P040E 0A0A MESSG4 NUM \$0A0A M2901072

1232 EQU LMESS4(*-MESSG4) M2901073

0C01

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1234 PG40F 0000 CLSFIL NUM 0
1235 PG410 0844 CLR A
1236 PG411 681E STA* V20
1237 PG412 681E STA* V22
1238 PG413 681E STA* V27
1239 PG414 E0E9 LDQ- $E9
1240 PG415 C208 LDA- 8,Q
1241 PG416 683D STA* FLS05D
1242 PG417 583G RTJ* FLS05
1243 PG418 4800 NUM $4800
1244 PG419 C622 FL0601 LDA- (ZERO),Q
1245 PG41A C206 LDA- 6,Q
1246 PG41B 0107 SAZ FL0610
1247 PG41C 0126 SAP FL0610
1248 PG41D A011 AND- LPMASK+15
1249 PG41E 6206 STA- 6,Q
1250 PG41F C207 LDA- 7,Q
1251 PG420 A011 AND- LPMASK+15
1252 PG421 6207 STA- 7,Q
1253 PG422 D80D RAO* V20
1254 PG423 C80D FL0610 LDA* V22
1255 PG424 09F6 INA -9
1256 PG425 0116 SAN FL0614
1257 PG426 C809 LDA* V20
1258 PG427 0104 SAZ FL0614
1259 PG428 581F RTJ* FLS05
1260 PG429 4C00 NUM $4C00
1261 PG42A 0844 CLR A
1262 PG42B 6804 STA* V20
1263 PG42C 5807 FL0614 RTJ* FLS05
1264 PG42D 1CE1 JMP* (CLSFIL)
1265 PG42E 18EA JMP* FL0601
1266 *
1267 PG42F 0000 V20 NUM 0
1268 PG430 0000 V22 NUM 0
1269 PG431 0000 V27 NUM 0
1270 *
1271 PG432 1C0C FILERR JMP* (CLSFIL)

```

SUBROUTINE TO CLOSE ALL JOB FILES
INITIALIZE

FREAD JOB FILE DIRECTORY

SKIP IF NOT DEFINED
SKIP IF CLOSED

CLOSE FILE

SET TO READ MODE
SET FILE CLOSED INDICATOR

SKIP IF NO FILES WERE CLOSED
REWRITE THE FILE BLOCK
FWRITE

CLEAR FILE CLOSED INDICATOR
GET NEXT FILE ENTRY IF ANY
FINISHED, RETURN
PROCESS THE NEXT ENTRY

FILE CLOSED INDICATOR
INDEX TO ENTRY IN FILE BLOCK
INDEX TO NUMBER OF FILES

ERROR, RETURN

SECTION TO FIND NEXT FILE ENTRY
IN THE FILE BLOCK

NOT DONE, SKIP
JUMP IF ALL CHECKED
CHECK IF ALL OF THIS BLOCK DONE

```

M2901075
M2901076
M2901077
M2901078
M2901079
M2901080
M2901081
M2901082
M2901083
M2901084
M2901085
M2901086
M2901087
M2901088
M2901089
M2901090
M2901091
M2901092
M2901093
M2901094
M2901095
M2901096
M2901097
M2901098
M2901099
M2901100
M2901101
M2901102
M2901103
M2901104
M2901105
M2901106
M2901107
M2901108
M2901109
M2901110
M2901111
M2901112

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1273 PG433 0000 FLS05 NUM 0
1274 PG434 D8FB RAO* V22
1275 PG435 D8FB RAO* V27
1276 PG436 C000 LDA =XJBFLV4
1277 PG437 0259 X
1278 PG438 98F8 X
1279 PG439 0111 SUB* V27
1280 PG43A 180C SAN FLS06A
1281 PG43B C8F4 JMP* FLS069
FLS05A LDA* V22

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M2901114
M2901115
M2901116
M2901117
M2901118
M2901119
M2901120
M2901121

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```

1281 P043C 09F5      INA -10
1282 P043D 0102      SAZ FLS061
1283 P043E 0D09      INQ 9
1284 P043F 1806      JMP* FLS067
1285 P0440 0813      FLS051 RAO* FLS05D
1286 P0441 5806      RTJ* FLS05
1287 P0442 4800      NUM $4800
1288 P0443 0844      CLR A
1289 P0444 68EB      STA* V22
1290 P0445 08ED      FLS057 RAO* FLS06
1291 P0446 1CEC      FLS059 JMP* (FLS06)

```

SKIP IF YES

```

UPDATE LSB OF SECTOR
READ THE NEXT SECTOR
FREAD

```

FIRST ENTRY IN FILE BLOCK

```

M2901122
M2901123
M2901124
M2901125
M2901126
M2901127
M2901128
M2901129
M2901130
M2901131
M2901132

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```

1293 P0447 0000      FLS05 NUM 0
1294 P0448 CCFE      LDA* (FLS05)
1295 P0449 6803      STA* FLS051
1296 P044A 08FC      RAO* FLS05
1297 P044B 54F4      RTJ- (AMONI)
1298 P044C 0000      FLS051 NUM 0
1299 P044D 0000      ADC 0
1300 P044E 0000      FLS05A ADC 0
1301 P044F 08C2      FLS05B NUM $8C2
1302 P0450 0060      NUM 95
1303 P0451 045C      P FLS05C ADC BUF2A
1304 P0452 0000      NUM 0
1305 P0453 0000      FLS05D NUM 0
1306 *
1307 P0454 C8F9      FLS052 LDA* FLS05A
1308 P0455 0101      SAZ FLS053
1309 P0456 18FD      JMP* FLS052
1310 *
1311 P0457 C8F7      FLS053 LDA* FLS05B
1312 P0458 0121      SAP FLS059
1313 P0459 18D8      JMP* FILERR
1314 P045A E8F6      FLS059 LDQ* FLS05C
1315 P045B 1CEB      JMP* (FLS05)
1316 P045C 0060      BUF2A BZS BUF2A(96)

```

SECTION TO READ/WRITE A FILE BLOCK

```

SAVE THE REQUEST CODE
UPDATE RETURN

```

```

+0 REQUEST CODE
+1 CA
+2 T
+3 LIBRARY UNIT
+4 NUMBER OF WORDS
+5 START ADDRESS
+6 MSB
+7 LSB

```

```

CHECK REQUEST COMPLETED
COMPLETED, SKIP

```

```

NO ERROR. SKIP
I/O ERROR

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M2901134
M2901135
M2901136
M2901137
M2901138
M2901139
M2901140
M2901141
M2901142
M2901143
M2901144
M2901145
M2901146
M2901147
M2901148
M2901149
M2901150
M2901151
M2901152
M2901153
M2901154
M2901155
M2901156
M2901157

```

1318 * ALLOCATION LENGTHS M2901159
 1319 * **MSOS 4.1** M2901160
 1320 * AREAS 1, 2, AND 3 ARE SETUP BY *S CONTROL CARDS IN **MSOS 4.1** M2901161
 1321 * SYSTEM INSTALLATION FILE. AREAS 4-15 ARE SETUP BY **MSOS 4.1** M2901162
 1322 * EQUATES IN SYSDAT **MSOS 4.1** M2901163

1324	P048C	7FFF	X	ALCLGH	ADC	N1	ALLOCATION LENGTH FOR AREA	1	M29J1165
1325	P048D	7FFF	X		ADC	N2	ALLOCATION LENGTH FOR AREA	2	M2901166
1326	P048E	00FA	X		ADC	PSIZV4	ALLOCATION LENGTH FOR AREA	3	**MSOS 4.1** M2901167
1327	P048F	7FFF	X		ADC	N4	ALLOCATION LENGTH FOR AREA	4	M2901168
1328	P04C0	7FFF	X		ADC	N5	ALLOCATION LENGTH FOR AREA	5	M2901169
1329	P04C1	7FFF	X		ADC	N6	ALLOCATION LENGTH FOR AREA	6	M2901170
1330	P04C2	7FFF	X		ADC	N7	ALLOCATION LENGTH FOR AREA	7	M2901171
1331	P04C3	7FFF	X		ADC	N8	ALLOCATION LENGTH FOR AREA	8	M2901172
1332	P04C4	7FFF	X		ADC	N9	ALLOCATION LENGTH FOR AREA	9	M2901173
1333	P04C5	7FFF	X		ADC	N10	ALLOCATION LENGTH FOR AREA	10	M2901174
1334	P04C6	7FFF	X		ADC	N11	ALLOCATION LENGTH FOR AREA	11	M2901175
1335	P04C7	7FFF	X		ADC	N12	ALLOCATION LENGTH FOR AREA	12	M2901176
1336	P04C8	7FFF	X		ADC	N13	ALLOCATION LENGTH FOR AREA	13	M2901177
1337	P04C9	7FFF	X		ADC	N14	ALLOCATION LENGTH FOR AREA	14	M2901178
1338	P04CA	7FFF	X		ADC	N15	ALLOCATION LENGTH FOR AREA	15	M2901179

1340 P04CB 1800 JMP RESTRT MUST ALWAYS BE 2 WORD INSTRUCTION **MSOS4.0** M2901181
 P04CC FB4F
 1341 * AUTOLOAD PROGRAM MOVED TO HERE M2901182
 1342 * **MSOS4.0** M2901183
 1343 P04CD 1800 STMSV4 JMP RESTRT FIRST WORD OF AUTOLOAD PROGRAM **MSOS4.0** M2901184
 P04CE FB4D

1345 P04CF 0002 * BSS (2) RESERVE TWO WORD FOR THE ALLOCATABLE M29J1186
 1346 * CORE THREAD M2901187
 1347 END M2901188

PGM= 04D1 (1233) COM = 0000 (0) DAT = 0000 (0)

EQUIVALENCES

DEF.LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0000	I	00FF (000255)	0190, 0194, 0286, 0299, 0403, 1137, 1146, 1148, 1149, 1150, 1168
0112	LOCORE	00F7 (000247)	0354, 0360
0113	HICORE	00F6 (000246)	0357, 0367
0119	LUCORE	0001 (000001)	0153
0120	VR	0003 (000003)	0143, 0144
0121	VPL	0004 (000004)	0147
0122	ZERO	0022 (000034)	0145, 0303, 0428, 0475, 0808, 0812, 0813, 0892, 1133, 1244
0123	JNEBIT	0023 (000035)	0505, 0605
0124	VTMP	0007 (000007)	0149
0125	LPMSK	0002 (000002)	0270, 0300, 0308, 0308, 0340, 0450, 0562, 0571, 0604, 0650, 0739, 0744, 0806, 0811, 0820, 0849
0126	AMONI	00F4 (000244)	0858, 0924, 1164, 1248, 1251
0127	FOUR	0025 (000037)	0231, 0566, 0575, 0583, 0610, 0668, 0723, 0758, 0786, 1074, 1100, 1172, 1198, 1297
0128	SYDIR	00EB (000235)	0425, 0429, 0433
0245	VITEMSL	0010 (000010)	0236
0645	HFPRJL	0007 (000007)	0641
0900	LSUMLV	0014 (000020)	0673
1223	LMESS1	0009 (000009)	1215
1226	LMESS2	0002 (000002)	1216
1230	LMESS3	0012 (000018)	1217
1232	LMESS4	0001 (000001)	1218

S Y M B O L S

DEF.LINE	NAME	ADDRESS	REFERENCED AT LINE NUMBER
0007	SPACE	0000	0007
0014	T10	0000	0014
0015	STMSV+	04CD	0015
0016	T17	0000	0016
0017	AREAC	001A	0017, 0188, 022+, 0225
0018	ALCLGH	04BC	0018, 0184, 0186, 0191, 0212
J145	COR1	0006	J140
J153	CORZ	0011	J151
0156	FOIDLE	0014	0871
0184	RESTRT	001C	1340, 1343
J187	RST1	0021	J215
0189	SETTBL	0024	0197
0194	GHKEND	002A	0192
0199	SETEND	002F	0195
0206	FIX4	0036	J204
0211	FIX4A	003C	J209
0216	FIX4X	0042	0211
0218	FIX4Y	0044	0205
0224	SKIPIT	004A	0217, 0220
0231	NTENUF	0054	0210
0234	NTETHO	0057	0239
0239	NTEWAT	005B	J241
0244	NTMSG	0060	0237, 0245
0268	INIT	0070	0229
0269	AGCP	0071	0339
0273	SETUP0	0075	0271
0277	SETUP	0078	0280, 0280, 0284, 0280
0295	NXTPGE	0086	0309, 0309, 0309, 0309
0302	NXTLOC	0088	0306, 0306, 0306, 0306
0322	SETUP1	0097	0324, 0324, 0324, 0324
0328	SPBLP0	009B	0272
0330	SPBLP	009C	0333
0334	CLRFB	00A0	J331
0338	CLRFB1	00A5	0336
0351	CLRFBT	00A9	J341
0363	LOBDAD	00B7	J364, 0366
0370	UPBDAD	00BE	0371, 0373
0374	NOTTS	00C2	0342
0380	NOTMP	00C6	0337
0381	RSTRT1	00C7	0386
0388	RSTRT2	00C0	0378, 0385

0393 RSTRT3 0003
 0405 RSTRT4 000F
 0415 RSTRT5 000E8
 0416 LOCO 000E9
 0417 H7FF 000FA
 0421 SDJOB 000EB
 0422 SDLIB 000EC
 0423 SDPRO 000ED
 0425 RSTRT6 000EE
 0473 TIMSRT 0112
 0479 TIMVCT 0116
 0492 T1572 011F
 0497 TOUT 0127
 0503 T1573 012A
 0510 T72LST 012F
 0521 T72SRG 013A
 0536 T3644 014A
 0543 T10336 014E
 0553 MP17CK 0157
 0561 CHKTMR 015F
 0568 RSTRTA 0165
 0570 RSTRIT 0160
 0577 TTRSTR 016C
 0582 SREJ 016E
 0586 SRJTH 0172
 0591 SRJCK 0176
 0596 SRJMSG 017A
 0600 REJ 0180
 0613 REJTH 018E
 0618 REJCK 0192
 0623 REJMSG 0196
 0628 RSTRT9 019C
 0633 RSTR9A 01A2
 0640 HFPRJ 01A9
 0644 HFPRJM 01B2
 0649 RSTR10 01B9
 0668 PSRMSG 01D4
 0671 TX 01D7
 0676 LTX 01DB
 0682 A101M 01DE
 0683 A101 01DF
 0685 A102 01E2
 0698 FAULT 01F2
 0703 HANGIT 01F9
 0704 GOPP 01FA
 0708 S101 01FD
 0710 S102 0200
 0712 SM 0203
 0718 S103 020B
 0726 PPTH 0214
 0731 PPWAIT 0218
 0734 OUTPP 021B
 0738 OUTID 021C

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 0413
 0408, 0411
 0294
 0297, 0297, 0297
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 0451, 0594
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 0506, 0517, 0532, 0538, 0548, 0557
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 0485, 0499
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 0632, 0638, 0642
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 0696, 0698, 0711
 0691, 0703
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0742	ID1	0221	0740
0749	ID2	0228	0754
0755	ID3	0233	0751
0761	IDTH	0238	0766
0763	IDL	023A	0736
0766	IDWAIT	023C	0768
0770	ID4	023F	0753, 0767
0775	MODE	0242	0741
0779	M32K	0246	0777
0781	M65K	0249	0778
0784	STO	024D	0780
0789	MODETH	0251	0794
0792	MMODE	0254	0784
0794	MODWAT	0255	0796
0797	FILCLS	0258	0795
0801	FILCHK	025D	0798
0803	T1	0260	0815
0814	T1B	026C	0807
0819	SETPF	026E	0809
0823	SPPF	0273	0821
0824	SPPF1	0274	0833
0834	SPPF5	027B	0831
0840	RSET1	027F	0864
0845	RSET2	0285	0841, 0842
0850	RSET4	028A	0861
0854	LRSET	028F	0851
0856	SRSET	0291	0852, 0857
0862	RRSET6	0297	0859
0865	PFCNT	029A	0838, 0845, 0862, 0863
0867	T1AA	029B	0822, 0844
0873	PPFLAG	02A3	0699, 0715, u721
0874	FLAGIT	02A4	0701, 0718
0876	I1	02A5	0775
0877	I2	02A6	0876
0878	I3	02A7	0776, 0877
0879	SAVID	02A8	0743, 0770
0881	ATC	02A9	0803, 0814
0882	T	02AA	0804
0894	SUMLVL	02B5	0674, 0900
0898	DATE	02C2	0657, 0658, 0660, 0665, 0666
0902	PP	02C9	0729
0906	X32K	02D5	0779
0911	X65K	02DC	0781
0916	MONTH	02E3	0649, 0653
0917	DAY	02E4	0659
0918	YEAR	02E5	0661
0922	BONES	02E6	0801, 0926, 0937, 1121, 1188
0932	BONES0	02F1	0996
0938	BONES1	02F8	0934
0959	BONES2	030C	0951, 0975
0970	BONES6	0317	0968
0976	BONES3	031D	0960, 0994
0984	BONES5	0325	0982

0987 BONES4 03228
0995 BONES7 03330
1001 ANATHD 03332
1002 ANATH0 03333
1005 ANATH1 03336
1012 ANATH2 0333D
1018 ANATH3 03343
1025 NUMRD 03446
1026 MAXRD 03447
1027 FSPNT 03448
1028 FSLUPT 03449
1029 LUENTL 0344A
1030 BGS CPL 0344B
1031 ACCUM 0344C
1032 FSENTO 0344D
1033 THDPNT 0344E
1034 BLKSIZ 0344F
1035 LUNO 03550
1036 MMBUFF 03551
1038 SECTOR 03554
1047 LENGTH 0355D
1066 RDMASS 03666
1067 SAMOK 0366D
1072 RDM0 03722
1074 RDM1 03733
1077 ROTHD 0376
1078 MMLU 0377
1082 SEC 037B
1084 RDMWAIT 037C
1088 RDMIN 037F
1097 RRROR 0385
1103 RERTHD 038A
1108 RERWAIT 038E
1112 RER1 0391
1119 RER2 039A
1123 CLJFIL 039E
1129 CLFILE 03A1
1140 CLFIL1 03AC
1156 CLFIL2 03BB
1163 CLFIL3 03C4
1175 CLTHD 03CC
1177 CLLEN 03CE
1178 CLADR 03CF
1179 FLMSB 03D0
1180 FL LSB 03D1
1182 CLFIL4 03D2
1186 CLFIL5 03D5
1192 MESSAG 03D9
1201 MESTHD 03E1
1203 MESLEN 03E3
1204 MESADD 03E4
1206 MESCHK 03E5
1209 MESDUN 03E8

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0957, 0986
0974, 0993, 1.04
1020
1003
1009, 1010
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1089, 1090
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0923, 0932, 0944, 0952, 0954, 0977, 0985
0950, 0976, 0984, 0987, 0989, 0990, 0992
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0946, 0959, 0967, 0971
0939, 0956, 0964, 0965, 0980, 1006, 1007
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0973, 0988, 1002, 1012, 1015, 1019
0963, 0991, 1005
0995, 1062
0962, 0965, 0970, 0972, 1014, 1018, 1080, 1106, 1112, 1115
0931, 1063, 1067, 1140
1068, 1144
0961, 1013, 1093
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1061, 1064, 1070
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0969, 0983, 1011, 1017, 1072, 1088, 1092, 1118
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0929, 0936, 1098, 1120, 1187, 1209
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1207

1211 MESSAD 03E9
 1215 MESSLN 03ED
 1222 MESSG1 03F1
 1224 MESSG2 03FA
 1227 MESSG3 03FC
 1231 MESSG4 040E
 1234 CLSFIL 040F
 1244 FL0601 0419
 1254 FL0610 0423
 1263 FL0614 042C
 1267 V20 0430
 1268 V22 043D
 1269 V27 0431
 1271 FILERR 0432
 1273 FL06 0433
 1280 FL06A 043B
 1285 FL061 0440
 1290 FL067 0445
 1291 FL069 0446
 1293 FL05 0447
 1298 FL051 044C
 1300 FL05A 044E
 1301 FL05B 044F
 1303 FL05C 0451
 1305 FL05D 0453
 1307 FL052 0454
 1311 FL053 0457
 1314 FL059 045A
 1316 BUF2A 045C

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 1236, 1253, 1257, 1262
 1237, 1254, 1274, 1280, 1289
 1238, 1275, 1277
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 1263, 1290, 1291
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 1242, 1259, 1286, 1294, 1296, 1315
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 1307
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 1314
 1241, 1285
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 1308
 1312
 1303

EXTERNALS

DEF. LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0022	UBPROT	00B2	0358
0023	LBPROT	00AE	0355
0024	UPBDTB	00BE	0369
0025	LOBDTB	00B7	0362
0026	CCP	0071	0268
0027	SYFAIL	005F	0242
0028	ENDOV4	0038	0207
0029	CKTHRD	000B	0148
0030	SAVLU	0013	0154
0031	RPMASK	0008	0145
0032	LVLSTR	002D	0196
0033	LEND	0031	0200
0034	CALTHD	004E	0226
0035	DTIMER	0165	0568
0036	IDLE	0019	0158
0037	MPFLAG	00A1	0334
0038	DMICOD	0158	0553
0039	TBLADR	015A	0554
0040	EMPSRT	015D	0556
0041	UPTOD	016C	0577
0042	E15761	010F	0449, 0452
0043	H15721	0142	0513, 0515, 052+, 0526
0044	D15721	0146	0529
0045	E15721	013B	0510, 0521
0046	E1573	012B	0503
0047	O1572	0126	0496
0048	E1572F	0122	0493
0049	E1572	0120	0492
0050	EQ3644	014B	0536
0051	E10336	014F	0543
0052	O10336	0155	0547
0053	T10336	0151	0544
0054	TMRTYP	018A	0473, 0608
0055	LOG1A	0182	0601
0056	E17811	019D	0628
0057	T17811	01A6	0636
0058	JOBENT	00E8	0421
0059	LIBEDT	00EC	0422
0060	PROTEC	00ED	0423
0061	SYSLVL	02C1	0897
0062	K65T10	0010	0152

00663	IUP	0107	0444
00664	INPTV4	0109	0445
00665	AUTF9	0104	0442
00666	AUTFA	0101	0440
00667	AUTFB	00FE	0438
00668	N1	048C	1324
00668	N2	04BD	1325
00668	N4	04BF	1327
00668	N5	04C0	1328
00668	N6	04C1	1329
00668	N7	04C2	1330
00668	N8	04C3	1331
00668	N9	04C4	1332
00668	N10	04C5	1333
00668	N11	04C6	1334
00668	N12	04C7	1335
00668	N13	04C8	1336
00668	N14	04C9	1337
00668	N15	04CA	1338
00669	LSIZV4	00F5	0431
00700	PSIZV4	04BE	0435, 1326
00711	JBFVLV4	0437	0797, 1276
00723	EFLLOCK	02A0	0228, 0870
00733	MIBX	029E	0227, 0869
00744	TDFUNC	0017	0157
00755	SYSMON	02E3	0916
00766	SYSDAY	02E4	0917
00777	SYSYER	02E5	0918
00788	SYSID	0241	0738, 0742, 0745, 0749, 076+, 0771
00799	TSLIST	03A2	1027, 1129
00800	ADRFMS	02FF	0930
00811	BEGLU1	0355	1039
00822	BEGLU2	0356	1040
00833	BEGLU3	0357	1041
00844	BEGLU4	0358	1042
00855	BEGLU5	0359	1043
00866	BEGLU6	035A	1044
00877	BEGLU7	035B	1045
00888	BEGLU8	035C	1046
00899	NUMFS0	035D	1047
00900	NUMFS1	035E	1048
00911	NUMFS2	035F	1049
00922	NUMFS3	0360	1050
00933	NUMFS4	0361	1051
00944	NUMFS5	0362	1052
00955	NUMFS6	0363	1053
00966	NUMFS7	0364	1054
00977	NUMFS8	0365	1055
00988	OUTPUT	02AA	0882
00999	SPACE4	02AB	0883
01000	NOG36A	02AC	0884
01001	REL	02AD	0885
01002	SCH	02AE	0886

0103	PTNALC	02AF
0104	PTNREL	J2B0
0105	SPCEV4	02B1
0106	RDP TV4	02B2
0107	OUTPV4	02B3
0108	PCORE	0268
0109	P18ECM	026F
0110	P18PGA	0287
0111	P18ADD	028B
0114	P18MXP	0280
0531	J15721	0148

0887
0888
0889
0890
J891
0810
0819
J846
0850
0840
J530


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0001      NAM DUMMY          DECK-ID M30  MSOS 5.0          SUMMARY-110M3000001
0002      * JUMMY DEVICE DRIVER                               M3000002
0003      * MASS STORAGE OPERATING SYSTEM VERSION 5.0       M3000003
0004      * SMALL SYSTEMS DIVISION, LA JOLLA, CALIFORNIA    M3000004
0005      * COPYRIGHT CONTROL DATA CORPORATION 1976        M3000005

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0007      *****M3000007
0008      * THERE ARE TWO FUNCTIONS THAT THIS DRIVER IS DESIGNED TO PERFORM.*M3000008
0009      * IT CAN FUNCTION AS A NORMAL DRIVER WITH A LOGICAL UNIT TO DO *M3000009
0010      * -DO NOTHING- FUNCTIONS, OR IT CAN FUNCTION AS AN ALTERNATE *M3000010
0011      * FOR A LOGICAL UNIT SO THAT DEVICE FAILURES FOR THE UNIT WILL *M3000011
0012      * BE LOGGED ON THE COMMENT DEVICE BUT REQUIRE NO OPERATOR RESPONSE *M3000012
0013      * AND REPORT AN ERROR TO THE CALLER. *M3000013
0014      *****M3000014

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0016      * DRIVER ENTRY POINTS                               M3000016
0017      ENT IDJMMY          DUMMY INITIATOR ENTRY           M3000017
0018      ENT CDUMY          DUMMY CONTINUATOR ENTRY        M3000018
0019      ENT EDUMY          DUMMY ERROR ENTRY              M3000019

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0021      * DRIVER EXTERNAL POINTS                           M3000021
0022      EXT LOG1           LOG1 TABLE IN SYSDAT          M3000022
0023      EXT DUMALT        DUMMY LOGICAL UNIT             M3000023
0024      EXT LOG1A         LOG1A TABLE IN SYSDAT         M3000024

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0026      * DRIVER EQUIVALENCES                               M3000026
0027      EQU AFNR($B5)    ADDRESS OF FIND NEXT REQUEST    M3000027
0028      EQU ADISP($EA)   ADDRESS OF DISPATCHER           M3000028
0029      EQU ELJ(5)       **MSOS 4.1**M3000029
0030      EQU ZROBIT($33)  TABLE OF COMPLEMENT SINGLE BIT MASKS M3000030
0031      EQU LPMSK($2)    TABLE OF RIGHT JUSTIFIED MASKS  M3000031
0032      EQU ESTAT1(9)   PDT STATUS 1 WORD              M3000032
0033      EQU ONEBIT($23) TABLE OF SINGLE BIT MASKS       M3000033
0034      EQU ACOMPR($B6)  ADDRESS OF COMPLETE REQUEST     M3000034
0035      EQU AMONI($F4)   ADDRESS OF MONITOR              M3000035

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0037      P0000 40FF      IDUMMY STQ- I          SAVE ADDRESS OF PDT IN I-REG.      M3000037
0038      P0001 54B5      CDUMMY RTJ- (AFNR)     LOOK FOR MORE REQUESTS           M3000038
0039      P0002 14EA      EDUMMY JMP- (ADISP)    NO REQUESTS--EXIT TO DISPATCHER  M3000039
0040      P0003 E105      LDQ- ELU,I      GET LOGICAL UNIT NUMBER         M3000040
0041      P0004 C600      LDA+ LOG1A,2   GET PDT ADDRESS FOR THIS LU     M3000041
0042      P0005 7FFF      X
0043      P0006 90FF      SUB- I         MINUS MY PDT ADDRESS           M3000042
0044      P0007 0113      SAN ASALT      SKIP IF REQUEST AS ALTERNATE DEVICE M3000043
0045      P0008 54B6      RTJ- (ACOMPR) COMPLETE REQUEST                 M3000044
0046      P0009 18F7      JMP* CDJMMY    GO TO SEE IF MORE REQUESTS     M3000045
0047      P000A 7FFF      X LUDUMY ADC DUMALT DUMMY LOGICAL UNIT M3000046
0047      P000B 0500      ASALT IIN 0    LOCK OUT OTHER CHANGES TO LOG1 M3000047

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0048	P000C	CE16	LDA* (ALOG1),Q	GET LOG1 ENTRY FOR REQUESTED L.U.	M3000048
0049	P0000	A040	AND- ZR0BIT+13	RESTORE UNIT	M3000049
0050	P000E	A03F	AND- ZR0BIT+12	CLEAR MESSAGE FLAG BIT	M3000050
0051			*	1 CARD DELETED	M3000051
0052	P000F	6E13	STA* (ALOG1),Q	MODIFY LOG1 ENTRY	M3000052
0053	P0010	E600	LDQ+ LOG1A,Q	MAKE Q-REG. POINT TO FAILED L.U. PDT	M3000053
	P0011	0005			
	P0012	C109	LDA- ESTAT1,I		M3000054
0054	P0013	A011	AND- LPMSK+15		M3000055
0055	P0014	8032	EOR- ONEBIT+15	SET ERROR INDICATOR IN V-FIELD	M3000056
0056	P0015	6109	STA- ESTAT1,I		M3000057
0057	P0016	480A	STQ* ADRPHY	SAVE ADDRESS OF FAILED L.U. PDT	M3000058
0058	P0017	54B6	RTJ- (ACOMPR)	COMPLETE REQUEST	M3000059
0059	P0018	0500	IIN 0	LOCK OUT OTHER ENTRIES TO FAILED DRIVER	M3000060
0060	P0019	E807	LDQ* ADRPHY		M3000061
0061	P001A	C205	LDA- ELU,Q	IS DRIVER BUSY (L.U. NOT ZERO)	M3000062
0062	P001B	0115	SAN BUSY	SKIP IF BUSY	M3000063
0063	P001C	C105	LDA- ELJ,I	SET BUSY SO ANY NEW REQUESTS WILL	M3000064
0064	P001D	6205	STA- ELJ,Q	BE THREADED	M3000065
0065	P001E	54F4	RTJ- (AMONI)	PART 1 INDIRECT REQUEST	M3000066
0066	P001F	2000	NUM \$2000		M3000067
0067	P0020	0000	ADRPHY NUM 0	PDT ADDRESS OF FAILED DRIVER	M3000068
0068	P0021	18DF	BUSY JMP* CDUMMY	GO TO LOOK FOR MORE REQUESTS	M3000069
0069	P0022	7FFF	X ALOG1 ADC LOG1		M3000070
0070			END		M3000071
0071					

PGM= 0023 (35) COM = 0000 (0) DAT = 0000 (0)

EQUIVALENCES

DEF.LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0000	I	00FF	(000255) 0037, 0042
0027	AFNR	00B5	(000181) 0038
0028	ADISP	00EA	(000234) 0039
0029	ELU	00C5	(000005) 0040, 0062, 0064, 0065
0030	ZROBIT	0033	(000051) 0049, 0050
0031	LPMSK	0002	(000002) 0055
0032	ESTAT1	0009	(000009) 0054, 0057
0033	ONEBIT	0023	(000035) 0056
0034	ACOMPR	00B6	(000182) 0044, 0059
0035	AMONI	00F4	(000244) 0066

S Y M B O L S

DEF. LINE	NAME	ADDRESS	REFERENCED AT LINE NUMBER
0017	IDUMMY	0000	0017
0018	CDUMMY	0001	0018, 0045, 0069
0019	EDUMMY	0002	0019
0046	LUDUMY	000A	
0047	ASALT	000B	0043
0068	ADRPY	0020	0058, 0061
0069	BUSY	0021	0063
0070	ALOG1	0022	0048, 0052

EXTERNALS

DEF.LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0022	LOG1	0022	0070
0023	DUMALT	000A	0046
0024	LOG1A	0011	0041, 0053


```

0001      *      NAM DSBUFR          DECK-ID M32  MSOS 5.0          SUMMARY-110M3200001
0002      *      OUTPUT MESSAGE BUFFERING PACKAGE                M32000002
0003      *      MASS STORAGE OPERATING SYSTEM VERSION 5.0      M32000003
0004      *      SMALL SYSTEMS DIVISION, LA JOLLA, CALIFORNIA    M32000004
0005      *      COPYRIGHT CONTROL DATA CORPORATION 1976        M32000005

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0007      ENT ISBJFR          DRIVER INITIATOR ENTRY          **MSOS 4.1**M32000007
0008      ENT CBWRIT         MM WRITE COMPLETION ENTRY        **MSOS 4.1**M32000008
0009      ENT CBREAD        MM READ COMPLETION ENTRY          **MSOS 4.1**M32000009
0010      ENT BOUTC         BUFFER OUTPUT COMPLETION ENTRY    **MSOS 4.1**M32000010
0011      EXT LOG           EF ERROR LOGGING ROUTINE          **MSOS 4.1**M32000011
0012      EXT ALTDEV        M32000012
0013      EQU REJECT(57)    MASS MEMORY ERROR CODE           **MSOS 4.1**M32000013
0014      EQU XFRERR(56)    STORAGE BUFFER FILLED ERROR      **MSOS 4.1**M32000014
0015      EQU AMONI($F4),ADISP($EA),AFNR($B5),ACOMPC($B6)      M32000015

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0016      EQU LPMSK($02),ZERO($22),ONEBIT($23),ZROBIT($33)    M32000016

```

```

0017      EQU LEVEL($EF)                                         M32000017

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0019      *      BUFFER DRIVER - INITIATOR ENTRY                M32000019

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```

0021      P0000 40FF      ISBUFR STQ- I          I = ADR OF BUFFER TABLE          **MSOS 4.1**M32000021
0022      P0001 54B5      BF01  RTJ- (AFNR)      FIND NEXT REQUEST                M32000022
0023      P0002 14EA      JMP- (ADISP)      NONE                                     M32000023

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0025      *      TRANSFER DATA FROM REQUEST TO BUFFER          M32000025

```

```

0027      P0003 E106      LDQ- 6,I          REQUEST ADDRESS                M32000027
0028      P0004 C622      LDA- (ZERO),Q    REQUEST CODE                    M32000028
0029      P0005 0F49      ARS 9           M32000029
0030      P0006 A007      AND- 7          M32000030
0031      P0007 09F1      INA -14        MOTION                          M32000031
0032      P0008 0111      SAN 1          M32000032
0033      P0009 1859      JMP* BF40      YES, COMPLETE                   M32000033
0034      P000A C203      LDA- 3,Q      GET MODE BIT                     M32000034
0035      P000B 0FC3      ALS 3          **MSOS 4.0M32000035
0036      P000C A032      AND- ONEBIT+15 SAVE                       **MSOS 4.0M32000036
0037      P000D 0822      TRA Q         SAVE                          **MSOS 4.0M32000037
0038      P000E C10B      LDA- ELSTWD,I **MSOS 4.0M32000038
0039      P000F 910A      SUB- ECCOR,I  M32000039
0040      P0010 0901      INA 1         M32000040
0041      P0011 0874      EAQ A         ADD MODE TO NUMBER OF WORDS     **MSOS 4.0M32000041
0042      P0012 611C      STA- CONTRL,I LENGTH OF MESSAGE + 1 M32000042

```

0043	P0013	A011		AND-	LPMSK+15		**MSOS 4.0	M3200043
0044	P0014	0901		INA	1			M3200044
0045	P0015	6118		STA-	DLEG,I	LENGTH OF MESSAGE + 2		M3200045
0046	P0016	C112		LDA-	FIRST,I			M3200046
0047	P0017	911B		SUB-	STOR,I			M3200047
0048	P0018	0102		SAZ	BF10-*--1	EMPTY		M3200048
0049	P0019	0128		SAP	BF11-*--1	CHECK LOWER AREA		M3200049
0050	P001A	1816		JMP*	BF12	CHECK UPPER AREA		M3200050
0052	P0018	C110	BF10	LDA-	LOCB,I	RESET BUFFER POINTERS		M3200052
0053	P001C	6112		STA-	FIRST,I			M3200053
0054	P001D	6124		STA-	READ,I			M3200054
0055	P001E	611B		STA-	STOR,I			M3200055
0056	P001F	C111		LDA-	EVJB,I			M3200056
0057	P0020	6113		STA-	LAST,I			M3200057
0058	P0021	911B		SUB-	STOR,I			M3200058
0059	P0022	9118	BF11	SUB-	DLEG,I			M3200059
0060	P0023	0131		SAM	ERR1-*--1	NO FIT		M3200060
0061	P0024	1819		JMP*	BF30		**MSOS 4.1**	M3200061
0063			*			REJECTED REQUEST		M3200063
0065	P0025	0A39	ERR1	ENA	REJECT	ERROR CODE		M3200065
0066	P0026	E105	ERR2	LDQ-	ELJ,I			M3200066
0067	P0027	0FA6		QLS	6			M3200067
0068	P0028	C872		FAQ	Q			M3200068
0069	P0029	C109		LDA-	ESTAT1,I	SET ERROR FLAG IN PDT	**MSOS 4.1**	M3200069
0070	P002A	B032		FOR-	ONEBIT+15		**MSOS 4.1**	M3200070
0071	P002B	6109		STA-	ESTAT1,I		**MSOS 4.1**	M3200071
0072	P002C	3400	X	RTJ+	LOG	LOG ERROR IN EF	**MSOS 4.1**	M3200072
	P002D	7FFF	X					
0073	P002E	1400	X	JMP+	ALTDEV	GO TO ALTERNATE DEVICE HANDLER		M3200073
	P002F	7FFF	X					
0075	P0030	C111	BF12	LDA-	ENDB,I			M3200075
0076	P0031	911B		SUB-	STOR,I			M3200076
0077	P0032	9118		SUB-	DLEG,I			M3200077
0078	P0033	0129		SAP	BF30-*--1	IF DATA FITS ABOVE STOR, GO TO 30	**MSOS 4.1**	M3200078
0079	P0034	C112		LDA-	FIRST,I			M3200079
0080	P0035	9110		SUB-	LOCB,I			M3200080
0081	P0036	9118		SUB-	DLEG,I			M3200081
0082	P0037	0121		SAP	BF15-*--1	IF DATA FITS BELOW FIRST, GO TO BF16		M3200082
0083	P0038	18EC		JMP*	ERR1	REJECT		M3200083
0085	P0039	C11B	BF16	LDA-	STOR,I	LAST = STOR		M3200085
0086	P003A	6113		STA-	LAST,I			M3200086
0087	P003B	C110		LDA-	LOCB,I	STOR = LOCB		M3200087

0088 P003C 611B STA- STOR,I M3200088

0090 * BUFFER INPUT HANDLER **MSOS 4.1**M3200090

0092	P003D	UAG1	BF30	ENA	1	SET UP TO TRANSFER CONTRL TO BFR	M3200092
0093	P003E	E118		STA-	DLEG,I		M3200093
0094	P003F	0A1C		ENA	CONTRL		M3200094
0095	P0040	80FF		ADD-	I		M3200095
0096	P0041	6119		STA-	DART,I		M3200096
0097	P0042	C0FF	BF31	LDA-	I		M3200097
0098	P0043	0914		INA	DPL0		M3200098
0099	P0044	6803		STA*	BF32		M3200099
0100	P0045	54F4		RTJ-	(AMONI)	INITIATE MM WRITE	M3200100
0101	P0046	2000		NUM	\$2000	PART 1 INDIRECT	**MSOS 4.0
0102	P0047	0000	BF32	NUM	0		M3200101
0103	P0048	14EA		JMP-	(ADISP)		M3200102
							M3200103

0105 * COMPLETION OF MM WRITE M3200105

0107	P0049	09EB	CBWRIT	INA	-DPL0	RESTORE I=ADDR OF BFRTAB	**MSOS 4.1**M3200107
0108	P004A	60FF		STA-	I		M3200108
0109	P004B	C11C		LDA-	CONTRL,I		M3200109
0110	P004C	C17C		SQM	BF34--*-1	IF MM WRITE FAILED GO TO BF34	M3200110
0111	P004D	0111		SAN	1		M3200111
0112	P004E	1811		JMP*	BF35	DATA TRANSFER COMPLETED OK	M3200112

0114	P004F	C10A		LDA-	ECCOR,I	SET UP TO TRANSFER DATA TO BFR	M3200114
0115	P0050	6119		STA-	DART,I		M3200115
0116	P0051	C11C		LDA-	CONTRL,I		M3200116
0117	P0052	A011		AND-	LPMSK+15		**MSOS 4.0
0118	P0053	09FE		INA	-1		M3200117
0119	P0054	6118		STA-	DLEG,I		M3200118
0120	P0055	011B		RAO-	STOR,I	STOR = STOR + 1	M3200119
0121	P0056	0844		CLR	A	SET CONTRL = 0	M3200120
0122	P0057	611C		STA-	CONTRL,I		M3200121
0123	P0058	18E9		JMP*	BF31		M3200122

0125	P0059	0113	BF34	SAN	BF38--*-1		M3200125
0126	P005A	C11B		LDA-	STOR,I	RESET STOR POINTER	M3200126
0127	P005B	09FE		INA	-1		M3200127
0128	P005C	611B		STA-	STOR,I		M3200128
0129	P005D	CA38	BF38	ENA	XFRERR	SET ERROR CODE	M3200129
0130	P005E	18C7		JMP*	ERR2		M3200130

0132	P005F	C11B	BF35	LDA-	STOR,I	UPDATE STOR POINTER	M3200132
0133	P0060	8118		ADD-	DLEG,I		M3200133

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0134 P0061 611B STA- STOR,I M3200134

0136 * DATA TRANSFER DONE, COMPLETE USERS REQUEST M3200136

0138 P0062 54B6 BF40 RTJ- (ACOMPC) M3200138
0139 P0063 3128 LDA- OUTP2,I M3200139
0140 P0064 B11F EOR- DOUT2,I M3200140
0141 P0065 0118 SAN BF41-*--1 IF NO OUTPUT IS IN PROGRESS FOR THIS BFR M3200141
0142 P0066 C0FF LDA- LEVEL START OUTPUT M3200142
0143 P0067 8000 ADD =N$5200 PART 1 SCHEDULE OF BF50 **MSOS 4.0 M3200143
      P0068 5200
0144 P0069 6803 STA* BF42 M3200144
0145 P006A E0FF LDQ- I M3200145
0146 P006B 54F4 RTJ- (AMONI) M3200146
0147 P006C 0000 BF42 NUM 0 M3200147
0148 P006D 006F P ADC BF50 M3200148
0149 P006E 1892 BF41 JMP* BF01 GET NEXT REQUEST M3200149

0151 * BUFFER OUTPJT HANDLER M3200151

0153 * START BUFFER OUTPUT ENTRY M3200153

0155 P006F 40FF BF50 STQ- I I = BUFFER TABLE ADDRESS M3200155
0156 P0070 C11B BF53 LDA- STOR,I M3200156
0157 P0071 9112 SUB- FIRST,I M3200157
0158 P0072 0102 SAZ BF51-*--1 M3200158
0159 P0073 09FE INA -1 M3200159
0160 P0074 0111 SAN BF52-*--1 M3200160
0161 P0075 14EA BF51 JMP- (ADISP) EXIT IF BUFFER IS EMPTY M3200161

0163 P0076 C12C BF52 LDA- LCHAR,I SET UP TO TRANSFER FROM BFR M3200163
0164 P0077 6121 STA- OUTLNG,I M3200164
0165 P0078 612A STA- OUTP4,I M3200165
0166 P0079 C12B LDA- ACHAR,I M3200166
0167 P007A 6122 STA- DADR,I M3200167

0169 * BUFFER OUTPLU HANDLER **MSOS 4.1**M3200169

0171 P007B C0FF LDA- I **MSOS 4.1**M3200171
0172 P007C 091D INA DOUT0 M3200172
0173 P007D 6803 STA* BF71 M3200173
0174 P007E 54F4 RTJ- (AMONI) INITIATE MM READ M3200174
0175 P007F 2000 NUM $2000 PART 1 INDIRECT **MSOS 4.0 M3200175
0176 P0080 0000 BF71 NUM 0 M3200176
0177 P0081 14EA JMP- (ADISP) M3200177

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0179 * COMPLETION OF MM READ M3200179

0181	P0082	09E2	CBREAD	INA	-DOJTO	RESTORE I=ADDR OF BFRTAB	**MSOS 4.1**	M3200181
0182	P0083	60FF		STA-	I			M3200182
0183	P0084	C161		SQP	BF73--*-1			M3200183
0184	P0085	14EA		JMP-	(ADISP)	EXIT IF READ ERROR OCCURRED, WAIT FOR RESTART		M3200184
0185	P0086	C124	BF73	LDA-	READ,I	UPDATE READ POINTER		M3200185
0186	P0087	8121		ADD-	OUTLNG,I			M3200186
0187	P0088	6124		STA-	READ,I			M3200187

0189 * DATA IS NOW IN CHARACTER BUFFER M3200189

0191	P0089	C125		LDA-	SKELNG,I			M3200191
0192	P008A	9102		SAZ	BF81--*-1			M3200192
0193	P008B	0131		SAM	BF81			M3200193
0194	P008C	1811		JMP*	BF82			M3200194
0195	P008D	E12B	BF81	LDQ-	ACHAR,I	NEW MESSAGE		M3200195
0196	P008E	C622		LDA-	(ZERO),Q			M3200196
0197	P008F	A011		AND-	LPMSK+15			M3200197
0198	P0090	6125		STA-	SKELNG,I	TOTAL MESSAGE LENGTH		M3200198
0199	P0091	C129		LDA-	OUTP3,I	LOGICAL UNIT		M3200199
0200	P0092	A03F		AND-	ZROBIT+12	CLEAR MODE BIT		M3200200
0201	P0093	6129		STA-	OJTP3,I			M3200201
0202	P0094	C622		LDA-	(ZERO),Q	MODE TO USE AND WORDS+1		M3200202
0203	P0095	0F43		ARS	3			M3200203
0204	P0096	A02F		AND-	ONEBIT+12			M3200204
0205	P0097	B129		EOR-	OUTP3,I			M3200205
0206	P0098	6129		STA-	OUTP3,I	STORE NEW MODE		M3200206
0207	P0099	D12B		RAO-	ACHAR,I	ADJUST BFR ADDRESS OVER FIRST WORD		M3200207
0208	P009A	C12A		LDA-	OUTP4,I			M3200208
0209	P009B	09FE		INA	-1			M3200209
0210	P009C	612A		STA-	OUTP4,I	ADJUST LENGTH OF TRANSFER		M3200210

0212	P009D	C125	BF82	LDA-	SKELNG,I			M3200212
0213	P009E	912C		SUB-	LCHAR,I			M3200213
0214	P009F	6125		STA-	SKELNG,I	LENGTH REMAINING		M3200214
0215	P00A0	0106		SAZ	BF83--*-1	COMPLETE		M3200215
0216	P00A1	012E		SAP	BF84--*-1	MESSAGE NOT COMPLETED		M3200216
0217	P00A2	8124		ADD-	READ,I	ADJUST LENGTH AND READ POINTER		M3200217
0218	P00A3	6124		STA-	READ,I	TO ACTUAL LENGTH OF MESSAGE		M3200218
0219	P00A4	C12A		LDA-	OUTP4,I			M3200219
0220	P00A5	8125		ADD-	SKELNG,I			M3200220
0221	P00A6	612A		STA-	OUTP4,I			M3200221
0222	P00A7	C124	BF83	LDA-	READ,I	FIRST = READ		M3200222
0223	P00A8	6112		STA-	FIRST,I			M3200223
0224	P00A9	9113		SUB-	LAST,I			M3200224
0225	P00AA	0115		SAN	BF84--*-1	NOT END OF BUFFER		M3200225

02226 P00AB C111
 02227 P00AC 6113
 02228 P00AD C110
 02229 P00AE 6124
 02230 P00AF 6112
 02231 P00B0 C0FF
 02232 P00B1 0926
 02233 P00B2 6803
 02234 P00B3 54F4
 02235 P00B4 2000
 02236 P00B5 0000
 02237 P00B6 14EA

BF84

 BF85

LDA- ENDB, I
 STA- LAST, I
 LDA- LOCB, I
 STA- READ, I
 STA- FIRST, I
 LDA- I
 INA OUTP0
 STA* BF85
 RTJ- (AMONI)
 NUM \$2000
 NUM 0
 JMP- (ADISP)

LAST = ENDB
 READ = FIRST = LOCB

INITIATE OUTPUT FROM CHAR BFR
 PART 1 INDIRECT

**MSOS 4.0

M3200226
 M3200227
 M3200228
 M3200229
 M3200230
 M3200231
 M3200232
 M3200233
 M3200234
 M3200235
 M3200236
 M3200237

0239

*

CHARACTER BUFFER OUTPUT COMPLETED

M3200239

0241 P00B7 09D9
 0242 P00B8 60FF
 0243
 0244 P00B9 C122
 0245 P00BA 612B
 0246 P00BB C12C
 0247 P00BC 612A
 0248 P00BD 18B2

BOUTC
 *

INA -OUTP0
 STA- I
 LDA- DADR, I
 STA- ACHAR, I
 LDA- LCHAR, I
 STA- OUTP4, I
 JMP* BF53

3 CARDS DELETED

RESTORE ADDRESS OF BUFFER
 RESTORE LENGTH OF TRANSFER
 CONTINUE BUFFER OUTPUT

MSOS 4.1

M3200241
 M3200242
 M3200243
 M3200244
 M3200245
 M3200246
 M3200247
 M3200248

0250 0005
 0251 0009
 0252 000A
 0253 000B
 0254 0010
 0255 0011
 0256 0012
 0257 0013
 0258 0014
 0259 0018
 0260 0019
 0261 001B
 0262 001C
 0263 001D
 0264 001F
 0265 0021
 0266 0022
 0267 0024
 0268 0025
 0269 0026
 0270 0028
 0271 0029
 0272 002A
 0273 002B

EQU ELJ (5)
 EQU ESTAT1 (9)
 EQU ECCOR (10)
 EQU ELSTWD (11)
 EQU LOCB (16)
 EQU ENDB (17)
 EQU FIRST (18)
 EQU LAST (19)
 EQU DPL0 (20)
 EQU DLEG (24)
 EQU DART (25)
 EQU STOR (27)
 EQU CONTRL (28)
 EQU DOUT0 (29)
 EQU DOUT2 (31)
 EQU OUTLNG (33)
 EQU DADR (34)
 EQU READ (36)
 EQU SKELNG (37)
 EQU OUTP0 (38)
 EQU OUTP2 (40)
 EQU OUTP3 (41)
 EQU OUTP4 (42)
 EQU ACHAR (43)

MSOS 4.1

M3200250
 M3200251
 M3200252
 M3200253
 M3200254
 M3200255
 M3200256
 M3200257
 M3200258
 M3200259
 M3200260
 M3200261
 M3200262
 M3200263
 M3200264
 M3200265
 M3200266
 M3200267
 M3200268
 M3200269
 M3200270
 M3200271
 M3200272
 M3200273

0274 002C EQU LCHAR(44) M3200274

0276 * EXAMPLE OF BUFFER PHYSICAL DEVICE TABLE MACRO FOLLOWS M3200276

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0278 *BUFFER MAC FLSB,LLSB,FMSB,BLU,MMLU,CBSIZE M3200278
0279 * LOC A M3200279
0280 * EXT ISBUFR BUFFER DRIVER INITIATOR M3200280
0281 * EXT CBWRIT MASS MEMORY WRITE COMPLETION M3200281
0282 * EXT CBREAD MASS MEMORY READ COMPLETION M3200282
0283 * EXT BOUTC BUFFER OUTPUT COMPLETION M3200283
0284 * NUM $520A 00 SCHEDULER CALL M3200284
0285 * ADC ISBUFR 01 INITIATOR ADDRESS M3200285
0286 * ADC 0 02 CONTINUATOR ADDRESS (NOT USED) M3200286
0287 * ADC 0 03 DIAGNOSTIC ERROR ADDRESS (NOT USED) M3200287
0288 * NUM -1 04 DIAGNOSTIC CLOCK (NOT USED) M3200288
0289 * NUM 0 05 LOGICAL UNIT M3200289
0290 * ADC 0 06 PARAMETER LOCATION M3200290
0291 * NUM 0 07 CONVERTER, EQUIPMENT, STATION (NOT USED) M3200291
0292 * NUM $A4 08 REQUEST STATUS M3200292
0293 * NUM 0 09 DRIVER STATUS M3200293
0294 * NUM 0 10 CURRENT LOCATION M3200294
0295 * NUM 0 11 LAST LOCATION PLUS ONE M3200295
0296 * NUM 0 12 DEVICE STATUS (NOT USED) M3200296
0297 * NUM 0 13 MASS MEMORY LENGTH (NOT USED) M3200297
0298 * NUM $7FFF 14 MASS MEMORY LOCATION (NOT USED) M3200298
0299 * NUM 0 15 MONITOR RETURN M3200299
0300 * ADC 'FLSB' 16 LSB START OF BUFFER M3200300
0301 * ADC 'LLSB' 17 LSB END OF BUFFER M3200301
0302 * ADC 'FLSB' 18 CURRENT LSB START OF BUFFER M3200302
0303 * ADC 'LLSB' 19 CURRENT LSB END OF BUFFER M3200303
0304 * NUM $44AA 20 MASS MEMORY WRITE REQUEST (UNFORMATTED) M3200304
0305 * ADC CBWRIT 21 COMPLETION M3200305
0306 * NUM 0 22 THREAD M3200306
0307 * ADC 'MMLU' 23 MASS MEMORY LOGICAL UNIT M3200307
0308 * NUM 0 24 NUMBER OF WORDS M3200308
0309 * NUM 0 25 STARTING DATA LOCATION M3200309
0310 * ADC 'FMSB' 26 MSB ADDRESS M3200310
0311 * ADC 'FLSB' 27 LSB ADDRESS M3200311
0312 * NUM 0 28 CONTROL WORD M3200312
0313 * NUM $42AA 29 MASS MEMORY READ REQUEST (UNFORMATTED) M3200313
0314 * ADC CBREAD 30 COMPLETION M3200314
0315 * NUM 0 31 THREAD M3200315
0316 * ADC 'MMLU' 32 MASS MEMORY LOGICAL UNIT M3200316
0317 * NUM 0 33 NUMBER OF WORDS M3200317
0318 * ADC 'A' 34 STARTING LOCATION (CHARACTER BUFFER) M3200318
0319 * ADC 'FMSB' 35 MSB ADDRESS M3200319
0320 * ADC 'FLSB' 36 LSB ADDRESS M3200320
0321 * NUM 0 37 PARTIAL WORD OUTPUT FLAG M3200321
0322 * NUM $4CAA 38 BUFFER WRITE REQUEST (FORMATTED) M3200322
0323 * ADC BOUTC 39 COMPLETION M3200323
0324 * NUM 0 40 THREAD M3200324

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0331

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ADC 'BLU' 41 OUTPUT LOGICAL UNIT
NUM 0 42 NUMBER OF WORDS
ADC 'A' 43 STARTING LOCATION (CHARACTER BUFFER)
ADC 'CBSIZE' 44 CHARACTER BUFFER SIZE
BZS 'A' ('CBSIZE') 45- CHARACTER BUFFER
EMC
END

M3200325
M3200326
M3200327
M3200328
M3200329
M3200330
M3200331

PG4= 00BE (190) COM = 0000 (0) DAT = 0000 (0)

EQUIVALENCES

DEF. LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0000	I	00FF (000255)	0021, 0095, 0097, 0108, 0145, 0155, 0171, 0182, 0231, 0242
0013	REJECT	0039 (000057)	0065
0014	XFRERR	0038 (000056)	0129
0015	AMONI	00F4 (000244)	0100, 0146, 0174, 0234
0015	ADISP	00EA (000234)	0023, 0103, 0161, 0177, 0184, 0237
0015	AFNR	00B5 (000181)	0022
0015	ACMPC	00B6 (000182)	0138
0016	LPMSK	0002 (000002)	0043, 0117, 0197
0016	ZERO	0022 (000034)	0028, 0196, 0202
0016	ONEBIT	0023 (000035)	0036, 0070, 0204
0016	TWOBIT	0033 (000051)	0200
0017	LEVEL	00EF (000239)	0142
0250	ELU	0005 (000005)	0066
0251	ESTAT1	0009 (000009)	0069, 0071
0252	ECCOR	000A (000010)	0039, 0114
0253	ELSTWD	000B (000011)	0038
0254	LOCB	0010 (000010)	0052, 0080, 0087, 0228
0255	ENDB	0011 (000017)	0056, 0073, 0226
0256	FIRST	0012 (000018)	0045, 0053, 0079, 0157, 0223, 0230
0257	LAST	0013 (000019)	0057, 0086, 0224, 0227
0258	DPLG	0014 (000020)	0093, 0107
0259	DLEG	0018 (000024)	0045, 0059, 0077, 0081, 0093, 0119, 0133
0260	JART	0019 (000025)	0096, 0115
0261	STOR	001B (000027)	0047, 0055, 0058, 0076, 0085, 0088, 0120, 0126, 0128, 0132, 0134, 0156
0262	CONTRL	001C (000028)	0042, 0094, 0109, 0116, 0122
0263	DOUT0	001D (000029)	0172, 0181
0264	JOUT2	001F (000031)	0140
0265	OUTLNG	0021 (000033)	0164, 0186
0266	DADR	0022 (000034)	0167, 0244
0267	READ	0024 (000036)	0054, 0185, 0187, 0217, 0218, 0222, 0229
0268	SKELNG	0025 (000037)	0191, 0198, 0212, 0214, 0220
0269	OUTP0	0026 (000038)	0232, 0241
0270	OUTP2	0028 (000040)	0139
0271	OUTP3	0029 (000041)	0199, 0201, 0205, 0206
0272	OUTP4	002A (000042)	0165, 0208, 0210, 0219, 0221, 0247
0273	ACHAR	002B (000043)	0166, 0195, 0207, 0245
0274	LCHAR	002C (000044)	0163, 0213, 0246

S Y M B O L S

DEF.LINE	NAME	ADDRESS	REFERENCED AT LINE NUMBER
0007	ISBUFR	0000	0007
0008	CBWRIT	0049	0008
0009	CBREAD	0082	0009
0010	CBOUTC	0087	0010
0022	BF01	0001	0149
0052	BF10	0018	0048
0059	BF11	0022	0049
0065	ERRR1	0025	0060, 0083
0066	ERRR2	0026	0130
0075	BF12	0033	0050
0085	BF16	0039	0082
0092	BF30	0030	0061, 0078
0097	BF31	0042	0123
0102	BF32	0047	0099
0125	BF34	0059	0110
0129	BF38	0050	0125
0132	BF35	0057	0112
0138	BF46	0062	0033
0147	BF42	0060	0144
0149	BF41	0066	0141
0153	BF56	0067	0148
0156	BF53	0070	0248
0161	BF51	0075	0158
0163	BF52	0076	0160
0176	BF71	0080	0173
0185	BF73	0088	0183
0195	BF81	0080	0192, 0193
0212	BF82	0090	0194
0222	BF83	00A7	0215
0231	BF84	00B0	0215, 0225
0236	BF85	00B5	0233

EXTERNALS

DEF.LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0011	LOG	002D	0072
0012	ALTDEV	002F	0073

*** ALPHABETICAL SORT OF SYMBOLS ***

ACHAR	0273	ACOMPC	0015	ADISP	0015	AFNR	0015	ALTOEV	0012	AMONI	0015	BF01	0022	BF10	0052	BF11	0059
BF12	0075	BF16	0085	BF30	0092	BF31	0097	BF32	0102	BF34	0125	BF35	0132	BF38	0129	BF40	0138
BF41	0149	BF42	0147	BF50	0155	BF51	0161	BF52	0163	BF53	0126	BF71	0176	BF73	0185	BF81	0195
BF82	0212	BF83	0222	BF84	0231	BF85	0235	BOUTC	0010	CBREAD	0009	CBWRIT	0008	CONTRL	0262	DADR	0266
DART	0250	DLEG	0259	DOUT0	0263	DOUT2	0264	DPL0	0258	ECCOR	0252	ELSTWD	0253	ELU	0250	FNDB	0255
ERR1	0065	ERR2	0066	ESTAT1	0251	FIRST	0256	I	0000	ISBUFR	0007	LAST	0257	LCHAR	0274	LEVEL	0017
LOCB	0254	LOG	0011	LPMSK	0016	ONEBIT	0016	OUTLNG	0265	OUTP0	0269	OUTP2	0270	OUTP3	0271	OUTP4	0272
READ	0267	REJECT	0013	SKELNG	0268	STOR	0261	XFRERR	0014	ZERO	0016	ZROBIT	0016				

0001
0002
0003
0004

* NAM DCOSY DECK-ID M3+ MSOS 5.0
* MASS STORAGE OPERATING SYSTEM VERSION 5.0
* SMALL SYSTEMS DIVISION, LA JOLLA, CALIFORNIA
* COPYRIGHT CONTROL DATA CORPORATION 1976

SUMMARY-114*****
M3400002
M3400003
M3400004

0006
0007

* CSYDRV (COSY DRIVER) VERSION 1.0.
* PROGRAM BASE-MSOS4.0

M3400006
M3400007

0009
0010
0011
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0013
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0016
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0018
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0021
0022
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0044
0045
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0048
0049
0050

0008
0002
0012
0022
002F
0031
0046
00EA
00B5
00E9
00B6
00F4
0005
0006
0008
0009
000A
000B
000C
0010
0011
0012
0015
0016
0017
0018
0019
001A
001B
001C
001D
001E
0020
0017
0010
001C

WORD8
LPMASK
NZERO
ZERO

TEN
DISP
EXTBV4
REQPRO

ELINK
SEQNJM
ID
NWORDS
HOLLR
INPLR
RWFG
PCN5F
FSTCHR
ENDOCK
ADINPB
INPPTR
HOLPTR
FTIME
SFLG

EXT MAS300
EXT ICOSY
EXT LOG1A
EXT ALTDEV
EXT MAKEQ
EQU WORD8(8)
EQU LPMASK(\$2)
EQU NZERO(\$12)
EQU ZERO(\$22)
EQU BIT12(\$2F)
EQU BIT14(\$31)
EQU TEN(\$45)
EQU DISP(\$EA)
EQU AFNR(\$B5)
EQU EXTBV4(\$E9)
EQU COMREQ(\$B6)
EQU REQPRO(\$F4)
EQU ELJ(5)
EQU EPTR(6)
EQU EREQST(8)
EQU ESTAT1(9)
EQU ECCOR(10)
EQU ELSTWD(11)
EQU ESTAT2(12)
EQU ELINK(16)
EQU SEQNUM(17)
EQU ID(18)
EQU NWORDS(21)
EQU HOLLR(22)
EQU INPLR(23)
EQU RWFG(24)
EQU PCN5F(25)
EQU FSTCHR(26)
EQU ENDOCK(27)
EQU ADINPB(28)
EQU INPPTR(29)
EQU HOLPTR(30)
EQU FTIME(31)
EQU SFLG(32)
EQU CSYLR(INPLR)
EQU CSYPTR(INPPTR)
EQU ADCSYB(ADINPB)

INITIATOR

MSOS 4.1

M3400009
M3400010
M3400011
M3400012
M3400013
M3400014
M3400015
M3400016
M3400017
M3400018
M3400019
M3400020
M3400021
M3400022
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M3400049
M3400050

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0052 P0000 40FF ICOSY STQ- I
0053 P0001 5801 RTJ* *+1
0054 P0002 0000 NUM 0
0055 P0003 C8FE LDA* *-1
0056 P0004 09FD INA -2
0057 P0005 6201 STA- 1,Q
0058 P0006 8812 ADD* ADRTAB
0059 P0007 6800 STA WREQ+1
0060 P0008 00C8
0061 P0009 8810 ADD* ADRTAB+1
0062 P000A 6800 STA MRQ+1
0063 P000B 00DB
0064 P000C 880E ADD* ADRTAB+2
0065 P000D 6855 STA* CSYADR
0066 P000E 8800 ADD* ADRTAB+3
0067 P000F 6800 STA RREQ+1
0068 P0010 0160
0069 P0011 880B ADD* ADRTAB+4
0070 P0012 684F STA* ENDAJR
0071 P0013 C000 LDA =NO
0072 P0014 0000
0073 P0015 0111 *
0074 P0016 1810 P BUSY EQU BUSY(*-1)
0075 P0017 14EA P LPHYTB EQU LPHYTB(*-1)

```

INITIATOR.
LOCALIZE, MAY BE CORE RESIDENT

STORE INITIATOR
CALCULATE ABSOLUTE ADDRESS.

COSY DRIVER BUSY.
NO.
YES.

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**MSOS 4.1**M3400052
**MSOS 4.1**M3400053
**MSOS 4.1**M3400054
**MSOS 4.1**M3400055
**MSOS 4.1**M3400056
**MSOS 4.1**M3400057
M3400058
M3400059
M3400060
M3400061
M3400062
M3400063
M3400064
M3400065
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M3400067
M3400068
M3400069
M3400070
M3400071
M3400072
M3400073
M3400074
M3400075

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0077 P0018 00D6 ADRTAB ADC WCO-ICOSY
0078 P0019 0015 ADC MCMP-WCO
0079 P001A 0010 ADC CSYREC-MCMP
0080 P001B 007B ADC RC1-CSYREC
0081 P001C 002B ADC ENDREC-RC1

```

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**MSOS 4.1**M3400077
M3400078
M3400079
M3400080
M3400081

```

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0083 P001D C110 INCSY2 LDA- ELINK,I
0084 P001E 60FF STA- I
0085 P001F 88F4 EOR* LPHYTB
0086 P0020 0101 SAZ INCSY3
0087 P0021 1800 JMP* INCS10
0088 P0022 0A00 INCSY3 ENA 0
0089 P0023 68F0 STA* BUSY
0090 P0024 1400 X JMP+ MAS300
0091 P0025 7FFF X
0091 P0026 48ED INCSY1 STQ* BUSY

```

ALL PHYSTBS CHECKED.
YES.
RELEASE BUFFER
NO.

```

M3400083
M3400084
M3400085
M3400086
M3400087
M3400088
M3400089
**MSOS 4.1**M3400090
M3400091

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0092	P0027	C11F	LDA-	FTIME,I		M3400092
0093	P0028	0122	SAP	INCS5		M3400093
0094	P0029	5800	RTJ	RESET	RESET DRIVER FLAGS.	M3400094
0095	P002A	016B				
0096	P002B	C11C	INCS5	LDA- ADINPB,I	SET THE BUFFER ADDRESS.	M3400095
0097	P002C	6800		STA RRB		M3400096
0098	P002D	0147				
0099	P002E	54B5	INCS10	RTJ- (AFNR)		M3400097
0100	P002F	18ED		JMP* INCSY2		M3400098
0101	P0030	C10B		LDA- ELSTWD,I		M3400099
0102	P0031	910A		SUB- ECCOR,I	NUMBER OF WORDS REQUESTED	M3400100
0103	P0032	6115		STA- NWORDS,I		M3400101
0104	P0033	E106				
0105	P0034	C622	LDQ-	EPTR,I	GET THE PARAMETER STRING ADDRESS.	M3400103
0106	P0035	A000	LDA-	(ZERO),Q		M3400104
0107	P0036	1C00	AND	=N\$1C00	CHECK FOR MOTION REQUEST.	M3400105
0108	P0037	98FE				
0109	P0038	0111	EQU	N1C(*-1)		M3400106
0110	P0039	182A	SUB*	N1C		M3400107
0111	PGG3A	E109	SAN	IOP01	IS IT A MOTION REQUEST.	M3400108
0112	P003B	0F61	JMP*	IOP20	YES.	M3400109
0113	PGG3C	0121	IOP01	LDQ- ESTAT1,I		M3400110
0114	PGG3D	180E		LRS 1		M3400111
0115	P003E	C118		SAP IOP03	IS IT A READ REQUEST.	M3400112
0116	P003F	0104		JMP* IOP10	NO.	M3400113
0117	P0040	C11F	IOP03	LDA- RWFG,I	YES.	M3400114
0118	P0041	0112		SAZ IOP05	LAST OPERATION A READ.	M3400115
0119	P0042	0A05		LDA- FTIME,I	NO.	M3400116
0120	P0043	1838	IOP04	SAN IOP05	FIRST REQUEST MADE ON PRESENT DECK.	M3400117
0121	P0044	0C01		ENA 3	READ ON A WRITE UNIT.	M3400118
0122	P0045	E6E9		JMP* IOP21B	REPORT ERROR	M3400119
0123	P0046	5873	IOP05	ENQ 1	YES.	M3400120
0124	P0047	6800		LDQ- (EXTBV4),Q	PICK UP READ DEVICE LOGICAL	M3400121
0125	P0048	012A		RTJ* TYPDEV	CHECK TYPE OF INPUT DEVICE.	M3400122
0126	P0049	1800		STA RLU	SET HE LOGICAL UNIT.	M3400123
0127	P004A	00B7		JMP IN1		M3400124
0128	P004B	C118				
0129	P004C	0116	* IOP13	LDA- RWFG,I	LAST OPERATION A WRITE.	M3400125
0130	P004D	C11F		SAN IOP12	NO.	M3400126
0131	P004E	0111		LDA- FTIME,I		M3400127
0132	P004F	18F2		SAN IOP11	WRITE ON A READ UNIT.	M3400128
0133	PGG5C	E800	IOP11	JMP* IOP04		M3400129
0134	PGG5D	01F7		LDQ LRSET		M3400130
0135	P0052	4117				
0136	P0053	0C02	IOP12	STQ- CSYLR,I	RESET THE LEFT/RIGHT CHARACTER POINTER	M3400132
0137	P0054	E6E9		ENQ 2	YES.	M3400133
0138	P0055	5864		LDQ- (EXTBV4),Q	WRITE LOGICAL UNIT NUMBER.	M3400134
0139	P0055	5864		RTJ* TYPDEV	CHFK TYPE OF OUTPUT DEVICE.	M3400135

0136	P0056	687C		STA* WLJ		M3400136
0137	P0057	1856		JMP* WN1		M3400137
0139			*			M3400139
0140			*			M3400140
0141			*			M3400141
0142			*			M3400142
0143	P0058	0800		SETREQ NOP 0		M3400143
0144	P0059	EA05		LDQ* REQTAB,Q		M3400144
0145	P005A	C522		LDA- (ZERO),I		M3400145
0146	P005B	A0GA		AND- LPMASK+8		M3400146
0147	P005C	0832		AAQ Q		M3400147
0148	P005D	1CFA		JMP* (SETREQ)		M3400148
0150	P005E	4800		REQTAB VFD N1/0,N1/1,N5/4,N1/0,N4/0,N4/0	FREAD	M3400150
0151	P005F	4C00		VFD N1/0,N1/1,N5/6,N1/0,N4/0,N4/0	FWRITE	M3400151
0152	P0060	5C00		VFD N1/0,N1/1,N5/14,N1/0,N4/0,N4/0	MOTION.	M3400152
0153	P0061	01A1	P	ENDADR ADC ENDREC		M3400153
0154	P0062	00FB	P	CSYADR ADC CSYREC		M3400154
0155			*			M3400155
0156	P0063	C118		IOP20 LDA- RWF3,I		M3400156
0157	P0064	0101		SAZ IOP20B		M3400157
0158	P0065	181B		JMP* IOP22	MOTION ON WRITE UNIT	M3400158
0159			*		2 CARDS DELETED	M3400159
0160	P0066	C204		IOP20B LDA- 4,Q	NO	M3400160
0161	P0067	6800		STA MREQ	SET MOTION WORD	M3400161
0162	P0068	0081				
0163	P0069	C102		SAZ IOP20A	DO NOTHING REQUEST	M3400162
0164	P006A	C11F		LDA- FTIME,I	NO	M3400163
0165	P006B	0106		SAZ IOP21	FIRST REQUEST MADE ON PRESENT DECK	M3400164
0166			P	IOP20A EQU IOP20A(*)		M3400165
0167	P006C	0C01		ENQ 1		M3400166
0168	P006D	C6E9		LDA- (EXTBV4),Q	SET THE READ LOGICA UNIT.	M3400167
0169	P006E	802F		ADD- BIT12		M3400168
0170	P006F	6879		STA* MLU		M3400169
0171	P0070	487E		STQ* MCMP1		M3400170
0172	P0071	1831		JMP* DOMO		M3400171
0173	P0072	C204		IOP21 LDA- 4,Q	GET MOTION WORD	M3400172
0174	P0073	A000		AND =N\$7000	MASK OUT FIRST REQUEST	M3400173
0175	P0074	7000				
0176	P0075	0F4C		ARS 12		M3400174
0177	P0076	B004		EOR- LPMASK+2	CHECK FOR REWIND	M3400175
0178	P0077	0105		SAZ IOP21C		M3400176
0179	P0078	B005		EOR- LPMASK+3	CHECK FOR UNLOAD	M3400177
0180	P0079	0103		SAZ IOP21C		M3400178
0181	P007A	0A06		ENA 6	MOTION OTHER THAN REW OR UNL ON READ	M3400179
0182	P007B	1800		IOP21B JMP ERRPRO	UNIT AND NO END OF DECK ENCOUNTERED	M3400180
0183	P007C	0261				
0184	P007D	5800		IOP21C RTJ RESET	RESET PARAMETERS	M3400181
0185	P007E	0117				
0186	P007F	18EC		JMP* IOP20A	PROCESS MOTION REQUEST	M3400182

0183	P0080	0C02	IOP22	ENQ	2		M3400183
0184	P0081	486D		STQ*	MCMP1		M3400184
0185	P0082	06E9		LDA-	(EXTBV4),Q		M3400185
0186	P0083	802F		EOR-	BIT12		M3400186
0187	P0084	6864		STA*	MLU		M3400187
0188	P0085	A0GA		AND-	LPMASK+8		M3400188
0189	P0086	0822		TRA	Q		M3400189
0190	P0087	5832		RTJ*	TYPDEV		M3400190
0191	P0088	684A		STA*	WLU		M3400191
0192	P0089	A02F		AND-	BIT12		M3400192
0193	P008A	6800		STA	CLEAR1	SET LAST BUFFER POINTER FOR THE CARD PUNCH.	M3400193
	P008B	023D					
0194	P008C	E106		LDQ-	EPTR,I	PARAMETER LIST ADDRESS.	M3400194
0195	P008D	C204		LDA-	4,Q	MOTION CODE WORD.	M3400195
0196	P008E	685B		STA*	MREQ		M3400196
0197	P008F	0121		SAP	IOP24	ITERATION TYPE REQUEST.	M3400197
0198	P0090	A011		AND-	NZERO-1	YES. CLEAR ITERATION BIT.	M3400198
0199	P0091	0842	IOP24	CLR	Q		M3400199
0200	P0092	0FE4		LLS	4		M3400200
0201	P0093	0DFD		INQ	-2		M3400201
0202	P0094	0148		SQZ	FE0F		M3400202
0203	P0095	0F24		QRS	4		M3400203
0204	P0096	0FE4		LLS	4		M3400204
0205	P0097	0DFD		INQ	-2		M3400205
0206	P0098	0144		SQZ	FE0F		M3400206
0207	P0099	0F24		QRS	4		M3400207
0208	P009A	0FE4		LLS	4		M3400208
0209	P009B	0DFD		INQ	-2		M3400209
0210	P009C	0155		SQN	DOMO		M3400210
0211	P009D	5800	FE0F	RTJ	CLEAR1		M3400211
	P009E	021D					
0212	P009F	E8C1		LDQ*	ENDADR		M3400212
0213	P00A0	0A06		ENA	6		M3400213
0214	P00A1	5825		RTJ*	WRCD		M3400214
0215	P00A2	5838	DOMO	RTJ*	MRQQ	MOTION PARAMETER WORD	M3400215
0216	P00A3	C846		LDA*	MREQ		M3400216
0217	P00A4	0102		SAZ	DOMOA		M3400217
0218	P00A5	0A01		ENA	1		M3400218
0219	P00A6	611F		STA-	FTIME,I		M3400219
0220		08A7	P DOMOA	EQU	DOMOA(*)		M3400220
0221	P00A7	C82C		LDA*	WLU+1		M3400221
0222	P00A8	09F9		INA	-6		M3400222
0223	P00A9	0112		SAN	DOMO1		M3400223
0224	P00AA	0C12		ENQ	18	CLEAR THE COSY DRIVER IN USE FLAG.	M3400224
0225	P00AB	66E9		STA-	(\$E9),2		M3400225
0226	P00AC	187C	DOMO1	JMP*	COMP		M3400226
0228	P00AD	C11F	WN1	LDA-	FTIME,I	IS THIS INITIAL CALL	M3400228
0229	P00AE	0106		SAZ	WNO	NO	M3400229
0230	P00AF	6118		STA-	RWFG,I	SET THE R/W FLAG TO WRITE.	M3400230

0231	P00B0	E8B1		LDQ*	CSYADR				
0232	P00B1	0A06		ENA	6				M3400231
0233	P00B2	5814		RTJ*	WRCD				M3400232
0234	P00B3	0A00		ENA	0				M3400233
0235	P00B4	611F		STA-	FTIME,I				M3400234
0236	P00B5	E10A	WNO	LDQ-	ECCOR,I	CLEAR INITIAL FLAG			M3400235
0237	P00B6	5800		RTJ	WRITE				M3400236
	P00B7	0194							M3400237
0238	P00B8	1870		JMP*	COMP				M3400238

0240	P00B9	0B00	TYPDEV	NOP	0				M3400240
0241	P00BA	480B		STQ*	SAVLU	SAVE THE LOGICAL UNIT.			M3400241
0242	P00BB	E600	X	LDQ	LOG1A,Q	LOGICAL UNIT PHYSTB.			M3400242
	P00BC	7FFF	X						
0243	P00BD	C208		LDA-	WORD8,Q	EQUIPMENT CLASS CODE.			M3400243
0244	P00BE	A000		AND	=N\$3800				M3400244
	P00BF	3800							
0245		00BF	P N18	EQU	N18(*-1)				M3400245
0246	P00C0	98FE		SUB*	N18				M3400246
0247	P00C1	C101		SAZ	TYP01	CARD DEVICE.			M3400247
0248	P00C2	C02F		LDA-	BIT12	NO. GET ASCII MODE BIT.			M3400248
0249	P00C3	B802	TYP01	EOR*	SAVLU	ADD THE LOGICAL UNIT NUMBER.			M3400249
0250	P00C4	1CF4		JMP*	(TYPDEV)				M3400250
0251			*						M3400251
0252	P00C5	0000	SAVLU	NUM	0	LOGICAL UNIT NUMBER BEING DEFINED.			M3400252
0253			*						M3400253

0255	P00C6	0B00	WRCD	NOP	0				M3400255
0256	P00C7	4800		STQ*	WRB				M3400256
0257	P00C8	680B		STA*	WLJ+1	WORDS TO WRITE			M3400257
0258	P00C9	E0FF		LDQ-	I				M3400258
0259	P00CA	4830		STQ*	ISAVE				M3400259
0260	P00CB	0C01		ENQ	1				M3400260
0261	P00CC	588B		RTJ*	SETREQ				M3400261
0262	P00CD	4802		STQ*	WREQ				M3400262
0263	P00CE	54F4		RTJ-	(\$F4)				M3400263
0264	P00CF	4C00	WREQ	NUM	\$4C00				M3400264
0265	P00D0	00D6	P	ADC	WCJ				M3400265
0266	P00D1	0000		NUM	0				M3400266
0267	P00D2	0000	WLU	NUM	0				M3400267
0268	P00D3	0028		NUM	40				M3400268
0269	P00D4	0000	WRB	NUM	0				M3400269
0270	P00D5	14EA		JMP-	(DISP)				M3400270
0271	P00D6	C824	WCO	LDA*	ISAVE				M3400271
0272	P00D7	60FF		STA-	I				M3400272
0273	P00D8	6C02		ENQ	2				M3400273
0274	P00D9	581A		RTJ*	PLUGPT	SET UP COSY DRIVER PHYSTB.			M3400274
0275	P00DA	C8F7		LDA*	WLJ				M3400275
0276	P00DB	5852		RTJ*	CHKV	CHECK IF ERROR FIELD SET.			M3400276

0277 P00DC 1CE9 JMP* (WRCD) M3400277

0279	P00DD	0B00	MRQQ	NOP	0		M3400279
0280	P00DE	0E00		LDQ-	I		M3400280
0281	P00DF	4818		STQ*	ISAVE		M3400281
0282	P00E0	4C02		ENQ	2		M3400282
0283	P00E1	5800		RTJ	SETREQ		M3400283
	P00E2	FF75					
	P00E3	3480		STQ*	MRQ		M3400284
0284	P00E4	34F4		RTJ-	(\$F4)		M3400285
0285	P00E5	5C00	MRQ	NUM	\$5C00		M3400286
0286	P00E6	00EB	P	ADC	MC49		M3400287
0287	P00E7	0000		NUM	0		M3400288
0288	P00E8	0000		MLU	NUM	0	M3400289
0289	P00E9	0000	MREQ	NUM	0		M3400290
0290	P00EA	14EA		JMP-	(DISP)		M3400291
0291	P00EB	0C80	MCMP	LDA*	ISAVE		M3400292
0292	P00EC	60FF		STA-	I		M3400293
0293	P00ED	0000		LDQ	=NO		M3400294
	P00EE	0000					
0295		00EE	P MCMP1	EQU	MCMP1(*-1)		M3400295
0296	P00EF	5804		RTJ*	PLUGPT	SET UP THE COSY DRIVER PHYSTB.	M3400296
0297	P00F0	08F7		LDA*	MLJ		M3400297
0298	P00F1	583C		RTJ*	CHKV		M3400298
0299	P00F2	1CEA		JMP*	(MRQQ)		M3400299

0301	P00F3	0B00	PLUGPT	NOP	0		M3400301
0302	P00F4	E6E9		LDQ-	(EXT8V4),Q	PICK UP WORKING LOGICAL UNIT.	M3400302
0303	P00F5	E600	X	LDQ	LOG1A,2	PICK UP WORKING LOGICAL UNITS PHYSTB ADDRESS.	M3400303
	P00F6	00BC					
0304	P00F7	C20C		LDA-	ESTAT2,Q		M3400304
0305	P00F8	610C		STA-	ESTAT2,I		M3400305
0306	P00F9	1CF9		JMP*	(PLUGPT)		M3400306

0308	P00FA	0000		ISAVE	NUM	0	M3400308
0309		00FB	P	BLANK	EQU	BLANK(*)	M3400309
0310	P00FB	2020		CSYREC	ALF	3,	M3400310
	P00FC	2020					
	P00FD	2020					
0311	P00FE	2043	C	ALF	1, C		M3400311
0312	P00FF	5359	SY	ALF	1,SY		M3400312
0313	P0100	2F20	SL	ALF	1,/		M3400313

0365 PO12A 54B6
0366 PO12B 1800
PO12C FF01

RTJ- (COMREQ)
JMP INCS10

M3400349
M3400350

0368
0369
0370
0371
0372 PG12D 0800
0373 PG12E 0128
0374 PG12F C108
0375 PG130 B031
0376 PG131 6108
0377 PG132 5863
0378 PG133 C108
0379 PG134 B031
0380 PG135 6108
0381 PG136 18F1
0382 PG137 1CF5

*

*
CHKV NOP 0
SAP CHKVX
LDA- EREQST, I
FOR- BIT14
STA- EREQST, I
RTJ* RESET
LDA- EREQST, I
FOR- BIT14
STA- EREQST, I
JMP* COMP4
CHKVX JMP* (CHKV)

CHECK V FIELD AND PASS IT BACK TO THE USER IF IT IS SET, ELSE RETURN TO CALLER.

SET ERROR BIT FOR MAKQ

CLEAR PROCESS FLAGS
SET THE ERROR BIT FOR MAKEQ

114*4282 *****
114*4282 *****
114*4282 *****
114*4282 *****
M3400352
M3400353
M3400354
M3400355
M3400356
M3400357
M3400362
M3400363
M3400364
M3400365
M3400366

0384 PG138 0B00
0385 PG139 0A00
0386 PG13A 6111
0387 PG13B 6112
0388 PG13C 6113
0389 PG13D 6114
0390 PG13E 611A
0391 PG13F 0AC1
0392 PG140 6119
0393 PG141 C11C
0394 PG142 511D
0395 PG143 1CF4

CLR NOP 0
ENA 0
STA- SEQNUM, I
STA- ID, I
STA- ID+1, I
STA- ID+2, I
STA- FSTCHR, I
ENA 1
STA- PCN5F, I
LDA- ADINPB, I
STA- INPPTR, I
JMP* (CLR)

M3400368
M3400369
M3400370
M3400371
M3400372
M3400373
M3400374
M3400375
M3400376
M3400377
M3400378
M3400379

0397 PG144 0B00
0398 PG145 0A00
0399 PG146 6859
0400 PG147 0A28
0401 PG148 581E
0402 PG149 E11C
0403 PG14A C205
0404 PG14B 98B4
0405 PG14C 0102
0406 PG14D 0A02
0407 PG14E 1838
0408 PG14F C11B
0409 PG150 0101

RCSY NOP 0
ENA 0
STA* BUFSIZ
ENA 40
RTJ* RQQ
LDQ- ADINPB, I
LDA- 5, Q
SUB* SL
SAZ C1
ER ENA 2
JMP* D11
C1 LDA- ENDDCK, I
SAZ CC

READ A CSY/ OR END/ CARD

FORCE THE FIRST COSY READ.
NUMBER OF WORDS

IS IT A /
YES
FIRST CARD NOT A CSY/ CARD.

IF ENDDCK SET

M3400381
M3400382
M3400383
M3400384
M3400385
M3400386
M3400387
M3400388
M3400389
M3400390
M3400391
M3400392
M3400393

0410	PG151	182D		JMP*	EDLOOK	LOOK FOR END/ CARD	M3400	394
0411	PG152	C204	CC	LDA-	4,Q		M3400	395
0412	PG153	98AB		SUB*	SY		M3400	396
0413	PG154	0101		SAZ	C2		M3400	397
0414	PG155	18F7		JMP*	ER		M3400	398
0415	PG156	C203	C2	LDA-	3,Q		M3400	399
0416	PG157	98A6		SUB*	C		M3400	+00
0417	PG158	0101		SAZ	IDCK		M3400	+01
0418	PG159	18F3		JMP*	ER	NOT A CSY/ CARD	M3400	+02
0419	PG15A	C622	IDCK	LDA-	(ZERO),Q		M3400	403
0420	PG15B	989F		SUB*	BLANK		M3400	+04
0421	PG15C	0112		SAN	IDPUT		M3400	+05
0422	PG15D	D120		RAO-	SFLG,I	WE WON'T BE ADDING SEQUENCE NUMBERS	M3400	406
0423	PG15E	1CE5		JMP*	(RCSY)		M3400	407
0424	PG15F	C224	IDPUT	LDA-	36,Q		M3400	408
0425	PG160	6112		STA-	ID,I	PICK UP 6 CHARACTER ID AND SAVE	M3400	409
0426	PG161	C225		LDA-	37,Q		M3400	410
0427	PG162	6113		STA-	ID+1,I		M3400	411
0428	PG163	C202		LDA-	2,Q		M3400	412
0429	PG164	6114		STA-	ID+2,I		M3400	413
0430	PG165	1CDE		JMP*	(RCSY)		M3400	414

0432	PG166	0B00	RQQ	NOF	0		M3400	+16
0433	PG167	680C		STA*	RLU+1		M3400	+17
0434	PG168	E0FF		LDQ-	I	SAVE I	M3400	+18
0435	PG169	4890		STQ*	ISAVE		M3400	419
0436	PG16A	C000		ENQ	0		M3400	+20
0437	PG16B	3800		RTJ	SETREQ		M3400	421
0438	PG16C	FEEB					M3400	422
0439	PG16D	4802		STQ*	RREQ		M3400	423
0440	PG16E	54F4		RTJ-	(SF+)		M3400	424
0441	PG16F	4800	P RREQ	NUM	\$4800		M3400	+25
0442	PG170	0176		ADC	RC1		M3400	+26
0443	PG171	0000		NUM	0		M3400	427
0444	PG172	0000	RLU	NUM	0		M3400	428
0445	PG173	0028		NUM	40		M3400	429
0446	PG174	0000	RRB	NUM	0		M3400	430
0447	PG175	14EA		JMP-	(DISP)		M3400	+31
0448	PG176	C883	RG1	LDA*	ISAVE		M3400	432
0449	PG177	60FF		STA-	I		M3400	433
0450	PG178	0C01		ENQ	1	SET UP COSY DRIVER PHYSTB TO LOOK LIKE THE DEVICE PHYSTB	M3400	434
0451	PG179	5800		RTJ	PLUGPT		M3400	435
0452	PG17A	FF78					M3400	436
0453	PG17B	C8F6		LDA*	RLJ		M3400	437
0454	PG17C	58B0		RTJ*	CHKV		M3400	438
0455	PG17D	1CE8		JMP*	(RQQ)		M3400	439

114*4282*****

04555 P017E C204
 04556 P017F 9826
 04557 P0180 0101
 04558 P0181 18D0
 04559 P0182 C203
 04560 P0183 9821
 04561 P0184 0103
 04562 PC185 0AC3
 04563 P0186 1800
 P0187 0156
 04564 P0188 C815
 04565 P0189 E10A
 04566 P018A 6622
 04567 PC18B 6D01
 04568 P018C C812
 04569 P018D 6622
 04570 P018E 0D01
 04571 P018F C812
 04572 P0190 6622
 04573 PC191 0D09
 04574 P0192 5803
 04575 P0193 0814
 04576 P0194 1893

EDLOCK LDA+ 4,Q
 SUB* ND
 SAZ 01
 JMP* CC
 D1 LDA- 3,Q
 SUB* FF
 SAZ 02
 ENA 3
 D11 JMP ERRPRO
 D2 LDA* M
 LDQ- ECCOR,I
 STA- (ZERO),Q
 INQ 1
 LDA* ON
 STA- (ZERO),Q
 INQ 1
 LDA* BLNK
 STA- (ZERO),Q
 INQ 9
 RTJ* RESET
 TRQ A
 JMP* COMP2

NOT AN END/ STILL COULD BE A CSY/

NO END/ CARD ENCOUNTERED.

CLEAR THE FLAGS

M3400439
 M3400440
 M3400441
 M3400442
 M3400443
 M3400444
 M3400445
 M3400446
 M3400447

M3400448
 M3400449
 M3400450
 M3400451
 M3400452
 M3400453
 M3400454
 M3400455
 M3400456
 M3400457
 M3400458
 M3400459
 M3400460

0478 PC195 0B00
 0479 P0196 0A00
 0480 P0197 6120
 0481 P0198 611B
 0482 P0199 0901
 0483 P019A 611F
 0484 P019B 589C
 0485 P019C 1CF8
 0486
 0487
 0488
 0489 P019D 204D
 0490 P019E 4F4E
 0491 P019F 00C0
 0492 P01A0 0000
 0493 P01A1 01A1
 0494 P01A2 2020
 P01A3 2020
 0495 P01A4 2045
 0496 P01A5 4E+4
 P01A6 2F20
 0497
 0499

RESET NOP 0
 ENA 0
 STA- SFLG,I
 STA- ENDDOCK,I
 INA 1
 STA- FTIME,I
 RTJ* CLR
 JMP* (RESET)
 * * * * *
 M ON ALF 1, M
 ON ALF 1, JN
 BUFSIZ NUM 192
 NUM 0
 P BLNK EQU BLNK(*)
 ENDREC ALF 3,
 E ALF 1, E
 ND ALF 2, ND/
 *
 *

M3400472
 M3400473
 M3400474
 M3400475
 M3400476
 M3400477
 M3400478
 M3400479
 M3400480
 M3400481
 M3400482
 M3400483
 M3400484
 M3400485
 M3400486
 M3400487
 M3400488

M3400489
 M3400490

M3400491

M3400493

WRITEI SUBROUTINE

0500
05001
05002
05003
05004 P01A7 0000
05005 P01A8 C120
05006 P01A9 0101
05007 P01AA 1CFC
05008 P01AB C111
05009 P01AC 4825
05010 P01AD 5812
05011 P01AE 581D
05012 P01AF 5810
05013 P01B0 581B
05014 P01B1 0C00
05015 P01B2 3046
05016 P01B3 0D30
05017 P01B4 C81E
05018 P01B5 0112
05019 P01B6 F030
05020 P01B7 1806
05021 P01B8 C113
05022 P01B9 A01A
05023 P01BA 0832
05024 P01BB 5810
05025 P01BC E112
05026 P01BD 580E
05027 P01BE 1CE8

*
*
*
WRITEI 0 0
LDA- SFLG,I
SAZ 1
JMP* (WRITEI)
LDA- SEQNUM,I
STQ* QSAVE
RTJ* WRIT11
RTJ* STORE
RTJ* WRIT11
RTJ* STORE
ENQ 0
JVI- TEN
INQ \$30
LDA* IDINP
SAN PIJ
ADQ- \$30
JMP* LID
PID LDA- ID+1,I
AND- NZERO+8
AAQ Q
RTJ* STORE
LDQ- ID,I
LID RTJ* STORE
JMP* (WRITEI)

NO SEQUENCE NUMBERS FOR THIS DECK
CONVERT INPUT RECORD COUNT TO DECIMAL. STORE
IN SEQUENCE NUMBER FIELD (COLUMNS 76-80).

PUT I.D. ON THE RECORD
ADD ABLANK - NO I.D.

M3400494
M3400495
M3400496
M3400497
M3400498
M3400499
M3400500
M3400501
M3400502
M3400503
M3400504
M3400505
M3400506
M3400507
M3400508
M3400509
M3400510
M3400511
M3400512
M3400513
M3400514
M3400515
M3400516
M3400517
M3400518
M3400519
M3400520

0528
0529 P01BF 0000
0530 P01C0 0C00
0531 P01C1 3046
0532 P01C2 0D30
0533 P01C3 4807
0534 P01C4 0C00
0535 P01C5 3046
0536 P01C6 0D30
0537 P01C7 0FA8
0538 P01C8 F802
0539 P01C9 1CF5
0541 P01CA 0000

*
WRIT11 0 0
ENQ 0
JVI- TEN
INQ \$30
STQ* WRTMP
ENQ 0
JVI- TEN
INQ \$30
QLS 8
ADQ* WRTMP
JMP* (WRIT11)
WRTMP NUM 0

CONVERT HEXIDECIMAL VALUE IN A TO A DECIMAL
WORD (TWO CHARACTERS).

TEMPORARY STORAGE USED BY WRIT11

M3400522
M3400523
M3400524
M3400525
M3400526
M3400527
M3400528
M3400529
M3400530
M3400531
M3400532
M3400533
M3400535

0543
0544 P01CB 0B00
0545 P01CC 4C05
0546 P01CD E804

*
STORE NOP 0
STQ* (QSAVE)
LDQ* QSAVE

M3400537
M3400538
M3400539
M3400540

0547	P01CE	0DFE		INQ	-1		M3400541
0548	P01CF	4802		STQ*	QSAVE		M3400542
0549	P01D0	1CFA		JMP*	(STORE)		M3400543
0551	P01D1	0000	QSAVE	NUM	0		M3400545
0552	P01D2	0000	IDINS	NUM	0		M3400546
0554	P01D3	0800	BBUF	NOP	0	BLANKS OUT BUFFER	M3400548
0555	P01D4	68FC		STA*	QSAVE		M3400549
0556	P01D5	E115		LDQ-	NWORDS, I		M3400550
0557	P01D6	0DFE		INQ	-1		M3400551
0558	P01D7	C8C9		LDA*	BLNK		M3400552
0559	P01D8	6EF8	BLK	STA*	(QSAVE), Q		M3400553
0560	P01D9	0DFE		INQ	-1		M3400554
0561	P01DA	0171		SQM	1		M3400555
0562	P01DB	18FC		JMP*	BLK		M3400556
0563	P01DC	1CF6		JMP*	(BBUF)		M3400557
0565	P01DD	0B00	READI	NOP	0		M3400559
0566	P01DE	C10A		LDA-	ECCOR, I		M3400560
0567	P01DF	611E		STA-	HOLPTR, I		M3400561
0568	P01E0	58F2		RTJ*	BBUF		M3400562
0569	P01E1	GA00		ENA	0		M3400563
0570	P01E2	611B		STA-	ENDDOCK, I	CLEAR THE END OF DECK MARKER AND SET THE	M3400564
0571	P01E3	611A		STA-	FSTCHR, I	FIRST CHARACTER MARKER.	M3400565
0572	P01E4	C864		LDA*	LRSET		M3400566
0573	P01E5	6116		STA-	HOLLR, I	SET HOLLERITH BUFFER L/R MARKER TO LEFT.	M3400567
0574	P01E6	C11D	RDI05	LDA-	INPPTR, I		M3400568
0575	P01E7	98B7		SUB*	BUFSIZ	TEST FOR INPUT BUFFER EMPTY.	M3400569
0576	P01E8	911C		SUB-	ADINPB, I		M3400570
0577	P01E9	0101		SAZ	1		M3400571
0578	P01EA	180B		JMP*	RDI07		M3400572
0579	P01EB	C11C		LDA-	ADINPB, I	BUFFER EMPTY. RESET THE BUFFER POINTER TO	M3400573
0580	P01EC	611D		STA-	INPPTR, I	THE START OF THE BUFFER.	M3400574
0581	P01ED	C85B		LDA*	LRSET		M3400575
0582	P01EE	6117		STA-	INPLR, I	SET INPUT BUFFER L/R MARKER TO LEFT.	M3400576
0583	P01EF	C000		LDA	=N&C0	192 WORDS	M3400577
0584	P01F0	00C0					
0584		01F0	P	EQU	N192(*-1)	READ A COSY RECORD.	M3400578
0585	P01F1	5800		RTJ	RQQ		M3400579
	P01F2	FF73					
0586	P01F3	C8FC		LDA*	N192		M3400580
0587	P01F4	68AA		STA*	BUFSIZ		M3400581
0588			*				M3400582

05389
05390
05391
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05399
06000
06001
06002
06003
06004
06005
06006
06007
06008
06009
06010
06011
06012
06013
06014
06015
06016
06017
06018
06019
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06038
06039
06040
06041

P01F5 E110
P01F6 C622D
P01F7 E117
P01F8 0FA1
P01F9 4117
P01FA 0172
P01FB D110
P01FC 1802
P01FD 0F48
P01FE A00A
P01FF E11A
P0200 0157
P0201 09CF
P0202 68CF
P0203 D11A
P0204 09D0
P0205 0101
P0206 18DF
P0207 0A5F
P0208 6841
P0209 C119
P020A 0111
P020B 181A
P020C C83D
P020D 09A0
P020E 0112
P020F 6119
P0210 1805
P0211 C11E
P0212 0108
P0213 0131
P0214 18D1
P0215 C834
P0216 E116
P0217 0FA1
P0218 4116
P0219 0165
P021A 0FC8
P021B 0920
P021C E11E
P021D 6622
P021E 18C7
P021F E11E
P0220 09DF
P0221 8622
P0222 6622
P0223 D11E
P0224 18C1
P0225 C824
P0226 6119
P0227 09DF

* UNPACKING ROUTINE
*
RDI07 LDQ- INPPTR,I
LDA- (ZERO),Q
LDQ- INPLR,I
QLS 1
STQ- INPLR,I
SQM 2
RAO- INPPTR,I
JMP* *+2
ARS 8
AND- LPMASK+8
LDQ- FSTCHR,I
SQN RDI08
INA -\$30
STA* IDINP
RAO- FSTCHR,I
INA -\$2F
SAZ 1
JMP* RDI05
ENA \$5F
RDI08 STA* CHAR
LDA- PCN5F,I
SAN 1
JMP* RDI11
LDA* CHAR
INA -\$5F
SAN RDI09
STA- PCN5F,I
JMP* RDI05
RDI09 LDA- HOLPTR,I
SUB- ELSTWD,I
SAM RDI09A
JMP* RDI05
RDI09A LDA* CHAR
LDQ- HOLLR,I
QLS 1
STQ- HOLLR,I
SQP RDI10
ALS 8
INA \$20
LDQ- HOLPTR,I
STA- (ZERO),Q
JMP* RDI05
RDI10 LDQ- HOLPTR,I
INA -\$20
ADD- (ZERO),Q
STA- (ZERO),Q
RAO- HOLPTR,I
JMP* RDI05
RDI11 LDA* CHAR
STA- PCN5F,I
INA -\$20

SWITCH INPUT L/R MARKER.

RIGHT CHARACTER. INCREMENT BUFFER POINTER.

LEFT CHARACTER. SHIFT TO RIGHT HALF.

FIRST CHARACTER IS THE ID CHARACTER.
DECREMENT TO GET A 0 OR A 1.

IF CHARACTER WAS \$5F, HANDLE SPECIAL. SHOULD
BE AN END-OF-DECK CHARACTER.

SAVE THE CHARACTER BEING UNPACKED.

THE PREVIOUS CHARACTER WAS NOT \$5F.

THIS CHARACTER NOT \$5F.
SET PREVIOUS CHARACTER = \$5F.

DON'T STORE BEYOND LAST WORD
OF USER,S BUFFER

SWITCH HOLLERITH BUFFER L/R MARKER.

STORE THE CHARACTER IN THE LEFT HALF OF THE
WORD WITH A BLANK IN THE RIGHT HALF.

STORE THE CHARACTER IN THE RIGHT HALF OF THE
WORD (REMOVING THE BLANK).

INCREMENT HOLBUF POINTER.

SET PREVIOUS CHARACTER NOT \$5F.

M3400583
M3400584
M3400585
M3400586
M3400587
M3400588
M3400589
M3400590
M3400591
M3400592
M3400593
M3400594
M3400595
M3400596
M3400597
M3400598
M3400599
M3400600
M3400601
M3400602
M3400603
M3400604
M3400605
M3400606
M3400607
M3400608
M3400609
M3400610
M3400611
M3400612
M3400613
M3400614
M3400615
M3400616
M3400617
M3400618
M3400619
M3400620
M3400621
M3400622
M3400623
M3400624
M3400625
M3400626
M3400627
M3400628
M3400629
M3400630
M3400631
M3400632
M3400633
M3400634
M3400635

```

06642 P0228 G1113 SAN RDI11B
06643 P0229 0A5F ENA $5F
06644 P022A 681F STA* CHAR
06645 P022B 18E5 JMP* RDI09
06646 022C P RDI11B EQU RDI11B(*)
06647 P022C 09C1 INA -$3E
06648 P022D 0102 SAZ 2
06649 P022E 013A SAM RDI12
06650 P022F D11B RAO- ENJDCK,I
06651 P0230 C116 LDA- HOLLR,I
06652 P0231 0121 SAP 1
06653 P0232 011E RAO- HOLPTR,I
06654 P0233 C10B LDA- ELSTWD,I
06655 P0234 0822 TRA Q
06656 P0235 911E SUB- HOLPTR,I
06657 P0236 0121 SAP RDI11A
06658 P0237 411E STQ- HOLPTR,I
06659 0238 P RDI11A EQU RDI11A(*)
06660 P0238 1CA4 JMP* (READI)
06661 P0239 0938 RDI12 INA $38
06662 P023A 0131 SAM 1
06663 P023B 09FE INA -1
06664 P023C 0908 INA 8
06665 P023D 0C00 ENQ 0
06666 P023E 0FEF LLS 15
06667 P023F F11E ADQ- HOLPTR,I
06668 P0240 411E STQ- HOLPTR,I
06669 P0241 0125 SAP RDI13
06670 P0242 C116 LDA- HOLLR,I
06671 P0243 0121 SAP 1
06672 P0244 D11E RAO- HOLPTR,I
06673 P0245 0FC0 ALS 1
06674 P0246 6116 STA- HOLLR,I
06675 P0247 189E RDI13 JMP* RDI05

```

HAD \$5F20, A TRUE \$5F CHARACTER.

HAD \$5F5E - END OF CARD.
HAD \$5FXX, A STRING OF BLANKS.
HAD \$5F5F. SET ENJ OF DECK MARKER.

RESET HOLPTR IF .GT. ELSTWD

CHARACTER WAS 26 OR GREATER. DECREMENT BY 1.
NUMBER OF BLANKS = CHARACTER - \$20 + 2.

INCREMENT HOLLERITH POINTER BY
HALF THE NUMBER OF BLANKS.
HAD AN EVEN NUMBER OF BLANKS.

WAS A RIGHT CHARACTER. INCREMENT POINTER.
SWITCH THE HOLLERITH L/R MARKER.

M3400635
M3400637
M3400638
M3400639
M3400640
M3400641
M3400642
M3400643
M3400644
M3400645
M3400646
M3400647
M3400648
M3400649
M3400650
M3400651
M3400652
M3400653
M3400654
M3400655
M3400656
M3400657
M3400658
M3400659
M3400660
M3400661
M3400662
M3400663
M3400664
M3400665
M3400666
M3400667
M3400668
M3400669

```

06677 *
06678 P0248 5555 LRSET NUM $5555
06679 *
06680 P0249 0000 CHAR NUM 0
06681 *
06682 P024A 0000 WRTMP1 NUM 0

```

WRITE SUBROUTINE
1 CARD DELETED
TEMPORARY STORAGE USED BY WRITEI

M3400671
M3400672
M3400673
M3400674
M3400675
M3400676

```

06684 *
06685 P024B 0000 WRITE 0 0
06686 P024C 48FD STQ* WRTMP1
06687 P024D 0A30 ENA $30
06688 P024E 5818 RTJ* PACK

```

NO ID'S ON WRITES
PACK THE ID MARKER IN CSYBUF.

M3400678
M3400679
M3400680
M3400681
M3400682


```

0741 P027B 0114 SAN PAK011+1
0742 P027C E83B LDQ* EBKCTR
0743 P027D 0141 SQZ PAK011
0744 P027E 1CFA JMP* (PAK01)
0745 P027F 1811 PAK011 JMP* PAK03
0746 P0280 09FC INA -3
0747 P0281 0125 SAP PAK02
0748 P0282 0902 INA 2
0749 P0283 6833 STA* BLKCTR
0750 P0284 0A20 ENA $20
0751 P0285 5817 RTJ* PAK06
0752 P0286 18F3 JMP* PAK01+1
0753 P0287 0A5F PAK02 ENA $5F
0754 P0288 5814 RTJ* PAK06
0755 P0289 C82D LDA* BLKCTR
0756 P028A 09F7 INA -8
0757 P028B 0131 SAM 1
0758 P028C 0901 INA 1
0759 P028D 0926 INA $25
0760 P028E 580E RTJ* PAK06
0761 P028F 1CE9 JMP* (PAK01)

```

OVER 2 BLANKS.
 DECREMENTS BLANK COUNTER BY ONE.
 OUTPUT A BLANK.
 OUTPUT \$5F.
 OUTPUT NUMBER OF BLANKS (\$21 - \$5C (NOT \$26))

```

M3400735
M3400736
M3400737
M3400738
M3400739
M3400740
M3400741
M3400742
M3400743
M3400744
M3400745
M3400746
M3400747
M3400748
M3400749
M3400750
M3400751
M3400752
M3400753
M3400754
M3400755

```

```

0763 P0290 C8B8 PAK03 LDA* CHAR
0764 P0291 09A0 INA -$5F
0765 P0292 0113 SAN PAK04
0766 P0293 0A01 ENA 1
0767 P0294 6822 STA* BLKCTR
0768 P0295 18DD JMP* PAK00
0769 P0296 C8B2 PAK04 LDA* CHAR
0770 P0297 5805 RTJ* PAK06
0771 P0298 0A00 PAK05 ENA 0
0772 P0299 681D STA* BLKCTR
0773 P029A E81E LDQ* SAVEQ
0774 P029B 1CCA JMP* (PACK)
0775 *
0776 P029C 0000 PAK05 0 0
0777 P029D E117 LDQ- CSYLR,I
0778 P029E 0FA1 QLS 1
0779 P029F 4117 STQ- CSYLR,I
0780 P02A0 0164 SQP PAK07
0781 P02A1 0FC8 ALS 8
0782 P02A2 E110 LDQ- CSYPTR,I
0783 P02A3 6622 STA- (ZERO),Q
0784 P02A4 1CF7 JMP* (PAK06)
0785 P02A5 E110 PAK07 LDQ- CSYPTR,I
0786 P02A6 8622 ADD- (ZERO),Q
0787 P02A7 6622 STA- (ZERO),Q
0788 P02A8 011D RAO- CSYPTR,I
0789 P02A9 C11D LDA- CSYPTR,I
0790 P02AA 9800 SUB BUFSIZ
0791 P02AB FEF3
0791 P02AC 911C SUB- ADCSYB,I

```

TRUE \$5F. SET TO OUTPUT \$5F THEN \$20.
 OUTPUT THE CHARACTER.
 CLEAR THE BLANK COUNTER.
 SWITCH COSY L/R MARKER.
 + MEANS FILL RIGHT CHARACTER.
 STORE THE LEFT CHARACTER IN THE BUFFER.
 STORE THE RIGHT CHARACTER IN THE BUFFER.
 INCREMENT THE BUFFER POINTER AND SEE IF THE BUFFER IS FULL.

```

M3400757
M3400758
M3400759
M3400760
M3400761
M3400762
M3400763
M3400764
M3400765
M3400766
M3400767
M3400768
M3400769
M3400770
M3400771
M3400772
M3400773
M3400774
M3400775
M3400776
M3400777
M3400778
M3400779
M3400780
M3400781
M3400782
M3400783
M3400784
M3400785

```

0792	PG2AD	0117	SAN	PAK09		M3400786
0793	PG2AE	C11C	LDA-	ADCSYB,I	BUFFER IS FULL. RESET THE BUFFER POINTER	M3400787
0794	PG2AF	611D	STA-	CSYPTR,I	AND WRITE THE BUFFER.	M3400788
0795	PG2B0	C800	LDA	N192		M3400789
0796	PG2B2	E11C	LDQ-	ADINPB,I		M3400790
0797	PG2B3	5800	RTJ	WRCD		M3400791
	PG2B4	FE11				
0798	PG2B5	1CE6	PAK09	JMP* (PAK06)		M3400792
0799	PG2B6	0000	BLKCTR	NUM 0	BLANK CHARACTER COUNTER FOR PACK SUBROUTINE.	M3400793
0800	PG2B7	0000	EBKCTR	NUM 0	BLANK COUNTER FLAG FOR END OF RECORD.	M3400794
0801	PG2B8	0000	SAVEQ	NUM 0	VALUE OF Q WHEN PACK SUBROUTINE WAS ENTERED.	M3400795
0802	PG2B9	00C0	N0192	NUM 192		M3400796
0803	PG2BA	2020	BLNKS	ALF 1,		M3400797
0804			*			M3400798
0805			*		PACKS END-OF-LIBRARY CHARACTERS INTO THE COSY OUTPUT BUFFER	M3400799
0806			*		AND WRITES THE BUFFER.	M3400800
0807			*			M3400801
0808	PG2BB	0000	CLEAR1	0		M3400802
0809	PG2BC	0A5F	ENA	\$5F		M3400803
0810	PG2BD	58DE	RTJ*	PAK06		M3400804
0811	PG2BE	0A5F	ENA	\$5F	OUTPUT END OF LIBRARY MARKER.	M3400805
0812	PG2BF	58DC	RTJ*	PAK06		M3400806
0813	PG2C0	C117	LDA-	CSYLR,I		M3400807
0814	PG2C1	0122	SAP	CLEAR0	SKIP IF WORD FILLED	M3400808
0815	PG2C2	0A20	ENA	\$20		M3400809
0816	PG2C3	58D8	RTJ*	PAK06	FILL RIGHT CHARACTER WITH BLANK	M3400810
0817		G2C4	P CLEAR0	EQU CLEAR0(*)		M3400811
0818	PG2C4	C11D	LDA-	CSYPTR,I	CALCULATE THE NUMBER OF WORDS THAT WERE USED	M3400812
0819	PG2C5	911C	SUB-	ADCSYB,I	IN THE BUFFER.	M3400813
0820			*		3 CARDS DELETED	M3400814
0821	PG2C6	010F	SAZ	CLEAR2		M3400815
0822	PG2C7	E000	LDQ	=NO		M3400816
	PG2C8	0000				
0823		02C8	P CLEAR1	EQU CLEAR1(*-1)		M3400817
0824	PG2C9	0151	SQN	CLEA11		M3400818
0825	PG2CA	C8EE	LDA*	N0192		M3400819
0826	PG2CB	09F5	CLEA11	INA -10		M3400820
0827	PG2CC	0125	SAP	CLEA12		M3400821
0828	PG2CD	E8EC	LDQ*	BLNKS		M3400822
0829	PG2CE	451D	STQ-	(CSYPTR),I	ALLOW A MINIMUM RECORD OF 10 WORDS	M3400823
0830	PG2CF	D11D	RAO-	CSYPTR,I	FOR TAPE DRIVER NOISE LENGTH	M3400824
0831	PG2DC	090B	INA	11		M3400825
0832	PG2D1	18F9	JMP*	CLEA11		M3400826
0833	PG2D2	E11C	CLEA12	LDQ- ADINPB,I		M3400827
0834	PG2D3	090A	INA	10	**MSOS+.J**	M3400828
0835	PG2D4	58C0	RTJ	WRCD		M3400829
	PG2D5	FDF0				
0836	PG2D6	C11C	CLEAR2	LDA- ADCSYB,I	RESET THE COSY BUFFER POINTER AND THE	M3400830
0837	PG2D7	611D	STA-	CSYPTR,I	LEFT/RIGHT CHARACTER POINTER.	M3400831
0838	PG2D8	C800	LDA	LRSET		M3400832
0839	PG2D9	FF6E				
	PG2DA	6117	STA-	CSYLR,I		M3400833

0840 P02DB 1CDF

JMP* (CLEARI)

M3400834

0842 P02DC 0000
 0843 P02DD 68FE
 0844 P02DE C108
 0845 P02DF B031
 0846 P02E0 6108
 0847 P02E1 5400 X
 P02E2 0129 X
 0848 P02E3 E8F8
 0849 P02E4 0FAA
 0850 P02E5 F105
 0851 P02E6 0FA6
 0852 P02E7 C522
 0853 P02E8 6802
 0854 P02E9 54F4

ERRCOD NUM 0
 ERRPRO STA* ERRCOD
 LDA- EREQST,I
 EOR- BIT14
 STA- EREQST,I
 RTJ MAKEQ
 LDQ* ERRCOD
 QLS 10
 ADQ- ELU,I
 QLS 6
 LDA- (ZERO),I
 STA* ERRPR1
 RTJ- (REQPRO)

SET THE ERROR BIT FOR MAKEQ.

FORM ERROR WORD FOR ALTDEV.

*
 *
 *
 SCHDLE ALTDEV,0,0,D

0855
 0856
 0857
 0858 P02EA 0000
 0859 P02EB 7FFF X
 0860 P02EC C012
 0861 P02ED 611F
 0862 P02EE 1800
 P02EF FD3E

ERRPR1 NUM 0
 ADC ALTDEV
 LDA- \$12
 STA- FTIME,I
 JMP INCS10

END

M3400836
 M3400837
 M3400838
 M3400839
 M3400840
 M3400841
 M3400842
 M3400843
 M3400844
 M3400845
 M3400846
 M3400847
 M3400848
 M3400849
 M3400850
 M3400851
 M3400852
 M3400853
 M3400854
 M3400855
 M3400856
 M3400857

PGM= 02FG (752) COM = 0000 (0) DAT = 0000 (0)

EQUIVALENCES

DEF.LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0000	I	00FF (000255)	0052, 0084, 0258, 0272, 0280, 0293, 0434, 0448
0014	WORD8	0008 (000008)	0243
0015	LPMASK	0002 (000002)	0146, 0175, 0177, 0188, 0600, 0721
0016	NZERO	0012 (000018)	0198, 0521
0017	ZERO	0022 (000034)	0104, 0145, 0419, 0465, 0469, 0472, 0592, 0631, 0635, 0636, 0689, 0692, 0783, 0785, 0787, 0852
0018	BIT12	002F (000047)	0168, 0186, 0192, 0248
0019	BIT14	0031 (000049)	0375, 0379, 0845
0020	TEN	0046 (000070)	0514, 0531, 0535
0021	DISP	00EA (000234)	0073, 0270, 0291, 0446
0022	AFNR	00B5 (000181)	0097
0023	EXTBV4	00E9 (000233)	0121, 0134, 0167, 0185, 0302
0024	COMREQ	00B6 (000182)	0365
0025	REQPRO	00F4 (000244)	0854
0026	FLU	0005 (000005)	0850
0027	EPTR	0006 (000006)	0103, 0194
0028	REQST	0008 (000008)	0374, 0376, 0378, 0380, 0844, 0846
0029	STAT1	0009 (000009)	0110
0030	CCOR	000A (000010)	0100, 0236, 0346, 0349, 0351, 0465, 0566
0031	ELSTWD	000B (000011)	0099, 0339, 0620, 0654
0032	STAT2	000C (000012)	0304, 0305
0033	ELINK	0010 (000016)	0083
0034	SEQNUM	0011 (000017)	0319, 0327, 0386, 0507
0035	ID	0012 (000018)	0387, 0388, 0389, 0425, 0427, 0429, 0520, 0524
0036	NWORDS	0015 (000021)	0101, 0337, 0356, 0556, 0697
0037	HOLLR	0016 (000022)	0342, 0573, 0624, 0626, 0651, 0670, 0674
0038	INPLR	0017 (000023)	0048, 0582, 0593, 0595
0039	RWFG	0018 (000024)	0114, 0126, 0156, 0230, 0318
0040	PCN5F	0019 (000025)	0392, 0511, 0617, 0640
0041	FSTCHR	001A (000026)	0390, 0571, 0601, 0605
0042	ENDDCK	001B (000027)	0322, 0408, 0481, 0578, 0650
0043	ADINPB	001C (000028)	0050, 0095, 0393, 0402, 0576, 0579, 0796, 0833
0044	INPPTR	001D (000029)	0049, 0394, 0574, 0580, 0591, 0597
0045	HOLPTR	001E (000030)	0341, 0567, 0619, 0630, 0633, 0637, 0653, 0656, 0658, 0667, 0668, 0672
0046	FTIME	001F (000031)	0092, 0116, 0128, 0163, 0219, 0228, 0235, 0315, 0324, 0330, 0483, 0861
0047	SFLG	0020 (000032)	0422, 0480, 0504
0048	CSYLR	0017 (000023)	0132, 0777, 0779, 0813, 0839
0049	CSYPTR	001D (000029)	0782, 0785, 0788, 0789, 0794, 0818, 0829, 0830, 0837
0050	ADCSYB	001C (000028)	0791, 0793, 0819, 0836

SYMBOLS

DEF.LINE	NAME	ADDRESS	REFERENCED AT LINE NUMBER
0010	ICOSY	0000	0010, 0077
0070	BUSY	0014	0083, 0091
0071	LPHYTB	0014	0083
0077	ADRTAB	0018	0058, 0060, 0062, 0064, 0066
0083	INCSY2	0010	0098
0088	INCSY3	0022	0086
0091	INCSY1	0026	0074
0095	INCS5	0028	0093
0097	INCS10	002E	0087, 0366, 0862
0106	N1C	0036	0107
0110	IOPC1	003A	0108
0114	IOPC3	003E	0112
0118	IOP04	0042	0130
0120	IOP05	0044	0115, 0117
0126	IOP10	004B	0113
0131	IOP11	0050	0129
0133	IOP12	0053	0127
0143	SETREQ	0058	0148, 0261, 0283, 0437
0150	RENTAB	005E	0144
0153	ENDADR	0061	0067, 0212
0154	CSYADR	0062	0063, 0231
0156	IOP20	0063	0109
0166	IOP20B	0066	0157
0168	IOP20A	006C	0162, 0182
0172	IOP21	0072	0164
0180	IOP21B	0078	0119
0181	IOP21C	007D	0176, 0178
0183	IOP22	0080	0158
0199	IOP24	0091	0197
0211	TEOF	009D	0202, 0206
0215	DOMO	00A2	0171, 0210
0220	DOMOA	00A7	0217
0226	DOMO1	00AC	0223
0228	WN1	00AD	0137
0236	WNO	00B5	0229
0240	TYPDEV	00B9	0122, 0135, 0190, 0250
0245	N18	00BF	0246
0249	TYP01	00C3	0247
0253	SAVLU	00C5	0241, 0249
0255	WRCD	00C6	0214, 0233, 0277, 0797, 0835
0264	WREQ	00CF	0059, 0262

0267	WLU	0002	0136,	0191,	0221,	0257,	0275
0269	WRB	0004	0255				
0271	WCO	0006	0077,	0078,	0265		
0279	MRQQ	0000	0215,	0299			
0286	MRQ	0005	0061,	0284			
0289	MLU	0008	0169,	0187,	0297		
0290	MREQ	0009	0161,	0196,	0216		
0292	MCOMP	0008	0078,	0079,	0287		
0295	MCOMP1	000E	0170,	0184			
0301	PLUGPT	00F3	0274,	0296,	0306,	0450	
0308	ISAVE	00FA	0259,	0271,	0281,	0292,	0+35, 0+47
0309	BLANK	00FB	00420				
0310	OSYREC	00FB	0079,	0080,	0154		
0311	OSY	00FE	0416				
0312	SY	00FF	0412				
0313	SL	0100	00404				
0315	IN1	0101	0124				
0321	N1	0107	0316,	0326			
0327	N2	010E	0323				
0345	COMP1	0119	00343				
0351	COMP3	011F	0340,	0348			
0361	COMP5	0126	0358				
0362	COMP2	0128	0476				
0364	COMP4	0128	00381				
0364	COMP	0128	0226,	0238,	0360		
0372	CHKV	012D	0276,	0298,	0382,	0452	
0382	CHKVX	0137	0373				
0384	CLR	0138	0329,	0395,	0-84		
0397	RCSY	0144	0320,	0423,	0430		
0406	ERR	014D	0414,	0418			
0408	CC1	014F	0405				
0411	CC2	0152	0409,	0458			
0415	CC2	0156	0413				
0419	IDCK	015A	0417				
0424	IDPUT	015F	0421				
0432	MRQQ	0166	0401,	0453,	0585		
0440	MREQ	016F	0065,	0438			
0443	RLU	0172	0123,	0433,	0451		
0445	RRB	0174	0096				
0447	RRC1	0176	0080,	0081,	0441		
0455	EDLOOK	017E	0410				
0459	D1	0182	0457				
0463	D11	0186	0407				
0464	D2	0188	0461				
0478	RESET	0195	0094,	0181,	0377,	0474,	0485
0489	M	019D	0464				
0490	ON	019E	0468				
0491	BUFSIZ	019F	0399,	0375,	0587,	0790	
0493	BLNK	01A1	0471,	0558			
0494	ENDREC	01A1	0081,	0153			
0499	E	01A4	0460				
0496	ND	01A5	0456				
0503	WRITEI	01A7	0361,	0506,	0526		

0520	PID	0188	0517
0525	LID	018DD	0519
0529	WRITTI1	018FF	0509, 0511, 0539
0541	WRITMP	01CA	0533, 0538
0544	STORE	01CB	0510, 0512, 0523, 0525, 0549
0551	QSAVE	01D1	0508, 0545, 0546, 0548, 0555, 0559
0552	IDINP	01D2	0516, 0604
0554	IBBUF	01D3	0518, 0563, 0568
0559	BLK	01D8	0562
0565	READI	01DD	0321, 0660
0574	RDI05	01FE	0608, 0618, 0622, 0632, 0638, 0675
0584	N192	01FG	0586, 0795
0591	RDI07	01F5	0578
0610	RDI08	0208	0602
0619	RDI09	0211	J616, 0645
0623	RDI09A	0215	0621
0633	RDI10	021F	0627
0639	RDI11	0225	J613
0646	RDI11B	022C	0642
0659	RDI11A	0238	0657
0661	RDI12	0239	0649
J675	RDI13	0247	0669
0678	LRSET	0248	J131, 0572, 0581, 0838
0680	CHAR	0249	0510, 0614, 0623, 0639, 0644, 0722, 0763, 0769
0682	WRITMP1	024A	0686, 0696
J685	WRITE7	024B	J237, 0711
0688	WRITE7	024F	0699
J705	WRITE71	025F	0701
J719	PACK	0266	0688, 0691, 0693, 0731, 0774
J732	PAK00	0273	J730, 0768
0739	PAK01	0279	0703, 0725, 0744, 0752, 0761
0741	PAK011	027F	0741, 0743
J753	PAK02	0287	0747
0763	PAK03	0290	0726, 0745
0769	PAK04	0296	0765
0771	PAK05	0298	0737
J776	PAK06	029C	0708, 0710, 0733, 0736, 0751, 0754, 0760, 0770, 0784, 0798, 081J, 0812, 0816
0785	PAK07	02A5	J780
0798	PAK09	02B5	0792
0799	BLKCTR	02B6	0700, 0705, 0727, 0728, 0734, 0740, 0749, 0755, 0767, 0772
0800	FBKCTR	02B7	0702, 0706, 0742
0801	SAVEQ	02B8	0720, 0773
0802	ZC192	02B9	0825
0803	BLNKS	02BA	0828
0808	CLEAR1	02BB	0211, 0840
0817	CLEAR0	02C4	J814
0823	CLEAR1	02C8	0193
0826	CLEAR11	02CB	0824, 0832
0833	CLEAR12	02D2	0827
0836	CLEAR2	02D6	0821
0842	RRRCOD	02DD	0843, 0848
0843	RRRPRO	02DD	0180, 0463
0858	RRRPR1	02EA	0853

EXTERNALS

DEF.LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0009	MAS300	0025	0090
0011	LOG1A	00F6	0242, 0303
0012	ALTDEV	02EB	0859
0013	MAKEQ	02E2	0364, 0847

*** ALPHABETICAL SORT OF SYMBOLS ***

ADCSYB	0050	ADINPB	0043	ADRTAB	0077	AFNR	0022	ALTDEV	0012	BBUF	0554	BIT12	0018	BIT14	0019	BLANK	0309
BLK	0559	BLKCTR	0799	BLNK	0493	BLNKS	0803	BUFSIZ	0491	BUSY	0070	C	0311	C1	0408	C2	0415
CC	0411	CHAR	0680	CHKV	0372	CHKVX	0382	CLEA11	0826	CLEA12	0833	CLEAR0	0917	CLEAR1	0823	CLEAR2	0836
CLEARIR	0308	CLR	0384	COMP	0364	COMP1	0345	COMP2	0362	COMP3	0351	CLEAR4	0363	COMP5	0361	COMREQ	0024
CSYADR	0154	CSYLR	0048	CSYPTR	0049	CSYREC	0310	D1	0459	D11	0463	D2	0464	DISP	0021	DOMO	0215
DOMO1	0226	DOMOA	0220	E	0495	EBKCTR	0800	ECCOR	0030	EDLOOK	0455	ELINK	0033	ELSTWD	0031	ELU	0626
ENJADR	0153	ENDJCK	0042	ENDREC	0494	EPTR	0027	ER	0406	EREQST	0028	ERRCOD	0842	ERRPR1	0858	ERRPRO	0843
ESTAT1	0029	ESTAT2	0032	EXTBV4	0023	FEOF	0211	FSTCHR	0041	FTIME	0046	HOLLR	0037	HOLPTR	0045	I	0000
ICOSY	0010	ID	0035	IDCK	0419	IDINP	0552	IDPUT	0424	IN1	0315	INCS10	0097	INCS5	0095	INCSY1	0091
IVCSY2	0083	INCSY3	0088	INPLR	0038	INPPTR	0044	IOP01	0110	IOP03	0114	IOP04	0118	IOP05	0120	IOP10	0126
IOP11	0131	IOP12	0133	IOP20	0156	IOP20A	0165	IOP20B	0160	IOP21	0172	IOP21B	0180	IOP21C	0181	IOP22	0183
IOP24	0199	ISAVE	0308	LID	0525	LOG1A	0011	LPHYTB	0071	LPMASK	0015	LRSET	0578	M	0489	MAKEQ	0013
MAS300	0009	MCMP	0292	MCMP1	0295	MLU	0289	MREQ	0290	MRQ	0286	MRQQ	0279	MS192	0802	M1	0321
N18	0245	N192	0584	N1C	0106	N2	0327	ND	0496	NWORDS	0036	NZERO	0016	ON	0490	PACK	0719
PAK00	0732	PAK01	0739	PAK011	0745	PAK02	0753	PAK03	0763	PAK04	0769	PAK05	0771	PAK06	0776	PAK07	0785
PAK09	0798	PCN5F	0040	PID	0520	PLUGPT	0301	QSAVE	0551	RC1	0447	RCSY	0397	RDIG5	0574	RDIG7	0591
RDI08	0610	RDI09	0619	RDI09A	0623	RDI10	0633	RDI11	0639	RDI11A	0659	RDI11B	0646	RDI12	0661	RJI13	0675
READI	0565	REQPRO	0025	REQTAB	0150	RESET	0478	RLU	0443	RQQ	0432	RRB	0445	RREQ	0440	RWFG	0039
SAVEQ	0801	SAVLU	0252	SEQNJM	0034	SETREQ	0143	SFLG	0047	SL	0313	STORE	0544	SY	0312	TEN	0020
TYPG1	0249	TYPDEV	0240	WCO	0271	WLU	0267	WN1	0228	WNO	0236	WORD8	0014	WRB	0269	WRCD	0255
WREQ	0264	WRIT71	0705	WRITE	0585	WRITE7	0589	WRITEI	0503	WRIT11	0529	WRTMP	0541	WRTMP1	0682	ZERO	0017

01502
 01503
 01504
 01505
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 00015
 00016
 00017

*
 *
 *

PHYSICAL DEVICE TABLE WORDS

EQU	ELU(5)	LOGICAL UNIT
EQU	EPTR(6)	REQUEST POINTER
EQU	ESTAT1(9)	SOFTWARE STATUS
EQU	ECCOR(10)	START OF USER BUFFER
EQU	ELSTWD(11)	LWA+1 OF USER BUFFER
EQU	ESTAT2(12)	HARDWARE STATUS
EQU	EDSKLU(16)	DISK LOGICAL UNIT
EQU	EDSMSB(17)	MM WORD ADDRESS POINTER (MSB)
EQU	EDSLSB(18)	MM WORD ADDRESS POINTER (LSB)
EQU	EDSTR1(19)	MM SECTOR ADDRESS (MSB)
EQU	EDSTR2(20)	START OF BUFFER (LSB)
EQU	EDLST1(21)	MM SECTOR ADDRESS (MSB)
EQU	EDLST2(22)	END OF BUFFER (LSB)
EQU	ENEXT(23)	POINTER TO NEXT PHYSTAB

M3300152
 M3300153
 M3300154
 M3300155
 M3300156
 M3300157
 M3300158
 M3300159
 M3300160
 M3300161
 M3300162
 M3300163
 M3300164
 M3300165
 M3300166
 M3300167
 M3300168

0170
 0171
 0172
 0173
 0174
 0175
 0176
 0177

0002
 00012
 0022
 0023
 0033

*
 *
 *

MASK TABLE WORDS

EQU	LPMSK(2)	START OF RIGHT PARTS MASK
EQU	NZERO(\$12)	START OF LEFT PARTS MASK
EQU	ZERO(\$22)	ZERO
EQU	ONEBIT(\$23)	START OF ONE BITS MASK
EQU	ZROBIT(\$33)	START OF ZERO BITS AMSK

M3300170
 M3300171
 M3300172
 M3300173
 M3300174
 M3300175
 M3300176
 M3300177

0179						M3300179
0180						M3300180
0181						M3300181
0182						M3300182
0183	P0000	40FF	START	STQ- I		M3300183
0184	P0001	EC00		LDQ =XIMTSIM-START		M3300184
	P0002	0015				
0185	P0003	0832		AAQ Q		M3300185
0186	P0004	4101		STQ- 1,I	SAVE THE ABSOLUTE INITIATOR ADDRESS	M3300186
0187	P0005	EC00		LDQ =XCMP-START		M3300187
	P0006	01D3				
0188	P0007	0832		AAQ Q		M3300188
0189	P0008	4800		STQ COMP	SAVE THE ABSOLUTE DISK I/O COMPLETION	M3300189
	P0009	01C2				
0190	P000A	ED00		LDQ =XBUFR-START		M3300190
	P000B	02A6				
0191	P000C	0832		AAQ Q		M3300191
0192	P000D	4800		STQ HDRBFR	SAVE THE ABSOLUTE HEADER BUFFER ADDRESS	M3300192
	P000E	029E				
0193	P000F	ED00		LDQ =XBUFR1-START		M3300193
	P0010	02A9				
0194	P0011	0834		AAQ A		M3300194
0195	P0012	6800		STA TRLBFR	SAVE THE ABSOLUTE TRAILER BUFFER ADDRESS	M3300195
	P0013	029A				
0196	P0014	1802		JMP* IMTSIM+1		M3300196

0198	PG015	40FF	IMTSIM	STQ-	I			M3300198
0199	PG016	C800		LDA	TEMP	CHECK IF DRIVER BUSY WITH ANOTHER DEVICE		M3300199
	PG017	0168						
0200	PG018	0101		SAZ	CHECK--1	NO.		M3300200
0201	PG019	14EA		JMP-	(ADISP)			M3300201
0202	PG01A	E0FF	CHECK	LDQ-	I			M3300202
0203	PG01B	4800		STQ	TEMP			M3300203
	PG01C	0163						
0204	PG01D	54B5		RTJ-	(AFNR)	GO FIND NEXT REQUEST		M3300204
0205	PG01E	1855		JMP*	GOCYL	GO GET NEXT PHYSTAB		M3300205
0206	PG01F	C1UC	PST1	LDA-	ESTAT2,I	IS THIS 1ST TIME IN DRIVER		M3300206
0207	PG020	A011		AND-	LPMSK+15	MASK OUT BIT 15		M3300207
0208	PG021	0101		SAZ	PST2--1	YES		M3300208
0209	PG022	1813		JMP*	PST3	NO		M3300209
0210			*					M3300210
0211	PG023	C000	PST2	LDA	=N\$5411	LD PNT,EOP,RDY,CONT ACTIVE,800 BPI		M3300211
	PG024	5411						
0212	PG025	B10C		EOR-	ESTAT2,I	PRESET HARDWARE		M3300212
0213	PG026	610C		STA-	ESTAT2,I	STATUS.		M3300213
0214	PG027	C114		LDA-	EDSTR2,I	CALCULATE AND		M3300214
0215	PG028	5844		RTJ*	CALADD	PRESET STARTING		M3300215
0216	PG029	4113		STQ-	EDSTR1,I	MM ADDRESS		M3300216
0217	PG02A	4111		STQ-	EDSMSB,I	AS WELL		M3300217
0218	PG02B	6114		STA-	EDSTR2,I	AS MM		M3300218
0219	PG02C	6112		STA-	EDSLSB,I	POINTER.		M3300219
0220	PG02D	C116		LDA-	EDLST2,I	CALCULATE LAST		M3300220
0221	PG02E	583E		RTJ*	CALADD	MM ADDRESS.		M3300221
0222	PG02F	0961		INA	97	CORRECT LAST		M3300222
0223	PG030	0122		SAP	PST2A--1	ADDRESS FOR		M3300223
0224	PG031	A011		AND-	LPMSK+15	SIZE OF		M3300224
0225	PG032	0D01		INQ	1	LAST SECTOR.		M3300225
0226	PG033	4115	PST2A	STQ-	EDLST1,I	STORE		M3300226
0227	PG034	6116		STA-	EDLST2,I	IT.		M3300227
0228			*					M3300228
0229	PG035	0A00	PST3	ENA	0	CLEAR FILE MARK		M3300229
0230	PG036	6856		STA*	FMFND	FOUND FLAG AND		M3300230
0231	PG037	6800		STA	FLMARK	BACKSPACE FILEMARK FLAG.		M3300231
	PG038	028B						
0232	PG039	C10C		LDA-	ESTAT2,I	WAS A FILE		M3300232
0233	PG03A	0FC4		ALS	4	MARK FOUND		M3300233
0234	PG03B	0122		SAP	PST3A--1	ON LAST READ.		M3300234
0235	PG03C	0C01		ENQ	1	YES, SET		M3300235
0236	PG03D	484F		STQ*	FMFND	FLAG.		M3300236
0237	PG03E	0FC4	PST3A	ALS	4	WAS A BACKSPACE		M3300237
0238	PG03F	0123		SAP	PST4--1	FILEMARK FOUND BEFORE.		M3300238
0239	PG040	0C01		ENQ	1	YES, SET		M3300239
0240	PG041	4800		STQ	FLMARK	FLAG.		M3300240
	PG042	0281						
0241	PG043	C10C	PST4	LDA-	ESTAT2,I	CLEAR ALL CLEARABLE		M3300241
0242	PG044	A000		AND	=N\$F401	CONTROLLER STATUS BITS		M3300242
	PG045	F401						
0243	PG046	B024		EOR-	ONEBIT+1	EXCEPT LOAD POINT AND		M3300243
0244	PG047	610C		STA-	ESTAT2,I	SET DRIVER BUSY BIT.		M3300244

0245	P0048	0FC5	ALS	5	ARE WE AT LOAD POINT	M3300245
0246	P0049	0131	SAM	CKHDR--1	YES, CHECK HEADER	M3300246
0247	P004A	1819	JMP*	RQSTCK	NO, CHECK THE TYPE OF REQUEST	M3300247
0248	P004B	0FCB	CKHDR	ALS 11	CHECK IF	M3300248
0249	P004C	0122	SAP	NORING--1	WRITE RING SET.	M3300249
0250	P004D	0A01	ENA	1	SET FLAG FOR	M3300250
0251	P004E	683F	STA*	ERFLAG	NO ERROR OUTPUT	M3300251
0252	P004F	5800	NORING	RTJ R0HDR	READ AND TEST HEADER	M3300252
	P0050	0279				
0253	P0051	0844	CLR	A	CLEAR FLAG FOR	M3300253
0254	P0052	683B	STA*	ERFLAG	ERROR OUTPUT	M3300254
0255	P0053	014F	SQZ	RQSTCK--1	IS HEADER OK	M3300255
0256	P0054	C032	LDA-	ONEBIT+15	NO, A BLANK	M3300256
0257	P0055	6800	STA	BUFR	DISK FILE	M3300257
	P0056	0250				
0258	P0057	6800	STA	BUFR+2	SO PRESET	M3300258
	P0058	0250				
0259	P0059	0844	CLR	A	A HEADER	M3300259
0260	P005A	6800	STA	BUFR+1	IN WORDS	M3300260
	P005B	024C				
0261	P005C	C003	ENQ	3	1,2	M3300261
0262	P005D	C800	LDA	HDRBFR		M3300262
	P005E	024E				
0263	P005F	6800	STA	BUFADR		M3300263
	P0060	016F				
0264	P0061	5800	RTJ	WDISK	AND 3.	M3300264
	P0062	0154				
0265			*			M3300265
0266	P0063	E106	RQSTCK	LDQ- EPTR,I	GET POINTER TO PARAM LIST	M3300266
0267	P0064	C622	LDA-	(ZERO),Q	PICK UP REQUEST CODE.	M3300267
0268	P0065	0F49	ARS	9	IS IT A TAPE	M3300268
0269	P0066	A007	AND-	LPMSK+5		M3300269
0270	P0067	09F1	INA	-14	MOTION REQUEST.	M3300270
0271	P0068	0112	SAN	NOMOTN	NO	M3300271
0272	P0069	1800	JMP	TPMCTL	YES	M3300272
	P006A	0194				
0273	P006B	180A	NOMOTN	JMP* RDWRIT		M3300273
0274			*			M3300274
0275	P006C	0B00	CALADD	NOP 0		M3300275
0276	P006D	2000	MUI	=N96	CONVERT MM	M3300276
	P006E	0060				
0277	P006F	3FE1	LLS	1	SECTOR ADDRESS	M3300277
0278	P0070	0F41	ARS	1	TO EQUIVALENT	M3300278
0279	P0071	A011	AND-	LPMSK+15	WORD ADDRESS.	M3300279
0280	P0072	1CF9	JMP*	(CALADD)		M3300280
0281			*			M3300281
0282	P0073	1800	GOCYL	JMP CYCLE	GO CHECK NEXT PHYSTAB	M3300282
	P0074	00F1				

028
0288
02885
02886
02887 P0075 C108
02888 P0076 910A
02889 P0077 0111
0290 P0078 0A01
0291 P0079 687F
0292 P007A 687F
0293 P007B 0822
0294 P007C C10A
0295 P007D 687D
0296 P007E C109
0297 P007F A023
0298 P0080 0111
0299 P0081 187A
0300 P0082 0814
0301 P0083 09FC
0302 P0084 0123
0303 P0085 0A1F
0304 P008E 1800
P0087 0157
0305 P0088 0814
0306 P0089 5805
0307 P008A 1800
P008B 00CE
0308
0309
0310 P008C 0000
0311 P008D 0000
0312
0313

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*
* THIS IS THE READ/WRITE PROCESSOR
*
RDWRIT LDA- ELSTWD,I      FIND NUMBER OF
SUB- EC3OR,I           WORDS TO TRANSFER.
SAN RDG01--*-1        ZERO WORD TRANSFER REQUESTED
ENA 1                  YES, SET NUMBER OF WDS TO 1
RDG01 STA* NUMRQS      STORE IT
STA* NUMWDS           SET NUM. TO TRANS. TO NUM. REQUESTED
TRA Q
LDA- EC3OR,I          GET STARTING ADDRESS
STA* STRTCO           AND SAVE
LDA- ESTAT1,I        IS THIS
AND- ONEBIT+0        A READ OR
SAN WRITRQ--*-1      A WRITE
JMP* READ            REQUEST.
WRITRQ TRQ A
INA -3               IS NUM. TO TRANS.
SAP WRITCK--*-1     LESS THAN 2?
ENA 31              YES, INDICATE ERROR-
JMP ERROR           NOISE RECORD
WRITCK TRQ A
RTJ* WRITE          PROCESS WRITE REQUEST
JMP WEXIT
*
*
FMFND NUM 0         FLAG TO INDICATE FILE MK FND ON LAST READ
ERFLAG NUM 0       FLAG TO INHIBIT HEADER ERROR OUTPUT
*
*

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M3300284
M3300285
M3300286
M3300287
M3300288
M3300289
M3300290
M3300291
M3300292
M3300293
M3300294
M3300295
M3300296
M3300297
M3300298
M3300299
M3300300
M3300301
M3300302
M3300303
M3300304
M3300305
M3300306
M3300307
M3300308
M3300309
M3300310
M3300311
M3300312
M3300313

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0315 *
0316 * PROCESS WRITE REQUEST
0317 *
0318 P008E 0B00 WRITE NOP 0
0319 P008F 8112 ADD- EDLSB,I ADD LSB OF MM POINTER
0320 P0090 0906 INA 6 CORRECT FOR HEADER AND TRAILER
0321 P0091 E111 LDQ- EDMSB,I GET MSB OF MM POINTER
0322 P0092 0122 SAP WRIT1-* -1 IS BIT 15 OF LSB SET
0323 P0093 A011 AND- LPMSK+15 YES, CLEAR BIT 15
0324 P0094 0001 INQ 1 AND INCREMENT MSB.
0325 P0095 0FF0 WRIT1 LLS 16 INTERCHANGE MSB AND LSB
0326 P0096 9115 SUB- EDLST1,I SEE IF WE OVERFLOW MM BUFFER
0327 P0097 0106 SAZ WRIT2-* -1 POSSIBLY, CHECK FURTHER
0328 P0098 0139 SAM WRTO-* -1 NO WAY, CONTINUE PROCESSING
0329 P0099 0C00 OVERFL ENQ 9 YES, SET END OF TAPE BIT
0330 P009A 5800 RTJ SETST2 (9) IN STATUS WORD.
0331 P009C 0A2C ENA 44 SET ERROR CODE = 44
0332 P009D 1808 JMP* WERROR TO INDICATE END OF PSEUDO-TAPE.
0333 P009E 0814 WRIT2 TRQ A FURTHER CHECK
0334 P009F 9116 SUB- EDLST2,I FOR OVERFLOW
0335 P00A0 0131 SAM WRTO-* -1 OF MM BUFFER.
0336 P00A1 18F7 JMP* OVERFL
0337 P00A2 C10C WRTO LDA- ESTAT2,I IS WRITE
0338 P00A3 0133 SAM WRT1-* -1 RING ENABLED.
0339 P00A4 0A00 ENA 13 NO, SET ERROR CODE = 13
0340 P00A5 1800 WERROR JMP ERROR TO INDICATE WRITE RING DISABLED.
0341 P00A6 0138 WRT1 RTJ RDHEDR READ AND CHECK CURRENT HEADER
0342 P00A7 5800 P00A8 0221 WRT1 LDA- ESTAT2,I STATUS NOW
0343 P00A9 C10C ALS 5
0344 P00AA 0FC5 SAM WRTA SKIP-LOAD POINT CLEAR EOF FROM HEADER
0345 P00AC E800 LDQ FLMARK BACKSPACE FILE PREVIOUSLY
0346 P00AD 0216 P00AE 0155 SQN WRTA SKIP-BACKSPACE FILE CLEAR HEADER
0347 P00AF 0FCF ALS 15
0348 P00B0 0131 SAM WRTB1 EOF SENSED?
0349 P00B1 1812 JMP* WRTB NO
0350 P00B2 E8D9 WRTB1 LDQ* FMFND EOF NOW Q=EOF PREVIOUSLY FLAG
0351 P00B3 015F SQN WRTB SKIP-EOF PREVIOUS
0352 P00B4 C800 WRTA LDA BUFR
0353 P00B5 01F1 P00B6 A011 AND- LPMSK+15 CLEAR BIT 15
0354 P00B7 09FE INA -1 ARE WE POSITIONED BEFORE
0355 P00B8 0117 SAN WRTA1 A SHORT RECORD?
0356 P00B9 5800 RTJ DECADR YES, BACK UP TO WRITE OVER IT.
0357 P00BB 58C0 RTJ CLRBSF CLEAR BACKSPACE FILEMARK BIT AND FLAG
0358 P00BC 0200 P00BD 5800 RTJ RDHEDR READ AND CHECK CURRENT HEADER
0359 P00BE 020B P00BF 1804 JMP* WRTB DO NOT CLEAR OUT FILE MARK

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M3300 315
M3300 316
M3300 317
M3300 318
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M3300 358
M3300 359

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0360	PC0C0	0A00	WRTA1	ENA 0	CLEAR EOF FROM HEADER	M3300360
0361	P00C1	6800		STA BUFR+1		M3300361
	P00C2	01E5				
0362	P00C3	0C0B	WRTE	ENQ 11	CLEAR FILE MARK	M3300362
0353	P00C4	5800		RTJ CLRST2	BIT IF SET.	M3300363
	P00C5	01FF				
0364	P00C6	0833		LDA* NUMWDS	GET NUMBER OF WORDS	M3300364
0355	P00C7	0822		TRA Q		M3300365
0366	P00C8	8032		EOR- ONEBIT+15	SET BIT 15	M3300366
0367	P00C9	6800		STA BUFR+2	SET IT IN HEADER OF THIS RECORD	M3300367
	P00CA	01DE				
0368	P00CB	6800		STA BUFR1	SET NUMBER	M3300368
	P00CC	01DD				
0369	P00CD	0844		CLR A	OF WORDS	M3300369
0370	P00CE	6800		STA BUFR1+1	AND END OF	M3300370
	P00CF	01DB				
0371	P00D0	C032		LDA- ONEBIT+15	WRITTEN DATA	M3300371
0372	P00D1	6800		STA BUFR1+2	IN TRAILER.	M3300372
	P00D2	01D9				
0373	P00D3	C111		LDA- EDMSB,I	SAVE MM	M3300373
0374	P00D4	6822		STA* TMPMSB	ADDRESS	M3300374
0375	P00D5	C112		LDA- EDLSB,I	IN TEMPORARY	M3300375
0376	P00D6	6821		STA* TPLSB	STORAGE	M3300376
0377	P00D7	0C03		ENQ 3		M3300377
0378	P00D8	C800		LDA HORBFR	SET TO	M3300378
	P00D9	0103				
0379	P00DA	6800		STA BUFR	WRITE HEADER	M3300379
	P00DB	00F4				
0380	P00DC	5800		RTJ WDISK	WRITE HEADER	M3300380
	P00DD	00D9				
0381	P00DE	0A03		ENA 3	INCREASE DISK ADDRESS	M3300381
0382	P00DF	5800		RTJ INKADR	BEYOND HEADER	M3300382
	P00E0	0200				
0383	P00E1	C819		LDA* STRTCO	GET STARTING ADDRESS	M3300383
0384	P00E2	6800		STA BUFR	OF USERS BUFFER	M3300384
	P00E3	00EC				
0385	P00E4	E815		LDQ* NUMWDS	NUM. WORDS TO TRANSFER	M3300385
0386	P00E5	5800		RTJ WDISK	WRITE FROM USERS BUFFER	M3300386
	P00E6	00D0				
0387	P00E7	C812		LDA* NJMWDS	INCREASE DISK ADDRESS	M3300387
0388	P00E8	5800		RTJ INKADR	BEYOND USERS RECORD	M3300388
	P00E9	01F7				
0389	P00EA	0CC3		ENQ 3		M3300389
0390	P00EB	C800		LDA TRLBFR	SET TO	M3300390
	P00EC	C1C1				
0391	P00ED	6800		STA BUFR	TRAILER BUFFER	M3300391
	P00EE	00E1				
0392	P00EF	5800		RTJ WDISK	WRITE TRAILER	M3300392
	P00F0	00C6				
0393	P00F1	C805		LDA* TMPMSB	RESTORE MM ADDRESS	M3300393
0394	P00F2	6111		STA- EDMSB,I	FROM	M3300394
0395	P00F3	C804		LDA* TPLSB	TEMPORARY	M3300395
0396	P00F4	6112		STA- EDLSB,I	STORAGE	M3300396

0337 PC0F5 1C98 JMP* (WRITE)
0339 *
0399 *
0400 P00F6 0000 TMPMSB NUM 0
0401 P00F7 0000 TEMPLSB NUM 0
0402 P00F8 0000 NUMRQS NUM 0
0403 P00F9 0000 NUMWJS NUM 0
0404 P00FA 0000 STRTCO NUM 0
0405 *

TEMPORARY MSB
TEMPORARY LSB
NUMBER OF WORDS REQUESTED
CORRECTED NUMBER OF WORDS TO TRANSFER
STARTING ADDRESS OF USERS BUFFER

M3300397
M3300398
M3300399
M3300400
M3300401
M3300402
M3300403
M3300404
M3300405

0407					M3300407
0408					M3300408
0409					M3300409
0410	P00FB	C1111	READ	LDA- EDSMSB, I	M3300410
0411	P00FC	68F9		STA* TMPMSB	M3300411
0412	P00FD	C1112		LDA- EDSLBS, I	M3300412
0413	P00FE	68F8		STA* TPLSBS	M3300413
0414	P00FF	0C03		ENQ 3	M3300414
0415	P0100	C8C0		LDA HORBFR	M3300415
	P0101	01AB			
0416	P0102	6800		STA BUFADR	M3300416
	P0103	00CC			
0417	P0104	5800		RTJ RDISK	M3300417
	P0105	00AB			
0418	P0106	5800		RTJ HORTST	M3300418
	P0107	007F			
0419	P0108	0A03		ENA 3	M3300419
0420	P0109	5800		RTJ INKADR	M3300420
	P010A	0106			
0421	P010B	C800		LDA BUFR+2	M3300421
	P010C	019C			
0422	P010D	0822		TRA Q	M3300422
0423	P010E	98EA		SUB* NUMWDS	M3300423
0424	P010F	0121		SAP RCBIGR- *-1	M3300424
0425	P0110	1802		JMP* RJ1	M3300425
0426	P0111	E8E7	RCBIGR	LDQ* NUMWDS	M3300426
0427	P0112	C8E7	RD1	LDA* STRTCO	M3300427
0428	P0113	6800		STA BUFADR	M3300428
	P0114	00BB			
0429	P0115	5800		RTJ RDISK	M3300429
	P0116	009A			
0430	P0117	C8DE		LDA* IMPMSB	M3300430
0431	P0118	6111		STA- EDSMSB, I	M3300431
0432	P0119	C8DD		LDA* TPLSBS	M3300432
0433	P011A	6112		STA- EDSLBS, I	M3300433
0434	P011B	C10C		LDA- ESTAT2, I	M3300434
0435	P011C	0FC4		ALS 4	M3300435
0436	P011D	0131		SAM FMFOND- *-1	M3300436
0437	P011E	1817		JMP* EOFCLR	M3300437
0438	P011F	C800	FMFOND	LDA FMFND	M3300438
	P0120	FF6B			
0439	P0121	0119		SAN EFCLR- *-1	M3300439
0440	P0122	E800		LDQ STRTCO	M3300440
	P0123	FFD6			
0441	P0124	C000		LDA =N\$1300	M3300441
	P0125	1300			
0442	P0126	6622		STA- (ZERO), Q	M3300442
0443	P0127	0A01		ENA 1	M3300443
0444	P0128	6800		STA BUFR+2	M3300444
	P0129	017F			
0445	P012A	1814		JMP* REXT1	M3300445
0446	P012B	C800	EFCLR	LDA BUFR+2	M3300446
	P012C	017C			

*
* PROCESS READ REQUEST
*

SAVE MM ADDRESS TEMPORARILY

SET TO

READ HEADER

READ HEADER

CHECK HEADER

INCREASE DISK ADDRESS BEYOND HEADER

IS NUMBER OF WORDS REQUESTED

GREATER THAN SIZE OF RECORD

NO, TRANSFER NUMBER REQUESTED

YES, TRANSFER NUMBER IN RECORD

NUMBER OF WORDS REQUESTED

SET TO READ INTO USERS BUFFER

READ DATA

RESTORE MM ADDRESS FROM TEMPORARY

WAS AN END OF FILE FOUND.

YES

NO

WAS IT FOUND ON LAST READ

YES, CHECK IF NEXT RECORD IS SHORT

NO, SET FILE MARK

BITS IN 1ST WORD

OF USERS BUFFER.

SIGNIFY THAT A 1 WORD TRANSFER OCCURED.

EXIT, BUT DO NOT INCREMENT MM PCINTER

LOAD SIZE OF NEXT RECORD

0447 PO12D 09FE
 0448 PO12E 0116
 0449 PO12F 5800
 PO130 01AA
 0450 PO131 0844
 0451 PO132 6800
 PO133 FF58
 0452 PO134 18C6
 0453 PO135 0C0B
 0454 PO136 5800
 PO137 018D
 0455 PO138 0FC7
 0456 PO139 0131
 0457 PO13A 1806
 0458 PO13B 0A12
 0459 PO13C 1800
 PO13D 0JA1

INA -1
 SAN EOFCLR*-1
 RTJ INCADR
 CLR A
 STA FMFND
 JMP* READ
 ENQ 11
 RTJ CLRST2
 ALS 7
 SAM EOD*-1
 JMP* REXIT
 ENA 18
 JMP ERROR

IS NUM. TO TRANS.
 LESS THAN 2?
 YES, SKIP THE SHORT RECORD
 CLEAR FILE MARK FOUND ON LAST READ
 READ NEXT RECORD
 CLEAR END OF
 FILE STATUS BIT
 ARE WE AT END OF WRITTEN DATA
 YES
 SET ERROR CODE = 18
 TO INDICATE END OF WRITTEN DATA.

M3300447
 M3300448
 M3300449
 M3300450
 M3300451
 M3300452
 M3300453
 M3300454
 M3300455
 M3300456
 M3300457
 M3300458
 M3300459

0451		*			M3300461
0462		* READ/WRITE EXIT PROCESSOR			M3300462
0463		*			M3300463
0464	P013E 0A01	REXT1 ENA 1	SET FLAG TO SUPPRESS		M3300464
0465	P013F 683F	STA* INCFLG	INCREMENTING MM POINTER.		M3300465
0466	P0140 C800	REXIT LDA BUFR+2	IS RECORD LENGTH LESS		M3300466
	P0141 0167				
0467	P0142 9800	SUB NUMRQS	THAN NO. OF WDS REQUESTED.		M3300467
	P0143 FFB4				
0468	P0144 012B	SAP NSHORT-* -1	NO.		M3300468
0469	P0145 C109	LDA- ESTAT1,I	YES, SET SHORT		M3300469
0470	P0146 A041	AND- ZROBIT+14	READ BIT (14)		M3300470
0471	P0147 B031	EOR- ONEBIT+14	IN ERROR		M3300471
0472	P0148 6109	STA- ESTAT1,I	(V) FIELD.		M3300472
0473	P0149 C800	LDA BUFR+2	SET NEXT		M3300473
	P014A 015E				
0474	P014B 8800	ADD STRTCO	LOCATION TO		M3300474
	P014C FFAD				
0475	P014D E10B	LDQ- ELSTWD,I	STORE INTO		M3300475
0476	P014E C0FE	INQ -1	USERS LAST		M3300476
0477	P014F 6622	STA- (ZERO),Q	BUFFER WORD.		M3300477
0478	P0150 C10C	NSHORT LDA- ESTAT2,I	CHECK END OF FILE		M3300478
0479	P0151 0FC4	ALS 4	BIT IN STATUS.		M3300479
0480	P0152 0126	SAP WEXIT-* -1	NOT SET		M3300480
0481	P0153 C109	LDA- ESTAT1,I	SET END OF FILE AND ERROR		M3300481
0482	P0154 A000	AND =N\$5FFF	BITS (13) AND (15)		M3300482
	P0155 5FFF				
0483	P0156 8000	EOR =N\$A000	IN ERROR		M3300483
	P0157 A000				
0484	P0158 6109	STA- ESTAT1,I	(V) FIELD.		M3300484
0485	P0159 C825	WEXIT LDA* INCFLG	SEE IF WE ARE TO SUPPRESS		M3300485
0486	P015A 0112	SAN WEXT1-* -1	INCREMENTING MM POINTER.		M3300486
0487	P015B 3800	RTJ INCAOR	INCREMENT MM POINTER		M3300487
	P015C 017E				
0488	P015D 0844	WEXT1 CLR A	CLEAR INCREMENT		M3300488
0489	P015E 6820	STA* INCFLG	MM POINTER FLAG.		M3300489
0490	P015F 0C0A	ENQ 10	CLEAR LOAD POINT		M3300490
0491	P0160 5800	RTJ CLRST2			M3300491
	P0161 0163				
0492		*			M3300492

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0494
0495
0496
0497 P0162 54B6
0498 P0163 1800
      P0164 FEB5
0499 P0165 0C04
0500 P0166 581A
0501 P0167 C0FF
0502 P0168 6817
0503 P0169 C117
0504 P016A 60FF
0505 P016B 54B5
0506 P016C 1803
0507 P016D 1800
      P016E FEB0
0508 P016F C0FF
0509 P0170 980F
0510 P0171 0101
0511 P0172 18F6
0512 P0173 680C
0513 P0174 54B5
0514 P0175 0B03
0515 P0176 0C01
0516 P0177 5800
      P0178 014C
0517 P0179 0C0C
0518 P017A 5800
      P017B 0149
0519 P017C 1400
      P017D 7FFF
0520
0521
0522 P017E 0000
0523 P017F 0000
0524
0525
0526 P0180 0B00
0527 P0181 C10C
0528 P0182 A233
0529 P0183 B223
0530 P0184 610C
0531 P0185 1CFA

*
* DRIVER EXIT PROCESSOR
*
EXIT RTJ- (ACMPRQ) COMPLETE THE REQUEST
      JMP CHECK
CYCLE ENQ 4 SET END OF OPERATION
      RTJ* SETST2 BIT IN STATUS.
      LDA- I SAVE PRESENT
      STA* TEMP PHYSTB LOCATION.
CYCLE1 LDA- ENEXT,I PREPARE TO CHECK NEXT
      STA- I PSEUDO-TAPE UNIT.
      RTJ- (AFNR)
      JMP* CYCLE2 NO MORE REQUESTS ON THIS UNIT
      JMP PST1 GO PROCESS NEW REQUEST
CYCLE2 LDA- I CHECK TO SEE IF WE HAVE
      SUB* TEMP CYCLED ALL THE PSEUDO-TAPES.
      SAZ CYCLE3-*--1 SKIP IF YES
      JMP* CYCLE1 GO CHECK NEXT TAPE.
CYCLE3 STA* TEMP
      RTJ- (AFNR) NO MORE REQUESTS, BUT CLEAR PHYSTAB
      NOP 0
      ENQ 1 CLEAR DRIVER BUSY BIT IN
      RTJ CLRST2 HARDWARE STATUS
      ENQ 12 CLEAR CONTROLLER ACTIVE
      RTJ CLRST2
      JMP+ MAS3J0 EXIT DRIVER
X
X
*
*
* INCF LG NUM 0 INCREMENT MM POINTER FLAG
* TEMP NUM 0 TEMP STORAGE LOCATION
*
*
* SETST2 NOP 0
      LDA- ESTAT2,I SET BIT GIVEN
      AND- ZROBIT,Q IN Q REGISTER
      EOR- ONEBIT,Q IN HARDWARE
      STA- ESTAT2,I STATUS WORD.
      JMP* (SETST2)
M33J0494
M3300495
M3300496
M3300497
M33J0498
M3300499
M3300500
M3300501
M3300502
M3300503
M3300504
M3300505
M3300506
M3300507
M33J0508
M3300509
M3300510
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M3300531

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0533 *
0534 * HEADER TEST ROUTINE
0535 *
0536 P0186 0B00 HDRTST NOP 0
0537 P0187 C800 LDA BUFR IS 1ST HEADER
P0188 011E
P0189 0138 SAM OK1-*-1 WORD NEGATIVE.
*
0538 P018A C800 HURERR LDA ERFLAG GET SUPPRESS ERROR FLAG
0539 P018B FF01
0540 P018C 0C03 ENQ 3
0541 P018D 0101 SAZ HERCAL-*-1 IS THE FLAG SET
0542 P018E 1CF7 JMP* (HDRTST) YES, RETURN WITH Q NON-ZERO
0543 P018F 58F0 HERCAL RTJ* SETST2 NO, SET HEADER ERROR BIT (3)
0544 P0190 0A03 ENA 3 SET ERROR CODE = 3
0545 P0191 184D JMP* ERROR FOR BAD RECORD HEADER.
*
0546 P0192 A011 OK1 AND- LPMSK+15 CLEAR BIT 15
0547 P0193 0113 SAN OK2-*-1 IS IT ZERO
0548 P0194 0C0A ENQ 10 YES, SET STATUS BIT 10
0549 P0195 58EA RTJ* SETST2 FOR LOAD POINT SENSED.
0550 P0196 1803 JMP* OK3
0551 P0197 0121 OK2 SAP OK3-*-1 SKIP IF 1ST HEADER WORD POSITIVE
0552 P0198 18F1 JMP* HDRERR NO, ERROR
0553 P0199 C800 OK3 LDA BUFR+1 GET 2ND HEADER WORD
0554 P019A 010D
0555 P019B 0105 SAZ OK5-*-1 IF ZERO, OK
0556 P019C B012 EOR- NZERO IF $FFFF IT
0557 P019D 0101 SAZ OK4-*-1 IS AN END OF FILE.
0558 P019E 18E8 JMP* HDRERR IF NEITHER, A HEADER ERROR
0559 P019F 0C0B OK4 ENQ 11 SET STATUS BIT 11
0560 P01A0 58DF RTJ* SETST2 TO INDICATE EOF SENSED.
0561 P01A1 C800 OK5 LDA BUFR+2 GET 3RD HEADER WORD
0562 P01A2 0106
0563 P01A3 0131 SAM OK6-*-1 IS IT NEGATIVE
0564 P01A4 18E5 JMP* HDRERR NO, HEADER ERROR
0565 P01A5 A011 OK6 AND- LPMSK+15 CLEAR BIT 15
0566 P01A6 6800 STA BUFR+2 RESTORE IT IN HEADER
0567 P01A7 0101
0568 P01A8 0113 SAN OK7-*-1 IS IT ZERO
0569 P01A9 0C08 ENQ 8 YES, SET STATUS BIT 8
0570 P01AA 58D5 RTJ* SETST2 FOR END OF WRITTEN DATA SENSED.
0571 P01AB 1803 JMP* OK8
0572 P01AC 0121 OK7 SAP OK8-*-1 SKIP IF 3RD HEADER WORD POSITIVE
0573 P01AD 18DC JMP* HDRERR NO, HEADER ERROR
0574 P01AE 0842 OK8 CLR Q Q = 0 FOR NO HEADER ERROR
0575 P01AF 1CD6 JMP* (HDRTST) RETURN
*

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M3300533
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M3300575

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0577 *
0578 * DISK READ/WRITE COUPLER ROUTINE
0579 *
0580 RDISK NOP 0
0581 P01B0 0B00 LDA* RDISK SET RETURN
0582 P01B1 C8FE STA* WDISK ADDRESS.
0583 P01B2 6804 LDA =N$4200 SET UP READ IN CALL
0584 P01B3 C000
0585 P01B4 4200
0586 P01B5 1804 WDISK JMP* STREQ
0587 P01B6 0B00 WDISK NOP 0
0588 P01B7 C000 LDA =N$4400 SET UP WRITE IN CALL
0589 P01B8 4400
0590 P01B9 4815 STREQ STQ* NUMB STORE NUMBER OF WDS TO READ OR WRITE
0591 P01BA 0822 TRA Q
0592 P01BB C4FF LDA- (I) SET UP
0593 P01BC A006 AND- LPMASK+4 REQUEST
0594 P01BD 0872 EAQ Q AND
0595 P01BE 0FC4 ALS 4 COMPLETION
0596 P01BF 0874 EAQ A PRIORITIES
0597 P01C0 680A STA* REQ
0598 P01C1 C110 LDA- EDSKLU,I GET DISK LU
0599 P01C2 680B STA* LU FOR THIS PSEUDO-TAPE.
0600 P01C3 C111 LDA- EJSMSB,I SET MM
0601 P01C4 680C STA* MMAJR ADDRESS
0602 P01C5 C112 LDA- EDSLSS,I IN
0603 P01C6 680B STA* MMADR+1 CALL.
0604 P01C7 C0FF LDA- I SAVE
0605 P01C8 6810 STA* SAVEI I REGISTER.
0606 P01C9 54F4 RTJ- (AMONI)
0607 P01CA 0000 P REQ
0608 P01CB 01D3 COMP ADC 0
0609 P01CC 0000 ADC CML
0610 P01CD 0000 ADC 0
0611 P01CE 0000 LU ADC 0
0612 P01CF 0000 NUMB ADC 0
0613 P01D0 0000 BUFADR ADC 0
0614 P01D1 0000 MMADR ADC 0,0
0615 P01D2 14EA JMP- (ADISP)
0616 *
0617 P01D3 C805 CML LDA* SAVEI RESTORE
0618 P01D4 60FF STA- I I REGISTER.
0619 P01D5 C8F7 LDA* LU DID A DISK I/O ERROR OCCUR
0620 P01D6 0132 SAM IOERR-* -1 YES
0621 P01D7 1CDE JMP* (WDISK) NO, RETURN
0622 *
0623 P01D8 0000 SAVEI NUM 0 SAVE I REGISTER HERE
0624 *
0625 P01D9 0C05 IOERR ENQ 5 SET BITS 5 AND
0626 P01DA 58A5 RTJ* SETST2 6 IN STATUS WORD TO
0627 P01DB 0C06 ENQ 6 INDICATE ALARM
0628 P01DC 58A3 RTJ* SETST2 AND LOST DATA.
0629 P01DD 0A02 ENA 2 SET ERROR CODE = 2

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M3300577
M3300578
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P01DE E105
P01DF 0FA6
P01EG 0872
P01EH 481B
P01EI C109
P01EJ A010
P01EK 0020
P01EL 6109
P01EM C10A
P01EN E10B
P01EO 00FE
P01EP 6622
P01EQ 0812
P01ER 5400
P01ES 7FFF
P01ET C4FF
P01EU 6802
P01EV 54F4
P01EW 0000
P01EX 7FFF
P01FY 1800
P01FZ FF71

*
* ERROR HANDLING ROUTINES
*

ERROR LDQ- ELU,I
QLS 6
EAQ Q
STQ* TEMP1
LDA- ESTAT1,I
AND- LPMSK+14
EOR- NZERO+14
STA- ESTAT1,I
LDA- ECCOR,I
LDQ- ELSTWD,I
INQ -1
STA- (ZERO),Q
LDQ* TEMP1
RTJ+ LOG

X
X
EREXIT LDA- (I)
STA* GO
RTJ- (AMONI)
GO NUM 0
X
ADC ALTDEV
JMP CYCLE

SET UP
ERROR WORD
FOR ALTERNATE
DEVICE HANDLER.

SET ALARM
AND SHORT
TRANSFER BITS IN
ERROR (V) FIELD.
SINCE NO TRANSFER
OCCURED SET LAST WORD
OF USERS BUFFER TO
ADDRESS OF 1ST WORD.
PICK UP ERROR WORD
ENGINEER LOG

SCHEDULE ALTDEV SO
WE CAN
RETAIN CONTROL.
GO CHECK OTHER PENDING REQUESTS

*
* TPMERR
*

TPMERR LDQ- ELU,I
QLS 6
EAQ Q
LDA- ESTAT1,I
AND- ZROBIT+15
EOR- ONEBIT+15
STA- ESTAT1,I
JMP* EREXIT

SET UP ERROR WORD
FOR ALTERNATE
DEVICE HANDLER.

SET ALARM
BIT (15)
IN SOFTWARE
STATUS WORD.

*
*
*

TEMP1 NUM 0
MULTNO NUM 0

TEMPORARY STORAGE LOCATION
NUMBER OF TIMES TO EXECUTE -- EQUALS -1 FOR
SINGLE REQUESTS

M3300627
M3300628
M3300629
M3300630
M3300631
M3300632
M3300633
M3300634
M3300635
M3300636
M3300637
M3300638
M3300639
M3300640
M3300641
M3300642
M3300643

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M3300650
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M3300658
M3300659
M3300660
M3300661
M3300662
M3300663
M3300664
M3300665

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0667 0668 0669 0670
PO1FE C800
PO1FF FE8C
0671 PO200 6800
PO201 00C1
0572 PO202 C204
0573 PO203 012E
0574 PO204 0822
0575 PO205 A00E
0576 PO206 09FE
0577 PO207 0122
0578 PO208 0A3C
0579 PO209 18EA
0580 PO20A 68F2
0681 PO20B 0814
0682 PO20C A000
PO20D 7000
0683 PO20E 0FC4
0684 PO20F 68EC
0685 PO210 0822
0686 PO211 1824
0687 PO212 0CFE
0688 PO213 48E9
0689 PO214 68E7
0690 PO215 A006
0691 PO216 0822
0692 PO217 0151
0693 PO218 180D
0694 PO219 C10C
0695 PO21A A000
PO21B 9FFF
0696 PO21C 0DFE
0697 PO21D 0151
0698 PO21E 1806
0699 PO21F 0DFE
0700 PO220 0152
0701 PO221 8030
0702 PO222 1802
0703 PO223 8031
0704 PO224 610C
0705 PO225 C8D6
0706 PO226 A016
0707 PO227 68D4
0708 PO228 1809
0709 PO229 E8D3
0710 PO22A 0176
0711 PO22B 0151
0712 PO22C 181B
0713 PO22D 0DFE
0714 PO22E 48CE
0715 PO22F E8CC

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*
* TAPE MOTION AND DENSITY CHANGE REQUEST ROUTINES
*
TPMCTL LDA FMFND PASS FILEMARK
STA FILEMK FOUND FLAG
LDA- 4,Q GET MOTION REQUEST CODES
SAP SINGRQ- *-1 CHECK FOR MULTIPLE REQUESTS
TRA Q MULTIPLE REQUEST
AND- LPMSK+12 ISOLATE NUMBER OF TIMES TO EXECUTE
INA -1
SAP MULTOK- *-1 CHECK FOR POSITIVE, NON-ZERO NUMBER
ENA 60 ILLEGAL, SET ERROR CODE = 60
JMP* TPMERR NO, ERROR IN NUMBER
MULTOK STA* MULTNO STORE NUMBER - 1
TRQ A
AND =N$7000 ISOLATE REQUEST CODE
ALS 4
STA* TEMP1
TRA Q
JMP* LEGAL
SINGRQ ENQ -1 SINGLE REQUEST
STQ* MULTNO SET FLAG FOR SINGLE REQUESTS
STA* TEMP1 STORE IT
AND- LPMSK+4 ISOLATE DENSITY
TRA Q BITS.
SQN TSTDNS- *-1 IS THERE A DENSITY CHANGE
JMP* NOCHG NO
TSTDNS LDA- ESTAT2,I CLEAR DENSITY BITS
AND =N$9FFF IN STATUS WORD.
INQ -1 IS IT 200 BPI
SQN TST556- *-1 NO
JMP* STODNS YES, RESTORE STATUS
TST556 INQ -1 IS IT 556 BPI
SQN TST800- *-1 NO
EOR- ONEBIT+13 YES, SET BIT 13
JMP* STODNS IN STATUS WORD.
TST800 EOR- ONEBIT+14 ALL OTHERS ARE 800 BPI
STODNS STA- ESTAT2,I RESTORE STATUS WORD
NOCHG LDA* TEMP1 CLEAR DENSITY
AND- NZERO+4 BITS IN
STA* TEMP1 REQUEST CODES.
JMP* GETREQ
TPCTLR LDQ* MULTNO
SQM GETREQ- *-1 CHECK FOR SINGLE REQUESTS
SQN DECR- *-1 CHECK IF FINISHED WITH A MULTIPLE REQUEST
JMP* DONOTH
DECR INQ -1 DECREMENT NUMBER OF TIMES TO EXECUTE
STQ* MULTNO
LDQ* TEMP1 LOAD REQUEST INTO Q

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M3300667
M3300668
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M3300670
M3300671
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M3300699
M3300700
M3300701
M3300702
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M3300710
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M3300712
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M3300714
M3300715

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0716 P0230 1805
0717 P0231 C8CA
0718 P0232 0842
0719 P0233 0FE4
0720 P0234 68C7
0721 P0235 0DF7
0722 P0236 0172
0723 P0237 0A3C
0724 P0238 18BB
0725 P0239 1A09
0726
0727
0728 P023A 180D
0729 P023B 1823
0730 P023C 1845
0731 P023D 181D
0732 P023E 181E
0733 P023F 1804
0734 P0240 1805
0735 P0241 1800
0736 P0242 00D9
0737 P0243 1800
0738 P0244 00A3
0739 P0245 1800
0740 P0246 00C0
0741 P0247 C87B
0742 P0248 6800
0743 P0249 FE42
0744 P024A 1800
0745 P024B FF16
0746 P024C 0B00
0747 P024D C114
0748 P024E 6112
0749 P024F C113
0750 P0250 6111
0751 P0251 0C0A
0752 P0252 5800
0753 P0253 FF2C
0754 P0254 5868
0755 P0255 0C0B
0756 P0256 586E
0757 P0257 0842
0758 P0258 486A
0759 P0259 10F2
0760 P025A 58F1
0761 P025B 18CD
0762 P025C 58EF
0763 P025D 18E9

GETREQ LDA* LEGAL
CLR Q
LLS 4
STA* TEMP1
LEGAL INQ -8
SQM TPM1--*-1
ENA 60
JMP* TPMERR
TPM1 JMP* TPMTBL+8,Q
*
*
TPMTBL JMP* DONOTH
JMP* BSPR
JMP* MARKEF
JMP* REWIND
JMP* UNLOAD
JMP* SKF
JMP* BSF
JMP SKIPR
SKF JMP SKIPF
BSF JMP BKSPF
*
*
DONOTH LDA* FILEMK
STA FMFND
JMP EXIT
*
*
RESET NOP 0
LDA- EDSTR2,I
STA- EDLSB,I
LDA- EDSTR1,I
STA- EDSMSB,I
ENQ 10
RTJ SETST2
RTJ* CLRBSF
ENQ 11
RTJ* CLRST2
CLR Q
STQ* FILEMK
JMP* (RESET)
*
*
REWIND RTJ* RESET
JMP* TPCTLR
*
*
UNLOAD RTJ* RESET
JMP* DONOTH

GET 1ST REQUEST
PARAMETER.
LEGALITY CHECK.
ILLEGAL, SET ERROR CODE = 60
FOR ILLEGAL TAPE MOTION REQUEST.
GO TO PROCESSOR
EXIT FROM TAPE MOTION REQUESTS
BACKSPACE RECORD
WRITE END OF FILE
REWIND PSEUDO-TAPE
UNLOAD PSEUDO-TAPE
ADVANCE TO NEXT RECORD
ADVANCE PAST NEXT FILE MARK
BACKSPACE PAST PREV FILE MARK
PASS FILEMARK FOUND
FLAG BACK.
FINISHED
RESET MM
POINTER TO
START OF
MM BUFFER.
SET LOAD POINT BIT (10)
IN STATUS WORD.
CLEAR BACKSPACE FILEMARK AND BIT
CLEAR FILE MARK BIT (11)
IN STATUS WORD.
CLEAR FILE MARK ON LAST OPERATION FLAG
RESET MM POINTER
AND GET NEXT REQUEST.
RESET MM POINTER
AND EXIT FROM DRIVER.

M3300716
M3300717
M3300718
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M3300760
M3300761
M3300762

0753	P025E	5868	BSPR	RTJ*	RDHEDR	READ AND CHECK HEADER OF CURRENT RECORD	M3300763
0764	P025F	0C08		ENQ	8	CLEAR END OF WRITTEN DATA BIT (8)	M3300764
0765	P0260	5864		RTJ*	CLRST2	IN STATUS WORD.	M3300765
0766	P0261	0FC4		ALS	4	WAS A FILE MARK FOUND	M3300766
0767	P0262	0128		SAP	NOFLMK-*-1	NO, CHECK FOR LOAD POINT	M3300767
0768	P0263	0C08		ENQ	11	YES, CLEAR FILE MARK BIT (11)	M3300768
0769	P0264	5860		RTJ*	CLRST2	IN STATUS WORD.	M3300769
0770	P0265	E85D		LDQ*	FILEMK	CHECK IF FOUND ON LAST OPERATION	M3300770
0771	P0266	0144		SQZ	NOFLMK-*-1	NO, CHECK FOR LOAD POINT	M3300771
0772	P0267	0842		CLR	0	YES, CLEAR FILE MARK ON	M3300772
0773	P0268	485A		STQ*	FILEMK	LAST OPERATION FLAG	M3300773
0774	P0269	586A		RTJ*	SETBSF	SET BACKSPACE FILEMARK BIT AND FLAG	M3300774
0775	P026A	18BE		JMP*	TPCTLR	GET NEXT REQUEST	M3300775
0776	P026B	C10C	NOFLMK	LDA-	ESTAT2,I	GET STATUS WORD	M3300776
0777	P026C	0FC5		ALS	5	CHECK IF AT LOAD POINT	M3300777
0778	P026D	0121		SAP	BSR3-*-1	NO, BACKSPACE A RECORD	M3300778
0779	P026E	1812		JMP*	FINISH	YES, DO NOT BACKSPACE ANYMORE	M3300779
0780	P026F	0C00	BSR3	ENQ	0		M3300780
0781	P0270	4852		STQ*	FILEMK	CLEAR FILE MARK ON LAST OPERATION FLAG	M3300781
0782	P0271	584B		RTJ*	CLRBSF	CLEAR BACKSPACE FILEMARK BIT AND FLAG	M3300782
0783	P0272	583C		RTJ*	DECADR	DECREMENT MM POINTER	M3300783
0784	P0273	5856		RTJ*	RDHEDR	READ AND CHECK NEW HEADER	M3300784
0785	P0274	C834		LDA-	BUF2+2	CHECK FOR SHORT RECORD	M3300785
0786	P0275	09FE		INA	-1	IS SIZE OF NEXT RECORD	M3300786
0787	P0276	0114		SAN	BSR2-*-1	LESS THAN 2?	M3300787
0788	P0277	0A0B		ENA	11	YES, CLEAR FILE MARK BIT (11)	M3300788
0789	P0278	584C		RTJ*	CLRST2	IN STATUS WORD.	M3300789
0790	P0279	585A		RTJ*	SETBSF		M3300790
0791	P027A	18AE		JMP*	TPCTLR	GET NEXT REQUEST	M3300791
0792	P027B	C10C	BSR2	LDA-	ESTAT2,I	GET STATUS WORD	M3300792
0793	P027C	0FC4		ALS	4	WAS A FILE MARK FOUND	M3300793
0794	P027D	0122		SAP	FINISH-*-1	NO, GET NEXT REQUEST	M3300794
0795	P027E	0C01		ENQ	1	SET FILE MARK ON LAST OPERATION FLAG.	M3300795
0796	P027F	4843		STQ*	FILEMK		M3300796
0797	P0280	18A8	FINISH	JMP*	TPCTLR	GET NEXT REQUEST	M3300797
0798			*				M3300798
0799			*				M3300799
0800	P0281	C10C	MARKEF	LDA-	ESTAT2,I	GET STATUS WORD.	M3300800
0801	P0282	0133		SAM	OKMARK-*-1	CHECK IF WRITE ENABLE RING PRESENT	M3300801
0802	P0283	0A0D		ENA	13	NO, SET ERROR CODE = 13	M3300802
0803	P0284	1800		JMP	TPMERR	TO INDICATE NO WRITE RING.	M3300803
0804	P0285	FF6E					M3300804
0805	P0286	C83C	OKMARK	LDA*	FILEMK	CHECK IF WE ARE AT AN EOF	M3300805
0806	P0287	010A		SAZ	SINGEF-*-1		M3300806
0807	P0288	0A22		ENA	\$22	YES, SET UP STARTING ADDRESS FOR	M3300807
0808	P0289	6800		STA	SIRTCO	WRITE OF SHORT RECORD	M3300808
0809	P028A	FE6F					M3300809
0810	P028B	0A01		ENA	1		M3300810
0811	P028C	0C01		ENQ	1		M3300811
0812	P028D	6800		STA	NJMWDS	SET UP NUMBER OF WORDS TO WRITE	M3300812
0813	P028E	FE6A					M3300813
0814	P028F	5800		RTJ	WRITE	WRITE THE SHORT RECORD	M3300814
0815	P0290	FDFD					M3300815


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0830 *
0831 *
0832 * THIS IS THE BUFFER AREA
0833 *
0834 P02A6 00C3 BZS BUFR(3) THE HEADER FOR RECORD GOES HERE
0835 P02A9 0003 BZS BUFR1(3) TRAILER GOES HERE
0836 P02AC 02A6 P HDRBFR ADC BUFR POINTER TO HEADER BUFFER
0837 P02AD 02A9 P TRLBFR ADC BUFR1 POINTER TO TRAILER BUFFER
0838 *
0839 P02AF 0B00 DECA DR NOP 0
0840 P02AF C8F6 LDA* BUFR GET LENGTH OF PRECEEDING RECORD
0841 P02B0 A011 AND- LPMASK+15 CLEAR BIT 15
0842 P02B1 0903 INA 3 CORRECT FOR HEADER LENGTH
0843 P02B2 0864 TCA A SUBTRACT INCREMENT
0844 P02B3 8112 ADD- EDS-5B,I FROM LSB OF MH POINTER.
0845 P02B4 0125 SAP FINDEC-* -1 HAVE WE UNDERFLOWED
0846 P02B5 A011 AND- LPMASK+15 YES, CLEAR BIT 15
0847 P02B6 0901 INA 1
0848 P02B7 E111 LDQ- EDSMSB,I DECREMENT
0849 P02B8 00FE INQ -1 MSB
0850 P02B9 4111 STQ- EDSMSB,I SLOT.
0851 P02BA 6112 FINDEC STA- EDLSB,I RESTORE LSB
0852 P02BB 1CF2 JMP* (DECA DR)
0853 *
0854 P02BC 0B00 CLRBSF NOP 0
0855 P02BD 0842 CLR Q CLEAR
0856 P02BE 4805 STQ* FLMARK
0857 P02BF 0C07 ENQ 7 FILEMARK BIT
0858 P02C0 5804 RTJ* CLRST2 AND FLAG.
0859 P02C1 1CFA JMP* (CLRBSF)
0860 *
0861 P02C2 0000 FILEMK NUM 0 SET IF A FILEMARK SENSED ON LAST OPERATION
0862 P02C3 0000 FLMARK NUM 0 SET IF A FILEMARK SENSED ON LAST BACKSPACE
0863 *
0864 P02C4 0B00 CLRST2 NOP 0
0865 P02C5 C10C LDA- ESTAT2,I CLEAR BIT GIVEN
0866 P02C6 A233 AND- ZROBIT,Q IN Q REGISTER
0867 P02C7 610C STA- ESTAT2,I IN STATUS WORD.
0868 P02C8 1CFB JMP* (CLRST2)
0869 *
0870 P02C9 0B00 RDHEDR NOP 0
0871 P02CA 0C03 ENQ 3
0872 P02CB C8E0 LDA* HDRBFR
0873 P02CC 6800 STA BUADR READ AND
0874 P02CD FF01 RTJ RDISK TEST HEADER
0875 P02CE 5800 RTJ HDRTST OF CURRENT RECORD.
0876 P02CF FEE0 JMP* (RDHEDR)
0877 *
0878 P02D3 0B00 SETBSF NOP 0 SET
0879 P02D4 0C01 ENQ 1 FILEMARK BIT

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M3300830
M3300831
M3300832
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M3300841
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M3300843
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M3300879

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0880 P02D5 48ED
0881 P02D6 0C07
0882 P02D7 5800
P02D8 FEA7
0883 P02D9 1CF9
0884
0885 P02DA 0B00
0886 P02DB C8CC
0887 P02DC AJ11
0888 P02DD 0903
0889 P02DE 5802
0890 P02DF 1CFA
0891
0892 P02EG 0B00
0893 P02E1 8112
0894 P02E2 0122
0895 P02E3 A011
0896 P02E4 0111
0897 P02E5 6112
0898 P02E6 1CF9
0899

STQ* FLMARK
ENQ 7
RTJ SETST2

JMP* (SETBSF)
*
INCAJR NOP 0
LDA* BUFR+2
AND- LPMSK+15
INA 3
RTJ* INKAJR
JMP* (INCAJR)
*
INKAJR NOP 0
ADD- EDLSB,I
SAP FININC- *-1
AND- LPMSK+15
RAO- EDMSB,I
FININC STA- EDLSB,I
JMP* (INKAJR)
*

AND FLAG

GET LENGTH OF RECORD
CLEAR BIT 15 IF NECESSARY
CORRECT FOR HEADER LENGTH
INCREMENT ADDRESS

ADD LSB OF MM POINTER
HAVE WE OVERFLOWED
YES, CLEAR BIT 15
INCREMENT MSB
RESTORE LSB
RETURN

M33J0880
M3300881
M3300882

M3300883
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M3300890
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M3300895
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M3300897
M3300898
M3300899

0901	P02E7	58E1	SKIPF	RTJ*	RDHEDR	READ AND CHECK HEADER OF CURRENT RECORD.	M3300901
0902	P02E8	0C0A		ENQ	10	CLEAR LOAD POINT BIT (10)	M3300902
0903	P02E9	58DA		RTJ*	CLRST2	IN STATUS WORD.	M3300903
0904	P02FA	58D1		RTJ*	CLRBSF	CLEAR BACKSPACE FILEMARK BIT AND FLAG	M3300904
0905	P02EB	0FC4		ALS	4	WAS A FILE MARK FOUND	M3300905
0906	P02EC	012E		SAP	FNDBFR--1	NO, CHECK FOR END OF WRITTEN DATA	M3300906
0907	P02ED	E8D4		LDQ*	FILEMK	YES, DID WE FIND	M3300907
0908	P02EE	015C		SNQ	FNDBFR--1	IT ON LAST OPERATION.	M3300908
0909	P02EF	C8B8		LDA*	BUFR+2	NO, CHECK FOR SHORT RECORD	M3300909
0910	P02F0	09FE		INA	-1	IS SIZE OF NEXT RECORD	M3300910
0911	P02F1	0116		SAN	SKIPF2--1	LESS THAN 2?	M3300911
0912	P02F2	0A0B		ENA	11	YES, CLEAR FILE MARK BIT (11)	M3300912
0913	P02F3	58D0		RTJ*	CLRST2	IN STATUS WORD.	M3300913
0914	P02F4	58DE		RTJ*	SETBSF		M3300914
0915	P02F5	58E4		RTJ*	INCADR	INCREMENT THE ADDRESS	M3300915
0916	P02F6	58D2		RTJ*	RDHEDR	READ AND CHECK HEADER OF CURRENT RECORD	M3300916
0917	P02F7	1888		JMP*	FINISH	GET NEXT REQUEST	M3300917
0918	P02F8	0A01	SKIPF2	ENA	1	NO, SET	M3300918
0919	P02F9	68C8		STA*	FILEMK	IT NOW.	M3300919
0920	P02FA	1885		JMP*	FINISH	GET NEXT REQUEST	M3300920
0921	P02FB	0FC3	FNDBFR	ALS	3	ARE WE AT THE END OF WRITTEN DATA	M3300921
0922	P02FC	0123		SAP	NOTFND--1	NO, ADVANCE TO NEXT RECORD	M3300922
0923	P02FD	0A12		ENA	18	YES, SET ERROR CODE = 18	M3300923
0924	P02FE	1800		JMP	TPMERR	TO INDICATE END OF WRITTEN DATA.	M3300924
	P02FF	FFF4					
0925	P0300	0C0B	NOTFND	ENQ	11	CLEAR FILE MARK BIT (11)	M3300925
0926	P0301	58C2		RTJ*	CLRST2	IN STATUS WORD.	M3300926
0927	P0302	0842		CLR	Q	CLEAR FILE MARK	M3300927
0928	P0303	48BE		STQ*	FILEMK	FOUND FLAG.	M3300928
0929	P0304	58D5		RTJ*	INCADR	INCREMENT MM POINTER TO NEXT RECORD	M3300929
0930	P0305	18E1		JMP*	SKI PF	CHECK AGAIN FOR FILE MARK	M3300930
0931			*				M3300931
0932	P0306	58C2	BKSPF	RTJ*	RDHEDR	READ AND CHK HDR OF CURRENT REC.	M3300932
0933	P0307	0C08		ENQ	8	CLEAR END OF WRITTEN DATA BIT (8)	M3300933
0934	P0308	58B8		RTJ*	CLRST2	IN STATUS WORD.	M3300934
0935	P0309	0FC4		ALS	4	WAS A FILE MARK FOUND	M3300935
0936	P030A	0128		SAP	FDBEFR--1	NO, CHECK IF WE ARE AT LOAD POINT	M3300936
0937	P030B	0C0B		ENQ	11	YES, CLEAR FILE MARK BIT (11)	M3300937
0938	P030C	58B7		RTJ*	CLRST2	IN STATUS WORD.	M3300938
0939	P030D	E8B4		LDQ*	FILEMK	DID WE FIND IT	M3300939
0940	P030E	0144		SQZ	FDBEFR--1	ON LAST OPERATION.	M3300940
0941	P030F	58C3		RTJ*	SETBSF	YES, SET BACKSPACE FILEMARK BIT AND FLAG	M3300941
0942	P0310	0C00		ENQ	0	CLEAR FORWARD	M3300942
0943	P0311	48B0		STQ*	FILEMK	FILEMARK FLAG.	M3300943
0944	P0312	1828		JMP*	FINSH	GET NEXT REQUEST	M3300944
0945	P0313	58A8	FDBEFR	RTJ*	CLRBSF	CLEAR BACKSPACE FILEMARK BIT AND FLAG	M3300945
0946	P0314	0FC5		ALS	5	ARE WE AT THE LOAD POINT	M3300946
0947	P0315	0121		SAP	NTFOND--1	NO	M3300947
0948	P0316	1824		JMP*	FINSH	GET NEXT REQUEST	M3300948
0949	P0317	5896	NTFOND	RTJ*	DEGADR	DECREMENT MM POINTER	M3300949
0950	P0318	0C01		ENQ	1	SET FILEMARK ON LAST OPERATION IN CASE WE	M3300950
0951	P0319	48A8		STQ*	FILEMK	BACKED UP TO AN END OF FILE	M3300951
0952	P031A	18EB		JMP*	BKSPF	CHECK AGAIN FOR FILE MARK	M3300952

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09353 *
09354 PG31B 58AD SKIPR RTJ* RDHEDR READ AND CHECK HEADER OF CURRENT RECORD M3300953
09355 PG31C 0C0A ENQ 10 CLEAR LOAD POINT BIT (10) M3300954
09356 PG31D 58A6 RTJ* CLRST2 IN STATUS WORD M3300955
09357 PG31E 0FC4 ALS 4 WAS A FILE MARK FOUND M3300956
09358 PG31F 012A SAP NFILMK*-1 NO, CHECK FOR END OF WRITTEN WORD M3300957
09359 PG320 E8A1 LDQ* FILEMK YES, DID WE FIND IT ON LAST OPERATION M3300958
09360 PG321 0158 SQN NFILMK*-1 YES, CHECK FOR END OF WRITTEN DATA M3300959
09361 PG322 C800 LDA BUFR+2 NO, CHECK FOR SHORT RECORD M3300960
PG323 FF84
09362 PG324 09FE INA -1 IS SIZE OF NEXT RECORD M3300962
09363 PG325 0107 SAZ ADVREC*-1 LESS THAN 2? M3300963
09364 PG326 0C01 ENQ 1 M3300964
09365 PG327 489A STQ* FILEMK SET IT NOW M3300965
09366 PG328 5893 RTJ* CLRBSF CLEAR BACKSPACE FILEMARK BIT AND FLAG M3300966
09367 PG329 1811 JMP* FINSH GET NEXT REQUEST M3300967
09368 PG32A 0FC3 NFILMK ALS 3 CHECK IF END OF WRITTEN DATA M3300968
09369 PG32B 0121 SAP ADVREC*-1 NO, ADVANCE TO NEXT RECORD M3300969
09370 PG32C 180E JMP* FINSH YES, DO NOT ADVANCE ANYMORE M3300970
09371 PG32D 0C0B ADVREC ENQ 11 CLEAR FILE MARK BIT (11) M3300971
09372 PG32E 5895 RTJ* CLRST2 IN STATUS WORD M3300972
09373 PG32F 0C00 ENQ 0 M3300973
09374 PG330 4891 STQ* FILEMK CLEAR FILE MARK ON LAST OPERATION FLAG M3300974
09375 PG331 588A RTJ* CLRBSF CLEAR BACKSPACE FILEMARK BIT AND FLAG M3300975
09376 PG332 58A7 RTJ* INCADR M3300976
09377 PG333 5895 RTJ* RDHEDR READ AND CHECK NEW HEADER M3300977
09378 PG334 C10C LDA- ESTAT2,I GET STATUS WORD M3300978
09379 PG335 0FC4 ALS 4 WAS A FILE MARK FOUND M3300979
09380 PG336 0123 SAP FINSH*-1 NO, GET NEXT REQUEST M3300980
09381 PG337 589B RTJ* SETBSF SET FILE MARK ON BACKSPACE FILE M3300981
09382 PG338 0C0B ENQ 11 CLEAR FILE MARK BIT (11) M3300982
09383 PG339 588A RTJ* CLRST2 IN STATUS WORD M3300983
09384 PG33A 1800 FINSH JMP TPCTLR GET NEXT REQUEST M3300984
PG33B FEED
09385 *
09386 *
09387 *
09388 033C P EQU ENDRVR(*) THIS IS THE LENGTH OF THE DRIVER M3300985
09389 END M3300986

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EQUIVALENCES

DEF. LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0060	I	ICFF	(0000255) 0183, 0198, 0202, 0501, 0504, 0508, 0589, 0601, 0615, 0644
0074	AFNR	0005	(0000181) 0204, 0505, 0513
0075	ACMPRQ	000E	(0000182) 0497
0076	ADISP	00EA	(0000234) 0201, 0612
0077	AMONI	00F4	(0000244) 0604, 0645
0155	ELU	0005	(0000005) 0630, 0652
0156	EPTR	0006	(0000006) 0266
0157	ESTAT1	0009	(0000009) 0296, 0469, 0472, 0481, 0484, 0634, 0637, 0655, 0658
0158	ECCOR	000A	(0000010) 0288, 0294, 0638
0159	ELSTWD	000B	(0000011) 0287, 0475, 0639
0160	ESTAT2	000C	(0000012) 0206, 0212, 0213, 0232, 0241, 0244, 0337, 0342, 0434, 0478, 0527, 0530, 0694, 0704, 0770, 0792
0161	EDSKLU	0010	(0000016) 0800, 0865, 0867, 0978
0162	EDSMSE	0011	(0000017) 0595
0163	EDSLSB	0012	(0000018) 0217, 0321, 0373, 0394, 0410, 0431, 0597, 0748, 0848, 0850, 0890
0164	EDSTR1	0013	(0000019) 0219, 0319, 0375, 0396, 0412, 0433, 0599, 0746, 0844, 0851, 0893, 0897
0165	EDSTR2	0014	(0000020) 0210, 0747
0166	EDLST1	0015	(0000021) 0214, 0218, 0745
0167	EDLST2	0016	(0000022) 0226, 0326
0168	ENEXT	0017	(0000023) 0220, 0227, 0334
0173	LPMSK	0002	(0000002) 0503
0174	VZERO	0012	(0000018) 0207, 0224, 0269, 0279, 0323, 0353, 0548, 0565, 0590, 0635, 0675, 0690, 0841, 0846, 0887, 0890
0175	ZERO	0022	(0000034) 0507, 0534, 0700
0176	ONEBIT	0023	(0000035) 0207, 0442, 0471, 0641
0177	ZKBIT	0035	(0000035) 0243, 0256, 0297, 0360, 0371, 0471, 0529, 0537, 0701, 0703, 0822
			(0000031) 0470, 0528, 0555, 0866

SYMBOLS

DEF. LINE	NAME	ADDRESS	REFERENCED AT LINE NUMBER
0065	DMTSIM	0015	0065, 0184, 0196
0183	START	0000	0184, 0187, 0190, 0193
0202	CHECK	001A	0200, 0498
0206	PST1	001F	0507
0211	PST2	0020	0208
0226	PST2A	0036	0223
0229	PST3	0039	0229
0237	PST3A	003F	0234
0241	PST4	0043	0238
0248	CHKHDR	004B	0245
0252	NORING	004F	0249
0266	RQSTCK	0063	0247, 0255
0273	NOMOTN	0068	0271
0275	CALADD	006C	0215, 0221, 0280
0282	GOCYL	0073	0205
0287	RDWRTIT	0075	0273
0291	RDDGO1	0079	0289
0300	WRITRQ	0082	0298
0305	WRITOK	0088	0302
0310	FMFND	008C	0230, 0236, 0350, 0438, 0451, 0670, 0741, 0819
0311	ERFLAG	008D	0251, 0254, 0340
0318	WRITE	008E	0300, 0397, 0811
0325	WRIT1	0095	0302
0329	OVERFL	0099	0300
0333	WRIT2	009E	0307
0337	WRIT3	00A2	0302, 0645
0340	WERROR	00A5	
0341	WRT1	00A7	0308
0350	WRTD1	00B2	0304
0352	WRTA	00B4	0344
0353	WRTA1	00C0	0304
0360	WRTS	00C3	0349, 0351, 0359
0400	TMPMSB	00F6	0374, 0393, 0411, 0430
0401	TMPLSB	00F7	0370, 0393, 0413, 0432
0402	NUMRQS	00F8	0291, 0467
0403	NUMWDS	00F9	0292, 0364, 0385, 0387, 0423, 0426, 0810
0404	STRTCO	00FA	0295, 0383, 0427, 0440, 0474, 0807
0410	READ	00FB	0299, 0452
0426	RCCBGR	0111	
0427	RDD1	0112	0425
0428	FMFND	011F	0300

0709	TPCTLR	0229	0759, 0775, 0791, 0797, 098-
0713	DFCR	022D	0711
0717	GETREQ	0231	0708, 0710
0721	LEGAL	0233	0686, 0716
0725	TPM1	0239	0722
0728	TPMTBL	023A	0725
0736	SKF	0243	0733
0737	BBSF	0245	0734
0740	DONOTH	0247	0712, 0728, 0762
0744	RESET	024C	0756, 0758, 0761
0758	REWIND	025A	0731
0761	UNLOAD	025C	0732
0763	BSPR	025E	0729
0776	NOFLMK	026B	0767, 0771
0780	BBSR3	026F	0778
0792	BBSR2	027B	0787
0797	FINISH	028C	0779, 0794, 0826, 0917, 0923
0800	MARKFF	0281	0730
0804	JKMARK	0288	0801
0813	SINGEF	0292	0805
0834	BUFR	02A6	019J, 0257, 0258, 0260, 0352, 0361, 0367, 0421, 0444, 0445, 0468, 0473, 0537, 0553, 0562, 0566
0835	BUFR1	02A9	0785, 0821, 0823, 0935, 0845, 0886, 0909, 0951
0836	HDRBFR	02AC	0193, 0368, 0376, 0372, 0637
0837	TRLBFR	02AD	0192, 0262, 0376, 0415, 0825, 0872
0839	DECADR	02AE	0195, 0390
0851	FINDEC	02BA	0356, 0783, 0852, 0949
0854	CLRSBF	02BC	0845
0861	FILEMK	02C2	0357, 0751, 0782, 0816, 0859, 0904, 0945, 0966, 0975
0862	FLMARK	02C3	0371, 0740, 0755, 0770, 0773, 0781, 0796, 0804, 0818, 0907, 0919, 0928, 0939, 0943, 0951, 0959
0864	CLRST2	02C4	0963, 0974
0870	RQHEDR	02C9	1231, 0240, 0345, 0356, 0830
0878	SETBSF	02D3	0363, 0454, 0491, 0510, 0518, 0753, 0765, 0769, 0789, 0858, 0868, 0903, 0913, 0926, 0934, 0938
0885	INCADR	02DA	0953, 0972, 0983
0892	INKADR	02E0	0232, 0341, 0358, 0763, 0784, 0813, 0876, 0901, 0916, 0932, 0954, 0977
0897	FININC	02E5	0774, 0790, 0883, 0914, 0941, 0981
0901	SKIPF	02E7	0449, 0487, 0812, 0890, 0915, 0929, 0970
0918	SKIPF2	02F8	0382, 0388, 0420, 0889, 0898
0921	FNDRFR	02F8	0894
0925	NOTFND	0300	0736, 0930
0932	BKSPF	0306	0911
0945	FDDBFR	0313	0906, 0908
0949	NTFOND	0317	0922
0954	SKIPR	031B	0737, 0952
0968	VFILMK	032A	0936, 0940
0971	ADVREC	032D	0947
0984	FINSH	033A	0735
0988	ENDRVR	033C	0956, 0960
			0963, 0969
			0944, 0948, 0967, 0970, 0980

EXTERNALS

DEF.LINE	NAME	VALUE	REFERENCED AT LINE NUMBER
0070	ALTDEV	01F1	0648
0071	LOG	01EC	0643
0072	MAS300	017D	0519

*** ALPHABETICAL SORT OF SYMBOLS ***

ACM	00775	ADISP	0076	ADVREC	0971	AFNR	0074	ALTDEV	0070	AMONI	0077	BKSPF	0982	BSF	0737	SSPR	0077
PRQ	00792	BSK3	0780	BUFADR	0010	BUFR	0834	BUFR1	0870	CALADD	0275	CHECK	0202	OKHDR	0218	CLRBSF	0077
ST2	0864	CMPL	1614	COMP	0505	CYCLE	0499	CYCLE1	0503	CYCLE2	0508	CYCLE3	0512	DECADR	0834	DEFGR	0077
DOOTH	00740	ECCOR	00158	EDLST1	0160	EDLST2	0167	EDSKLU	0161	EDSLSC	0168	EDSMS	0122	EDSTR1	0104	EDSTR2	0077
FLR	00410	ELSTWD	00159	ELU	0155	ENDRVR	0098	ENEXT	0168	ENOD	0058	FOFCLR	0053	EDSTR	0100	EREXIT	0077
FLAG	00311	ERROR	00630	ESTAT1	0157	ESTAT2	0161	EXIT	0197	DEEFR	0094	FILENK	0051	FINDEC	0851	FINING	0077
FINISH	00797	FINSH	0098	FLMARK	0862	FMFND	0310	FMFOND	0438	FNDEFR	0921	GETREQ	0717	GO	0647	GOOYL	0077
HDRFR	00833	HDRFRR	00910	HDRTST	0536	HERCAL	0514	I	0000	IMTSIM	0065	INCADR	0888	INCFLG	0522	INKADR	0077
IOERR	00622	LEGAL	00721	LOG	0071	LPMSK	0173	LU	0008	MARKEF	0800	MAS300	0079	MMADR	0511	MULTNO	0077
MULTOK	00630	NFILMK	00968	NOCHG	0705	NOFLMK	0770	NOMOTN	0273	NORING	0202	NOTFND	0925	NSHORT	0178	NTFOND	0077
NUM48	00009	NUMRQS	00402	NUMWJS	0403	NZERO	0174	OK1	0548	OK2	0533	OK3	0535	OK4	0560	OK5	0077
OKS	00000	OK7	00571	OK8	0573	OKMARK	0804	ONERIT	0176	OVERFL	0329	PST1	0029	PST2	0211	PST2A	0077
POSTS	00220	PS13A	00237	PSTL	0241	ROBIGR	0425	RD1	0427	RDGO1	0291	RDHEJR	0037	RDISK	0080	RDWRIT	0077
STAD	00410	REQ	00005	RESET	0744	REWIND	0738	REXIT	0100	REXT1	0464	RQSTOK	0226	SAVEI	0620	STBSF	0077
STST2	00426	SINGEF	00813	SINGRQ	0687	SKF	0736	SKIPF	0901	SKIPF2	0918	SKIPR	0939	START	0183	STOONS	0077
STRFEOR	00507	STRTCO	00504	TEMP	0523	TEMP1	0602	TMPLS	0101	THPMSB	0100	TPCTLR	0709	TPM1	0725	TPMCTL	0077
TPMFR	00430	TPMIBL	00728	TRLBFR	0837	TST800	0556	TST&C	0703	TSTDNS	0694	UNLOAD	0701	WDISK	0585	WERROR	0077
WEXIT	00430	WEXT1	0488	WRT1	1325	WRT12	0333	WRITE	0318	WRITOK	0305	WRITRQ	0300	WRTC	0337	WRT1	0077
WRTA	0332	WRTA1	0360	WRTB	0362	WRTB1	0350	ZERO	0175	ZROBIT	0177						0077