DOS-III SYSTEM SOFTWARE
(24307B - REV. 1419)

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BINARY TAPES	24307-16001
	24307-16002
	24307-16003
	24307-16004
	24307-16005
SOURCE TAPES	24307-18001
	24307-18002
	24307-18003
	24307-18004
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	24307-18006
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	24307-18010
	24307-18011
	24307-18012
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	24307-18020
	24307-18021
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	24307-18031
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	24307-18034
	24307-18035
	24307-18036
	24307-18037
	24307-18038
	24307-18039
	24307-18040
	24307-18041
SOURCE LISTING	24307-19001

```
0001                    ASMB,A,B,L,C
**  NO ERRORS*
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```
0001                ASMB,A,B,L,C
0003*****************************************************
0004*                                                   *
0005* THIS BOOTLOADER IS DESIGNED TO BRING IN A DOS-III *
0006*   SYSTEM DISC RESIDENT BOOTSTRAP FROM TRACK 0     *
0007*   SECTORS 1&2 OF THE DISC. THE DISC MAY BE ANY    *
0008*   OF THE MOVING HEAD DISCS(2883,2883B,7900,7901)  *
0009*   THE SUBCHANNEL FROM WHICH THE BOOTSTRAP IS TO   *
0010*   BE LOADED IS SPECIFIED IN THE SWITCH REGISTER,  *
0011*   THE BOOTLOADER LOADS THE DISC RESIDENT BOOT-    *
0012*   STRAP INTO CORE STARTING AT LOCATION 15400 &    *
0013*   BEGINS EXECUTION THERE.                         *
0014*                                                   *
0015* TO CONFIGURE THIS BOOTLOADER:                     *
0016*                                                   *
0017*       1. LOAD & CONFIGURE A PUNCH SIO DRIVER      *
0018*                                                   *
0019*       2. LOAD THE UNCONFIGURED BOOTSTRAP          *
0020*                                                   *
0021*       3. SET THE P-REGISTER TO 2                  *
0022*                                                   *
0023*       4. SET THE S-REGISTER AS FOLLOWS:           *
0024*             BIT 15 : 1                            *
0025*              BIT 5-0: I/O CHANNEL OF DISC         *
0026*                       (HIGH PRIORITY)             *
0027*                                                   *
0028*       5. PRESS RUN.                               *
0029*                                                   *
0030* TO EXECUTE THE CONFIGURED BOOTLOADER:             *
0031*                                                   *
0032*       1. SET THE P-REGISTER TO 100                *
0033*                                                   *
0034*       2. SET THE S-REGISTER AS FOLLOWS:           *
0035*             BIT 14  : 1 FOR 2883B                 *
0036*                       0 FOR 7900/7901/2883        *
0037*             BIT 5-0 : SUBCHANNEL FROM WHICH BOOT- *
0038*                         STRAP IS TO BE LOADED     *
0039*                                                   *
0040*       3. PRESS RUN                                *
0041*                                                   *
0042* HALTS AND ERRORS:                                 *
0043*                                                   *
0044*       HLT 77B : CONFIGURATION COMPLETE            *
0045*                  SET BIT 15 OF S-REGISTER         *
0046*                       =1 TO PUNCH CONFIGURED BOOT *
0047*                       =0 TO EXECUTE BOOTSTRAP     *
0048*                  PRESS RUN                        *
0049*       HLT 11B : BOOTSTRAP ERROR                   *
0050*                  A = -1  ILLEGAL SUBCHANNEL       *
0051*                  A =  0  NO SYSTEM ON SUBCHANNEL  *
0052*                  A =  X  DISC ERROR STATUS        *
0053*                  CORRECT PROBLEM, PRESS RUN       *
0054*                                                   *
0055*****************************************************
0056*
0057  00002             ORG 2B
```

```
0058  00002 024301          JMP CONFG
0059*
0060  00005                 ORG 5B
0061  00005 107700  BOOT    CLC 0,C
0062  00006 102501          LIA 1           GET SYSTEM SUBCHANNEL
0063  00007 070505          STA TSUB        SAVE TEMPORARILY
0064  00010 010265          AND B77
0065  00011 070501          STA SUBCH       SET SYST SUBCHNL
0066*
0067* SET UP FOR ISS DISC
0068*
0069  00012 010122          AND ,3          *
0070  00013 070001          STA B           * COMPUTE
0071  00014 001222          RAL,RAL         *
0072  00015 044000          ADB A           * HEAD-MASK (ISS)
0073  00016 005727          BLF,BLF         *
0074  00017 060501          LDA SUBCH
0075  00020 001121          ARS,ARS         DRIVE# = SUBCHNL DIV 4 (ISS)
0076  00021 014147          JSB SEEK        ISSUE SEEK
0077*
0078*  DETERMINE TYPE OF DISC
0079*
0080  00022 064247          LDB ISSST       SET ISS
0081  00023 074503          STB STCMD         STATUS COMMAND
0082  00024 060250          LDA ISSRD       GET ISS READ COMMAND
0083  00025 106501          LIB CC
0084  00026 006003          SZB,RSS         ANY ATTENTION BIT ON?
0085  00027 024126          JMP BOOTi
0086*
0087*  SET UP FOR IOMEC, 7900/7901 DISC
0088*
0089  00030 002400          CLA             SET FOR IOMEC/7900
0090  00031 070503          STA STCMD         STATTUS COMMAND
0091  00032 070502          STA DRV#        START CLEAR AT DRIVE 0
0092  00033 014205          JSB CLEAR       MAKE SURE STATUS IS CLEAR
0093  00034 060501          LDA SUBCH
0094  00035 000065          CLE,ERA         SET DRIVE#
0095  00036 006600          CLB,CME
0096  00037 005622          ELB,RBL
0097  00040 005727          BLF,BLF         SET HEAD-MASK
0098  00041 014147          JSB SEEK         ISSUE SEEK
0099  00042 060246          LDA IOMRD       GET IOMEC/7900 READ COMMAND
0100*
0101*  READ IN DISC RESIDENT BOOTSTRAP
0102*
0103  00043 107706  BOOTX   CLC 6,C
0104  00044 064251          LDB DMACW
0105  00045 106606          OTB 6           OUTPUT DMA CONTROL WORD
0106  00046 064252          LDB MEMAD
0107  00047 106702          CLC 2
0108  00050 106602          OTB 2           OUTPUT BUFFER ADDRESS
0109  00051 064270          LDB N256
0110  00052 102702          STC 2
0111  00053 106602          OTB 2           OUTPUT WORD COUNT TO WCR
0112  00054 030502          IOR DRV#        INCLUDE DRV# IN READ COMMAND
0113  00055 106701          CLC CC
```

```
0114  00056 102601          OTA CC          OUTPUT READ COMMAND
0115  00057 103700          STC DC,C        SET DATA CHNL FOR READ
0116  00060 103706          STC 6,C         START DMA
0117  00061 103701          STC CC,C        START READ OPERATION
0118  00062 102301          SFS CC          WAIT FOR READ
0119  00063 024062          JMP *-1           TO COMPLETE
0120  00064 102106          STF 6           TURN OFF DMA
0121  00065 014172          JSB STAT        CHECK STATUS
0122  00066 000010          SLA             ERROR?
0123  00067 024077          JMP NRDY
0124*
0125*  CHECK FOR VALID DISC RESIDENT BOOTSTRAP
0126*
0127  00070 064261          LDB ABEND       GET DISC-RES. BOOT END ADDRESS
0128  00071 144261          ADB ABEND,I     SUBTRACT DISPLACEMENT TO ASPBF
0129  00072 006004          INB               AND INCREMENT TO 1ST ENTRY
0130  00073 160001          LDA B,I         GET 1ST ENTRY OF ASPBF
0131  00074 050264          CPA .2          IS IT A 2 (LOWER CORE BP ADRS.)?
0132  00075 024110          JMP OKSYS        -YES, CONTINUE
0133*
0134  00076 002400          CLA              -NO
0135  00077 102011  NRDY    HLT 11B
0136*
0137  00100                 ORG 100B        BOOTSTRAP START ADDRESS
0138  00100 024005          JMP BOOT
0139  00105                 ORG 105B
0140  00105 000300  DFEND   DEF CHSUM
0141*
0142  00110                 ORG 110B
0143*
0144*  CONFIGURE DISC RESIDENT BOOTSTRAP
0145*
0146  00110 044266  OKSYS   ADB B17         INCREMENT TO REV. FLAG ADDRESS
0147  00111 160001          LDA B,I           IF = 0, REV B, ELSE REV A
0148  00112 064504          LDB HDMSK
0149  00113 174254          STB ABHDM,I     SET HEAD# FOR DISC-RES. BOOT
0150  00114 064502          LDB DRV#
0151  00115 174260          STB ABDRV,I     SET DRIVE# FOR DISC-RES. BOOT
0152  00116 064244          LDB CHAN
0153  00117 174255          STB ACHNL,I     SAVE DISC I/O CHNL
0154  00120 174256          STB ACCHN,I
0155  00121 006004          INB
0156  00122 002003  .3      SZA,RSS         REVISION B IF A=0
0157  00123 064501          LDB SUBCH
0158  00124 174257          STB ASYSC,I
0159*
0160  00125 124253          JMP DBOOT,I     TRANSFER TO DISC-RES. BOOTSTRAP
0161*
0162* DETERMINE MODE OF 2883 ACCESS
0163*
0164  00126 064505  BOOT1   LDB TSUB        BIT 14 SET TO INDICATE 2883B?
0165  00127 005200          RBL
0166  00130 006021          SSB,RSS
0167  00131 024043          JMP BOOTX         NO- TREAT AS 4 SUBCH/DRIVE
0168  00132 006400          CLB
0169  00133 060501          LDA SUBCH
```

```
0170  00134 000010          SLA
0171  00135 064262          LDB U10         "B" = HDMSK (EITHER OR 10)
0172  00136 001100          ARS             DRIVE# = SUBCHANNEL DIV 2
0173  00137 002002          SZA                     (MUST BE EITHER 0 OR 1)
0174  00140 050263          CPA .1
0175  00141 024144          JMP BOOT2
0176  00142 003400          CCA             INVALID DRIVE # - HLT 11B WITH
0177  00143 024077          JMP NRDY          A = -1
0178  00144 014147  BOOT2 JSB SEEK         RE-SEEK TO SUBCHANNEL (A&B SET)
0179  00145 060250          LDA ISSRD       GET ISS READ COMMAND
0180  00146 024043          JMP BOOTX
0181*
0182  00147 000000  SEEK    NOP
0183  00150 070502          STA DRV#
0184  00151 074504          STB HDMSK
0185  00152 006400          CLB
0186  00153 106600          OTB DC          OUTPUT TRK#
0187  00154 103700          STC DC,C          FOR SEEK
0188  00155 106701          CLC CC
0189  00156 030245          IOR SKCMD
0190  00157 102601          OTA CC          OUTPUT SEEK CMND
0191  00160 103701          STC CC,C          TO COMMAND CHNL
0192  00161 102300          SFS DC
0193  00162 024161          JMP *-1
0194  00163 060504          LDA HDMSK
0195  00164 002004          INA             SET FOR SECTOR 1
0196  00165 102600          OTA DC          OUTPUT HEAD/SCTR
0197  00166 103700          STC DC,C          TO DATA CHNL
0198  00167 102301          SFS CC          WAIT FOR SEEK
0199  00170 024167          JMP *-1           TO COMPLETE
0200  00171 124147          JMP SEEK,I
0201*
0202  00172 000000  STAT    NOP
0203  00173 103700          STC DC,C
0204  00174 060502          LDA DRV#
0205  00175 030503          IOR STCMD       INCLUDE STATUS CMND
0206  00176 106701          CLC CC
0207  00177 102601          OTA CC          OUTPUT STATUS CMND
0208  00200 103701          STC CC,C          TO COMMAND CHNL
0209  00201 102300          SFS DC
0210  00202 024201          JMP *-1
0211  00203 102500          LIA DC          GET STATUS
0212  00204 124172          JMP STAT,I
0213*
0214* ROUTINE TO FIX MULTI-DRIVE 7900 CONTROLLER PROBLEM
0215*
0216*       1. ISSUE A STATUS COMMAND TO EACH OF
0217*          THE FOUR POSSIBLE DRIVES TO CLEAR
0218*          THE ATTENTION BITS.
0219*       2. CHECK THE NOT READY STATUS BIT FROM
0220*          EACH DRIVE. IF THE DRIVE IS READY, ISSUE
0221*          A SEEK COMMAND TO CLEAR THE SEEK CHECK
0222*          STATUS FOLLOWED BY A STATUS COMMAND TO
0223*          CLEAR THE ATTENTION BIT
0224*
0225  00205 000000  CLEAR NOP
```

```
0226  00206 060271         LDA M4
0227  00207 070272         STA CNT
0228  00210 014172  CL1    JSB STAT        ISSUE STATUS COMMAND
0229  00211 010267         AND B104        MASK READY(BIT6),BUSY(BIT2) STAT
0230  00212 064273         LDB ADSB        COMPUTE ADDRESS OF
0231  00213 044502         ADB DRV#         DISC STATUS BUFFER
0232  00214 170001         STA B,I         SAVE READY STATUS OF DRIVE
0233  00215 001727         ALF,ALF         IS DRIVE
0234  00216 001222         RAL,RAL          READY
0235  00217 002011         SLA,RSS           (I.E., BIT 6 = 0)?
0236  00220 024241         JMP CL3         YES, CHECK BIT 2.
0237  00221 034502  CL4    ISZ DRV#        NO
0238  00222 034272         ISZ CNT
0239  00223 024210         JMP CL1         REPEAT FOR 4 DRIVES
0240*
0241  00224 003400  CL2    CCA             CHECK TO SE IF SEEK COMMAND
0242  00225 040502         ADA DRV#          SHOULD BE ISSUED TO DRIVE
0243  00226 070502         STA DRV#          STARTING AT DRIVE 3
0244  00227 002020         SSA             DONE WITH 4 DRIVES?
0245  00230 124205         JMP CLEAR,I      YES - EXIT
0246  00231 040273         ADA ADSB        WAS THIS
0247  00232 164000         LDB A,I           DRIVE
0248  00233 006002         SZB                 READY?
0249  00234 024224         JMP CL2          NO - IGNORE IT
0250  00235 060502         LDA DRV#         YES- ISSUE
0251  00236 014147         JSB SEEK         SEEK COMMAND TO DRIVE
0252  00237 014172        JSB STAT         ISSUE STATUS COMMAND
0253  00240 024224         JMP CL2         CONTINUE
0254*
0255  00241 001710  CL3    ALF,SLA         IS DRIVE BUSY?
0256  00242 024210         JMP CL1           YES - WAIT TILL NOT BUSY.
0257  00243 024221         JMP CL4           NO - CLEAR NEXT DRIVE.
0258*
0259  00244 000000  CHAN   NOP
0260  00245 030000  SKCMD  OCT 030000
0261  00246 020000  IOMRD  OCT 020000
0262  00247 010000  ISSST  OCT 010000
0263  00250 040000  ISSRD  OCT 040000
0264  00251 120000  DMACW  OCT 120000
0265  00252 115400  MEMAD  OCT 115400
0266  00253 015400  DBOOT  OCT 15400
0267  00254 015772  ABHDM  OCT 15772
0268  00255 015773  ACHNL  OCT 15773
0269  00256 015774  ACCHN  OCT 15774
0270  00257 015775  ASYSC  OCT 15775
0271  00260 015776  ABDRV  OCT 15776
0272  00261 015777  ABEND  OCT 15777
0273  00262 005000  U10    OCT 005000
0274  00263 000001  .1     OCT 1
0275  00264 000002  .2     OCT 2
0276  00265 000077  B77    OCT 77
0277  00266 000017  B17    OCT 17
0278  00267 000104  B104   OCT 104          MASK FOR BITS 6 AND 2
0279  00270 177400  N256   DEC -256
0280  00271 177774  M4     DEC -4
0281  00272 000000  CNT    NOP
```

```
0282  00273 000274  ADSB  DEF *+1        DISC STATUS BUFFER
0283  00274 000000        BSS 4          READY STATUS FOR 4 DRIVES
0284*
0285  00000          A     EQU 0B
0286  00001          B     EQU 1B
0287*
0288  00000          DC    EQU 0          DISC DATA CHANNEL
0289  00001          CC    EQU 1          DISC CMND CHANNEL
0290*
0291  00500          .     EQU 500B
0292  00501          SUBCH EQU .+1
0293  00502          DRV#  EQU .+2
0294  00503          STCMD EQU .+3
0295  00504          HDMSK EQU .+4
0296  00505          TSUB  EQU .+5
```

```
0298*
0299  00300 000000  CHSUM NOP
0300*
0301  00301 102501  CONFG LIA 1          GET DISC DATA CHANNEL
0302  00302 010265        AND B77
0303  00303 070244        STA CHAN
0304  00304 030251        IOR DMACW
0305  00305 070251        STA DMACW      CONFIGURE DMA CNTRL WORD
0306  00306 060105        LDA DFEND
0307  00307 003000        CMA
0308  00310 040410        ADA DEFBT
0309  00311 070411        STA CNTR
0310  00312 064410        LDB DEFBT
0311  00313 006004  CLOOP INB             *
0312  00314 160001        LDA B,I        *
0313  00315 002021        SSA,RSS        * CONFIGURE ALL
0314  00316 024325        JMP CNEXT      *
0315  00317 010416        AND MASK       *   DISC I/O
0316  00320 002002        SZA            *
0317  00321 024325        JMP CNEXT      *   INSTRUCTIONS
0318  00322 160001        LDA B,I        *
0319  00323 040244        ADA CHAN       *   IN BOOTSTRAP
0320  00324 170001        STA B,I        *
0321  00325 034411  CNEXT ISZ CNTR
0322  00326 024313        JMP CLOOP
0323*
0324  00327 102501        LIA 1
0325  00330 002020        SSA            PUNCH CONFIGURED BOOTSTRAP?
0326  00331 024334        JMP PUNCH       -YES
0327*
0328  00332 102077        HLT 77B
0329  00333 024005        JMP BOOT       GO EXECUTE BOOTSTRAP
0330*
```

```
0332  00334 060264  PUNCH LDA .2
0333  00335 070407        STA ABSAD     SET BOOTSTRAP START ADDRESS
0334  00336 003004        CMA,INA
0335  00337 040105        ADA DFEND
0336  00340 070412        STA TEMP      SAVE BOOTSTRAP END ADDRESS
0337  00341 001727        ALF,ALF
0338  00342 010270        AND M1774
0339  00343 070406        STA RCLNG     SET PUNCH RECORD LENGTH
0340*
0341  00344 002400        CLA
0342  00345 070002        STA 2B
0343  00346 070003        STA 3B
0344  00347 070004        STA 4B
0345  00350 060412        LDA TEMP
0346  00351 003004        CMA,INA
0347  00352 070411        STA CNTR      SET COUNTER FOR CHECKSUM
0348  00353 060407        LDA ABSAD
0349  00354 064264        LDB .2
0350  00355 140001  KLOOP ADA B,I       *
0351  00356 006004        INB           * GENERATE
0352  00357 034411        ISZ CNTR      *   CHECKSUM
0353  00360 024355        JMP KLOOP     *   FOR BBL
0354  00361 070300        STA CHSUM     *
0355*
0356  00362 060413  PMORE LDA N50
0357  00363 064417        LDB AFDFR
0358  00364 114103        JSB HSPDR,I   PUNCH LEADER
0359*
0360  00365 060414        LDA N2
0361  00366 064405        LDB SHREC
0362  00367 114103        JSB HSPDR,I   PUNCH RECORD LENGTH, ABS ADDRS
0363*
0364  00370 060412        LDA TEMP
0365  00371 003004        CMA,INA
0366  00372 002004        INA
0367  00373 064415        LDB .4
0368  00374 114103        JSB HSPDR,I   PUNCH BOOTSTRAP
0369*
0370  00375 060413        LDA N50
0371  00376 064417        LDB AFDFR
0372  00377 114103        JSB HSPDR,I   PUNCH TRAILER
0373*
0374  00400 102077        HLT 77B
0375  00401 102501        LIA 1
0376  00402 002020        SSA           PUNCH AGAIN?
0377  00403 024362        JMP PMORE
0378  00404 024005        JMP BOOT       -NO, GO EXECUTE BOOTSTRAP
0379*
0380  00405 000406  SHREC DEF *+1
0381  00406 000000  RCLNG NOP
0382  00407 000000  ABSAD NOP
0383  00103         HSPDR EQU 103B
0384  00410 000006  DEFBT DEF BOOT+1
0385  00411 000000  CNTR  NOP
0386  00412 000000  TEMP  NOP
0387  00413 177716  N50   DEC -50
```

```
0388  00414 177776  N2     DEC -2
0389  00415 000004  .4     OCT 4
0390  00416 070036  MASK   OCT 070036
0391  00270         M1774  EQU N256
0392*
0393  00417 000420  AFDFR  DEF *+1
0397                       LST
0398*
0399                       END
** NO ERRORS*
```

**ORG	*****	00057	00060	00137	00139	00142	
.	00291	00292	00293	00294	00295	00296	
.1	00274	00174					
.2	00275	00131	00332	00349			
.3	00156	00069					
.4	00389	00367					
A	00285	00072	00247				
ABDRV	00271	00151					
ABEND	00272	00127	00128				
ABHDM	00267	00149					
ABSAD	00382	00333	00348				
ACCHN	00269	00154					
ACHNL	00268	00153					
ADSB	00282	00230	00246				
AFDFR	00393	00357	00371				
ASYSC	00270	00158					
B	00286 00320	00070 00350	00130	00147	00232	00312	00318
B104	00278	00229					
B17	00277	00146					
B77	00276	00064	00302				
BOOT	00061	00138	00329	00378	00384		
BOOT1	00164	00085					
BOOT2	00178	00175					
BOOTX	00103	00167	00180				
CC	00289 00190	00083 00191	00113 00198	00114 00206	00117 00207	00118 00208	00188
CHAN	00259	00152	00303	00319			
CHSUM	00299	00140	00354				

CL1	00228	00239	00256				
CL2	00241	00249	00253				
CL3	00255	00236					
CL4	00237	00257					
CLEAR	00225	00092	00245				
CLOOP	00311	00322					
CNEXT	00321	00314	00317				
CNT	00281	00227	00238				
CNTR	00385	00309	00321	00347	00352		
CONFG	00301	00058					
DBOOT	00266	00160					
DC	00288	00115	00186	00187	00192	00196	00197
	00203	00209	00211				
DEFBT	00384	00308	00310				
DFEND	00140	00306	00335				
DMACW	00264	00104	00304	00305			
DRV#	00293	00091	00112	00150	00183	00204	00231
	00237	00242	00243	00250			
HDMSK	00295	00148	00184	00194			
HSPDR	00383	00358	00362	00368	00372		
IOMRD	00261	00099					
ISSRD	00263	00082	00179				
ISSST	00262	00080					
KLOOP	00350	00353					
M1774	00391	00338					
M4	00280	00226					
MASK	00390	00315					
MEMAD	00265	00106					
N2	00388	00360					

N256	00279	00109	00391			
N50	00387	00356	00370			
NRDY	00135	00123	00177			
OKSYS	00146	00132				
PMORE	00356	00377				
PUNCH	00332	00326				
RCLNG	00381	00339				
SEEK	00182	00076	00098	00178	00200	00251
SHREC	00380	00361				
SKCMD	00260	00189				
STAT	00202	00121	00212	00228	00252	
STCMD	00294	00081	00090	00205		
SUBCH	00292	00065	00074	00093	00157	00169
TEMP	00386	00336	00345	00364		
TSUB	00296	00063	00164			
U10	00273	00171				

```
0001                    ASMB,A,B,C,L,N      DOS-III SYSTEM GENERATOR (DSGEN)
** NO ERRORS*
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```
0001                    ASMB,A,B,C,L,N      DOS-III SYSTEM GENERATOR (DSGEN)
0002  00100                   ORG 100B
0003*
```

```
0005**********************************************************
0006**********************************************************
0007******************* - HIGH CORE - ********************
0008*                                                        *
0009*              SIO DRIVERS (TTY, PT, HSP)                *
0010*                                                        *
0011**********************************************************
0012*                        - IDENTS -                      *
0013*                        ----------                      *
0014*                                                        *
0015*                                                        *
0016*                                                        *
0017*                         -------                        *
0018*                         - LST -                        *
0019**********************************************************
0020*                                                        *
0021*                                                        *
0022*            LOAD, LINKAGE SUBROUTINES                   *
0023*                                                        *
0024*                     DISK DRIVERS                       *
0025*                                                        *
0026*                                                        *
0027******************** - 10000 - ************************
0028*                                                        *
0029*                                                        *
0030*            PROGRAM LOADING CONTROL                     *
0031*                                                        *
0032*                                                        *
0033******************** - 6000 - ************************
0034*                                                        *
0035*                                                        *
0036*                I/O TABLE GENERATION                    *
0037*                                                        *
0038*                   PARAMETER INPUT                      *
0039*                                                        *
0040*                                                        *
0041******************** - 4000 - ************************
0042*                                                        *
0043*                                                        *
0044*           RELOCATABLE PROGRAM INPUT                    *
0045*                                                        *
0046*                 INITIALIZATION                         *
0047*                                                        *
0048*                                                        *
0049******************** - 2000 - ************************
0050*                                                        *
0051*                                                        *
0052*                     DATA AREAS                         *
0053*                                                        *
0054*                                                        *
0055**********************************************************
```

```
0057*
0058*
0059*  IDENT FORMAT
0060*
0061*  WORD 1: ID1 - NAME 1,2
0062*  WORD 2: ID2 - NAME 3,4
0063*  WORD 3: ID3 - NAME 5, USAGE FLAG
0064*  WORD 4: ID4 - COMMON LENGTH
0065*  WORD 5: ID5 - CURRENT DISK ADDRESS
0066*  WORD 6 (15): ID6 - M/S
0067*  WORD 6 (14): ID6 - LINKING MODE: CURRENT/BASE - 0/1
0068*  WORD 6 (00-06): ID6 - TYPE
0069*  WORD  7: ID10 - DISK LENGTH, BG MAIN ADDRESS (BS ONLY)
0070*
0071*
0072*  LST FORMAT
0073*
0074*  WORD 1: LST1 - NAME 1,2
0075*  WORD 2: LST2 - NAME 3,4
0076*  WORD 3: LST3 - NAME 5, ORDINAL
0077*  WORD 4: LST4 - IDENT ADDRESS
0078*  WORD 5: LST5 - BP LINK ADDRESS
0079*
0080*
0081*  PROGRAM TYPES
0082*
0083*  0: SYSTEM RESIDENT
0084*  1: EXEC SUPERVISOR MODULES
0085*  2: RESERVED FOR FUTURE
0086*  3: USER MAIN
0087*  4: I/O DRIVER MODULES
0088*  5: USER SEGMENT
0089*  6: RELOCATABLE LIBRARY
0090* 10: RELOCATABLE BINARY
0091* 11: ASCII SOURCE STATEMENTS
0092* 12: BINARY DATA
0093* 13: ASCII DATA
0094* 14: ABSOLUTE BINARY
```

```
0096*
0097*  ERROR CODES
0098*
0099*  1: INVALID TTY REPLY TO INITIALIZATION PARAMETERS
0100*  2: CHECKSUM ERROR
0101*  3: RECORD OUT OF SEQUENCE
0102*  4: INVALID RECORD TYPE
0103*  5: DUPLICATE ENTRY POINTS
0104*  6: INVALID BP CODE IN PROGRAM
0105*  7: LST/IDENT OVERFLOW
0106*  8: DUPLICATE PROGRAM NAMES
0107*  9: PARAMETER NAME ERROR
0108*  10: PARAMETER TYPE ERROR
0109*  13: USER SEGMENT PRECEDES USER MAIN
0110*  15: PROGRAM LIST OVERFLOW (MORE THAN 64 SUB-PROGRAMS)
0111*  16: BP LINKAGE AREA OVERFLOW
0112*  17: DISK OVERFLOW (NEXT DISK ADDR EXCEEDS LAST AVAIL DISK ADDR)
0113*  18: MEMORY OVERFLOW
0114*  19: DBL RECORD ORDER/ PROGRAM OVERLAY
0115*  20: DBL LIST OVERFLOW (MORE THAN 675 DBL RECORDS)
0116*  21: '$CIC' NOT FOUND IN LOADER SYMBOL TABLE
0117*  22: DISK READ PARITY/DECODE ERROR
0118*  23: EQT ENTRY NOT ENTERED FOR DISC RESIDENT I/O DRIVER MODULE
0119*  24: INVALID CHANNEL NO. IN EQT RECORD
0120*  25: INVALID DRIVER NAME IN EQT RECORD
0121*  26: INVALID D,R,U OPERANDS IN EQT RECORD
0122*  27: INVALID DEVICE REFERENCE NO.
0123*  28: INVALID INTERRUPT REC CHANNEL NO.
0124*  29: INVALID INTERRUPT REC CHANNEL NO. ORDER
0125*  30: INVALID INTERRUPT ENTRY MNEMONIC
0126*  31: INVALID EQT NO. IN INT RECORD
0127*  33: INVALID ENTRY POINT
0128*  34: INVALID ABSOLUTE VALUE
0129*  35: BP INTERRUPT LOCATION OVERFLOW
0130*  36: INVALID TERMINATING OPERAND IN INT RECORD
```

```
0132*
0133                                SUP
0134  00000                 A       EQU 0
0135  00001                 B       EQU 1
0136  00100 124112                  JMP TRANS,I     BEGIN
0137  00101 000000  DRPTR  BSS 1                   PT READER DRIVER ADDRESS
0138  00102 000000  DRKEY  BSS 1                   KEYBOARD OUPUT DRIVER ADDRESS
0139  00103 000000  DRHSP  BSS 1                   HS PUNCH DRIVER ADDRESS
0140  00104 000000  DRTTY  BSS 1                   TELETYPE INPUT DRIVER ADDRESS
0141  00105 016000  FWAM   DEF END+1
0142  00106 000000  LWAM   BSS 1                   END AVAIL. MEM - SET BY DRIVERS
0143  00107 000000  DRMAG  NOP
0144  00110 000000  LWSBP  NOP
0145*
0146  00111 007777  ANDBL  OCT 7777
0147  00112 002000  TRANS  DEF RTGEN              TRANSFER ADDR TO RTGEN
0148  00113 002325  AINPT  DEF INPUT              ADDRESS OF PROGRAM INPUT CODE
0149  00114 004137  IPARM  DEF IPARS              ADDR OF PARAMETER INITIALIZATION
0150  00115 004000  APARS  DEF PARAM              ADDRESS OF PARAMETER INPUT CODE
0151  00116 004153  AGNIO  DEF GENIO              ADDR OF I/O GENERATOR CODE
0152  00117 004757  AGETA  DEF GETAL              ADDR OF GETAL SUB.
0153  00120 005004  AGETN  DEF GETNA              ADDRESS OF GETNA SUB.
0154  00121 005043  AGETO  DEF GETOC              ADDRESS OF GETOC SUB.
0155  00122 005121  AGINI  DEF GINIT              ADDR OF GINIT SUB.
0156  00123 003310  AREPL  DEF REPLY
0157  00124 003336  AINER  DEF INERR
0158  00125 002136  AGTSC  DEF GETSC
0159  00126 006000  AFWAP  DEF FWENT              ADDR OF FWA BP LINKAGE CODE
0160  00127 000550  ADOUT  DEF DISKO              DISK OUTPUT DRIVER ADDRESS
0161  00130 010105  ALOAD  DEF LOAD               ADDRESS OF MAIN LOAD BEGIN
0162  00131 010117  ALODS  DEF LOADS              ADDRESS OF SUB-LOAD BEGIN
0163  00132 007663  ABPOT  DEF BPOUT              ADDR OF BP OUTPUT CODE
0164  00133 010030  ACLRT  DEF CLRLT              ADDR OF LOCAL LST CLEARING CODE
0165  00134 010000  AIDSN  DEF IDSCN              ADDR OF SCAN IDENT CODE
0166  00135 011351  ALABD  DEF LABDO              ADDR OF ABSOLUTE OUTPUT SECTION
0167  00136 011430  AREMD  DEF REMDO              ADDRESS OF REMAINING OUTPUT DRIV
0168  00137 011207  AGEND  DEF GENID              ADDR OF ID SEGMENT GENERATOR
0169  00140 011317  AOUTD  DEF OUTID              ADDR OF ID SEG OUTPUT CONTROL
0170  00141 010021  ANOTS  DEF NOTST              ADDR OF PROGRAMS-LOADED TEST
0171  00142 005146  AALOC  DEF ALLOC
0172  00143 007642  ASCBP  DEF SCNBP
0173  00144 011157  ASCOT  DEF SCOUT
0174  00145 015400  ABOOT  DEF START              ADDRESS OF BOOTSTRAP LOADER
0175  00146 015600         DEF START+128
0176  00147 015727  ASBUF  DEF ASPBF              ADDRESS OF 9-WORD BUFFER IN BOOT
0177  00150 006010  TEMBF  DEF SLINK
0178  00151 006202  TEMBX  DEF SLINK+122
0179  00152 005127  ARESC  DEF RESCN              ASCII TO DEC CONV (0<(A)<15)
0180  00153 005333  AMS17  DEF MES17
0181  00154 012000  AMS32  DEF MES32
0182  00155 005337  AMS36  DEF MES36
0183  00156 001203  MES12  DEF MS12
0184  00157 001206  MES15  DEF MS15
0185  00160 001222  MES19  DEF MS19
0186  00161 001234  MES20  DEF MS20
0187  00162 016207  AIDSK  DEF INDSK
```

```
0188   00163 002152   ACHJM DEF CHJMP
0189   00164 000740   AXIN  DEF XINST
0190   00165 016000   AOUT3 DEF OUT3
0191   00166 011455   APTCT DEF ISSPR
0192   00167 017437   APBC  DEF PBCHN
0193   00170 017440   APBD  DEF PBDMA
0194   00171 016110   ASTSC DEF SETSC
0195   00172 015563   ACNFG DEF CNFGR
0196   00173 015725   ADVAD DEF DVADR
0197   00174 015750   ADCHN DEF CHANL
0198   00175 015773   ACHNL DEF DCHAN      ADDR OF DISC IN BOOT
0199   00176 000207   DFN64 DEF N64
0200   00177 001350   DEF,  DEF ,
0201   00200 015744   A#SCT DEF #SPTK
0202   00201 015745   A#SPC DEF #SPCY
0203   00202 015746   A#STN DEF #SPTN
0204   00203 015776   ABDRV DEF BDRV#
0205   00204 015772   ABHDM DEF BHMSK
0206   00205 017401   ALCD  DEF LCODE
0207   00206 012456   EXDEF DEF EXTAB      EXEC MODULE BUFFER ADDRESS
0208*
```

```
0210*                                          BASE PAGE CONSTANTS
0211   00207 177700  N64    DEC -64
0212   00210 177766  N10    DEC -10
0213   00211 177767  N9     DEC -9
0214   00212 177770  N8     DEC -8
0215   00213 177771  N7     DEC -7
0216   00214 177772  N6     DEC -6
0217   00215 177773  N5     DEC -5
0218   00216 177774  N4     DEC -4
0219   00217 177775  N3     DEC -3
0220   00220 177776  N2     DEC -2
0221   00221 177777  N1     DEC -1
0222   00222 000000  ZERO   OCT 0
0223   00223 000001  P1     DEC 1
0224   00224 000002  P2     DEC 2
0225   00225 000003  P3     DEC 3
0226   00226 000004  P4     DEC 4
0227   00227 000005  P5     DEC 5
0228   00230 000006  P6     DEC 6
0229   00231 000007  P7     DEC 7
0230   00232 000010  P8     DEC 8
0231   00233 000011  P9     DEC 9
0232   00234 000012  P10    DEC 10
0233   00235 000021  P17    DEC 17
0234   00236 000100  P64    DEC 64
0235   00237 000017  M17    OCT 17
0236   00240 000037  M37    OCT 37
0237   00241 000077  M77    OCT 77
0238   00242 000177  M177   OCT 177
0239   00243 000377  M377   OCT 377
0240   00244 177400  M7400  OCT 177400
0241   00245 003777  M3777  OCT 3777
0242   00246 177700  M7700  OCT 177700
0243*                                          PROGRAM CONSTANT FACTORS
0244   00247 177400  N256   DEC -256
0245   00250 177465  N203   DEC -203
0246   00251 177467  N201   DEC -201
0247   00252 177577  N129   DEC -129
0248   00253 177600  N128   DEC -128
0249   00254 177734  N36    DEC -36
0250   00255 177740  N32    DEC -32
0251   00256 177741  N31    DEC -31
0252   00257 177763  N13    DEC -13
0253   00260 177764  N12    DEC -12
0254   00261 000013  P11    DEC 11
0255   00262 000015  P13    DEC 13
0256   00263 000016  P14    DEC 14
0257   00264 000020  P16    DEC 16
0258   00265 000022  P18    DEC 18
0259   00266 000024  P20    DEC 20
0260   00267 000026  P22    DEC 22
0261   00270 000027  P23    DEC 23
0262   00271 000030  P24    DEC 24
0263   00272 000044  P36    DEC 36
0264   00273 000051  P41    DEC 41
0265   00242         P127   EQU M177
```

```
0266   00274 000200   P128   DEC 128
0267   00275 000312   P202   DEC 202
0268   00214          L6     EQU N6
0269   00212          L10    EQU N8
0270   00210          L12    EQU N10
0271   00276 177720   L60    OCT -60
0272   00277 176000   L2000  OCT -2000
0273   00300 177600   .N128  DEC -128
0274   00231          M7     EQU P7
0275   00301 000060   M60    OCT 60
0276   00302 000400   M400   OCT 400
0277   00303 076000   M0760  OCT 076000
0278   00304 100377   M1377  OCT 100377
0279   00305 174000   M1740  OCT 174000
0280   00306 002000   M2000  OCT 2000
0281   00307 002002   M2002  OCT 2002
0282   00310 002003   M2003  OCT 2003
0283   00311 002006   M2006  OCT 2006
0284   00312 002040   M2040  OCT 2040
0285   00313 002100   M2100  OCT 2100
0286   00314 177000   M7000  OCT 177000
0287   00315 177600   M7600  OCT 177600
0288   00316 001777   M1777  OCT 1777
0289   00317 077777   M7777  OCT 77777
0290   00320 000321   DPWRS  DEF *+1
0291   00321 023420          DEC 10000
0292   00322 001750          DEC 1000
0293   00323 000144          DEC 100
0294   00324 000012          DEC 10
0295   00325 000001          DEC 1
0296   00326 000327   OPWRS  DEF *+1
0297   00327 010000          OCT 10000
0298   00330 001000   B1000  OCT 1000
0299   00331 000100   M100   OCT 100
0300   00332 000010          OCT 10
0301   00333 000001          OCT 1
0302*
0303   00334 006000   DBADR  OCT 6000
0304   00335 000040   BLANK  OCT 040        BLANK
0305   00336 020000   UBLNK  OCT 20000      UPPER CHAR BLANK
0306   00337 025000   UPAST  OCT 25000
0307   00340 100000   MSIGN  OCT 100000     NEGATIVE SIGN
0308   00341 030000   SEEKX  OCT 030000
0309   00342 060000   CHCMD  OCT 060000
0310   00343 110000   INWRT  OCT 110000
0311   00344 111000   IPWRT  OCT 111000
0312   00345 110000   DWRT   OCT 110000
0313   00346 020000   DREAD  OCT 020000
0314   00347 020000   RACMD  OCT 020000     READ / READ ADDRESS COMMAND
0315   00350 000000   STATC  NOP
0316   00351 144000   TR200  OCT 144000
0317   00352 144400   TR201  OCT 144400
0318   00353 145000   TR202  OCT 145000
0319   00354 000314   LSTAC  DEC 204
0320   00355 022105   ASCEX  ASC 1,SE
0321   00356 054063   ASCX3  ASC 1,X3
```

```
0322  00357 054064  ASCX4 ASC 1,X4
0323  00360 000000  DOTA  NOP
0324  00361 000000  DSTAT NOP          CURRENT DISC STATUS
0325  00362 000000  LODSK NOP
0326  00363 000000  DEOF  NOP
0327  00364 000000  INHDM NOP
0328  00365 000000  INDRV NOP
0329  00366 000000  SVHDM NOP
0330  00367 000000  SVDRV NOP
0331  00370 000000  DSKAB NOP          ABSOLUTE OUTPUT DISC ADDR: T/S
0332  00371 000000  DSKSC NOP          SCRARCH OUTPUT DISC ADDR: T/S
0333  00372 000000  NLINK NOP          NUMBER OF USER LINKS
0334  00373 000040  NCONS DEC 32        # COMMONLY USED CONSTANTS
0335  00374 000237  NSYSC DEC 159       # SYSTEM VARIABLES
0336  00375 000000  UPLNK NOP          UPPER LIMIT OF LINKAGE AREA
0337  00376 000000  XPREL NOP
0338  00377 000000  MAXPX NOP          MAX EX MODULE PROG LENGTH
0339  00400 000000  IDFLG NOP           ID SEGMENT;/SECTOR COUNTER
0340  00401 000000  INFLG NOP           TEMBF CODE IN/OUT FLAG
0341  00402 000000  EQCNT NOP           EQUIPMENT TABLE COUNTER
0342  00403 000000  SSSAV NOP           SYSTEM SEARCH OF USER FILES
0343  00404 000000  BPAGE NOP
0344*
0345  00405 000000  ASST  BSS 1         ADDRESS OF SUBSYSTEM TABLE
0346*
0347  00406 000000  AEQT  BSS 1         ADDRESS OF EQUIPMENT TABLE
0348  00407 000000  CEQT  BSS 1         NO. ENTRIES IN EQUIPMENT TABLE
0349*
0350  00410 000000  ASQT  BSS 1         ADDR OF DEVICE REFERENCE TABLE
0351  00411 000000  CSQT  BSS 1         NO. ENTRIES IN DEV. REF. TABLE
0352*
0353  00412 000000  AINT  BSS 1         ADDRESS OF INTERRUPT TABLE
0354  00413 000000  CINT  BSS 1         NO. ENTRIES IN INTERRUPT TABLE
0355*
0356  00414 000000  MCNT  BSS 3
0357*
0358  00417 000000  SAVMT BSS 1         ADDRESS OF MAG TAPE DRIVER
0359  00420 000000  PGMAD BSS 1         PROG INPUT DRIVER ADDRESS
0360  00421 000000  LIBAD BSS 1         LIBR INPUT DRIVER ADDRESS
0361  00422 000000  PINAD BSS 1         INPUT DRIVER ADDRESS
0362  00423 000000  NXCNT BSS 1         UNDEFINED SYMBOL COUNT
0363  00424 000000  TADBL BSS 1         CURRENT DBLST ADDRESS
0364  00425 000000  PADBL BSS 1         ADDRESS OF END OF DBLST
0365  00426 000000  ETFLG BSS 1         END TAPE FLAG = -1/0 = IGN/MAX
0366  00427 000000  CNFLG BSS 1         LB, UT END FLAG
0367  00430 000000  RIC   BSS 1         RECORD ID CODE
0368  00431 000000  SYM12 BSS 1         CHAR 1,2 ADDR
0369  00432 000000  SYM34 BSS 1         CHAR 3,4 ADDR
0370  00433 000000  SYM5  BSS 1         CHAR 5 ADDR
0371  00434 000000  SIDNT BSS 1          SAVE END OF IDENT TABLE
0372  00435 000000  SLST   BSS 1        SAVE END OF LST TABLE
0373  00436 000000  ER16F BSS 1
0374  00437 000000  ER18F BSS 1         ERROR 18 FLAG
0375  00440 027505  PTERM ASC 1,/E
0376  00441 000054  COMMA OCT 54
0377  00442 040000  BIT14 OCT 40000
```

```
0378*
0379* THE FOLLOWING LOCATIONS ARE THE PARAMETERS
0380*   NECESSARY TO CHARACTERIZE THE TYPE OF DISC
0381*   USED IN THE CURRENT GENERATION
0382*
0383  00443 000000  DTYPE NOP           DISC TYPE (7900=0,2883=1,2870=2)
0384  00444 000000  NSPTK NOP           # SECTORS/TRACK
0385  00445 000000  NSBPD NOP           # SUBCHANNELS/DRIVE
0386  00446 000000  NHDPS NOP           # HEADS/SUBCHANNEL
0387  00447 000000  NSPCY NOP           # SECTORS/CYLINDER
0388  00450 000000  MSPTK NOP           NEGATIVE # SECTORS/TRACK
```

```
0390*
0391*                                       CLEAR BUFFER WITH OCTAL ZEROES
0392*
0393*  THE BUFCL SUBROUTINE CLEARS A 128-WORD BUFFER WITH ZEROS.
0394*
0395*  CALLING SEQUENCE:
0396*    A = IGNORED
0397*    B = ADDRESS OF BUFFER
0398*    JSB BUFCL
0399*
0400*  RETURN: CONTENTS OF A AND B ARE DESTROYED.
0401*
0402  00451 000000  BUFCL NOP
0403  00452 060253        LDA N128
0404  00453 071075        STA WDCNT     SET BUFFER LENGTH = 128
0405  00454 002400        CLA
0406  00455 170001        STA B,I       CLEAR BUFFER WORD
0407  00456 006004        INB
0408  00457 035075        ISZ WDCNT     ALL WORDS CLEAR?
0409  00460 024455        JMP *-3       NO - CONTINUE CLEARING
0410  00461 124451        JMP BUFCL,I   RETURN
0411*
0412*                                       NEW LINE (CR,LF) ON TTY
0413*
0414*  THE SPACE SUBROUTINE IS USED TO SPACE UP THE TELEPRINTER.
0415*
0416*  CALLING SEQUENCE:
0417*    A = IGNORED
0418*    B = IGNORED
0419*    JSB SPACE
0420*
0421*  RETURN: CONTENTS OF A AND B ARE DESTROYED.
0422*
0423  00462 000000  SPACE NOP
0424  00463 002400        CLA           SET CHARACTER COUNT = ZERO
0425  00464 114102        JSB DRKEY,I   OUTPUT CR, LF ON TTY
0426  00465 124462        JMP SPACE,I   RETURN
0427*
0428*                                       PRINT: ERR XX
0429*
0430*  THE ERROR SUBROUTINE IS USED TO PRINT THE DIAGNOSTICS
0431*  FOR ALL ERROR MESSAGES.
0432*
0433*  CALLING SEQUENCE:
0434*    A = 2-DIGIT ASCII ERROR CODE
0435*    B = IGNORED
0436*    JSB ERROR
0437*
0438*  RETURN: CONTENTS OF A AND B ARE DESTROYED.
0439*
0440  00466 000000  ERROR NOP           PRINT ERROR MESSAGES
0441  00467 070503        STA AMERR+3   SET ERROR CODE INTO MESSAGE
0442  00470 060230        LDA P6
0443  00471 064500        LDB AMERR     AMERR = MESSAGE ADDRESS
0444  00472 114102        JSB DRKEY,I   PRINT ERROR MESSAGE
0445  00473 124466        JMP ERROR,I   RETURN
```

```
0446*
0447*                                          IRRECOVERABLE ERROR EXIT
0448*
0449  00474 000000  IRERR NOP
0450  00475 014466        JSB ERROR          PRINT ERROR MESSAGE
0451  00476 102000  HLT0  HLT 0B             WAIT = PROGRAM CAN NOT CONTINUE
0452  00477 024476        JMP *-1            IRRECOVERABLE ERROR
0453*
0454  00500 000501  AMERR DEF *+1
0455  00501 042522        ASC 3,ERR          ERROR MESSAGE = ERR + CODE
0456*
0457  00504 060507  LIBER LDA ERR14
0458  00505 014474        JSB IRERR
0459*
0460  00506 000000  LOLIB NOP               LOW LIBRARY DISC ADDRESS
0461  00507 030464  ERR14 ASC 1,14          ABSOL, CODE OVERRUN IN LIBRY
0462*
0463  00510 030067  ERR07 ASC 1,07          IDENT/LST OVERFLOW
0464*                                        RELOCATATION BASE TABLE
0465  00511 000000  CHKSM NOP
0466  00512 060256        LDA N31
0467  00513 070522        STA LBCNT
0468  00514 003400        CCA
0469  00515 120001        XOR B,I
0470  00516 006004        INB
0471  00517 034522        ISZ LBCNT
0472  00520 024515        JMP *-3
0473  00521 124511        JMP CHKSM,I
0474*
0475  00522 000000  LBCNT NOP
0476*
```

```
0478*
0479*                                        INCREMENT DISK ADDRESS
0480*
0481*  THE DISKA SUBROUTINE INCREMENTS THE CURRENT DISK ADDRESS
0482*  TO PROVIDE THE ADDRESS OF THE SUCCEEDING SECTOR,
0483*  WHETHER THAT SECTOR IS ON THE SAME TRACK OR THE FOLLOWING
0484*  TRACK.  IN ADDITION, THE DISKA SUBROUTINE CHECKS THAT
0485*  THE NEXT DISK ADDRESS IS VALID.
0486*
0487*  CALLING SEQUENCE:
0488*    A = CURRENT DISK ADDRESS
0489*    B = IGNORED
0490*    JSB DISKA
0491*
0492*  RETURN:
0493*    A = NEXT DISK ADDRESS
0494*    B = DESTROYED
0495*
0496  00523 000000  DISKA NOP
0497  00524 002004        INA
0498  00525 070001        STA B
0499  00526 010243        AND M377
0500  00527 050447        CPA NSPCY
0501  00530 024533        JMP  *+3
0502  00531 060001        LDA  B
0503  00532 124523        JMP DISKA,I
0504  00533 020001        XOR B
0505  00534 040302        ADA M400
0506  00535 070001        STA B
0507  00536 005727        BLF,BLF
0508  00537 055110        CPB DSIZE
0509  00540 024542        JMP DKERR
0510  00541 124523        JMP DISKA,I
0511  00542 061251  DKERR LDA ERR17     SET CODE FOR INSUFFICIENT DISK
0512  00543 014474        JSB IRERR     IRRECOVERABLE ERROR EXIT
0513*
0514*                                        DISK INPUT DRIVER
0515*
0516*  THE DISKI SUBROUTINE CONTROLS THE INPUT FROM THE DISK,
0517*  IT ADDS THE DIRECTION BIT TO THE CORE ADDRESS, AND
0518*  CONTAINS THE ERROR RECOVERY PROCEDURE IF READ PARITY
0519*  OR DECODE ERRORS ARE DETECTED ON READ.  FOLLOWING DETECTION
0520*  OF SUCH AN ERROR, 9 ADDITIONAL ATTEMPTS TO READ THE
0521*  SPECIFIED SECTOR WILL BE MADE.  IF THESE FAIL, THE DISK ADDRESS
0522*  AND THE CORE ADDRESS ARE DISPLAYED IN THE A AND B REGISTERS
0523*  AND THE COMPUTER HALTS.  BY PRESSING RUN, 10 ADDITIONAL
0524*  ATTEMPTS TO READ THE SECTOR WILL BE MADE.
0525*
0526*  CALLING SEQUENCE:
0527*    A = DISK ADDRESS
0528*    B = CORE ADDRESS
0529*    JSB DISKI
0530*
0531*  RETURN: CONTENTS OF A AND B ARE DESTROYED.
0532*
0533  00544 000000  DISKI NOP
```

```
0534  00545 044340          ADB MSIGN      SET SIGN = 1
0535  00546 014600          JSB DIO        READ FROM DISC
0536  00547 124544          JMP DISKI,I
0537*
0538*                                       DISK OUTPUT DRIVER
0539*
0540*  THE DISKO SUBROUTINE CONTROLS ALL OUTPUT TO THE
0541*  DISK.  IT ADDS THE DIRECTION BIT TO THE CORE ADDRESS, AND CONTAIN
0542*  THE ERROR RECOVERY PROCEDURE IF DISK ERRORS ARE DETECTED.
0543*  FOLLOWING EXECUTION OF THE DISK WRITE, THE SECTOR IS
0544*  IMMEDIATELY READ BACK TO TEST FOR ERRORS.  IF ERRORS ARE DETECTED
0545*  THIS PROCEDURE IS REPEATED (SEE RECOVERY FOR DISKI).
0546*
0547*  CALLING SEQUENCE:
0548*    A = DISK ADDRESS
0549*    B = CORE ADDRESS
0550*    JSB DISKO
0551*
0552*  RETURN: CONTENTS OF A AND B ARE DESTROYED.
0553*
0554  00550 000000  DISKO NOP
0555  00551 014600        JSB DIO        WRITE ON DISC
0556*
0557  00552 102502  CHECK LIA 2
0558  00553 002002        SZA
0559  00554 024754        JMP TRNON
0560  00555 061161        LDA DCMND
0561  00556 014643        JSB SEEK
0562*
0563  00557 060253        LDA N128       * CONVERT NEGATIVE
0564  00560 003004        CMA,INA        *   WORD COUNT
0565  00561 040242        ADA M177       *
0566  00562 010315        AND M7600      *
0567  00563 001727        ALF,ALF        *     TO
0568  00564 001200        RAL            *   POSITIVE SECTOR COUNT
0569  00565 102600  DSC1  OTA 0          OUTPUT SECTOR COUNT
0570  00566 103700  DSC2  STC 0,C         TO DATA CHANNEL
0571  00567 060342        LDA CHCMD      LOAD CHECK DATA COMMAND
0572  00570 031121        IOR DRV#       INCLUDE DRIVE#
0573  00571 106701        CLC 1
0574  00572 102601        OTA 1          OUTPUT CHECK DATA CMND
0575  00573 103701        STC 1,C          TO COMMAND CHANNEL
0576  00574 102301        SFS 1
0577  00575 024574        JMP *-1
0578  00576 014703        JSB STAT
0579  00577 124550  OEXT  JMP DISKO,I
0580*
0581*                                       COMMON I/O DISK DRIVER
0582*
0583*  THE  DIO  SUBROUTINE IS THE MAIN DISC INPUT/OUTPUT
0584*  DRIVER.  IT SETS UP THE MEMORY ADDRESS REGISTER, THE
0585*  WORD COUNT REGISTER, AND THE DISK ADDRESS.  FOLLOWING THESE,
0586*  IT INITIATES THE TRANSFER, AND WAITS UNTIL THE TRANSFER
0587*  IS COMPLETE (BY TESTING THE DISK STATUS WORD).  IN THE CASE OF
0588*  A DISK READ, IT TESTS FOR READ PARITY AND DECODE ERRORS.
0589*
```

```
0590*  CALLING SEQUENCE:
0591*    A = DISK ADDRESS (WITH DIRECTION BIT)
0592*    B = CORE ADDRESS (WITH DIRECTION BIT)
0593*    JSB DIO
0594*
0595  00600 000000  DIO   NOP
0596  00601 071161        STA DCMND     SAVE DISC ADDRESS
0597  00602 075162        STB MADDR     SAVE CORE ADDRESS
0598*
0599  00603 060346        LDA DREAD     SET UP CONFIGURED
0600  00604 006021        SSB,RSS         READ / WRITE
0601  00605 060345        LDA DWRT        COMMAND
0602  00606 031121  DISKC IOR DRV#
0603  00607 070360        STA DOTA
0604*
0605  00610 060210  DISKE LDA N10       SET FOR 10 RE-TRY
0606  00611 071160        STA EDCNT       IF ERROR
0607*
0608  00612 060253  DISKD LDA N128      "A" = WORD COUNT
0609  00613 014616        JSB DMA       PERFORM DMA TRANSFER
0610  00614 014703        JSB STAT      CHECK STATUS
0611  00615 124600        JMP DIO,I
0612*
0613*  COMMON DMA TRANSFER ROUTINE, TRANSFER IS ALWAYS
0614*    TO OR FROM CORE ADDRESS IN MADDR,DISC ADDRESS
0615*    IN DCMND.
0616*
0617*  CALLING SEQUENCE:
0618*    DOTA = CONFIGURED DISC COMMAND
0619*    "A"  = # WORDS FOR DMA TRANSFER
0620*
0621  00616 000000  DMA   NOP
0622  00617 065162        LDB MADDR
0623  00620 106702        CLC 2         PREPARE TO SET MEM ADDR REG
0624  00621 106602        OTB 2         SET MEM ADDR IN MAR
0625  00622 102702        STC 2         PREPARE TO SET WORD COUNT REG
0626*
0627  00623 102602        OTA 2         SET WORD COUNT IN WCR
0628*
0629  00624 061161        LDA DCMND
0630  00625 014643        JSB SEEK
0631*
0632  00626 060360        LDA DOTA      GET DISC READ/WRITE COMMAND
0633  00627 102601        OTA 1         OUTPUT TO COMMAND CHANNEL
0634  00630 001710        ALF,SLA       CHECK IF READ OR WRITE
0635  00631 102100  DSK11 STF 0          -WRITE, SET FLAG ON DATA CHNL
0636  00632 002011        SLA,RSS
0637  00633 103700  DSK12 STC 0,C        -READ, SET CNTRL ON DATA CHNL
0638  00634 106701        CLC 1
0639  00635 103706        STC 6,C       INITITATE DMA
0640  00636 103701        STC 1,C       INITIATE DATA TRANSFER
0641  00637 102301        SFS 1         WAIT FOR
0642  00640 024637        JMP *-1         TRANSFER COMPLETE
0643  00641 106706        CLC 6
0644  00642 124616        JMP DMA,I
0645*
```

```
0646  00643 000000  SEEK   NOP
0647  00644 001727         ALF,ALF        ROTATE TRACK# TO LO BITS
0648  00645 010243         AND M377         AND ISOLATE
0649  00646 102600  DSK1   OTA 0           OUTPUT TRACK#
0650  00647 103700  DSK2   STC 0,C           TO DATA CHANNEL
0651  00650 064341         LDB SEEKX      LOAD SEEK COMMAND
0001  00651 045121         ADB DRV#       INCLUDE DRIVE#
0002  00652 050354         CPA LSTAC      CURRENT TRK = LAST TRK ACCESSED?
0003  00653 044340  ALTSK  ADB MSIGN       =YES, ALTER TO ADDRESS CMND
0004  00654 070354         STA LSTAC      UPDATE LAST TRACK ACCESSED
0005  00655 106701         CLC 1
0006  00656 106601         OTB 1          OUTPUT SEEK/ADDRESS CMND
0007  00657 103701         STC 1,C          TO COMMAND CHANNEL
0008*
0009  00660 061161         LDA DCMND      GET DISK ADDRESS
0010  00661 010243         AND M377       ISOLATE SCTR#
0011  00662 006401         CLB,RSS        *
0012  00663 006004         INB            * COMPUTE
0013  00664 040450         ADA MSPTK      *   PHYSICAL
0014  00665 002021         SSA,RSS        *   HEAD/SCTR
0015  00666 024663         JMP *-3        *     FROM
0016  00667 040444         ADA NSPTK      *   LOGICAL SCTR#
0017  00670 005727         BLF,BLF        *     AND
0018  00671 045122         ADB HDMSK      *   HEAD MASK
0019  00672 030001         IOR B          *
0020  00673 102300  DSK3   SFS 0          WAIT FOR DATA CHANNEL
0021  00674 024673         JMP *-1          TO ACCEPT TRACK#
0022  00675 102600  DSK4   OTA 0          OUTPUT HEAD/SECTOR
0023  00676 103700  DSK5   STC 0,C           TO DATA CHANNEL
0024  00677 102301         SFS 1          WAIT FOR
0025  00700 024677         JMP *-1          SEEK COMPLETION
0026  00701 014703         JSB STAT
0027  00702 124643         JMP SEEK,I
0028*
0029  00703 000000  STAT   NOP
0030  00704 102106         STF 6
0031  00705 103700  DSK6   STC 0,C
0032  00706 061121         LDA DRV#
0033  00707 030350         IOR STATC
0034  00710 106701         CLC 1
0035  00711 102601         OTA 1          OUTPUT STATUS CMND
0036  00712 103701         STC 1,C          TO COMMAND CHANNEL
0037  00713 102300  DSK7   SFS 0
0038  00714 024713         JMP *-1
0039  00715 106701         CLC 1          CLEAR COMMAND CHANNEL
0040  00716 102500  DSK8   LIA 0          LOAD STATUS FROM DATA CHANNEL
0041  00717 070361         STA DSTAT
0042  00720 002111         CLE,SLA,RSS    CHECK IF ANY ERROR
0043  00721 124703         JMP STAT,I       =NO, EXIT
0044*
0045  00722 001221         RAL,ARS
0046  00723 002021         SSA,RSS        FIRST SEEK?
0047  00724 001333         RAR,SLA,RAR    DATA ERROR?
0048  00725 024736         JMP RETRY        =YES
0049  00726 001310         RAR,SLA        CHECK IF PCI/DCI
0050  00727 024752         JMP FLGCY
```

```
0051  00730 060263  DSKNR LDA P14
0052  00731 065000        LDB MES33
0053  00732 114102  DSKMS JSB DRKEY,I
0054  00733 061161        LDA DCMND
0055  00734 064361        LDB DSTAT
0056  00735 102032        HLT 32B
0057*
0058  00736 035160  RETRY ISZ EDCNT     TRIED 10 TIMES?
0059  00737 024612        JMP DISKD       NO- TRY AGAIN
0060  00740 061254  XINST LDA ERR22     OUTPUT ERROR MESSAGE
0061  00741 014466        JSB ERROR       (ERR22 - NORMAL I/O
0062  00742 061161        LDA DCMND        ERR12 - INITIALIZING
0063  00743 064361        LDB DSTAT      THEN HALT
0064  00744 102022        HLT 22B         BEGORE TRYING AGAIN
0065*
0066  00745 002400        CLA            RESEEK
0067  00746 014643        JSB SEEK        AFTER ERROR
0068  00747 060353        LDA TR202
0069  00750 014643        JSB SEEK
0070*
0071  00751 024610        JMP DISKE      RESET ERROR COUNTER & GO
0072*
0073  00752 001310  FLGCY RAR,SLA        CHECK IF DCI
0074  00753 024757        JMP DEFCT       -DEFECTIVE CYLINDER
0075*
0076  00754 060273  TRNON LDA P41
0077  00755 164154        LDB AMS32,I
0078  00756 024732        JMP DSKMS      OUTPUT :PROTECTED: MESSAGE
0079*
0080  00757 060347  DEFCT LDA RACMD     CONFIGURE READ (READ ADDRESS IF
0081  00760 031121        IOR DRV#        ISS) COMMAND FOR INPUTTING
0082  00761 070360        STA DOTA        ALT. TRACK FOR DEFECT. CYL.
0083*
0084  00762 060220        LDA N2         READ TWO WORDS
0085  00763 014616        JSB DMA        PERFORM DMA TRANSFER
0086*
0087  00764 061162        LDA MADDR      GET ALTERNATE TRACK
0088  00765 001265        RAL,CLE,ERA     NUMBER FROM
0089  00766 160000        LDA A,I         CORE BUFFER
0090  00767 000000  ALTTR NOP            CHANGED TO ALF,ALF IF ISS DISC,
0091  00770 010244        AND M7400       SINCE TRACK # IS IN LOW 8 BITS
0092  00771 070001        STA B           FOR ISS,HI 8 BITS FOR 7900
0093*
0094  00772 061161        LDA DCMND      GET NEW DISC TRACK/SECTOR
0095  00773 010243        AND M377        FROM NEW TRACK & OLD SECTOR
0096  00774 030001        IOR B
0097  00775 071161        STA DCMND
0098*
0099  00776 060346        LDA DREAD      RESET DOTA TO READ FROM
0100  00777 024606        JMP DISKC       ALTERNATE TRACK
0101*
0102  01000 001001  MES33 DEF **+1
0103  01001 042111        ASC 7,DISC NOT READY
0104*
0105  00127         DVORG EQU ADOUT
0106  01000         DVEND EQU MES33
```

```
0107*
0108  01010 054505  YES  ASC 1,YE
0109  01011 047117  NO    ASC 1,NO
0110*
0111*                                        CONVERT A TO ASCII AT B
0112*
0113*  THE CONVD SUBROUTINE CONVERTS THE CONTENTS OF A
0114*  INTO ASCII (DECIMAL OR OCTAL) AT THE LOCATION SPECIFIED
0115*  BY B.  THE CONVERTED RESULT REQUIRES 3 WORDS, AND IS
0116*  IN THE FORMAT:  XXXXX, WITH A SPACE IN THE FIRST POSITION.
0117*
0118*  CALLING SEQUENCE:
0119*    A = NO. TO BE CONVERTED.  IF THE SIGN OF A IS POS.,
0120*        THE CONVERSION IS TO BE IN OCTAL;  IF NEGATIVE,
0121*        IN DECIMAL.
0122*    B = ADDRESS OF CORE LOCATION FOR CONVERTED RESULT
0123*    JSB CONVD
0124*
0125*  RETURN: CONTENTS OF A AND B ARE DESTOYED.
0126*
0127  01012 000000  CONVD NOP
0128  01013 075324        STB CURAT      SET MESSAGE ADDRESS
0129  01014 064326        LDB OPWRS      GET ADDR OF OCTAL POWERS
0130  01015 002020        SSA            SKIP IF OCTAL CONV REQUIRED
0131  01016 064320        LDB DPWRS      GET ADDRESS OF DECIMAL POWERS
0132  01017 075202        STB RANAD      SET POWER RANGE ADDRESS
0133  01020 002021        SSA,RSS        SKIP IF NEGATIVE (DECIMAL)
0134  01021 003004        CMA,INA        CONVERT NUMBER TO NEGATIVE
0135  01022 070001        STA B          PUT NUMBER IN B (REMAINDER)
0136  01023 060220        LDA N2
0137  01024 071325        STA TCNT       SET CONVERSION COUNTER
0138  01025 015043        JSB GETD       GET FIRST DIGIT
0139  01026 030336        IOR UBLNK      ADD BLANK TO FIRST CHAR
0140  01027 171324        STA CURAT,I    SAVE FIRST BLANK, CHARACTER
0141  01030 035324        ISZ CURAT      INCR MESSAGE ADDRESS
0142  01031 015043  NEXTD  JSB GETD      GET NEXT DIGIT
0143  01032 001727        ALF,ALF        ROTATE TO UPPER
0144  01033 171324        STA CURAT,I    SAVE UPPER CHARACTER
0145  01034 015043        JSB GETD       GET NEXT DIGIT
0146  01035 131324        IOR CURAT,I    ADD UPPER CHAR
0147  01036 171324        STA CURAT,I    SAVE NEXT 2 CHARACTERS
0148  01037 035324        ISZ CURAT      INCR MESSAGE ADDRESS
0149  01040 035325        ISZ TCNT       SKIP = 5 DIGITS IN
0150  01041 025031        JMP NEXTD      NO = CONTINUE WITH NEXT DIGIT
0151  01042 125012        JMP CONVD,I    YES = RETURN
0152*
0153*                                        GET DIGIT FOR CONVD
0154*
0155*  GETD PROVIDES THE ASCII CHARACTERS FOR CONVD.
0156*
0157*  CALLING SEQUENCE:
0158*    A = IGNORED
0159*    B = REMAINDER
0160*    JSB GETD
0161*
0162*  RETURN:
```

```
0163*     A = ASCII DIGIT
0164*     B = IGNORED
0165*
0166   01043 000000  GETD   NOP
0167   01044 002400         CLA
0168   01045 145202  INCRA  ADB RANAD,I    ADD POWER
0169   01046 007026         CMB,SSB,INB,SZB   SKIP - TRY NEXT HIGHER DIGIT
0170   01047 025053         JMP *+4         DIGIT FOUND
0171   01050 002004         INA             INCR DIGIT
0172   01051 007004         CMB,INB         RESTORE REMAINDER TO NEGATIVE
0173   01052 025045         JMP INCRA       TRY HIGHER DIGIT
0174   01053 145202         ADB RANAD,I     ADD POWER
0175   01054 007004         CMB,INB         RESTORE REMAINDER
0176   01055 035202         ISZ RANAD       INCR POWER LIST ADDRESS
0177   01056 030301         IOR M60         CONVERT TO ASCII
0178   01057 125043         JMP GETD,I      RETURN WITH DIGIT IN A
0179*                                       CLEAR PROGRAMS-LOADED FLAGS
```

```
0181*
0182  01060 001061  RBTAD DEF **+1
0183  01061 000000        OCT 0          ABSOLUTE PROGRAM BASE
0184  01062 000000  TPREL OCT 0          CURRENT PROG BASE ADDRESS
0185  01063 000000        OCT 0          BP RELOCATION ADDRESS
0186  01064 000000  COMAD OCT 0          CURRENT COMMON RELOCATION BASE
0187  01065 000000        OCT 0          ABSOLUTE
0188*
0189  01066 001570  ALBUF DEF LBUF
0190  01067 005377  ADBUF DEF DBUF
0191  01070 003600  AIBUF DEF IBUF
0192  01071 001326  ATBUF DEF TBUF
0193  01072 005600  PLAD  DEF PLIST
0194  01073 001513  AMLST DEF MLIST
0195  01074 001520  AMEMS DEF MLIST+5
0196*
0197  01075 000000  WDCNT OCT 0          TEMPORARY WORD COUNTER
0198*
0199  01076 012656  BLST  DEF LST        ADDR OF FIRST LST ENTRY
0200  01077 000000  TLST  BSS 1          CURRENT LST ADDR
0201  01100 000000  PLST  BSS 1          ADDR OF NEXT AVAILABLE ENTRY
0202*
0203  01101 000000  BIDNT BSS 1          ADDR OF FIRST IDENT
0204  01102 000000  TIDNT BSS 1          CURRENT IDENT
0205  01103 000000  PIDNT BSS 1          NEXT AVAILABLE IDENT
0206*
0207  01104 000000  MAXC  BSS 1          MAX CHAR COUNT
0208  01105 000000  TCHAR BSS 1          TEMPORARY CHAR SAVE AREA
0209  01106 000000  OCTNO BSS 1          OCTAL DIGIT
0210*
0211  01107 000000  SCODE BSS 1          SYSTEM GEN. CODE
0212  01110 000000  DSIZE BSS 1          DISK SIZE - NO. OF TRACKS
0213  01111 000000  DCHNL BSS 1          DISK I/O CHANNEL NO. (OCTAL)
0214  01112 000000  UDSC  BSS 1          USER DISC SUBCHANNEL
0215  01113 000000  TBCHN BSS 1          TIME BASE GENERATOR CHNL
0216  01114 000000  LWASM BSS 1          LAST WORD SYS AVAIL MEM
0217  01115 000000  PARAD BSS 1          PARAMETER INPUT DRIVER ADDRESS
0218  01116 000000  COMPT BSS 1          COMPUTER IDENTIFICATION
0219  01117 000000  SYSCH BSS 1          SYSTEM SUBCHANNEL
0220  01120 000000  SCNO  BSS 1          # OF SUBCHANNELS ON SYSTEM
0221  01121 000000  DRV#  BSS 1          SYSTEM DRIVE#
0222  01122 000000  HDMSK BSS 1          SYSTEM HEAD# BIT
0223  01123 000000  PICHN BSS 1          PRIV INT CARD CHANNEL
0224*
0225  01124 000000  DERCN BSS 1          DISK ERROR COUNTER
0226  01125 000000  DSKAD BSS 1          CURRENT DISK ADDRESS
0227  01126 000000  PLFLG BSS 1          PROGRAM LOAD. FLAG * -1/0 * L/NL
0228  01127 000000  DSCNT BSS 1          DISK SEGMENT SECTOR COUNT
0229*
0230  01130 000000  ID1   BSS 1          IDENT 1 ADDR: NAME 1,2
0231  01131 000000  ID2   BSS 1          IDENT 2 ADDR: NAME 3,4
0232  01132 000000  ID3   BSS 1          IDENT 3 ADDR: NAME 5, USAGE FLAG
0233  01133 000000  ID4   BSS 1          IDENT 4 ADDR: COMMON LENGTH
0234  01134 000000  ID5   BSS 1          IDENT 5 ADDR: CURRENT DISK ADDR
0235  01135 000000  ID6   BSS 1          IDENT 6 ADDR: M/S,PRIORITY,TYPE
0236  01136 000000  ID10  BSS 1          IDENT 10 ADDR: LIB LGTH/BS MAIN
```

```
0237*
0238  01137 000000  LST1  BSS 1          WORD 1 ADDR (LST)
0239  01140 000000  LST2  BSS 1          WORD 2 ADDR (LST)
0240  01141 000000  LST3  BSS 1          WORD 3 ADDR (LST)
0241  01142 000000  LST4  BSS 1          WORD 4 ADDR (LST)
0242  01143 000000  LST5  BSS 1          WORD 5 ADDR (LST)
0243*
0244  01144 000000  NXFLG BSS 1          ENT/EXT FLAG = -1/0
0245  01145 000000  EXCNT BSS 1          SYMBOL COUNTER
0246*
0247  01146 000000  CURAD BSS 1          CURRENT DBUF ADDRESS
0248  01147 000000  DCNT  BSS 1          CURRENT DBUF COUNT
0249  01150 005402  ADLBL DEF DBUF+3
0250  01151 005436  ADCHK DEF DBUF+31
0251  01152 005477  SNXTS DEF DBUF+64
0252  01153 005576  SBLBL DEF DBUF+127
0253*
0254  01154 000000  LRBP  BSS 1          LOWER RESIDENT BP BOUND
0255  01155 000000  URBP  BSS 1          UPPER RESIDENT BP BOUND
0256  01156 000000  LBBP  BSS 1          LOWER BACKGROUND BP BOUND
0257  01157 000000  UBBP  BSS 1          UPPER BACKGROUND BP BOUND
0258*
0259  01160 000000  EDCNT BSS 1          CURRENT DISK ERROR COUNT
0260  01161 000000  DCMND BSS 1          DISK COMMAND/ADDRESS
0261  01162 000000  MADDR BSS 1          MEMORY COMMAND/ADDRESS
0262  01163 000000  TEMPP BSS 1          CURRENT ABSOLUTE WORD
0263  01164 000000  ABCNT BSS 1          CURRENT ABSOLUTE DISPLACEMENT
0264  01165 000000  DSKMN BSS 1          INITIAL MAIN DISK ADDRESS
0265  01166 000000  BSSDP BSS 1          INITIAL DISK RES MAIN BSS DISP
0266  01167 000000  PRENT BSS 1          PRIMARY ENTRY POINT
0267  01170 000000  DBLAD BSS 1          CURRENT DBL ADDRESS
0268  01171 000000  REKEY BSS 1          INSTRUCTION TYPE BYTE
0269  01172 000000  INSCN BSS 1          INSTRUCTION TYPE COUNTER
0270  01173 000000  EXORD BSS 1          EXT ORDINAL
0271  01174 000000  INSTR BSS 1          CURRENT INSTRUCTION
0272  01175 000000  PAGNO BSS 1          CURRENT PAGE NO.
0273  01176 000000  OPRND BSS 1          CURRENT OPERAND
0274  01177 000000  PLGTH BSS 1          PROGRAM LENGTH
0275  01200 000000  LOWER BSS 1          LOWER BP LST BOUND
0276  01201 000000  UPPER BSS 1          UPPER BP LST BOUND
0277  01202 000000  RANAD BSS 1          CURRENT POWER RANGE ADDRESS
0278*
0279  01203 051531  MS12  ASC 3,SYSTEM
0280  01206 042530  MS15  ASC 12,EXEC SUPERVISOR MODULES
0281  01222 044457  MS19  ASC 10,I/O DRIVER MODULES
0282  01234 052523  MS20  ASC 10,USER SYSTEM PROGRAMS
0283*
0284  01246 030462  ERR12 ASC 1,12       DISC ERROR DURING INITIALIZATION
0285  01247 030465  ERR15 ASC 1,15       PROGRAM LST FULL
0286  01250 030466  ERR16 ASC 1,16       USER LINKAGE AREA FULL
0287  01251 030467  ERR17 ASC 1,17       DISC OVERFLOW
0288  01252 030470  ERR18 ASC 1,18       MEMORY OVERFLOW
0289  01253 030471  ERR19 ASC 1,19       INVALID DBL ORDER/PROGRAM OVERLA
0290  01254 031062  ERR22 ASC 1,22       DISC READ PARITY/DECODE ERROR
0291*
0292  01255 001256  MES16 DEF *+1
```

```
0293  01256 040514         ASC 5,ALLOW SS?
0294  01263 001264  MES22   DEF *+1
0295  01264 024116         ASC 3,(NONE)
0296  01267 001271  MES34   DEF SYMES
0297  01270 001276  MES35   DEF SYMES+6
0298  01271 046127  SYMES   ASC 5,LWA PROG
0299  01276 000000         NOP
0300  01277 000000         NOP
0301  01300 000000         NOP
0302  01301 001302  MES38   DEF *+1
0303  01302 043127         ASC 5,FWA USER?
0304*
0305  01307 001310  CARET   DEF *+1
0306  01310 005015         OCT 5015
0307*
0308  01311 000000  L001    NOP           PASS 1/2  FLAG
0309  01312 000000  L01     NOP           PASS 3    FLAG
0310  01313 000000  LWH1    NOP           UPPER LINK AREA PRESENT FLAG
0311  01314 000000  LWH2    NOP           LENGTH OF CURRENT PAGE LINK AREA
0312*
0313  01315 103004  HLT4    HLT 4,C
0314  01316 103005  HLT5    HLT 5,C
0315  01317 020040  BLNKS   OCT 20040     BLANKS
0316  01320 020052  BLAST   OCT 20052     BLANK, ASTERISK
0317  01321 024000  ULPAR   OCT 24000     UPPER LEFT PAREN
0318  01322 024440  RPARB   OCT 24440     RIGHT PAREN, BLANK
0319  01323 051502  ASCSB   ASC 1,SB
0320*
0321  01324 000000  CURAT   BSS 1         CURRENT TBUF ADDRESS
0322  01325 000000  TCNT    BSS 1         CURRENT TBUF COUNT
0323  01326 000000  TBUF    BSS 4         TEMPORARY BUFFER
0324*
0325*  THE INIDX AND IDX SUBROUTINES ARE USED TO SET THE CURRENT
0326*  ADDRESSES FOR THE ENTRY IN THE PROGRAM IDENTIFICATION
0327*  BLOCK TABLE (IDENT).  THE ADDRESS OF THE NEXT ENTRY
0328*  IN THE IDENT TABLE IS CONTAINED IN TIDNT.  ON RETURN FROM
0329*  IDX, TIDNT CONTAINS THE ADDRESS OF THE NEXT AVAILABLE
0330*  ENTRY IN IDENT.  THE ADDRESS OF THE FIRST ENTRY IS CONTAINED
0331*  IN BIDNT AND THE ADDRESS OF THE END OF IDENT IS CONTAINED
0332*  IN PIDNT.
0333*
0334*  IF THE NEXT IDENT ENTRY OVERFLOWS INTO THE LAST LST ENTRY,
0335*  IDX PRINTS A DIAGNOSTIC AND EXITS TO THE IRRECOVERABLE ERROR
0336*  SUBROUTINE.
0337*
0338*                                    SET INITIAL IDENT ADDRESS
0339*
0340*  INIDX SETS THE ADDRESS OF THE FIRST ENTRY IN THE IDENT
0341*  TABLE AS THE CURRENT ADDRESS.
0342*
0343*  CALLING SEQUENCE:
0344*    A = IGNORED
0345*    B = IGNORED
0346*    JSB INIDX
0347*
0348*  RETURN: CONTENTS OF A AND B ARE DESTROYED.
```

```
0349*
0350  01332 000000  INIDX NOP
0351  01333 061101        LDA BIDNT     BIDNT = INITIAL IDENT ADDRESS
0352  01334 071102        STA TIDNT     SET CURRENT IDENT ADDRESS
0353  01335 125332        JMP INIDX,I   RETURN
0354*
0355*                                   SET IDENT ADDRESSES FROM TIDNT
0356*  IDX SETS THE ADDRESSES OF THE CURRENT 10-WORD ENTRY IN THE
0357*  IDENT TABLE FROM THE ADDRESS OF THE CURRENT ENTRY (TIDNT).
0358*
0359*  CALLING SEQUENCE:
0360*    A = IGNORED
0361*    B = IGNORED
0362*    JSB IDX
0363*
0364*  RETURN: CONTENTS OF A AND B ARE DESTROYED.
0365*  (N+1): CURRENT IDENT ADDRESSES ARE THE ADDRESSES
0366*         OF THE NEXT AVAILABLE IDENT ENTRY, OR THE
0367*         END OF THE IDENT TABLE HAS BEEN REACHED.
0368*  (N+2): CURRENT IDENT ENTRY ADDRESSES (NOT END OF IDENT)
0369*
0370  01336 000000  IDX   NOP
0371  01337 061102        LDA TIDNT     TIDNT = CURRENT IDENT ADDRESS
0372  01340 051103        CPA PIDNT     END OF IDENT LIST?
0373  01341 002001        RSS           YES - RETURN TO NEXT INSTRUCTION
0374  01342 035336        ISZ IDX       SET RETURN ADDRESS FOR N+2
0375  01343 071130        STA ID1       SET ADDRESS OF NAME 1,2
0376  01344 002004        INA
0377  01345 071131        STA ID2       SET ADDRESS OF NAME 3,4
0378  01346 002004        INA
0379  01347 071132        STA ID3       SET ADDRESS OF NAME 5, USE FLAG
0380  01350 002004        INA
0381  01351 071133        STA ID4       SET ADDRESS OF COM/PROG LENGTH
0382  01352 002004        INA
0383  01353 071134        STA ID5       SET ADDRESS OF CURRENT DISK ADDR
0384  01354 002004        INA
0385  01355 071135        STA ID6       SET ADDRESS OF M/S,PRIOR/DISK,TY
0386  01356 002004        INA
0387  01357 071136        STA ID10      SET MAIN IDENT ADDR FOR BS
0388  01360 061102        LDA TIDNT     TIDNT = CURRENT IDENT ADDR
0389  01361 064000        LDB A
0390  01362 003004        CMA,INA
0391  01363 041100        ADA PLST      PLST = CURRENT END LST ADDR
0392  01364 002021        SSA,RSS       SKIP IF NO OVERLAP
0393  01365 025421        JMP LSERR     PRINT OVERFLOW MESSAGE
0394  01366 044213        ADB N7       SET FOR NEXT IDENT ADDRESS
0395  01367 075102        STB TIDNT     SET NEXT IDENT ADDRESS
0396  01370 125336        JMP IDX,I     RETURN
0397*
0398*  THE INLST AND LSTX SUBROUTINES ARE USED TO SET THE CURRENT
0399*  LOADER SYMBOL TABLE (LST) ADDRESSES.  THE ADDR OF THE NEXT ENTRY
0400*  IN LST IS CONTAINED IN TLST.  ON RETURN FROM IDX, TLST CONTAINS
0401*  THE ADDRESS OF THE NEXT AVAILABLE ENTRY IN LST, OR THE ADDRESS
0402*  OF THE END OF LST.  THE ADDRESS OF THE FIRST ENTRY IN LST
0403*  IS AT BLST AND THE ADDRESS OF THE NEXT AVAILABLE ENTRY
0404*  IS AT PLST.
```

```
0405*  IF THE NEXT ENTRY IN LST OVERFLOWS INTO THE CURRENT
0406*  IDENT ENTRY, LSTX PRINTS A DIAGNOSTIC AND EXITS
0407*  TO THE IRRECOVERABLE ERROR SUBROUTINE.
0408*
0409*                                        SET INITIAL LST ADDRESS
0410*
0411*  INLST SETS THE ADDRESS OF THE FIRST ENTRY IN LST.
0412*
0413  01371 000000  INLST NOP
0414  01372 061076        LDA BLST      BLST = FIRST LST ADDRESS
0415  01373 071077        STA TLST      SET CURRENT LST ADDRESS
0416  01374 125371        JMP INLST,I   RETURN
0417*
0418*                                        SET LST ADDRESSES FROM TLST
0419*
0420*  LSTX SETS THE CURRENT LST ADDRESSES FROM TLST.
0421*
0422*  CALLING SEQUENCE:
0423*    A = IGNORED
0424*    B = IGNORED
0425*    JSB LSTX
0426*
0427*  RETURN: CONTENTS OF A AND B ARE DESTROYED.
0428*    (N+1): THE END OF LST IS REACHED AND THE CURRENT
0429*           LST ADDRESSES ARE THE ADDRESSES OF THE NEXT AVAILABLE
0430*           ENTRY IN LST.
0431*    (N+2): CURRENT LST ADDRESSES ARE SET (NOT END OF LST).
0432*
0433  01375 000000  LSTX  NOP
0434  01376 061077        LDA TLST      GET CURRENT LST ADDRESS
0435  01377 051100        CPA PLST      END OF LST TABLE?
0436  01400 002001        RSS
0437  01401 035375        ISZ LSTX      INCR RETURN ADDRESS
0438  01402 071137        STA LST1      SET WORD 1  ADDR
0439  01403 002004        INA
0440  01404 071140        STA LST2      SET WORD 2 ADDR
0441  01405 002004        INA
0442  01406 071141        STA LST3      SET WORD 3 ADDR
0443  01407 002004        INA
0444  01410 071142        STA LST4      SET WORD 4 ADDR
0445  01411 002004        INA
0446  01412 071143        STA LST5      SET WORD 5 ADDR
0447  01413 002004        INA
0448  01414 071077        STA TLST      SET NEXT LST ADDRESS
0449  01415 003004        CMA,INA
0450  01416 041103        ADA PIDNT     PIDNT = ADDR CURRENT IDENT
0451  01417 002021        SSA,RSS       SKIP = INVALID LST ENTRY
0452  01420 125375        JMP LSTX,I    RETURN
0453  01421 060510  LSERR LDA ERR07
0454  01422 014474        JSB IRERR
0455*
0456  01423 000000  YESNO NOP
0457  01424 114123        JSB AREPL,I
0458  01425 060217        LDA N3
0459  01426 114120        JSB AGETN,I
0460  01427 114117        JSB AGETA,I
```

```
0461  01430 050222          CPA ZERO
0462  01431 025434          JMP *+3
0463  01432 114124          JSB AINER,I
0464  01433 125423          JMP YESNO,I
0465  01434 006404          CLB,INB
0466  01435 061326          LDA TBUF
0467  01436 051010          CPA YES
0468  01437 025442          JMP *+3
0469  01440 006400          CLB
0470  01441 051011          CPA NO
0471  01442 035423          ISZ YESNO
0472  01443 125423          JMP YESNO,I
0473* 
0474*                                       CLEAR PROGRAMS-LOADED FLAGS
0475* 
0476*  CLID3 CLEARS THE USAGE FLAGS TO ENSURE THAT PROGRAMS WILL BE
0477*  RE-LOADED AGAIN IF CALLED MORE THAN ONCE.  THIS IS ESSENTIAL
0478*  FOR ALL UTILITY PROGRAMS AND USER SUBROUTINES, BUT MUST NOT
0479*  BE DONE FOR SYSTEM PROGRAMS, LIBRARY PROGRAMS, OR MAIN USER
0480*  PROGRAMS.  BOTH THE USAGE FLAG IN THE IDENT ENTRY AND THE
0481*  BP LINK ADDRESS FOR ALL ENTRY POINTS IN THE PROGRAM ARE CLEARED.
0482* 
0483*  CALLING SEQUENCE:
0484*    A = IGNORED
0485*    B = IGNORED
0486*    JSB CLID3
0487* 
0488*  RETURN: CONTENTS OF A AND B ARE DESTROYED.
0489* 
0490  01444 000000  CLID3 NOP
0491  01445 060227         LDA P5
0492  01446 065072         LDB PLAD        GET ADDRESS OF PROGRAM LIST
0493  01447 051537         CPA PTYPE       PROG = BG SEGMENT?
0494  01450 065545         LDB PLMAN       YES - GET MAIN PROG LIST ADDRESS
0495  01451 075510         STB CURAP       SET CURRENT PROG LIST ADDRESS
0496  01452 007004         CMB,INB
0497  01453 045072         ADB PLAD        ADD PROGRAM LIST ADDRESS
0498  01454 044274         ADB P128        ADJUST FOR PROG LIST LENGTH
0499  01455 007000         CMB
0500  01456 075511         STB PLCNT       SET CURRENT PROG LIST COUNT
0501  01457 161510  TRID3 LDA CURAP,I     GET CURRENT PROG LIST ENTRY
0502  01460 002003         SZA,RSS         SKIP - NOT ENT OF PROG LIST
0503  01461 125444         JMP CLID3,I     RETURN (ALL FLAGS CLEARED)
0504  01462 035510         ISZ CURAP       INCR CURRENT PROG LIST ADDRESS
0505  01463 035511         ISZ PLCNT       SKIP - END OF PROG LIST
0506  01464 002001         RSS             NO - CONTINUE
0507  01465 125444         JMP CLID3,I     RETURN
0508  01466 071102         STA TIDNT       SET CURRENT IDENT ADDRESS
0509  01467 015336         JSB IDX         SET CURRENT IDENT ADDRESSES
0510  01470 102000         HLT 0B          IDENT NOT FOUND
0511  01471 161135         LDA ID6,I       GET M/S,TYPE
0512  01472 002020         SSA             SKIP IF SUB
0513  01473 025457         JMP TRID3       IGNORE MAIN
0514  01474 010242         AND M177        ISOLATE TYPE
0515  01475 050222         CPA ZERO        TYPE = SYSTEM?
0516  01476 025457         JMP TRID3       YES - DO NOT CHANGE FLAG
```

```
0517  01477 161132         LDA ID3,I      GET USAGE FLAG
0518  01500 001310         RAR,SLA        IGNORE SUBROUTINE LINKED TO
0519  01501 025457         JMP TRID3        CORE-RESIDENT PROGRAM
0520  01502 001200         RAL
0521  01503 010244         AND M7400      ISOLATE NAME 5
0522  01504 171132         STA ID3,I      SET NAME 5 IN IDENT
0523  01505 115507         JSB ACLNK,I    CLEAR BP LINKS
0524  01506 025457         JMP TRID3
0525*
0526  01507 011604  ACLNK   DEF CLLNK      CLEAR BP LINK ROUTINE
0527*
0528  01510                ORG *
```

```
0530*
0531*                                          THIS AREA USED FOR DBL LIST
0532*
0533  01510 000000  CURAP BSS 1               CURRENT PLIST ADDRESS
0534  01511 000000  PLCNT BSS 1               CURRENT PLIST COUNT
0535*
0536  01512 000000  AMAD  BSS 1               CURRENT MLIST ADDRESS
0537  01513 000000  MLIST BSS 18              MEMORY MAP BUFFER
0538*
0539  01535 000000  LICNT BSS 1               LONG ID SEGMENT COUNT
0540*
0541  01536 000000  DSKID BSS 1               DISK ID SEGMENT ADDRESS
0542*
0543  01537 000000  PTYPE BSS 1               PROGRAM TYPE
0544  01540 000000  FSYBP BSS 1                1ST WORD SYSTEM BP LINK
0545*
0546  01541 000000  TBREL BSS 1               CURRENT BP RELOC ADDR
0547  01542 000000  PBREL BSS 1               INITIAL BP RELOC ADDR
0548  01543 000000  PPREL BSS 1               INITIAL PROG RELOC ADDR
0549*
0550  01544 000000  RELAD BSS 1               CURRENT CORE RELOCATION ADDRESS
0551  01545 000000  PLMAN BSS 1               CURRENT BG MAIN PLIST ADDRESS
0552*
0553  01546 000000  BSBAD BSS 1               BG SEGMENT BP RELOC ADDR
0554  01547 000000  BSPAD BSS 1               BG SEGMENT PROG RELOC ADDR
0555*
0556  01550 000000  LFLAG BSS 1               PROGRAMS-LOADED FLAG
0557  01551 000000  IMAIN BSS 1               CURRENT MAIN IDENT ADDR
0558  01552 000000  HDFLG BSS 1               HEADING FORMAT FLAG
0559  01553 000000  CIDNT BSS 1               CURRENT MAIN IDENT ADDRESS
0560  01554 000000  DSKRD BSS 1               DISK INPUT ADDRESS
0561*
0562*
0563  01555 000000  DSKIN BSS 1               DISK ADDR OF INT CODE RECORD
0564  01556 000000  INTCN BSS 1               RECORD COUNT OF INT CODE
0565*
0566  01557 000000  TEMP  BSS 3
0567  01562 000000  I.XX  BSS 1               DRIVER ENTRY POINT
0568  01563 000000  C.XX  BSS 1               DRIVER EXIT POINT
0569  01564 044456  IDEC  ASC 1,I.
0570  01565 041456  CDEC  ASC 1,C.
0571*
0572  01566 000000  CURAL BSS 1               CURRENT LBUF ADDRESS
0573  01567 000000  LCNT  BSS 1               CURRENT LBUF COUNT
0574  01570 000000  LBUF  BSS 128             LOAD BUFFER
0575*
0576  01770 000000  CURAI BSS 1               CURRENT IBUF ADDRESS
0577  01771 000000  ICNT  BSS 1               CURRENT IBUF COUNT
0578*
```

```
0580  01772                 ORG *
0581*
```

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0583*
0584  01350          .      EQU 1350B
0585*
0586  01350          UMLWA  EQU .+0        LWA OF USEABLE MEMORY
0587*
0588  01351          JBINS  EQU .+1        S?ART TR/SEC OF JBIN AREA
0589  01352          JBINC  EQU .+2        CURRENT TR/SEC OF JBIN AREA
0590*
0591  01353          TBG    EQU .+3        TIME BASE GENERATOR I/O ADDRESS
0592  01354          CLOCK  EQU .+4        CURRENT SYSTEM CLOCK TIME
0593  01356          CLEX   EQU .+6        EXECUTION TIME CLOCK
0594  01360          CXMX   EQU .+8        MAXIMUM ALLOWABLE EXECUTION TIME
0001*
0002  01361          BATCH  EQU .+9        L. U. OF BATCH INPUT DEVICE
0003  01362          SYSTY  EQU .+10       L. U. OF SYSTEM TELETYPE
0004  01363          DUMPS  EQU .+11       ABORT /POST MORTEM DUMP FLAG
0005  01364          SYSDR  EQU .+12       SYSTEM DIRECTORY TRACK/SECTOR
0006*
0007  01365          SYSBF  EQU .+13       START SYS BUF T/USER DIRECT SECT
0008  01366          $SECT  EQU .+14       # SECTORS/CYLINDER
0009*
0010  01367          EQTAB  EQU .+15       FWA OF EQUIPMENT TABLE
0011  01370          EQT#   EQU .+16       # OF EQUIPMENT ENTRIES
0012*
0013  01371          LUTAB  EQU .+17       FWA OF LOGICAL UNIT TABLE
0014  01372          LUT#   EQU .+18       # OF LOGICAL UNIT ENTRIES
0015  01373          JBUF   EQU .+19       JOB INPUT BUFFER ASDRESS
0016*
0017  01374          JFILS  EQU .+20      SOURCE FILE START TRACK/SECTOR
0018  01375          JFILC  EQU .+21      SOURCE FILE CURRENT TRACK/SECTOR
0019*
0020  01376          RONBF  EQU .+22       USER AREA FILE NAME INFORMATION
0021*
0022  01411          EXPG   EQU .+33       DIRECTORY ENTRY FOR CURRENT PROG
0023*
0024  01424          DISCO  EQU .+44       IO CHNL #/ LAST TRACK ON DISC
0025  01425          SYSSC  EQU .+45       SYSTEM SUBCHANNEL
0026  01426          SCCNT  EQU .+46       LAST SUBCHANNEL ON SYSTEM
0027  01427          UDNTS  EQU .+47       NEXT USER TRACK/SECTOR
0028  01430          SYNTS  EQU .+48       NEXT SYST TRACK/SECTOR
0029  01431          CUDSC  EQU .+49       CURRENT USER DISC SUBCHANNEL
0030*
0031  01432          CRFLG  EQU .+50       CURRENT REQUEST FLAG
0032  01433          CUDLA  EQU .+51       CURRENT USER DISC LAST ACCESS
0033  01434          FSFLG  EQU .+52       FILE SEARCH FLAG
0034  01435          CUMID  EQU .+53       COMPUTER IDENTIFICATION
0035  01436          DBUFR  EQU .+54       SYSTEM DISC TRIPLET PARAM BUFFER
0036  01441          UBUFR  EQU .+57       USER DISC TRIPLET PARAM BUFFER
0037  01444          TSONE  EQU .+60       LAST TRK/SCTR + 1
0038  01445          GUDSC  EQU .+61       DEFAULT USER DISC SUBCHANNEL
0039  01446          SYSCD  EQU .+62       SYSTEM GEN. CODE
0040  01447          JFLSC  EQU .+63       SOURCE FILE SUBCHANNEL
0041  01450          DISCL  EQU .+64       USER DISC: SYS=1, NOT SYS=0
0042  01451          INTAB  EQU .+65       FWA OF INTERRUPT TABLE
0043  01452          INT#   EQU .+66       # OF INTERRUPT ENTRIES
0044*
```

```
0045  01453          EQT1   EQU .+67       ADDRESSES
0046  01454          EQT2   EQU .+68
0047  01455          EQT3   EQU .+69       OF
0048  01456          EQT4   EQU .+70
0049  01457          EQT5   EQU .+71       CURRENT
0050  01460          EQT6   EQU .+72
0051  01461          EQT7   EQU .+73       EQUIPMENT
0052  01462          EQT8   EQU .+74
0053  01463          EQT9   EQU .+75       TABLE
0054  01464          EQT10  EQU .+76
0055  01465          EQT11  EQU .+77
0056  01466          EQT12  EQU .+78       ENTRY
0057  01467          EQT13  EQU .+79
0058  01470          EQT14  EQU .+80
0059  01471          EQT15  EQU .+81
0060  01472          EQT16  EQU .+82
0061  01473          EQT17  EQU .+83
0062*
0063  01474          RQCNT  EQU .+84       # OF REQUEST PARAMETERS-1
0064  01475          RQRTN  EQU .+85       REQUEST RETURN ADDRESS
0065*
0066  01476          RQP1   EQU .+86       ADDRESSES
0067  01477          RQP2   EQU .+87
0068  01500          RQP3   EQU .+88       OF
0069  01501          RQP4   EQU .+89
0070  01502          RQP5   EQU .+90       REQUEST
0071  01503          RQP6   EQU .+91
0072  01504          RQP7   EQU .+92       PARAMETERS
0073  01505          RQP8   EQU .+93
0074*
0075  01506          NABRT  EQU .+94      ILLEGAL REQ ABORT/NO ABORT OPTION
0076*
0077  01507          XA     EQU .+95       A REGISTER
0078  01510          XB     EQU .+96       B REGISTER
0079  01511          XEO    EQU .+97       E AND O REGISTER
0080  01512          XSUSP  EQU .+98       POINT OF SUSPENSION
0081*
0082  01513          EXLOC  EQU .+99       LOC OF EX MOD DOUBLETS
0083  01514          EX#    EQU .+100      # OF EX MOD DOUBLETS
0084  01515          EXMOD  EQU .+101      CURRENT EX MOD #
0085  01516          EXMAN  EQU .+102      EX MOD MAIN LOAD ADDRESSES
0086  01520          EXBAS  EQU .+104      EX MOD BASE LOAD ADDRESSES
0087*
0088  01522          IODMN  EQU .+106      FWA OF IO DRIVER MOD MAIN AREA
0089  01523          IODBS  EQU .+107      FWA OF IO DRIVER MOD BASE AREA
0090*
0091  01524          UMFWA  EQU .+108      FWA OF USER MAIN AREA
0092  01525          UBFWA  EQU .+109      FWA OF USER BASE AREA
0093  01526          UBLWA  EQU .+110      LWA OF USER BASE AREA
0094*
0095  01527          CHAN   EQU .+111      CURRENT DMA CHANNEL NUMBER
0096*
0097  01530          OPATN  EQU .+112      OPERATOR/KEYBOARD ATTENTION FLAG
0098  01531          OPFLG  EQU .+113      OPERATOR COMMUNICATION FLAG
0099*
0100  01532          SWAP   EQU .+114      JOB PROCESSOR IN/NOT IN FLAG
```

```
0101*
0102  01533          JOBPM EQU .+115     JOB PROC MAIN (T/S)#WORDS)
0103  01535          JOBPB EQU .+117      JOB PROCESSOR BASE # WORDS
0104  01536          TBSYG EQU .+118      T/S ADDR OF SYS TRACK TABLE
0105  01537          RTRK  EQU .+119      RT DISC ALLOC TRACK #
0106*
0107  01540          DUMMY EQU .+120      I/O ADDR OF PRIV INT CARD
0108  01541          MPTFL EQU .+121      MEMORY PROTECT FLAG
0109*
0110  01542          $GOPT EQU .+122      PT OF SUSP CONTINUATION ADDRESS
0111  01543          $IOCD EQU .+123      INPUT REQUEST CODE
0112  01544          $MDBF EQU .+124      EXEC MODULE DATA BUFFER
0113*
0114  01546          $TEMP EQU .+126
0115  01555          TEMP0 EQU .+133
0116  01556          TEMP1 EQU .+134
0117  01557          TEMP2 EQU .+135
0118  01560          TEMP3 EQU .+136
0119  01561          TEMP4 EQU .+137
0120  01562          TEMP5 EQU .+138
0121  01563          MSECT EQU .+139      NEG OF SECTORS/TRACK VALUE
0122  01564          VADR  EQU .+140      ADDR OF VIOLATING INSTRUCTION
0123  01565          IODMD EQU .+141      RES I/O DRIVER MODULE FLAG
0124  01566          RCODE EQU .+142      POSITIVE REQUEST CODE VALUE
0125  01567          SXA   EQU .+143
0126  01570          SXB   EQU .+144
0127  01571          SXEO  EQU .+145
0128  01572          SXSUS EQU .+146
0129  01573          SEQT1 EQU .+147
0130  01574          DSCL8 EQU .+148      DISC T/S OF RELOCATABLE LIBRARY
0131  01575          DSCL# EQU .+149      # OF RELOCATABLE LIBRARY SECTORS
0132  01576          LSTCH EQU .+150      LAST SUBCHANNEL REFERENCED
0133  01577          TRAC# EQU .+151      USER FILE TABLE VALIDITY FLAG
0134  01600          XFLG  EQU .+152      ENTRY ADDRESS FOR DISC NOT READY
0135  01601          SSFLG EQU .+153      SYSTEM SEARCH FLAG
0136  01602          ZWZW  EQU .+154      CHARC COMMUNICATION FLAG
0137  01603          TYEQT EQU .+155      SYSTEM CONSOLE EQT4 ADDRESS
0138  01604          DMFLG EQU .+156      DATA MANAGEMENT FLAG
0139  01605          SSTBL EQU .+157      SUBSYSTEM TABLE
0140  01606          TMBEG EQU .+158      BEGINNING OF TIMER BUFFER
0141  01772                ORG *
0142*
```

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0144  02000                ORG 2000B
0145*
0146*  INITIAL TRANSFER IS MADE TO DSGEN BY SETTING 100(8)
0147*  IN THE SWITCH REGISTER AND PRESSING RUN. IF ANY ERRORS ARE
0148*  DETECTED DURING THE INITIALIZATION PHASE, THE INITIALIZATION
0149*  SECTION CAN BE REPEATED.
0150*
0151*  THE FOLOOWING MESSAGES ARE PRINTED DURING THE INITIALIZATION
0152*  PHASE, WITH THE SPECIFICATIONS FOR EACH VALID RESONSE.
0153*
0154*
0155*  MESSAGE          RESPONSE
0156*  -------          --------
0157*
0158*  SYS GEN CODE?  ENTER 4 DECIMAL DIGITS
0159*
0160*  SYS DISC CHNL?  ENTER 2 OCTAL DIGITS
0161*
0162*  DISC TYPE?  ENTER 7900,7901,2883,2883B, OR 2870
0163*
0164*  SYS DISC SIZE?  ENTER 3 DECIMAL DIGITS
0165*
0166*  # DRIVES?  ENTER 1 DECIMAL DIGIT
0167*
0168*  1ST SYSTEM TRACK?  ENTER 3 DECIMAL DIGITS
0169*
0170*  1ST SYSTEM SECTOR?  ENTER 3 DECIMAL DIGITS
0171*
0172*  SYS DISC SUBCHNL?  ENTER 1 OCTAL DIGIT
0173*
0174*  USER DISC SUBCHANNEL?  ENTER 1 OCTAL DIGIT
0175*
0176*  TBG CHNL?        ENTER 2 OCTAL DIGITS
0177*
0178*  PRIV INT CARD CHNL?   ENTER 2 OCTAL DIGITS
0179*
0180*  # DMA CHANNELS?       ENTER 1 OCTAL DIGIT
0181*
0182*  LWA MEM?         ENTER 5 OCTAL DIGITS
0183*
0184*  PRGM INPT?
0185*  LIBR INPT?       ENTER PT, MT, OR TY, OR DF
0186*  PRAM INPT?
0187*
0188*  FOLLOWING SUCCESSFUL COMPLETION OF THIS SECTION,
0189*  THE TRANSFER ADDRESS IS MOVED TO THE INITIALIZATION SECTION
0190*  OF THE LOADING PHASE.
0191*
0192  02000 107700  RTGEN CLC 0,C        TURN OFF ALL I/O,INTERRUPTS
0193*
0194  02001 060107        LDA DRMAG      SAVE ORIGINAL MAG TAPE
0195  02002 070417        STA SAVMT        DRIVER ADDRESS
0196*
0197  02003 061315        LDA HLT4
0198  02004 070004        STA 4B
0199  02005 061316        LDA HLT5
```

```
0200  02006 070005          STA SB
0201  02007 060224          LDA P2
0202  02010 065307          LDB CARET      GET ADDRESS OF CR,LF
0203  02011 114102          JSB DRKEY,I    OUTPUT NEW LINE
0204*
0205*                     GET SYST. GEN. CODE
0206  02012 060262          LDA P13
0207  02013 067630          LDB MES11
0208  02014 017310          JSB REPLY
0209  02015 060216          LDA N4
0210  02016 017323          JSB DOCON
0211  02017 026012          JMP *-5
0212  02020 071107          STA SCODE
0213  02021 170205          STA ALCD,I
0214*
0215*                                    SET DISK CHANNEL
0216  02022 014462  GETCH JSB SPACE
0217  02023 060263          LDA P14
0218  02024 067557          LDB MESS2     MESS2: SYS DISC CHNL?
0219  02025 017310          JSB REPLY      PRINT MESSAGE, GET REPLY
0220  02026 060224          LDA P2         SET FOR 2 OCTAL DIGITS INPUT
0221  02027 017323          JSB DOCON      GET DIGITS, RETURN OCTAL
0222  02030 026023          JMP *-5        REPEAT INPUT
0223  02031 071111          STA DCHNL      SET DISK CHANNEL NUMBER
0224  02032 170175          STA ACHNL,I    SET DISC CHANNEL IN BOOTSTRAP
0225*
0226*                     GET DISC TYPE
0227*
0228  02033 014462          JSB SPACE
0229  02034 060234  GETDT LDA P10
0230  02035 067660          LDB MES18      MES18: DISC TYPE?
0231  02036 017310          JSB REPLY      PRINT MESSAGE; GET REPLY
0232  02037 117513          JSB ADSCI,I    SET DISC TYPE PARAMETERS
0233  02040 002001          RSS             ERROR-ILLEGAL DISC TYPE
0234  02041 026044          JMP INIT        NO ERROR - COUNTINUE
0235  02042 017336          JSB INERR
0236  02043 026034          JMP GETDT
0237*
0238  02044 102501  INIT  LIA 1
0239  02045 002020          SSA            INITIALIZE DISC ONLY?
0240  02046 026136          JMP GETSC       -YES
0241*                                    GET SYSTEM DISK SIZE
0242  02047 014462          JSB SPACE      NEW LINE
0243  02050 060263          LDA P14
0244  02051 067547          LDB MESS1      MESS1 = ADDR: SYS DISK SIZE?
0245  02052 017310          JSB REPLY      PRINT MESSAGE, GET REPLY
0246  02053 060217          LDA N3         SET FOR 3 DECIMAL DIGITS INPUT
0247  02054 017323          JSB DOCON      GET DIGITS, RETURN OCTAL
0248  02055 026050          JMP *-6       REPEAT INPUT
0249  02056 071110          STA DSIZE      SET SYSTEM DISK SIZE
0250  02057 040251          ADA N201
0251  02060 002021          SSA,RSS
0252  02061 026050          JMP *-9
0253*
0254*                     GET #SUBCHNLS ON SYSTEM
0255  02062 014462          JSB SPACE
```

```
0256  02063 060233          LDA P9
0257  02064 067640          LDB MES13
0258  02065 017310          JSB REPLY
0259  02066 060221          LDA N1
0260  02067 017323          JSB DOCON
0261  02070 026063          JMP *-5
0262  02071 002003          SZA,RSS
0263  02072 026063          JMP *-7
0264  02073 100200          MPY NSBPD      # SUBCH## DRIVES X #SUBCH/DRIVE
0265  02075 040221          ADA N1
0266  02076 071120          STA SCNO
0267*
0268*                 GET 1ST SYSTEM TRACK/SECTOR
0269  02077 014462          JSB SPACE
0270  02100 060266          LDA P20
0271  02101 067666          LDB MES30      MES30# 1ST SYSTEM TRACK
0272  02102 017310          JSB REPLY
0273  02103 060217          LDA N3
0274  02104 017323          JSB DOCON
0275  02105 026100          JMP *-5
0276  02106 070001          STA B
0277  02107 001727          ALF,ALF
0278  02110 070370          STA DSKAB      STORE START TRACK NUMBER
0279  02111 007004          CMB,INB
0280  02112 045110          ADB DSIZE       START SCRATCH AREA IN THE
0281  02113 005100          BRS               MIDDLE OF AVAILABLE DISC
0282  02114 005727          BLF,BLF
0283  02115 074371          STB DSKSC      STORE SCRATVHTRACK NUMBER
0284  02116 060266          LDA P20
0285  02117 067701          LDB MES31      MES31# 1ST SYSTEM SECTRR
0286  02120 017310          JSB REPLY
0287  02121 060217          LDA N3
0288  02122 017323          JSB DOCON
0289  02123 026116          JMP *-5        REPEAT INPLUT
0290  02124 030370          IOR DSKAB
0291  02125 070370          STA DSKAB      FORM START TRACK/SECTOR
0292*
0293*                      GET SYS DISC SUBCHNL
0294  02126 014462            JSB SPACE
0295  02127 060235            LDA P17
0296  02130 067646            LDB MES14
0297  02131 017310            JSB REPLY
0298  02132 060223            LDA P1
0299  02133 017323            JSB DOCON
0300  02134 026127            JMP *-5
0301  02135 114171            JSB ASTSC,I
0302*
0303*                      GET USER DISC SUBCHANNEL
0304  02136 014462  GETSC JSB SPACE
0305  02137 060265          LDA P18
0306  02140 067727          LDB MES50       MES50; USR DISC SUBCHNL
0307  02141 017310          JSB REPLY
0308  02142 060223          LDA P1
0309  02143 017323          JSB DOCON
0310  02144 026137          JMP *-5        REPEAT INPUT
0311  02145 071112          STA UDSC        SET USER DISC SUBCHANNEL
```

```
0312  02146 106501         LIB 1
0313  02147 006021         SSB,RSS        INITIALIZE DISC ONLY?
0314  02150 026153         JMP TBSET       =NO
0315  02151 114171         JSB ASTSC,I
0316  02152 026266  CHJMP   JMP CHSET      =YES
0317*
0318*                                      SET TIME BASE GENERATOR CHANNEL
0319  02153 014462  TBSET  JSB SPACE
0320  02154 060266         LDA P20
0321  02155 067714         LDB MES37      MES 37= ADDR: TBG CHNL
0322  02156 017310         JSB REPLY       PRINT MESSAGE, GET REPLY
0323  02157 060224         LDA P2          SET FOR 2 OCTAL DIGITS INPUT
0324  02160 017323         JSB DOCON       GET DIGITS, RETURN OCTAL
0325  02161 026154         JMP *-5        REPEAT INPUT
0326  02162 071113         STA TBCHN       SET TBG CHANNEL NO.
0327*
0328  02163 014462         JSB SPACE
0329  02164 060266         LDA P20
0330  02165 067741          LDB MES60      PRIV INT CARD CHNL?
0331  02166 017310         JSB REPLY
0332  02167 060224          LDA P2
0333  02170 017323         JSB DOCON
0334  02171 026164         JMP *-5
0335  02172 071123          STA PICHN      SET PRIV INT CHANNEL NO.
0336*
0337  02173 065113         LDB TBCHN      IF TBG CHANNEL ASSIGNED,
0338  02174 006003         SZB,RSS
0339  02175 026204         JMP DMAQ-1
0340  02176 003004         CMA,INA          IT MUST BE OF LOWER PRIORITY
0341  02177 040001         ADA B            THAN PRIV INT CHANNEL.
0342  02200 002021         SSA,RSS
0343  02201 026204         JMP DMAQ-1
0344  02202 017336         JSB INERR      IF NOT, ERROR, RE-ENTER TBG & PI
0345  02203 026153         JMP TBSET        CHANNEL NUMBERS
0346*
0347  02204 014462         JSB SPACE      NEW LINE
0348  02205 060264  DMAQ    LDA P16
0349  02206 067617         LDB MES10      # DMA CHANNELS?
0350  02207 017310         JSB REPLY
0351  02210 002404         CLA,INA
0352  02211 017323         JSB DOCON
0353  02212 026205         JMP DMAQ
0354  02213 050223         CPA P1         1 => CUMID = 1
0355  02214 026220         JMP DMAR
0356  02215 050224         CPA P2         2 => CUMID = 0
0357  02216 002401         CLA,RSS
0358  02217 026205         JMP DMAQ       NEITHER, REPEAT QUESTION
0359  02220 071116  DMAR   STA COMPT
0360*
0361  02221 014462         JSB SPACE      NEW LINE
0362  02222 060234         LDA P10
0363  02223 067567         LDB MES33      MES33 = ADDR: LWA MEM?
0364  02224 017310         JSB REPLY       PRINT MESSAGE, GET REPLY
0365  02225 060227         LDA P5          SET FOR 5 OCTAL DIGITS INPUT
0366  02226 017323         JSB DOCON       GET DIGITS, RETURN OCTAL
0367  02227 026222         JMP *-5        REPEAT INPUT
```

```
0368  02230 040254          ADA N36       ALLOW SPACE FOR JBUF
0369  02231 071114          STA LWASM     SET LWA MEM FOR SYSTEM
0370*
0371  02232 014462          JSB SPACE
0372  02233 060234          LDA P10
0373  02234 065255          LDB MES16     CHECK IF SYSTEM SEARCHES ALLOWED
0374  02235 015423          JSB YESNO
0375  02236 026233          JMP *-3       REPEAT
0376  02237 051011          CPA NO        SET FLAG FOR NO SYSTEM SEARCHES
0377  02240 070403          STA SSSAV
0378*                                     SET PROGRAM INPUT UNIT
0379  02241 014462          JSB SPACE     NEW LINE
0380  02242 060234           LDA P10
0381  02243 067575          LDB MESS4     MESS4 = ADDR: PRGM INPT?
0382  02244 017310          JSB REPLY     PRINT MESSAGE, GET REPLY
0383  02245 017342          JSB SINIT     GET CODE, ANALYSE
0384  02246 026242          JMP *-4
0385  02247 070420          STA PGMAD     SET PROGRAM INPUT DRIVER ADDR
0386*
0387*                                     SET LIBRARY INPUT UNIT
0388  02250 014462          JSB SPACE     NEW LINE
0389  02251 060234          LDA P10
0390  02252 067603          LDB MESS5     MESS5 = ADDR: LIBR INPT?
0391  02253 017310          JSB REPLY     PRINT MESSAGE, GET REPLY
0392  02254 017342          JSB SINIT     GET CODE, ANALYSE
0393  02255 026251          JMP *-4
0394  02256 070421          STA LIBAD     SET LIB INPUT DRIVER ADDRESS
0395*
0396*                                     SET PARAMETER INPUT UNIT
0397  02257 014462          JSB SPACE     NEW LINE
0398  02260 060234          LDA P10
0399  02261 067611          LDB MESS6     MESS6 = ADDR: PRAM INPT?
0400  02262 017310          JSB REPLY     PRINT MESSAGE, GET REPLY
0401  02263 017342          JSB SINIT     GET CODE, ANALYSE
0402  02264 026260          JMP *-4
0403  02265 071115          STA PARAD     PARAD = PRAM INPUT DRIVER ADDR
```

```
0405*
0406*                                          CONFIGURE DISK I/O INSTRUCTIONS
0407*
0408  02266 060336  CHSET LDA UBLNK      GET DMA CONTROL
0409  02267 030340        IOR MSIGN        WORD (120000B)
0410  02270 031111        IOR DCHNL      INSERT CHANNEL NO.
0411  02271 102606        OTA 6          OUTPUT CONTROL WORD
0412  02272 170170        STA APBD,I     PUT DMACW IN PRE-BOOT PROCESSOR
0413*
0414  02273 061111        LDA DCHNL
0415  02274 170174        STA ADCHN,I
0416  02275 170167        STA APBC,I     PUT DISC I/O CHNL IN PRE-BOOT
0417*
0418  02276 160173        LDA ADVAD,I
0419  02277 071326        STA TBUF
0420  02300 060127        LDA DVORG
0421  02301 170173        STA ADVAD,I
0422  02302 065000        LDB DVEND
0423  02303 114172        JSB ACNFG,I    CONFIGURE DISC I/O INSTRUCTIONS
0424  02304 061326        LDA TBUF
0425  02305 170173        STA ADVAD,I
0426  02306 102501        LIA 1
0427  02307 002020        SSA            INITIALIZE DISC ONLY?
0428  02310 124162        JMP AIDSK,I     =YES
0429  02311 061114        LDA LWASM      GET LWA SYSTEM MEMORY
0430  02312 010303        AND M0760      ISOLATE PAGE NUMBER
0431  02313 071326        STA TBUF       SAVE PAGE NO. OF BOOTSTRAP LDR
0432  02314 160147        LDA ASBUF,I
0433  02315 010316        AND M1777
0434  02316 031326        IOR TBUF
0435  02317 170147        STA ASBUF,I    ADJUST PAGE# OF ASPBF
0436*
0437  02320 114165        JSB AOUT3,I    OUTPUT SECTORS 0-3
0438  02321 062521        LDA JSBOU
0439  02322 017501        JSB PAGIO
0440*
0441  02323 060113        LDA AINPT      GET ADDR OF INIT. PROG. CODE
0442  02324 070112        STA TRANS      SET CURRENT TRANSFER ADDRESS
```

```
0444*
0445*                                          INITIALIZE LOADING
0446*
0447  02325 002400  INPUT CLA
0448  02326 071124        STA DERCN      SET DISK ERROR COUNT TO ZERO
0449  02327 070363        STA DEOF
0450  02330 014462        JSB SPACE      NEW LINE
0451  02331 014462        JSB SPACE      NEW LINE
0452  02332 060106        LDA LWAM       GET LAST WORD AVAIL MEMORY
0453  02333 040214        ADA N6         ADJUST FOR FIRST IDENT LENGTH
0454  02334 071101        STA BIDNT      BIDNT = ADDR OF FIRST IDENT
0455  02335 071103        STA PIDNT      PIDNT = ADDRESS OF NEXT IDENT
0456  02336 010303        AND M0760
0457  02337 043516        ADA N26K
0458  02340 065076        LDB BLST
0459  02341 002021        SSA,RSS        16K COMPUTER?
0460  02342 075070        STB AIBUF       =YES, MOVE IBUF
0461  02343 002021        SSA,RSS        16K?
0462  02344 044274        ADB P128        =YES, MOVE LST
0463  02345 075076        STB BLST
0464  02346 075100        STB PLST       INITIALIZE END OF LST
0465  02347 060371        LDA DSKSC      GET DISK ADDRESS OF SCRATCH AREA
0466  02350 071125        STA DSKAD      SET CURRENT DISK ADDRESS
0467  02351 017301        JSB IDBUF      INITIALIZE DBUF
0468  02352 003400        CCA            SET A = -1
0469  02353 071126        STA PLFLG      PLFLG = LOADING FLAG = -1
0470*
0471*                                    TEST FOR PROG, LIB, END OF LOAD
0472*                                    SWR = 00 - LOAD NEXT SOURCE PROG
0473*                                    SWR = 01 - TERMINATE LOADING
0474*                                    SWR = 10 - LOAD LIBRARY PROGRAM
0475*
0476  02354 102077  TSTIN HLT 77B        GET SWR, SET INPUT UNIT
0477  02355 002400        CLA            SET TO NOT IGNORE
0478  02356 073514        STA PASS2        DUPLICATE ENT'S
0479  02357 061103        LDA PIDNT      SAVE END OF IDENT & LST
0480  02360 070434        STA SIDNT        TABLES IN CASE OF CHECKSUM,
0481  02361 061100        LDA PLST         RECORD OUT OF SEQUENCE, OR
0482  02362 070435        STA SLST         ILLEGAL RECORD ERRORS
0483  02363 061125        LDA DSKAD      SAVE URRENT
0484  02364 073515        STA SDSKA        DISC ADDRESS
0485  02365 102501  TST1  LIA 1          GET SWITCH REGISTER
0486  02366 000010        SLA            SKIP IF MORE RECS TO READ
0487  02367 027416        JMP LSTEX      PROCESS END OF LOAD CONDITION
0488  02370 000040  TSTN4 CLE            SET FOR NO MASS STORAGE INPUT
0489  02371 064420        LDB PGMAD      GET PROG INPUT DRIVER ADDR
0490  02372 001110        ARS,SLA        SKIP - LOAD PROGRAM TAPE
0491  02373 064421        LDB LIBAD      GET LIBR INPUT DRIVER ADDR
0492  02374 006020        SSB            IF BIT 15 IS SET, SET THE "E"
0493  02375 005265        RBL,CLE,ERB     REGISTER FOR MASS STORAGE INPUT
0494  02376 074422        STB PINAD      SET INPUT UNIT DRIVER ADDR
0495  02377 002041        SEZ,RSS        IF E=1, SET DRMAG # 0 TO INDICAT
0496  02400 006400        CLB             INPUT IS FROM A MASS STORAGE
0497  02401 074107        STB DRMAG      DEVICE
0498  02402 003400        CCA
0499  02403 070426        STA ETFLG      SET EOT FLAG = IGNORE 1@ FF
```

```
0500*
0501*                                          READ BINARY RECORD
0502  02404 065066  LDRIN LDB ALBUF     ALBUF = ADDR OF LBUF
0503  02405 014451        JSB BUFCL     CLEAR LBUF
0504  02406 060107        LDA DRMAG
0505  02407 002003        SZA,RSS       IF 107#0, INPUT FROM MASS TORAGE
0506  02410 026420        JMP PTDV.
0507  02411 060253        LDA N128
0508  02412 065066        LDB ALBUF
0509  02413 114422        JSB PINAD,I
0510  02414 000000        OCT 0
0511  02415 026430        JMP MTEOT
0512  02416 026466        JMP PAR.E
0513  02417 026434        JMP TESTR
0514  02420 060253  PTDV. LDA N128
0515  02421 065066        LDB ALBUF     ALBUF = ADDRESS OF LBUF
0516  02422 114422        JSB PINAD,I   GET BINARY RECORD FROM INPT UNIT
0517  02423 002002        SZA           TEST FOR FEED FRAMES INPUT
0518  02424 026434        JMP TESTR     NO - PROCESS RECORD
0519  02425 060426        LDA ETFLG     GET EOT FLAG
0520  02426 002002        SZA           SKIP IF MAX 10 FF PERMITTED
0521  02427 026404        JMP LDRIN     IGNORE 10 FEED FRAMES
0522  02430 060226  MTEOT LDA P4
0523  02431 067533        LDB MESS7     MESS7 = ADDR: *EOT
0524  02432 114102        JSB DRKEY,I
0525  02433 026354        JMP TSTIN     TEST SWR, SET INPUT UNUT
0526*
0527*                                          PROCESS INPUT RECORD
0528  02434 002400  TESTR CLA
0529  02435 070426        STA ETFLG     SET EOT FLAG = MAX 10 FF
0530  02436 061571        LDA LBUF+1    GET RECORD IDENTIFIER
0531  02437 001723        ALF,RAR       ROTATE RIC TO LOW A
0532  02440 010231        AND M7        ISOLATE RIC
0533  02441 070430        STA RIC       RIC = RECORD IDENT CODE
0534  02442 002002        SZA           SKIP IF ABSOLUTE RECORD
0535  02443 040214        ADA L6        ADD -6B
0536  02444 002021        SSA,RSS       TEST FOR RIC = (1,5)
0537  02445 026472        JMP RCERR     INVALID RECORD TYPE
0538*
0539*                                          TEST CHECK SUM
0540  02446 065570        LDB LBUF      GET RECORD LENGTH
0541  02447 005727        BLF,BLF       ROTATE TO LOW B
0542  02450 007004        CMB,INB       SET TO NEG
0543  02451 044225        ADB P3        ADD 3 FOR WORD COUNT IN CHECKSUM
0544  02452 006021        SSB,RSS       TEST FOR SHORT (1,3) RECORD
0545  02453 026472        JMP RCERR     SHORT (1-3) WORD RECORD
0546  02454 075075        STB WDCNT     SET RECORD WORD COUNT
0547  02455 061571        LDA LBUF+1    GET WORD 2 - INITIALIZE CHECKSUM
0548  02456 065066        LDB ALBUF     ALBUF = A(LBUF)
0549  02457 044225        ADB P3
0550  02460 140001        ADA B,I       ADD WORD TO CHECKSUM
0551  02461 006004        INB           INCR ADDR
0552  02462 035075        ISZ WDCNT     SKIP IF END OF RECORD
0553  02463 026460        JMP *-3       CONTINUE CHECKSUM TEST
0554  02464 051572        CPA LBUF+2    TEST WITH GIVEN CHECKSUM
0555  02465 026476        JMP LDRC      PROCESS VALID RECORD
```

```
0556*
0557*                                          INVALID CHECKSUM
0558  02466 063520  PAR,E LDA ERR02
0559  02467 014466        JSB ERROR     PRINT ERROR MESSAGE
0560  02470 102002        HLT 02B       WAIT FOR OPERATOR INTERVEBTION
0561  02471 026642        JMP TRYA      TRY AGAIN AT BEGINNING
0562*
0563  02472 063522  RCERR LDA ERR04
0564  02473 014466        JSB ERROR     PRINT ERROR MESSAGE
0565  02474 102004        HLT 04B       WAIT FOR OPERATOR INTERVENTION
0566  02475 026642        JMP TRYA      TRY AGAIN AT BEGINNING
0567*
0568*                                          CLASSIFY RECORDS BY TYPE
0569  02476 060430  LDRC  LDA RIC       GET REC IDENT CODE
0570  02477 065126        LDB PLFLG     PLFLG = PROGRAM LOADING FLAG
0571  02500 050223        CPA P1        RIC = 1? (NAM)
0572  02501 026655        JMP NAMR      PROCESS NAM REC
0573  02502 006002        SZB           SKIP IF NOT LOADING
0574  02503 026637        JMP NMERR     RECORD OUT OF SEQUENCE
0575  02504 050224        CPA P2        RIC = 2? (ENT)
0576  02505 027032        JMP ENTR      PROCESS ENT REC
0577  02506 050225        CPA P3        RIC = 3? (DBL)
0578  02507 026776        JMP DBLR      PROCESS DBL REC
0579  02510 050226        CPA P4        RIC = 4? (EXT)
0580  02511 027033        JMP EXTR      PROCESS EXT REC
```

```
0582*
0583*                                          PROCESS END RECORD
0584  02512 002404          CLA,INA           SET MASK = 1
0585  02513 011571          AND LBUF+1        ISOLATE M/S
0586  02514 001300          RAR               MOVE M/S TO SIGN POSITION
0587  02515 131135          IOR ID6,I         ADD TO PRIORITY,TYPE
0588  02516 171135          STA ID6,I         SET M/S, PRIORITY, TYPE
0589  02517 061536          LDA DSKID         GET NEXT DBL ADDRESS
0590  02520 065066          LDB ALBUF         GET ADDRESS OF LBUF
0591  02521 114127  JSBOU    JSB ADOUT,I       OUTPUT END RECORD
0592  02522 060424          LDA TADBL         GET NEXT DBLST ADDRESS
0593  02523 070425          STA PADBL         SAVE END OF DBLST
0594  02524 002400          CLA               GET MIN RELOCATION ADDR
0595  02525 071105          STA TCHAR         SET CURRENT (MIN) VALUE
0596  02526 060317  SORT1    LDA M7777         GET MAX RELOCATION ADDR
0597  02527 071104          STA MAXC          SAVE MAX VALUE
0001  02530 060334          LDA DBADR         GET ADDRESS OF DBL LIST
0002  02531 070424          STA TADBL         SET CURRENT DBLST ADDRESS
0003  02532 060424  SORT2    LDA TADBL         GET ADDRESS OF NEXT ENTRY
0004  02533 034424          ISZ TADBL         INCR ADDR FOR NEXT ENTRY
0005  02534 050425          CPA PADBL         END OF LIST?
0006  02535 026572          JMP SORT5         YES - TEST FOR END OF SORT
0007  02536 164000          LDB A,I           GET CURRENT VALUE
0008  02537 007004          CMB,INB
0009  02540 045105          ADB TCHAR         ADD MIN VALUE
0010  02541 006003          SZB,RSS           SKIP - NOT CURRENT VALUE
0011  02542 026554          JMP SORT3         OUTPUT CURRENT RECORD
0012  02543 006021          SSB,RSS           SKIP - GREATER, EQUAL TO MIN
0013  02544 026532          JMP SORT2         IGNORE LESS THAN MIN
0014  02545 164000          LDB A,I           GET CURRENT VALUE
0015  02546 060001          LDA B             SAVE VALUE IN A
0016  02547 007004          CMB,INB
0017  02550 045104          ADB MAXC          ADD MAX VALUE
0018  02551 007026          CMB,SSB,INB,SZB   SKIP - NO NEW MAX
0019  02552 071104          STA MAXC          SET NEW MAX
0020  02553 026532          JMP SORT2         GET NEXT VALUE
0021*
0022  02554 003004  SORT3    CMA,INA
0023  02555 040334          ADA DBADR         GET ADDRESS OF DBL LIST
0024  02556 071075          STA WDCNT         SET DBL LIST DISPLACEMENT
0025  02557 070001          STA B
0026  02560 060370          LDA DSKAB
0027  02561 006003          SZB,RSS
0028  02562 026566          JMP *+4
0029  02563 014523          JSB DISKA         INCR DBL DISC ADDRESS
0030  02564 035075          ISZ WDCNT         SKIP - END OF SEARCH FOR DBL REC
0031  02565 026563          JMP *-2           INCR DISK ADDRESS
0032  02566 065066          LDB ALBUF         GET ADDRESS OF LBUF
0033  02567 014544  JSBIN    JSB DISKI         GET RECORD FROM DISC
0034  02570 017230          JSB DWRIT         PACK,PUT OUT TO DISK
0035  02571 026532          JMP SORT2         GET NEXT VALUE
0036*
0037  02572 061104  SORT5    LDA MAXC          GET PREVIOUS MAX
0038  02573 071105          STA TCHAR         SET NEW MIN
0039  02574 050317          CPA M7777         END OF SORT?(NO NEW MAX SET)
0040  02575 002001          RSS
```

```
0041  02576 026526          JMP SORT1      NO = PROCESS NEXT VALUE
0042*
0043  02577 003400          CCA
0044  02600 071126          STA PLFLG      SET PROG LOAD FLAG = LOADING
0045  02601 070427          STA CNFLG      SET FLAG FOR LB, UT END COUNT
0046  02602 061536          LDA DSKID      GET ADDRESS OF END RECORD
0047  02603 065066          LDB ALBUF      GET ADDR OF LBUF
0048  02604 014544          JSB DISKI      GET END RECORD
0049  02605 017230          JSB DWRIT      PACK, PUT OUT TO DISK
0050*
0051  02606 061313          LDA LWH1       WAS PROGRAM COMPILED?
0052  02607 002003          SZA,RSS
0053  02610 026404          JMP LDRIN       NO= SKIP NAM UPDATE
0054*
0055  02611 065066          LDB ALBUF
0056  02612 014544          JSB DISKI      INPUT NAM RECORD
0057  02613 061314          LDA LWH2
0058  02614 071576          STA LBUF+6     SET NEW LENGTH IN WORD 7
0059*
0060  02615 061570          LDA LBUF       COMPUTE NEW CHECKSUM
0061  02616 001727          ALF,ALF
0062  02617 010242          AND M177
0063  02620 003004          CMA,INA
0064  02621 040225          ADA P3
0065  02622 070522          STA LBCNT
0066  02623 061571          LDA LBUF+1
0067  02624 065066          LDB ALBUF
0068  02625 044225          ADB P3
0069  02626 140001          ADA B,I
0070  02627 006004          INB
0071  02630 034522          ISZ LBCNT
0072  02631 026626          JMP *-3
0073  02632 071572          STA LBUF+2
0074*
0075  02633 061313          LDA LWH1
0076  02634 065066          LDB ALBUF
0077  02635 014550          JSB DISKO      OUTPUT UPDATED NAM RECORD TO DSC
0078  02636 026404          JMP LDRIN
0079*
0080  02637 063521  NMERR LDA ERR03
0081  02640 014466          JSB ERROR      PRINT ERROR MESSAGE
0082  02641 102003          HLT 03B        WAIT FOR OPERATOR INTERVENTION
0083*
0084  02642 060434  TRYA  LDA SIDNT       RESTORE END OF
0085  02643 071103          STA PIDNT        IDENT & LST
0086  02644 060435          LDA SLST         TABLES
0087  02645 071100          STA PLST
0088  02646 063515          LDA SDSKA      RESTORE DISC
0089  02647 071125          STA DSKAD        ADDRESS
0090  02650 017301          JSB IDBUF      INITIALIZE DBUF
0091  02651 003400          CCA            SET PROGRAM FLAG
0092  02652 071126          STA PLFLG        = LOADING
0093  02653 073514          STA PASS2      SET TO IGNORE DUP ENT'S
0094  02654 026365          JMP TST1       RE-INPUT AT BEGINNING OF PROGRAM
```

```
0096*
0097*                                          NAM RECORD PROCESSOR
0098   01573          NAM12 EQU LBUF+3
0099   01574          NAM34 EQU LBUF+4
0100   01575          NAM5  EQU LBUF+5
0101   01576          NPL   EQU LBUF+6
0102   01577          NBP   EQU LBUF+7
0103   01600          NCOM  EQU LBUF+8
0104   01601          NTYP  EQU LBUF+9
0105   01602          NLNK  EQU LBUF+10
0106*
0107   02655 006003   NAMR  SZB,RSS       SKIP IF LOADING
0108   02656 026637        JMP NMERR      RECORD OUT OF SEQUENCE
0109   02657 061570        LDA LBUF       GET RECORD LENGTH
0110   02660 040277        ADA L2000      IS REOCRD LENGTH
0111   02661 002020        SSA              LESS THAN 4
0112   02662 026472        JMP RCERR          YES = ILLEGAL RECORD LENGTH
0113   02663 064352        LDB TR201      MAKE UP NEG 57 CONSTANT
0114   02664 044314        ADB M7000
0115   02665 040001        ADA B          IS RECORD LENGTH
0116   02666 002021        SSA,RSS          GREATER THAN 60
0117   02667 026472        JMP RCERR          YES = ILLEGAL RECORD LENGTH
0118   02670 064370   NAMOK LDB DSKAB    SET DBL DISC ADDR = 0,3
0119   02671 075536        STB DSKID      SET CURRENT DBL DISK ADDRESS
0120   02672 006400        CLB
0121   02673 075127        STB DSCNT      CLEAR DISK SEGMENT COUNT
0122   02674 074427        STB CNFLG      CLEAR DISK SEGMENT COUNT FLAG
0123   02675 075126        STB PLFLG      SET PLFLG = NOT LOADING
0124   02676 060334        LDA DBADR      GET ADDRESS OF DBL LIST
0125   02677 070424        STA TADBL      SET CURRENT DBLST ADDRESS
0126   02700 015332        JSB INIDX      INITIALIZE IDENT ADDRESSES
0127   02701 015336   NEXTN JSB IDX       SET IDENT ADDRESSES
0128   02702 026726        JMP ENTNA      YES = ENTER NAME
0129   02703 061573        LDA NAM12      GET NAME 1,2
0130   02704 151130        CPA ID1,I      EQUAL?
0131   02705 002001        RSS            YES = CONTINUE
0132   02706 026701        JMP NEXTN      NO = TRY NEXT IDENT
0133   02707 061574        LDA NAM34      GET NAME 3, 4
0134   02710 151131        CPA ID2,I      EQUAL?
0135   02711 002001        RSS            YES = CONTINUE
0136   02712 026701        JMP NEXTN      NO = TRY NEXT IDENT
0137   02713 061575        LDA NAM5       GET NAME 5
0138   02714 010244        AND M7400      ISOLATE UPPER CHAR
0139   02715 151132        CPA ID3,I      EQUAL
0140   02716 002001        RSS            YES = CONTINUE
0141   02717 026701        JMP NEXTN      NO = TRY NEXT IDENT
0142*
0143   02720 063525        LDA ERR08      GET ERROR CODE = DUPLICATE NAMES
0144   02721 014466        JSB ERROR      PRINT DIAGNOSTIC
0145   02722 060227        LDA P5
0146   02723 065130        LDB ID1        GET ADDRESS OF NAME IN IDENT
0147   02724 114102        JSB DRKEY,I    PRINT DUPLICATE PROG. NAME
0148   02725 026737        JMP REPNA      REPLACE REST OF IDENT
0149*
0150   02726 061573   ENTNA LDA NAM12     GET NAME 1,2
0151   02727 171130        STA ID1,I      SET NAME 1,2 IN IDENT
```

```
0152  02730 061574         LDA NAM34     GET NAME 3,4
0153  02731 171131         STA ID2,I     SET NAME 3,4 IN IDENT
0154  02732 061575         LDA NAM5      GET NAME 5
0155  02733 010244         AND M7400     SAVE UPPER CHAR
0156  02734 171132         STA ID3,I     SET NAME 5 IN IDENT
0157  02735 061102         LDA TIDNT     GET ADDRESS OF NEXT IDENT
0158  02736 071103         STA PIDNT     SAVE NEXT IDENT ADDRESS
0159*
0160  02737 061601  REPNA LDA NTYP       GET PROGRAM TYPE
0161  02740 010242         AND M177      ISOLATE TYPE
0162  02741 171135         STA ID6,I     SET TYPE IN IDENT
0163  02742 030506         IOR LOLIB     LOLIB = 0 IF NOT SET YET
0164  02743 065125         LDB DSKAD
0165  02744 175134         STB ID6,I     SET CURRENT DISC ADDR IN IDENT
0166  02745 050230         CPA P6        1ST LIBRY RECORD8?
0167  02746 074506         STB LOLIB      =YES
0168  02747 050231         CPA P7
0169  02750 074506         STB LOLIB      =YES
0170*
0171  02751 061576         LDA NPL       WAS PROGRAM COMPILED?
0172  02752 002021         SSA,RSS
0173  02753 006400         CLB             NO = LWH1=0
0174  02754 075313         STB LWH1        YES = LWH1=DISC ADDR OF NAM RC
0175*
0176  02755 161135         LDA ID6,I
0177  02756 065602         LDB NLNK      BASE PAGE LINKING SPECIFIED?
0178  02757 006002         SZB
0179  02760 032775         IOR BT14        YES = SET BIT 14 OF ID6
0180  02761 171135         STA ID6,I
0181*
0182  02762 065600         LDB NCOM      GET COMMON LENGTH
0183  02763 175133         STB ID4,I     SAVE COMMON LENGTH
0184  02764 063524         LDA ERR06     GET ERROR CODE
0185  02765 065577         LDB NBP       GET BP LENGTH
0186  02766 006002         SZB            =ERROR IF NON=ZERO
0187  02767 014466         JSB ERROR     PRINT DIAGNOSTIC
0188  02770 002400         CLA
0189  02771 171136         STA ID10,I    CLEAR BS IDENT MAIN ADDRESS
0190  02772 071104         STA MAXC      CLEAR MAX RELOC ADDR FOR DBL
0191  02773 017230         JSB DWRIT     PACK RECORD, OUTPUT TO DISK
0192  02774 026404         JMP LDRIN     GET NEXT RECORD
0193*
0194  02775 040000  BT14   OCT 040000
```

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0196*
0197*                                          DBL REC PROCESSOR
0198   02776 061573  DBLR  LDA LBUF+3          GET RELOCATION ADDRESS
0199   02777 170424        STA TADBL,I         SAVE ADDR IN DBLST
0200   03000 034424        ISZ TADBL           INCR DBLST ADDR FOR NEXT ENTRY
0201   03001 060424        LDA TADBL           GET NEXT DBLST ADDRESS
0202   03002 003004        CMA,INA
0203   03003 040111        ADA ANDBL           ADD ADDRESS OF END OF DBL LIST
0204   03004 002021        SSA,RSS             SKIP - DBL OVERFLOW
0205   03005 027010        JMP *+3             NO DBL OVERFLOW
0206   03006 063527        LDA ERR20           GET ERROR CODE - DBL OVERFLOW
0207   03007 014466        JSB ERROR           PRINT DIAGNOSTIC
0208   03010 061536        LDA DSKID           GET DBL DISK ADDRESS
0209   03011 065066        LDB ALBUF           GET ADDRESS OF LBUF
0210   03012 114127        JSB ADOUT,I         OUTPUT DBL RECORD
0211   03013 061536        LDA DSKID           GET DISK ADDRESS
0212   03014 014523        JSB DISKA           INCR ADDRESS
0213   03015 071536        STA DSKID           SET NEW DISK ADDRESS
0214*
0215   03016 065573        LDB LBUF+3          CURRENT RELOC ADDR > MAX?
0216   03017 061104        LDA MAXC
0217   03020 003004        CMA,INA
0218   03021 040001        ADA B
0219   03022 002020        SSA
0220   03023 026404        JMP LDRIN             NO- IGNORE
0221   03024 061571        LDA LBUF+1            YES- COMPUTE NEW PROG LENGTH
0222   03025 010241        AND M77
0223   03026 040001        ADA B
0224   03027 071314        STA LWH2                    SAVE LENGTH FOR CP LINKS
0225   03030 075104        STB MAXC                    UPDATE NEW MAX RELOC ADDR
0226   03031 026404        JMP LDRIN           GET NEXT RECORD
```

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0228*
0229*                                          ENT/EXT RECORD PROCESSOR
0230  03032 003401  ENTR  CCA,RSS              ENT PROCESSOR
0231  03033 002400  EXTR  CLA                  EXT PROCESSOR
0232  03034 071144        STA NXFLG           NXFLG = ENT/EXT FLAG
0233  03035 061571        LDA LBUF+1          SET NO. SYMBOLS
0234  03036 010240        AND M37             ISOLATE NO. SYMBOLS
0235  03037 003004        CMA,INA
0236  03040 071145        STA EXCNT           SET SYMBOL COUNT
0237  03041 061066        LDA ALBUF           ALBUF = A(LBUF)
0238  03042 040225        ADA P3              P3 = +3
0239  03043 070431  SETNX STA SYM12          SET STARTING SYMBOL ADDR
0240  03044 002004        INA
0241  03045 070432        STA SYM34           SET CHARS 3,4 ADDR
0242  03046 002004        INA
0243  03047 070433        STA SYM5            SET CHAR 5 ADDR
0244  03050 015371        JSB INLST           INITIALIZE LST ADDRESSES
0245  03051 015375  ENTX1 JSB LSTX            SET LST1 - LST5
0246  03052 027125        JMP ENTX3           END OF LST
0247  03053 160431        LDA SYM12,I         GET CHARS 1,2
0248  03054 151137        CPA LST1,I          EQUAL?
0249  03055 002001        RSS                 YES - CONTINUE
0250  03056 027051        JMP ENTX1           TRY NEXT ENTRY
0251  03057 160432        LDA SYM34,I         GET CHARS 3,4
0252  03060 151140        CPA LST2,I          EQUAL?
0253  03061 002001        RSS                 YES - CONTINUE
0254  03062 027051        JMP ENTX1           TRY NEXT ENTRY
0255  03063 160433        LDA SYM5,I          GET CHAR 5
0256  03064 010244        AND M7400           ISOLATE UPPER CHAR
0257  03065 151141        CPA LST3,I          EQUAL?
0258  03066 002001        RSS                 YES - CONTINUE
0259  03067 027051        JMP ENTX1           TRY NEXT ENTRY
0260*
0261  03070 061144        LDA NXFLG           GET ENT/EXT FLAG
0262  03071 002003        SZA,RSS             SKIP IF ENT
0263  03072 027153        JMP ENTX4           COMPLETE EXT PROCESSING
0264*
0265*                                          PROCESS ENT REC
0266  03073 161142        LDA LST4,I          GET WORD 4 OF LST ENTRY
0267  03074 002003        SZA,RSS             SKIP IF NON-ZERO (DEFINED)
0268  03075 027122        JMP ENTX2           MAKE ENTRY FOR UNDEFINED EXT
0269  03076 002020        SSA                 SKIP IF ENTRY MADE
0270  03077 027111        JMP ENTX6           MAKE ENTRY FOR BS EXT
0271  03100 063514        LDA PASS2           RELOADING BECAUSE OF
0272  03101 002002        SZA                   ERROR?
0273  03102 027122        JMP ENTX2           YES - IGNORE DUP ENT'S
0274  03103 063523        LDA ERR05           SET CODE - DUPLICATE ENTRY POINT
0275  03104 014466        JSB ERROR           PRINT ERROR MESSAGE
0276  03105 060227        LDA P5
0277  03106 065137        LDB LST1            LST1 = ADDR OF SYMBOL
0278  03107 114102        JSB DRKEY,I         PRINT DUPLICATE ENTRY SYMBOL
0279  03110 027122        JMP ENTX2           IGNORE DUPLICATE ENT'S
0280  03111 161135  ENTX6 LDA ID6,I          GET CURRENT TYPE
0281  03112 010242        AND M177            ISOLATE TYPE
0282  03113 050224        CPA P2              TYPE 2?
0283  03114 002001        RSS                   YES, ERROR
```

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0284  03115 050225        CPA P3          TYPE = BG DISK RESIDENT?
0285  03116 002001        RSS             YES - CONTINUE (ERROR)
0286  03117 027122        JMP ENTX2       MAKE ENTRY FOR UNDEFINED EXT
0287  03120 063526        LDA ERR13       SET CODE = INVALID BG BS ORDER
0288  03121 014474        JSB IRERR       IRRECOVERABLE ERROR
0289  03122 061130  ENTX2  LDA ID1         GET MAIN IDENT ADDRESS
0290  03123 171142        STA LST4,I      ENTER IDENT ADDR IN WORD 4
0291  03124 027217        JMP ENTX5
0292  03125 160431  ENTX3  LDA SYM12,I     GET CHARS 1,2
0293  03126 171137        STA LST1,I      SET CHARS 1,2 IN LST
0294  03127 160432        LDA SYM34,I     GET CHARS 3,4
0295  03130 171140        STA LST2,I      SET CHARS 3,4 IN LST
0296  03131 160433        LDA SYM5,I      GET CHAR 5
0297  03132 010244        AND M7400       ISOLATE UPPER CHAR
0298  03133 171141        STA LST3,I      SET CHAR 5 IN LST
0299  03134 061143        LDA LST5        GET WORD 5 ADDR
0300  03135 002004        INA
0301  03136 071100        STA PLST        PLST = NEXT LST ENTRY ADDRESS
0302  03137 006400        CLB
0303  03140 175143        STB LST5,I      CLEAR WORD 5 IN LST ENTRY (BOTH)
0304  03141 061144        LDA NXFLG       GET EXT/ENT FLAG
0305  03142 002002        SZA             SKIP IF EXT ENTRY
0306  03143 027122        JMP ENTX2       SET WORD 4 OF ENT ENTRY
0307  03144 161135        LDA ID6,I       GET TYPE
0308  03145 010242        AND M177        ISOLATE TYPE
0309  03146 065130        LDB ID1         GET MAIN IDENT ADDRESS
0310  03147 050227        CPA P5          TYPE = BS?
0311  03150 007001        CMB,RSS         YES - SET LST4 = BS REF, SKIP
0312  03151 006400        CLB             NO - SET LST4 = UNDEFINED
0313  03152 175142        STB LST4,I      YES - SET ADDRESS IN LST WORD 4
0314  03153 161135  ENTX4  LDA ID6,I       GET TYPE
0315  03154 010242        AND M177        ISOLATE TYPE
0316  03155 050222        CPA ZERO        TYPE = SYSTEM?
0317  03156 002001        RSS             YES - SET LIBRARY RESIDENT CODE
0318  03157 050223        CPA P1          TYPE = RT RESIDENT?
0319  03160 135143        ISZ LST5,I      INCR WORD 5 - LIBRARY RESIDENT
0320  03161 050227        CPA P5          TYPE = BG SEGMENT?
0321  03162 002001        RSS             YES - CONTINUE
0322  03163 027217        JMP ENTX5       NO - IGNORE BG SEG MAIN ADDR
0323  03164 061130        LDA ID1         GET CURRENT IDENT ADDRESS
0324  03165 071551        STA IMAIN       SAVE IDENT ADDRESS
0325  03166 161142        LDA LST4,I      GET IDENT ADDRESS
0326  03167 002002        SZA             SKIP IF UNDEFINED
0327  03170 002020        SSA             SKIP IF IDENT ADDRESS
0328  03171 027217        JMP ENTX5       IGNORE UNDEFINED EXT
0329  03172 071102        STA TIDNT       SET IDENT ADDRESS FOR IDX
0330  03173 015336        JSB IDX         SET IDENT ADDRESSES
0331  03174 102000        HLT 0           IDENT NOT FOUND
0332  03175 161135        LDA ID6,I       GET TYPE
0333  03176 002021        SSA,RSS         SKIP IF MAIN
0334  03177 027205        JMP NTMAN       SET FLAG FOR IGNORING BS REF
0335  03200 010242        AND M177        ISOLATE TYPE
0336  03201 050224        CPA P2          TYPE 2?
0337  03202 002001        RSS               YES-SET FLAG FOR SEGMENT REF
0338  03203 050225        CPA P3          TYPE = BG DISK RESIDENT?
0339  03204 007401        CCB,RSS         SET FLAG FOR BS REF, SKIP
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0340   03205 006400  NTMAN CLB            SET FLAG FOR IGNORING BS REF
0341   03206 075105        STB TCHAR      SET FLAG = 0/-1 = IGNORE/BS REF
0342   03207 061551        LDA IMAIN      GET CURRENT IDENT ADDRESS
0343   03210 071102        STA TIDNT      SET FOR NEXT IDENT ADDRESSES
0344   03211 015336        JSB IDX        SET CURRENT IDENT ADDRESSES
0345   03212 102000        HLT 0          ADDRESS INVALID
0346   03213 035105        ISZ TCHAR      SKIP - SET IDENT ADDR FOR BS REF
0347   03214 027217        JMP ENTX5      IGNORE IF NOT MAIN BG DISK RES
0348   03215 161142        LDA LST4,I     GET BG MAIN ADDRESS
0349   03216 171136        STA ID10,I     SET MAIN IDENT ADDR IN BS IDENT
0350   03217 060431  ENTX5 LDA SYM12      GET SYMBOL ADDR
0351   03220 040225        ADA P3         ADJUST FOR BOTH ENT & EXT
0352   03221 065144        LDB NXFLG      GET EXT/ENT FLAG
0353   03222 006002        SZB            SKIP IF EXT ENTRY
0354   03223 002004        INA            ADJUST FOR ENT REC (4-WORD ENT)
0355   03224 035145        ISZ EXCNT      TEST SYMBOL COUNTER
0356   03225 027043        JMP SETNX      PROCESS NEXT SYMBOL
0357   03226 017230        JSB DWRIT      PACK RECORD, OUTPUT TO DISK
0358   03227 026404        JMP LDRIN      GET NEXT RECORD
```

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0360*
0361*                                       WRITE RELOC REC ON DISK
0362*
0363*  DWRIT PACKS THE CURRENT CONTENTS OF LBUF INTO DBUF AND DUMPS
0364*  DBUF WHEN IT CONTAINS 128 WORDS OF RELOCATABLE INPUT.
0365*  IF THE END RECORD IS BEING PROCESSED, DWRIT TESTS FOR
0366*  PROCESSING LIBRARY PROGRAMS AND SETS THE NO. OF PACKED
0367*  RELOCATABLE LIBRARY RECORDS IN WORD 10 OF IDENT FOR
0368*  USE IN MOVING THE RELOCATABLE LIBRARY TO THE PROTECTED
0369*  AREA OF THE DISK AFTER THE LOADING PHASE IS COMPLETE.
0370*  CALLING SEQUENCE:
0371*    A = IGNORED
0372*    B = IGNORED
0373*    JSB DWRIT
0374*
0375*  RETURN: CONTENTS OF A AND B DESTROYED
0376*
0377  03230 000000  DWRIT NOP
0378  03231 065066        LDB ALBUF     GET ADDRESS OF LBUF
0379  03232 075566        STB CURAL     SAVE CURRENT LBUF ADDRESS
0380  03233 061570        LDA LBUF      GET RECORD LENGTH
0381  03234 001727        ALF,ALF       ROTATE TO LOW A
0382  03235 003004        CMA,INA
0383  03236 071567        STA LCNT      SAVE RECORD LENGTH COUNT
0384  03237 161566  LTOD  LDA CURAL,I   GET WORD FROM LBUF
0385  03240 171146        STA CURAD,I   SET WORD INTO DBUF
0386  03241 035147        ISZ DCNT      SKIP IF DBUF FULL
0387  03242 027245        JMP GETL      TEST FOR END OF LBUF
0388  03243 017267        JSB DDOUT     OUTPUT DBUF TO DISK
0389  03244 002001        RSS           OMIT CURRENT DBUF ADDR INCREMENT
0390  03245 035146  GETL  ISZ CURAD     INCR CURRENT DBUF ADDRESS
0391  03246 035566        ISZ CURAL     INCR CURRENT LBUF ADDRESS
0392  03247 035567        ISZ LCNT      SKIP IF LBUF MOVED TO DBUF
0393  03250 027237        JMP LTOD      MOVE NEXT WORD TO DBUF
0394  03251 060427        LDA CNFLG     GET END FLAG
0395  03252 002003        SZA,RSS       SKIP IF END RECORD READ
0396  03253 127230        JMP DWRIT,I   RETURN
0397*
0398  03254 061147        LDA DCNT
0399  03255 050253        CPA N128      BUFFER EMPTY?
0400  03256 002001        RSS
0401  03257 017267        JSB DDOUT     OUTPUT TO DISK
0402*
0403  03260 161135        LDA ID6,I     GET TYPE
0404  03261 010242        AND M177      ISOLATE TYPE
0405  03262 050227        CPA P5        TYPE = BG SEGMENT?
0406  03263 127230        JMP DWRIT,I   RETURN
0407  03264 061127        LDA DSCNT     GET TOTAL LIBR DISK SECTR COUNT
0408  03265 171136        STA ID10,I    SET TOTAL SECTOR COUNT IN IDENT
0409  03266 127230        JMP DWRIT,I   RETURN
0410*
0411*                                       OUTPUT DBUF TO DISK
0412*
0413*  THE DDOUT SUBROUTINE WRITES THE CONTENTS OF DBUF IN THE
0414*  CURRENT DISK SECTOR.  FOLLOWING THIS DBUF IS CLEARED,
0415*  THE CURRENT ADDRESS AND COUNT FOR DBUF ARE SET,
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0416*  AND THE NEXT DISK ADDRESS IS SET INTO DSKAD.
0417*
0418*  CALLING SEQUENCE:
0419*    A = IGNORED
0420*    B = IGNORED
0421*    JSB DDOUT
0422*
0423*  RETURN:  CONTENTS OF A AND B ARE DESTOYED.
0424*
0425  03267 000000  DDOUT NOP
0426  03270 061125        LDA DSKAD      GET CURRENT DISK ADDRESS
0427  03271 065067        LDB ADBUF      GET BUFFER ADDRESS
0428  03272 114127        JSB ADOUT,I    OUTPUT RECORD TO DISK
0429  03273 017301        JSB IDBUF      INITIALIZE DBUF
0430  03274 035127        ISZ DSCNT      COUNT RECORD
0431  03275 061125        LDA DSKAD      GET CURRENT DISK ADDRESS
0432  03276 014523        JSB DISKA      INCR CURRENT DISC ADDRESS
0433  03277 071125        STA DSKAD      SET NEW DISK ADDRESS
0434  03300 127267        JMP DDOUT,I    RETURN
0435*                                    INITIALIZE DBUF
0436*
0437*  THE IDBUF SUBROUTINE CLEARS DBUF AND SETS
0438*  CURAD AND DCNT TO THEIR INITIAL STATES.
0439*
0440  03301 000000  IDBUF NOP
0441  03302 065067        LDB ADBUF      SET TO START
0442  03303 075146        STB CURAD       OF DBUF
0443  03304 014451        JSB BUFCL      CLEAR DBUF
0444  03305 060253        LDA N128       INITIALIZE
0445  03306 071147        STA DCNT          COUNTER
0446  03307 127301        JMP IDBUF,I
0447*
0448*                                    PRINT MESSAGE, GET REPLY
0449*
0450*  THE SUBROUTINE REPLY CONTROLS THE PRINTING OF THE
0451*  MESSAGE, CLEARING OF THE INPUT BUFFER, TESTING FOR CHARACTERS
0452*  TRANSMITTED, AND INITIALIZATION OF THE BUFFER SCAN FOR
0453*  ALL INITIALIZATION MESSAGES.
0454*
0455*  CALLING SEQUENCE:
0456*    A = NO CHARACTERS (POS.) IN MESSAGE
0457*    B = ADDRESS OF MESSAGE
0458*    JSB REPLY
0459*
0460*  RETURN: CONTENTS OF A AND B ARE DESTROYED.
0461*
0462  03310 000000  REPLY NOP
0463  03311 114102        JSB DRKEY,I    PRINT MESSAGE
0464  03312 065066        LDB ALBUF      GET ADDRESS OF LBUF
0465  03313 014451        JSB BUFCL      CLEAR LBUF
0466  03314 060274        LDA P128
0467  03315 065066        LDB ALBUF      SET BUFFER ADDRESS FOR INPUT
0468  03316 114104        JSB DRTTY,I    GET REPLY FROM TTY
0469  03317 002003        SZA,RSS        SKIP IF CHARACTERS TRANSMITTED
0470  03320 027314        JMP *-4        REPEAT INPUT
0471  03321 114122        JSB AGINI,I    INITIALIZE LBUF SCAN
```

```
0472  03322 127310          JMP REPLY,I    RETURN
0473*
0474*                                       NUMERICAL INPUT CONTROL
0475*
0476*  THE DOCON SUBROUTINE ANALYZES THE INPUT FOR THE
0477*  CHANNEL NO., DISK SIZES, TBG CHANNEL NO. AND LAST
0478*  WORD OF AVAILABLE MEMORY.
0479*
0480*  CALLING SEQUENCE:
0481*    A = MAX NO. OF CHARACTERS PERMITTED IN RESPONSE.
0482*        THE SIGN OF A DETERMINES THE CONVERSION FROM
0483*        ASCII TO OCTAL (POS.) OR DECIMAL (NEG.).
0484*    B = IGNORED
0485*    JSB DOCON
0486*
0487*  RETURN:
0488*    (N+1): CONTENTS OF A AND B ARE DESTROYED.  AN INVALID
0489*           CHARACTER HAS BEEN DETECTED IN THE RESPONSE, OR
0490*           THE RESPONSE CONTAINS AN INVALID NO. CHARACTERS.
0491*           THE MESSAGE IS TO BE REPEATED ON RETURN.
0492*    (N+2): A = CONVERTED RESULT
0493*
0494  03323 000000  DOCON NOP
0495  03324 114121         JSB AGETO,I    GET OCTAL/DECIMAL, RETURN OCTAL
0496  03325 027331         JMP *+4        INVALID DIGIT
0497  03326 114117         JSB AGETA,I    GET NEXT CHAR FROM LBUF
0498  03327 050222         CPA ZERO       CHAR = ZERO? (END OF BUFFER)
0499  03330 027333         JMP *+3        YES = CONTINUE
0500  03331 017336         JSB INERR      INVALID DIGIT ENTRY
0501  03332 127323         JMP DOCON,I    RETURN
0502  03333 037323         ISZ DOCON      INCR RETURN ADDRESS
0503  03334 061106         LDA OCTNO      GET CONVERTED NUMBER
0504  03335 127323         JMP DOCON,I    RETURN
0505*
0506*                                       INVALID TTY RESPONSE
0507*                                       INVALID TTY RESPONSEERS,TERSRAM
0508*  THE INERR SUBROUTINE PRINTS THE DIAGNOSTIC FOR INVALID
0509*  RESPONSES DURING THE INITIALIZATION SECTION.
0510*
0511*  CALLING SEQUENCE:
0512*    A = IGNORED
0513*    B = IGNORED
0514*    JSB INERR
0515*
0516*  RETURN: CONTENTS OF A AND B ARE DESTROYED.
0517*           ONTENTS OF A AND B ARE DESTROYED. , R INVALID S,TERSRAM
0518  03336 000000  INERR NOP
0519  03337 063517         LDA ERR01      SET INVALID DEVICE ERROR CODE
0520  03340 014466         JSB ERROR      PRINT ERROR MESSAGE
0521  03341 127336         JMP INERR,I    RETURN
0522*
0523*                                       ALPHABETIC INPUT CONTROL
0524*                                       ALPHABETIC INPUT CONTROLTERSRAM
0525*  THE SINIT SUBROUTINE ANALYZES THE RESPONSE FOR THE PROGRAM,
0526*  LIBRARY, AND PARAMETER INPUT.
0527*
```

```
0528*  CALLING SEQUENCE:
0529*    A = IGNORED
0530*    B = IGNORED
0531*    JSB SINITEDNCE:METER INPUT, THE RESPONSE FOR THE PROGRAM,RSRAM
0532*
0533*  RETURN:
0534*    (N+1): AN INVALID SET OF CHARACTERS (NOT PT, MT, TY)
0535*           OR NO. OF CHARACTERS HAS BEEN DETECTED.
0536*           AFTER PRINTING THE DIAGNOSTIC, A RETURN IS MADE TO
0537*           PERMIT THE MESSAGE TO BE REPEATED,  THE CONTENTS
0538*           OF A AND B ARE DESTROYED.
0539*    (N+2): A = ADDRESS OF DESIGNATED INPUT DRIVER
0001*           B = DESTROYED
0002*
0003  03342 000000  SINIT NOP
0004  03343 060220        LDA N2          SET MAX NO. DIGITS FOR GETNA
0005  03344 114120        JSB AGETN,I     MOVE LBUF TO TBUF
0006  03345 114117        JSB AGETA,I     GET NEXT CHAR FROM LBUF
0007  03346 050222        CPA ZERO        CHAR = ZERO? (END OF BUFFER)
0008  03347 027352        JMP *+3         YES - CONTINUE
0009  03350 017336  CODIN JSB INERR       INVALID TTY RESPONSE
0010  03351 127342        JMP SINIT,I     RETURN - ERROR
0011  03352 061326        LDA TBUF        GET 2-CHARACTER CODE
0012  03353 053530        CPA TYTYP       TYPE = TTY?
0013  03354 027364        JMP TYUN        YES - UNIT IS TELETYPE
0014  03355 053531        CPA PTTYP       TYPE = PT READER?
0015  03356 027366        JMP PTUN        SET UNIT = PT READER
0016  03357 053532        CPA MTTYP       TYPE = MAG TAPE?
0017  03360 027370        JMP MTUN        SET UNIT = MAG TAPE
0018  03361 053415        CPA DFTYP
0019  03362 027410        JMP DFUN        SET UNIT = DISC
0020  03363 027350        JMP CODIN       INVALID PT, MT OR TY
0021  03364 060104  TYUN  LDA DRTTY       DRTTY = TTY INPUT DRIVER ADDRESS
0022  03365 002001        RSS
0023  03366 060101  PTUN  LDA DRPTR       DRPTR = PT READER DRIVER ADDR
0024  03367 027406        JMP PT.DV
0025  03370 064417  MTUN  LDB SAVMT       GET MT DRVR ADDR
0026  03371 006003        SZB,RSS         DRIVER IN?
0027  03372 027350        JMP CODIN       -NO, NO DRIVER - INVALD
0028  03373 074107        STB DRMAG       -YES, SET 107 TO MT DRIVER ADDR
0029  03374 114107        JSB DRMAG,I
0030  03375 000003        OCT 3
0031  03376 002404        CLA,INA
0032  03377 006400        CLB
0033  03400 114107        JSB DRMAG,I
0034  03401 000004        OCT 4
0035  03402 102001        HLT 1B
0036  03403 102001        HLT 1B
0037  03404 060107  MS    LDA DRMAG       SET BIT 15 TO INDICATE MASS
0038  03405 030340        IOR MSIGN         STORAGE INPUT DEVICE
0039  03406 037342  PT.DV ISZ SINIT
0040  03407 127342        JMP SINIT,I     RETURN
0041*
0042  03410 060107  DFUN  LDA DRMAG       HAS 107 ALREADY BEEN ASSIGNED
0043  03411 050417        CPA SAVMT         TO DISC?
0044  03412 117414        JSB ADFSC,I     -NO, INITIALIZE DISC PSEUDO DRVR
```

```
0045  03413 027404         JMP MS
0046*
0047  03414 014000  ADFSC DEF DSCHN
0048  03415 042106  DFTYP ASC 1,DF
0049*
0050*                                    LIST UNDEFINED EXTS
0051*
0052*  THE UNDEFINED EXTERNAL REFERENCES CAN BE LISTED AFTER
0053*  EACH END-OF-TAPE CONDITION IS DETECTED.
0054*
0055*  FOLLOWING COMPLETION OF THE EXT LISTING, THE COMPUTER
0056*  HALTS TO PERMIT THE OPERATOR TO RETURN FOR ADDITIONAL
0057*  PROGRAM INPUT, OR CONTINUE WITH THE PROCESSING OF PARAMETERS.
0058*
0059  03416 014462  LSTEX JSB SPACE      NEW LINE
0060  03417 014462        JSB SPACE      NEW LINE
0061  03420 003400        CCA
0062  03421 070423        STA NXCNT      SET SYMBOL COUNT = -1
0063  03422 015371        JSB INLST      INITIALIZE LST ADDRESSES
0064  03423 015375  OUTNX JSB LSTX       SET LST1 - LST5
0065  03424 027451        JMP EXOUT      END OF LIST
0066  03425 050355        LDA ASCEX      *
0067  03426 151137        CPA LST1,I     * EXT =
0068  03427 161140        LDA LST2,I     *  $EX3N?
0069  03430 050356        CPA ASCX3      *
0070  03431 027423        JMP OUTNX       -YES, SUPPRESS UNDEF EXT
0071  03432 050357        CPA ASCX4
0072  03433 027423        JMP OUTNX
0073  03434 161142        LDA LST4,I     GET WORD 4 OF LST
0074  03435 003026        CMA,SSA,INA,SZA  SKIP IF UNDEFINED OR BS REF
0075  03436 027423        JMP OUTNX      TRY NEXT LST SYMBOL
0076  03437 034423        ISZ NXCNT      TEST FOR FIRST UNDEF EXT
0077  03440 027445        JMP OUTEX      NO - PUT OUT SYMBOL NAME
0078  03441 060234        LDA P10
0079  03442 067536        LDB MESS8      MESS8 = ADDR: UNDEF EXTS
0080  03443 114102        JSB DRKEY,I    PRINT: UNDEF EXTS
0081  03444 014462        JSB SPACE      NEW LINE
0082  03445 060227  OUTEX LDA P5
0083  03446 065137        LDB LST1       LST1 = A(SYMBOL)
0084  03447 114102        JSB DRKEY,I    PRINT SYMBOL
0085  03450 027423        JMP OUTNX      TRY NEXT SYMBOL
0086*
0087  03451 052567  EXOUT LDA JSBIN
0088  03452 017501        JSB PAGIO
0089  03453 034423        ISZ NXCNT      TEST FOR NO UNDEFINED EXTS
0090  03454 027473        JMP ENDEX      NO - OMIT MESSAGE
0091  03455 050263        LDA P14
0092  03456 067537        LDB MESS9      MESS9 = ADDR: NO UNDEF EXTS
0093  03457 114102        JSB DRKEY,I    PRINT MESSAGE
0094  03460 014462        JSB SPACE
0095  03461 060107        LDA DRMAG      IF INPUT WAS FROM A MASS STORAGE
0096  03462 002003        SZA,RSS          DEVICE, ISSUE A REWIND
0097  03463 027470        JMP EX1
0098  03464 114422        JSB PINAD,I
0099  03465 000005        OCT 5
0100  03466 000000        NOP
```

```
0101  03467 000000         NOP
0102  03470 060417  EX1    LDA SAVMT      RESTORE ORIGINAL MAG TAPE DRIVER
0103  03471 070107         STA DRMAG        ADDRESS IN 107
0104  03472 124114         JMP IPARM,I
0105  03473 014462  ENDEX  JSB SPACE      NEW LINE
0106  03474 102077         HLT 77B        WAIT FOR OPERATOR INTERVENTION
0107  03475 102501         LIA 1          GET SWITCH REGISTER
0108  03476 002011         SLA,RSS        SKIP IF SWITCH 0 UP
0109  03477 026370         JMP TSTN4      TEST FOR PROGRAM OR LIBR LOAD
0110  03500 124114         JMP IPARM,I    INITIATE PARAMETER INPUT SECTION
0111*
0112  03501 000000  PAGIO  NOP
0113  03502 073507         STA JSBIO
0114  03503 060277         LDA L2000
0115  03504 070253         STA N128
0116  03505 060352         LDA TR201
0117  03506 064334         LDB DBADR
0118  03507 000000  JSBIO  NOP
0119  03510 060300         LDA ,N128
0120  03511 070253         STA N128
0121  03512 127501         JMP PAGIO,I
```

```
0123  03513 016434  ADSCI DEF DSCI      DISC TYPE INITIALIZATION ROUTINE
0124  03514 000000  PASS2 NOP           DUP ENT IGNORE FLAG
0125  03515 000000  SDSKA NOP           SAVED DISC ADDRESS
0126  03516 152300  N26K  OCT -26000
0127*
0128  03517 030061  ERR01 ASC 1,01      INVALID TTY REPLY
0129  03520 030062  ERR02 ASC 1,02      CHECKSUM ERROR
0130  03521 030063  ERR03 ASC 1,03      RECORD OUT OF SEQUENCE
0131  03522 030064  ERR04 ASC 1,04      INVALID RECORD
0132  03523 030065  ERR05 ASC 1,05      DUPLICATE ENTRY POINTS
0133  03524 030066  ERR06 ASC 1,06      INVALID NAM REC - BP LENGTH
0134  03525 030070  ERR08 ASC 1,08      DUPLICATE PROGRAM NAMES
0135  03526 030463  ERR13 ASC 1,13      BG SEGMENT PRECEDES BG MAIN
0136  03527 031060  ERR20 ASC 1,20      DBL LIST OVERFLOW
0137*
0138  03530 052131  TYTYP ASC 1,TY
0139  03531 050124  PTTYP ASC 1,PT
0140  03532 046524  MTTYP ASC 1,MT
0141*
0142  03533 003534  MESS7 DEF *+1
0143  03534 025105        ASC 2,*EOT
0144  03536 003542  MESS8 DEF *+4
0145  03537 003540  MESS9 DEF *+1
0146  03540 020116        ASC 7, NO UNDEF EXTS
0147*****************************************************
0148*                                                   *
0149* THE FOLLOWING MESSAGES ARE DESTROYED BY INBUF      *
0150*   AFTER THE INITIALIZATION PHASE IS COMPLETE       *
0151*                                                   *
0152*****************************************************
0153  03547 003550  MESS1 DEF *+1
0154  03550 051531        ASC 7,SYS DISC SIZE?
0155  03557 003560  MESS2 DEF *+1
0156  03560 051531        ASC 7,SYS DISC CHNL?
0157  03567 003570  MESS3 DEF *+1
0158  03570 046127        ASC 5,LWA MEM?
0159  03575 003576  MESS4 DEF *+1
0160  03576 050122        ASC 5,PRGM INPT?
0161  03603 003604  MESS5 DEF *+1
0162  03604 046111        ASC 5,LIBR INPT?
0163  03611 003612  MESS6 DEF *+1
0164  03612 050122        ASC 5,PRAM INPT?
0165  03617 003620  MES10 DEF *+1
0166  03620 021440        ASC 6,# DMA CHANNELS?
0167  03630 003631  MES11 DEF *+1
0168  03631 051531        ASC 7,SYS GEN CODE?
0169  03640 003641  MES13 DEF *+1
0170  03641 021440        ASC 5,# DRIVES?
0171  03646 003647  MES14 DEF *+1
0172  03647 051531        ASC 9,SYS DISC SUBCHNL?
0173  03660 003661  MES18 DEF *+1
0174  03661 042111        ASC 5,DISC TYPE?
0175  03666 003667  MES30 DEF *+1
0176  03667 043111        ASC 10,FIRST SYSTEM TRACK?
0177  03701 003702  MES31 DEF *+1
0178  03702 043111        ASC 10,FIRST SYSTEM SECTOR?
```

```
0179  03714 003715  ME837 DEF *+1
0180  03715 052111        ASC 10,TIME BASE GEN CHNL?
0181  03727 003730  MES50 DEF *+1
0182  03730 052523        ASC  9,USER DISC SUBCHNL?
0183  03741 003742  MES60 DEF *+1
0184  03742 050122        ASC 10,PRIV INT CARD CHNL?
0185*
0186  03754               ORG *
0187  03600               ORG 3600B
0188*
0189  03600 000000  IBUF  BSS 128
0190*
0191  04000               ORG *
```

```
0193  04000                 ORG 40000B
0194*
0195*                                       SET PARAMETERS INTO IDENTS
0196*
0197*  THE PARAMETER INPUT SECTION PERMITS ALTERATION (OR INTRODUCTION)
0198*  OF THE TYPE, PRIORITY, AND EXECUTION INTERVAL FOR EACH PROGRAM.
0199*  EACH PARAMETER RECORD HAS ONE OF THE FOLLOWING FORMATS:
0200*
0201*    NAME,TYPE
0202*
0203*  TYPE = 1 DECIMAL DIGIT (0-7)
0204*
0205*  NOTE: TYPE OF BG DISK RESIDENTS HAVING BG SEGMENTS MAY NOT
0206*        BE ALTERED WITHOUT DESTROYING RELATIONSHIP.
0207*
0208  04000 014462  PARAM JSB SPACE     NEW LINE
0209  04001 060267        LDA P22
0210  04002 067244        LDB MES24     MES24 = ADDR: PARAMETERS
0211  04003 114102        JSB DRKEY,I   PRINT: PARAMETERS
0212  04004 014462        JSB SPACE     NEW LINE
0213  04005 065115        LDB PARAD     GET PARAM INPUT DRIVER ADDRESS
0214  04006 054134        CPB DRTTY     INPUT UNIT = TTY?
0215  04007 002001        RSS           YES - CONTINUE
0216  04010 102077        HLT 77B       WAIT FOR INSERTION OF PARAMETERS
0217*
0218  04011 065066  PARST LDB ALBUF     GET ADDRESS OF LBUF
0219  04012 014451        JSB BUFCL     CLEAR LBUF
0220  04013 060274        LDA P128
0221  04014 065066        LDB ALBUF     GET ADDRESS OF LBUF
0222  04015 115115        JSB PARAD,I   GET ASCII PARAMETER RECORD
0223  04016 002003        SZA,RSS       SKIP IF CHARS INPUT
0224  04017 026013        JMP *-4       REPEAT PARAMETER INPUT
0225  04020 073357        STA PARNO     SAVE PARAMETER RECORD LENGTH
0226  04021 017121        JSB GINIT     INITIALIZE BUFFER SCAN
0227  04022 060215        LDA N5
0228  04023 017004        JSB GETNA     MOVE CHARS FROM LBUF TO TBUF
0229  04024 050440        CPA PTERM     CHARS = /E?
0230  04025 026133        JMP SETLB     YES - SET LIBRARY TYPE IN IDENT
0231  04026 016757        JSB GETAL     GET NEXT CHAR FROM LBUF
0232  04027 050335        CPA BLANK     CHAR = BLANK?(DELIMITER = COMMA)
0233  04030 026033        JMP *+3       YES - CONTINUE
0234*
0235  04031 063230  PANER LDA ERR09     PARAMETER NAME ERROR
0236  04032 026115        JMP PARER
0237*
0238  04033 015332        JSB INIDX     INITIALIZE IDENT ADDRESSES
0239  04034 015336  NXTID JSB IDX       SET CURRENT IDENT ADDRESSES
0240  04035 026031        JMP PANER     YES - INVALID NAME
0241  04036 161130        LDA ID1,I     GET NAME 1,2
0242  04037 051326        CPA TBUF      EQUAL?
0243  04040 002001        RSS           YES - CONTINUE
0244  04041 026034        JMP NXTID     NO - TRY NEXT IDENT
0245  04042 161131        LDA ID2,I     GET NAME 3,4
0246  04043 051327        CPA TBUF+1    EQUAL?
0247  04044 002001        RSS           YES - CONTINUE
0248  04045 026034        JMP NXTID     NO - TRY NEXT IDENT
```

```
0249  04046 161132        LDA ID3,I     GET NAME 5
0250  04047 010244        AND M7400     ISOLATE UPPER CHAR
0251  04050 051330        CPA TBUF+2    EQUAL?
0252  04051 002001        RSS           YES = CONTINUE
0253  04052 026034        JMP NXTID     NO = TRY NEXT NAME
0254*
0255*                                    SET TYPE
0256  04053 060220        LDA N2
0257  04054 017043        JSB GETOC     CONVERT TO OCTAL
0258  04055 026063        JMP PATER     INVALID DIGIT
0259  04056 016757        JSB GETAL     GET NEXT CHAR FROM LBUF
0260  04057 050222        CPA ZERO      CHAR = ZERO? (END OF BUFFER)
0261  04060 002001        RSS           YES = CONTIMUE
0262  04061 050335        CPA BLANK     CHAR = BLANK?(DELIMITER = COMMA)
0263  04062 026065        JMP SETYP     SET PROGRAM TYPE IN IDENT
0264  04063 063231  PATER LDA ERR10     PARAMETER TYPE ERROR
0265  04064 026115        JMP PARER
0266*
0267  04065 065106  SETYP LDB OCTNO     GET CONVERTED NUMBER
0268  04066 161135        LDA ID6,I     GET PREVIOUS TYPE
0269  04067 010315        AND M7600     SET PREVIOUS TYPE = ZERO
0270  04070 030001        IOR B         INSERT NEW TYPE
0271  04071 171135        STA ID6,I     SET NEW TYPE
0272  04072 016757        JSB GETAL
0273  04073 050222        CPA ZERO      END OF RECORD?
0274  04074 026011        JMP PARST     YES - GET NEXT PARAMETER RECORD
0275  04075 003400        CCA
0276  04076 017043        JSB GETOC     GET LINKING MODE PARAMETER
0277  04077 026063        JMP PATER
0278  04100 016757        JSB GETAL     SHOULD BE LAST PARAMETER
0279  04101 050222        CPA ZERO
0280  04102 002001        RSS
0281  04103 050335        CPA BLANK
0282  04104 002001        RSS
0283  04105 026063        JMP PATER
0284  04106 161135        LDA ID6,I
0285  04107 010304        AND M1377     SET FOR CURRENT PAGE LINKS
0286  04110 065106        LDB OCTNO     BASE PAGE LINKS DESIRED?
0287  04111 006002        SZB
0288  04112 030442        IOR BIT14       YES - SET BIT 14
0289  04113 171135        STA ID6,I
0290  04114 026011        JMP PARST     GET NEXT RECORD
0291*
0292  04115 073356  PARER STA TEMPE     SAVE ERROR CODE
0293  04116 016123        JSB ERPNT     TEST FOR PRINTING LBUF
0294  04117 063356        LDA TEMPE     GET ERROR CODE
0295  04120 014466        JSB ERROR     PRINT ERROR MESSAGE
0296  04121 014462        JSB SPACE     NEW LINE
0297  04122 026011        JMP PARST     REREAD PARAMETER RECORD
0298*
0299*                                    PRINT LBUF UNLESS FROM TTY
0300  04123 000000  ERPNT NOP           PRINT CONTENTS OF LBUF
0301  04124 065115        LDB PARAD     GET ADDRESS OF PARAMETER UNIT
0302  04125 054104        CPB DRTTY     DEVICE = TTY?
0303  04126 126123        JMP ERPNT,I   YES - OMIT PRINTING ON TTY
0304  04127 063357        LDA PARNO     PARNO = PARAMETER RECORD LENGTH
```

```
0305   04130 065066          LDB ALBUF      ALBUF = BUFFER ADDRESS
0306   04131 114102          JSB DRKEY,I    PRINT PARAMETER RECORD
0307   04132 126123          JMP ERPNT,I    RETURN
0308*
0309   04133 016123  SETLB   JSB ERPNT      TEST FOR PRINTING /E
0310   04134 014462          JSB SPACE      NEW LINE
0311   04135 126136          JMP *+1,I      PAGE BOUNDARY CROSS NECESSARY
0312   04136 012026          DEF SDIR
```

```
0314*
0315*                                          CLEAR UNDEFINED EXTS
0316*
0317  04137 015371  IPARS JSB INLST      INITIALIZE LSTX
0318  04140 015375  CLST3 JSB LSTX       SET LST ADDRESSES
0319  04141 026150         JMP ENDLB     SET USAGE FLAGS
0320  04142 161142         LDA LST4,I    GET IDENT ADDRESS
0321  04143 002021         SSA,RSS       SKIP - UNDEFINED EXT
0322  04144 026140         JMP CLST3     IGNORE DEFINED ENTRY POINT
0323  04145 002400         CLA
0324  04146 171142         STA LST4,I    CLEAR IDENT ADDRESS
0325  04147 026140         JMP CLST3     TRY NEXT LST ENTRY
0326*
0327  04150 060115  ENDLB LDA APARS      GET ADDR OF PARAMETER INPUT CODE
0328  04151 070112         STA TRANS     RESET INITIAL TRANSFER ADDRESS
0329  04152 026000         JMP PARAM     GET PARAMETERS
```

```
0331*
0332*                                        GENERATE I/O TABLES
0333*
0334*  THIS SECTION OF CODE GENERATES THE I/O TABLES
0335*  FOR THE SYSTEM.  THESE INCLUDE THE EQUIPMENT TABLE (EQT),
0336*  STANDARD DEVICE REFERENCE TABLE (DRT), AND INTERRUPT TABLE.
0337*
0338*  THE EQT RECORDS HAVE THE FOLLOWING FORMAT:
0339*
0340*    N1,DVRN2<,D><,R><,U>
0341*
0342*  N1 = CHANNEL NO. (2 OCTAL DIGITS)
0343*  N2 = DRIVER CLASS. CODE (2 OCTAL DIGITS)
0344*  D = DMA FLAG (OPTIONAL)
0345*  R = CORE RESIDENT FLAG
0346*  U = UNIT NO. (OPTIONAL)
0347*
0348*
0349*  EACH DRT RECORD CONSISTS OF A 2-DIGIT NO. SPECIFYING THE
0350*  CORRESPONDING ENTRY IN THE EQUIPMENT TABLE.  FOR EXAMPLE, IN
0351*  RESPONSE TO THE MESSAGE:  5 = ?, THE RESPONSE 6 INDICATES THAT
0352*  THE LOGICAL UNIT NO. 5 IS TO USE DEVICE 6 IN EQT.
0353*
0354*
0355*  THE INT RECORDS HAVE ONE OF THE FOLLOWING FORMATS:
0356*
0357*    N1,OPTION
0358*
0359*  N1 = CHANNEL NO. (2 OCTAL DIGITS - MUST BE IN INCREASING ORDER)
0360*  OPTION:
0361*
0362*         EQT,N2      - EQT NO.
0363*         ENT,NAME    - DEFINE ENTRY ADDRESS
0364*         ABS,XXXXXX  - ABSOLUTE OCTAL VALUE
0365*
0366*
0367  04153 000000  GENIO NOP
0368*
0369  04154 060343        LDA INWRT     SET FOR UNPROTECTED
0370  04155 070345        STA DWRT       WRITE COMMAND
0371  04156 062756        LDA T200.     SAVE PLIST BUFFER
0372  04157 065072        LDB PLAD       ON TRACK 200,
0373  04160 114127        JSB ADOUT,I       SECTOR 1
0374  04161 060344        LDA IPWRT     RESTORE PROTECTED
0375  04162 070345        STA DWRT       WRITE COMMAND
0376*
0377  04163 060351        LDA TR200     READ IN CODE
0378  04164 065072        LDB PLAD       SAVED ON TRACK 200 PRIOR
0379  04165 014544        JSB DISKI       TO DESTRUCTION BY PLIST
0380*
0381*                                   GENERATE EQUIPMENT TABLE (EQT)
0382*
0383  04166 061543        LDA PPREL     GET CURRENT PROG RELOC ADDRESS
0384  04167 070406        STA AEQT      SAVE ADDRESS OF EQT
0385  04170 002400        CLA
0386  04171 070407        STA CEQT      CLEAR NO. OF EQT ENTRIES
```

```
0387  04172 062755          LDA N119
0388  04173 071147          STA DCNT       REDUCE SECTOR SIZE = 119 WORDS
0389  04174 014462          JSB SPACE
0390  04175 060270          LDA P23
0391  04176 067260          LDB ME825      ME825 = ADDR: * EQT TABLE ENTRY
0392  04177 114102          JSB DRKEY,I    PRINT: * EQUIPMENT TABLE ENTRY
0393  04200 014462          JSB SPACE      NEW LINE
0394*
0395  04201 065066  SEQT    LDB ALBUF
0396  04202 014451          JSB BUFCL      CLEAR LBUF
0397  04203 060274          LDA P128
0398  04204 065066          LDB ALBUF      GET ADDRESS OF LBUF
0399  04205 114104          JSB DRTTY,I    GET EQT RECORD FROM TTY
0400  04206 002003          SZA,RSS        SKIP = DATA INPUT
0401  04207 026203          JMP **-4       REPEAT INPUT
0402  04210 017121          JSB GINIT      INITIALIZE LBUF SCAN
0403  04211 060220          LDA N2
0404  04212 017004          JSB GETNA      MOVE 2 CHARS TO TBUF
0405  04213 050440          CPA PTERM      CHARS = /E?
0406  04214 026472          JMP SSQT       YES = SET DEVICE REF TABLE (SQT)
0407  04215 017121          JSB GINIT      RE-INITIALIZE LBUF SCAN
0408  04216 060224          LDA P2
0409  04217 017043          JSB GETOC      GET 2 OCTAL DIGITS, CONVERT
0410  04220 026230          JMP IOERR      INVALID DIGIT
0411  04221 003004          CMA,INA        MAXIMUM I/O CHANNEL
0412  04222 040240          ADA M37          IS 37
0413  04223 002020          SSA
0414  04224 026230          JMP IOERR
0415  04225 016757          JSB GETAL      GET NEXT CHAR FROM LBUF
0416  04226 050335          CPA BLANK      CHAR = COMMA?
0417  04227 026233          JMP CLDBU      YES = SET CHNL NO., CLEAR D,R,U
0418  04230 063233  IOERR   LDA ERR24      SET CODE = INVALID CHNL IN EQT
0419  04231 014466  EQTER   JSB ERROR      PRINT DIAGNOSTIC
0420  04232 026201          JMP SEQT       GET NEXT EQT RECORD
0421*
0422  04233 065106  CLDBU   LDB OCTNO      GET I/O CHANNEL NO.
0423  04234 077360          STB IOADD      SET I/O ADDRESS
0424  04235 044214          ADB N6        CHECK IF LEGAL I/O CHNL ADDRESS
0425  04236 006020          SSB
0426  04237 026230          JMP IOERR     NO, SO REJECT
0427  04240 002400          CLA
0428  04241 073361          STA IODMA      CLEAR DMA FLAG
0429  04242 073362          STA IOBUF     CLEAR NON RES/RES FLAG
0430  04243 073363          STA IOUNT      CLEAR UNIT NO. (FOR MULTI-CHNL)
0431  04244 002404          CLA,INA
0432  04245 017004          JSB GETNA      MOVE 1 CHAR TO RH TBUF POSITION
0433  04246 053351          CPA CHARD      CHAR = D?
0434  04247 002001          RSS            YES = CONTINUE
0435  04250 026255          JMP DVERR      INVALID DRIVER NAME
0436  04251 060220          LDA N2
0437  04252 017004          JSB GETNA      MOVE 2 CHARS TO TBUF (CHARS 2,3)
0438  04253 053355          CPA CHAVR      CHARS = VR?
0439  04254 026257          JMP STYPE      YES = GET DRIVER TYPE
0440  04255 063234  DVERR   LDA ERR25      SET CODE = INVALID DRIVER NAME
0441  04256 026231          JMP EQTER
0442  04257 060220  STYPE   LDA N2
```

```
0443  04260 017004          JSB GETNA      MOVE 2 CHARS TO TBUF
0444  04261 073365          STA ASTYP      SAVE 2 ASCII CHARS FOR I,XX,C,XX
0445  04262 003400          CCA
0446  04263 041566          ADA CURAL      ADJUST CURRENT LBUF ADDR
0447  04264 071566          STA CURAL      RESET CURAL TO CONVERT TYPE
0448  04265 060224          LDA P2
0449  04266 017043          JSB GETOC      GET 2 OCTAL CHARS, CONVERT
0450  04267 026255          JMP DVERR      INVALID DRIVER NAME
0451  04270 065106          LDB OCTNO      GET DRIVER TYPE
0452  04271 005727          BLF,BLF        ROTATE TO UPPER B
0453  04272 077364          STB IOTYP      SET DRIVER TYPE
0454  04273 016757          JSB GETAL      GET NEXT CHAR FROM LBUF
0455  04274 050222          CPA ZERO       END OF BUFFER?
0456  04275 026361          JMP LISCN-1    SCAN FOR I,XX, C,XX
0457  04276 050335          CPA BLANK      CHAR = COMMA?
0458  04277 002001          RSS            YES = CONTINUE
0459  04300 026255          JMP DVERR      NO = INVALID DRIVER NAME
0460*
0461  04301 003400          CCA
0462  04302 073366          STA DFLAG      SET DMA-IN FLAG
0463  04303 073367          STA BFLAG      SET NON RES/RES FLAG
0464  04304 073370          STA UFLAG      SET UNIT-IN FLAG
0465*
0466  04305 003400  INDBU    CCA
0467  04306 073375          STA CMFLG      SET COMMA FLAG = NO COMMA IN
0468  04307 016757          JSB GETAL      GET NEXT CHAR FROM LBUF
0469  04310 053351          CPA CHARD      CHAR = D?
0470  04311 026347          JMP SEDMA      YES = SET DMA CODE
0471  04312 053352          CPA CHARR      CHAR = R?
0472  04313 026354          JMP SETBU      YES = SET BUFFERING CODE
0473  04314 063376          LDA BUFUL      BACK UP ONE CHARACTER
0474  04315 070001          STA B
0475  04316 041566          ADA CURAL
0476  04317 071566          STA CURAL
0477  04320 007000          CMB
0478  04321 077376          STB BUFUL
0479  04322 060220          LDA N2         SET FOR MAX 2 DECIMAL DIGITS
0480  04323 017043          JSB GETOC      GET OCTAL UNIT NUMBER
0481  04324 026331          JMP UNERR        INVALID UNIT NUMBER
0482  04325 061106          LDA OCTNO      MAXIMUM IS
0483  04326 040255          ADA N32          32 UNIT NUMBERS (0-31)
0484  04327 002020          SSA            SKIP = INVALID UPPER LIMIT
0485  04330 026333          JMP STUNT      SET UNIT NO.
0486  04331 063235  UNERR    LDA ERR26
0487  04332 026231          JMP EQTER
0488  04333 037370  STUNT    ISZ UFLAG      SKIP = FIRST U ENTERED
0489  04334 026331          JMP UNERR      DUPLICATE UNIT NOS. ENTERED
0490  04335 061106          LDA OCTNO      GET CONVERTED UNIT NUMBER
0491  04336 001700          ALF
0492  04337 001222          RAL,RAL        ROTATE TO BITS 6-8
0493  04340 073363          STA IOUNT      SET I/O UNIT NO.
0494  04341 016757  EQTST    JSB GETAL      GET NEXT CHAR FROM LBUF
0495  04342 050222          CPA ZERO       END OF BUFFER?
0496  04343 026361          JMP LISCN-1    SCAN FOR I,XX, C,XX
0497  04344 050335          CPA BLANK      CHAR = COMMA?
0498  04345 026305          JMP INDBU      YES = GET NEXT D,R,U, ENTRY
```

```
0499  04346 026331         JMP UNERR     NO, INVALID CHARACTER
0500*
0501  04347 037366  SEDMA  ISZ DFLAG      SKIP = FIRST D ENTERED
0502  04350 026331         JMP UNERR      DUPLICATE D'S ENTERED
0503  04351 060340         LDA MSIGN      SET BIT 15 = 1 FOR DMA FLAG
0504  04352 073361         STA IODMA      SET DMA CODE
0505  04353 026341         JMP EQTST      TEST FOR NEXT OPERAND
0506*
0507  04354 037367  SETBU  ISZ BFLAG     SKIP, FIRST R ENTERED
0508  04355 026331         JMP UNERR     DUPLICATE R S ENTERED
0509  04356 060442         LDA BIT14      SET BIT14 = 1
0510  04357 073362         STA IOBUF     SET DRIVER RESIDENCE CODE
0511  04360 026341         JMP EQTST      TEST FOR NEXT OPERAND
0512*
0513  04361 015371         JSB INLST      INITIALIZE LSTX
0514  04362 015375  LISCN  JSB LSTX       SET LST ADDRESSES
0515  04363 026255         JMP DVERR      I.XX NOT FOUND IN LST
0516  04364 161137         LDA LST1,I     GET NAME 1,2 OF LST ENTRY
0517  04365 051564         CPA IDEC       CHARS = I,?
0518  04366 002001         RSS            YES - CONTINUE
0519  04367 026362         JMP LISCN      NO - TRY NEXT LST ENTRY
0520  04370 161140         LDA LST2,I     GET NAME 3,4 OF LST ENTRY
0521  04371 053365         CPA ASTYP      CHARS = XX IN DVRXX NAME?
0522  04372 002001         RSS            YES - CONTINUE
0523  04373 026362         JMP LISCN      NO - TRY NEXT LST ENTRY
0524  04374 161141         LDA LST3,I     GET NAME 5 OF LST NAME
0525  04375 010244         AND M7400      ISOLATE UPPER CHAR
0526  04376 050336         CPA UBLNK      CHAR = BLANK?
0527  04377 002001         RSS            YES - CONTINUE
0528  04400 026362         JMP LISCN      NO - TRY NEXT LST ENTRY
0529  04401 161142         LDA LST4,I     GET INDENT ENTRY ADDRESS
0530  04402 040224         ADA P2         POINT TO WORD3
0531  04403 160000         LDA A,I
0532  04404 064442         LDB BIT14
0533  04405 000010         SLA            HAS DRIVER BEEN LOADED?
0534  04406 077362         STB IOBUF       YES- SET CORE-RESIDENT BIT
0535  04407 161143         LDA LST5,I     GET BP LINK ADDRESS
0536  04410 040306         ADA M2000      ADJUST FOR BP ADDRESS
0537  04411 160000         LDA A,I        GET ABSOLUTE ENTRY POINT ADDR
0538  04412 071562         STA I,XX       SAVE DRIVER ENTRY POINT
0539*
0540  04413 015371         JSB INLST      INITIALIZE LSTX
0541  04414 015375  LCSCN  JSB LSTX       SET LST ADDRESSES
0542  04415 026255         JMP DVERR      C.XX NOT FOUND IN LST
0543  04416 161137         LDA LST1,I     GET NAME 1,2 OF LST ENTRY
0544  04417 051565         CPA CDEC       CHARS = C,?
0545  04420 002001         RSS            YES - CONTINUE
0546  04421 026414         JMP LCSCN      NO - TRY NEXT LST ENTRY
0547  04422 161140         LDA LST2,I     GET NAME 3,4 OF LST ENTRY
0548  04423 053365         CPA ASTYP      CHARS = XX IN DVRXX NAME?
0549  04424 002001         RSS            YES - CONTINUE
0550  04425 026414         JMP LCSCN      NO - TRY NEXT LST ENTRY
0551  04426 161141         LDA LST3,I     GET NAME 5 OF LST NAME
0552  04427 010244         AND M7400      ISOLATE UPPER CHAR
0553  04430 050336         CPA UBLNK      CHAR = BLANK?
0554  04431 002001         RSS            YES - CONTINUE
```

```
0555   04432 026414          JMP LC8CN     NO = TRY NEXT LST ENTRY
0556   04433 161143          LDA LST5,I    GET BP LINK ADDRESS
0557   04434 040306          ADA M2000     ADJUST FOR BP ADDRESS
0558   04435 160000          LDA A,I       GET ABSOLUTE COMP. POINT ADDR
0559   04436 071563          STA C.XX      SAVE DRIVER EXIT POINT
0560*
0561   04437 061562          LDA I.XX      GET DRIVER ENTRY POINT
0562   04440 017673          JSB IOTBL     OUTPUT ABSOLUTE DVRXX ENT ADDR
0563   04441 061563          LDA C.XX      GET DRIVER EXIT POINT
0564   04442 017673          JSB IOTBL     OUTPUT ABSOLUTE DVRXX COMP. ADDR
0565   04443 063361          LDA IODMA     GET DMA CODE
0566   04444 033362          IOR IOBUF    ADD NON RES/RES CODE
0567   04445 033363          IOR IOUNT     ADD UNIT NO.
0568   04446 033360          IOR IOADD     ADD CHANNEL NO.
0569   04447 017673          JSB IOTBL     OUTPUT D,R,U, CHANNEL
0570*
0571   04450 063364          LDA IOTYP     GET EQUIPMENT TYPE CODE
0572   04451 010314          AND M7000     ISOLATE UPPER 7 BITS
0001   04452 002002          SZA           SKIP = TYPE = 0,I
0002   04453 002401          CLA,RSS       SET STATUS = 0, SKIP
0003   04454 060335          LDA BLANK     SET STATUS = 40(8)
0004   04455 033364          IOR IOTYP     ADD EQUIPMENT TYPE CODE
0005   04456 017673          JSB IOTBL     OUTPUT EQUIPMENT TYPE, STATUS
0006*
0007   04457 060257          LDA N13
0008   04460 071325          STA TCNT      SET TEMPORARY COUNT = -6
0009   04461 002400          CLA           SET EQT ENTRY WORD = ZERO
0010   04462 017673          JSB IOTBL     OUTPUT ZERO TO EQT
0011   04463 035325          ISZ TCNT      SKIP = 6 ZEROES OUT
0012   04464 026461          JMP *-3       CONTINUE ZERO OUTPUT
0013   04465 061543          LDA PPREL    GET CURRENT EQT ADDRESS
0014   04466 040235          ADA P17
0015   04467 071543          STA PPREL     SET NEW RELOCATION ADDRESS
0016   04470 034407          ISZ CEQT      INCR EQT ENTRY COUNT
0017   04471 026201          JMP SEQT      PROCESS NEXT EQT RECORD
```

```
0019*
0020*                                          SET DEVICE REFERENCE TABLE (SQT)
0021*
0022   04472 014462  SSQT  JSB SPACE      NEW LINE
0023   04473 014462        JSB SPACE      NEW LINE
0024   04474 061543        LDA PPREL      GET CURRENT RELOCATION ADDRESS
0025   04475 070410        STA ASQT       SAVE SQT ADDRESS
0026   04476 002404        CLA,INA
0027   04477 070411        STA CSQT       SET SQT COUNT = 1
0028   04500 003400        CCA
0029   04501 071550        STA LFLAG      SET 1ST DEV REF INPUT FLAG = -1
0030   04502 060271        LDA P24
0031   04503 067275        LDB MES26      MES26 = ADDR: *DEV REF TABLE
0032   04504 114102        JSB DRKEY,I    PRINT: * DEVICE REFERENCE TABLE
0033   04505 014462        JSB SPACE      NEW LINE
0034*
0035   04506 060411  DEVRE LDA CSQT       GET CURRENT DEV REF NO.
0036   04507 003004        CMA,INA        SET TO NEG. FOR DECIMAL CONV
0037   04510 065071        LDB ATBUF      GET ADDRESS OF TBUF
0038   04511 015012        JSB CONVD
0039   04512 061330        LDA TBUF+2     GET 2 LEAST SIGNIFICANT DIGITS
0040   04513 010244        AND M7400      ISOLATE UPPER CHAR
0041   04514 053350        CPA UASCZ      CHAR = ASCII ZERO?
0042   04515 060336        LDA UBLNK      YES - REPLACE WITH BLANK
0043   04516 070001        STA B          SAVE UPPER CHAR
0044   04517 061330        LDA TBUF+2     GET 2-DIGIT DEV REF NO.
0045   04520 010242        AND M177       ISOLATE LOWER CHAR
0046   04521 030001        IOR B          SET A = DEV REF CODE
0047   04522 173312        STA MES28,I    PUT DEV REF CODE IN MESSAGE
0048   04523 060261        LDA P11
0049   04524 067312        LDB MES28      MES28 = ADDR: XX = EQT #?
0050   04525 114102        JSB DRKEY,I    PRINT: XX = ?
0051   04526 065066        LDB ALBUF
0052   04527 014451        JSB BUFCL      CLEAR LBUF
0053   04530 060274        LDA P128
0054   04531 065066        LDB ALBUF      GET ADDRESS OF LBUF
0055   04532 114104        JSB DRTTY,I    GET EQT ENTRY NO.
0056   04533 002003        SZA,RSS        SKIP - DATA IN
0057   04534 026530        JMP *-4        REPEAT INPUT
0058   04535 017121        JSB GINIT      INITIALIZE LBUF SCAN
0059   04536 060220        LDA N2
0060   04537 017004        JSB GETNA      MOVE 2 CHARS TO TBUF
0061   04540 050440        CPA PTERM      CHARS = /E?
0062   04541 026574        JMP SINTT      YES - SET INTERRUPT TABLE
0063   04542 017121        JSB GINIT      RE-INITIALIZE LBUF SCAN
0064   04543 060220        LDA N2
0065   04544 017043        JSB GETOC      GET 2 DECIMAL DIGITS, CONVERT
0066   04545 026551        JMP DRERR      INVALID DIGIT ENTERED
0067   04546 016757        JSB GETAL      GET NEXT CHAR FROM LBUF
0068   04547 050222        CPA ZERO       END OF BUFFER?
0069   04550 026554        JMP SETDR      PUT OUT DEVICE REF. NO.
0070   04551 063236  DRERR LDA ERR27      SET CODE = INVALID DEV. REF. NO.
0071   04552 014466        JSB ERROR      PRINT DIAGNOSTIC
0072   04553 026506        JMP DEVRE      REPEAT DEV. REF. NO. INPUT
0073   04554 061106  SETDR LDA OCTNO      GET DEV. REF. NO.
0074   04555 003004        CMA,INA        COMPLEMENT
```

```
0075  04556 040407         ADA CEQT      ADD NO. EQT ENTRIES
0076  04557 002020         SSA           SKIP IF VALID DEV. REF NO.
0077  04560 026551         JMP DRERR     INVALID DEV. REF. NO. (NO EQT)
0078  04561 061106         LDA OCTNO     GET DEV. REF NO.
0079  04562 064411         LDB CSQT      GET CURRENT SQT NO.
0080  04563 044216         ADB N4
0081  04564 006021         SSB,RSS
0082  04565 026570         JMP SESQT     PUT OUT DEV REF NO. TO SQT
0083  04566 002003         SZA,RSS       SKIP IF DEV REF IS NOT ZERO
0084  04567 026551         JMP DRERR     INVALID DEV. REF. NO.
0085  04570 017673 SESQT   JSB IOTBL     OUTPUT SQT ENTRY
0086  04571 035543         ISZ PPREL     INCR CURRENT RELOC ADDRESS
0087  04572 034411         ISZ CSQT      INCR CURRENT SQT COUNT
0088  04573 026506         JMP DEVRE     GET NEXT SQT ENTRY
0089*
0090  04574 014462 SINTT   JSB SPACE     NEW LINE
0091  04575 014462         JSB SPACE     NEW LINE
0092  04576 003400         CCA
0093  04577 040411         ADA CSQT      SUBTRACT 1 FROM SQT COUNT
0094  04600 070411         STA CSQT      SET SQT COUNT
```

```
0096*
0097*                                          SET INTERRUPT TABLE (INT)
0098*
0099  04601 061543          LDA PPREL         GET CURRENT RELOCATION ADDR
0100  04602 070412          STA AINT          SAVE INTERRUPT TABLE ADDRESS
0101  04603 061125          LDA DSKAD         GET CURRENT ABS. CODE DISK ADDR
0102  04604 071555          STA DSKIN         SAVE INT CODE DISK ADDR
0103  04605 061147          LDA DCNT          GET CURRENT ABS. CODE DBUF COUNT
0104  04606 071556          STA INTCN         SAVE INT CODE DISK RECORD COUNT
0105  04607 060235          LDA P17
0106  04610 067321          LDB MES29         MES29 = ADDR. * INT TABLE
0107  04611 114102          JSB DRKEY,I       PRINT: * INTERRUPT TABLE
0108  04612 014462          JSB SPACE         NEW LINE
0109*
0110  04613 015371          JSB INLST         INITIALIZE LSTX
0111  04614 015375  CISCN   JSB LSTX          SET LST ADDRESSES
0112  04615 027600          JMP NOCIC         CIC NOT FOUND IN LST
0113  04616 161137          LDA LST1,I        GET NAME 1,2 OF LST ENTRY
0114  04617 053353          CPA CHR$C         CHARS = SC
0115  04620 002001          RSS               YES - CONTINUE
0116  04621 026614          JMP CISCN         NO - TRY NEXT LST ENTRY
0117  04622 161140          LDA LST2,I        GET NAME 3,4 OF LST ENTRY
0118  04623 053354          CPA CHRIC         CHARS = IC?
0119  04624 002001          RSS               YES - CONTINUE
0120  04625 026614          JMP CISCN         NO - TRY NEXT LST ENTRY
0121  04626 161141          LDA LST3,I        GET NAME 5 OF LST ENTRY
0122  04627 010244          AND M7400         ISOLATE UPPER CHAR
0123  04630 050336          CPA UBLNK         CHAR = BLANK?
0124  04631 002001          RSS               YES - CONTINUE
0125  04632 026614          JMP CISCN         NO - TRY NEXT LST ENTRY
0126  04633 161143          LDA LST5,I        GET BP LINK ADDRESS
0127  04634 033347          IOR IJSB        ADD JSB 0,I CODE
0128  04635 073372          STA JSCIC         SET JSB CIC,I CODE
0129  04636 065540          LDB FSYBP         GET FWA BP LINKAGE
0130  04637 007004          CMB,INB           COMPLEMENT
0131  04640 075325          STB TCNT          SET TEMPORARY COUNT
0132  04641 064306          LDB M2000         ADJUST FOR FIRST BP ADDRESS
0133  04642 054307  BACK    CPB M2002         DON'T DESTROY LOCATIONS
0134  04643 026647          JMP BUMP            2 OR 3
0135  04644 054310          CPB M2003
0136  04645 026647          JMP BUMP
0137  04646 170001          STA B,I           PUT JSB CIC,I IN BP LOCATION
0138  04647 006004  BUMP    INB               INCR CURRENT BP ADDRESS
0139  04650 035325          ISZ TCNT          SKIP - ALL INT LOCATIONS FILLED
0140  04651 026642          JMP BACK
0141  04652 064311          LDB M2006         GET ADDR FOR FIRST INT LOCATION
0142  04653 075541          STB TBREL         SET CURRENT BP ADDRESS
0143*
0144  04654 065066  SETIN   LDB ALBUF
0145  04655 014451          JSB BUFCL         CLEAR LBUF
0146  04656 060274          LDA P128
0147  04657 065066          LDB ALBUF         GET ADDRESS OF LBUF
0148  04660 114104          JSB DRTTY,I       INPUT INT RECORD
0149  04661 002003          SZA,RSS           SKIP - DATA INPUT
0150  04662 026656          JMP *-4           REPEAT INPUT
0151  04663 017121          JSB GINIT         INITIALIZE LBUF SCAN
```

```
0152  04664 060220         LDA N2
0153  04665 017004         JSB GETNA      MOVE 2 CHARS TO TBUF
0154  04666 050440         CPA PTERM      CHARS = /E?
0155  04667 026735         JMP ENDIO      YES - I/O TABLES COMPLETE
0156  04670 017121         JSB GINIT      RE-INITIALIZE LBUF SCAN
0157  04671 060224         LDA P2
0158  04672 017043         JSB GETOC      GET 2 OCTAL DIGITS, CONVERT
0159  04673 026703         JMP CHERR      INVALID INT CHANNEL NO. DIGIT
0160  04674 003004         CMA,INA        MAXIMUM I/O CHANNEL IS
0161  04675 040240         ADA M37          37 OCTAL
0162  04676 002020         SSA
0163  04677 026703         JMP CHERR
0164  04700 016757         JSB GETAL      GET NEXT CHAR FROM LBUF
0165  04701 050335         CPA BLANK      CHAR = COMMA?
0166  04702 027602         JMP SETCH      SAVE INT CHANNEL NO.
0167  04703 063237 CHERR   LDA ERR28      SET CODE = INVALID INT CHNL NO.
0168  04704 027615         JMP INTER      PRINT ERROR, REPEAT INPUT
0169*
0170  04705 071325 FILLI   STA TCNT       SET NO. OF FILL-INS REQUIRED
0171  04706 002400         CLA            SET INTERRUPT TABLE ENTRY = ZERO
0172  04707 017673         JSB IOTBL      OUTPUT ZERO TO INTERRUPT TABLE
0173  04710 035543         ISZ PPREL      INCR CURRENT INT TABLE ADDRESS
0174  04711 035541         ISZ TBREL      INCR CURRENT INT LOCATION ADDR
0175  04712 035325         ISZ TCNT       SKIP - ALL FILL-INS COMPLETE
0176  04713 026706         JMP FILLI+1    CONTINUE INT FILL-IN
0177*
0178  04714 065327 STINT   LDB TBUF+1     GET INT LOCATION CODE
0179  04715 175541         STB TBREL,I    PUT INT LOCATION CODE IN INT LOC
0180  04716 035541         ISZ TBREL      INCR CURRENT BP LOCATION ADDR
0181  04717 065541         LDB TBREL      GET INT LOCATION ADDR
0182  04720 044277         ADB L2000      ADJUST FOR BP ADDR
0183  04721 007004         CMB,INB
0184  04722 045540         ADB FSYBP      ADD ADDR OF FIRST SYS LINK
0185  04723 006021         SSB,RSS        SKIP - INT LOCATION OVERFLOW
0186  04724 026731         JMP NOBPO      SET INT TABLE ENTRY
0187  04725 063242         LDA ERR35      SET CODE = BP INT LOC OVERFLOW
0188  04726 014466         JSB ERROR      PRINT DIAGNOSTIC
0189  04727 014462         JSB SPACE      NEW LINE
0190  04730 124126         JMP AFWAP,I    GET FWA BP LINKAGE
0191*
0192*
0193  04731 061326 NOBPO   LDA TBUF       GET INT TABLE CODE
0194  04732 017673         JSB IOTBL      OUTPUT INT TABLE ENTRY
0195  04733 035543         ISZ PPREL      INCR CURRENT RELOCATION ADDR
0196  04734 026654         JMP SETIN      GET NEXT INT TABLE RECORD
0197  04735 060412 ENDIO   LDA AINT       GET ADDRESS OF INT
0198  04736 003004         CMA,INA
0199  04737 041543         ADA PPREL      ADD CURRENT RELOCATION ADDR
0200  04740 070413         STA CINT       SAVE NO. INT ENTRIES
0201  04741 066755         LDB N119
0202  04742 055147         CPB DCNT       ANYTHING LEFT TO OUTPUT?
0203  04743 002001         RSS             -NO
0204  04744 114136         JSB AREMD,I     -YES, DO IT
0205  04745 064253         LDB N128
0206  04746 075147         STB DCNT       RESET TO 128-WORD SECTOR SIZE
0207  04747 014462         JSB SPACE      NEW LINE
```

```
0208  04750 014462          JSB SPACE      NEW LINE
0209*
0210  04751 062756          LDA T200,       RESTORE PLIST BUFFER
0211  04752 065072          LDB PLAD         FROM TRACK 200,
0212  04753 014544          JSB DISKI          SECTOR 1
0213  04754 126153          JMP GENIO,I    RETURN = CONTINUE LOADING
0214*
0215  04755 177611  N119     DEC -119
0216  04756 144001  T200,    OCT 144001      TRACK 200, SECTOR 1
```

```
0218*
0219*                                          GET CHAR FROM LBUF, RETURN IN A
0220*
0221*  THE FOLLOWING SUBROUTINE SUPPLIES THE CHARACTERS FOR
0222*  GETNA AND GETOC.
0223*
0224*  CALLING SEQUENCE:
0225*    A = IGNORED
0226*    B = IGNORED
0227*    JSB GETAL
0228*
0229*  RETURN:
0230*    A = CURRENT CHARACTER
0231*    B = DESTROYED
0232*
0233  04757 000000  GETAL NOP
0234  04760 063375        LDA CMFLG     CMFLG = COMMA-IN FLAG
0235  04761 002003        SZA,RSS       SKIP IF NO COMMA IN
0236  04762 027002        JMP BLRET     RETURN BLANK
0237  04763 067376        LDB BUFUL     GET U/L FLAG
0238  04764 161566  IGNOR LDA CURAL,I   GET CHAR FROM LBUF
0239  04765 006002        SZB           SKIP IF LOWER CHAR
0240  04766 001727        ALF,ALF       ROTATE TO LOWER
0241  04767 010243        AND M377      ISOLATE LOWER CHAR
0242  04770 050222        CPA ZERO      END OF BUFFER?
0243  04771 126757        JMP GETAL,I   YES - RETURN WITH ZERO
0244  04772 007002        CMB,SZB       RESET U/L, SKIP IF UPPER CHAR
0245  04773 035566        ISZ CURAL     INCR LBUF ADDRESS
0246  04774 050335        CPA BLANK     CHAR = BLANK?
0247  04775 026764        JMP IGNOR     IGNORE BLANKS
0248  04776 077376        STB BUFUL     SAVE U/L FLAG
0249  04777 050441        CPA COMMA     CHAR = COMMA?
0250  05000 037375        ISZ CMFLG     RESET FLAG TO SHOW COMMA IN
0251  05001 126757        JMP GETAL,I   RETURN WITH NON-BLANK CHAR
0252  05002 060335  BLRET LDA BLANK     REPLACE WITH BLANK CHAR
0253  05003 126757        JMP GETAL,I   RETURN WITH BLANK
0254*
0255*                                          MOVE ALPHA FROM LBUF TO TBUF
0256*
0257*  THE FOLLOWING SUBROUTINE MOVES THE CHARACTERS FROM LBUF
0258*  TO TBUF.
0259*
0260*  CALLING SEQUENCE:
0261*    A = MAX. NO. OF CHARACTERS TO BE MOVED.  THE SIGN OF A
0262*        DESIGNATES THE POSITION OF THE FIRST CHARACTER.
0263*        IF THE SIGN OF A IS POSITIVE, THE FIRST CHAR IS TO
0264*        BE MOVED TO THE LOW CHAR IN TBUF.  IF A IS NEGATIVE, THE
0265*        FIRST CHARACTER IS TO BE MOVED TO THE UPPER CHAR IN TBUF.
0266*    B = IGNORED
0267*    JSB GETNA
0268*
0269*  RETURN:
0270*    A = FIRST CHAR (IF ONLY 1 CHAR) OR FIRST 2 CHARS MOVED.
0271*    B = DESTROYED
0272*
0273  05004 000000  GETNA NOP
```

```
0274  05005 002321          CCE,SSA,RSS   SET E = 1 (EVEN) POSITION
0275  05006 003104          CMA,CLE,INA   SET E = 0 (ODD) POSITION - COMP
0276  05007 071104          STA MAXC      MAXC = MAXIMUM NO. CHARS
0277  05010 061071          LDA ATBUF     ATBUF = ADDR OF TBUF
0278  05011 071324          STA CURAT     SET CURRENT TBUF ADDRESS
0279  05012 006400          CLB
0280  05013 075326          STB TBUF      CLEAR WORD 1 OF TBUF
0281  05014 003400          CCA
0282  05015 073375          STA CMFLG     SET COMMA-IN FLAG
0283  05016 002041          SEZ,RSS       SKIP - ODD POSITION
0284  05017 027031          JMP OCHAR     BEGIN WITH ODD CHARACTER
0285  05020 016757  NEXTC    JSB GETAL     GET CHAR FROM LBUF
0286  05021 050222          CPA ZERO      END OF BUFFER?
0287  05022 060335          LDA BLANK     YES - REPLACE CHAR WITH BLANK
0288  05023 001727          ALF,ALF       ROTATE TO UPPER A
0289  05024 171324          STA CURAT,I   SET CHARACTER IN TBUF
0290  05025 035104          ISZ MAXC      CHECK FOR ALL CHARS IN
0291  05026 027031          JMP OCHAR     GET ODD CHAR FROM LBUF
0292  05027 061326          LDA TBUF      GET FIRST 2 TRANSFERRED CHARS
0293  05030 127004          JMP GETNA,I   YES - RETURN
0294  05031 016757  OCHAR    JSB GETAL     GET CHAR FROM LBUF
0295  05032 050222          CPA ZERO      END OF BUFFER-
0296  05033 060335          LDA BLANK     REPLACE ZERO CHAR WITH BLANK
0297  05034 131324          IOR CURAT,I   ADD TO UPPER CHAR IN TBUF
0298  05035 171324          STA CURAT,I   SET CHARS IN TBUF
0299  05036 035324          ISZ CURAT     INCR TBUF ADDRESS
0300  05037 035104          ISZ MAXC      CHECK FOR ALL CHARS IN
0301  05040 027020          JMP NEXTC     NO - TRY NEXT UPPER CHAR
0302  05041 061326          LDA TBUF      GET FIRST 2 TRANSFERRED CHARS
0303  05042 127004          JMP GETNA,I   RETURN
0304*
0305*                                     CONVERT OCT/DEC ASCII TO BINARY
0306*
0307*  THE GETOC SUBROUTINE CONVERTS THE NEXT CHARACTERS IN LBUF FROM
0308*  ASCII (DECIMAL OR OCTAL) TO THEIR BINARY VALUE.
0309*
0310*  CALLING SEQUENCE:
0311*    A = MAX. NO. OF CHARS IN CONVERSION REQUEST.  IF A IS
0312*        POSITIVE, THE REQUEST IS FOR OCTAL; IF A IS NEGATIVE,
0313*        THE REQUEST IS FOR DECIMAL.
0314*    B = IGNORED
0315*    JSB GETOC
0316*
0317*  RETURN:
0318*    (N+1): INVALID DIGIT OR OVERFLOW IN CONVERSION
0319*    (N+2): A = CONVERTED NO.
0320*           B = DESTROYED
0321*
0322  05043 000000  GETOC   NOP
0323  05044 064212          LDB L10       GET OCTAL RANGE
0324  05045 002020          SSA           SKIP IF OCTAL REQUEST
0325  05046 064210          LDB L12       GET DECIMAL RANGE
0326  05047 077373          STB DRANG     SET DIGIT RANGE
0327  05050 002021          SSA,RSS       SKIP IF DECIMAL REQUEST
0328  05051 003004          CMA,INA       SET REQUEST COUNT TO NEGATIVE
0329  05052 071104          STA MAXC      SET MAX NO. OF DIGITS
```

```
0330  05053 003400          CCA
0331  05054 073374          STA DIFLG      SET DATA-IN FLAG = NO DATA IN
0332  05055 073375          STA CMFLG      SET COMMA-IN FLAG
0333  05056 002400          CLA
0334  05057 071106          STA OCTNO      OCTNO = OCTAL NUMBER
0335  05060 016757  GETNX    JSB GETAL      GET CHAR FROM LBUF
0336  05061 050222          CPA ZERO       CHAR = ZERO? (END OF BUFFER)
0337  05062 027116          JMP ENDOC      YES - RETURN
0338  05063 050335          CPA BLANK      CHAR = BLANK? (COMMA IN)
0339  05064 027116          JMP ENDOC      YES - RETURN
0340  05065 040276          ADA L60        SUBTRACT 60B FROM CHAR
0341  05066 071105          STA TCHAR      SAVE CHAR
0342  05067 002020          SSA            SKIP IF VALID LOWER LIMIT
0343  05070 027115          JMP DGERR      INVALID DIGIT
0344  05071 043373          ADA DRANG      ADD DIGIT RANGE
0345  05072 002121          CLE,SSA,RSS    CLEAR E - SKIP IF VALID DIGIT
0346  05073 027115          JMP DGERR      INVALID DIGIT
0347  05074 037374          ISZ DIFLG      INCR DATA-IN FLAG, SKIP
0348  05075 000000          NOP
0349  05076 061106          LDA OCTNO      GET PREVIOUS OCTAL NO.
0350  05077 040000          ADA A          SET A = OCTNO X 2
0351  05100 040000          ADA A          SET A = OCTNO X 4
0352  05101 067373          LDB DRANG      GET DIGIT RANGE
0353  05102 054210          CPB L12        RANGE = DECIMAL?
0354  05103 041106          ADA OCTNO      SET A = OCTNO X 5
0355  05104 040000          ADA A          SET A = OCTNO X 10/8
0356  05105 041105          ADA TCHAR      SET A = NEW OCTAL NO.
0357  05106 071106          STA OCTNO      SAVE NEW OCTAL NO.
0358  05107 002040          SEZ            TEST FOR OVERFLOW
0359  05110 027115          JMP DGERR      INVALID NO.
0360  05111 035104          ISZ MAXC       SKIP IF ALL DIGITS PROCESSED
0361  05112 027060          JMP GETNX      GET NEXT DECIMAL DIGIT
0362  05113 037043          ISZ GETOC      INCR RETURN ADDRESS
0363  05114 061106          LDA OCTNO      GET OCTAL EQUIVALENT
0364  05115 127043  DGERR    JMP GETOC,I    RETURN
0365  05116 037374  ENDOC    ISZ DIFLG      SKIP - NO DATA IN
0366  05117 027113          JMP *-4        DATA IN - NORMAL RETURN
0367  05120 127043          JMP GETOC,I    RETURN - ERROR
0368*
0369*                                       INITIALIZE CHAR TRANSFER
0370*
0371*  THE GINIT SUBROUTINE SETS THE CURRENT ADDRESS AND UPPER/LOWER
0372*  FLAG FOR SCANNING LBUF.
0373*
0374*  CALLING SEQUENCE:
0375*    A = IGNORED
0376*    B = IGNORED
0377*    JSB GINIT
0378*
0379*  RETURN : CONTENTS OF A AND B ARE DESTROYED
0380*
0381  05121 000000  GINIT   NOP
0382  05122 061066          LDA ALBUF      ALBUF = ADDR OF LBUF
0383  05123 071566          STA CURAL      SET CURRENT LBUF ADDRESS
0384  05124 007400          CCB
0385  05125 077376          STB BUFUL      BUFUL = BUFFER U/L FLAG
```

```
0386  05126 127121          JMP GINIT,I   RETURN
0387*
0388*                CONVERTS ASCII A REGISTER TO DECIMAL
0389*
0390*      CALLING SEQUENCE:
0391*           A= ASCII DIGITS
0392*           B= (IGNORED)
0393*           JSB RESCN
0394*
0395*      RETURN:
0396*           VALUE IN A REGISTER
0397  05127 000000  RESCN NOP
0398  05130 071557         STA TEMP      SAVE ASCII DATA
0399  05131 001727         ALF,ALF
0400  05132 010242         AND M177
0401  05133 040276         ADA L60       FORM FIRST DEC DIGIT
0402*      ****************************************************************
0403*
0404  05134 070001         STA B         SAVE MULTIPLICAND
0405  05135 001721         ALF,ARS       MULTIPLY BY 8
0406  05136 040001         ADA B         BY 9
0407  05137 040001         ADA B         BY 10
0408*      ****************************************************************
0409  05140 071075         STA WDCNT     MULTIPLY BY 10 AND SAVE
0410  05141 061557         LDA TEMP
0411  05142 010242         AND M177
0412  05143 040276         ADA L60       FORM SECOND DEC DIGIT
0413  05144 041075         ADA WDCNT          ADD FIRST DIGIT
0414  05145 127127         JMP RESCN,I   RETURN
0415*
0416*                                     ALLOCATE NEW BP LINK WORD
0417*
0418*  THE ALLOC SUBROUTINE ESTABLISHES ALL THE BP LINKAGE ADDRESSES,
0419*  IF THE ALLOCATED LINK WORD FALLS IN THE SYSTEM COMMUNICATION AREA
0420*  A DISGNOSTIC IS PRINTED.
0421*
0422*  CALLING SEQUENCE:
0423*    A = IGNORED
0424*    B = IGNORED
0425*    JSB ALLOC
0426*
0427*  RETURN:
0428*    A = ALLOCATED BP LINK ADDRESS
0429*    B = DESTROYED
0430*
0431  05146 000000  ALLOC NOP
0432  05147 061541         LDA TBREL     GET NEXT BP ADDRESS
0433  05150 040306         ADA M2000     ADJUST FOR BP ADDRESS
0434  05151 006400         CLB
0435  05152 174000         STB A,I       CLEAR ALLOCATED BP LOCATION
0436  05153 040277         ADA L2000     ADJUST FOR BP ADDRESS
0437  05154 035541         ISZ TBREL     INCR BP RELOCATION ADDR
0438  05155 064000         LDB A
0439  05156 007000         CMB
0440  05157 044110         ADB LWSBP     ADD ADDR OF SYS COMM AREA
0441  05160 006021         SSB,RSS       SKIP - BP FULL
```

```
0442  05161 127146          JMP ALLOC,I   RETURN = NO BP OVERFLOW
0443  05162 071105          STA TCHAR     SAVE CURRENT BP LINK ADDRESS
0444  05163 060436          LDA ER16F     HAS ERROR 16 BEEN OUTPUTX
0445  05164 002002          SZA
0446  05165 027171          JMP ALL1        YES = IGNORE
0447  05166 061250          LDA ERR16     SET ERROR CODE FOR BP OVERFLOW
0448  05167 070436          STA ER16F     SET TO IGNORE ERROR 16
0449  05170 014466          JSB ERROR     PRINT ERROR MESSAGE
0450  05171 061105  ALL1    LDA TCHAR     GET BP LINK ADDRESS
0451  05172 127146          JMP ALLOC,I   RETURN
0452*
0453  05173 000000  INBND    NOP
0454  05174 073146          STA ALLOC     SAVE VALUE
0455  05175 065066          LDB ALBUF     CLEAR LBUF
0456  05176 014451          JSB BUFCL
0457  05177 060274          LDA P128
0458  05200 065066          LDB ALBUF
0459  05201 114104          JSB DRTTY,I   REQUEST INPUT
0460  05202 002003          SZA,RSS
0461  05203 027177          JMP *-4        NO INPUT = REPEAT
0462  05204 114122          JSB AGINI,I
0463  05205 060227          LDA P5
0464  05206 114121          JSB AGETO,I   CONVERT TO OCTAL
0465  05207 127173          JMP INBND,I     ERROR = RETURN P+1
0466  05210 063146          LDA ALLOC     RESTORE VALUE
0467  05211 003004          CMA,INA       IS VALUE ENTERED >= ORIGINAL?
0468  05212 041106          ADA OCTNO
0469  05213 002020          SSA
0470  05214 127173          JMP INBND,I     NO-ERROR, RETURN P+1
0471  05215 061106          LDA OCTNO       YES- RETURN P+2 WITH "A"
0472  05216 037173          ISZ INBND         REGISTER = OCTAL VALUE
0473  05217 127173          JMP INBND,I
0474*
0475  05220 046127  SYLM    ASC 5,LWA LINKS
0476  05225 000000          NOP
0477  05226 000000          NOP
0478  05227 000000          NOP
```

```
0480*
0481  05230 030071  ERR09 ASC 1,09      PARAMETER NAME ERROR
0482  05231 030460  ERR10 ASC 1,10      PARAMETER TYPE ERROR
0483  05232 031061  ERR21 ASC 1,21      SCIC NOT FOUND IN LST
0484  05233 031064  ERR24 ASC 1,24      INVALID CHANNEL NO. IN EQT REC
0485  05234 031065  ERR25 ASC 1,25      INVALID DRIVER NAME
0486  05235 031066  ERR26 ASC 1,26      INVALID D,B, OR U OPERAND
0487  05236 031067  ERR27 ASC 1,27      INVALID DEVICE REF. NO.
0488  05237 031070  ERR28 ASC 1,28      INVALID INT REC CHANNEL NO.
0489  05240 031071  ERR29 ASC 1,29      INVALID INT CHANNEL NO. ORDER
0490  05241 031461  ERR31 ASC 1,31      INVALID EQT NO. IN INT RECORD
0491  05242 031465  ERR35 ASC 1,35      BP INTERRUPT LOCATION OVERFLOW
0492  05243 031466  ERR36 ASC 1,36      INVALID FINAL OPERAND IN INT REC
0493*
0494  05244 005245  MES24 DEF *+1
0495  05245 042516        ASC 11,ENTER PROG PARAMETERS
0496  05260 005261  MES25 DEF *+1
0497  05261 025040        ASC 12,* EQUIPMENT TABLE ENTRY
0498  05275 005276  MES26 DEF *+1
0499  05276 025040        ASC 12,* DEVICE REFERENCE TABLE
0500  05312 005313  MES28 DEF *+1
0501  05313 020040        ASC 6,   * EQT #?
0502  05321 005322  MES29 DEF *+1
0503  05322 025040        ASC 9,* INTERRUPT TABLE
0504*    ****************************************************************
0505  05333 021440  MES17 ASC 4,# LINKS?
0506  05337 043127  MES36 ASC 8,FWA USER LINKS?
0507*    ****************************************************************
0508*
0509  05347 114000  IJSB  JSB 0,I       I=JSB CODE FOR INTERRUPT LOCS
0510  05350 030000  UASCZ OCT 30000     UPPER ASCII ZERO CHAR
0511  05351 000104  CHARD OCT 104       ASCII CHAR D
0512  05352 000122  CHARR OCT 122      ASCII CHAR R
0513  05353 022103  CHR$C ASC 1,$C
0514  05354 044503  CHRIC ASC 1,IC
0515  05355 053122  CHAVR ASC 1,VR
0516*
0517  05356 000000  TEMPE BSS 1         PARAMETER ERROR CODE
0518  05357 000000  PARNO BSS 1         PARAMETER RECORD LENGTH
0519*
0520  05360 000000  IOADD BSS 1         I/O ADDR (CHANNEL NO.) IN EQT
0521  05361 000000  IODMA BSS 1         I/O DMA FLAG IN EQT
0522  05362 000000  IOBUF BSS 1         I/O BUFFERING FLAG IN EQT
0523  05363 000000  IOUNT BSS 1         I/O UNIT NO. IN EQT
0524  05364 000000  IOTYP BSS 1         I/O DRIVER TYPE IN EQT (OCTAL)
0525  05365 000000  ASTYP BSS 1         I/O DRIVER TYPE IN EQT (ASCII)
0526  05366 000000  DFLAG BSS 1         DMA=IN FLAG FOR EQT
0527  05367 000000  BFLAG BSS 1         BUFFERING=IN FLAG FOR EQT
0528  05370 000000  UFLAG BSS 1         UNIT=IN FLAG FOR EQT
0529  05371 000000  INTCH BSS 1         INT RECORD CHANNEL NO.
0530  05372 000000  JSCIC BSS 1         JSB CIC,I CODE FOR INTERRUPT LOC
0531*
0532  05373 000000  DRANG BSS 1         DIGIT RANGE
0533  05374 000000  DIFLG BSS 1         DATA=IN FLAG = -1/0 = NOT IN/IN
0534  05375 000000  CMFLG BSS 1         COMMA FLAG = -1/0 = NOT IN/IN
0535  05376 000000  BUFUL BSS 1         BUFFER U/L FLAG
```

```
0536*
0537  05377 000000  DBUF  BSS 128       RELOCATABLE DISC INPUT BUFFER
0538  05577 000000        NOP           INIT. USER DIRECTORY = 0
```

```
0540* THE FOLLOWING 128 WORDS ARE USED FOR INTERRUPT
0001*  ENTRY PROCESSING CODE, AS WELL AS FOR THE PLIST
0002*  BUFFER PRIOR TO BEGINNING THE DISC LOADING
0003*  PHASE, THIS BLOCK IS WRITTEN ONTO TRACK 200,
0004*  SECTOR 0 OF THE DISC. THE DISC LOADING PHASE
0005*  USES PLIST, WHICH DESTROYS THE CODE IN CORE.
0006*  PRIOR TO PROCESSING THE INTERRUPT ENTRIES, THIS
0007*  BLOCK IS READ BACK INTO CORE FROM TRACK 200,
0008*  SECTOR 0.
0009*
0010  05600          PLIST EQU *
0011*
0012  05600 063232   NOCIC LDA ERR21      SET CODE = SCIC NOT FOUND IN LST
0013  05601 014474         JSB IRERR      IRRECOVERABLE ERROR
0014*
0015  05602 061106   SETCH LDA OCTNO      GET INT CHANNEL NO.
0016  05603 073371         STA INTCH      SAVE CHANNEL NO.
0017*
0018  05604 060220         LDA N2
0019  05605 017004         JSB GETNA      MOVE 2 CHARS TO TBUF
0020  05606 053775         CPA CHREQ      CHARS = EQ?
0021  05607 027617         JMP INTEQ      YES - PROCESS INT EQT RECORD
0022  05610 053776         CPA CHREN      CHARS = EN?
0023  05611 027703         JMP INTEN      YES- PROCESS INT ENT RECORD
0024  05612 053777         CPA CHRAB      CHARS = AB?
0025  05613 027753         JMP INABS      YES - PROCESS INT ABS RECORD
0026  05614 063770   IMNEM LDA ERR30      SET CODE = INVALID INT MNEMONIC
0027  05615 014466   INTER JSB ERROR      PRINT DIAGNOSTIC
0028  05616 026654         JMP SETIN      REPEAT INT RECORD PROCESSING
0029*
0030  05617 060220   INTEQ LDA N2
0031  05620 017004         JSB GETNA      MOVE NEXT 2 CHARS TO TBUF
0032  05621 053773         CPA UTCHR      CHARS = T,BLANK?
0033  05622 002001         RSS            YES - CONTINUE
0034  05623 027614         JMP IMNEM      NO - INVALID MNEMONIC
0035*
0036  05624 060220         LDA N2
0037  05625 017043         JSB GETOC      GET 2 DECIMAL DIGITS, CONVERT
0038  05626 027636         JMP EQUER      INVALID EQT NO. IN INT REC
0039  05627 065106         LDB OCTNO      GET EQT TABLE ENTRY NO.
0040  05630 007007         CMB,INB,SZB,RSS   SKIP - VALID LOWER LIMIT
0041  05631 027636         JMP EQUER      INVALID EQT REFERENCE
0042  05632 075105         STB TCHAR      SAVE EQT NO.
0043  05633 044407         ADB CEQT       ADD UPPER EQT REF. NO.
0044  05634 006021         SSB,RSS        SKIP - INVALID UPPER LIMIT
0045  05635 027640         JMP TSTIQ      TEST FOR FIRST EQT REFERENCE
0046  05636 063241   EQUER LDA ERR31      SET CODE = INVALID EQT NO.
0047  05637 027615         JMP INTER      PRINT ERROR, REPEAT INPUT
0048*
0049  05640 065105   TSTIQ LDB TCHAR      GET EQT REF. NO.
0050  05641 060406         LDA AEQT       GET ADDR OF EQT
0051  05642 006007         INB,SZB,RSS    SKIP - NOT FIRST EQT REFERENCE
0052  05643 027647         JMP SEQTI      SET EQT ADDR IN INT TABLE
0053  05644 040235         ADA P17        ADJUST FOR NEXT EQT ENTRY ADDR
0054  05645 006006         INB,SZB        SKIP - EQT ADDRESS FOUND
0055  05646 027644         JMP *-2        CONTINUE EQT SEARCH
```

```
0056  05647 067372  SEQTI LDB JSCIC      GET FSB CIC CODE
0057  05650 071326  COMIN STA TBUF       SAVE INT TABLE CODE
0058  05651 075327        STB TBUF+1     SAVE INT LOCATION CODE
0059  05652 016757        JSB GETAL      GET NEXT CHAR FROM LBUF
0060  05653 050222        CPA ZERO       END OF BUFFER?
0061  05654 027657        JMP COM1        YES - CONTINUE
0062  05655 063243        LDA ERR36      SET CODE = INVALID FINAL OPRND
0063  05656 027615        JMP INTER      PRINT ERROR, REPEAT INPUT
0064*
0065  05657 063371  COM1  LDA INTCH      GET INT CHANNEL NO.
0066  05660 003004        CMA,INA
0067  05661 040277        ADA L2000      ADJUST FOR BP LOCATION ADDR
0068  05662 041541        ADA TBREL      ADD CURRENT BP ADDRESS
0069  05663 002003        SZA,RSS        SKIP - NOT NEXT LOCATION
0070  05664 026714        JMP STINT      SET INTERRUPT TABLES, LOCATION
0071  05665 002020        SSA            SKIP - INVALID CHANNEL NO, ORDER
0072  05666 026705        JMP FILLI      FILL IN SKIPPED VALUES
0073  05667 063240        LDA ERR29      SET CODE = INVALID INT CHNL ORDR
0074  05670 014466        JSB ERROR      PRINT DIAGNOSTIC
0075  05671 014462        JSB SPACE      NEW LINE
0076  05672 026654        JMP SETIN      GET NEXT INTERRUPT RECORD
0077*
0078  05673 000000  IOTBL NOP
0079  05674 066755        LDB N119
0080  05675 074253        STB N128       SIMULATE 119=WORD SECTOR
0081  05676 006404        CLB,INB        SET COUNT = 1
0082  05677 114135        JSB ALABD,I    OUTPUT 1 WORD OF ABS CODE
0083  05700 064300        LDB .N128
0084  05701 074253        STB N128       RESET SECTOR SIZE TO 128 WORDS
0085  05702 127673        JMP IOTBL,I
0086*
0087  05703 060220  INTEN LDA N2
0088  05704 017004        JSB GETNA      MOVE 2 CHARS TO TBUF
0089  05705 053773        CPA UTCHR      CHARS = T,BLANK?
0090  05706 002001        RSS            YES - CONTINUE
0091  05707 027614        JMP IMNEM      NO - INVALID INT MNEMONIC
0092  05710 060215        LDA N5
0093  05711 017004        JSB GETNA      MOVE 5 CHARS TO TBUF
0094*
0095  05712 015371        JSB INLST      INITIALIZE LSTX
0096  05713 015375  ENSCN JSB LSTX       SET LST ADDRESSES
0097  05714 027744        JMP ENERR      INVALID ENTRY POINT
0098  05715 161137        LDA LST1,I     GET NAME 1,2 OF LST ENTRY
0099  05716 051326        CPA TBUF       CHARS EQUAL?
0100  05717 002001        RSS            YES - CONTINUE
0101  05720 027713        JMP ENSCN      NO - TRY NEXT LST ENTRY
0102  05721 161140        LDA LST2,I     GET NAME 3,4 OF LST ENTRY
0103  05722 051327        CPA TBUF+1     CHARS EQUAL?
0104  05723 002001        RSS            YES - CONTINUE
0105  05724 027713        JMP ENSCN      NO - TRY NEXT LST ENTRY
0106  05725 161141        LDA LST3,I     GET NAME 5 OF LST ENTRY
0107  05726 010244        AND M7400      ISOLATE UPPER CHAR
0108  05727 051330        CPA TBUF+2     CHARS EQUAL?
0109  05730 002001        RSS            YES - CONTINUE
0110  05731 027713        JMP ENSCN      NO - TRY NEXT LST ENTRY
0111  05732 161142        LDA LST4,I     GET IDENT ADDRESS
```

```
0112  05733 002003          SZA,RSS       SKIP = ENT 15 DEFINED
0113  05734 027744          JMP ENERR     INVALID ENTRY POINT
0114  05735 071102          STA TIDNT     SET IDENT ADDRESS OF PROGRAM
0115  05736 015336          JSB IDX       SET IDENT ADDRESSES
0116  05737 102000          HLT 0         END OF IDENT LIST
0117  05740 161135          LDA ID6,I     GET PROGRAM TYPE
0118  05741 010242          AND M177      ISOLATE TYPE
0119  05742 002003          SZA,RSS       SKIP = NOT SYSTEM PROGRAM
0120  05743 027746          JMP SETEN     SET ENTRY POINT ADDRESSES
0121  05744 063771 ENERR    LDA ERR33     SET CODE = INVALID ENTRY POINT
0122  05745 027615          JMP INTER     PRINT ERROR, REPEAT INPUT
0123*
0124  05746 161143 SETEN    LDA LST5,I    GET BP LINK ADDRESS
0125  05747 033347          IOR IJSB      ADD JSB 0,I CODE
0126  05750 070001          STA B
0127  05751 002400          CLA           SET INT ENTRY = ZERO
0128  05752 027650          JMP COMIN     SET INTERRUPT TABLE, LOCATION
0129*
0130  05753 060220 INABS    LDA N2
0131  05754 017004          JSB GETNA     MOVE 2 CHARS TO TBUF
0132  05755 053774          CPA USCHR     CHARS = S,BLANK?
0133  05756 002001          RSS           YES - CONTINUE
0134  05757 027614          JMP IMNEM     NO = INVALID INT MNEMONIC
0135  05760 060230          LDA P6
0136  05761 017043          JSB GETOC     GET 6 OCTAL DIGITS, CONVERT
0137  05762 027766          JMP ABERR     INVALID ABS DIGIT
0138  05763 002400          CLA
0139  05764 065106          LDB OCTNO     GET ABSOLUTE VALUE
0140  05765 027650          JMP COMIN
0141*
0142  05766 063772 ABERR    LDA ERR34     SET CODE = INVALID ABS DIGIT
0143  05767 027615          JMP INTER     PRINT ERROR, REPEAT INPUT
0144*
0145  05770 031460 ERR30    ASC 1,30      INVALID INT MNEMONIC
0146  05771 031463 ERR33    ASC 1,33      INVALID INT ENT ENTRY
0147  05772 031464 ERR34    ASC 1,34      INVALID INT ABS ENTRY
0148  05773 052040 UTCHR    ASC 1,T
0149  05774 051440 USCHR    ASC 1,S
0150  05775 042521 CHREQ    ASC 1,EQ
0151  05776 042516 CHREN    ASC 1,EN
0152  05777 040502 CHRAB    ASC 1,AB
```

```
0154  06000                ORG 60000B
0155*
0156*                                        LOAD ABSOLUTE SYSTEM
0157*
0158*  THIS SECTION OF CODE CONTROLS THE GENERATION OF
0159*  THE ABSOLUTE CODE FOR THE SYSTEM.  EACH PROGRAM
0160*  IS LOADED BY TYPE AS FOLLOWS:
0161*
0162*     (1) SYSTEM--TYPE 0
0163*     (2) EXEC MODULES--TYPE 1
0164*     (3) AVAILABLE--TYPE 2
0165*     (4) BK DISC RESIDENT--TYPE 3
0166*     (5) IO DRIVER MODULES--TYPE 4
0167*     (6) BK DISC SEGMENTS--TYPE 5
0168*
0169*  EACH TYPE OF PROGRAM IS LOADED IN THE FOLLOWING MANNER:
0170*
0171*  (1) THE IDENTIFICATION BLOCK FOR THE PROGRAM IS LOCATED
0172*  IN IDENT.  A CALL TO LOAD IS EXECUTED TO LOAD THIS PROGRAM AND
0173*  ALL CALLED SUBROUTINES.  IF THE PROGRAM IS DISK RESIDENT,
0174*  THE BASE PAGE SECTION OF CODE IS WRITTEN ON THE DISK
0175*  IMMEDIATELY AFTER THE MAIN SECTION OF CODE.
0176*  IF THE PROGRAM IS
0177*  A USER PROGRAM (OTHER THAN SYSTEM USER PROGRAM) AN ID SEGMENT IS
0178*  GENERATED.  FINALLY, THE BASE PAGE LINKAGE ADDRESSES ARE MADE
0179*  UNAVAILABLE TO SUBSEQUENT PROGRAMS IF THE PROGRAM IS DISK RESIDEN
0180*
0181*  THIS ENTIRE PAGE IS WRITTEN ONTO TRACK 201 OF THE
0182*  DISC PRIOR TO THE PROGRAM INPUT PHASE, AND &
0183*  RESTORED INTO CORE FOLLOWING THE PROGRAM INPUT
0184*  PHASE.
0185*
0186*  THE 256-WORD BLOCK OF CODE STARTING AT SLINK IS
0187*  WRITTEN ONTO TRACK 202 OF THE DISC, THEN DESTROYED
0188*  BY THE LOAD I/O DRIVERS SECTION.
0189*
0190*
0191*  THE ALLOCATION OF MEMORY TO THE SYSTEM IS GIVEN BELOW:
0192*
```

```
0194*****************************************************************
0195*                    USER PROGRAM AREA (MAIN AND SEGMENTS)
0196*                    SYSTEM OVERLAYS (JOB AND FILE MANAGER)
0197*
0198**************END OF SYSTEM MEMORY PROTECTED AREA*******************
0199*
0200*                    EQUIP,DEVICE REFERENCE,INTERRUPT TABLES
0201*
0202*****************************************************************
0203*
0204*                    I/O DRIVER OVERLAY AREA
0205*
0206*****************************************************************
0207*
0208*                    EXEC SUPERVISOR OVERLAY AREA
0209*
0210*****************************************************************
0211*
0212*                    TELETYPE DRIVER
0213*
0214*****************************************************************
0215*
0216*                    DISC DRIVER
0217*
0218*****************************************************************
0219*
0220*                    I/O SUPERVISOR
0221*
0222*****************************************************************
0223*
0224*                    EXEC SUPERVIOSR
0225*
0226*****************************************************************
0227*
0228*                    CENTRAL INTERRUPT COSTROLLER*
0229*
0230*****************************************************************
0231*
0232*                    USER PROGRAM LINKAGE AREA
0233*
0234*****************************************************************
0235*
0236*                    SYSTEM LINKAGE AREA
0237*
0238*****************************************************************
0239*
0240*                    SYSTEM COMMUNICATION AREA
0241*
0242**************(OCTAL LOCATION 100)*********************************
0243*
0244*                    SYSTEM CONSTANTS
0245*
0246**************(OCTAL LOCATION 40)**********************************
0247*
0248*                    INTERRUPT LOCATOONS
0249*
```

0250**********(OCTAL LOCATION 2)**********

```
0252*
0253*  # LINKS?    ENTER 3 DECIMAL DIGITS
0254*
0255  06000 060353  FWENT LDA TR202
0256  06001 064343        LDB INWRT
0257  06002 074345        STB DWRT
0258  06003 064401        LDB INFLG      IS THE FOLLOWING SECTION OF
0259  06004 004065        CLE,ERB
0260  06005 074401        STB INFLG
0261  06006 002200        CME
0262  06007 017626        JSB TMPIO       -NO, LOAD IT IN
0263*
0264  06010 014462  SLINK JSB SPACE
0265  06011 060232        LDA P8
0266  06012 064153        LDB AMS17
0267  06013 114102        JSB DRKEY,I
0268  06014 065066        LDB ALBUF
0269  06015 014451        JSB BUFCL
0270  06016 060274        LDA P128
0271  06017 065066        LDB ALBUF
0272  06020 114104        JSB DRTTY,I
0273  06021 002003        SZA,RSS
0274  06022 026016        JMP *+4
0275  06023 061570        LDA LBUF       WAS "BLANK" ENTERED?
0276  06024 051317        CPA BLNKS
0277  06025 026040        JMP SL1          YES-DEFAULT MAX # LINKS
0278  06026 114122        JSB AGINI,I
0279  06027 060217        LDA N3
0280  06030 114121        JSB AGETO,I
0281  06031 026010        JMP SLINK
0282  06032 114117        JSB AGETA,I
0283  06033 050222        CPA ZERO
0284  06034 002001        RSS
0285  06035 026010        JMP SLINK
0286  06036 061106        LDA OCTNO
0287  06037 002001        RSS
0288  06040 063574  SL1   LDA MAGIC      SET DEFAULT=MAX # LINKS
0289  06041 070372        STA NLINK      SET # OF LINKS
0290*
0291*                                    SET FWA BP LINKAGE
0292  06042 064335        LDB BLANK
0293  06043 044373        ADB NCONS      # COMMONLY USED CONSTANTS
0294  06044 044374        ADB NSYSC     NUMBER OF SYSTEM CONSTANTS
0295  06045 075540        STB FSYBP      SET ADDR OF FIRST SYS LINK
0296  06046 044372        ADB NLINK
0297  06047 044277        ADB L2000
0298  06050 006021        SSB,RSS
0299  06051 026010        JMP SLINK
0300  06052 014462        JSB SPACE      NEW LINE
0301*
0302*                                    CLEAR LST WORD 5
0303  06053 015371        JSB INLST      INITIALIZE LST ADDRESSES
0304  06054 015375  CLLST JSB LSTX       SET LST ADDRESSES
0305  06055 026064        JMP CLRID-1    CLEAR USAGE FLAGS
0306  06056 002400        CLA
0307  06057 171143        STA LST5,I     CLEAR LST WORD 5
```

```
0308   06060 161141          LDA LST3,I     GET WORD 3 OF LST ENTRY
0309   06061 010244          AND M7400      ISOLATE UPPER CHARACTER
0310   06062 171141          STA LST3,I     SET LST WORD 3 WITH NO ORDINAL
0311   06063 026054          JMP CLLST      CONTINUE CLEARING LST
0312*                                       CLEAR PROGRAM USAGE FLAGS
0313   06064 015332          JSB INIDX      INITIALIZE IDENT ADDRESSES
0314   06065 015336  CLRID   JSB IDX        SET IDENT ADDRESSES
0315   06066 026073          JMP IDCLR      ALL IDENT FLAGS CLEAR
0316   06067 161132          LDA ID3,I      GET USAGE FLAG
0317   06070 010244          AND M7400      SET FLAG = ZERO
0318   06071 171132          STA ID3,I      SET CLEARED USAGE FLAG
0319   06072 026065          JMP CLRID      CLEAR NEXT IDENT FLAG
0320*
0321*                                       CLEAR PAGE 1 FOR INDIRECT LINKS
0322   06073 060277  IDCLR   LDA L2000
0323   06074 071075          STA WDCNT      SET WORD COUNT = 2000(8)
0324   06075 002400          CLA
0325   06076 064306          LDB M2000      GET ADDRESS OF PAGE 1
0326   06077 170001  CLRBP   STA B,I        CLEAR WORD IN BASE PAGE AREA
0327   06100 006004          INB            INCR PAGE ADDRESS
0328   06101 035075          ISZ WDCNT      SKIP = AREA CLEARED
0329   06102 026077          JMP CLRBP      CONTINUE CLEARING
```

```
0331*
0332*                                          LOAD INITIALIZATION
0333  06103 002400          CLA
0334  06104 071544          STA RELAD        CLEAR RELOCATION ADDR FOR LABDO
0335  06105 071064          STA COMAD        CLEAR COMMON RELOC BASE
0336  06106 071537          STA PTYPE        SET PROGRAM TYPE # SYSTEM
0337  06107 071155          STA URBP         CLEAR UPPER RESIDENR BP BOUND
0338  06110 071156          STA LBBP         CLEAR LOW BACKGROUND BP BOUND
0339  06111 071157          STA UBBP         CLEAR HIGH BACKGROUND BP BOUND
0340  06112 070400          STA IDFLG        CLAAR # ID SEG/SECTOR FLG
0341  06113 073575          STA FIRST        CLEAR PROG TYPE 2 FLAG
0342  06114 061540          LDA FSYBP        GET FIRST WORD AVAIL BP LINKAGE
0343  06115 071154          STA LRBP         CLEAR LOW RESIDENT BP BOUND
0344  06116 071542          STA PBREL        SET BP RELOC ADDR
0345  06117 040372          ADA NLINK            # YSER LINKS
0346  06120 070375          STA UPLNK      UPPER LIMIT OF LINKAGES
0347  06121 070110          STA LWSBP
0348  06122 002004          INA
0349  06123 071543          STA PPREL
0350  06124 073720          STA LRMAN        SET LOWER RESIDENT MAIN ADDR
0351  06125 060253          LDA N128
0352  06126 071147          STA DCNT         INITIALIZE ABSOLUTE OUTPUT COUNT
0353  06127 065067          LDB ADBUF        GET ADDRESS OF DBUF
0354  06130 075146          STB CURAD        SET CURRENT DBUF ADDRESS
0355  06131 060370          LDA DSKAB        GET INITIAL ABSOLUTE DISK ADDR
0356  06132 071125          STA DSKAD        SET CURRENT ABSOLUTE DISK ADDR
0357  06133 071536          STA DSKID      SET INITIAL ID SEG DISC ADDRESS
0358*              SET ASIDE ROOM ON DISC FOR SySTEM DIRECTORy
0359*     ****************************************************************
0360  06134 002400          CLA
0361  06135 065535          LDB LICNT        ESTIMATED # OF ID SEGMENTS
0362  06136 007004          CMB,INB          MAKE NEG
0363  06137 002004  CLRB1   INA              INCREMENT MULTIPLE OF 5 COUNTER
0364  06140 044261          ADB P11          ADD 11 TILL POS
0365  06141 006020          SSB              EXIT IF POS
0366  06142 026137          JMP CLRB1        LOOP
0367  06143 010316          AND M1777
0368  06144 001722          ALF,RAL
0369  06145 001222          RAL,RAL
0370*     ****************************************************************
0371  06146 006400          CLB
0372  06147 114132          JSB ABPOT,I    OUTPUT AREA ON DISC FOR SYS DIR,
0373  06150 061125          LDA DSKAD            SAVE CURRENT DISC ADDRESS
0374  06151 073722          STA DSKRR
```

```
0376*
0377*                                          LOAD SYSTEM
0378  06152 060344        LDA IPWRT            SET UP TO PROTECT
0379  06153 070345        STA DWRT               SYSTEM AREA OF DISC
0380  06154 014462        JSB SPACE            NEW LINE
0381  06155 060230        LDA P6
0382  06156 064156        LDB MES12            MES12 = ADDR: SYSTEM
0383  06157 017603        JSB SETHD            PRINT HEADING, INITIALIZE IDX
0384  06160 114134  SYLD  JSB AIDSN,I          SCAN IDENTS
0385  06161 026173        JMP SYEND            END OF IDENTS
0386  06162 165132        LDB ID3,I            GET USAGE FLAG
0387  06163 006014        SLB,INB              SKIP IF UNUSED
0388  06164 026160        JMP SYLD             IGNORE USED PROGRAM
0389  06165 175132        STB ID3,I            SET WORD 3 WITH USAGE FLAG
0390  06166 114130        JSB ALOAD,I          INITIATE AND LOAD MAIN PROGRAM
0391  06167 017620        JSB INCAD            UPDATE BP, PROG RELOC ADDR
0392  06170 061541        LDA TBREL            GET CURRENT BP ADDRESS
0393  06171 071165        STA URBP             SET UPPER RESIDENT BP BOUND
0394  06172 026160        JMP SYLD             PROCESS NEXT SYSTEM PROGRAM
0395*
0396  06173 114141  SYEND JSB ANOTS,I          TEST FOR PROGRAMS LOADED
0397*
0398*                                          SCAN LST FOR INITIAL ENTRY POINT
0399  06174 015371        JSB INLST            INITIALIZE LSTX
0400  06175 015375  STSCN JSB LSTX             SET LST ADDRESSES
0401  06176 102000        HLT 0B               START NOT FOUND IN LST
0402  06177 161137        LDA LST1,I           GET NAME 1,2
0403  06200 053713        CPA CHR$S            CHARS = $S?
0404  06201 002001        RSS                  YES - CONTINUE
0405  06202 026175        JMP STSCN            NO - TRY NEXT LST ENTRY
0406  06203 161140        LDA LST2,I           GET NAME 3,4
0407  06204 053714        CPA CHRTR            CHARS = TR?
0408  06205 002001        RSS                  YES - CONTINUE
0409  06206 026175        JMP STSCN            NO - TRY NEXT LST ENTRY
0410  06207 161141        LDA LST3,I           GET NAME 5
0411  06210 010244        AND M7400            ISOLATE UPPER CHAR
0412  06211 053712        CPA UCHRT            CHAR = T?
0413  06212 002001        RSS                  YES - START FOUND
0414  06213 026175        JMP STSCN            NO - TRY NEXT LST ENTRY
0415  06214 064307        LDB M2002            GET ADDR FOR JMP,I START
0416  06215 063711        LDA JMP3I            GET JMP 3,I CODE
0417  06216 170001        STA B,I              SET JMP 3,I IN BP LOCATION
0418  06217 006004        INB                  INCR CURRENT BP ADDRESS
0419  06220 161143        LDA LST5,I           GET BP ADDR FOR START
0420  06221 040306        ADA M2000            ADJUST FOR BP ADDRESS
0421  06222 160000        LDA A,I              GET ABSOLUTE ENTRY POINT ADDR
0422  06223 170001        STA B,I              SET ADDR OF START IN BP LOCATION
0423  06224 061542        LDA PBREL
0424  06225 073716        STA UBPSY          SAVE UPPER SYS BP ADDRESS
0425  06226 117601        JSB ABSST,I         BUILD SUBSYSTEM TABLE
0426  06227 114136        JSB AREMD,I        OUTPUT REMAINDER OF RES SYSTEM
0427  06230 117602        JSB AUP,I           UPDATE SUBSYSTEM COUNT ON DISC
0428  06231 061125        LDA DSKAD               SAVE I-O TABLES DISC ADDR
0429  06232 073725        STA DSKBG               FOR SYS LOADER
0430  06233 061543        LDA PPREL               SAVE LOW I/O TABLE MEMORY
0431  06234 073723        STA LBMAN               ADDR FOR SYS LOADER
```

```
0432  06235 073721        STA URMAN          SAVE HI MAIN ADDR
0433*
0434  06236 114116        JSB AGNIO,I    SET I/O TABLES
0435  06237 061543        LDA PPREL
0436  06240 073762        STA EXMLC
0437  06241 073726        STA DSKEL
0438*
0439*     COUNT # EXEC MODULES FOR SETTING DOUBLET TABLE SPACE
0440  06242 002400        CLA
0441  06243 073761        STA EXCN#      CLEAR EX MODULE COUNTER
0442  06244 002004        INA
0443  06245 071537        STA PTYPE      SET SCAN TYPE
0444  06246 003400        CCA
0445  06247 071550        STA LFLAG      INIT SCAN PARAMETERS
0446  06250 061101        LDA BIDNT
0447  06251 071553        STA CIDNT
0448  06252 114134        JSB AIDSN,I    SCAN FOR EX MODULES
0449  06253 026256        JMP *+3            =DONE=
0450  06254 037761        ISZ EXCN#          =MODULE FOUND
0451  06255 026252        JMP *-3        GO SEARCH FOR NEXT MODULE
0452  06256 063761        LDA EXCN#      # OF EX MODULES
0453  06257 001200        RAL                 X 2 WORDS FOR EACH MODULE
0454  06260 041543        ADA PPREL      ADD TO CURRENT ADDRESS AND SET
0455  06261 071543        STA PPREL           FOR PROG LOADING
0456  06262 073727        STA DSKEU
0457  06263 061543        LDA PPREL          SAVE HI IO TABLE MEMORY
0458  06264 073724        STA UBMAN          ADDR FOR SYS LOADER
0459  06265 065070        LDB AIBUF      SET ID SEGMENT BUFFER ADDRESS
0460  06266 075770        STB CURAI
0461  06267 014451        JSB BUFCL      CLEAR ID SEGMENT BUFFER
0462  06270 060253        LDA N128       SET ID SEGMENT BUFFER COUNT
0463  06271 071771        STA ICNT
```

```
0465*                LOAD EX MODULES
0466*
0467  06272 034401          ISZ INFLG      SET CODING FLAG = OUT
0468*
0469  06273 064206          LDB EXDEF
0470  06274 014451          JSB BUFCL      CLEAR EXEC MODULE TABLE
0471  06275 060206          LDA EXDEF      SET EXMOD PARAMETER STORAGE
0472  06276 070414          STA MCNT            BUFFER ADDRESS
0473  06277 002400          CLA            CLEAR
0474  06300 070377          STA MAXPX           MAX EX MOD PROG LENGTH
0475  06301 073770          STA MAXBX           MAX EX MOD RES BP LENGTH
0476  06302 060270          LDA P23
0477  06303 064157          LDB ME815
0478  06304 017603          JSB SETHD      PRINT HEADING, INIT IDX
0479  06305 114134  EXLD    JSB AIDSN,I    SCAN IDENTS FOR EXEC MODULES
0480  06306 026374          JMP EXNND           END OF SCAN
0481  06307 161130          LDA ID1,I      CHECK IF NAME IS "EX"
0482  06310 050355          CPA ASCEX
0483  06311 002001          RSS                 YES, SO LEGAL NAME
0484  06312 026305          JMP EXLD            NO, SO IGNORE
0485  06313 161132          LDA ID3,I
0486  06314 010244          AND M7400
0487  06315 001727          ALF,ALF
0488  06316 070001          STA B
0489  06317 161131          LDA ID2,I      LOAD A WITH "NN"
0490  06320 010243          AND M377
0491  06321 001727          ALF,ALF
0492  06322 030001          IOR B
0493  06323 114152          JSB ARESC,I    CONVERT TO DECIMAL
0494  06324 170414          STA MCNT,I     SAVE MODULE #
0495  06325 061125          LDA DSKAD
0496  06326 070415          STA MCNT+1     SAVE DISC TRACK/SECTOR #
0497  06327 114130          JSB ALOAD,I    INIT AND LOAD MAIN PROGRAM
0498  06330 114137          JSB AGEND,I    GENERATE ID SEGMENT
0499  06331 061543          LDA PPREL      GET PROG RELOC ADDR
0500  06332 003004          CMA,INA
0501  06333 041062          ADA TPREL      CURRENT PROG LENGTH
0502  06334 070416          STA MCNT+2     CURRENT MODULE WORD LENGTH
0503  06335 064377          LDB MAXPX      CURRENT LARGEST PROG LENGTH
0504  06336 007004          CMB,INB
0505  06337 044000          ADB A
0506  06340 006021          SSB,RSS
0507  06341 070377          STA MAXPX      SET NEW MAX PROG LENGTH
0508  06342 061542          LDA PBREL      GET BP RELOC ADDRESS
0509  06343 003004          CMA,INA
0510  06344 041541          ADA TBREL      CURRENT BASE PAGE LENGTH
0511  06345 067770          LDB MAXBX
0512  06346 007004          CMB,INB
0513  06347 044000          ADB A
0514  06350 006021          SSB,RSS
0515  06351 073770          STA MAXBX      SET NEW MAX BP LENGTH
0516  06352 114136          JSB AREMD,I OUTPUT REMAINDER OF ABS REC
0517  06353 061541          LDA TBREL           UPPER BP ADDRESS
0518  06354 065542          LDB PBREL           LOWER BP ADDRESS
0519  06355 114132          JSB ABPOT,I    OUTPUT BP SECTION
0520  06356 061542          LDA PBREL           LOWER BP ADDRESS
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0521  06357 065541          LDB TBREL          UPPER BP ADDRESS
0522  06360 114133          JSB ACLRT,I  CLEAR LOCAL BASE PAGE LINKS
0523  06361 060416          LDA MCNT+2
0524* ******************************************************************
0525  06362 040242          ADA M177
0526  06363 010315          AND M7600      PICK UP HIGH 9 BITS
0527  06364 001700          ALF
0528* ******************************************************************
0529  06365 130414          IOR MCNT,I
0530  06366 170414          STA MCNT,I
0531  06367 034414  EXAD    ISZ MCNT
0532  06370 060415          LDA MCNT+1
0533  06371 170414          STA MCNT,I
0534  06372 034414          ISZ MCNT
0535  06373 026305          JMP EXLD       GO TO PROCESS NEXT EX MOD
0536  06374 114141  EXNND   JSB ANOTS,I TEST FOR PROGRAMS LOADED
0537  06375 014462          JSB SPACE
0538  06376 061542          LDA PBREL      GET BP RELOC ADDR
0539  06377 073765          STA EXBS1       LOW BASE ADDR OF EX MODULE
0001  06400 043770          ADA MAXBX      ADD MAX BP LENGTH
0002  06401 073740          STA SYBAD      SET ADDR OF I/O MOD BP LINKS
0003  06402 073766          STA EXBS2       HI  BASE ADDR OF EX MODULE
0004  06403 071542          STA PBREL
0005  06404 073743          STA IOMBS
0006  06405 061543          LDA PPREL      GET PROG RELOC ADDRESS
0007  06406 073763          STA EXMN1       LOW MAIN ADDR OF EX MODULE
0008  06407 040377          ADA MAXPX      ADD MAX PROG LENGTH
0009  06410 073733          STA SYMAD      SET ADDR OF I/O MOD PROG
0010  06411 073764          STA EXMN2       HI  BASE ADDR OF EX MODULE
0011  06412 071543          STA PPREL
0012  06413 073744          STA IOMMS
0013*
```

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0015*              LOAD I/O DRIVER MODULES
0016  06414 060226         LDA P4
0017  06415 071537         STA PTYPE
0018  06416 002700         CLA,CCE        CLEAR
0019  06417 073771         STA MAXPI          MAX I/O DRIVER PROG LENGTH
0020  06420 073772         STA MAXBI          MAX I/O DRIVER BP LENGTH
0021*
0022*     READ IN EQT TABLE TO INSERT NECESSARY ADDRESSES OF
0023*                    INITIATION, CONTINUATION, UPPER MAIN MEMORY BOUND
0024*                    UPPER BASE MEMORY BOUND, TRACK/SECTOR ADDRESS
0025*
0026  06421 060266         LDA P20
0027  06422 064160         LDB MES19
0028  06423 017603         JSB SETHD      PRINT HEADING, INIT IDX
0029  06424 114134 IODLD   JSB AIDSN,I    SCAN IDENTS FOR I/O DRIVERS
0030  06425 026654         JMP IODND          END OF SCAN
0031  06426 165132         LDB ID3,I      GET USEAGE FLAG
0032  06427 006014         SLB,INB
0033  06430 026424         JMP IODLD      PROG ALREADY LOADED
0034  06431 175132         STB ID3,I      UPDATE USEAGE FLAG
0035  06432 061125         LDA DSKAD
0036  06433 071561         STA TEMP+2     SAVE CURRENT DISC ADDRESS
0037*
0038*    FORM AND STORE CHAR 4 AND 5 OF NAME FOR
0039*         EQT TABLE SEARCH
0040  06434 161131         LDA ID2,I      GET CHAR 3,4 OF PROG
0041  06435 010242         AND M177           MASK OFF ALL BUT CHAR 4
0042  06436 001727         ALF,ALF            SHIFT INTO UPPER CHAR POSI
0043  06437 071557         STA TEMP           SAVE
0044  06440 001727         ALF,ALF
0045  06441 040276         ADA L60
0046  06442 001723         ALF,RAR
0047  06443 071560         STA TEMP+1     FPRM AND STORE OCTAL EQUIV
0048  06444 161132         LDA ID3,I      GET CHAR 5 AND TYPE
0049  06445 001727         ALF,ALF
0050  06446 010242         AND M177           MASK OFF ALL BUT CHAR 5
0051  06447 021557         XOR TEMP
0052  06450 071557         STA TEMP       I,XX AND C,XX NAME IN ASCII
0053  06451 161132         LDA ID3,I
0054  06452 001727         ALF,ALF
0055  06453 010242         AND M177
0056  06454 040276         ADA L60
0057  06455 021560         XOR TEMP+1
0058  06456 071560         STA TEMP+1     I,XX AND C,XX NAME IN OCTAL
0059  06457 060407         LDA CEQT       SETUP LOOP COUNT
0060  06460 003004         CMA,INA
0061  06461 070402         STA EQCNT
0062  06462 063725         LDA DSKBG
0063  06463 073745 .FNXT   STA EQCUR       SAVE CURRENT EQT SECTOR ADDRESS
0064  06464 064150         LDB TEMBF
0065  06465 014544         JSB DISKI      READ IN EQT SECTOR
0066  06466 064150         LDB TEMBF      EQT BUFFER ADDRESS
0067  06467 044225         ADB P3
0068*
0069  06470 160001 FNEXT   LDA B,I        GET AV,EQT TYPE,STATUS WORD
0070  06471 001727         ALF,ALF
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0071  06472 010241         AND M77       ISOLATE EQR TYPE
0072  06473 051560         CPA TEMP+1     CHECK IF DESIRED PROG
0073  06474 026515         JMP FOUND
0074  06475 044235  FNXTX  ADB P17
0075  06476 054151         CPB TEMBX      END OF SECTOR?
0076  06477 026505         JMP EQNXT       =YES, GET NEXT ONE
0077  06500 034402         ISZ EQCNT      CHECK IF ALL PROCESSED
0078  06501 026470         JMP FNEXT          NO SO GO TO NEXT
0079  06502 034522  FNXTY  ISZ LBCNT
0080  06503 027565         JMP EQERR
0081  06504 026620         JMP IOLOD      GO LOAD DRIVER
0082*
0083  06505 063745  EQNXT  LDA EQCUR
0084  06506 064150         LDB TEMBF
0085  06507 114127         JSB ADOUT,I    OUTPUT CURRENT EQT SECTOR
0086  06510 063745         LDA EQCUR
0087  06511 014523         JSB DISKA      GET NEXT EQT SECTOR ADDRS
0088  06512 034402         ISZ EQCNT
0089  06513 026463         JMP .FNXT        AND GO READ IT IN
0090  06514 026502         JMP FNXTY
0091*
0092  06515 044217  FOUND  ADB N3        FORM AND STORE
0093  06516 077731         STB XPPPP          EQT ADDRESS
0094  06517 034522         ISZ LBCNT      1ST EQT FOR THIS DRIVER?
0095  06520 002001         RSS             =YES, LOAD IT
0096  06521 026574         JMP IOSSN       =NO, SKIP LOADING
0097  06522 114130         JSB ALOAD,I   INIT AND LOAD MAIN PROG
0098  06523 114137         JSB AGEND,I   GENERATE ID SEGMENT
0099*      SCAN TO FIND PRIMARY DRIVER ENTRY POINT
0100  06524 015371         JSB INLST
0101  06525 015375  IOISN  JSB LSTX
0102  06526 027565         JMP EQERR
0103  06527 161137         LDA LST1,I
0104  06530 051564         CPA IDEC      CHAR = I,  ?
0105  06531 002001         RSS
0106  06532 026525         JMP IOISN          NO, SO GO TO NEXT
0107  06533 161140         LDA LST2,I
0108  06534 051557         CPA TEMP      CHAR = XX  ?
0109  06535 002001         RSS
0110  06536 026525         JMP IOISN          NO, SO GO TO NEXT
0111  06537 161141         LDA LST3,I
0112  06540 010244         AND M7400
0113  06541 050336         CPA UBLNK     CHAR = BLANK  $
0114  06542 002001         RSS                YES, SO I,XX VALUE
0115  06543 026525         JMP IOISN          NO, SO GO TO NEXT
0116  06544 161143         LDA LST5,I    GET BP LINK ADDRESS
0117  06545 040306         ADA M2000          ADJUST FOR BP ADDRESS
0118  06546 160000         LDA A,I       GET ABSOLUTE ENTRY POINT ADDRESS
0119  06547 071562         STA I.XX      STORE DRIVER PRIMARY ENTRY POINT
0120*
0121*      SCAN TO FIND CONTINUATION DRIVER ENTRY POINT
0122*
0123  06550 015371         JSB INLST
0124  06551 015375  IOCSN  JSB LSTX
0125  06552 027565         JMP EQERR
0126  06553 161137         LDA LST1,I
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0127  06554 051565          CPA CDEC      CHAR = C,  ?
0128  06555 002001          RSS                 YES
0129  06556 026551          JMP IOCSN           NO, SO GO TO NEXT
0130  06557 161140          LDA LST2,I
0131  06560 051557          CPA TEMP      CHAR = XX  ?
0132  06561 002001          RSS                  YES
0133  06562 026551          JMP IOCSN           NO, SO GO TO NEXT
0134  06563 161141          LDA LST3,I
0135  06564 010244          AND M7400
0136  06565 050336          CPA UBLNK     CHAR = BLANK ?
0137  06566 002001          RSS                 YES, SO C,XX ENTRY
0138  06567 026551          JMP IOCSN           NO, SO GO TO NEXT
0139  06570 161143          LDA LST5,I    GET BP LINK ADDRESS
0140  06571 040306          ADA M2000     ADJUST FOR BP ADDRESS
0141  06572 160000          LDA A,I       GET ABS CONTINUATION ADDR
0142  06573 071563          STA C,XX      STORE DRIVER CONTINUATION POINT
0143  06574 067731  IOSSN LDB XPPPP
0144  06575 061562          LDA I,XX
0145  06576 170001          STA B,I       STORE INIT ENTRY ADDR
0146  06577 006004          INB
0147  06600 061563          LDA C,XX
0148  06601 170001          STA B,I       STORE CONT ENTRY ADDRESS
0149  06602 044262          ADB P13
0150  06603 061062          LDA TPREL
0151  06604 170001          STA B,I        STORE UPPER MAIN MEMORY ADDRESS
0152  06605 006004          INB
0153  06606 061541          LDA TBREL
0154  06607 170001          STA B,I       STORE UppER BASE MEMORY ADDRESS
0155  06610 006004          INB
0156  06611 061561          LDA TEMP+2
0157  06612 170001          STA B,I       STORE STARTING TRACK/SECTOR
0158  06613 003400          CCA
0159  06614 070522          STA LBCNT      SET EQT FOUND FLAG
0160  06615 067731          LDB XPPPP
0161  06616 044225          ADB P3
0162  06617 026475          JMP FNXTX      GO LOOK FOR ANOTHER EQT
0163  06620 063745  IOLOD LDA EQCUR
0164  06621 064150          LDB TEMBF
0165  06622 114127          JSB ADOUT,I    OUTPUT REMAINING EQT SECTOR
0166  06623 061543          LDA PPREL     GET PROG RELOC ADDR
0167  06624 003004          CMA,INA
0168  06625 041062          ADA TPREL           ADD CURRENT PROG LENGTH
0169  06626 067771          LDB MAXPI     GET CURRENT LARGEST PROG LENGTH
0170  06627 007004          CMB,INB
0171  06630 044000          ADB A
0172  06631 006021          SSB,RSS
0173  06632 073771          STA MAXPI     SET NEW MAX PROG LENGTH
0174  06633 061542          LDA PBREL     GET BP RELOC ADDRESS
0175  06634 003004          CMA,INA
0176  06635 041541          ADA TBREL           ADD CURRENT BP LENGTH
0177  06636 067772          LDB MAXBI     GET CUR, LARGEST BP LENGTH
0178  06637 007004          CMB,INB
0179  06640 044000          ADB A
0180  06641 006021          SSB,RSS
0181  06642 073772          STA MAXBI     SET NEW MAX BP LENGHT
0182  06643 114136          JSB AREMD,I   OUTPUT REMAINDER OF ABS REC
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0183  06644 061541         LDA TBREL
0184  06645 065542         LDB PBREL
0185  06646 114132         JSB ABPOT,I  OUTPUT BASE PAGE SECTION
0186  06647 061542         LDA PBREL
0187  06650 065541         LDB TBREL
0188  06651 114133         JSB ACLRT,I  CLEAR LOCAL BP LINKS
0189  06652 015444         JSB CLID3
0190  06653 026424         JMP IODLD    GO TO PROCESS NEXT PROG
0191  06654 114141 IODND   JSB ANOTS,I  TEST FOR PROGS LOADED
0192*
0193*   WRITE OUT UPDATED EQT TABLE BACK ONTO DISC
0194*
0195  06655 014462         JSB SPACE
0196  06656 061542         LDA PBREL    GET BP RELOC ADDR
0197  06657 043772         ADA MAXBI         ADD MAX BP VALUE
0198  06660 071542         STA PBREL
0199  06661 061543         LDA PPREL     GET PROG RELOC ADDR
0200  06662 043771         ADA MAXPI       ADD MAX PROG VALUE
0201  06663 071543         STA PPREL
0202  06664 061542 GETUL   LDA PBREL     GET ADDRESS OF FIRST AVAILABLE
0203  06665 067572         LDB MES41       USER BASE PAGE LINK
0204  06666 015012         JSB CONVD
0205  06667 060264         LDA P16
0206  06670 067573         LDB MES42
0207  06671 114102         JSB DRKEY,I   OUTPUT=LWA SYS LINKSXXXX=
0208  06672 014462         JSB SPACE
0209  06673 060264         LDA P16
0210  06674 064155         LDB AMS36
0211  06675 114102         JSB DRKEY,I   OUTPUT = FWA USER LINKS?
0212  06676 061542         LDA PBREL     SET FOR BASE PAGE LIMIT
0213  06677 117571         JSB AINBD,I   INPUT & CONVERT NEW USER LINK
0214  06700 026664         JMP GETUL      ERROR = REPEAT
0215  06701 064277         LDB L2000     MAKE SURE VALUE IS
0216  06702 044000         ADB A           ON BASE PAGE
0217  06703 006021         SSB,RSS
0218  06704 026664         JMP GETUL       NO = ERROR, REPEAT
0219  06705 073740         STA SYBAD    SET NEW BP ADDRESS
0220  06706 071542         STA PBREL
0221  06707 071156         STA LBBP     SET LOW USER BP ADDRESS
0222  06710 014462         JSB SPACE
0223  06711 014462         JSB SPACE
0224  06712 061543 GETUB   LDA PPREL    GET ADDRESS OF FIRST AVAILABLE
0225  06713 065270         LDB MES35     USER PROGRAM ADDRESS
0226  06714 015012         JSB CONVD
0227  06715 060264         LDA P16
0228  06716 065267         LDB MES34
0229  06717 114102         JSB DRKEY,I  OUTPUT=LWA OF SYSTEM AREA XXXXX=
0230  06720 014462         JSB SPACE
0231  06721 060234         LDA P10      OUTPUT=FWA USER?=
0232  06722 065301         LDB MES38
0233  06723 114102         JSB DRKEY,I
0234  06724 061543         LDA PPREL     SET FOR MAIN PROGRAM LIMIT
0235  06725 117571         JSB AINBD,I   INPUT & CONVERT NEW USER BOUND
0236  06726 026712         JMP GETUB      ERROR = REPEAT
0237  06727 071543         STA PPREL
0238  06730 073733         STA SYMAD    SET NEW PROG ADDRESS
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0239  06731 073734          STA BGBND
0240  06732 071064          STA COMAD
0241  06733 071544          STA RELAD
0242  06734 014462          JSB SPACE
0243  06735 014462          JSB SPACE
0244*
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0246*
0247*                LOAD USER MAIN PROG AND SEGMENTS
0248*
0249  06736 015332         JSB INIDX      SCAN THROUGH IDENT TABLE LOOKING
0250  06737 015336  GETSS JSB IDX          FOR SYSTEM SUBROUTINES  (I.E.
0251  06740 026752         JMP ENDSS       TYPE=0)  CHANGE ALL SYSTEM
0252  06741 161132         LDA ID3,I
0253  06742 001310         RAR,SLA
0254  06743 002001         RSS              ITS BASE PAGE LINK
0255  06744 026737         JMP GETSS
0256  06745 001200         RAL
0257  06746 010216         AND N4
0258  06747 171132         STA ID3,I
0259  06750 115507         JSB ACLNK,I
0260  06751 026737         JMP GETSS
0261*
0262  06752 060225  ENDSS LDA P3
0263  06753 071537         STA PTYPE     SET PROG TYPE TO USER MAIN
0264  06754 060266         LDA P20
0265  06755 064161         LDB MES20      MES20 = USER SYSTEM PROGRAMS
0266  06756 017603         JSB SETHD      PRINT HEADING INITIALIZE IDX
0267  06757 061543         LDA PPREL
0268  06760 070376         STA XPREL
0269  06761 002400         CLA
0270  06762 073746         STA ASFLG      CLEAR JOB PROCESSOR FLAG
0271  06763 114134  BDLD  JSB AIDSN,I    SCAN IDENTS
0272  06764 027213         JMP BDEND      END OF IDENTS
0273  06765 002041         SEZ,RSS        SKIP IF MAIN
0274  06766 026763         JMP BDLD       IGNORE SUBS
0275  06767 165132         LDB ID3,I      GET USAGE FLAG
0276  06770 006014         SLB,INB        SKIP = PROGRAM NOT LOADED
0277  06771 026763         JMP BDLD       IGNORE LOADED PROGRAM
0278  06772 175132         STB ID3,I      SET NEW USAGE FLAG
0279  06773 060376         LDA XPREL
0280  06774 141133         ADA ID4,I     COMMON LENGTH
0281  06775 071543         STA PPREL     SET NEW LOAD BASE ADDRESS
0282  06776 061130         LDA ID1        GET CURRENT MAIN IDENT ADDRESS
0283  06777 073742         STA IDMBS      SAVE MAIN IDENT ADDR FOR BS REF
0284  07000 161130         LDA ID1,I      CHECK IF PROGRAM IS JOB PROCESSO
0285  07001 053753         CPA ASJOB
0286  07002 002001         RSS                 =CHAR 1,2 IS 'JO'
0287  07003 027023         JMP BDLD5
0288  07004 161131         LDA ID2,I
0289  07005 053754         CPA ASJOB+1
0290  07006 002001         RSS                 =CHAR 3,4 IS 'BP'
0291  07007 027023         JMP BDLD5
0292  07010 161132         LDA ID3,I
0293  07011 010244         AND M7400
0294  07012 053755         CPA ASJOB+2
0295  07013 002001         RSS                 =CHAR 5 IS 'R'
0296  07014 027023         JMP BDLD5
0297  07015 037746         ISZ ASFLG      SET JOB PROCESSOR FLAG
0298  07016 061125         LDA DSKAD
0299  07017 073750         STA JOBPR      SET TRACK/SECTOR JOB PROCESSOR
0300  07020 061543         LDA PPREL
0301  07021 003004         CMA,INA
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0302  07022 073751          STA JOBPR+1
0303  07023 114130  BDLD5   JSB ALOAD,I    INITIATE AND LOAD MAIN PROGRAM
0304  07024 061062          LDA TPREL      SAVE END OF MAIN AS LAST
0305  07025 073600          STA MAXSG        ADDRESS OF LARGEST MODULE
0306  07026 061771          LDA ICNT       SAVE POINTERS NECESSARY TO
0307  07027 073576          STA SAVE1        DEFINE DISC ADDRESS AND
0308  07030 061536          LDA DSKID        OFFSET WITHIN SECTOR OF
0309  07031 073577          STA SAVE2        MAIN PROGRAM'S DIRECTORY
0310  07032 114137          JSB AGEND,I    GENERATE ID SEGMENT
0311  07033 114136          JSB AREMD,I    OUTPUT REMAINDER OF RECORD
0312  07034 063746          LDA ASFLG      CHECK IF JOB PROCESSOR LOADING
0313  07035 002003          SZA,RSS              FLAG IS SET
0314  07036 027050          JMP BDLD8
0315  07037 061542          LDA PBREL      SET # OF WORDS OF BASE PAGE
0316  07040 003004          CMA,INA
0317  07041 041541          ADA TBREL
0318  07042 073752          STA JOBPR+2
0319  07043 061062          LDA TPREL    SET # WORDS OF MAIN
0320  07044 043751          ADA JOBPR+1
0321  07045 073751          STA JOBPR+1
0322  07046 002400          CLA            CLEAR JOB PROCESSOR LOADING FLAG
0323  07047 073746          STA ASFLG
0324  07050 061125  BDLD8   LDA DSKAD      GET CURRENT DISC ADDRESS
0325  07051 073736          STA DSKBS      SAVE DISK ADDR OF BP SECTION
0326  07052 061541          LDA TBREL      GET UPPER BP ADDRESS
0327  07053 065542          LDB PBREL      GET LOWER BP ADDRESS
0328  07054 114132          JSB ABPOT,I    OUTPUT BP SECTION
0329  07055 061062          LDA TPREL      GET CURRENT PROG RELOC ADDR
0330  07056 071547          STA BSPAD      SAVE PROG RELOC ADDR FOR BS
0331  07057 061541          LDA TBREL      GET CURRENT BP RELOC ADDR
0332  07060 071546          STA BSBAD      SAVE BP RELOC ADDR FOR BS
0333  07061 060227          LDA P5
0334  07062 071537          STA PTYPE    SET TYPE TO USER SEGMENT
0335  07063 061510          LDA CURAP     GET CURRENT PROGRAM LIST ADDR
0336  07064 002004          INA
0337  07065 071545          STA PLMAN      SAVE CURRENT PROGRAM LIST ADDR
0338  07066 015332          JSB INIDX      INITIALIZE IDX
0339  07067 015336  BSLD    JSB IDX        SET IDENT ADDRESSES
0340  07070 027141          JMP BSEND      END OF IDENTS
0341  07071 061130          LDA ID1        GET CURRENT MAIN IDENT ADDRESS
0342  07072 071551          STA IMAIN      SAVE MAIN BS IDENT ADDRESS
0343  07073 161135          LDA ID6,I      GET TYPE
0344  07074 002021          SSA,RSS        SKIP IF MAIN BG SEGMENT
0345  07075 027067          JMP BSLD       IGNORE SUBS
0346  07076 010242          AND M177       ISOLATE TYPE
0347  07077 050227          CPA P5         TYPE = BG SEGMENT?
0348  07100 002001          RSS            YES - CONTINUE
0349  07101 027067          JMP BSLD       NO - IGNORE IDENT
0350  07102 161136          LDA ID10,I     GET BS MAIN IDENT ADDRESS
0351  07103 053742          CPA IDMBS      BS CALLS THIS BG MAIN
0352  07104 002001          RSS            YES - CONTINUE
0353  07105 027067          JMP BSLD       NO - IGNORE BACKGROUND SEGMENT
0354  07106 061102          LDA TIDNT      GET NEXT IDENT ADDRESS
0355  07107 073741          STA ABSID      SAVE ADDR FOR NEXT BG SEG SCAN
0356  07110 007400          CCB
0357  07111 075552          STB HDFLG      SET HEADING FLAG FOR BG SEGMENT
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0358  07112 114131         JSB ALODS,I   LOAD BG SEGMENT
0359  07113 014462         JSB SPACE     NEW LINE
0360  07114 114137         JSB AGEND,I   GENERATE ID SEGMENT, KEYWORD
0361  07115 114136         JSB AREMD,I   OUTPUT REMAINING OF ABS REC
0362  07116 061541         LDA TBREL     GET UPPER BP ADDRESS
0363  07117 065546         LDB BSBAD     GET LOWER BS BP ADDRESS
0364  07120 114132         JSB ABPOT,I   OUTPUT BP SECTION
0365  07121 061546         LDA BSBAD     GET BS BP RELOC ADDR
0366  07122 065541         LDB TBREL     GET UPPER BOUND BP ADDRESS
0367  07123 114133         JSB ACLRT,I   CLEAR BP LINKAGES
0368  07124 065062         LDB TPREL     KEEP TRACK OF LARGEST SEGMENT
0369  07125 063600         LDA MAXSG
0370  07126 003004         CMA,INA
0371  07127 041062         ADA TPREL
0372  07130 002021         SSA,RSS
0373  07131 077600         STB MAXSG
0374  07132 061546         LDA BSBAD     GET BS BP RELOC ADDRESS
0375  07133 071541         STA TBREL     SET BP RELOC ADDR
0376  07134 061547         LDA BSPAD     GET BS PROG RELOC ADDRESS
0377  07135 071062         STA TPREL     SET PROG RELOC ADDR
0378  07136 063741         LDA ABSID     GET NEXT BG SEG IDENT ADDR
0379  07137 071102         STA TIDNT     SET IDENT ADDRESS FOR IDX
0380  07140 027067         JMP BSLD      LOAD NEXT BG SEGMENT
0381*
0382  07141 061125 BSEND   LDA DSKAD     GET CURRENT DISK ADDRESS
0383  07142 073737         STA DSKBR     SAVE CURRENT DISK ADDR OF ABS
0384  07143 063736         LDA DSKBS     GET DISK ADDR FOR MAIN BP CODE
0385  07144 071125         STA DSKAD     SET CURRENT BP CODE ADDRESS
0386  07145 061546         LDA BSBAD     GET UPPER ADDR OF BP CODE
0387  07146 065542         LDB PBREL     GET LOW ADDR FOR BP CODE
0388  07147 114132         JSB ABPOT,I   OUTPUT BP CODE FOR MAIN DISK RES
0389  07150 063600         LDA MAXSG     HAS A SEGMENT BEEN LOADED?
0390  07151 051547         CPA BSPAD
0391  07152 027200         JMP BS1         NO=SKIP DIRECTORY UPDATE
0392  07153 063577         LDA SAVE2     HAS SECTOR CONTAINING MAIN'S
0393  07154 051536         CPA DSKID       DIRECTORY ENTRY BEEN OUTPUT?
0394  07155 027172         JMP INCOR         NO= UPDATE IN CORE ONLY
0395  07156 065067         LDB ADBUF         YES= DISC UPDATE REQUIRED
0396  07157 014544         JSB DISKI
0397  07160 067576         LDB SAVE1     COMPUTE NECESSARY OFFSET INTO
0398  07161 044274         ADB P128        MAIN'S DIRECTORY ENTRY
0399  07162 045067         ADB ADBUF
0400  07163 044234         ADB P10
0401  07164 063600         LDA MAXSG     STORE LARGEST ADDRESS IN WORD 11
0402  07165 170001         STA B,I         OF MAIN'S DIRECTORY ENTRY
0403  07166 063577         LDA SAVE2     RE=WRITE DIRECTORY ENTRY
0404  07167 065067         LDB ADBUF
0405  07170 014550         JSB DISKO
0406  07171 027200         JMP BS1
0407  07172 067576 INCOR   LDB SAVE1     COMPUTE OFFSET IN MEMORY BUFFER
0408  07173 044274         ADB P128
0409  07174 045070         ADB AIBUF
0410  07175 044234         ADB P10
0411  07176 063600         LDA MAXSG     STORE LARGEST SEGMENT VALUE IN
0412  07177 170001         STA B,I         MAIN'S DIRECTORY ENTRY
0413  07200 063737 BS1     LDA DSKBR     GET CURRENT DISC ADDRESS
```

```
0414  07201 071125        STA DSKAD     SET CURRENT ABS DISK ADDRESS
0415  07202 061542        LDA PBREL     GET LOW BP ADDRESS
0416  07203 065546        LDB BSBAD     GET UPPER BOUND BP CODE
0417  07204 114133        JSB ACLRT,I   CLEAR BP LINKAGES
0418  07205 060225        LDA P3
0419  07206 071537        STA PTYPE    SET PROG TYPE TO USER MAIN
0420  07207 015444        JSB CLID3     CLEAR PROG LOADED FLAGS
0421  07210 061072        LDA PLAD
0422  07211 071510        STA CURAP
0423  07212 026763        JMP BDLD     LOAD NEXT USER MAIN
0424*
0425  07213 114141  BDEND JSB ANOTS,I   TEST FOR PROGRAMS LOADED
0426  07214 014462        JSB SPACE     NEW LINE
0427*
0428  07215 061125  EXECO LDA DSKAD
0429  07216 050506        CPA LOLIB     OVERRUNNING LIBRY IN SCRATCH?
0430  07217 024504        JMP LIBER      -YES, CRASH!
0431  07220 073730        STA DSKEX     SAVE ADDRESS FOR LOADER
0432  07221 064206        LDB EXDEF
0433  07222 114127        JSB ADOUT,I   OUTPUT DOUBLETS TO DISC
0434  07223 061125        LDA DSKAD
0435  07224 014523        JSB DISKA     INCR DISC ADDRESS
0436  07225 071125        STA DSKAD
```

```
0438*
0439*                                          MOVE UTILITY PROGS TO LOW DISK
0440  07226 002400          CLA
0441  07227 073732          STA LBSEC         CLEAR LIBRARY SECTOR COUNT
0442  07230 073747          STA UTCNT
0443  07231 061125          LDA DSKAD         GET CURRENT DISK ADDRESS
0444  07232 073735          STA DSKUT         SAVE DISK ADDR OF UTILITY PROGS
0445  07233 015332          JSB INIDX         INITIALIZE IDENT SCAN
0446  07234 015336  GETLB   JSB IDX           SET IDENT ADDRESSES
0447  07235 027273          JMP ENDSY         ALL UTILITY PROGS MOVED
0448  07236 161135          LDA ID6,I         GET TYPE
0449  07237 010242          AND M177          ISOLATE TYPE
0450  07240 050230          CPA P6          TYPE = LIBRARY
0451  07241 027245          JMP STLBR
0452  07242 050231          CPA P7
0453  07243 002001          RSS
0454  07244 027234          JMP GETLB         IGNORE OTHER PROGRAMS
0455  07245 161136  STLBR   LDA ID10,I
0456  07246 064000          LDB A             ADD LENGTH OF CURRENT LIBRARY
0457  07247 047732          ADB LBSEC              PROGRAM TO TOTAL SECTOR
0458  07250 077732          STB LBSEC              COUNT
0459  07251 003004          CMA,INA
0460  07252 071127          STA DSCNT         SET SECTOR COUNT
0461  07253 161134          LDA ID5,I         GET INITIAL DISK ADDR
0462  07254 071554  MOVEL   STA DSKRD         SET CURRENT UTILITY DISK ADDRESS
0463  07255 065067          LDB ADBUF         GET ADDRESS OF DBUF
0464  07256 014544          JSB DISKI         READ UTILITY PROGRAM RECORD
0465  07257 061125          LDA DSKAD         GET CURRENT ABSOLUTE DISK ADDR
0466  07260 065067          LDB ADBUF         GET ADDRESS OF DBUF
0467  07261 114127          JSB ADOUT,I       WRITE UTILITY RECORD ON DISK
0468  07262 061125          LDA DSKAD         GET CURRENT ABSOLUTE DISK ADDR
0469  07263 014523          JSB DISKA         INCR DISC ADDRESS
0470  07264 071125          STA DSKAD         SET NEW CURRENT DISK ADDRESS
0471  07265 061554          LDA DSKRD         GET CURRENT UTILITY DISK ADDR
0472  07266 014523          JSB DISKA         INCR DISC ADDRESS
0473  07267 035127          ISZ DSCNT         SKIP = UTILITY PROGRAM MOVED
0474  07270 027254          JMP MOVEL         MOVE NEXT UTILITY PROGRAM
0475  07271 037747          ISZ UTCNT
0476  07272 027234          JMP GETLB         SCAN IDENTS FOR NEXT UTILITY PRG
0477*
0478*      FORM LIBRARY ID SEGMENT
0479*
0480  07273 063756  ENDSY   LDA LIBAS         OUTPUT ASCII CHARS =LI=
0481  07274 114140          JSB AOUTD,I
0482  07275 063757          LDA LIBAS+1       OUTPUT ASCII CHARS =BR=
0483  07276 114140          JSB AOUTD,I
0484  07277 063760          LDA LIBAS+2       OUTPUT ASCII CHAR =Y= AND TYPE 6
0485  07300 114140          JSB AOUTD,I
0486  07301 063735          LDA DSKUT         OUTPUT LIBRARY TRACK/SECTOR ADDR
0487  07302 114140          JSB AOUTD,I
0488  07303 063732          LDA LBSEC         OUTPUT # SECTORS IN LIBRARY
0489  07304 114140          JSB AOUTD,I
0490  07305 060214          LDA N6
0491  07306 071075          STA WDCNT
0492  07307 002400          CLA
0493  07310 114140          JSB AOUTD,I       OUTPUT ZEROS TO REST OF ID SEGMT
```

```
0494  07311 035075          ISZ WDCNT
0495  07312 027307          JMP *-3
0496  07313 061536          LDA DSKID      OUTPUT FINAL ID SEGMENT BUFFER
0497  07314 065070          LDB AIBUF      GET ADDR OF ID SEG BUFFER
0498  07315 114127          JSB ADOUT,I    OUTPUT LAST ID SEGMENT SECTOR
0499*
0500*
0501*     FORM TRACK ASSIGNMENT TABLE
0502*
0503  07316 061125          LDA DSKAD      CURRENT DISC ADDRESS
0504*     ****************************************************************
0505  07317 010244          AND M7400      PICK UP UPPER 8 BITS
0506  07320 001727          ALF,ALF        RIGHT JUSTIFY
0507  07321 071557          STA TEMP
0508*     ****************************************************************
0509  07322 061156          LDA LBBP
0510  07323 040221          ADA N1
0511  07324 070404          STA BPAGE
0512*     ****************************************************************
0513  07325 040242          ADA M177
0514  07326 010315          AND M7600      PICK UP HIGH 11 BITS
0515  07327 001727          ALF,ALF        RIGHT JUSTIFY
0516  07330 001200          RAL
0517  07331 002004          INA
0518  07332 070001          STA B
0519*     ****************************************************************
0520  07333 061125          LDA DSKAD
0521  07334 010242          AND M177
0522  07335 040001          ADA B
0523  07336 003004          CMA,INA
0524  07337 040444          ADA NSPTK
0525  07340 002002          SZA
0526  07341 002020          SSA
0527  07342 035557          ISZ TEMP
0528  07343 035557          ISZ TEMP
0529  07344 061557          LDA TEMP
0530  07345 073767          STA SYSBT
0531*
0532*                                  CLEAR SYSTEM COMMUNICATION AREA
0533  07346 060177          LDA DEF,
0534  07347 064306          LDB M2000    GET ADDR OF END OF SYS COMM AREA
0535  07350 007004          CMB,INB
0536  07351 044000          ADB A          SET B = COMM AREA LENGTH
0537  07352 075075          STB WDCNT      SET COUNT FOR CLEARING BP AREA
0538  07353 006400          CLB
0539  07354 174000          STB A,I        CLEAR BP COMM AREA WORD
0540  07355 002004          INA
0541  07356 035075          ISZ WDCNT      SKIP = AREA CLEARED
0542  07357 027354          JMP *-3        CONTINUE CLEARING BP AREA
0543*
0544*                                  PUT OUT SYS COMM AREA VALUES
0545  07360 065067          LDB ADBUF
0546  07361 075146          STB CURAD
0547  07362 014451          JSB BUFCL      CLEAR DBUF
0548  07363 060253          LDA N128
0549  07364 071147          STA DCNT
```

```
0550*
0551  07365 002400          CLA
0552  07366 071544          STA RELAD      CLEAR RELOCATION ADDR FOR LABDO
0553  07367 071536          STA TBSYG      TBSYG = EJOBF IN DOS-M
0554*
0555  07370 060405          LDA ASST       SET ADDRESS OF
0556  07371 071605          STA SSTBL        SUBSYSTEM TABLE
0557*
0558  07372 060406          LDA AEQT       GET ADDRESS OF EQT
0559  07373 071367          STA EQTAB      SET ADDRESS OF EQT TABLE
0560*
0561  07374 060407          LDA CEQT       GET NO. OF EQT ENTRIES
0562  07375 071370          STA EQT#       SET NO. OF EQT ENTRIES
0563*
0564  07376 060410          LDA ASQT       GET ADDR OF DEV REF TABLE
0565  07377 071371          STA LUTAB      SET ADDRESS OF DEVICE REFERENCE
0566*
0567  07400 060411          LDA CSQT       GET NO. OF DEV REF TABLE ENTRIES
0568  07401 071372          STA LUT#       SET # DEVICE REF ENTRIES
0569*
0570  07402 060412          LDA AINT       GET ADDR OF INTERRUPT TABLE
0571  07403 071451          STA INTAB      SET ADDRESS OF INTERRUPT TABLE
0572*
0573  07404 060413          LDA CINT       GET NO. OF INT ENTRIES
0574  07405 071452          STA INT#       SET # OF INTERRUPT ENTRIES
0001*
0002  07406 061116          LDA COMPT
0003  07407 071435          STA CUMID      SET COMPUTER IDENTIFICATION FLAG
0004*
0005  07410 061113          LDA TBCHN      GET I/O ADDR FOR TBG
0006  07411 071353          STA TBG        SET I/O ADDR FOR TBG
0007*
0008  07412 061123          LDA PICHN      GET I/O ADDR FOR PRIV INT CARD
0009  07413 071540          STA DUMMY      SET IT
0010*
0011  07414 060403          LDA SSSAV      SYSTEM SEARCH FLAG
0012  07415 071601          STA SSFLG
0013  07416 002404          CLA,INA
0014  07417 071362          STA SYSTY      SET I/O ADDR FOR SYS TELETYPE
0015  07420 071361          STA BATCH
0016*
0017  07421 063724          LDA UBMAN    GET USER SYSTEM PROGRAM ORIGIN
0018  07422 071524          STA UMFWA
0019*
0020  07423 061114          LDA LWASM      GET LAST AVAIL ADDR FOR SYSTEM
0021  07424 071350          STA UMLWA      SET LAST AVAIL ADDR
0022  07425 002004          INA
0023  07426 071373          STA JBUF       STORE JOB BUFFER ADDRESS
0024*
0025  07427 060370          LDA DSKAB
0026  07430 071364          STA SYSDR      SET SYS DIRECTORY TRACK/SECTOR
0027  07431 071444          STA TSONE
0028*
0029  07432 063767          LDA SYSBT
0030  07433 001727          ALF,ALF
0031  07434 040302          ADA M400
```

```
0032  07435 071365        STA SYSBF     SET SYS BUF SECTOR/USER DIRECTOR
0033  07436 040302        ADA M400
0034  07437 071430        STA SYNTS     SYSTEM NEXT TRACK/SECTOR
0035*
0036  07440 060447        LDA NSPCY
0037  07441 071366        STA SSECT     # SECTORS/CYLINDER
0038  07442 003004        CMA,INA
0039  07443 071563        STA MSECT     NEG #SCTRS/CYL
0040*
0041  07444 061107        LDA SCODE
0042  07445 071446        STA SYSCD     SYS GEN CODE
0043  07446 061112        LDA UDSC
0044  07447 071431        STA CUDSC     CURR USER DISC SUBCHNL
0045  07450 071445        STA GUDSC     DFLT USER DISC SUBCHNL
0046  07451 061117        LDA SYSCH
0047  07452 071425        STA SYSSC     SYS SUBCHNL
0048  07453 071576        STA LSTCH     LAST SUBCHANNEL REFERENCED
0049  07454 006400        CLB
0050  07455 075432        STB CRFLG     CURRENT REQUEST FLAG
0051  07456 051431        CPA CUDSC     SYS SC = USER SC?
0052  07457 065365        LDB SYSBF      =YES
0053  07460 075450        STB DISCL     USER SC FLAG
0054  07461 064302        LDB M400
0055  07462 051431        CPA CUDSC     SYS SC = USER SC?
0056  07463 065430        LDB SYNTS      =YES
0057  07464 075427        STB UDNTS     SET USER NEXT TRACK/SECTOR
0058  07465 061120        LDA SCNO
0059  07466 071426        STA SCCNT     # SUBCHNLS
0060  07467 060243        LDA M377
0061  07470 071433        STA CUDLA     USER LAST TRACK ACCESSED
0062*
0063  07471 063762        LDA EXMLC
0064  07472 071513        STA EXLOC     SET LOCATION OF EX MOD DOUBLETS
0065  07473 063761        LDA EXCN#
0066  07474 071514        STA EX#       SET # OF EX MOD DOUBLETS
0067  07475 063765        LDA EXBS1
0068  07476 071520        STA EXBAS     SET EXMOD =LOW= BASE ADDR
0069  07477 063766        LDA EXBS2
0070  07500 071521        STA EXBAS+1   SET EX MOD =HI= BASE ADDR
0071  07501 063763        LDA EXMN1
0072  07502 071516        STA EXMAN     SET EX MOD =LOW= MAIN ADDR
0073  07503 063764        LDA EXMN2
0074  07504 071517        STA EXMAN+1   SET EX MOD =HI= MAIN ADDR
0075*
0076  07505 063743        LDA IOMBS
0077  07506 071523        STA IODBS     SET FWA OF I/O DRIVER BASE AREA
0078  07507 063744        LDA IOMMS
0079  07510 071522        STA IODMN     SET FWA OF I/O DRIVER MAIN AREA
0080*
0081  07511 063750        LDA JOBPR     SET JOB PROCESSOR PARAMETERS
0082  07512 071533        STA JOBPM          T/S
0083  07513 063751        LDA JOBPR+1
0084  07514 071534        STA JOBPM+1        # WORDS OF MAIN
0085  07515 063752        LDA JOBPR+2
0086  07516 071535        STA JOBPM+2        # WORDS OF BASE
0087*
```

```
0088  07517 063735          LDA DSKUT
0089  07520 071574          STA DSCLB      SET ADDR OF RELOCATABLE LIBRARY
0090  07521 063747          LDA UTCNT
0091  07522 071575          STA DSCL#     SET # OF LIBRARY PROGRAMS
0092*
0093  07523 007400          CCB            FORM DISC CHAN/TRACK # TABLES
0094  07524 045110          ADB DSIZE
0095  07525 003400          CCA
0096  07526 041111          ADA DCHNL
0097  07527 001727          ALF,ALF
0098  07530 001723          ALF,RAR
0099  07531 030001          IOR B
0100  07532 071424          STA DISCO      SYSTEM DISC SET
0101*
0102  07533 063734          LDA BGBND
0103  07534 071524          STA UMFWA      SET 1ST WORD OF USER #1 MAIN
0104  07535 061156          LDA LBBP
0105  07536 071525          STA UBFWA      SET 1ST WORD OF USER #1 BASE PG
0106  07537 060375          LDA UPLNK
0107  07540 071526          STA UBLWA      SET LAST WORD ADDR OF USER BASE
0108*
0109  07541 060176          LDA DFN64
0110  07542 071324          STA CURAT
0111  07543 060255          LDA N32
0112  07544 071325          STA TCNT
0113  07545 064312          LDB M2040
0114  07546 161324          LDA CURAT,I
0115  07547 170001          STA B,I
0116  07550 006004          INB
0117  07551 035324          ISZ CURAT
0118  07552 035325          ISZ TCNT
0119  07553 027546          JMP *-5
0120  07554 061125          LDA DSKAD
0121  07555 073717          STA DSKBP     DISC ADDR OF BASE PAGE
0122  07556 060177          LDA DEF.
0123  07557 071324          STA CURAT      SET CURRENT SYS BP ADDRESS
0124  07560 064374          LDB NSYSC
0125  07561 007004          CMB,INB
0126  07562 075325          STB TCNT
0127*
0128  07563 127564          JMP **1,I      OUTPUT BASE PAGE
0129  07564 011615          DEF OUTBP
0130*
0131*
0132  07565 063570  EQERR LDA ERR23
0133  07566 014466         JSB ERROR
0134  07567 102000         HLT
0135  07570 031063  ERR23 ASC 1,23
0136  07571 005173  AINBD DEF INBND
0137  07572 005225  MES41 DEF SYLM+5
0138  07573 005220  MES42 DEF SYLM
0139  07574 001440  MAGIC DEC 800         MAX # LINKS
0140  07575 000000  FIRST NOP             TYPE 2 PROGRAM FLAG
0141  07576 000000  SAVE1 NOP             OFFSET FOR MAIN'S DIRECTORY
0142  07577 000000  SAVE2 NOP             DISC ADDR FOR MAIN'S DIRECTORY
0143  07600 000000  MAXSG NOP             ADDRESS OF LARGEST PROG MODULE
```

```
0144  07601 012052  ABSST DEF BSST      BUILD SUBSYSTEM TABLE ROUTINE
0145  07602 012175  AUP   DEF UPDC      UPDATE DISC COUNT ROUTINE
0146*
0147*                                    (TURN ON DISK PROTECT)
0148*
0149*****************************************************************
0150*                          E N D   D S G E N                    *
0151*****************************************************************
```

```
0153*
0154*                                       PRINT HEADING, INITIALIZE IDX
0155*
0156*  THE SETHD SUBROUTINE PRINTS THE HEADINGS FOR THE DIFFERENT
0157*  TYPES OF PROGRAMS LOADED, SETS THE NO-PROGRAMS-LOADED-YET
0158*  FLAG, AND ORIGINS THE SCAN OF IDENT.
0159*
0160*  CALLING SEQUENCE:
0161*    A = NO. CHARS. (POS.) IN MESSAGE
0162*    B = ADDRESS OF MESSAGE
0163*    JSB SETHD
0164*
0165*  RETURN: CONTENTS OF A AND B ARE DESTROYED
0166*
0167  07603 000000  SETHD NOP
0168  07604 114102        JSB DRKEY,I    PRINT HEADING
0169  07605 014462        JSB SPACE      NEW LINE
0170  07606 060272        LDA P36        OUTPUT PROGRAM MAP HEADING
0171  07607 067617        LDB MES61
0172  07610 114102        JSB DRKEY,I
0173  07611 014462        JSB SPACE
0174  07612 003400        CCA
0175  07613 071550        STA LFLAG      SET PROGRAMS-LOADED FLAG = -1
0176  07614 061101        LDA BIDNT      GET FIRST IDENT ADDRESS
0177  07615 071553        STA CIDNT      SET IDENT ADDRESS FOR ID SCAN
0178  07616 127603        JMP SETHD,I    RETURN
0179*
0180  07617 011554  MES61 DEF MSG61
0181*
0182*                                       UPDATE RESIDENT MEMORY BOUNDS
0183*
0184*  THE INCAD SUBROUTINE UPDATES THE MAIN AND BP MEMORY BOUNDS
0185*  FROM THAT USED IN THE PREVIOUS LOADING CALL.
0186*
0187*  CALLING SEQUENCE:
0188*    A = IGNORED
0189*    B = IGNORED
0190*    JSB INCAD
0191*
0192*  RETURN: CONTENTS OF A AND B ARE DESTROYED
0193*
0194  07620 000000  INCAD NOP
0195  07621 061062        LDA TPREL      GET CURRENT RELOCATION ADDRESS
0196  07622 071543        STA PPREL      SET NEW PROGRAM RELOC ADDRESS
0197  07623 061541        LDA TBREL      GET CURRENT BP RELOC ADDRESS
0198  07624 071542        STA PBREL      SET NEW BP RELOCATION ADDRESS
0199  07625 127620        JMP INCAD,I    RETURN
0200*
0201  07626 000000  TMPIO NOP
0202  07627 064247        LDB N256
0203  07630 074253        STB N128
0204  07631 064150        LDB TEMBF
0205  07632 002040        SEZ            IS THIS A READ REQUEST?
0206  07633 027636        JMP *+3         =NO
0207  07634 014544        JSB DISKI       =YES
0208  07635 002001        RSS
```

```
0209  07636 114127          JSB ADOUT,I
0210  07637 060300          LDA ,N128
0211  07640 070253          STA N128
0212  07641 127626          JMP TMPIO,I
0213*
```

```
0215*
0216*                                       SCAN BP AREA FOR SAME OPERAND
0217*
0218*  THE SCNBP SUBROUTINES CONTROLS THE SCAN FOR A GIVEN OPERAND
0219*  IN THE CURRENT BP SECTION.
0220*
0221*  CALLING SEQUENCE:
0222*    A = LOWER BP ADDRESS
0223*    B = UPPER BP ADDRESS
0224*    JSB SCNBP
0225*
0226*  RETURN:
0227*    (1): TO BPSCN + OPERAND NOT FOUND
0228*    (2): TO MAIN PROGRAM + OPERAND FOUND (A = BP ADDR OF OPERAND)
0229*
0230  07642 000000  SCNBP NOP
0231  07643 007004        CMB,INB       SET LOW BOUND TO NEGATIVE
0232  07644 075201        STB UPPER     SAVE NEGATIVE UPPER BOUND
0233  07645 071200        STA LOWER     SAVE LOWER BOUND
0234  07646 061200  BPSRC LDA LOWER     GET CURRENT LOW BP BOUND
0235  07647 041201        ADA UPPER     TEST FOR END OF AREA
0236  07650 002021        SSA,RSS       SKIP + AREA NOT EXHAUSTED
0237  07651 127642        JMP SCNBP,I   RETURN + SAME OPERAND NOT FOUND
0238  07652 065176        LDB OPRND     GET OPERAND
0239  07653 061200        LDA LOWER     SET A = LOWER BOUND
0240  07654 040306        ADA M2000     ADJUST FOR FIRST PAGE ADDRESS
0241  07655 035200        ISZ LOWER     INCR LOWER BOUND
0242  07656 154000        CPB A,I       OPERANDS EQUAL?
0243  07657 002001        RSS           YES + GET BP ADDRESS
0244  07660 027646        JMP BPSRC     NO + CONTINUE BP SCAN
0245  07661 040277        ADA L2000     ADJUST FOR BP ADDRESS
0246  07662 124144        JMP ASCOT,I   RETURN + A = BP LINK ADDR FOR OP
0247*
0248*                                       OUTPUT ABSOLUTE BASE PAGE CODE
0249*
0250*  BPOUT OUTPUTS THE BASE PAGE SECTION OF CODE FOLLOWING LOADING OF
0251*  EACH DISC RESIDENT PROGRAM, BEGINNING WITH THE DISC
0252*  ADDRESS SPECIFIED IN DSKAD.
0253*
0254*  CALLING SEQUENCE:
0255*     A =UPPER BP ADDRESS
0256*    B = LOWER BP ADDRESS
0257*    JSB BPOUT
0258*
0259*  RETURN: CONTENTS OF A AND B ARE DESTROYED
0260*
0261  07663 000000  BPOUT NOP
0262  07664 003004        CMA,INA       COMPLEMENT UPPER ADDRESS
0263  07665 040001        ADA B         ADD LOWER ADDRESS
0264  07666 071325        STA TCNT      SAVE BP LENGTH
0265  07667 044306        ADB M2000     ADJUST FOR BP ADDRESS
0266  07670 075324        STB CURAT     SAVE CURRENT LOWER CORE ADDR
0267  07671 002021        SSA,RSS       SKIP + SOME CODE IN BP
0268  07672 127663        JMP BPOUT,I   RETURN + ALL CODE OUT
0269  07673 061125        LDA DSKAD     GET CURRENT DISK ADDRESS
0270  07674 114127  BPSYO JSB ADOUT,I   OUTPUT CURRENT BP SECTOR
```

```
0271  07675 061125        LDA DSKAD      GET CURRENT DISK ADDRESS
0272  07676 014523        JSB DISKA      INCR DISC ADDRESS
0273  07677 071125        STA DSKAD      SAVE NEXT DISK ADDRESS
0274  07700 065325        LDB TCNT       GET CURRENT LENGTH
0275  07701 044274        ADB P128
0276  07702 075325        STB TCNT       SAVE COUNT FOR NEXT PASS
0277  07703 006021        SSB,RSS        SKIP = MORE TO OUTPUT
0278  07704 127663        JMP BPOUT,I
0279  07705 065324        LDB CURAT      GET CURRENT LOW CORE ADDRESS
0280  07706 044274        ADB P128
0281  07707 075324        STB CURAT      SET NEST CORE ADDRESS
0282  07710 027674        JMP BP8YO      OUTPUT NEXT SECTOR TO DISK
```

```
0284*
0285  07711 124003  JMP3I JMP 3,I        INITIAL JMP INSTRUCTION
0286  07712 052000  UCHRT OCT 52000      UPPER ASCII CHAR T
0287*
0288  07713 022123  CHR$S ASC 1,$S
0289  07714 052122  CHRTR ASC 1,TR
0290*
```

```
0292*
0293*
0294  07715           SECTR BSS 0         BOOTSTRAP BUFFER FORMAT
0295*
0296  07715 000002    LBPSY DEC 2         LOWER SYS BP ADDRESS
0297  07716 000000    UBPSY BSS 1         UPPER SYS BP ADDRESS
0298  07717 000000    DSKBP BSS 1          SYS BP DISK ADDRESS
0299*
0300  07720 000000    LRMAN BSS 1         LOWER SYS MAIN ADDRESS
0301  07721 000000    URMAN BSS 1         UPPER SYS MAIN ADDRESS
0302  07722 000000    DSKRR BSS 1         SYS MAIN DISC ADDRESS
0303*
0304*
0305  07723 000000    LBMAN BSS 1         LOWER I/O TABLES ADDRESS
0306  07724 000000    UBMAN BSS 1         UPPER I/O TABLES ADDRESS
0307  07725 000000    DSKBG BSS 1         I/O TABLES DISC ADDRESS
0308*
0309  07726 000000    DSKEL BSS 1          LOWER EXEC MODULE DOUBLET ADDR
0310  07727 000000    DSKEU BSS 1          UPPER EXEC MODULE DOUBLET ADDR
0311  07730 000000    DSKEX BSS 1          EXEC MODULE DOUBLET DISC ADDR
0312*
0313  07731 000000    XPPPP BSS 1         CURRENT EQT FORMATION ADDRESS
0314  07732 000000    LBSEC NOP            LIBRARY SECTOR COUNTER
0315  07733 000000    SYMAD BSS 1          AVAIL SYS MEM ADDR
0316  07734 000000    BGBND BSS 1          BACKGROUND BOUNDARY
0317*
0318  07735 000000    DSKUT BSS 1          UTILITY PROG DISK ADDRESS
0319  07736 000000    DSKBS BSS 1          DISK ADDR OF MAIN BG DISK RES BP
0320  07737 000000    DSKBR BSS 1          CURRENT MAIN BG DISK RES DISK AD
0321  07740 000000    SYBAD BSS 1          ADDR OF FIRST BP LINK FOR BG
0322  07741 000000    ABSID BSS 1          IDENT ADDR FOR NEXT BG SEG SCAN
0323  07742 000000    IDMBS BSS 1          BG MAIN ADDRESS FOR BS REF
0324  07743 000000    IOMBS NOP            I/O DRIVER MODULE BASE
0325  07744 000000    IOMMS NOP            I/O DRIVER MODULE MAIN
0326  07745 000000    EQCUR NOP            CURRENT EQT SECTOR ADDRESS
0327  07746 000000    ASFLG NOP
0328  07747 000000    UTCNT NOP           # OF LIBRARY PROGRAMS
0329  07750 000000    JOBPR BSS 3          JOB PROCESSOR(T/S)# MAIN)# BASE)
0330  07753 046117    ASJOB ASC 2,JOBP
0331  07755 051000          OCT 51000
0332  07756 046111    LIBAS ASC 2,LIBR     ASC LIBRY AND TYPE 6 FOR LIBRARY
0333  07760 054406          OCT 54406           ID SEGMENT
0334  07761 000000    EXCN# NOP            # OF EX MODULES
0335  07762 000000    EXMLC NOP            ADDRESS OF EX MOD PARAM
0336*
0337  07763 000000    EXMN1 NOP            EX MOD MAIN -LOW- ADDRESS
0338  07764 000000    EXMN2 NOP            EX MOD MAIN -HI- ADDRRSS
0339  07765 000000    EXBS1 NOP            EX MOD BASE -LOW- ADDRESS
0340  07766 000000    EXBS2 NOP            EX MOD BASE -HI- ADDRESS
0341  07767 000000    SYSBT NOP
0342  07770 000000    MAXBX NOP           MAX EX MODULE BASE PAGE LENGTH
0343  07771 000000    MAXPI NOP           MAX I/O DRIVER PROG LENGTH
0344  07772 000000    MAXBI NOP           MAX I/O DRIVER BP LENGTH
0345*
0346  07773                 ORG *
```

```
0348  10000                 ORG 10000B
0349*
0350*                                       SCAN IDENTS FOR PROGRAM TYPE
0351*
0352*  THE IDSCN SUBROUTINE SCANS IDENT FOR A PROGRAM OF THE
0353*  CURRENT TYPE (SET IN PTYPE).
0354*
0355*  CALLING SEQUENCE:
0356*    A = IGNORED
0357*    B = IGNORED
0358*    JSB IDSCN
0359*  RETURN
0360*     (N+1) = END OF IDENTS RETURN
0361*     (N+2) = PROG FOUND RETURN
0362*
0363*  RETURN: CONTENTS OF A AND B ARE DESTOYED.
0364*    E = M/S FLAG FOR CURRENT PROGRAM.
0365*
0366  10000 000000  IDSCN NOP
0367  10001 061553        LDA CIDNT     GET NEXT IDENT IN SCAN
0368  10002 071102        STA TIDNT     SET IDENT ADDRESS FOR IDX
0369  10003 015336        JSB IDX       SET IDENT ADDRESSES
0370  10004 126000        JMP IDSCN,I   RETURN = END OF IDENTS
0371  10005 061130        LDA ID1       GET CURRENT MAIN IDENT ADDRESS
0372  10006 071551        STA IMAIN     SAVE CURRENT MAIN IDENT ADDRESS
0373  10007 061102        LDA TIDNT     GET NEXT IDENT ADDRESS
0374  10010 071553        STA CIDNT     SAVE ADDR FOR NEXT IDENT SCAN
0375  10011 161135        LDA ID6,I     GET TYPE
0376  10012 001265        RAL,CLE,ERA   SET E = M/S
0377  10013 010242        AND M177      ISOLATE PROGRAM TYPE
0378  10014 051537        CPA PTYPE     CURRENT TYPE?
0379  10015 002001        RSS           YES = CONTINUE
0380  10016 026003        JMP IDSCN+3   IGNORE IDENT = TRY NEXT IDENT
0381  10017 036000        ISZ IDSCN     INCR RETURN ADDRESS
0382  10020 126000        JMP IDSCN,I   RETURN
0383*
0384*                                       TEST FOR SOME PROGRAMS LOADED
0385*
0386*  THE NOTST SUBROUTINE CHECKS FOR PROGRAMS OF THE CURRENT
0387*  TYPE LOADED.  IT IS EXECUTED FOLLOWING COMPLETION OF THE
0388*  LOADING SEQUENCE FOR EACH PROGRAM TYPE.  IF NO PROGRAMS OF
0389*  THIS TYPE HAVE BEEN LOADED, IT PRINTS THE MESSAGE
0390*  (NONE) ON THE TELEPRINTER.
0391*
0392*  CALLING SEQUENCE:
0393*    A = IGNORED
0394*    B = IGNORED
0395*    JSB NOTST
0396*
0397*  RETURN: CONTENTS OF A AND B ARE DESTROYED.
0398*
0399  10021 000000  NOTST NOP
0400  10022 035550        ISZ LFLAG     SKIP = NO PROGRAMS LOADED
0401  10023 126021        JMP NOTST,I   RETURN
0402  10024 060230        LDA P6
0403  10025 065263        LDB MES22     MES22 = ADDR: (NONE)
```

```
0404  10026 114102          JSB DRKEY,I    PRINT: (NONE)
0405  10027 126021          JMP NOTBT,I    RETURN
0406*
0407*                                       CLEAR LOCAL LST ENTRIES
0408*
0409*  CLRLT CLEARS THE CURRENT BP LINKAGE ADDRESSES IN THE LOADER
0410*  SYMBOL TABLE TO MAKE THEM UNAVAILABLE TO THE SUCCEEDING
0411*  PROGRAMS.  THIS CONSISTS OF CLEARING WORD 5 OF THE LST
0412*  ENTRY, AND THE CORRESPONDING BP LINK VALUE IN BASE PAGE.
0413*    A = CURRENT LOW BP ADDRESS
0414*  CALLING SEQUENCE:
0415*    B = CURRENT HIGH BP ADDRESS
0416*    JSB CLRLT
0417*
0418*  RETURN: CONTENTS OF A AND B ARE DESTROYED.
0419*
0420*
0421  10030 000000  CLRLT NOP
0422  10031 003004        CMA,INA          SET NEGATIVE
0423  10032 071200        STA LOWER        SAVE LOWER BOUND
0424  10033 007004        CMB,INB          SET NEGATIVE
0425  10034 075201        STB UPPER        SAVE UPPER BOUND
0426  10035 015371        JSB INLST        INITIALIZE LSTX
0427  10036 015375  CLRNX JSB LSTX         SET LST ADDRESSES
0428  10037 026054        JMP CLBPS        CLEAR BP SECTION
0429  10040 161143        LDA LST5,I       GET WORD 5 OF LST ENTRY
0430  10041 041200        ADA LOWER        ADD NEG LOWER BOUND
0431  10042 002020        SSA              SKIP IF GREATER, EQUAL TO LOWER
0432  10043 026036        JMP CLRNX        TRY NEXT ENTRY
0433  10044 161143        LDA LST5,I       GET WORD 5 OF LST ENTRY
0434  10045 041201        ADA UPPER        ADD NEG UPPER BOUND
0435  10046 002021        SSA,RSS          SKIP IF LESS THAN UPPER
0436  10047 026036        JMP CLRNX        TRY NEXT ENTRY
0437  10050 161143        LDA LST5,I       GET BP LINK ADDRESS
0438  10051 006400        CLB
0439  10052 175143        STB LST5,I       CLEAR BP LINK ADDRESS
0440  10053 026036        JMP CLRNX        TRY NEXT ENTRY
0441*
0442  10054 065200  CLBPS LDB LOWER        GET LOWER BP BOUND
0443  10055 007004        CMB,INB          SET TO POSITIVE
0444  10056 061201        LDA UPPER        GET UPPER BOUND (NEG.)
0445  10057 040001        ADA B            SET A = TOTAL WORD COUNT
0446  10060 002021        SSA,RSS          SKIP - SOME BP SECTION TO CLEAR
0447  10061 126030        JMP CLRLT,I      RETURN - NO BP SECTION
0448  10062 071075        STA WDCNT        SET COUNT FOR CLEARING
0449  10063 044306        ADB M2000        ADJUST FOR BP ADDRESS
0450  10064 002400        CLA
0451  10065 170001        STA B,I          CLEAR BO WORD
0452  10066 006004        INB
0453  10067 035075        ISZ WDCNT        SKIP - ALL BP CLEAR
0454  10070 026065        JMP *-3
0455  10071 126030        JMP CLRLT,I      END OF CLEARING
0456*
0457*                                       CLEAR MEMORY MAP BUFFER
0458*
0459*  CLIST CLEARS THE MEMORY MAP BUFFER WITH BLANKS.
```

```
0460*
0461*  CALLING SEQUENCE:
0462*    A = IGNORED
0463*    B = IGNORED
0464*    JSB CLIST
0465*
0466*  RETURN: CONTENTS OF A AND B ARE DESTOYED.
0467*
0468  10072 000000  CLIST NOP
0469  10073 065073        LDB AMLST     AMLST = ADDR OF MLIST
0470  10074 062104        LDA N18
0471  10075 071512        STA AMAD      SET BUFFER LENGTH
0472  10076 061317        LDA BLNKS     GET 2 BLANK CHARACTERS
0473  10077 170001        STA B,I       CLEAR BUFFER WORD
0474  10100 006004        INB
0475  10101 035512        ISZ AMAD      ALL WORDS CLEAR?
0476  10102 026077        JMP *-3       NO - CONTINUE CLEARING
0477  10103 126072        JMP CLIST,I   RETURN
0478*
0479  10104 177756  N18   DEC -18
```

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0481*
0482*                                       INITIATE MAIN PROGRAM LOADING
0483*
0484*  LOAD IS THE SUBROUTINE FOR ENTRY TO LOADS FOR THOSE
0485*  PROGRAMS WHICH REQUIRE USE OF A NEW BP AND PROGRAM BASE.
0486*
0487*  CALLING SEQUENCE:
0488*    A = IGNORED
0489*    B = IGNORED
0490*    JSB LOAD
0491*
0492*  RETURN: CONTENTS OF A AND B ARE DESTOYED.
0493*
0494  10105 000000  LOAD  NOP
0495  10106 007400        CCB
0496  10107 075552        STB HDFLG     SET HEADING FLAG
0497  10110 061543        LDA PPREL     GET PROGRAM RELOCATION ADDRESS
0498  10111 071062        STA TPREL     SET CURRENT PROG RELOC ADDRESS
0499  10112 061542        LDA PBREL     GET BP RELOCATION ADDRESS
0500  10113 071541        STA TBREL     SET CURRENT BP RELOC ADDRESS
0501  10114 016117        JSB LOADS     LOAD PROGRAM
0502  10115 014462        JSB SPACE     NEW LINE
0503  10116 126105        JMP LOAD,I    RETURN
0504*
0505*                                       LOAD, LINK MAIN PROG & SUBS.
0506*
0507*  LOADS IS THE MAIN LOADING SUBROUTINE FOR GENERATING THE ABSOLUTE
0508*  CODE AND LINKING ALL CALLED SUBROUTINES.  IT IS USED BY EACH
0509*  PROGRAM TYPE FOR LOADING.  IT READS THE RELOCATABLE RECORDS FROM
0510*  THE SCRATCH PORTION OF THE DISK, AND WRITES THE ABSOLUTE CODE
0511*  ON THE LOWER (PROTECTED) PORTION OF THE DISK.
0512*
0513*  CALLING SEQUENCE:
0514*    A = IGNORED
0515*    B = IGNORED
0516*    JSB LOADS
0517*
0518*  RETURN: CONTENTS OF A AND B ARE DESTOYED.
0519*
0520  10117 000000  LOADS NOP
0521  10120 002400        CLA           SET FLAG FOR NO LIBRARY
0522  10121 073316        STA LIBRY       ROUTINES YET
0523  10122 070436        STA ER16F     CLEAR ERROR FLAGS
0524  10123 070437        STA ER18F
0525  10124 003400        CCA
0526  10125 071126        STA PLFLG     SET FLAG = NO DBL RECS IN
0527  10126 002400  LOADN CLA           INITIALLY SET FOR PASS 1
0528  10127 071311  LD3   STA L001      PASS 2 WHEN LOW LINK AREA FIXED
0529  10130 003400        CCA           SET FOR UPPER LINK
0530  10131 071313        STA LWH1        AREA PRESENT
0531  10132 065311        LDB L001      IF PASS 1,
0532  10133 006002        SZB             SAVE PROGRAM & BASE PAGE
0533  10134 026141        JMP LD1         STARTING RELOCATION ADDRESSES
0534  10135 061062        LDA TPREL
0535  10136 073736        STA LWH4
0536  10137 061541        LDA TBREL
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0537   10140 073735          STA LWH3
0538   10141 062300  LD1     LDA RSS         RESTORE SKIP INSTRUCTION
0539   10142 173742          STA ABLN3,I
0540   10143 002400          CLA             SET FOR PASS 1 OR 2
0541   10144 071312  LOADX   STA L01         PASS 3 WHEN LOW LINK OUT TO DISC
0542   10145 061311          LDA L001        IF PASS 2 OR 3 (IE, SOME LOADING
0543   10146 002003          SZA,RSS           HAS BEEN PERFORMED), CLEAR
0544   10147 026153          JMP LD2           BASE PAGE LINK ADDRESSES IN
0545   10150 063735          LDA LWH3          LST ENTRIES
0546   10151 065541          LDB TBREL
0547   10152 016030          JSB CLRLT
0548   10153 063736  LD2     LDA LWH4        RESTORE ORIGINAL PROG RELOCATION
0549   10154 065312          LDB L01           BASE, UNLESS PASS 3, IF PASS 3
0550   10155 006003          SZB,RSS           RELOCATION BASE HAS BEEN AD-
0551   10156 071062          STA TPREL         JUSTED PAST LOW LINK AREA
0552   10157 063735          LDA LWH3        RESTORE ORIGINAL BASE PAGE
0553   10160 071541          STA TBREL         RELOCATION BASE
0554   10161 016072          JSB CLIST       SET MEMORY MAP TO BLANKS
0555   10162 035550          ISZ LFLAG       INCR PROGRAMS-LOADED FLAG
0556   10163 000000          NOP
0557   10164 061073          LDA AMLST       AMLST = ADDR OF MEM MAP BUFFER
0558   10165 071512          STA AMAD        SET CURRENT MEMORY MAP ADDRESS
0559   10166 061552          LDA HDFLG       GET HEADING FORMAT FLAG
0560   10167 073737          STA TMP3
0561   10170 002021          SSA,RSS         SKIP IF NEGATIVE (MAIN)
0562   10171 035512          ISZ AMAD        INCR CURRENT MEM MAP ADDR
0563   10172 161130          LDA ID1,I       GET NAME 1,2
0564   10173 171512          STA AMAD,I      SET NAME 1,2 IN MEMORY MAP
0565   10174 035512          ISZ AMAD        INCR CURRENT MEMORY MAP ADDRESS
0566   10175 161131          LDA ID2,I       GET NAME 3 4
0567   10176 171512          STA AMAD,I      SET NAME 3,4 IN MEMORY MAP
0568   10177 035512          ISZ AMAD        INCR CURRENT MEMORY MAP ADDRESS
0569   10200 161132          LDA ID3,I       GET NAME 5
0570   10201 010244          AND M7400       ISOLATE UPPER CHAR
0571   10202 030335          IOR BLANK       ADD BLANK (OCT 40)
0572   10203 171512          STA AMAD,I      SET NAME 5 IN MEMORY MAP
0573   10204 061312          LDA L01         PASS 3?
0574   10205 002002          SZA
0575   10206 026212          JMP LD4           YES - TEST REAL FLAG
0576   10207 037737          ISZ TMP3          NO  - TEST TEMPORARY FLAG
0577   10210 026255          JMP SUBHD
0578   10211 026214          JMP LD5
0579   10212 035552  LD4     ISZ HDFLG       SKIP IF HDFLG= -1 (MAIN)
0580   10213 026255          JMP SUBHD       SKIP PRIORITY OUTPUT FOR SUB
0581*
0582   10214 061125  LD5     LDA DSKAD       GET CURRENT DISC ADDRESS
0583   10215 065312          LDB L01         IF NOT PASS 3, DON'T SAVE
0584   10216 006003          SZB,RSS
0585   10217 071165          STA DSKMN       SAVE INITIAL MAIN DISK ADDRESS
0586   10220 061537          LDA PTYPE       GET PROGRAM TYPE
0587   10221 050227          CPA P5          TYPE = BG SEGMENT?
0588   10222 026234          JMP BGSPL       CLEAR UNRESERVED PART OF PLIST
0589   10223 060253          LDA N128
0590   10224 071511          STA PLCNT       SET PLIST WORD COUNT
0591   10225 065072          LDB PLAD        GET ADDRESS OF PROGRAM LIST
0592   10226 061130          LDA ID1         GET IDENT ADDRESS OF MAIN
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0593   10227 170001          STA B,I        SET ADDRESS IN PLIST
0594   10230 006004          INB            INCR CURRENT PLIST ADDRESS
0595   10231 035511          ISZ PLCNT      SKIP = PLIST FULL
0596   10232 026242          JMP CPXXX      CONTINUE TO CLEAR PLIST
0597   10233 026247          JMP SETMP      NO PLIST CLEARING REQUIRED
0598   10234 061072  BGSPL   LDA PLAD
0599   10235 003004          CMA,INA
0600   10236 041545          ADA PLMAN
0001   10237 040253          ADA N128
0002   10240 071511          STA PLCNT
0003   10241 065545          LDB PLMAN
0004   10242 002400  CPXXX   CLA
0005   10243 170001          STA B,I        CLEAR PLIST WORD
0006   10244 006004          INB            INCR PLIST ADDRESS
0007   10245 035511          ISZ PLCNT      SKIP = PLIST CLEAR
0008   10246 026243          JMP *-3        CONTINUE CLEARING
0009*
0010   10247 063736  SETMP   LDA LWH4       FOR MAINS & SEGMENTS, SAVE
0011   10250 072501          STA SV1          STARTING ADDRESSES (PROGRAM &
0012   10251 063735          LDA LWH3         BASE PAGE)
0013   10252 072502          STA SV2
0014   10253 060234          LDA P10        SET CHAR COUNT FOR NAME ONLY
0015   10254 026264          JMP OUTLN        SKIP BOUNDS OUTPUT
0016   10255 063736  SUBHD   LDA LWH4       GET CURRENT PROG RELOC ADDR
0017   10256 065074          LDB AMEM5      SET B = ADDR OF MEMORY MAP + 5
0018   10257 015012          JSB CONVD      CONVERT TO DECIMAL/OCTAL
0019   10260 063735          LDA LWH3       SET CURRENT BASE PAGE
0020   10261 067577          LDB AME12        ADDRESS IN MEMORY MAP
0021   10262 015012          JSB CONVD
0022   10263 060272          LDA P36
0023   10264 065312  OUTLN   LDB L01        PASS 3?
0024   10265 006003          SZB,RSS
0025   10266 026271          JMP LD6         NO= SKIP MEMORY MAP
0026   10267 065073          LDB AMLST
0027   10270 114102          JSB DRKEY,I    OUTPUT STARTING BOUNDS FOR SUBR
0028   10271 161134  LD6     LDA ID5,I      GET DISC ADDRESS
0029   10272 071554          STA DSKRD      SAVE CURRENT DISK INPUT ADDRESS
0030*
0031*                                       READ NAM RECORD FROM DISK
0032   10273 017174          JSB DBIN       GET RECORD FROM DISK
0033   10274 061571          LDA LBUF+1     GET RIC
0034   10275 001723          ALF,RAR        ROTATE TO LOW A
0035   10276 010231          AND M7         ISOLATE RIC
0036   10277 050223          CPA P1         NAM RECORD?
0037   10300 002001  RSS     RSS            YES = CONTINUE
0038   10301 102000          HLT 0B         INVALID DISK RECORD
0039   10302 061576          LDA LBUF+6     GET PROGRAM LENGTH
0040   10303 071177          STA PLGTH      SAVE PROGRAM LENGTH
0041   10304 117740          JSB AALNK,I    SET UP LOW LINK AREA FOR CP LINK
0042   10305 065062          LDB TPREL      GET PROGRAM RELOCATION BASE
0043   10306 075544          STB RELAD      SET CURRENT RELOCATION ADDRESS
0044   10307 061570          LDA LBUF       GET NAM RECORD LENGTH
0045   10310 001727          ALF,ALF        ROTATE TO LOW A
0046   10311 064000          LDB A          SAVE IN B
0047   10312 041566          ADA CURAL      ADJUST CURRENT LBUF ADDRESS
0048   10313 071566          STA CURAL        WITH LENGTH OF NAM RECORD.
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0049  10314 045567          ADB LCNT       ADJUST CURRENT LBUF COUNT
0050  10315 075567          STB LCNT         WITH LENGTH OF NAM RECORD.
0051*
0052  10316 063316          LDA LIBRY      IS THIS THE 1ST LIBRARY ROUTINE?
0053  10317 002002          SZA
0054  10320 026332          JMP CLSRC        NO - SKIP
0055  10321 061601          LDA LBUF+9       OTHERWISE, IS THIS ROUTINE
0056  10322 010242          AND M177          TYPE 6 OR 7?
0057  10323 050230          CPA P6
0058  10324 026330          JMP SUBH5
0059  10325 050231          CPA P7
0060  10326 002001          RSS
0061  10327 026332          JMP CLSRC        NO - SKIP
0062  10330 061062  SUBH5   LDA TPREL        YES - SET 1ST LIBRARY ADDRESS
0063  10331 073316          STA LIBRY
0064*
0065*                                        CLASSIFY ENT, EXT, DBL, END RECS
0066  10332 017166  CLSRC   JSB DBSET       GET ADDR OF NEXT WORD IN LBUF
0067  10333 161566          LDA CURAL,I    GET SECOND WORD IN RECORD
0068  10334 064000          LDB A          SAVE WORD IN B
0069  10335 001723          ALF,RAR        ROTATE RIC TO LOW A
0070  10336 010231          AND M7         ISOLATE RIC
0071  10337 050224          CPA P2         ENT RECORD?
0072  10340 026524          JMP DENTR      PROCESS ENT RECORD
0073  10341 050225          CPA P3         DBL RECORD?
0074  10342 026737          JMP DDBLR      PROCESS DBL RECORD
0075  10343 050226          CPA P4         EXT RECORD?
0076  10344 026525          JMP DEXTR      PROCESS EXT RECORD
0077  10345 050227          CPA P5         END RECORD?
0078  10346 002001          RSS            YES - PROCESS END RECORD
0079  10347 102000          HLT 0B         INVALID DISK RECORD
0080*
0081*                                        PROCESS END RECORD
0082  10350 061312          LDA L01        IF END DETECTED DURING PASS 2,
0083  10351 002002          SZA              SET LWH1=0 TO INDICATE NO
0084  10352 026355          JMP LD7          UPPER LINK AREA, THEN OUTPUT
0085  10353 071313          STA LWH1         LOW LINK AREA TO DISC
0086  10354 127744          JMP ACRSS,I
0087  10355 017166  LD7     JSB DBSET      GET ADDR OF NEXT WORD IN LBUF
0088  10356 017166          JSB DBSET      GET ADDR OF NEXT WORD IN LBUF
0089  10357 061062          LDA TPREL      GET CURRENT PROG RELOCATION BASE
0090  10360 141566          ADA CURAL,I    ADD RELOCATION ADDRESS
0091  10361 065552          LDB HDFLG      GET HEADING FLAG
0092  10362 006003          SZB,RSS        SKIP UNLESS MAIN
0093  10363 071167          STA PRENT      SAVE PRIMARY ENTRY POINT FOR ID
0094  10364 015371          JSB INLST      INITIATE LSTX
0095  10365 015375  CLST    JSB LSTX       SET LST ADDRESSES
0096  10366 026373          JMP LSTCR      END OF LST
0097  10367 161141          LDA LST3,I     GET WORD 3 OF LST (ORDINAL)
0098  10370 010244          AND M7400      ISOLATE UPPER CHAR = CLEAR ORD
0099  10371 171141          STA LST3,I     SET NAME 5 IN LST
0100  10372 026365          JMP CLST       CONTINUE CLEARING ORDINALS
0101  10373 061177  LSTCR   LDA PLGTH      GET PROGRAM LENGTH
0102  10374 001265          RAL,CLE,ERA    SET E = SIGN
0103  10375 041062          ADA TPREL      ADD PROGRAM RELOCATION BASE
0104  10376 002040          SEZ            SKIP IF ASSEMBLER PRODUCED
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0105   10377 061544          LDA RELAD     GET CURRENT RELOCATION ADDRESS
0106   10400 071062          STA TPREL     SET NEW RELOCATION BASE
0107   10401 070001          STA B         SAVE NEW PROG RELOC BASE IN B
0108   10402 061544          LDA RELAD     GET LAST WORD ADDRESS
0109   10403 003004          CMA,INA
0110   10404 044000          ADB A         ADD RELOC BASE
0111   10405 006003          SZB,RSS       SKIP = FILL SPACE WITH HALTS
0112   10406 026411          JMP *+3       NO HALTS REQUIRED AT END OF PROG
0113   10407 002400          CLA
0114   10410 017361          JSB LABDO     FILL IN LAST BSS WITH ZEROES
0115   10411 061312          LDA L01       IF PASS 3,
0116   10412 002021          SSA,RSS         OUTPUT UPPER LINK AREA
0117   10413 117741          JSB ABLNK,I
0118   10414 060253          LDA N128
0119   10415 071511          STA PLCNT     SET PROGRAM LIST COUNTER
0120   10416 065072          LDB PLAD      PLAD = ADDR OF PROGRAM LIST
0121   10417 160001 PLSCN    LDA B,I       GET PROG LIST ENTRY
0122   10420 002003          SZA,RSS       SKIP = ENTRY IN PLIST
0123   10421 026427          JMP CLFLG     CLEAR FLAGS FOR PROGRAMS
0124   10422 002020          SSA           SKIP IF POSITIVE (PROG LOADED)
0125   10423 026503          JMP ENTID     GET NEXT PROGRAM IDENT ADDRESS
0126   10424 006004 EPLST    INB           INCR PROGRAM LIST ADDRESS
0127   10425 035511          ISZ PLCNT     SKIP IF END OF PROGRAM LIST
0128   10426 026417          JMP PLSCN     NO - CONTINUE PROG LIST SEARCH
0129   10427 014462 CLFLG    JSB SPACE     OUTPUT BLANK LINE
0130   10430 016072          JSB CLIST     CLEAR OUTPUT BUFFER
0131   10431 066474          LDB BNDHD     SET "(BOUNDS)" IN OUTPUT BUFFER
0132   10432 160001          LDA B,I
0133   10433 071513          STA MLIST
0134   10434 006004          INB
0135   10435 160001          LDA B,I
0136   10436 071514          STA MLIST+1
0137   10437 006004          INB
0138   10440 160001          LDA B,I
0139   10441 071515          STA MLIST+2
0140   10442 006004          INB
0141   10443 160001          LDA B,I
0142   10444 071516          STA MLIST+3
0143   10445 062501          LDA SV1
0144   10446 065074          LDB AMEM5
0145   10447 015012          JSB CONVD     CONVERT STARTING PROGRAM BOUND
0146   10450 062502          LDA SV2
0147   10451 067577          LDB AME12
0148   10452 015012          JSB CONVD     CONVERT STARTING BASE PAGE BOUND
0149   10453 061062          LDA TPREL
0150   10454 067576          LDB AMEM8
0151   10455 015012          JSB CONVD     CONVERT ENDING PROGRAM BOUND
0152   10456 061541          LDA TBREL
0153   10457 067600          LDB AME15
0154   10460 015012          JSB CONVD     CONVERT ENDING BASE PAGE BOUND
0155   10461 060272          LDA P36
0156   10462 065073          LDB AMLST
0157   10463 114102          JSB DRKEY,I   OUTPUT BOUNDS FOR MAIN/SEGMENT
0158   10464 014462          JSB SPACE
0159   10465 061537          LDA PTYPE     GET CURRENT PROGRAM TYPE
0160   10466 050225          CPA P3        TPYE = BG DISK RESIDENT?
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0161   10467 126117          JMP LOADS,I    YES = DO NOT CLEAR LOADED FLAGS
0162   10470 050226          CPA P4        TYPE = I/O DRIVER MODULE
0163   10471 126117          JMP LOADS,I    RETURN
0164   10472 015444          JSB CLID3      CLEAR PROG-LOADED FLAGS
0165   10473 126117          JMP LOADS,I    RETURN = ALL FLAGS CLEARED
0166*
0167   10474 010475  BNDHD   DEF *+1
0168   10475 024102          ASC 4,(BOUNDS)
0169   10501 000000  SV1     NOP            SAVED STARTING PROG BOUND
0170   10502 000000  SV2     NOP            SAVED STARTING BASE PAGE BOUND
0171*
0172   10503 001265  ENTID   RAL,CLE,ERA    CLEAR SIGN (PROG TO BE LOADED)
0173   10504 071102          STA TIDNT      SET IDENT ADDRESS FOR IDX
0174   10505 071326          STA TBUF       SAVE CURRENT IDENT ADDRESS
0175   10506 075510          STB CURAP      SAVE CURRENT PLIST ADDRESS
0176   10507 015336          JSB IDX        SET IDENT ADDRESSES
0177   10510 102000          HLT 0B         INVALID RETURN - NON-EXISTENT ID
0178   10511 065510          LDB CURAP      GET CURRENT PLIST ADDRESS
0179   10512 161132          LDA ID3,I      GET PROGRAM USAGE FLAG
0180   10513 002014          SLA,INA        SKIP - PROGRAM NOT YET LOADED
0181   10514 026424          JMP EPLST      TEST FOR END OF PLIST
0182   10515 065537          LDB PTYPE        SUBROUTINE IF SUBROUTINE IS
0183   10516 006003          SZB,RSS          CALLED FROM A SYSTEM PROGRAM
0184   10517 040224          ADA P2
0185   10520 171132          STA ID3,I      SET PROGRAM USAGE FLAG = LOADED
0186   10521 061326          LDA TBUF       GET CURRENT IDENT ADDRESS
0187   10522 171510          STA CURAP,I    SET ENTRY IN PROGRAM LIST
0188   10523 026126          JMP LOADN      LOAD NEXT PROGRAM
0189*
0190*                                       PROCESS ENT/EXT RECORDS
0191   10524 003401  DENTR   CCA,RSS        SET ENT FLAG AND SKIP
0192   10525 002400  DEXTR   CLA            SET EXT FLAG
0193   10526 071144          STA NXFLG      SAVE ENT/EXT FLAG
0194   10527 060001          LDA B          GET NO. ENTRIES IN EXT/ENT
0195   10530 010240          AND M37        ISOLATE SYMBOL COUNT
0196   10531 003004          CMA,INA
0197   10532 071145          STA EXCNT      SET SYMBOL COUNTER
0198   10533 017166          JSB DBSET      GET ADDR OF NEXT WORD IN LBUF
0199   10534 017166          JSB DBSET      GET ADDR OF NEXT WORD IN LBUF
0200   10535 161566  NXSYM   LDA CURAL,I    GET NAME 1,2
0201   10536 071326          STA TBUF       SAVE NAME 1,2 IN TEMP BUFF
0202   10537 017166          JSB DBSET      GET ADDR OF NEXT WORD IN LBUF
0203   10540 161566          LDA CURAL,I    GET NAME 3,4
0204   10541 071327          STA TBUF+1     SAVE NAME IN TEMP BUFF
0205   10542 017166          JSB DBSET      GET ADDR OF NEXT WORD IN LBUF
0206   10543 161566          LDA CURAL,I    GET NAME 5
0207   10544 071330          STA TBUF+2     SAVE NAME IN TEMP BUFF
0208   10545 017166          JSB DBSET      GET ADDR OF NEXT WORD IN LBUF
0209   10546 015371          JSB INLST      INITIATE LSTX
0210   10547 015375  ENEX1   JSB LSTX       SET LST ADDRESSES
0211   10550 102000          HLT 0B         ENT/EXT NOT FOUND IN LST
0212   10551 061326          LDA TBUF       GET NAME 1,2
0213   10552 151137          CPA LST1,I     EQUAL?
0214   10553 002001          RSS            YES - CONTINUE
0215   10554 026547          JMP ENEX1      NO - TRY NEXT LST ENTRY
0216   10555 061327          LDA TBUF+1     GET NAME 3,4
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0217   10556 151140          CPA LST2,I     EQUAL?
0218   10557 002001          RSS            YES = CONTINUE
0219   10560 026547          JMP ENEX1      NO = TRY NEXT LST ENTRY
0220   10561 061330          LDA TBUF+2     GET NAME 5
0221   10562 010244          AND M7400      ISOLATE UPPER CHAR
0222   10563 070001          STA B
0223   10564 161141          LDA LST3,I
0224   10565 010244          AND M7400
0225   10566 050001          CPA B          EQUAL?
0226   10567 002001          RSS            YES = CONTINUE
0227   10570 026547          JMP ENEX1      NO = TRY NEXT LST ENTRY
0228*
0229   10571 061144          LDA NXFLG      GET ENT/EXT FLAG
0230   10572 002003          SZA,RSS        SKIP IF ENTRY
0231   10573 026635          JMP EXT1       PROCESS EXT
0232   10574 065062          LDB TPREL      GET CURRENT PROG RELOC BASE
0233   10575 145566          ADB CURAL,I    ADD CURRENT RELOCATION VALUE
0234   10576 075176          STB OPRND      SAVE ABS ENTRY PT, ADDRESS
0235   10577 161143          LDA LST5,I     GET BP LINK ADDRESS
0236   10600 002003          SZA,RSS        SKIP = BP LINK ADDR SET
0237   10601 017143          JSB BPSCN      SET BP LINK ADDR, BP LINK
0238   10602 171143          STA LST5,I     SET BP LINK ADDRESS IN LST
0239   10603 017160          JSB SETOP      SET OPERAND IN BASE PAGE
0240   10604 102501          LIA 1          GET SWITCH REGISTER
0241   10605 002021          SSA,RSS        SKIP = SWITCH 15 UP (LIST ENTS)
0242   10606 026633          JMP NLENT      SUPPRESS PRINTING OF MAP
0243   10607 061312          LDA L01        UNLESS IT'S PASS 3, SKIP ENT
0244   10610 002003          SZA,RSS          LIST
0245   10611 026633          JMP NLENT
0246   10612 016072          JSB CLIST      CLEAR MEMORY MAP BUFFER
0247   10613 061320          LDA BLAST      GET BLANK, ASTERISK
0248   10614 071514          STA MLIST+1    SET IN MAP
0249   10615 161137          LDA LST1,I     GET NAME 1,2
0250   10616 071515          STA MLIST+2    SET IN MEMORY MAP
0251   10617 161140          LDA LST2,I     GET NAME 3,4
0252   10620 071516          STA MLIST+3    SET IN MEMORY MAP BUFFER
0253   10621 161141          LDA LST3,I     GET NAME 5
0254   10622 010244          AND M7400      ISOLATE UPPER CHAR
0255   10623 030335          IOR BLANK      SET LOWER CHARACTER = BLANK
0256   10624 071517          STA MLIST+4    SET NAME 5 IN MEM MAP
0257   10625 061176          LDA OPRND      GET ABSOLUTE ENTRY PT, ADDRESS
0258   10626 065074          LDB AMEM5      GET ADDRESS OF MESSAGE
0259   10627 015012          JSB CONVD      CONVERT TO DECIMAL/OCTAL
0260   10630 060264          LDA P16
0261   10631 065073          LDB AMLST      GET ADDRESS OF MEM MAP BUFFER
0262   10632 114102          JSB DRKEY,I    PRINT ENTRY POINT
0263   10633 017166  NLENT    JSB DBSET      GET ADDR OF NEXT WORD IN LBUF
0264   10634 026734          JMP EXEND      PROCESS NEXT SYMBOL
0265*
0266   10635 061330  EXT1    LDA TBUF+2     GET ORDINAL
0267   10636 171141          STA LST3,I     SET ORDINAL IN LST
0268   10637 161143          LDA LST5,I     GET BP LINK ADDRESS
0269   10640 002003          SZA,RSS        SKIP = BP LINK ADDRESS SET
0270   10641 114142          JSB AALOC,I    ALLOCATE NEW BP LOCATION
0271   10642 171143          STA LST5,I     SET NEW BP LINK ADDRESS
0272   10643 161142          LDA LST4,I     GET IDENT ADDRESS
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0273  10644 002002          SZA             SKIP = UNDEFINED EXT
0274  10645 002020          SSA
0275  10646 026734          JMP EXEND       IGNORE UNDEFINED PROGRAM CALL
0276  10647 071102          STA TIDNT       SET ID ADDR FOR IDX
0277  10650 061130          LDA ID1         GET CURRENT IDENT ADDRESS
0278  10651 071326          STA TBUF        SAVE CURRENT IDENT ADDRESS
0279  10652 015336          JSB IDX         SET IDENT ADDRESSES
0280  10653 102000          HLT 0B          IDENT NOT FOUND IN LIST
0281  10654 161135          LDA ID6,I       GET M/S, TYPE
0282  10655 071327          STA TBUF+1      SAVE M/S, TYPE
0283  10656 161132          LDA ID3,I       GET PROGRAM USAGE FLAG
0284  10657 071330          STA TBUF+2      SAVE USAGE FLAG
0285  10660 061326          LDA TBUF        GET CURRENT IDENT ADDRESS
0286  10661 071102          STA TIDNT       SET CURRENT IDENT ADDR
0287  10662 015336          JSB IDX         SET IDENT ADDRESSES
0288  10663 102000          HLT 0B          CURRENT IDENT NOT FOUND IN LIST
0289  10664 061327          LDA TBUF+1      GET M/S, TYPE FOR EXT
0290  10665 001265          RAL,CLE,ERA     SET E = M/S
0291  10666 010242          AND M177        ISOLATE TYPE
0292  10667 050230          CPA P6          TYPE = LIBRARY?
0293  10670 026675          JMP LIBUT       YES - TEST FOR LOADING
0294  10671 050231          CPA P7
0295  10672 026675          JMP LIBUT
0296  10673 002040          SEZ             SKIP - NOT MAIN PROGRAM
0297  10674 026734          JMP EXEND       IGNORE PROGRAM CALL
0298  10675 060253  LIBUT   LDA N128
0299  10676 071511          STA PLCNT       SET PROGRAM LIST COUNTER
0300  10677 065072          LDB PLAD        GET PROGRAM LIST ADDRESS
0301  10700 160001  PLEXT   LDA B,I         GET PROG LIST ENTRY
0302  10701 002003          SZA,RSS         SKIP IF IDENT ADDRESS
0303  10702 026714          JMP SEXT        MAKE ENTRY IN PROGRAM LIST
0304  10703 001265          RAL,CLE,ERA     CLEAR SIGN
0305  10704 151142          CPA LST4,I      PROGRAM PREVIOUSLY CALLED?
0306  10705 026734          JMP EXEND       YES - IGNORE EXT SYMBOL
0307  10706 006004          INB             INCR PROG LIST ADDR
0308  10707 035511          ISZ PLCNT       END OF PROGRAM LIST?
0309  10710 026700          JMP PLEXT       NO - CONTINUE PROGRAM LIST SCAN
0310  10711 061247          LDA ERR15       SET ERROR CODE - PROG LIST FULL
0311  10712 014466          JSB ERROR       PRINT DIAGNOSTIC
0312  10713 026734          JMP EXEND       TEST FOR ALL EXTS PROCESSED
0313  10714 061330  SEXT    LDA TBUF+2      GET PROGRAM USAGE FLAG
0314  10715 000010          SLA             SKIP - PROGRAM NOT LOADED
0315  10716 026734          JMP EXEND       OMIT PROGRAM LIST ENTRY
0316  10717 061537          LDA PTYPE
0317  10720 002002          SZA
0318  10721 026731          JMP STIDF
0319  10722 061327          LDA TBUF+1      IF SUBROUTINE IS TYPE 0, SET AL-
0320  10723 010242          AND M177          READY LOADED ENTRY IN PLIST
0321  10724 050230          CPA P6
0322  10725 026731          JMP STIDF
0323  10726 050231          CPA P7
0324  10727 026731          JMP STIDF
0325  10730 026734          JMP EXEND
0326  10731 161142  STIDF   LDA LST4,I
0327  10732 030340          IOR MSIGN       SET SIGN TO SHOW PROG NOT LOADED
0328  10733 170001          STA B,I         SET IN PROGRAM LIST
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0329   10734 035145  EXEND ISZ EXCNT      SKIP = ALL SYMBOLS PROCESSED
0330   10735 026535        JMP NXSYM      NO = PROCESS NEXT SYMBOL
0331   10736 026332        JMP CLSRC      NO = CLASSIFY NEXT RECORD
0332*
0333*                                      PROCESS DBL RECORDS
0334   10737 060001  DDBLR LDA B          GET COUNT
0335   10740 010241        AND M77        ISOLATE COUNT
0336   10741 003004        CMA,INA
0337   10742 071145        STA EXCNT      SET INSTRUCTION COUNT
0338   10743 017166        JSB DBSET      GET ADDR OF NEXT WORD IN LBUF
0339   10744 017166        JSB DBSET      GET ADDR OF NEXT WORD IN LBUF
0340*
0341   10745 165566        LDB CURAL,I    GET RELOCATION ADDRESS
0342   10746 075170        STB DBLAD      SAVE RELOCATION ADDRESS
0343   10747 035126        ISZ PLFLG      SKIP = FIRST DBL RECORD
0344   10750 026767        JMP DBL0       IGNORE SUBSEQUENT RECORDS
0345   10751 061312        LDA L01
0346   10752 002002        SZA
0347   10753 161135        LDA ID6,I      GET TYPE
0348   10754 010242        AND M177       ISOLATE TYPE
0349   10755 050224        CPA P2         TYPE = RT DISK RESIDENT?
0350   10756 026764        JMP HABSS      SET NEW MEMORY BOUND
0351   10757 050225        CPA P3         TYPE = BG DISK RESIDENT?
0352   10760 026764        JMP HABSS      SET NEW MEMORY BOUND
0353   10761 050227        CPA P5         TYPE = BG SEGMENT?
0354   10762 002001        RSS
0355   10763 006400        CLB            SET PGMAD = 0 FOR RESIDENTS
0356   10764 075166  HABSS STB BSSDP      SAVE INITIAL PROG DISPLACEMENT
0357   10765 045544        ADB RELAD      ADD RELOCATION ADDRESS
0358   10766 075544        STB RELAD      SET NEW RELOCATION ADDRESS
0359   10767 017166  DBL0  JSB DBSET      GET ADDR OF NEXT WORD IN LBUF
0360   10770 165566  DBL1  LDB CURAL,I    GET RELOCATION BYTES
0361   10771 075171        STB REKEY      SAVE FOR RELOCATION TYPE
0362   10772 060215        LDA N5
0363   10773 071172        STA INSCN      SET RELOCATION BYTE COUNT
0364   10774 017166        JSB DBSET      GET ADDR OF NEXT WORD IN LBUF
0365*
0366   10775 061171  DBL2  LDA REKEY      GET RELOCATION BYTES
0367   10776 001723        ALF,RAR        ROTATE TO LOW A
0368   10777 071171        STA REKEY      SAVE FOR NEXT INSTRUCTION WORD
0369   11000 010231        AND M7         ISOLATE CURRENT BYTE
0370   11001 050226        CPA P4         EXTERNAL REFERENCE?
0371   11002 027035        JMP DBL4       YES = GET LINK ADDRESS
0372   11003 050227        CPA P5         MEMORY REFERENCE?
0373   11004 027056        JMP DBL6       YES = CHECK FOR INDIRECT LINK
0374   11005 050230        CPA P6         SPECIAL REFERENCE?
0375   11006 027121        JMP BYTE       YES = CHECK FOR BYTE ADDRESS
0376   11007 041060        ADA RBTAD      ADD RELOCATION BASE TABLE ADDR
0377   11010 160000        LDA A,I        GET RELOCATION BASE
0378   11011 141566        ADA CURAL,I    ADD CURRENT INSTRUCTION WORD
0379*
0380   11012 065544  DBL3  LDB RELAD      GET PREVIOUS RELOCATION ADDRESS
0381   11013 007004        CMB,INB        SET TO NEGATIVE
0382   11014 045170        ADB DBLAD      ADD CURRENT RELOCATION ADDRESS
0383   11015 045062        ADB TPREL      ADD CURRENT PROG RELOCATION BASE
0384   11016 006004        INB            INCR FOR NEXT LOCATION
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0385  11017 073737         STA TMP3      SAVE "A"-REGISTER
0386  11020 061312         LDA L01       UNLESS IT'S PASS 3, DON'T
0387  11021 002003         SZA,RSS         OUTPUT TO DISC
0388  11022 027025         JMP LD8
0389  11023 063737         LDA TMP3      RESTORE "A"-REGISTER
0390  11024 017351         JSB LABDO     OUTPUT ABSOLUTE WORD
0391  11025 017166  LD8     JSB DBSET     GET ADDR OF NEXT WORD IN LBUF
0392  11026 035145         ISZ EXCNT     SKIP = LAST INSTRUCTION OUT
0393  11027 002001         RSS           NO = CONTINUE
0394  11030 026332         JMP CLSRC     YES = CLASSIFY NEXT RECORD
0395  11031 035170         ISZ DBLAD     INCR DBL RELOCATION ADDRESS
0396  11032 035172         ISZ INSCN     SKIP IF NEW RELOCATION BYTE
0397  11033 026775         JMP DBL2      NO = PROCESS NEXT INSTRUCTION
0398  11034 026770         JMP DBL1      YES = GET NEXT RELOCATION BYTE
0399*
0400  11035 161566  DBL4    LDA CURAL,I   GET CURRENT DBL WORD
0401  11036 010243         AND M377      ISOLATE ORDINAL
0402  11037 071173         STA EXORD     SAVE ORDINAL
0403  11040 015371         JSB INLST     INITIALIZE LSTX
0404  11041 015375  DBL5    JSB LSTX      SET LST ADDRESSES
0405  11042 102000         HLT 0B        ORDINAL NOT FOUND
0406  11043 161141         LDA LST3,I    GET WORD 3 OF LST ENTRY
0407  11044 010243         AND M377      ISOLATE ORDINAL
0408  11045 051173         CPA EXORD     SAME ORDINAL8?
0409  11046 002001         RSS           YES = CONTINUE
0410  11047 027041         JMP DBL5      NO = CONTINUE LST SEARCH
0411  11050 165143         LDB LST5,I    GET BP LINK ADDRESS
0412  11051 161566         LDA CURAL,I   GET CURRENT DBL WORD
0413  11052 010305         AND M1740     ISOLATE INSTRUCTION CODE
0414  11053 030340         IOR MSIGN     SET SIGN = 1 (INDIRECT)
0415  11054 030001         IOR B         SET ADDRESS = BP LINK ADDRESS
0416  11055 027012         JMP DBL3      OUTPUT INSTRUCIION
0417*
0418  11056 161566  DBL6    LDA CURAL,I   GET CURRENT DBL WORD
0419  11057 071174         STA INSTR     SAVE INSTRUCTION CODE
0420  11060 017166         JSB DBSET     GET ADDR OF NEXT WORD IN LBUF
0421  11061 061174         LDA INSTR     GET INSTRUCTION CODE
0422  11062 065062         LDB TPREL     GET CURRENT PROG RELOC ADDR
0423  11063 001332         RAR,SLA,RAL   SKIP IF PROGRAM REFERENCE
0424  11064 065064         LDB COMAD     REPLACE PROG WITH COMMON BASE
0425  11065 145566         ADB CURAL,I   ADD CURRENT INSTR ADDRESS
0426  11066 010305         AND M1740     ISOLATE INSTRUCTION CODE
0427  11067 002020         SSA           SKIP IF DIRECT REFERENCE
0428  11070 044340         ADB MSIGN     SET SIGN = 1
0429  11071 071174         STA INSTR     SAVE INSTRUCTION CODE
0430  11072 061062         LDA TPREL    FORM CURRENT RELOCATION ADDRESS
0431  11073 041170         ADA DBLAD
0432  11074 010303         AND M0760     ISOLATE PAGE NUMBER
0433  11075 071175         STA PAGNO     SAVE CURRENT PAGE NUMBER
0434  11076 060001         LDA B         GET INSTRUCTION ADDRESS
0435  11077 010303         AND M0760     ISOLATE PAGE NUMBER
0436  11100 051175         CPA PAGNO     SAME PAGE?
0437  11101 027114         JMP DBL7      YES = NO INDIRECT ADDRESS NEEDED
0438  11102 075176         STB OPRND     SAVE INSTRUCTION ADDRESS
0439  11103 017143         JSB BPSCN     SCAN BP FOR SAME OPERAND
0440  11104 017160  LINKC   JSB SETOP     SET OPERAND IN BP LOCATION
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0441   11105 070001          STA B
0442   11106 010316          AND M1777
0443   11107 050001          CPA B           CURRENT PAGE LINK?
0444   11110 002001          RSS
0445   11111 030306          IOR M2000         YES- SET CURRENT PAGE BIT
0446   11112 030340          IOR MSIGN        SET INDRIECT BIT
0447   11113 027117          JMP DBL8
0448   11114 060001  DBL7    LDA B           GET OPERAND ADDRESS
0449   11115 010316          AND M1777       ISOLATE PAGE LOCATION
0450   11116 030306          IOR M2000       SET Z/C = 1 (CURRENT)
0451   11117 031174  DBL8    IOR INSTR       ADD INSTRUCTION CODED
0452   11120 027012          JMP DBL3        OUTPUT INSTRUCTION WORD
0453*
0454* R=6    SPECIAL REFERENCE
0455*
0456   11121 161566  BYTE    LDA CURAL,I     GET TYPE (BITS 15-12 OF WORD 1)
0457   11122 001700          ALF
0458   11123 010237          AND M17
0459   11124 002002          SZA             BYTE ADDRESSING?
0460   11125 027141          JMP NBYT          NO- IGNORE
0461   11126 161566          LDA CURAL,I       YES- USE BITS 1-0 OF WORD 1
0462   11127 010225          AND P3                 TO DETERMINE RELOCATION
0463   11130 041060          ADA RBTAD
0464   11131 002004          INA
0465   11132 160000          LDA A,I         GET RELOCATION BASE
0466   11133 001000          ALS             SHIFT TO MAKE IT BYTE ADDRESS
0467   11134 073143          STA BPSCN       SAVE TEMPORARILY
0468   11135 017166          JSB DBSET       POINT TO WORD 2
0469   11136 161566          LDA CURAL,I     GET RELOCATABLE BYTE ADDRESS
0470   11137 043143          ADA BPSCN       ADD BYTE RELOCATION BASE
0471   11140 027012          JMP DBL3        OUTPUT INSTRUCTION WORD
0472*
0473   11141 017166  NBYT    JSB DBSET       BUMP POINTER TO WORD 2
0474   11142 027025          JMP LD8         IGNORE INSTRUCTION WORD
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0476*
0477*                                        GET BP LINK ADDR, SET BP VALUE
0478*
0479*  BPSCN SCANS THE RESIDENT AND CURRENT SECTIONS OF BASE PAGE
0480*  FOR A VALUE EQUAL TO THE CURRENT OPERAND.  IF SUCH A VALUE
0481*  IS FOUND, THE ADDRESS OF THE OPERAND IS RETURNED
0482*  IN THE A-REGISTER.  OTHERWISE, A NEW BP LINK WORD IS
0483*  RESERVED AND THE ADDRESS OF THIS WORD RETURNED IN A.
0484*
0485*  CALLING SEQUENCE:
0486*    A = IGNORED
0487*    B = IGNORED
0488*    JSB BPSCN
0489*
0490*  RETURN:
0491*    A = BP LINK ADDRESS FOR CURRENT OPERAND
0492*    B = DESTOYED
0493*
0494  11143 000000  BPSCN NOP            SCAN BP AREA FOR SAME OPERAND
0001*
0002  11144 061154        LDA LRBP      GET LOW RESIDENT BOUND
0003  11145 065155        LDB URBP      GET HIGH RESIDENT BOUND
0004  11146 114143        JSB ASCBP,I   SCAN AREA FOR SAME OPERAND
0005*
0006  11147 061156        LDA LBBP      GET LOW BACKGROUND BOUND
0007  11150 065157        LDB UBBP      GET HIGH BACKGROUND BOUND
0008  11151 114143        JSB ASCBP,I   SCAN AREA FOR SAME OPERAND
0009*
0010  11152 061542        LDA PBREL     GET LOW CURRENT BOUND
0011  11153 065541        LDB TBREL     GET HIGH CURRENT BOUND
0012  11154 114143        JSB ASCBP,I   SCAN AREA FOR SAME OPERAND
0013*
0014  11155 117743        JSB ADLNK,I   GO CHECK FOR CURRENT PAGE LINK
0015  11156 114142        JSB AALOC,I   ALLOCATE NEW BP LINK ADDRESS
0016  11157 127143  SCOUT JMP BPSCN,I   RETURN = A = BP LINK ADDRESS
0017*
0018*                                        SET OPERAND IN BP LOCATION
0019*
0020*  SETOP SETS THE CURRENT OPERAND IN THE BP LOCATION
0021*  SPECIFIED BY THE ADDRESS IN A.
0022*
0023*  CALLING SEQUENCE:
0024*    A = CURRENT BP LINK ADDRESS
0025*    B = IGNORED
0026*    JSB SETOP
0027*
0028*  RETURN:
0029*    A = BP LINK ADDRESS
0030*    B = DESTROYED
0031*
0032  11160 000000  SETOP NOP
0033  11161 040306        ADA M2000     ADJUST BP LINK ADDRESS
0034  11162 065176        LDB OPRND     GET OPERAND
0035  11163 174000        STB A,I       SET BP VALUE IN BP LOCATION
0036  11164 040277        ADA L2000     ADJUST FOR BP ADDRESS
0037  11165 127160        JMP SETOP,I   RETURN = A = BP LINK ADDRESS
```

```
0038*
0039*                                       READ RELOCATABLE RECORD CONTROL
0040*
0041*  DBSET ESTABLISHES THE ADDRESS OF THE NEXT WORD OF THE RELOCATABLE
0042*  RECORD IN LBUF.  IF LBUF HAS BEEN PROCESSED, IT ISSUES A CALL TO
0043*  DBIN TO READ ANOTHER PACKED RELOCATABLE RECORD.
0044*
0045*  CALLING SEQUENCE:
0046*    A = IGNORED
0047*    B = IGNORED
0048*    JSB DBSET
0049*
0050*  RETURN: CONTENTS OF A AND B ARE DESTROYED
0051*
0052  11166 000000  DBSET NOP
0053  11167 035566        ISZ CURAL      INCR CURRENT LBUF ADDRESS
0054  11170 035567        ISZ LCNT       SKIP = END OF LBUF
0055  11171 127166        JMP DBSET,I    RETURN
0056  11172 017174        JSB DBIN       READ NEXT RELOCATABLE REC
0057  11173 127166        JMP DBSET,I    RETURN
0058*
0059*                                       READ PACKED RELOCATABLE RECS
0060*
0061*  THE DBIN SUBROUTINE READS THE PACKED RELOCATABLE RECORDS FROM
0062*  THE DISK AS SPECIFIED BY THE DISK ADDRESS AT DSKRD.
0063*
0064*  CALLING SEQUENCE:
0065*    A = IGNORED
0066*    B = IGNORED
0067*    JSB DBIN
0068*
0069*  RETURN: CONTENTS OF A AND B ARE DESTROYED.
0070*
0071  11174 000000  DBIN  NOP
0072  11175 061554        LDA DSKRD      GET CURRENT DISK ADDRESS
0073  11176 065066        LDB ALBUF      GET ADDRESS OF LBUF
0074  11177 075566        STB CURAL      SET CURRENT LBUF ADDRESS
0075  11200 014544        JSB DISKI      READ RECORD FROM DISK
0076  11201 061554        LDA DSKRD      GET DISK ADDRESS
0077  11202 014523        JSB DISKA      INCR DISK ADDRESS
0078  11203 071554        STA DSKRD      SET NEXT DISK ADDRESS
0079  11204 060253        LDA N128
0080  11205 071567        STA LCNT       SET CURRENT LBUF COUNT
0081  11206 127174        JMP DBIN,I     RETURN
0082*
0083*
0084*   GENID GENERATES THE CURRENT ID SEGMENT FOR THE PROGRAM LOADED.
0085*
0086*  CALLING SEQUENCE:
0087*    B = IGNORED
0088*    JSB GENID
0089*
0090*  RETURN: CONTENTS OF A AND B ARE DESTROYED
0091*
0092  11207 000000  GENID NOP
0093  11210 003400        CCA
```

```
0094  11211 071126          STA PLFLG      SAVE ID SEGMENT LENGTH FLAG
0095*                                      GENERATE ID SEGMENT
0096  11212 061551          LDA IMAIN
0097  11213 071102          STA TIDNT      SET ADDRESS FOR IDX
0098  11214 015336          JSB IDX        SET IDENT ADDRESSES
0099  11215 102000          HLT 0          NO IDENT FOUND
0100  11216 161130          LDA ID1,I      GET NAME 1,2
0101  11217 017317          JSB OUTID      OUTPUT WORD TO ID SEGMENT BUFFER
0102  11220 161131          LDA ID2,I      GET NAME 3,4
0103  11221 017317          JSB OUTID      OUTPUT WORD TO ID SEGMENT BUFFER
0104  11222 161135          LDA ID6,I      GET TYPE
0105  11223 010242          AND M177       ISOLATE TYPE
0106  11224 070001          STA B          SAVE TYPE IN B
0107  11225 161132          LDA ID3,I      GET NAME 5
0108  11226 010244          AND M7400      ISOLATE NAME 5
0109  11227 030001          IOR B          ADD TYPE TO NAME 5
0110  11230 017317          JSB OUTID      OUTPUT WORD TO ID SEGMENT BUFFER
0111  11231 061165          LDA DSKMN      GET INITIAL MAIN DISK ADDRESS
0112  11232 017317          JSB OUTID      OUTPUT WORD TO ID SEGMENT BUFFER
0113  11233 061543          LDA PPREL
0114  11234 065537          LDB PTYPE
0115  11235 054227          CPB P5
0116  11236 061547          LDA BSPAD
0117  11237 041166          ADA BSSDP
0118  11240 071326          STA TBUF
0119  11241 003004          CMA,INA
0120  11242 041062          ADA TPREL
0121  11243 040242          ADA P127
0122  11244 010315          AND M7600
0123  11245 001727          ALF,ALF
0124  11246 001200          RAL
0125  11247 071327          STA TBUF+1     NUMBER OF SECT-MAIN-
0126  11250 061542          LDA PBREL
0127  11251 054227          CPB P5
0128  11252 061546          LDA BSBAD
0129  11253 071330          STA TBUF+2     STORE LOW BASE
0130  11254 003004          CMA,INA
0131  11255 041541          ADA TBREL
0132  11256 040242          ADA P127
0133  11257 010315          AND M7600
0134  11260 001727          ALF,ALF
0135  11261 001200          RAL
0136  11262 041327          ADA TBUF+1
0137  11263 017317          JSB OUTID     OUTPUT NUMBER OF SECTORS
0138  11264 061326          LDA TBUF
0139  11265 017317          JSB OUTID     OUTPUT LOW MAIN
0140  11266 061062          LDA TPREL
0141  11267 017317          JSB OUTID     OUTPUT HIGH MAIN
0142  11270 061330          LDA TBUF+2
0143  11271 017317          JSB OUTID      OUTPUT LOW BASE
0144  11272 061541          LDA TBREL
0145  11273 017317          JSB OUTID     OUTPUT HIGH BASE
0146  11274 061167          LDA PRENT
0147  11275 017317          JSB OUTID     OUTPUT PRIMARY ENTRY
0148  11276 061062          LDA TPREL     OUTPUT LAST WORD ADDRESS OF PROG
0149  11277 017317          JSB OUTID
```

```
0150  11300 034400          ISZ IDFLG
0151  11301 060400          LDA IDFLG
0152  11302 050261          CPA P11
0153  11303 002001          RSS
0154  11304 127207          JMP GENID,I  RETURN--ID SEGMENT---
0155  11305 003400          CCA
0156  11306 017317          JSB OUTID
0157  11307 060214          LDA N6
0158  11310 070400          STA IDFLG
0159  11311 002400          CLA
0160  11312 017317          JSB OUTID
0161  11313 034400          ISZ IDFLG
0162  11314 027311          JMP *-3
0163  11315 127207          JMP GENID,I
0164*
0165  11316 000000  LIBRY NOP            ADDR OF 1ST LIBRARY ROUTINE
0166*
0167*                                     OUTPUT ID SEGMENT WORD TO IBUF
0168*
0169*  OUTID PACKS THE WORDS FOR THE ID SEGMENTS IN THE ID SEGMENT
0170*  BUFFER AND WRITES THE BUFFER ON THE DISK WHEN IT CONTAINS
0171*  64 WORDS.
0172*
0173*  CALLING SEQUENCE:
0174*    A = CURRENT ID SEGMENT WORD
0175*    B = IGNORED
0176*    JSB OUTID
0177*
0178*  RETURN: CONTENTS OF A AND B ARE DESTROYED
0179*
0180  11317 000000  OUTID NOP
0181  11320 171770         STA CURAI,I   PUT WORD INTO ID BUFFER
0182  11321 035770         ISZ CURAI     INCR CURRENT ID BUFFER ADDRESS
0183  11322 035771         ISZ ICNT      SKIP = IBUF FULL
0184  11323 127317         JMP OUTID,I   RETURN
0185  11324 061536         LDA DSKID     GET CURRENT DRCTRY DISC ADDRESS
0186  11325 050370         CPA DSKAB     (ALLOW DIRECTORY TO START
0187  11326 027332         JMP OUT1          ON SECTOR ZERO)
0188  11327 010243         AND M377      ISOLATE SECTOR#
0189  11330 002003         SZA,RSS       IF SECTOR# = 0, TRACK BOUNDARY
0190  11331 027346         JMP DIROF       HAS BEEN CROSSED - CRASH!
0191  11332 061536  OUT1   LDA DSKID     GET CURRENT ID SEG DISC ADDR
0192  11333 065070         LDB AIBUF     GET ID BUFFER ADDRESS
0193  11334 014550         JSB DISKO     WRITE ID SEGMENT REC ON DISK
0194  11335 065070         LDB AIBUF     GET BUFFER ADDRESS
0195  11336 075770         STB CURAI     SET NEW CURRENT IBUF ADDRESS
0196  11337 014451         JSB BUFCL     CLEAR ID BUFFER
0197  11340 061536         LDA DSKID     GET CURRENT ID SEGMENT DISK ADDR
0198  11341 014523         JSB DISKA     INCREMENT DISK ADDRESS
0199  11342 071536         STA DSKID     SAVE NEXT DISK ID ADDRESS
0200  11343 060253         LDA N128
0201  11344 071771         STA ICNT      SET CURRENT IBUF COUNT
0202  11345 127317         JMP OUTID,I   RETURN
0203*
0204  11346 063350  DIROF LDA ERR11
0205  11347 014474         JSB IRERR
```

```
0206*
0207  11350 030461  ERR11 ASC 1,11
0208*
0209*                                        OUTPUT ABSOLUTE PROGRAM WORD
0210*
0211*  LABDO PUTS OUT THE CURRENT ABSOLUTE CODE WORD FOR THE PROGRAM
0212*  BEING LOADED.  IT FILLS THE GAPS WITH HALT CODES IF THE
0213*  CURRENT WORD DOES NOT FALL IN THE NEXT POSITION.  IN
0214*  ADDITION, IT CHECKS FOR PROGRAM OVERLAY AND PPRINTS A DIAGNOSTIC
0215*  IF THE CURRENT PROGRAM WORD OVERLAYS A PREFIOUSLY-GENERATED
0216*  SECTION OF CODE.  THE CURRENT PROG RELOCATION ADDRESS
0217*  IS PRINTED WITH THE DIAGNOSTIC, BUT THE ORIGINALLY-
0218*  GENERATED CODE IS NOT MODIFIED.
0219*
0220*  CALLING SEQUENCE:
0221*    A = CURRENT ABSOLUTE CODE WORD
0222*    B = CURRENT DISPLACEMENT FROM PREVIOUS WORD
0223*    JSB LABDO
0224*
0225*  RETURN: CONTENTS OF A AND B ARE DESTROYED
0226*
0227  11351 000000  LABDO NOP
0228  11352 071163        STA TEMPP      SAVE PROGRAM WORD
0229  11353 007026        CMB,SSB,INB,SZB  SKIP = OVERLAY
0230  11354 027373        JMP TSTAB+1
0231  11355 061253        LDA ERR19      SET ERROR CODE = PROGRAM OVERLAY
0232  11356 014466        JSB ERROR      PRINT DIAGNOSTIC
0233  11357 061170        LDA DBLAD      GET CURRENT PROG RELOC ADDRESS
0234  11360 065071        LDB ATBUF      GET ADDRESS OF TBUF
0235  11361 015012        JSB CONVD      CONVERT TO DECIMAL/OCTAL IN TBUF
0236  11362 061321        LDA ULPAR      GET UPPER CHAR LEFT PAREN
0237  11363 031326        IOR TBUF       ADD LEFT PAREN TO FIRST DIGIT
0238  11364 071326        STA TBUF       SET LEFT PAREN, FIRST DIGIT
0239  11365 061322        LDA RPARB      GET RIGHT PAREN, BLANK
0240  11366 071331        STA TBUF+3     SET RIGHT PAREN IN BUFFER
0241  11367 060231        LDA P7
0242  11370 065071        LDB ATBUF      GET ADDRESS OF TBUF
0243  11371 114102        JSB DRKEY,I    PRINT RELOC ADDR OF OVERLAY
0244  11372 127361        JMP LABDO,I    RETURN = NO OUTPUT
0245*
0246  11373 075164        STB ABCNT      SAVE ABSOLUTE COUNT
0247  11374 035164  TSTAB ISZ ABCNT      SKIP = PUT OUT LAST WORD
0248  11375 027402        JMP CLOUT      SET HALT 0 INTO BSS
0249  11376 061163        LDA TEMPP      GET LAST WORD
0250  11377 171146        STA CURAD,I    SET INTO LOAD BUFFER
0251  11400 017406        JSB TSTEL      TEST FOR BUFFER FULL
0252  11401 127361        JMP LABDO,I    RETURN
0253*
0254  11402 002400  CLOUT CLA            CLEAR SKIPPED AREA
0255  11403 171146        STA CURAD,I    SET INTO LOAD BUFFER
0256  11404 017406        JSB TSTEL      TEST FOR BUFFER FULL
0257  11405 027374        JMP TSTAB      OUTPUT NEXT WORD
0258*
0259*                                        TEST FOR ABSOLUTE BUFFER FULL
0260*
0261*  TSTEL PUTS OUT THE CURRENT ABSOLUTE BUFFER WHEN IT
```

```
0262*  CONTAINS 128 WORDS OF CODE. IN ADDITION, IT CHECKS FOR
0263*  POSSIBLE PROGRAM OVERFLOW AND PRINTS A DIAGNOSTIC.
0264*
0265*  CALLING SEQUENCE:
0266*    A = IGNORED
0267*    B = IGNORED
0268*    JSB TSTEL
0269*
0270*  RETURN: CONTENTS OF A AND B ARE DESTROYED
0271*
0272  11406 000000  TSTEL NOP
0273  11407 061544        LDA RELAD     GET ABSOLUTE ADDRESS
0274  11410 035544        ISZ RELAD     INCR ABSOLUTE ADDRESS
0275  11411 003004        CMA,INA       COMPLEMENT CURRENT RELOC ADDR
0276  11412 041114        ADA LWASM     ADD LAST WORD AVAIL SYSTEM MEM
0277  11413 002021        SSA,RSS       SKIP = INVALID RELOCATION ADDR
0278  11414 027423        JMP NOVER     NO MEMORY OVERFLOW
0279  11415 060437        LDA ER18F     HAS ERROR 18 BEEN OUTPUT?
0280  11416 002002        SZA
0281  11417 027423        JMP NOVER       YES= IGNORE
0282  11420 061252        LDA ERR18     SET ERROR CODE = MEMORY OVERFLOW
0283  11421 070437        STA ER18F     SET TO IGNORE ERROR 18
0284  11422 014466        JSB ERROR     PRINT DIAGNOSTIC
0285  11423 035146  NOVER ISZ CURAD     INCR CURRENT DBUF ADDRESS
0286  11424 035147        ISZ DCNT      SKIP = DBUF FULL
0287  11425 127406        JMP TSTEL,I   RETURN = LBUF NOT FULL
0288  11426 017436        JSB DBOUT     WRITE DBUF ON DISK
0289  11427 127406        JMP TSTEL,I   RETURN
0290*
0291*                                   OUTPUT REST (IF ANY) OF ABS. REC
0292*
0293*  REMDO PUTS OUT THE CURRENT SECTOR IF IT CONTAINS ANY WORDS OF
0294*  ABSOLUTE CODE.  THIS IS NORMALLY DONE WHEN THE CODE FOR THE
0295*  MAIN PROGRAM SECTION HAS BEEN GENERATED.
0296*
0297*  CALLING SEQUENCE:
0298*    A = IGNORED
0299*    B = IGNORED
0300*    JSB REMDO
0301*
0302*  RETURN: CONTENTS OF A AND B ARE DESTROYED.
0303*
0304  11430 000000  REMDO NOP
0305  11431 061147        LDA DCNT      GET CURRENT DBUF COUNT
0306  11432 050253        CPA N128      BUFFER EMPTY?
0307  11433 127430        JMP REMDO,I   YES = RETURN
0308  11434 017436        JSB DBOUT     WRITE DBUF ON DISK
0309  11435 127430        JMP REMDO,I   RETURN
0310*
0311*                                   DUMP DBUF TO DISK
0312*
0313*  DBOUT WRITES THE CONTENTS OF THE ABSOLUTE BUFFER ON THE DISK
0314*  AT THE DISK ADDRESS SPECIFIED BY DSKAD.
0315*
0316*  CALLING SEQUENCE:
0317*    A = IGNORED
```

```
0318*     B = IGNORED
0319*     JSB DBOUT
0320*
0321*  RETURN: CONTENTS OF A AND B ARE DESTOYED.
0322*
0323   11436 000000  DBOUT NOP
0324   11437 061125        LDA DSKAD     GET CURRENT DISK ADDRESS
0325   11440 050506        CPA LOLIB     OVERRUNNING LIBRY IN SCRATCH?
0326   11441 024504        JMP LIBER      =YES, CRASH!
0327   11442 065067        LDB ADBUF     GET ADDRESS OF DBUF
0328   11443 014550        JSB DISKO     WRITE RECORD ON DISK
0329   11444 065067        LDB ADBUF     GET ADDRESS OF DBUF
0330   11445 075146        STB CURAD     SET CURRENT DBUF ADDRESS
0331   11446 014451        JSB BUFCL     CLEAR LBUF
0332   11447 061125        LDA DSKAD     GET CURRENT DISK ADDRESS
0333   11450 014523        JSB DISKA     UPDATE DISC ADDRESS
0334   11451 071125        STA DSKAD     SET NEXT DISK ADDRESS
0335   11452 060253        LDA N128
0336   11453 071147        STA DCNT      SET CURRENT DBUF COUNT
0337   11454 127436        JMP DBOUT,I   RETURN
0338*
0339* ISS PROTECT/UNPROTECT ROUTINE
0340*
0341   11455 000000  ISSPR NOP
0342   11456 003000        CMA
0343   11457 073547        STA PTRK      SET END TRK/TRK CNTR
0344   11460 063543        LDA N46
0345   11461 070253        STA N128      SET FOR 1-TRK BFR
0346   11462 077545        STB TRFLG     SET FLAG BIT
0347   11463 067544        LDB ISSIN
0348   11464 074345        STB DWRT      SET FOR ISS INIT. WRITE
0349   11465 061122  LOOPT LDA HDMSK     SET UP HEAD LOOP
0350   11466 073546        STA HD#
0351   11467 060446        LDA NHDPS
0352   11470 003004        CMA,INA
0353   11471 073551        STA HCNTR
0354   11472 002400        CLA           SET REL SCTR# TO 0
0355   11473 073550        STA RSCTR
0356   11474 060450  LOOPH LDA MSPTK     SET UP SECTOR LOOP
0357   11475 073552        STA SCNTR
0358   11476 065066        LDB ALBUF
0359   11477 077553        STB PNTR
0360   11500 067547        LDB PTRK      GET CURREN TRK#
0361   11501 007000        CMB
0362   11502 054362        CPB LODSK     BOTTOM OF DISC?
0363   11503 027536        JMP ISSXT      =YES, EXIT
0364   11504 047545        ADB TRFLG     INCLUDE FLAG BIT
0365   11505 063552  LOOPS LDA SCNTR     SET UP HD/SCTR
0366   11506 040444        ADA NSPTK
0367   11507 033546        IOR HD#
0368   11510 177553        STB PNTR,I
0369   11511 037553        ISZ PNTR
0370   11512 173553        STA PNTR,I
0371   11513 037553        ISZ PNTR
0372   11514 037552        ISZ SCNTR     BUFFER DONE?
0373   11515 027505        JMP LOOPS     =NO, SET NEXT SCTR
```

```
0374   11516 063547          LDA PTRK
0375   11517 003000          CMA
0376   11520 001727          ALF,ALF
0377   11521 033550          IOR RSCTR
0378   11522 065066          LDB ALBUF
0379   11523 014550          JSB DISKO      WRITE/INIT, 1 TRK
0380   11524 063550          LDA RSCTR
0381   11525 040444          ADA NSPTK
0382   11526 073550          STA RSCTR
0383   11527 063546          LDA HD#        INCREMENT HEAD #
0384   11530 040302          ADA M400
0385   11531 073546          STA HD#
0386   11532 037551          ISZ HCNTR      DONE WITH CYLINDER?
0387   11533 027474          JMP LOOPH       =NO, GO DO NEXT TRK
0388   11534 037547          ISZ PTRK       DONE ALL CYLINDERS?
0389   11535 027465          JMP LOOPT       =NO, GO DO NEXT CYL
0390   11536 064343  ISSXT   LDB INWRT
0391   11537 074345          STB DWRT
0392   11540 064300          LDB .N128
0393   11541 074253          STB N128
0394   11542 127455          JMP ISSPR,I     =YES, EXIT,
0395*
0396   11543 177722  N46     DEC -46
0397   11544 070000  ISSIN   OCT 70000
0398   11545 000000  TRFLG   NOP
0399   11546 000000  HD#     NOP
0400   11547 000000  PTRK    NOP
0401   11550 000000  RSCTR   NOP
0402   11551 000000  HCNTR   NOP
0403   11552 000000  SCNTR   NOP
0404   11553 000000  PNTR    NOP
```

```
0406*
0407* ADDITIONAL STORAGE
0408*
0409  11554 047101  MSG61 ASC 18,NAME        PROG BOUNDS   BP BOUNDS
0410  11576 001523  AMEM8 DEF MLIST+8
0411  11577 001527  AME12 DEF MLIST+12
0412  11600 001532  AME15 DEF MLIST+15
0413  11601 007767  ASYSB DEF SYSBT
0414  11602 007715  ASECT DEF SECTR
0415  11603 007626  ATMP  DEF TMPIO
0416*
0417* ROUTINE TO CLEAR BASE PAGE LINKS
0418*   CURRENT ID1 MUST BE SET PRIOR TO CALL
0419*
0420  11604 000000  CLLNK NOP
0421  11605 015371        JSB INLST      INITIALIZE LST SCAN
0422  11606 015375  NEXT  JSB LSTX       GET LST ENTRY
0423  11607 127604        JMP CLLNK,I      END OF LIST - RETURN
0424  11610 006400        CLB
0425  11611 161142        LDA LST4,I     GET IDENT ADDRESS
0426  11612 051130        CPA ID1        ENT/EXT BELONGS TO CURRENT PROG?
0427  11613 175143        STB LST5,I       YES- CLEAR BP LINK
0428  11614 027606        JMP NEXT       TRY NEXT LST ENTRY
0429*
0430* OUTPUT BASE PAGE
0431*
0432  11615 064313  OUTBP LDB M2100
0433  11616 161324        LDA CURAT,I    GET WORD OF SYS COMM AREA
0434  11617 170001        STA B,I        MOVE WORD TO BP LOCATION
0435  11620 006004        INB            INCR CURRENT BP LOCATION WORD
0436  11621 035324        ISZ CURAT      INCR CURRENT BP ADDRESS
0437  11622 035325        ISZ TCNT       SKIP - SYS COMM AREA MOVED
0438  11623 027616        JMP *-6        CONTINUE MOVING BASE PAGE
0439  11624 060404        LDA BPAGE
0440  11625 064224        LDB P2         GET LOWER SYSTEM BP ADDRESS
0441  11626 114132        JSB ABPOT,I    OUTPUT RESIDENT BP SECTION
0442*
0443* SET BOOTSTRAP LOADER BUFFER
0444*
0445  11627 002504        CLA,CLE,INA    SET UP TO READ BOOTSTRAP
0446  11630 117603        JSB ATMP,I       (TRACK 0, SECTORS 1 & 2)
0447  11631 060260        LDA N12        MOVE 12-WORD BUFFER INTO BOOT
0448  11632 071075        STA WDCNT
0449  11633 064145        LDB ABOOT
0450  11634 007004        CMB,INB
0451  11635 044147        ADB ASBUF
0452  11636 006004        INB
0453  11637 044150        ADB TEMBF
0454  11640 075325        STB TCNT
0455  11641 067602        LDB ASECT
0456  11642 160001        LDA B,I
0457  11643 171325        STA TCNT,I
0458  11644 006004        INB
0459  11645 035325        ISZ TCNT
0460  11646 035075        ISZ WDCNT
0461  11647 027642        JMP *-5
```

```
0462  11650 002704          CLA,CCE,INA   OUTPUT UPDATED BOOTSTRAP BACK
0463  11651 117603          JSB ATMP,I      TO TRACK 0, SECTORS 1 & 2
0464*
0465* UPDATE DISC LABELS
0466*
0467  11652 002400  UPLBL   CLA
0468  11653 065067          LDB ADBUF
0469  11654 014544          JSB DISKI     READ SYSTEM LABEL SECTOR
0470  11655 061365          LDA SYSBF
0471  11656 171152          STA SNXTS,I   SET TR/SECT OF USER LABEL
0472  11657 002400          CLA
0473  11660 065067          LDB ADBUF
0474  11661 114127          JSB ADOUT,I   WRITE SYSTEM LABEL SECTOR
0475*
0476  11662 060443          LDA DTYPE
0477  11663 050223          CPA P1        IS THIS AN ISS DISC TYPE?
0478  11664 006401          CLB,RSS
0479  11665 027673          JMP NTISS       NO
0480  11666 163601          LDA ASYSB,I   YES - UNPROTEST USER AREA
0481  11667 040221          ADA N1
0482  11670 070362          STA LODSK
0483  11671 060275          LDA P202
0484  11672 114166          JSB APTCT,I
0485  11673 060337  NTISS   LDA UPAST     FORM SYSTEM BUFFER SECTOR
0486  11674 171150          STA ADLBL,I     UNLABELLED
0487  11675 061323          LDA ASCSB
0488  11676 171153          STA SBLBL,I     "SB" IN WORD 127
0489  11677 002400          CLA
0490  11700 171067          STA ADBUF,I     UNLABELLED
0491  11701 065067          LDB ADBUF
0492  11702 014511          JSB CHKSM
0493  11703 171151          STA ADCHK,I     CHECKSUM
0494  11704 061430          LDA SYNTS
0495  11705 171152          STA SNXTS,I     NEXT TRACK/SECTOR
0496  11706 060343          LDA INWRT
0497  11707 070345          STA DWRT      SET TO WRITE UNPROTECTED
0498  11710 060252          LDA N129
0499  11711 070253          STA N128      SET TO CLEAR USER DIRECTORY
0500  11712 061365          LDA SYSBF
0501  11713 065067          LDB ADBUF
0502  11714 114127          JSB ADOUT,I   WRITE SYSTEM BUFFER SECTOR
0503*
0504  11715 060267          LDA P22       OUTPUT COMPLETION MESSAGE
0505  11716 067745          LDB MES23
0506  11717 114102          JSB DRKEY,I
0507  11720 102077          HLT 77B
0508*
0509  11721 060300          LDA .N128
0510  11722 073604          STA CLLNK
0511  11723 065067          LDB ADBUF
0512  11724 160001  MBOOT   LDA B,I       MOVE BOOT FROM DBUF TO LOC 2011
0513  11725 173734          STA ADDRB,I
0514  11726 006004          INB
0515  11727 037734          ISZ ADDRB
0516  11730 037604          ISZ CLLNK
0517  11731 027724          JMP MBOOT
```

```
0518  11732 127733          JMP **+1,I      TRANSFER CONTROL TO BOOT
0519  11733 002057          OCT 2057
0520*
0521  11734 002011  ADDRB   OCT 2011
0522*
0523* VARIABLES NEEDED FOR CURRENT PAGE LINKING
0524*
0525  11735 000000  LWH3    NOP             HOLDS ORIGINAL TBREL
0526  11736 000000  LWH4    NOP             HOLDS ORIGINAL TPREL
0527  11737 000000  TMP3    NOP             TEMPORARY
0528  11740 012221  AALNK   DEF ALINK
0529  11741 012415  ABLNK   DEF BLINK
0530  11742 012371  ABLN3   DEF BLIN3
0531  11743 012307  ADLNK   DEF DLINK
0532  11744 012356  ACRSS   DEF CROSS
0533*
0534  11745 011746  MES23   DEF **+1
0535  11746 025123          ASC 11,*SYSTEM STORED ON DISC
```

```
0537  12000                ORG 12000B
0538*
0539* THIS PAGE CONTAINS THE ROUTINES NECESSARY FOR
0540*     CURRENT PAGE LINKING AS WELL AS CODE WHICH
0541*     HAS OVERFLOWED PRECEDING PAGES
0542*
0543  12000 012001  MES32 DEF *+1
0544  12001 052125         ASC 21,TURN ON DISC PROTECT OVERRIDE - PRESS R
0545*
0546* SDIR COUNTS THE NUMBER OF DIRECTORY ENTRIES
0547*     REQUIRED IN THE SYSTEM, NO DIRECTORY ENTRY IS
0548*     NEEDED IF THE PROGRAM IS EITHER A SYSTEM
0549*     PROGRAM (TYPE=0) OR A LIBRARY ROUTINE (TYPE=6
0550*     OR 7)
0551*
0552  12026 002404  SDIR   CLA,INA
0553  12027 071535         STA LICNT
0554  12030 015332         JSB INIDX      INITIALIZE IDX
0555  12031 015336  SETIX  JSB IDX        SET IDENT ADDRESSES
0556  12032 026044         JMP TRMCN       TERMINATE DIRECTORY COUNT
0557  12033 161135         LDA ID6,I
0558  12034 010242         AND M177
0559  12035 002003         SZA,RSS        IS TYPE SYSTEM?
0560  12036 026031         JMP SETIX        YES- IGNORE
0561  12037 040214         ADA N6
0562  12040 002021         SSA,RSS        IS TYPE LIBRARY?
0563  12041 026031         JMP SETIX        YES- IGNORE
0564  12042 035535         ISZ LICNT      NEITHER - BUMP COUNT
0565  12043 026031         JMP SETIX      GO TO NEXT IDENT
0566*
0567  12044 060351  TRMCN  LDA TR200      SAVE CODE DESTROYED BY PLIST BUF
0568  12045 065072         LDB PLAD       IT IS OUTPUT TO TR 200,SECT 0
0569  12046 114127         JSB ADOUT,I     (RESTORED IN INT PROCESSING)
0570*
0571  12047 060126         LDA AFWAP      GET ADDRESS OF LOADING SECTION
0572  12050 070112         STA TRANS      RESET TRANSFER ADDRESS TO LOAD
0573  12051 124126         JMP AFWAP,I    LOAD ABSOLUTE SYSTEM



0575*
0576* BUILD SUBSYSTEM TABLE
0577*
0578  12052 000000  BSST   NOP
0579  12053 061125         LDA DSKAD      SAVE CURRENT DISC ADDRESS
0580  12054 072156         STA SVDSK
0581  12055 061147         LDA DCNT       SAVE CURRENT DBUF POINTER
0582  12056 072157         STA SVCNT
0583  12057 061543         LDA PPREL      SAVE STARTING ADDRESS OF TABLE
0584  12060 070405         STA ASST         FOR BASE PAGE LOCATION
0585  12061 002400         CLA            SET # SUBSYSTEMS TO ZERO
0586  12062 072160         STA #SS
0587  12063 016146         JSB OUTWD      OUTPUT ZERO AS 1ST WORD IN TABLE
0588*
0589  12064 014462         JSB SPACE      OUTPUT PROMPT MESSAGE
0590  12065 060267         LDA P22
```

```
0591  12066 066161          LDB MES63
0592  12067 114102          JSB DRKEY,I
0593  12070 014462          JSB SPACE
0594*
0595  12071 065066  NEWRC   LDB ALBUF
0596  12072 014451          JSB BUFCL       CLEAR INPUT BUFFER
0597  12073 060274          LDA P128
0598  12074 065066          LDB ALBUF
0599  12075 114104          JSB DRTTY,I     INPUT NAME
0600  12076 002003          SZA,RSS
0601  12077 026073          JMP *-4
0602  12100 072155          STA #CHAR       SAVE # CHARACTERS INPUT
0603*
0604  12101 114122          JSB AGINI,I     INITIALIZE BUFFER SCAN
0605  12102 060220          LDA N2
0606  12103 114120          JSB AGETN,I
0607  12104 052154          CPA SLSHE       CHECK FOR /E
0608  12105 126052          JMP BSST,I      END OF INPUT -- RETURN
0609*
0610  12106 062155          LDA #CHAR       MORE THAN 4 CHARS INPUT?
0611  12107 003004          CMA,INA
0612  12110 040226          ADA P4
0613  12111 002020          SSA
0614  12112 026143          JMP SSERR         YES- ERROR
0615*
0616  12113 015371          JSB INLST
0617  12114 015375  SNSCN   JSB LSTX        WAS NAME DECLARED AS AN ENTRY?
0618  12115 026143          JMP SSERR         NO- ERROR
0619  12116 161137          LDA LST1,I
0620  12117 051570          CPA LBUF        COMPARE 1ST TWO CHARS
0621  12120 002001          RSS
0622  12121 026114          JMP SNSCN        NO- TRY NEXT ENTRY
0623  12122 161140          LDA LST2,I
0624  12123 051571          CPA LBUF+1      COMPARE 2ND TWO CHARS
0625  12124 002001          RSS
0626  12125 026114          JMP SNSCN        NO- TRY NEXT ENTRY
0627  12126 161141          LDA LST3,I      MAKE SURE 5TH CHAR IS A BLANK
0628  12127 010244          AND M7400
0629  12130 050336          CPA UBLNK
0630  12131 002001          RSS
0631  12132 026114          JMP SNSCN
0632*
0633  12133 036160          ISZ #SS         INCREMENT # SUBSYSTEM ENTRIES
0634  12134 061570          LDA LBUF
0635  12135 016146          JSB OUTWD       OUTPUT WORD 1 - CHAR 1,2
0636  12136 061571          LDA LBUF+1
0637  12137 016146          JSB OUTWD       OUTPUT WORD 2 - CHAR 3,4
0638  12140 002400          CLA
0639  12141 016146          JSB OUTWD       OUTPUT WORD 3 - ZERO
0640  12142 026071          JMP NEWRC       GET NEW RECORD
0641*
0642  12143 062153  SSERR   LDA ERR9
0643  12144 014466          JSB ERROR       UNDEFINED/ILLEGAL SUBSYSTEM NAME
0644  12145 026071          JMP NEWRC
0645*
0646  12146 000000  OUTWD   NOP
```

```
0647  12147 006404          CLB,INB        OUTPUT 1 WORD
0648  12150 114135          JSB ALABD,I
0649  12151 035543          ISZ PPREL      BUMP PROG RELOC BASE
0650  12152 126146          JMP OUTWD,I
0651*
0652  12153 030071  ERR9    ASC 1,09
0653  12154 027505  SLSHE   ASC 1,/E
0654  12155 000000  #CHAR   NOP
0655  12156 000000  SVDSK   NOP
0656  12157 000000  SVCNT   NOP
0657  12160 000000  #SS     NOP
0658  12161 012162  ME863   DEF *+1
0659  12162 042516          ASC 11,ENTER SUBSYSTEM NAMES
0660*
0661* UPDATE SUBSYSTEM COUNT
0662*
0663  12175 000000  UPDC    NOP
0001  12176 062160          LDA #SS        ANY SUBSYSTEMS ENTERED?
0002  12177 002003          SZA,RSS
0003  12200 126175          JMP UPDC,I      NO- BYPASS UPDATE
0004*
0005  12201 061125          LDA DSKAD      SAVE CURRENT DISC ADDRESS
0006  12202 072155          STA #CHAR
0007  12203 062156          LDA SVDSK
0008  12204 065067          LDB ADBUF
0009  12205 014544          JSB DISKI      READ SECTOR WITH SS COUNT
0010  12206 065067          LDB ADBUF      COMPUTE OFFSET IN DBUF
0011  12207 044274          ADB P128
0012  12210 046157          ADB SVCNT
0013  12211 062160          LDA #SS        UPDATE # SUBSYSTEM ENTRIES
0014  12212 170001          STA B,I
0015  12213 062156          LDA SVDSK
0016  12214 065067          LDB ADBUF
0017  12215 014550          JSB DISKO      OUTPUT UPDATED SECTOR
0018  12216 062155          LDA #CHAR
0019  12217 071125          STA DSKAD      RESTORE CURRENT DISC ADDRESS
0020  12220 126175          JMP UPDC,I
```

```
0023  12221 000000  ALINK NOP
0024  12222 061312        LDA L01       CURRENT PAGE
0025  12223 002020        SSA             LINKS POSSIBLE?
0026  12224 126221        JMP ALINK,I       NO- RETURN
0027  12225 002002        SZA               YES - PASS 3?
0028  12226 026301        JMP PS3             YES - SET LOW LINK POINTER
0029*
0030  12227 061311        LDA L001      PASS 1 - FOR LOW LINK
0031  12230 002002        SZA             AREA GUESS?
0032  12231 026271        JMP PS2         NO - PASS 2 FOR FIXED LOW LNK
0033*
0034  12232 161135        LDA ID6,I     CURRENT PAGE LINKS REQUESTED
0035  12233 001200        RAL
0036  12234 002020        SSA
0037  12235 026267        JMP NCPL        NO - SET L01 < 0 FOR NO CPL
0038*
0039  12236 061062        LDA TPREL     GET ADDRESS
0040  12237 070001        STA B           OF LAST WORD
0041  12240 030316        IOR M1777       OF PAGE
0042*
0043  12241 007004        CMB,INB       COMPUTE #
0044  12242 006004        INB             WORDS
0045  12243 044000        ADB A         REMAINING
0046  12244 076445        STB TMP2      ON PAGE
0047*
0048  12245 061177        LDA PLGTH     COMPUTE # WORDS
0049  12246 001265        RAL,CLE,ERA     OF PROGRAM
0050  12247 007004        CMB,INB         THAT FALL
0051  12250 044000        ADB A           BEYOND THIS
0052  12251 076444        STB TMP1        PAGE
0053*
0054  12252 006020        SSB           IF PROGRAM FITS ON ONE PAGE
0055  12253 026267        JMP NCPL        CURRENT PAGE LINKS ARE NOT
0056  12254 006003        SZB,RSS         REQUIRED.
0057  12255 026267        JMP NCPL
0058*
0059  12256 062445        LDA TMP2      COMPUTE MINIMUM OF:
0060  12257 001100        ARS             HALF # WORDS OF PROGRAM
0061  12260 007004        CMB,INB         ON CURRENT PAGE -OR-
0062  12261 044000        ADB A           # WORDS OF PROGRAM
0063  12262 006021        SSB,RSS         ON NEXT PAGE
0064*
0065  12263 062444        LDA TMP1      DIVIDE THIS
0066  12264 001121        ARS,ARS         MINIMUM BY FOUR
0067  12265 002002        SZA           IF NON-ZERO,USE AS SIZE OF LOW
0068  12266 026272        JMP PS1         LINK AREA, IF EQUAL TO ZERO,
0069*
0070  12267 003400  NCPL  CCA           SET L01 < TO INDICATE
0071  12270 126453        JMP LOADA,I     NO CURRENT PAGE LINKS
0072*
0073  12271 061314  PS2   LDA LWH2      PASS 2 - FIXED LENGTH OF LOW LNK
0074  12272 065062  PS1   LDB TPREL     SET NEW:
0075  12273 076444        STB TMP1        LOW LIMIT OF LOW LINK AREA
0076  12274 044000        ADB A             (ADD LENGTH OF LINK AREA)
0077  12275 075062        STB TPREL     LOAD ADDRESS
0078  12276 076450        STB CPMAX     UPPER LIMIT OF LOW LINK AREA
```

```
0079   12277 003004          CMA,INA        SAVE NEGATIVE LENGTH OF LINK
0080   12300 071314          STA LWH2         AREA FOR OUTPUT TO DISC (BLIN0
0081*
0082   12301 062444  PS3     LDA TMP1       SET UP POINTERS
0083   12302 072447          STA CPLOC        FOR LOW LINK AREA
0084   12303 072446          STA CPBAS
0085   12304 010303          AND M0760
0086   12305 072451          STA CPADD      GET CURRENT PAGE ADDRESS
0087   12306 126221          JMP ALINK,I
```

```
0089  12307 000000  DLINK NOP
0090  12310 162454        LDA BPSCM,I    WAS CALL FROM
0091  12311 052452        CPA CLINK        DBLBPROCESSOR?
0092  12312 002001        RSS
0093  12313 126307        JMP DLINK,I      NO - USE BASE PAGE LINK
0094  12314 061312        LDA L01        USING CURRENT
0095  12315 002020        SSA            PAGE LINKS?
0096  12316 126307        JMP DLINK,I      NO - USE BASE PAGE LINK
0097*
0098  12317 062451  SETL  LDA CPADD      GET LINK PAGE
0099  12320 051175        CPA PAGNO      SAME AS INSTRUCTION PAGE?
0100  12321 002001        RSS
0101  12322 026356        JMP CROSS      NO - PAGE BOUNDARY CROSSING
0102*
0103  12323 061100        LDA PLST       SET TO
0104  12324 072415        STA BLINK        BOTTOM OF LINK AREA
0105  12325 066446        LDB CPBAS      GET NUMBER OF CURRENT PAGE LINKS
0106  12326 007004        CMB,INB          ALLOCATED SO FAR.  IF ZERO,
0107  12327 046447        ADB CPLOC        JUMP TO ALLOCATE.
0108  12330 007007        CMB,INB,SZB,RSS
0109  12331 026340        JMP DLIN1
0110  12332 162415  DLIN2 LDA BLINK,I    IF NOT ZERO, SCAN CURRENT PAGE
0111  12333 051176        CPA OPRND        LINKS PRESENT FOR POSS. MATCH
0112  12334 026340        JMP DLIN1        MATCH FOUND- RETURN ADDRESS
0113  12335 036415        ISZ BLINK        MATCH NOT FOUND- CONTINUE
0114  12336 006006        INB,SZB           SEARCHING THROUGH LINKS
0115  12337 026332        JMP DLIN2
0116*
0117  12340 062415  DLIN1 LDA BLINK      MAKE SURE CORE BUFFER DOESN'T
0118  12341 051103        CPA PIDNT        OVERFLOW INTO ID TABLE
0119  12342 126307        JMP DLINK,I      YES : USE BP LINKS
0120  12343 062447        LDA CPLOC      GET NEXT AVAIL LINK LOC
0121  12344 040001        ADA B            ADD OFFSET IN CASE NOT NEW LIN
0122  12345 052450        CPA CPMAX      OVERFLOW LINK AREA?
0123  12346 126307        JMP DLINK,I     YES- MUST USE BP LINK
0124  12347 006003        SZB,RSS        IF NEW LINK, INCREMENT THE
0125  12350 036447        ISZ CPLOC        LOCATION COUNTER
0126  12351 066176        LDB OPRND      GET THE LINK WORD
0127  12352 176415        STB BLINK,I    SET IN THE LINK AREA
0128  12353 166454        LDB BPSCM,I
0129  12354 006004        INB
0130  12355 124001        JMP B,I        RETURN TO DBL PROCESSING
0131*
0132  12356 061312  CROSS LDA L01        PASS 3?
0133  12357 002002        SZA
0134  12360 026371        JMP BLIN3       YES-ASSIGN UPPR LINK OR RETURN
0135*
0136  12361 061311        LDA L001       PASS 1?
0137  12362 002003        SZA,RSS
0138  12363 026407        JMP FLLA         YES-FIX LOW LINK AREA
0139*
0140  12364 061314        LDA LWH2       IF LENGTH OF LOW LINK AREA IS
0141  12365 002002        SZA              GREATER THAN ZERO,
0142  12366 016432        JSB BLIN0        OUTPUT IT TO DISC
0143  12367 002404  BLIN2 CLA,INA        SET FOR PASS 3
0144  12370 126453        JMP LOADA,I      AND GO
```

```
0145  12371 002001  BLIN3 RSS            SKIP THE 1ST TIME THROUGH, THEN
0146  12372 126307        JMP DLINK,I     RSS CHANGED TO NOP - (BP LINKS)
0147*
0148  12373 061177        LDA PLGTH       COMPUTE
0149  12374 001265        RAL,CLE,ERA
0150  12375 041062        ADA TPREL
0151  12376 072447        STA CPLOC
0152  12377 072446        STA CPBAS         LOW BOUND OF UPPER LINK AREA
0153  12400 010303        AND M0760
0154  12401 072451        STA CPADD         CURRENT PAGE ADDRESS
0155  12402 040306        ADA M2000
0156  12403 072450        STA CPMAX         UPPER BOUND OF UPPER LINK AREA
0157  12404 002400        CLA             CLEAR BLIN3, SO SUBSEQUENT PAGE
0158  12405 072371        STA BLIN3         CROSSINGS WILL USE BP LINKS
0159  12406 026317        JMP SETL        RETURN TO ALLOCATE CP LINK
0160*
0161  12407 062444  FLLA  LDA TMP1        COMPUTE # LINKS ACTUALLY USED IN
0162  12410 003004        CMA,INA           LOW LINK AREA, & SAVE FOR
0163  12411 042447        ADA CPLOC         FIXED LENGTH.
0164  12412 071314        STA LWH2
0165  12413 002404        CLA,INA         SET FOR PASS 2
0166  12414 126455        JMP LOADY,I       AND GO



0168  12415 000000  BLINK NOP
0169  12416 035313        ISZ LWH1        IF FROM END RECORD BEFORE PASS 3
0170  12417 126415        JMP BLINK,I       NO UPPER LINK AREA, RETURN
0171*
0172  12420 062447        LDA CPLOC       COMPUTE NEGATIVE #
0173  12421 003004        CMA,INA           OF WRODS IN UPPER LINK AREA,
0174  12422 041062        ADA TPREL         (TPREL IS AT END OF CURRENT
0175  12423 071314        STA LWH2           PROGRAM)
0176  12424 002003        SZA,RSS         IF LENGTH = 0, DON'T
0177  12425 126415        JMP BLINK,I       OUTPUT
0178  12426 016432        JSB BLIN0       OTHERWISE) OUTPUT UPPER LINK2
0179*
0180  12427 062447        LDA CPLOC       ADJUST NEW RELOCATION ADDRESS TO
0181  12430 071062        STA TPREL         BEYOND UPPER LINK AREA
0182  12431 126415        JMP BLINK,I



0184  12432 000000  BLIN0 NOP
0185  12433 061100        LDA PLST        SET POINTER TO START
0186  12434 072221        STA ALINK         OF LINK BUFFER
0187*
0188  12435 162221  BLIN1 LDA ALINK,I     GET THE LINK WORD
0189  12436 006404        CLB,INB         OUTPUT LINK TO
0190  12437 114135        JSB ALABD,I       DISC BUFFER
0191  12440 036221        ISZ ALINK       INCREMENT LINK BUFFER POINTER
0192  12441 035314        ISZ LWH2        LWH2 = - # WORDS IN BUFFER
0193  12442 026435        JMP BLIN1       MORE TO OUTPUT
0194  12443 126432        JMP BLIN0,I     DONE
0195  12444 000000  TMP1  NOP             LOW BOUND OF LOW LINK AREA
0196  12445 000000  TMP2  NOP             TEMPORARY
0197  12446 000000  CPBAS NOP             LOW BOUND OF CURRENT PAGE BUFFER
```

```
0198  12447 000000  CPLOC NOP           CURRENT POINTER IN CP BUFFER
0199  12450 000000  CPMAX NOP           UPPER BND OF CURRENT PAGE BUFFER
0200  12451 000000  CPADD NOP           CURRENT PAGE ADDRESS OF BUFFER
0201  12452 011104  CLINK DEF LINKC
0202  12453 010144  LOADA DEF LOADX
0203  12454 011143  BPSCM DEF BPSCN
0204  12455 010127  LOADY DEF LD3
0205  12456 000000  EXTAB BSS 128       EXEC MODULE TABLE - MAX 64 ENTRI
```

```
0207*
0208*  IMPORTANT:  ANY NON-RELEASABLE DSGEN CODE MUST
0209*              PRECEDE THIS LOCATION
0210*
0211  12656          LST   BSS 0          LOADER SYMBOL TABLE
```

```
0213  16000                ORG 16000B
0214*
0215  16000 000000  OUT3   NOP
0216  16001 062204         LDA ASCSY      IF INITIALIZING, SET UP LABEL
0217  16002 106501         LIB 1            FOR UNLABELLED, OTHERWISE,
0218  16003 006020         SSB              SET UP LABEL FOR SYSTEM
0219  16004 062205         LDA ASTY
0220  16005 073402         STA SYST
0221  16006 062206         LDA ASCLB
0222  16007 006020         SSB
0223  16010 002400         CLA
0224  16011 073377         STA LBDO
0225*
0226  16012 067376         LDB ALBL       COMPUTE CHECKSUM
0227  16013 014511         JSB CHKSM        OF SYSTEM LABEL
0228  16014 073436         STA CHSUM
0229*
0230  16015 060443         LDA DTYPE      IF 7900/7901 DISC,
0231  16016 002003         SZA,RSS          INITIALLY CLEAR ALL
0232  16017 016033         JSB CLEAR        ATTENTION BITS
0233  16020 016226         JSB PRTCT      INITIALIZE DISC
0234*
0235  16021 002400         CLA            DISC ADDRESS: 0,0
0236  16022 067376         LDB ALBL
0237  16023 114127         JSB ADOUT,I    OUTPUT DISC LABEL
0238*
0239  16024 060223         LDA P1         *
0240  16025 064145         LDB ABOOT      * OUTPUT
0241  16026 114127         JSB ADOUT,I    *   BOOTSTRAP
0242  16027 060224         LDA P2         *     TO
0243  16030 064146         LDB ABOOT+1    *   SECTORS 1,2 OF TRK# 0
0244  16031 114127         JSB ADOUT,I    *
0245*
0246  16032 126000         JMP OUT3,I
0247*
0248* THIS ROUTINE IS USED TO CLEAR ATTENTION BITS
0249*   ON HP 7900/7901 DRIVES
0250*
0251  16033 000000  CLEAR  NOP
0252  16034 160173         LDA ADVAD,I    SAVE DVADR
0253  16035 071326         STA TBUF
0254  16036 062106         LDA STRT1      SET DVADR TO START OF DISC CON-
0255  16037 170173         STA ADVAD,I      FIGURABLE INSTRUCTIONS
0256  16040 066107         LDB END1       "B" = END OF CONFIG. INSTR
0257  16041 114172         JSB ACNFG,I    CONFIGURE DISC I/O FOR CLEAR
0258  16042 061326         LDA TBUF
0259  16043 170173         STA ADVAD,I    RESTORE ORIGINAL DVADR
0260*
0261  16044 060216         LDA N4
0262  16045 071327         STA TBUF+1     SET COUNTER FOR 4 DRIVES
0263  16046 002400         CLA            ISSUE SEEK & STATUS COMMAND TO
0264  16047 016054         JSB S,S         ALL 4 DRIVES TO CLEAR ANY SEEK
0265  16050 002004         INA             CHECK STATUS BITS AND ANY
0266  16051 035327         ISZ TBUF+1      ATTENTION BITS
0267  16052 026047         JMP *-3
0268  16053 126033         JMP CLEAR,I    RETURN TO OUT3
```

```
0269*
0270  16054 000000  S,S   NOP
0271  16055 006400        CLB             B=0 FOR TRACK #, HEAD #
0272  16056 106600        OTB 0
0273  16057 103700        STC 0,C         OUTPUT TRACK #
0274*
0275  16060 106701        CLC 1
0276  16061 030341        IOR SEEKX
0277  16062 102601        OTA 1
0278  16063 103701        STC 1,C         OUTPUT SEEK + DRIVE #
0279  16064 102300        SFS 0           WAIT FOR DATA CHANNEL
0280  16065 026064        JMP *-1
0281*
0282  16066 106600        OTB 0
0283  16067 103700        STC 0,C         OUTPUT HEAD #
0284  16070 102301        SFS 1
0285  16071 026070        JMP *-1
0286*
0287  16072 020341        XOR SEEKX       STRIP SEEK BITS FOR STATUS BITS
0288  16073 016075        JSB ST79        ISSUE STATUS COMMAND
0289  16074 126054        JMP S,S,I
0290*
0291  16075 000000  ST79  NOP
0292  16076 103700        STC 0,C
0293  16077 106701        CLC 1
0294  16100 102601        OTA 1
0295  16101 103701        STC 1,C         ISSUE STATUS COMMAND
0296  16102 102300        SFS 0
0297  16103 026102        JMP *-1
0298  16104 106500        LIB 0
0299  16105 126075        JMP ST79,I
0300*
0301  16106 016054  STRT1 DEF S,S         START OF DISC I/O CONFIG. INSTR.
0302  16107 016107  END1  DEF *           END   OF DISC I/O CONFIG. INSTR.
0303*
0304* THIS ROUTINE IS USED TO COMPUTE THE DRIVE # (DRV#)
0305*   AND HEAD MASK (HDMSK) FOR THE GIVEN DISC SUBCHNL
0306*   THIS DEFINES WHERE THE DISC OUTPUT IS TO GO.
0307*   IN ADDITION, IF A DISC OTHER THAN THE 7900 IS
0308*   USED, NECESSARY INSTRUCTIONS & DISC COMMANDS ARE
0309*   ALTERED.
0310*
0311  16110 000000  SETSC NOP
0312  16111 071117        STA SYSCH       SET SYSTEM SUBCHANNEL
0313*
0314  16112 064443        LDB DTYPE
0315  16113 054223        CPB P1          IS THIS AN ISS DISC?
0316  16114 016146        JSB ISSIO        YES - CHANGE NECESSARY VALUES
0317*
0318  16115 006400        CLB
0319  16116 061117        LDA SYSCH
0320  16117 100400        DIV NSBPD
0321  16121 071121        STA DRV#        DRV#= SUBCH / #SUBCH/DRIVE
0322  16122 070367        STA SVDRV       SAVE IN CASE OF DISC INPUT
0323  16123 170203        STA ABDRV,I     SET DRIVE# TO BOOTSTRAP
0324  16124 074000        STB A
```

```
0325  16125 100200          MPY NHDPS
0326  16127 064446          LDB NHDPS      BACKWARD SUBCHANNEL ADDRESSING?
0327  16130 006021          SSB,RSS
0328  16131 026141          JMP SET1        NO= NO COMPUTING NECESSARY
0329  16132 071122          STA HDMSK       YES= SAVE REMAINDER
0330  16133 003400          CCA              COMPUTE HD # CORRESPONDING
0331  16134 040445          ADA NSBPD         TO SUBCHANNEL 0
0332  16135 100200          MPY NHDPS
0333  16137 003004          CMA,INA
0334  16140 041122          ADA HDMSK        ADD ORIGINAL OFFSET
0335  16141 001727  SET1    ALF,ALF        SHIFT HD MSK TO UPPER 8 BITS
0336  16142 071122          STA HDMSK
0337  16143 070366          STA SVHDM
0338  16144 170204          STA ABHDM,I    SET HEADMASK IN BOOTSTRAP
0339  16145 126110          JMP SETSC,I
0340*
0341  16146 000000  ISSIO   NOP
0342  16147 006400          CLB
0343  16150 074653          STB ALTSK
0344  16151 066201          LDB INST       SET UP ALF,ALF INSTRUCTION FOR
0345  16152 074767          STB ALTTR       POSITION,TRACK # OF ALT. TRACK
0346  16153 064340          LDB MSIGN
0347  16154 074342          STB CHCMD      ALTER CHECK DATA CMND
0348  16155 066176          LDB ISSWR      SET
0349  16156 074343          STB INWRT        ALL WRITE COMMANDS
0350  16157 074344          STB IPWRT          TO
0351  16160 074345          STB DWRT         'WRITE DATA'
0352  16161 077465          STB PBSTM      ALTER STATUS MASK IN PRE-BOOT
0353  16162 066177          LDB ISSRD
0354  16163 074346          STB DREAD      ALTER READ CMND
0355  16164 176203          STB RDCMX,I    ALTER READ CMND IN BOOT
0356  16165 066200          LDB ISSRA
0357  16166 074347          STB RACMD      ALTER READ ADDRESS COMMAND
0358  16167 064327          LDB OPWRS+1
0359  16170 074350          STB STATC
0360  16171 176202          STB ASTAT,I
0361  16172 066175          LDB ISSRM
0362  16173 077464          STB PBRDM
0363  16174 126146          JMP ISSIO,I
0364*
0365  16175 070000  ISSRM   OCT 070000
0366  16176 050000  ISSWR   OCT 050000
0367  16177 040000  ISSRD   OCT 040000
0368  16200 060000  ISSRA   OCT 060000
0369  16201 001727  INST    ALF,ALF
0370  16202 015762  ASTAT   DEF STCMD
0371  16203 015764  RDCMX   DEF RDCMD
0372  16204 051531  ASCSY   ASC 1,SY
0373  16205 025131  ASTY    ASC 1,*Y
0374  16206 046102  ASCLB   ASC 1,LB
0375*
0376  16207 066225  INDSK   LDB JMPIN
0377  16210 174163          STB ACHJM,I
0378  16211 016000          JSB OUT3
0379  16212 060223          LDA P1
0380  16213 064145          LDB ABOOT
```

```
0381   16214 014544          JSB DISKI
0382   16215 060224          LDA P2
0383   16216 064146          LDB ABOOT+1
0384   16217 014544          JSB DISKI
0385   16220 102007          HLT 7B
0386   16221 102501          LIA 1
0387   16222 002020          SSA
0388   16223 124125          JMP AGTSC,I
0389   16224 124112          JMP TRANS,I
0390*
0391   16225 124162  JMPIN   JMP AIDSK,I
0392*
0393*
0394   16226 000000  PRTCT   NOP
0395   16227 060370          LDA DSKAB       GET 1ST SYST TRK/SCTR
0396   16230 001727          ALF,ALF
0397   16231 010243          AND M377
0398   16232 040221          ADA N1
0399   16233 070362          STA LODSK       SET LOWER DISC BOUND
0400   16234 072361          STA LODX
0401   16235 160164          LDA AXIN,I
0402   16236 072365          STA TAXIN
0403   16237 062366          LDA LDE12
0404   16240 170164          STA AXIN,I
0405   16241 060443          LDA DTYPE
0406   16242 050223          CPA P1          IS THIS AN ISS DISC?
0407   16243 026340          JMP PTISS        =YES
0408   16244 060444          LDA NSPTK
0409   16245 001700          ALF             CONVERT TO
0410   16246 001222          RAL,RAL           WORDS/HALF TRACK
0411   16247 052371          CPA B3000
0412   16250 026256          JMP PSET
0413   16251 066367          LDB JMPV1
0414   16252 076277          STB PV1
0415   16253 066370          LDB JMPV2
0416   16254 076304          STB PV2
0417   16255 001200          RAL
0418   16256 003004  PSET    CMA,INA
0419   16257 070253          STA N128        STORE NEG #WORDS/TRK
0420   16260 060250          LDA N203
0421   16261 072362          STA ALTRK
0422*
0423   16262 060300          LDA .N128       MOVE 128 WORD SYSTEM LABEL
0424   16263 072322          STA PRTRK         BUFFER TO OUTPUT BUFFER -
0425   16264 063376          LDA ALBL          RIGHT BELOW TWO SECTORS
0426   16265 072364          STA ADDR          OF BOOTSTRAP
0427   16266 066373          LDB APBUF
0428   16267 162364  QLOOP   LDA ADDR,I
0429   16270 170001          STA B,I
0430   16271 036364          ISZ ADDR
0431   16272 006004          INB
0432   16273 036322          ISZ PRTRK
0433   16274 026267          JMP QLOOP
0434*
0435   16275 006400  PLOOP   CLB             SET SCTR# = 0
0436   16276 016322          JSB PRTRK       INIT 1ST HALF TOP TRACK
```

```
0437  16277 064444  PV1    LDB NSPTK      * * JMP PSKP1* FOR LOW DENSITY
0438  16300 005100         BRS
0439  16301 016322         JSB PRTRK      INIT 2ND HALF TOP TRACK
0440  16302 064444  PSKP1  LDB NSPTK
0441  16303 016322         JSB PRTRK      INIT 1ST HALF BOT TRACK
0442  16304 064444  PV2    LDB NSPTK      * *JMP PSKP2* FOR LOW DENSITY
0443  16305 074000         STB A
0444  16306 001100         ARS
0445  16307 044000         ADB A
0446  16310 016322         JSB PRTRK      INIT 2ND HALF BOT TRACK
0447  16311 036362  PRNXT  ISZ ALTRK
0448  16312 026275         JMP PLOOP      GO INIT, NEXT TRACK
0449  16313 060343  PRTXT  LDA INWRT
0450  16314 070345         STA DWRT       RESTORE WRITE COMMAND
0451  16315 062365         LDA TAXIN
0452  16316 170164         STA AXIN,I
0453  16317 060300         LDA .N128
0454  16320 070253         STA N128
0455  16321 126226         JMP PRTCT,I    EXIT
0456*
0457  16322 000000  PRTRK  NOP
0458  16323 062362         LDA ALTRK      LOAD NEG TRK# + 1
0459  16324 003000         CMA
0460  16325 050362         CPA LODSK      BOTTOM OF DISC?
0461  16326 026313         JMP PRTXT       =YES
0462  16327 001727         ALF,ALF        ROTATE TO HI 8 BITS
0463  16330 030001         IOR B          INCLUDE SECTOR#
0464  16331 072363         STA DSKTR
0465  16332 060243  M.V.   LDA M377
0466  16333 070354         STA LSTAC
0467  16334 066373         LDB APBUF
0468  16335 062363         LDA DSKTR
0469  16336 114127         JSB ADOUT,I
0470  16337 126322         JMP PRTRK,I
0471*
0472  16340 064340  PTISS  LDB MSIGN      GET FLAG BIT
0473  16341 102501         LIA 1
0474  16342 002020         SSA            INIT, DISC?
0475  16343 006400         CLB             =YES, DON'T SET FLAG BIT
0476  16344 060275         LDA P202
0477  16345 114166         JSB APTCT,I
0478  16346 102501         LIA 1
0479  16347 002020         SSA
0480  16350 026313         JMP PRTXT
0481  16351 002400         CLA
0482  16352 007400         CCB
0483  16353 074362         STB LODSK
0484  16354 064340         LDB MSIGN
0485  16355 114166         JSB APTCT,I
0486  16356 062361         LDA LODX
0487  16357 070362         STA LODSK
0488  16360 026313         JMP PRTXT
0489*
0490  16361 000000  LODX   NOP
0491  16362 000000  ALTRK  NOP
0492  16363 000000  DSKTR  NOP
```

```
0493   16364 000000   ADDR  NOP
0494   16365 000000   TAxIN NOP
0495   16366 061246   LDE12 LDA ERR12
0496   16367 026302   JMPV1 JMP PSKP1
0497   16370 026311   JMPV2 JMP PRNXT
0498   16371 003000   B3000 OCT 3000
0499   16372 016033   ACLR  DEF CLEAR
0500   16373 015200   APBUF DEF OTBUF
```

```
0502*
0503* THE FOLLOWING TABLE CONTAINS A 6-WORD ENTRY FOR
0504*   EACH TYPE OF DISC SUPPORTED. THE FORMAT OF EACH
0505*   IS AS FOLLOWS:
0506*         WORD 1             : CHAR 1,2
0507*         WORD 2             : CHAR 3,4
0508*         WORD 3 (BITS 15-8): CHAR 5
0509*         WORD 3 (BITS  7-0): DISC TYPE
0510*                              0 = 7900,7901
0511*                              1 = 2883
0512*                              2 = 2870
0513*         WORD 4             : #SECTORS/TRACK
0514*         WORD 5             : # SUBCHANNELS/DRIVE
0515*         WORD 6             : # HEADS/SUBCHANNEL
0516*                              (IF NEGATIVE, SUBCHANNEL ASSIGNMENT IS
0517*                               IN REVERSE ORDER FROM HEAD ASSGNMNT)
0518*
0519  16374 177773  #ENTR DEC -5          FIVE ENTRIES
0520*
0521  16375 016376  ADTBL DEF *+1
0522  16376 033471        ASC 2,7900      "7900"
0523  16400 020000        OCT 20000       DISC TYPE = 0
0524  16401 000030        DEC 24          # SECTORS/TRACK
0525  16402 000002        DEC 2           # SUBCHANNELS/DRIVE
0526  16403 177776        DEC -2          # HEADS/SUBCHANNEL
0527*                   (BACKWARD SUBCHANNEL ADDRESSING)
0528*
0529  16404 031070        ASC 2,2883      "2883"
0530  16406 020001        OCT 20001       DISC TYPE = 1
0531  16407 000027        DEC 23          # SECTORS/TRACK
0532  16410 000004        DEC 4           # SUBCHANNELS/DRIVE
0533  16411 000005        DEC 5           # HEADS/SUBCHANNEL
0534*
0535  16412 031070        ASC 2,2883      "2883B"
0536  16414 041001        OCT 41001       DISC TYPE = 1
0537  16415 000027        DEC 23          # SECTORS/TRACK
0538  16416 000002        DEC 2           # SUBCHANNELS/DRIVE
0539  16417 000012        DEC 10          # HEADS/SUBCHANNEL
0540*
0541  16420 033471        ASC 2,7901      "7901"
0542  16422 020000        OCT 20000       DISC TYPE = 0
0543  16423 000030        DEC 24          # SECTORS/TRACK
0544  16424 000002        DEC 2           # SUBCHANNELS/DRIVE
0545  16425 177776        DEC -2          # HEADS/SUBCHANNEL
0546*                   (BACKWARD SUBCHANNEL ADDRESSING)
0547*
0548  16426 031070        ASC 2,2870      "2870
0549  16430 020002        OCT 20002       DISC TYPE = 2
0550  16431 000014        DEC 12          # SECTORS/TRACK
0551  16432 000002        DEC 2           # SUBCHANNELS/DRIVE
0552  16433 177776        DEC -2          # HEADS/SUBCHANNEL
0553*                   (BACKWARD SUBCHANNEL ADDRESSING)
```

```
0555*
0556* THIS ROUTINE IS USED TO SET NECESSARY PARAMETERS
0557*   ACCORDING TO THE SPECIFIED DISC TYPE. THE DISC
0558*   TYPE TABLE IS SCANNED, AND IF A WATCH IS FOUND,
0559*   THE DISC PARAMETERS WHICH ARE VARIABLE ARE SET
0560*   INTO THE BASE PAGE, BOOTSTRAP, & PRE-BOOT
0561*   PROCESSOR.
0562*
0563  16434 000000  DSCI  NOP
0564  16435 066374       LDB #ENTR
0565  16436 076365       STB TAXIN      SET MAX # ENTRIES COUNTER
0566  16437 066375       LDB ADTBL
0567  16440 076364       STB ADDR       SET STARTING TABLE ADDRESS
0568*
0569  16441 162364  DSCI1 LDA ADDR,I    SCAN DISC TYPE TABLE FOR MATCH
0570  16442 051570       CPA LBUF       (USER INPUT IS IN LBUF)
0571  16443 002001       RSS
0572  16444 026517       JMP DSCI2
0573  16445 036364       ISZ ADDR
0574  16446 162364       LDA ADDR,I
0575  16447 051571       CPA LBUF+1
0576  16450 002001       RSS
0577  16451 026520       JMP DSCI3
0578  16452 036364       ISZ ADDR
0579  16453 162364       LDA ADDR,I
0580  16454 010244       AND M7400
0581  16455 070001       STA B
0582  16456 061572       LDA LBUF+2
0583  16457 010244       AND M7400
0584  16460 002002       SZA
0585  16461 050001       CPA B
0586  16462 002001       RSS
0587  16463 026521       JMP DSCI4
0588*
0589  16464 162364       LDA ADDR,I     MATCH FOUND
0590  16465 010243       AND M377
0591  16466 070443       STA DTYPE      SET DISC TYPE
0592*
0593  16467 036364       ISZ ADDR
0594  16470 162364       LDA ADDR,I
0595  16471 070444       STA NSPTK      SET # SECTORS/TRACK IN BASE PAGE
0596  16472 170200       STA A#SCT,I      AND IN BOOTSTRAP
0597*
0598  16473 003004       CMA,INA
0599  16474 070450       STA MSPTK      SET NEG # SECT/TRACK IN BASE PG
0600  16475 170202       STA A#STN,I      AND IN BOOTSTRAP
0601*
0602  16476 036364       ISZ ADDR
0603  16477 162364       LDA ADDR,I
0604  16500 070445       STA NSBPD      SET # SUBCH/DRIVE IN BASE PAGE
0605  16501 073574       STA PBSB         AND IN PRE-BOOT PROCESSOR
0606*
0607  16502 036364       ISZ ADDR
0608  16503 162364       LDA ADDR,I
0609  16504 070446       STA NHDPS      SET # HEAD/SUBCH IN BASE PAGE
0610  16505 073575       STA PBHD         AND IN PRE-BOOT PROCESSOR
```

```
0611*
0612   16506 002020          SSA             FORCE # HEADS/SUBCHANNEL POSITIV
0613   16507 003004          CMA,INA
0614   16510 100200          MPY NSPTK
0615   16512 070447          STA NSPCY       SET # SECTORS/CYLINDER IN BASE
0616   16513 040221          ADA N1
0617   16514 170201          STA A#SPC,I     SET # SECT/CYL - 1 IN BOOTSTRAP
0618   16515 036434          ISZ DSCI
0619   16516 126434          JMP DSCI,I      P+2 RETURN - DISC TYPE FOUND,SET
0620*
0621   16517 036364  DSCI2   ISZ ADDR
0622   16520 036364  DSCI3   ISZ ADDR
0623   16521 062364  DSCI4   LDA ADDR
0624   16522 040226          ADA P4
0625   16523 072364          STA ADDR        INCREMENT TO NEXT ENTRY
0626*
0627   16524 036365          ISZ TAXIN       TRIED ALL ENTRIES?
0628   16525 026441          JMP DSCI1        NO - TRY NEXT ONE
0629   16526 126434          JMP DSCI,I       YES- P+1 RETURN, DISC NOT FOUND
```

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0631*
0632* THE FOLLOWING 128 WORDS ARE USED TO CONTAIN THE
0633*   SYSTEM LABEL SECTOR. THIS SECTOR CONTAINS BOTH
0634*   DISC LABEL INFORMATION AND PRE-BOOT PROCESSOR
0635*   CODE. IT IS WRITTEN ONTO TRACK 0, SECTOR 0 OF
0636*   THE DISC, AND READ INTO MEMORY BY THE CORE-
0637*   RESIDENT BOOTSTRAP LOADER.  WHEN THE PRE-BOOT
0638*   PROCESSOR RECEIVES CONTROL, IT LOADS IN THE DISC
0639*   RESIDENT BOOTSTRAP (TRACK 0,SECTORS 1&2) AND
0640*   TRANSFERS CONTROL TO IT.
0641*
0642  17376                 ORG DBUF+12000B-1
0643*
0644  17376 017377  ALBL    DEF *+1
0645  17377 046102  LBDO    ASC 2,LBDO
0646  17401 000000  LCODE   BSS 1
0647  17402 051531  SYST    ASC 3,SYSTEM
0648*
0649  17405 102077          HLT 77B         HLT7  HLT 77B          (2017)
0650  17406 107700          CLC 0,C         BACK  CLC 0,C          (2020)
0651  17407 102501          LIA 1                 LIA 1            (2021)
0652  17410 012046          OCT 012046            AND ,77          (2022)
0653  17411 072300          OCT 072300            STA SUBCH        (2023)
0654  17412 006400          CLB                   CLB              (2024)
0655  17413 100400          OCT 100400            DIV              (2025)
0656  17414 002206          OCT 002206      END   DEF PBSB         (2026)
0001  17415 072302          OCT 072302            STA DRV#         (2027)
0002  17416 074000          STB A                 STB A            (2030)
0003  17417 100200          OCT 100200            MPY              (2031)
0004  17420 002207          OCT 002207            DEF PBHD         (2032)
0005  17421 066207          OCT 066207            LDB PBHD         (2033)
0006  17422 006021          SSB,RSS               SSB,RSS          (2034)
0007  17423 026121          OCT 026121            JMP CONT         (2035)
0008  17424 072301          OCT 072301            STA HDMSK        (2036)
0009  17425 003400          CCA                   CCA              (2037)
0010  17426 042206          OCT 042206            ADA PBSB         (2040)
0011  17427 100200          OCT 100200            MPY              (2041)
0012  17430 002207          OCT 002207            DEF PBHD         (2042)
0013  17431 003004          CMA,INA               CMA,INA          (2043)
0014  17432 042301          OCT 042301            ADA HDMSK        (2044)
0015  17433 026121          OCT 026121            JMP CONT         (2045)
0016  17434 000077          OCT 77          ,77   OCT 77           (2046)
0017  17435 177400          OCT 177400      N256  DEC -256         (2047)
0018*
0019  17436 000000  CHSUM   BSS 1
0020*
0021  17437 000000  PBCHN   NOP             CHAN  NOP              (2051)
0022  17440 000000  PBDMA   NOP             DMA   NOP              (2052)
0023  17441 115400          OCT 115400      MEM   OCT 115400       (2053)
0024  17442 030000          OCT 030000      SEEK  OCT 030000       (2054)
0025  17443 002100          OCT 2100        BEGN  DEF PREB         (2055)
0026  17444 072051          OCT 072051      CNFG  STA CHAN         (2056)
0027  17445 066055          OCT 066055            LDB BEGN         (2057)
0028  17446 056026          OCT 056026            CPB END          (2060)
0029  17447 026017          OCT 026017            JMP HLT7         (2061)
0030  17450 160001          LDA B,I               LDA B,I          (2062)
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0031  17451 002021          SSA,RSS             SSA,RSS          (2063)
0032  17452 026073          OCT 026073          JMP NEXT         (2064)
0033  17453 012075          OCT 012075          AND MSK1         (2065)
0034  17454 002002          SZA                 SZA              (2066)
0035  17455 026073          OCT 026073          JMP NEXT         (2067)
0036  17456 160001          LDA B,I             LDA B,I          (2070)
0037  17457 042051          OCT 042051          ADA CHAN         (2071)
0038  17460 170001          STA B,I             STA B,I          (2072)
0039  17461 006004          INB             NEXT INB             (2073)
0040  17462 026060          OCT 026060          JMP CNFG+2       (2074)
0041  17463 070036          OCT 70036       MSK1 OCT 70036       (2075)
0042  17464 010000  PBRDM    OCT 10000       RDM  BSS 1           (2076)
0043  17465 020000  PBSTM    OCT 20000       STM  BSS 1           (2077)
0044  17466 000000          NOP             PREB NOP             (2100)
0045  17467 102106          STF 6               STF 6            (2101)
0046  17470 062100          OCT 062100          LDA PREB         (2102)
0047  17471 002003          SZA,RSS             SZA,RSS          (2103)
0048  17472 026057          OCT 026057          JMP CNFG+1       (2104)
0049  17473 160000          LDA A,I             LDA A,I          (2105)
0050  17474 072052          OCT 072052          STA DMA          (2106)
0051  17475 012046          OCT 012046          AND ,77          (2107)
0052  17476 026056          OCT 026056          JMP CNFG         (2110)
0053*
0054  17477 000400          OCT 400
0055  17500 000000          NOP
0056  17501 000312          OCT 312
0057*
0058  17502 015772          OCT 15772       BHDM OCT 15772       (2114)
0059  17503 015773          OCT 15773       BCHN OCT 15773       (2115)
0060  17504 015775          OCT 15775       BSUB OCT 15775       (2116)
0061  17505 015776          OCT 15776       BDRV OCT 15776       (2117)
0062  17506 015400          OCT 15400       BOOT OCT 15400       (2120)
0063  17507 001727          ALF,ALF         CONT ALF,ALF         (2121)
0064  17510 072301          OCT 072301          STA HDMSK        (2122)
0065  17511 062302          OCT 062302          LDA DRV#         (2123)
0066  17512 032054          OCT 032054          IOR SEEK         (2124)
0067  17513 006400  PBC1     CLB                 CLB              (2125)
0068  17514 106600          OTB 0               OTB 0            (2126)
0069  17515 103700          STC 0,C             STC 0,C          (2127)
0070  17516 016201          OCT 016201          JSB CC           (2130)
0071  17517 066301          OCT 066301          LDB HDMSK        (2131)
0072  17520 006004          INB                 INB              (2132)
0073  17521 102300          SFS 0               SFS 0            (2133)
0074  17522 026133          OCT 026133          JMP *-1          (2134)
0075  17523 106600          OTB 0               OTB 0            (2135)
0076  17524 103700          STC 0,C             STC 0,C          (2136)
0077  17525 066052          OCT 066052          LDB DMA          (2137)
0078  17526 106606          OTB 6               OTB 6            (2140)
0079  17527 066053          OCT 066053          LDB MEM          (2141)
0080  17530 106602          OTB 2               OTB 2            (2142)
0081  17531 102702          STC 2               STC 2            (2143)
0082  17532 066047          OCT 066047          LDB N256         (2144)
0083  17533 106602          OTB 2               OTB 2            (2145)
0084  17534 022076          OCT 022076          XOR PDM          (2146)
0085  17535 103700          STC 0,C             STC 0,C          (2147)
0086  17536 103706          STC 6,C             STC 6,C          (2150)
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0087  17537 016201          OCT 016201          JSB CC          (2151)
0088  17540 102301          SFS 1               SFS 1           (2152)
0089  17541 026152          OCT 026152          JMP *-1         (2153)
0090  17542 102106          STF 6               STF 6           (2154)
0091  17543 103700          STC 0,C             STC 0,C         (2155)
0092  17544 022077          OCT 022077          XOR STM         (2156)
0093  17545 016201          OCT 016201          JSB CC          (2157)
0094  17546 102300          SFS 0               SFS 0           (2160)
0095  17547 026160          OCT 026160          JMP *-1         (2161)
0096  17550 102500          LIA 0               LIA 0           (2162)
0097  17551 001200          RAL                 RAL             (2163)
0098  17552 002020          SSA                 SSA             (2164)
0099  17553 026020          OCT 026020          JMP BACK        (2165)
0100  17554 001310          RAR,SLA             RAR,SLA         (2166)
0101  17555 102011          HLT 11B             HLT 11B         (2167)
0102  17556 062301          OCT 062301          LDA HDMSK       (2170)
0103  17557 172114          OCT 172114          STA BHDM,I      (2171)
0104  17560 062302          OCT 062302          LDA DRV#        (2172)
0105  17561 172117          OCT 172117          STA BDRV,I      (2173)
0106  17562 062300          OCT 062300          LDA SUBCH       (2174)
0107  17563 172116          OCT 172116          STA BSUB,I      (2175)
0108  17564 062051          OCT 062051          LDA CHAN        (2176)
0109  17565 172115          OCT 172115          STA BCHN,I      (2177)
0110  17566 126120          OCT 126120          JMP BOOT,I      (2200)
0111  17567 000000          NOP           CC    NOP             (2201)
0112  17570 106701          CLC 1               CLC 1           (2202)
0113  17571 102601          OTA 1               OTA 1           (2203)
0114  17572 103701          STC 1,C             STC 1,C         (2204)
0115  17573 126201  PBC2    OCT 126201          JMP CC,I        (2205)
0116  17574 000000  PBSB    NOP           PBSB  BSS 1           (2206)
0117  17575 000000  PBHD    NOP           PBHD  BSS 1           (2207)
0118*
0119  17576 052502          ASC 1,UB
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0121  14000                ORG 14000B
0122*
0123  14000 000000 DSCHN  NOP
0124  14001 062070         LDA P19
0125  14002 066074         LDB ME840
0126  14003 114123         JSB AREPL,I    INPUT DISC SUBCHNL?
0127  14004 002404         CLA,INA
0128  14005 116071         JSB ADCON,I    CONVERT TO OCTAL
0129  14006 026001         JMP *+5         =NO INPUT = REPEAT QUESTION
0130  14007 051117         CPA SYSCH      INPUT SUBCHNL = SYSTEM SUBCHNL?
0131  14010 026001         JMP *+7         =YES, INVALID RESPONSE
0132  14011 006400         CLB
0133  14012 100400         DIV NSBPD
0134  14014 070365         STA INDRV      COMPUTE DRIVE #
0135  14015 074000         STB A
0136  14016 100200         MPY NHDPS
0137  14020 064446         LDB NHDPS      BACKWARD SUBCHANNEL ADDRESSING?
0138  14021 006021         SSB,RSS
0139  14022 026032         JMP D1           NO= NO COMPUTING NECESSARY
0140  14023 070364         STA INHDM        YES= SAVE REMAINDER
0141  14024 003400         CCA               COMPUTE HD # CORRESPONDING TO
0142  14025 040445         ADA NSBPD          SUBCHANNEL 0
0143  14026 100200         MPY NHDPS
0144  14030 003004         CMA,INA
0145  14031 040364         ADA INHDM            ADD ORIGINAL OFFSET
0146  14032 001727 D1      ALF,ALF        SHIFT HD MSK TO UPPER 8 BITS
0147  14033 070364         STA INHDM      COMPUTE HEAD MASK
0148  14034 060106         LDA LWAM       GET LWA MEM, SET BY DRIVERS
0149  14035 012065         AND B70K       ISOLATE CORE SIZE
0150  14036 032066         IOR B6000      SET FOR PAGE 0N6000
0151  14037 072064         STA DRPAG      SAVE NEW DRIVER PAGE
0152  14040 042067         ADA B110
0153  14041 070107         STA DRMAG      SET AS DRIVER ENTRY ADDRESS
0154  14042 040221         ADA N1
0155  14043 070106         STA LWAM       SET NEW LWA MEM,
0156  14044 062255         LDA ADIBF      GET INTERNAL BFR ADDRESS
0157  14045 010316         AND M1777      ISOLATE RELATIVE ADDRESS
0158  14046 032064         IOR DRPAG      INCLUDE PAGE MASK
0159  14047 072255         STA ADIBF
0160  14050 062256         LDA DIEND      GET DIBUF END ADDRESS
0161  14051 010316         AND M1777      ISOLATE RELATIVE ADDRESS
0162  14052 032064         IOR DRPAG      INCLUDE PAGE MASK
0163  14053 072256         STA DIEND
0164  14054 066072         LDB DRORG      GET DRIVER START ADDRESS
0165  14055 160001 DRAGN   LDA B,I        MOVE WORD
0166  14056 172064         STA DRPAG,I      TO NEW PAGE
0167  14057 036064         ISZ DRPAG
0168  14060 056073         CPB DREND      END OF DRIVER
0169  14061 126000         JMP DSCHN,I     =YES
0170  14062 006004         INB
0171  14063 026055         JMP DRAGN      GO RELOCATE NEXT WORD
0172  14064 000000 DRPAG   NOP
0173*
0174  14065 070000 B70K    OCT 070000
0175  14066 006000 B6000   OCT 6000
0176  14067 000110 B110    OCT 110
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0177  14070 000023  P19   DEC 19
0178*
0179  14071 003323  ADCON DEF DOCON
0180  14072 014000  DRORG OCT 14000
0181  14073 014262  DREND DEF DIBUF
0182*
0183  14074 014075  MES40 DEF *+1
0184  14075 044516       ASC 10,INPUT DISC SUBCHNL?
0185*
0186*
0187  14110              ORG 14110B
0188*
0189  14110 000000  DRDSC NOP
0190  14111 076246       STB AUBUF     SAVE DSGEN BUFFER ADDRESS
0191  14112 044274       ADB P128
0192  14113 076247       STB AUEND
0193  14114 166110       LDB DRDSC,I   GET REQUEST CODE
0194  14115 036110       ISZ DRDSC     INCREMENT RETURN ADDRESS
0195  14116 006002       SZB           REQUEST FOR READ?
0196  14117 026150       JMP DRIGN      =NO, IGNORE REQUEST
0197  14120 064363       LDB DEOF      GET DISC EOF FLAG
0198  14121 006003       SZB,RSS       IS THIS FIRST CALL?
0199  14122 026153       JMP DINIT      =YES, GO INITIALIZE
0200  14123 066250       LDB DPNTR     GET CURRENT DISC BFR POINTER
0201  14124 056256       CPB DIEND     END OF BUFFER?
0202  14125 016176  DRNXT JSB NXSCT     =YES, GET NEXT SECTOR
0203  14126 160001       LDA B,I       GET CURRENT RECORD LENGTH
0204  14127 002003       SZA,RSS       ZERO?
0205  14130 026125       JMP DRNXT      =YES, GO GET NEXT SECTOR
0206  14131 001727       ALF,ALF       ROTATE TO LO 8 BITS
0207  14132 003004       CMA,INA
0208  14133 072251       STA DRECL     SET RECORD WORD COUNTER
0209  14134 062246  DLOOP LDA AUBUF
0210  14135 052247       CPA AUEND     END OF REQ. BUFFER?
0211  14136 026147       JMP DRIGN-1    =YES, RETURN
0212  14137 160001       LDA B,I       GET NEXT WORD
0213  14140 172246       STA AUBUF,I     AND STORE
0214  14141 036246       ISZ AUBUF     INCREMENT DSGEN BUFFER POINTER
0215  14142 006004       INB           INCREMENT DISC BUFFER POINTER
0216  14143 056256       CPB DIEND     END OF BUFFER?
0217  14144 016176       JSB NXSCT      =YES, GET NEXT SECTOR
0218  14145 036251       ISZ DRECL     INCREMENT WORD COUNTER
0219  14146 026134       JMP DLOOP     GO TRANSFER NEXT WORD
0220  14147 076250       STB DPNTR     SAVE CURRENT BUFFER POINTER
0221  14150 036110  DRIGN ISZ DRDSC     INCREMENT
0222  14151 036110       ISZ DRDSC       TO NORMAL RETURN
0223  14152 126110       JMP DRDSC,I     AND EXIT
0224*
0225  14153 002400  DINIT CLA
0226  14154 016222       JSB DSCIN     READ TRK 0, SCTR 0
0227  14155 062257       LDA SY        *
0228  14156 052265       CPA DIBUF+3   *
0229  14157 066266       LDB DIBUF+4   * LABEL
0230  14160 056260       CPB SY+1      *  =
0231  14161 062267       LDA DIBUF+5   * SYSTEM?
0232  14162 052261       CPA SY+2      *
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0233  14163 026172         JMP DRSYS      =YES
0234  14164 002400         CLA
0235  14165 040302  DRSET   ADA M400       INCREMENT 1 TRACK
0236  14166 066362         LDB DIBUF+64   GET DISC EOF TRK/SCTR
0237  14167 074363         STB DEOF       SET DISC EOF TRK/SCTR
0238  14170 016222         JSB DSCIN      READ 1ST SECTOR
0239  14171 026126         JMP DRNXT+1    GO PROCESS 1ST RECORD
0240  14172 062362  DRSYS   LDA DIBUF+64   GET ADDRESS OF SYST BFR SCTR
0241  14173 016222         JSB DSCIN      READ SYST BFR SCTR
0242  14174 062252         LDA DICUR
0243  14175 026165         JMP DRSET      GO FINISH SETUP
0244*
0245  14176 000000  NXSCT   NOP
0246  14177 062252         LDA DICUR
0247  14200 001727         ALF,ALF
0248  14201 010243         AND M377       ISOLATE LAST INPUT TRACK#
0249  14202 072254         STA INLAC        AND SET AS LAST TRK ACCESSED
0250  14203 060354         LDA LSTAC      GET LAST TRACK ACCESSED
0251  14204 072253         STA SVLAC        AND SAVE
0252  14205 064365         LDB INDRV      GET INPUT DRIVE#
0253  14206 054367         CPB SVDRV      SAME AS SYSTEM DRIVE#?
0254  14207 072254         STA INLAC      =YES, RESET INPUT LAST ACCESS
0255  14210 062252         LDA DICUR      GET CURRENT DISC ADDRESS
0256  14211 014523         JSB DISKA        AND INCREMENT
0257  14212 050363         CPA DEOF       END=OF=FILE?
0258  14213 026217         JMP DEOFX      =YES
0259  14214 016222         JSB DSCIN      =NO, READ NEXT SECTOR
0260  14215 066255         LDB ADIBF      SET POINTER TO START OF DIBUF
0261  14216 126176         JMP NXSCT,I
0262*
0263  14217 002400  DEOFX   CLA            CLEAR DISC EOF FLAG
0264  14220 070363         STA DEOF         TO ALLOW ANOTHER DISC
0265  14221 126110         JMP DRDSC,I    EXIT TO EOF EXIT
0266*
0267  14222 000000  DSCIN   NOP
0268  14223 072252         STA DICUR      UPDATE CURRENT DISC ADDRESS
0269  14224 066254         LDB INLAC      SET LAST INPUT ACCESS
0270  14225 074354         STB LSTAC        AS LAST TRACK ACCESSED
0271  14226 064364         LDB INHDM
0272  14227 075122         STB HDMSK      SET DISC INPUT HEAD MASK
0273  14230 064365         LDB INDRV
0274  14231 075121         STB DRV#       SET DISC INPUT DRIVE#
0275  14232 066255         LDB ADIBF
0276  14233 014544         JSB DISKI      READ DISC INTO DIBUF
0277  14234 064366         LDB SVHDM
0278  14235 075122         STB HDMSK      RESTORE HEAD MASK
0279  14236 064367         LDB SVDRV
0280  14237 075121         STB DRV#       RESTORE DRIVE#
0281  14240 062253         LDA SVLAC      GET SAVED LAST TRK ACCESSED
0282  14241 054365         CPB INDRV      INPUT DRV# = SYSTEM DRV#?
0283  14242 002001         RSS              =YES, DON'T CHANGE LAST ACCESS
0284  14243 070354         STA LSTAC        =NO, RESET TO SAVED VALUE
0285  14244 066255         LDB ADIBF
0286  14245 126222         JMP DSCIN,I
0287*
0288  14246 000000  AUBUF   NOP
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0289   14247 000000  AUEND NOP
0290   14250 000000  DPNTR NOP
0291   14251 000000  DRECL NOP
0292   14252 000000  DICUR NOP
0293   14253 000000  SVLAC NOP
0294   14254 000313  INLAC DEC 203
0295   14255 014262  ADIBF DEF DIBUF
0296   14256 014462  DIEND DEF DIBUF+128
0297   14257 051531  SY    ASC 3,SYSTEM
0298*
0299   14262 000000  DIBUF BSS 128
0300   14462               ORG *


0302*  BUFFER TO HOLD SYSTEM LABEL SECTOR WHILE OUTPUT-
0303*    TING THREE SECTORS TO INITIALIZE IOMEC/7900
0304*    DISCS

0306   15200               ORG 15200B
0307   15200 000000  OTBUF BSS 128
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0309  15400                ORG 15400B
0310*
0311*  THE FOLLOWING LOADER PERMITS LOADING OF THE RESIDENT PORTIONS
0312*  OF THE DISC MONITOR SYSTEM. THE LOADER IS LOCATED ON SECTOR 2,
0313*  TRACK 0 OF THE SYSTEM DISC.  IT IS GENERATED BY THE SYSTEM
0314*  GENERATOR AND CONSISTS OF:
0315*
0316*  (1) THE INSTRUCTIONS REQUIRED FOR LOADING THE SYSTEM
0317*  (2) THE DISK AND CORE ADDRESSES SPECIFYING LOADING
0318*
0319*
0320*  THE ADDRESSES REQUIRED FOR LOADING ARE THE FOLLOWING:
0321*
0322*  (A) BASE PAGE LINKAGES
0323*     (1) LOW CORE ADDRESS
0324*     (2) HIGH CORE ADDRESS
0325*     (3) DISK ADDRESS OF ABSOLUTE CODE
0326*
0327*  (B) SYSTEM, RT RESIDENT MAIN
0328*     (1) LOW CORE ADDRESS
0329*     (2) HIGH CORE ADDRESS
0330*     (3) DISK ADDRESS OF ABSOLUTE CODE
0331*
0332*
0333*  THE PROGRAM IS ASSUMED TO BE LOADED IN THE 128 WORDS PRECEEDING
0334*  THE PROTECTED LOADER.
0335*
0336  15400 000000  START NOP
0337  15401 067773        LDB DCHAN
0338  15402 077750        STB CHANL
0339  15403 067726        LDB DEFDY
0340  15404 017563        JSB CNFGR      CONFG. BOOTSTRAP I/O INSTR.
0341  15405 063727        LDA ASPBF      GET ADDRS CONTAINING RELOC. PAGE
0342  15406 013754        AND M76K       ISOLATE PAGE
0343  15407 070001        STA B          SAVE RELOCATION PAGE
0344  15410 063725        LDA DVADR
0345  15411 013754        AND M76K
0346  15412 050001        CPA B          BOOTSTRAP ALREADY RELOCATED?
0347  15413 027440        JMP RELBT       =YES
0348  15414 047756        ADB N2KB        =NO, MOVE DOWN 1 PAGE
0349  15415 077747        STB PGMSK
0350  15416 063727        LDA ASPBF
0351  15417 013755        AND B1777
0352  15420 033747        IOR PGMSK
0353  15421 073727        STA ASPBF      RELOCATE SPEC. BFR ADDRS
0354  15422 063724        LDA RELDF
0355  15423 013755       AND B1777
0356  15424 033747        IOR PGMSK
0357  15425 073724        STA RELDF      RELOCATE TRANSFER ADDRESS
0358  15426 063723        LDA DFORG
0359  15427 013755        AND B1777
0360  15430 033747        IOR PGMSK
0361*
0362  15431 167723  MVMOR LDB DFORG,I    *
0363  15432 174000        STB A,I        *
0364  15433 002004        INA            *  RELOCATE
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0365  15434 037723          ISZ DFORG      *
0366  15435 037753          ISZ N,256      *  BOOTSTRAP
0367  15436 027431          JMP MVMOR      *
0368*
0369  15437 127724          JMP RELDF,I    TRANSFER TO RELOCATED BOOTSTRAP
0370*
0371  15440 017601  RELBT    JSB PLOAD      LOAD BASE PAGE
0372  15441 017601           JSB PLOAD     LOAD MAIN SYSTEM
0373  15442 063752           LDA .119       * SIMULATE
0374  15443 073761           STA P,128      *   119-WORD
0375  15444 003004           CMA,INA        *   SECTOR SIZE
0376  15445 073760           STA N,128      *   FOR I/O TABLES
0377  15446 017601           JSB PLOAD      LOAD I/O TABLES
0378  15447 063751           LDA .128       * RESET
0379  15450 073761           STA P,128      *   SECTOR SIZE
0380  15451 003004           CMA,INA        *    TO
0381  15452 073760           STA N,128      *   128 WORDS
0382  15453 017601           JSB PLOAD      LOAD EXEC DOUBLETS
0383*
0384  15454 064120           LDB BEQT#      GET # OF EQUIPMENT
0385  15455 007004           CMB,INB          TABLE ENTRIES AND
0386  15456 077774           STB CNTR         STORE NEGATIVE
0387  15457 064117           LDB BEQTB      GET FWA OF EQUIPMENT TABLE
0388  15460 044055  CNFG1    ADB .2
0389  15461 160001           LDA B,I
0390  15462 044051           ADB .2N
0391  15463 013072           AND M,77
0392  15464 073750           STA CHANL      SAVE I/O CHANNEL#
0393  15465 077400           STB EQADR      SAVE CURRENT EQPMT TABLE ADDRESS
0394  15466 044056           ADB .3
0395  15467 160001           LDA B,I
0396  15470 001727           ALF,ALF
0397  15471 013757           AND M,377
0398  15472 073401           STA EQPCD      SAVE EQPT TYPE CODE
0399  15473 050060           CPA .5          #SYSTEM TELETYPE?
0400  15474 027513           JMP CNFG4        -YES
0401  15475 053767           CPA DISK        #DISC
0402  15476 027504           JMP CNFG3        -YES
0403  15477 067400  CNFG2    LDB EQADR
0404  15500 044066           ADB .17D       INCR TO NEXT EQPMT TABLE ENTRY
0405  15501 037774           ISZ CNTR       CHECKED ALL ENTRIES?
0406  15502 027460           JMP CNFG1       -NO
0407  15503 027536           JMP CNFG7       -YES
0408  15504 044052  CNFG3    ADB .1N        SET NEW DISC I/O CHANNEL
0409  15505 160001           LDA B,I          IN EQT ENTRY
0410  15506 023750           XOR CHANL
0411  15507 033773           IOR DCHAN
0412  15510 170001           STA B,I
0413  15511 063773           LDA DCHAN      SET NEW DISC I/O CHANNEL FOR
0414  15512 073750           STA CHANL        CONFIGURATION ROUTINE
0415  15513 067400  CNFG4    LDB EQADR
0416  15514 160001           LDA B,I
0417  15515 073725           STA DVADR      SAVE DRIVER ENTRY POINT
0418  15516 164000           LDB A,I        GET CONFIGURATION STOP POINT
0419  15517 017563           JSB CNFGR
0420*
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0421   15520 063401          LDA EQPCD      GET EQPMT TYPE CODE
0422   15521 050060          CPA .5          =SYSTEM TELETYPE?
0423   15522 027477          JMP CNFG2       =YES
0424   15523 006004          INB             =NO, MUST BE DISC
0425   15524 160001          LDA B,I
0426   15525 033750          IOR CHANL      CONFIGURE DMA CNTRL WORD
0427   15526 170001          STA B,I          AND STORE
0428   15527 006004          INB
0429   15530 063744          LDA #SPTK      * SET + AND -
0430   15531 170001          STA B,I        *  SECTORS/TRACK
0431   15532 006004          INB            *    IN
0432   15533 003004          CMA,INA        *  DISC DRIVER
0433   15534 170001          STA B,I        *
0434   15535 027477          JMP CNFG2
0435*
0436   15536 060154  CNFG7 LDA BDSCO       *
0437*
0438   15537 001722          ALF,RAL        *
0439   15540 013771          AND M,740      * SET RUN TIME
0440   15541 033773          IOR DCHAN      *   DISC CHANNEL
0441   15542 001727          ALF,ALF        *   IN *DISCO*
0442   15543 001723          ALF,RAR        *
0443   15544 070154          STA BDSCO      *
0444*
0445*
0446   15545 063775          LDA RSYSC
0447   15546 064155          LDB BSYSC
0448   15547 070155          STA BSYSC      SET RUN TIME SYS SUBCHNL
0449   15550 054175          CPB BUDSC
0450   15551 070175          STA BUDSC
0451   15552 006400          CLB
0452   15553 050175          CPA BUDSC      SYS SC = USER SC?
0453   15554 064115          LDB BSYBF       =YES,
0454   15555 074200          STB BDSCL         SET DISCL
0455   15556 047765          ADB .400
0456   15557 074157          STB BUNTS         = SYSTEM NEXT TRK/SCTR
0457   15560 064175          LDB BUDSC
0458   15561 074161          STB BCDSC
0459*
0460   15562 124003          JMP 3B,I       GO START DOS
0461*
0462   15563 000000  CNFGR NOP
0463   15564 057725          CPB DVADR      DONE CONFIGURING THIS DRIVER?
0464   15565 127563          JMP CNFGR,I     =YES
0465   15566 037725          ISZ DVADR       =NO, INCR TO NEXT INSTRUCTION
0466   15567 163725          LDA DVADR,I    LOAD INSTRUCTION
0467   15570 002021          SSA,RSS        *
0468   15571 027564          JMP CNFGR+1    * CHECK IF INSTRUCTION
0469   15572 013770          AND MASK       *   IS I/O
0470   15573 002002          SZA            *   FOR DEVICE (EXCLUDING DMA)
0471   15574 027564          JMP CNFGR+1    *
0472   15575 163725          LDA DVADR,I     =YES,
0473   15576 043750          ADA CHANL         CONFIGURE INSTRUCTION
0474   15577 173725          STA DVADR,I       AND STORE
0475   15600 027564          JMP CNFGR+1
0476*
```

```
0477   15601 000000  PLOAD NOP
0478   15602 167727        LDB SPCAD,I    GET LOW CORE ADDRESS
0479   15603 037727        ISZ SPCAD      INCR CURRENT SPBUF ADDRESS
0480   15604 163727        LDA SPCAD,I    GET HIGH CORE ADDRESS
0481   15605 037727        ISZ SPCAD      INCR CURRENT SPBUF ADDRESS
0482   15606 003304        CMA,CCE,INA    COMPLEMENT, SET DIRECTION BIT
0483   15607 040001        ADA B          SET A = TOTAL WORD COUNT
0484   15610 005225        RBL,ERB        SET DIRECTION BIT IN CORE ADDR
0485   15611 106702        CLC 2
0486   15612 106602        OTB 2          SET MEMORY ADDRESS REGISTER
0487   15613 167727        LDB SPCAD,I    GET DISK ADDRESS OF ABSOLUTE COD
0488   15614 037727        ISZ SPCAD      INCR CURRENT SPBUF ADDRESS
0489*
0490   15615 002021  SLOAD SSA,RSS        SKIP = MORE SECTORS TO LOAD
0491   15616 127601        JMP PLOAD,I    RETURN = THIS SECTION LOADED
0492   15617 043761        ADA P,128      ADJUST FOR NEXT COUNT
0493   15620 073766        STA RECNT      SET REMAINING COUNT
0494   15621 002020        SSA            SKIP = LESS THAN 128 WORDS
0495   15622 002400        CLA
0496   15623 043760        ADA N,128      SET A = CURRENT SECTOR COUNT
0497   15624 102702        STC 2
0498   15625 102602        OTA 2          SET WORD COUNT REGISTER
0499   15626 060001        LDA B          LOAD CURRENT DISK ADRS INTO A,
0500   15627 001767        ALF,CLE,ALF      ROTATE TO LO BITS,
0501   15630 013757        AND M,377        AND ISOLATE TRK#
0502   15631 102600  DSKA  OTA 0          OUTPUT TRK#
0503   15632 103700        STC 0,C          TO DATA CHANNEL
0504   15633 063763        LDA SKCMD      LOAD SEEK COMMAND
0505   15634 033776        IOR BDRV#      INCLUDE DRIVE #
0506   15635 106701        CLC 1
0507   15636 102601        OTA 1          OUTPUT SEEK/ADDRESS CMND
0508   15637 103701        STC 1,C          TO COMMAND CHANNEL
0509   15640 102300        SFS 0          CHECK DATA CHNL FLAG,
0510   15641 027640        JMP *-1          LOOP UNTIL SET
0511   15642 060001        LDA B          LOAD CURRENT DISK ADDRESS INTO A
0512   15643 077400        STB EQADR      SAVE CURRENT DISC ADDRESS
0513   15644 013757        AND M,377        ISOLATE SECTOR#
0514   15645 006401        CLB,RSS        *
0515   15646 006004        INB            * CONVERT
0516   15647 043746        ADA #SPTN      *
0517   15650 002021        SSA,RSS        *   LOGICAL SCTR#
0518   15651 027646        JMP *-3        *
0519   15652 043744        ADA #SPTK      *     TO
0520   15653 005727        BLF,BLF        *
0521   15654 047772        ADB BHMSK      *   PHYSICAL HD/SCTR
0522   15655 030001        IOR B          *
0523   15656 102600        OTA 0          OUTPUT HEAD/SECTOR
0524   15657 103700        STC 0,C          TO DATA CHANNEL
0525   15660 102301        SFS 1          CHECK CMND CHNL FLAG,
0526   15661 027660        JMP *-1          WAIT UNTIL SET
0527   15662 063764        LDA RDCMD      LOAD READ COMMAND
0528   15663 033776        IOR BDRV#      INCLUDE DRIVE#
0529   15664 102601        OTA 1          OUTPUT COMMAND
0530   15665 103700        STC 0,C
0531   15666 106701        CLC 1
0532   15667 103706        STC 6,C        INITIATE DMA
```

```
0533  15670 103701         STC 1,C        INITIATE DATA TRANSFER
0534  15671 102301         SFS 1          CHECK CMND CHNL FLAG,
0535  15672 027671         JMP *-1          WAIT UNTIL SET
0536  15673 017706         JSB BSTAT
0537  15674 063400         LDA EQADR      GET DISC ADDRESS
0538  15675 013757         AND M,377        AND ISOLATE
0539  15676 070001         STA B          SAVE SECTOR#
0540  15677 023400         XOR EQADR      ISOLATE TRACK#
0541  15700 057745         CPB #SPCY      END OF CYLINDER?
0542  15701 067757         LDB M,377       -YES
0543  15702 006004         INB            INCREMENT TO NEXT SECTOR
0544  15703 044000         ADB A          INCR TO NEXT DISC ADDRESS
0545  15704 063766         LDA RECNT      GET REMAINING COUNT
0546  15705 027615         JMP SLOAD      LOAD NEXT CYLINDER
0547*
0548  15706 000000  BSTAT  NOP
0549  15707 103700         STC 0,C
0550  15710 063776         LDA BDRV#
0551  15711 033762         IOR STCMD
0552  15712 106701         CLC 1
0553  15713 102601         OTA 1
0554  15714 103701         STC 1,C
0555  15715 102300         SFS 0
0556  15716 027715         JMP *-1
0557  15717 102500  DSKY   LIA 0
0558  15720 000010         SLA
0559  15721 102031         HLT 31B
0560  15722 127706         JMP BSTAT,I
0561*                                    DATA AREA
0562*
0563  15723 015400  DFORG  DEF START
0564  15724 015440  RELDF  DEF RELBT
0565  15725 015630  DVADR  DEF DSKA-1
0566  15726 015717  DEFDY  DEF DSKY
0567*
0568  15727 015730  ASPBF  DEF *+1
0569  15730 000000         BSS 12
0570  15727          SPCAD  EQU ASPBF
0571*
0572  15744 000027  #SPTK  DEC 23         #SCTRS/TRK
0573  15745 000162  #SPCY  DEC 114        #SCTRS/CLY - 1
0574  15746 177751  #SPTN  DEC -23        NEG #SCTRS/TRK
0575  15747 000000  PGMSK  NOP
0576  15750 000000  CHANL  NOP
0577  15751 000200  .128   DEC 128
0578  15752 000167  .119   DEC 119
0579  15753 177400  N.256  DEC -256
0580  15754 076000  M76K   OCT 76000
0581  15755 001777  B1777  OCT 1777
0582  15756 176000  N2KB   OCT -2000
0583  15757 000377  M.377  OCT 377
0584  15760 177600  N.128  DEC -128
0585  15761 000200  P.128  DEC 128
0586  15762 000000  STCMD  NOP
0587  15763 030000  SKCMD  OCT 030000     SEEK COMMAND
0588  15764 020000  RDCMD  OCT 020000     READ COMMAND
```

```
0589   15765 000400   .400   OCT 400        LOWER HEAD# BIT
0590   15766 000000   RECNT  OCT 0          CURRENT REMAINING COUNT
0591   15767 000031   DISK   OCT 31
0592   15770 070036   MASK   OCT 070036
0593   15771 177740   M.740  OCT 177740
0594*
0595   00053          #      EQU 53B
0596   00045          .6N    EQU #-6
0597   00051          .2N    EQU #-2
0598   00052          .1N    EQU #-1
0599   00055          .2     EQU #+2
0600   00056          .3     EQU #+3
0601   00060          .5     EQU #+5
0602   00066          .17D   EQU #+11
0603   00071          M.37   EQU #+14
0604   00072          M.77   EQU #+15
0605*
0606   00100          *      EQU 100B
0607   00115          BSYBF  EQU *+13
0608   00117          BEQTB  EQU *+15
0609   00120          BEQT#  EQU *+16
0610   00154          BDSCO  EQU *+44
0611   00155          BSYSC  EQU *+45
0612   00157          BUNTS  EQU *+47
0613   00161          BCDSC  EQU *+49
0614   00175          BUDSC  EQU *+61
0615   00200          BDSCL  EQU *+64
0616*
0617   15400          EQADR  EQU START      TWO TEMPORARY STORAGES WRITE
0618   15401          EQPCD  EQU START+1      OVER 1ST 2 WORDS OF BOOTSTRAP
0619*
0620* THE FOLLOWING 4 LOCATIONS ARE SET BY THE CORE
0621*  RESIDENT DOS-M BOOTSTRAP.
0622*
0623   15772                 ORG 15772B
0624   15772 000000   BHMSK  NOP
0625   15773 000000   DCHAN  NOP
0626   15774 000000   CNTR   NOP
0627   15775 000000   RSYSC  NOP
0628   15776 000000   BDRV#  NOP
0629*
0630   15777 177730   END    ABS ASPBF-*
0631*
0632                         END
**  NO ERRORS*
```

```
 #       00595/13 00596/13 00597/13 00598/13 00599/13 00600/13 00601/13
         00602/13 00603/13 00604/13

 #CHAR   00654/11 00602/11 00610/11 00006/12 00018/12

 #ENTR   00519/12 00564/12

 #3PCY   00573/13 00202/01 00541/13

 #SPTK   00572/13 00201/01 00429/13 00519/13

 #SPTN   00574/13 00203/01 00516/13

 #SS     00657/11 00586/11 00633/11 00001/12 00013/12

*$GOPT   00110/03

*$IDCD   00111/03

*$MDBF   00112/03

 $SECT   00008/03 00037/09

*$TEMP   00114/03

 **ORG   ******** 00002/01 00528/02 00580/02 00141/03 00144/03 00186/05
         00187/05 00191/05 00193/05 00154/07 00346/09 00348/09 00537/11
         00213/12 00642/12 00121/13 00187/13 00300/13 00306/13 00309/13
         00623/13

 .       00584/02 00200/01 00586/02 00588/02 00589/02 00591/02 00592/02
         00593/02 00894/02 00002/03 00003/03 00004/03 00005/03 00007/03
         00008/03 00010/03 00011/03 00013/03 00014/03 00015/03 00017/03
         00018/03 00020/03 00022/03 00024/03 00025/03 00026/03 00027/03
         00028/03 00029/03 00031/03 00032/03 00033/03 00034/03 00035/03
         00036/03 00037/03 00038/03 00039/03 00040/03 00041/03 00042/03
         00043/03 00045/03 00046/03 00047/03 00048/03 00049/03 00050/03
         00051/03 00052/03 00053/03 00054/03 00055/03 00056/03 00057/03
         00058/03 00059/03 00060/03 00061/03 00063/03 00064/03 00066/03
         00067/03 00068/03 00069/03 00070/03 00071/03 00072/03 00073/03
         00075/03 00077/03 00078/03 00079/03 00080/03 00082/03 00083/03
         00084/03 00085/03 00086/03 00088/03 00089/03 00091/03 00092/03
         00093/03 00095/03 00097/03 00098/03 00100/03 00102/03 00103/03
         00104/03 00105/03 00107/03 00108/03 00110/03 00111/03 00112/03
         00114/03 00115/03 00116/03 00117/03 00118/03 00119/03 00120/03
         00121/03 00122/03 00123/03 00124/03 00125/03 00126/03 00127/03
         00128/03 00129/03 00130/03 00131/03 00132/03 00133/03 00134/03
         00135/03 00136/03 00137/03 00138/03 00139/03 00140/03

 .119    00578/13 00373/13

 .128    00577/13 00378/13

 .17D    00602/13 00404/13
```

.1N 00598/13 00408/13

.2 00599/13 00388/13

.2N 00597/13 00390/13

.3 00600/13 00394/13

.400 00589/13 00455/13

.5 00601/13 00399/13 00422/13

.6N 00596/13

.FNXT 00063/08 00089/08

.N128 00273/01 00119/05 00083/07 00210/09 00392/11 00509/11 00423/12
00453/12

. 00606/13 00607/13 00608/13 00609/13 00610/13 00611/13 00612/13
00613/13 00614/13 00615/13

A 00134/01 00089/02 00389/02 00007/04 00014/04 00531/05 00537/05
00558/05 00350/06 00351/06 00355/06 00435/06 00438/06 00421/07
00505/07 00513/07 00118/08 00141/08 00171/08 00179/08 00216/08
00456/08 00536/08 00539/08 00242/09 00046/10 00068/10 00110/10
00377/10 00465/10 00035/11 00045/12 00051/12 00062/12 00076/12
00324/12 00443/12 00445/12 00002/13 00049/13 00135/13 00363/13
00418/13 00544/13

A#SCT 00201/01 00596/12

A#SPC 00202/01 00617/12

A#STN 00203/01 00600/12

AALNK 00528/11 00041/10

AALOC 00171/01 00270/10 00015/11

ABCNT 00263/02 00246/11 00247/11

ABDRV 00204/01 00323/12

ABERR 00142/07 00137/07

ABHDM 00205/01 00338/12

ABLN3 00530/11 00539/09

ABLNK 00529/11 00117/10

ABOOT 00174/01 00449/11 00240/12 00243/12 00380/12 00383/12

ABPOT 00163/01 00372/07 00519/07 00185/08 00328/08 00364/08 00388/08
00441/11

ABSID 00322/09 00355/08 00378/08

ABSST 00144/09 00425/07

ACHJM 00188/01 00377/12

ACHNL 00198/01 00224/03

ACLNK 00526/02 00523/02 00259/08

*ACLR 00499/12

ACLRT 00164/01 00522/07 00188/08 00367/08 00417/08

ACNFG 00195/01 00423/03 00257/12

ACRSS 00532/11 00086/10

ADBUF 00190/02 00427/04 00441/04 00353/07 00395/08 00399/08 00404/08
00463/08 00466/08 00545/08 00327/11 00329/11 00468/11 00473/11
00490/11 00491/11 00501/11 00511/11 00008/12 00010/12 00016/12

ADCHK 00250/02 00493/11

ADCHN 00197/01 00415/03

ADCON 00179/13 00128/13

ADDR 00493/12 00426/12 00428/12 00430/12 00567/12 00569/12 00573/12
00574/12 00578/12 00579/12 00589/12 00593/12 00594/12 00602/12
00603/12 00607/12 00608/12 00621/12 00622/12 00623/12 00625/12

ADDRB 00521/11 00513/11 00515/11

ADFSC 00047/05 00044/05

ADIBF 00295/13 00156/13 00159/13 00260/13 00275/13 00285/13

ADLBL 00249/02 00486/11

ADLNK 00531/11 00014/11

ADOUT 00160/01 00105/02 00591/03 00210/04 00428/04 00373/05 00085/08
00165/08 00433/08 00467/08 00498/08 00209/09 00270/09 00474/11
00502/11 00569/11 00237/12 00241/12 00244/12 00469/12

ADSCI 00123/05 00232/03

ADTBL 00521/12 00566/12

ADVAD 00196/01 00418/03 00421/03 00425/03 00252/12 00255/12 00259/12

AEGT 00347/01 00384/05 00050/07 00558/08

AFWAP 00159/01 00190/06 00571/11 00573/11

AGEND 00168/01 00498/07 00098/08 00310/08 00360/08

AGETA 00152/01 00460/02 00497/04 00006/05 00282/07

AGETN 00153/01 00459/02 00005/05 00606/11

AGETO 00154/01 00495/04 00464/06 00280/07

AGINI 00155/01 00471/04 00462/06 00278/07 00604/11

AGNIO 00151/01 00434/07

AGTSC 00158/01 00388/12

AIBUF 00191/02 00460/03 00459/07 00409/08 00497/08 00192/11 00194/11

AIDSK 00187/01 00428/03 00391/12

AIDSN 00165/01 00384/07 00448/07 00479/07 00029/08 00271/08

AINBD 00136/09 00213/08 00235/08

AINER 00157/01 00463/02

AINPT 00148/01 00441/03

AINT 00353/01 00100/06 00197/06 00570/08

ALABD 00166/01 00082/07 00648/11 00190/12

ALBL 00644/12 00226/12 00236/12 00425/12

ALBUF 00189/02 00502/03 00508/03 00515/03 00548/03 00590/03 00032/04
00047/04 00055/04 00067/04 00076/04 00209/04 00237/04 00378/04
00464/04 00467/04 00218/05 00221/05 00305/05 00395/05 00398/05
00051/06 00054/06 00144/06 00147/06 00382/06 00455/06 00458/06
00268/07 00271/07 00073/11 00358/11 00378/11 00595/11 00598/11

ALCD 00206/01 00213/03

ALINK 00023/12 00528/11 00026/12 00087/12 00186/12 00188/12 00191/12

ALL1 00450/06 00446/06

ALLOC 00431/06 00171/01 00442/06 00451/06 00454/06 00466/06

ALOAD 00161/01 00390/07 00497/07 00097/08 00303/08

ALODS 00152/01 00358/08

ALTRK 00491/12 00421/12 00447/12 00458/12

ALTSK 00003/02 00343/12

ALTTR 00090/02 00345/12

AMAD 00536/02 00471/09 00475/09 00558/09 00562/09 00564/09 00565/09
00567/09 00568/09 00572/09

AME12 00411/11 00020/10 00147/10

AME15 00412/11 00153/10

AMEM5 00195/02 00017/10 00144/10 00258/10

AMEM8 00410/11 00150/10

AMERR 00454/01 00441/01 00443/01

AMLST 00194/02 00469/09 00557/09 00026/10 00156/10 00261/10

AMS17 00180/01 00266/07

AMS32 00181/01 00077/02

AMS36 00182/01 00210/08

ANDBL 00146/01 00203/04

ANOTS 00170/01 00396/07 00536/07 00191/08 00425/08

AOUT3 00190/01 00437/03

AOUTD 00169/01 00481/08 00483/08 00485/08 00487/08 00489/08 00493/08

APARS 00150/01 00327/05

APBC 00192/01 00416/03

APBD 00193/01 00412/03

APBUF 00500/12 00427/12 00467/12

APTCT 00191/01 00484/11 00477/12 00485/12

AREMD 00167/01 00204/06 00426/07 00516/07 00182/08 00311/08 00361/08

AREPL 00156/01 00457/02 00126/13

ARESC 00179/01 00493/07

ASBUF 00176/01 00432/03 00435/03 00451/11

ASCBP 00172/01 00004/11 00008/11 00012/11

ASCEX 00320/01 00066/05 00482/07

ASCLB 00374/12 00221/12

ASCOT 00173/01 00246/09

ASCSB 00319/02 00487/11

ASCSY 00372/12 00216/12

ASCX3 00321/01 00069/05

ASCX4 00322/01 00071/05

ASECT 00414/11 00455/11

ASFLG 00327/09 00270/08 00297/08 00312/08 00323/08

ASJOB 00330/09 00285/08 00289/08 00294/08

ASPBF 00568/13 00176/01 00341/13 00350/13 00353/13 00570/13 00630/13

ASQT 00350/01 00025/06 00564/08

ASST 00345/01 00555/08 00584/11

ASTAT 00370/12 00360/12

ASTSC 00194/01 00301/03 00315/03

ASTY 00373/12 00219/12

ASTYP 00525/06 00444/05 00521/05 00548/05

ASYSB 00413/11 00480/11

ATBUF 00192/02 00037/06 00277/06 00234/11 00242/11

ATMP 00415/11 00446/11 00463/11

AUBUF 00288/13 00190/13 00209/13 00213/13 00214/13

AUEND 00289/13 00192/13 00210/13

AUP 00145/09 00427/07

AXIN 00189/01 00401/12 00404/12 00452/12

B 00135/01 00406/01 00469/01 00498/01 00502/01 00504/01 00506/01
00019/02 00092/02 00096/02 00135/02 00276/03 00341/03 00550/03
00015/04 00025/04 00069/04 00115/04 00218/04 00223/04 00270/05
00474/05 00043/06 00046/06 00137/06 00404/06 00406/06 00407/06
00126/07 00326/07 00417/07 00422/07 00488/07 00492/07 00069/08
00145/08 00148/08 00151/08 00154/08 00157/08 00402/08 00412/08
00518/08 00522/08 00099/09 00115/09 00263/09 00445/09 00451/09
00473/09 00593/09 00005/10 00107/10 00121/10 00132/10 00135/10
00138/10 00141/10 00194/10 00222/10 00225/10 00301/10 00328/10
00334/10 00415/10 00434/10 00441/10 00443/10 00448/10 00106/11
00109/11 00434/11 00456/11 00512/11 00014/12 00040/12 00121/12
00130/12 00429/12 00463/12 00581/12 00585/12 00030/13 00036/13
00038/13 00165/13 00203/13 00212/13 00343/13 00346/13 00389/13
00395/13 00409/13 00412/13 00416/13 00425/13 00427/13 00430/13

00433/13 00483/13 00499/13 00511/13 00522/13 00539/13

•B1000 00298/01

B110 00176/13 00152/13

B1777 00581/13 00351/13 00355/13 00359/13

B3000 00498/12 00411/12

B6000 00175/13 00150/13

B70K 00174/13 00149/13

BACK 00133/06 00140/06

BATCH 00002/03 00015/09

BCDSC 00613/13 00458/13

BDEND 00425/08 00272/08

BDLD 00271/08 00274/08 00277/08 00423/08

BDLD5 00303/08 00287/08 00291/08 00296/08

BDLD8 00324/08 00314/08

BDRV# 00628/13 00204/01 00505/13 00528/13 00550/13

BDSCL 00615/13 00454/13

BDSCO 00610/13 00436/13 00443/13

BEQT# 00609/13 00384/13

BEQTB 00608/13 00387/13

BFLAG 00527/06 00463/05 00507/05

BGBND 00316/09 00239/08 00102/09

BGSPL 00598/09 00588/09

BHMSK 00624/13 00205/01 00521/13

BIDNT 00203/02 00351/02 00454/03 00446/07 00176/09

BIT14 00377/01 00288/05 00509/05 00532/05

BLANK 00304/01 00232/05 00262/05 00281/05 00416/05 00457/05 00497/05
00003/06 00165/06 00246/06 00252/06 00287/06 00296/06 00338/06
00292/07 00571/09 00255/10

BLAST 00316/02 00247/10

BLIN0 00184/12 00142/12 00178/12 00194/12

BLIN1 00188/12 00193/12

•BLIN2 00143/12

BLIN3 00145/12 00530/11 00134/12 00158/12

BLINK 00168/12 00529/11 00104/12 00110/12 00113/12 00117/12 00127/12
00170/12 00177/12 00182/12

BLNKS 00315/02 00276/07 00472/09

BLRET 00252/06 00236/06

BLST 00199/02 00414/02 00458/03 00463/03

BNDHD 00157/10 00131/10

BPAGE 00343/01 00511/08 00439/11

BPOUT 00261/09 00163/01 00268/09 00278/09

BPSCH 00203/12 00090/12 00128/12

BPSCN 00494/10 00237/10 00439/10 00467/10 00470/10 00016/11 00203/12

BPSRC 00234/09 00244/09

BPSYD 00270/09 00282/09

BS1 00413/08 00391/08 00406/08

BSBAD 00553/02 00332/08 00363/08 00365/08 00374/08 00386/08 00416/08
00128/11

BSEND 00382/08 00340/08

BSLD 00339/08 00345/08 00349/08 00353/08 00380/08

BSPAD 00554/02 00330/08 00376/08 00390/08 00116/11

BSSDP 00265/02 00356/10 00117/11

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 DRORG  00180/13 00164/13

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 INSCN  00269/02 00363/10 00396/10

 INST   00369/12 00344/12

 INSTR  00271/02 00419/10 00421/10 00429/10 00451/10

 INT#   00043/03 00574/08

 INTAB  00042/03 00571/08

 INTCH  00529/06 00016/07 00065/07

 INTCN  00564/02 00104/06

 INTEN  00087/07 00023/07

 INTEQ  00030/07 00021/07

 INTER  00027/07 00168/06 00047/07 00063/07 00122/07 00143/07

 INWRT  00310/01 00369/05 00256/07 00390/11 00496/11 00349/12 00449/12

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 IOBUF  00522/06 00429/05 00510/05 00534/05 00566/05

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 IODBS  00089/03 00077/09

 IODLD  00029/08 00033/08 00190/08

 IODMA  00521/06 00428/05 00504/05 00565/05

*IODMD  00123/03

 IODMN  00088/03 00079/09

 IODND  00191/08 00030/08

 IOERR  00418/05 00410/05 00414/05 00426/05

 IOISN  00101/08 00106/08 00110/08 00115/08

 IOLOD  00163/08 00081/08

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IOUNT 00523/06 00430/05 00493/05 00567/05

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IPARS 00317/05 00149/01

IPWRT 00311/01 00374/05 00378/07 00350/12

IRERR 00449/01 00458/01 00512/01 00454/02 00288/04 00013/07 00205/11

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ISSIO 00341/12 00316/12 00363/12

ISSPR 00341/11 00191/01 00394/11

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ISSRD 00367/12 00353/12

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#JBINS 00588/02

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#JFILC 00018/03

#JFILS 00017/03

#JFLSC 00040/03

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JSBIO   00118/05 00113/05

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L2000   00272/01 00110/04 00114/05 00182/06 00436/06 00067/07 00297/07
        00322/07 00215/08 00245/09 00036/11

L6      00268/01 00535/03

L60     00271/01 00340/06 00401/06 00412/06 00045/08 00056/08

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LBBP    00256/02 00338/07 00221/08 00509/08 00104/09 00006/11

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LBMAN   00305/09 00431/07

#LBPSY  00296/09

LBSEC   00314/09 00441/08 00457/08 00458/08 00488/08

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        00044/10 00055/10 00620/11 00624/11 00634/11 00636/11 00570/12
        00575/12 00582/12

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LD7 00087/10 00084/10

LD8 00391/10 00388/10 00474/10

LDE12 00495/12 00403/12

LDRC 00569/03 00555/03

LDRIN 00502/03 00521/03 00053/04 00078/04 00192/04 00220/04 00226/04 00358/04

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LIBAS 00332/09 00480/08 00482/08 00484/08

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LIBRY 00165/11 00522/09 00052/10 00063/10

LIBUT 00298/10 00293/10 00295/10

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LOOPS 00365/11 00373/11

LOOPT 00349/11 00389/11

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LRMAN 00300/09 00350/07

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         00175/12 00192/12

 LWH3    00525/11 00537/09 00545/09 00552/09 00012/10 00019/10

 LWH4    00526/11 00535/09 00548/09 00010/10 00016/10

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 M.740   00593/13 00430/13

 M.77    00604/13 00391/13

*M.V.    00465/12

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*M100    00299/01

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 M1740   00279/01 00413/10 00426/10

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00248/13

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M76K 00580/13 00342/13 00345/13

M77 00237/01 00222/04 00071/08 00335/10

*M7700 00242/01

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MADDR 00261/02 00597/01 00622/01 00087/02

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MAXBX 00342/09 00475/07 00511/07 00515/07 00001/08

MAXC 00207/02 00597/03 00017/04 00019/04 00037/04 00190/04 00216/04
00225/04 00276/06 00290/06 00300/06 00329/06 00360/06

MAXPI 00343/09 00019/08 00169/08 00173/08 00200/08

MAXPX 00338/01 00474/07 00503/07 00507/07 00008/08

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MES15   00184/01 00477/07

MES16   00292/02 00373/03

MES17   00505/06 00188/01

MES18   00173/05 00230/03

MES19   00185/01 00027/08

MES20   00186/01 00265/08

MES22   00294/02 00403/09

MES23   00534/11 00505/11

MES24   00494/06 00210/05

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MES28   00500/06 00047/06 00049/06

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MES30   00175/05 00271/03

MES31   00177/05 00285/03

MES32   00543/11 00181/01

MES33   00102/02 00052/02 00106/02

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 MES61   00180/09 00171/09

 MES63   00658/11 00591/11

 MESS1   00153/05 00244/03

 MESS2   00155/05 00218/03

 MESS3   00157/05 00363/03

 MESS4   00159/05 00381/03

 MESS5   00161/05 00390/03

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 MESS7   00142/05 00523/03

 MESS8   00144/05 00079/05

 MESS9   00145/05 00092/05

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 MS      00037/05 00045/05

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MTUN    00025/05 00017/05

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N.256   00579/13 00366/13

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N256    00244/01 00202/09

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P19 00177/13 00124/13

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PANER   00235/05 00240/05

PAR.E   00558/03 00512/03

PARAD   00217/02 00403/03 00213/05 00222/05 00301/05

PARAM   00208/05 00150/01 00329/05

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PBRDM 00042/13 00362/12

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PLOOP   00435/12 00448/12

PLSCN   00121/10 00126/10

PLST    00201/02 00391/02 00435/02 00464/03 00481/03 00067/04 00301/04
        00103/12 00185/12

PNTR    00404/11 00359/11 00368/11 00369/11 00370/11 00371/11

PPREL   00548/02 00383/05 00013/06 00015/06 00024/06 00086/06 00099/06
        00173/06 00195/06 00199/06 00349/07 00430/07 00435/07 00454/07
        00455/07 00457/07 00499/07 00006/08 00011/08 00166/08 00199/08
        00201/08 00224/08 00234/08 00237/08 00267/08 00281/08 00300/08
        00196/09 00497/09 00113/11 00583/11 00649/11

PRENT   00266/02 00093/10 00146/11

PRNXT   00447/12 00497/12

PRTCT   00394/12 00233/12 00455/12

PRTRK   00457/12 00424/12 00432/12 00436/12 00439/12 00441/12 00446/12
        00470/12

PRTXT   00449/12 00461/12 00480/12 00488/12

PS1     00074/12 00068/12

PS2     00073/12 00032/12

PS3     00082/12 00028/12

PSET    00418/12 00412/12

PSKP1   00440/12 00496/12

PT.DV   00039/05 00024/05

PTDV.   00514/03 00506/03

PTERM   00375/01 00229/05 00405/05 00061/06 00154/06

PTISS   00472/12 00407/12

PTRK    00400/11 00343/11 00360/11 00374/11 00388/11

PTTYP   00139/05 00014/05

PTUN    00023/05 00015/05

PTYPE   00543/02 00493/02 00336/07 00443/07 00017/08 00263/08 00334/08
        00419/08 00378/09 00586/09 00159/10 00182/10 00316/10 00114/11

PV1     00437/12 00414/12

PV2     00442/12 00416/12
```

QLOOP 00428/12 00433/12

RACMD 00314/01 00080/02 00357/12

RANAD 00277/02 00132/02 00168/02 00174/02 00176/02

RBTAD 00182/02 00376/10 00463/10

RCERR 00563/03 00537/03 00545/03 00112/04 00117/04

*RCODE 00124/03

RDCMD 00588/13 00371/12 00527/13

RDCMX 00371/12 00355/12

RECNT 00590/13 00493/13 00545/13

REKEY 00268/02 00361/10 00366/10 00368/10

RELAD 00550/02 00334/07 00241/08 00552/08 00043/10 00105/10 00106/10
00357/10 00358/10 00380/10 00273/11 00274/11

RELBT 00371/13 00347/13 00564/13

RELDF 00564/13 00354/13 00357/13 00369/13

REMDO 00304/11 00167/01 00307/11 00309/11

REPLY 00462/04 00156/01 00208/03 00219/03 00231/03 00245/03 00258/03
00272/03 00286/03 00297/03 00307/03 00322/03 00331/03 00350/03
00364/03 00382/03 00391/03 00400/03 00472/04

REPNA 00160/04 00148/04

RESCN 00397/06 00179/01 00414/06

RETRY 00058/02 00048/02

RIC 00367/01 00533/03 00569/03

*RONBF 00020/03

RPARB 00318/02 00239/11

*RQCNT 00063/03

*RQP1 00066/03

*RQP2 00067/03

*RQP3 00068/03

*RQP4 00069/03

*RQP5 00070/03

*RQP6 00071/03

*RQP7 00072/03

*RQP8 00073/03

*RQRTN 00064/03

RSCTR 00401/11 00355/11 00377/11 00380/11 00382/11

RSS 00037/10 00538/09

RSYSC 00627/13 00446/13

RTGEN 00192/03 00147/01

*RTRK 00105/03

S.S 00270/12 00264/12 00289/12 00301/12

SAVE1 00141/09 00307/08 00397/08 00407/08

SAVE2 00142/09 00309/08 00392/08 00403/08

SAVMT 00358/01 00195/03 00025/05 00043/05 00102/05

SBLBL 00252/02 00488/11

SCCNT 00026/03 00059/09

SCNBP 00230/09 00172/01 00237/09

SCNO 00220/02 00266/03 00058/09

SCNTR 00403/11 00357/11 00365/11 00372/11

SCODE 00211/02 00212/03 00041/09

SCOUT 00016/11 00173/01

SDIR 00552/11 00312/05

SDSKA 00125/05 00484/03 00068/04

SECTR 00294/09 00414/11

SEDMA 00501/05 00470/05

SEEK 00646/01 00561/01 00630/01 00027/02 00067/02 00069/02

SEEKX 00308/01 00651/01 00276/12 00287/12

SEQT 00395/05 00420/05 00017/06

```
 STYPE   00442/05 00439/05
 SUBH5   00062/10 00058/10
 SUBHD   00016/10 00577/09 00580/09
 SV1     00169/10 00011/10 00143/10
 SV2     00170/10 00013/10 00146/10
 SVCNT   00656/11 00582/11 00012/12
 SVDRV   00330/01 00322/12 00253/13 00279/13
 SVDSK   00655/11 00580/11 00007/12 00015/12
 SVHDM   00329/01 00337/12 00277/13
 SVLAC   00293/13 00251/13 00281/13
*SWAP    00100/03
*SXA     00125/03
*SXB     00126/03
*SXEO    00127/03
*SXSUS   00128/03
 SY      00297/13 00227/13 00230/13 00232/13
 SYBAD   00321/09 00002/08 00219/08
 SYEND   00396/07 00385/07
 SYLD    00384/07 00388/07 00394/07
 SYLM    00475/06 00137/09 00138/09
 SYM12   00368/01 00239/04 00247/04 00292/04 00350/04
 SYM34   00369/01 00241/04 00251/04 00294/04
 SYM5    00370/01 00243/04 00255/04 00296/04
 SYMAD   00315/09 00009/08 00238/08
 SYMES   00298/02 00296/02 00297/02
 SYNTS   00028/03 00034/09 00056/09 00494/11
 SYSBF   00007/03 00032/09 00052/09 00470/11 00500/11
 SYSBT   00341/09 00530/08 00029/09 00413/11
```

SYSCD 00039/03 00042/09

SYSCH 00219/02 00046/09 00312/12 00319/12 00130/13

SYSDR 00005/03 00026/09

SYSSC 00025/03 00047/09

SYST 00647/12 00220/12

SYSTY 00003/03 00014/09

T200. 00216/06 00371/05 00210/06

TADBL 00363/01 00592/03 00002/04 00003/04 00004/04 00125/04 00199/04
00200/04 00201/04

TAXIN 00494/12 00402/12 00451/12 00565/12 00627/12

TBCHN 00215/02 00326/03 00337/03 00005/09

TBG 00591/02 00006/09

TBREL 00545/02 00142/06 00174/06 00179/06 00180/06 00181/06 00432/06
00437/06 00068/07 00392/07 00510/07 00517/07 00521/07 00153/08
00176/08 00183/08 00187/08 00317/08 00326/08 00331/08 00362/08
00366/08 00375/08 00197/09 00500/09 00536/09 00546/09 00553/09
00152/10 00011/11 00131/11 00144/11

TBSET 00319/03 00314/03 00345/03

TBSYG 00104/03 00553/08

TBUF 00323/02 00192/02 00466/02 00419/03 00424/03 00431/03 00434/03
00011/05 00242/05 00246/05 00251/05 00039/06 00044/06 00178/06
00193/06 00280/06 00292/06 00302/06 00057/07 00058/07 00099/07
00103/07 00108/07 00174/10 00186/10 00201/10 00204/10 00207/10
00212/10 00216/10 00220/10 00266/10 00278/10 00282/10 00284/10
00285/10 00289/10 00313/10 00319/10 00118/11 00125/11 00129/11
00136/11 00138/11 00142/11 00237/11 00238/11 00240/11 00253/12
00258/12 00262/12 00266/12

TCHAR 00208/02 00595/03 00009/04 00038/04 00341/04 00346/04 00341/06
00356/06 00443/06 00450/06 00042/07 00049/07

TCNT 00322/02 00137/02 00149/02 00008/06 00011/06 00131/06 00139/06
00170/06 00175/06 00112/09 00118/09 00126/09 00264/09 00274/09
00276/09 00437/11 00454/11 00457/11 00459/11

TEMBF 00177/01 00064/08 00066/08 00084/08 00164/08 00204/09 00453/11

TEMBX 00178/01 00075/08

TEMP 00566/02 00398/06 00410/06 00036/08 00043/08 00047/08 00051/08
00052/08 00057/08 00058/08 00072/08 00108/08 00131/08 00156/08
00507/08 00527/08 00528/08 00529/08

*TEMP0 00115/03

*TEMP1 00116/03

*TEMP2 00117/03

*TEMP3 00118/03

*TEMP4 00119/03

*TEMP5 00120/03

TEMPE 00517/06 00292/05 00294/05

TEMPP 00262/02 00228/11 00249/11

TESTR 00528/03 00513/03 00518/03

TIDNT 00204/02 00352/02 00371/02 00388/02 00395/02 00508/02 00157/04
00329/04 00343/04 00114/07 00354/08 00379/08 00368/09 00373/09
00173/10 00276/10 00286/10 00097/11

TLST 00200/02 00415/02 00434/02 00448/02

*TMBEG 00140/03

TMP1 00195/12 00052/12 00065/12 00075/12 00082/12 00161/12

TMP2 00196/12 00046/12 00059/12

TMP3 00527/11 00560/09 00576/09 00385/10 00389/10

TMPIO 00201/09 00262/07 00212/09 00415/11

TPREL 00184/02 00501/07 00150/08 00168/08 00304/08 00319/08 00329/08
00368/08 00371/08 00377/08 00195/09 00498/09 00534/09 00551/09
00042/10 00062/10 00089/10 00103/10 00106/10 00149/10 00232/10
00383/10 00422/10 00430/10 00120/11 00140/11 00148/11 00039/12
00074/12 00077/12 00150/12 00174/12 00181/12

TR200 00316/01 00377/05 00567/11

TR201 00317/01 00113/04 00116/05

TR202 00318/01 00068/02 00255/07

*TRAC# 00133/03

TRANS 00147/01 00136/01 00442/03 00328/05 00572/11 00389/12

TRFLG 00398/11 00346/11 00364/11

TRID3 00501/02 00513/02 00516/02 00519/02 00524/02

TRMCN 00567/11 00556/11

TRNON 00076/02 00059/01

TRYA 00084/04 00561/03 00566/03

TSONE 00037/03 00027/09

TST1 00485/03 00094/04

TSTAB 00247/11 00230/11 00257/11

TSTEL 00272/11 00251/11 00256/11 00287/11 00289/11

TSTIN 00476/03 00525/03

TSTIQ 00049/07 00045/07

TSTN4 00488/03 00109/05

*TYEQT 00137/03

TYTYP 00138/05 00012/05

TYUN 00021/05 00013/05

UASCZ 00510/06 00041/06

UBBP 00257/02 00339/07 00007/11

UBFWA 00092/03 00105/09

UBLNK 00305/01 00139/02 00408/03 00526/05 00553/05 00042/06 00123/06
00113/08 00136/08 00629/11

UBLWA 00093/03 00107/09

UBMAN 00306/09 00458/07 00017/09

UBPSY 00297/09 00424/07

*UBUFR 00036/03

UCHRT 00286/09 00412/07

UDNTS 00027/03 00057/09

UDSC 00214/02 00311/03 00043/09

UFLAG 00528/06 00464/05 00488/05

ULPAR 00317/02 00236/11

UMFWA 00091/03 00018/09 00103/09

UMLWA 00586/02 00021/09

```
 UNERR  00486/05 00481/05 00489/05 00499/05 00502/05 00508/05

 UPAST  00306/01 00485/11

 UPDC   00663/11 00145/09 00003/12 00020/12

*UPLBL  00467/11

 UPLNK  00336/01 00346/07 00106/09

 UPPER  00276/02 00232/09 00235/09 00425/09 00434/09 00444/09

 URBP   00265/02 00337/07 00393/07 00003/11

 URMAN  00301/09 00432/07

 USCHR  00149/07 00132/07

 UTCHR  00148/07 00032/07 00089/07

 UTCNT  00328/09 00442/08 00475/08 00090/09

*VADR   00122/03

 WDCNT  00197/02 00404/01 00408/01 00546/03 00552/03 00024/04 00030/04
        00409/06 00413/06 00323/07 00328/07 00491/08 00494/08 00537/08
        00541/08 00448/09 00453/09 00448/11 00460/11

*XA     00077/03

*XB     00078/03

*XEO    00079/03

*XFLG   00134/03

 XINST  00060/02 00189/01

 XPPPP  00313/09 00093/08 00143/08 00160/08

 XPREL  00337/01 00268/08 00279/08

*XSUSP  00080/03

 YES    00108/02 00467/02

 YESNO  00456/02 00464/02 00471/02 00472/02 00374/03

 ZERO   00222/01 00461/02 00515/02 00316/04 00498/04 00007/05 00260/05
        00273/05 00279/05 00455/05 00495/05 00068/06 00242/06 00286/06
        00295/06 00336/06 00060/07 00283/07

*ZWZW   00136/03
```

```
0001                    ASMB,L,X,C,N,R,B  DOS-III REVISION B MONITOR(DISCM)
** NO ERRORS*
```

```
0001                    ASMB,L,X,C,N,R,B  DOS-III REVISION B MONITOR(DISCM)
0002  00000                    NAM DISCM,0,0
0003                           ENT $CIC,$STRT,$LDEX,EXEC,$DISC,$IDL1
0004                           ENT $MDLD,$RQER,$JLOD,$MOVE
0005                           ENT $ABRT,$WAIT,$ETEQ,$BLOP
0006                           ENT $CIC3,$AVES,$CLER,$OPER
0007                           ENT ERR01,ERR03,ERR04,ERR05
0008                           ENT LUCHK,$DMA,$MBSY,$LDVR
0009                           ENT DRIVR,ERRTN,IO,40
0010                           ENT $TYPE,$SYIO,$RTRN
0011                           ENT DEF04,DEF19,DEF20,DEF31,DEF32,DEF33
0012                           ENT $PCOM
0013                           EXT $TIME
0014                           EXT $EX01,$EX02,$EX03,$EX04,$EX05,$EX06,$EX07
0015                           EXT $EX08,$EX09,$EX10,$EX11,$EX12,$EX13,$EX14
0016                           EXT $EX15,$EX16,$EX17,$EX18,$EX19,$EX20
0017                           EXT $EX21,$EX22
0018                           EXT $EX30,$EX31,$EX32,$EX33
0019                           EXT $EX34,$EX35,$EX36,$EX37
0020                           EXT $EX40,$EX41,$EX42,$EX43,$EX44,$EX45
0021                           EXT $EX46,$EX47,$EX48,$EX49
0022                           EXT $SETP,$PFAL
0023                           ENT $CREA,$PURG,$RNME,SYSCL
0024                           ENT $BUF,$B1,$B2,$B3,$B4,$B5,$B31,$B35,$B64
0025                           ENT $B65,$B66,$B77,$B95,$B125,$B127,$B128
0026                           ENT $CLCK,$IRT,$EOAB
0027                           ENT RQTBL,MDTAB
0028                           ENT $MAVL
0029*
0030*      DISC OPERATING SYSTEM
0031*
0032*          MAJOR SECTIONS:
0033*
0034*               1. CENTRAL INTERRUPT CONTROL PROCESSOR
0035*
0036*               2. EXECUTIVE SUPERVISOR
0037*
0038*               3. I/O SUPERVISOR
0039*
```

```
0041*
0042***** CENTRAL INTERRUPT CONTROL PROCESSOR *****
0043*
0044*     THE PROCESSING OF SYSTEM INTERRUPTS IS CONTROLLED BY DIRECTING
0045*   ALL SOURCES TO THE ENTRY POINT <$CIC>. <$CIC> IS RESPONSIBLE FOR
0046*   SAVING AND RESTORING THE CURRENT STATE OF THE COMPUTER, ANALYZ-
0047*   ING THE SOURCE OF THE INTERRUPT, AND ACTIVATING THE PROCESSOR.
0048*   THIS ROUTINE IS TABLE DRIVEN BY THE INTERRUPT TABLE.
0049*
0050*     WHEN THE PRIVILEGED INTERRUPT I/O CARD IS INCLUDED IN THE
0051*   SYSTEM, THE CLASS OF PRIVILEGED INTERRUPTS ARE PROCESSED
0052*   INDEPENDENTLY OF REGULAR SYSTEM OPERATION.
0053*
0054*   I. INTERRUPT TABLE
0055*
0056*        A TABLE, ORDERED BY HARDWARE INTERRUPT PRIORITY THAT DESIG
0057*       NATES THE ASSOCIATED SOFTWARE PROCESSOR AND THE PROCEDURE
0058*       FOR INITIATING THE PROCESSOR. THE INTERRUPT TABLE IS CONS-
0059*       TRUCTED BY THE SYSTEM GENERATOR ON INFORMATION SUPPLIED BY
0060*       THE USER. THE TABLE CONSISTS OF ONE ENTRY PER INTERRUPT
0061*       SOURCE. THE CONTENTS OF EACH VALID ENTRY IS THE PROCESSOR
0062*       IDENTIFIER.
0063*
0064*        1. SYSTEM - THE ADDRESS OF THE EQT ENTRY IDENTIFYING THE
0065*                    I/O DEVICE.
0066*
0067*        2. ILLEGAL -AN ENTRY CORRESPONDING TO AN ILLEGAL INTERRUPT
0068*                    SOURCE CONTAINS ZERO.
0069*
0070*        THE PROCESSOR IS CALLED DIRECTLY IN RESPONSE TO A STANDARD
0071*        INTERRUPT:
0072*              1. CLOCK
0073*              2. MEMORY PROTECT
0074*              3. I/O DEVICE DRIVER
0075*
0076*  II. INTERRUPT PROCESSING
0077*
0078*        INTERRUPT ACKNOWLEDGEMENT BY THE CPU CAUSES THE INSTRUCT-
0079*       ION IN THE WORD CORRESPONDING TO THE I/O CHANNEL ADDRESS TO
0080*       BE EXECUTED. FOR ALL ACTIVE I/O CHANNELS (PLUS 4-7) CONT-
0081*       ROLLED BY THE SYSTEM, THE INSTRUCTION SET IN EACH INTERRUPT
0082*       LOCATION IS A JSB $CIC,I.
0083*
0084*     FOR ALL ACTIVE I/O CHANNELS CONTROLLED BY PRIVILEGED
0085*   INTERRUPT PROCESSING ROUTINES, THE I/O TRAP CELL IS
0086*   FILLED WITH A SUBROUTINE JUMP DIRECTLY TO THE ENTRY
0087*   POINT OF ITS ASSOCIATED SPECIAL ROUTINE.  (THE ADDRESS
0088*   OF THE PRIVILEGED INTERRUPT ROUTINE IS PROVIDED BY
0089*   THE 'ENT,NAME' OPTION WHEN CONFIGURING THE INTERRUPT
0090*   TABLE DURING SYSTEM GENERATION.
```

```
0092*       $CIC PERFORMS THE FOLLOWING
0093*
0094*          1. DISABLES THE INTERRUPT SYSTEM
0095*
0096*          2. SAVES ALL REGISTERS AND RETURN POINT
0097*
0098*          3. CLEARS THE FLAG OF THE INTERRUPT SOURCE, SET MPTFL,
0099*             TURN ON INTERRUPT SYSTEM FOR PRIVILEGED INTERRUPTS ONLY
0100*             IF THERE IS PRIVILEGED INTERRUPT CARD PRESENT.
0101*
0102*          4. TRANSFERS DIRECTLY TO THE INTERRUPT
0103*             PROCESSOR FOR SOURCES OF:
0104*               4 - POWER FAILURE
0105*               5 - MEMORY PROTECT VIOLATION
0106*             (TBG) - TIME BASE GENERATOR
0107*
0108*          5. FOR OTHER SOURCES, THE INTERRUPT SOURCE CODE IS USED TO
0109*             INDEX THE INTERRUPT TABLE. THE CONTENTS OF THE INTER-
0110*             RUPT ENTRY IS ASSUMED TO BE THE FWA OF THE EQT ENTRY.
0111*             THE ADDRESSES OF THE 17 WORD ENTRY ARE SET IN EQT1-
0112*             EQT17 AND CONTROL TRANSFERRED DIRECTLY TO THE COMPLE-
0113*             TION SECTION ADDRESS.(WORD 2 OF EQT ENTRY)
0114*
0115*          6. ILLEGAL INTERRUPTS ARE IGNORED.
0116*
0117*          7. RETURN FROM I/O DRIVER INDICATES CONTINUATION OR
0118*             COMPLETION OF THE OPERATION BY THE DRIVER OR DEVICE:
0119*
0120*                A. (P+1)- OPERATION COMPLETE. $CIC TRANSFERS DIRECTLY
0121*                          TO THE $IOC COMPLETION SECTION <$IOCM>.
0122*                          CONTROL IS NOT RETURNED TO $CIC.
0123*
0124*                B. (P+2)- CONTINUATION OF THE OPERATION. $CIC RESTORES
0125*                          REGISTERS AND RETURNS TO THE POINT OF
0126*                          INTERRUPTION.
0127*
```

```
0129  00000 000000  $CIC   NOP             ENTRY TO $CIC
0130  00001 103100         CLF 0           DISABLE INTERRUPT SYSTEM
0131  00002 016132R        JSB SEOAB       SAVE E,O,A,B REGISTERS
0132  00003 102504         LIA 4           GET INTERRUPT SOURCE CODE AND
0133  00004 050057         CPA .4         CHECK IF POWER FAIL
0134  00005 002001         RSS
0135  00006 026011R        JMP CIC,1           NO, SO PROCEED WITH PROCESSI
0136  00007 016053X        JSB $PFAL      TRANSFER TO POWER FAIL ROUTINE
0137  00010 026052R        JMP $CIC3       ON RESTART $PFAL MUST RESTORE RE
0138*                              FOR    THE ORIGINAL STATE AT POWER FAIL
0139  00011 072073R CIC,1  STA INTSC
0140  00012 032001R        IOR $CIC+1      CONSTRUCT A CLF XX INSTRUCTION
0141  00013 072014R        STA *+1         AND CLEAR INTERRUPT FLAG.
0142  00014 000000         NOP
0143  00015 016200R        JSB $INT SET MPTFL, TURN ON INTERRUPT SYS, ETC
0144  00016 062000R        LDA $CIC
0145  00017 070242         STA XSUSP      SAVE POINT OF SUSPENSION
0146  00020 066073R        LDB INTSC      GET INTERRUPT SOURCE CODE
0147  00021 054270         CPB DUMMY       CHECK IF PRIVILEGED COMPLETION I
0148  00022 026074R        JMP PCOM            YES, SO GO DO SPECIAL PROCE
0149  00023 054060         CPB .5          CHECK IF MEMORY PROTECT
0150  00024 026064R        JMP CIC,5         GO CHECK FOR PARITY ERROR OR M
0151  00025 054103         CPB TBG         CHECK IF TIME BASE GENERATOR
0152  00026 026260R        JMP $CLCK           YES, EXECUTE CLOCK ROUTINE
0153  00027 044045         ADB N6
0154  00030 074000         STB A
0155  00031 003021         CMA,SSA,RSS    MUST BE BETWEEN 6 AND INT#
0156  00032 026052R        JMP $CIC3
0157  00033 040202         ADA INT#
0158  00034 002020         SSA
0159  00035 026052R        JMP $CIC3
0160  00036 044201         ADB INTAB       CHECK IF INTERRUPT ASSIGNED
0161  00037 160001         LDA B,I
0162  00040 050203         CPA EQT1        EQT ADDRESSES ALREADY SET?
0163  00041 026045R        JMP CIC,2
0164  00042 002003         SZA,RSS
0165  00043 026052R        JMP $CIC3
0166  00044 016057R        JSB SETEQ       SET EQT ENTRIES
0167  00045 062073R CIC,2  LDA INTSC
0168  00046 164204         LDB EQT2,I      CALL DRIVER AT CONTINUATION ADDR
0169  00047 114001         JSB B,I
0170  00050 026365R        JMP $IOCM       (P+1): COMPLETION RETURN
0171  00051 016150R        JSB OPRAT       CHECK IF OPRTR POUNDING ON KYBD
0172  00052 060242  $CIC3  LDA XSUSP
0173  00053 016142R        JSB ADCHK
0174  00054 026061R        JMP CIC,4
0175  00055 060242         LDA XSUSP        SET UP TRANSFER ADDR FOR $IRT
0176  00056 070137         STA XIRT
0177  00057 016122R        JSB $EOAB       RESTORE REGISTERS
0178  00060 026213R        JMP $IRT        RESTORE INTERRUPT SYS,MEM PROT
0179*                                     & RETURN.
0180  00061 016122R CIC,4  JSB $EOAB       RESTORE REGISTERS
0181  00062 016234R SKIP3  JSB $IRT1       NOP IF NO PRIV INT.
0182  00063 124242         JMP XSUSP,I
0183*
0184  00064 102505  CIC,5  LIA 5
```

```
0185  00065 102105         STF 5           REENABLE PARITY ERROR
0186  00066 002021         SSA,RSS       IF 15 SET, PARITY ERROR
0187  00067 026645R        JMP $EXEC           MEMORY PROTECT VIOLATION
0188  00070 001265         RAL,CLE,ERA       SET PARITY ERROR ADDRESS IN A
0189  00071 102005         HLT 5
0190  00072 026052R        JMP $CIC3     RETURN
0191  00073 000000  INTSC  NOP
0192*
0193*      PCOM IS ENTERED EACH TIME A PRIVILEGED COMPLETION
0194*       INTERRUPT OCCURS, IF MORE COMPLETION REQUESTS ARE IN
0195*       QUEUE, THEN ANOTHER INTERRUPT IS FORCED, THE DRIVER
0196*       COMPLETION IS ENTERED AFTER PSEUDO INTERRUPT SELECT
0197*       CODE IS FORMED
0198*
0199  00074 103100  PCOM   CLF 0           TURN OFF INTERRUPTS
0200  00075 062121R         LDA PRLST     SET TOP OF COMPLETION EQT LIST I
0201  00076 066121R         LDB PRLST
0202  00077 047035R         ADB .12       FORM LINK ADDRESS
0203  00100 164001         LDB B,I       GET LINK VALUE
0204  00101 076121R         STB PRLST     STORE AS NEW TOP OF LIST
0205  00102 102100         STF 0         TURN INTERRUPTS BACK ON
0206  00103 006002         SZB           SKIP IF END OF LIST,OTHERWISE
0207  00104 102600  PCOMX  OTA 0                FORCE INTERRUPT
0208  00105 016057R         JSB SETEQ     SET EQT ENTRIES
0209  00106 160205         LDA EQT3,I    FORM AND STORE PSEUDO COMPLETION
0210  00107 010072         AND M77             SELECT CODE ADDRESS
0211  00110 072073R         STA INTSC
0212  00111 026045R         JMP CIC,2     GO TO NORMAL COMPLETION PROCESSO
0213*
0214*      ROUTINE TO ENTER DRIVER INTO PRIVILEGED
0215*      COMPLETION LIST
0216*
0217*      THIS ROUTINE USE EQT13 OF DRIVER EQUIPMENT ENT
0218*      LINK TO NEXT EQT ENTRY IN LIST, A ZERO IN EQT13 INDICATES
0219*      END OF LIST AND PRLST OF ZERO INDICATES NULL LIST
0220*
0221*
0222*      CALLING SEQUENCE
0223*          LDA  EQT1       EQT ADDRESS TO BE ENTERED
0224*          CLF  0          TURN OFF INTERRUPT SYSTEM
0225*          JSB  $PCOM
0226*
0227  00112 000000  $PCOM  NOP
0228  00113 066121R         LDB PRLST       CURRENT TOP OF LISR
0229  00114 072121R         STA PRLST     STORE NEW TOP OF LIST
0230  00115 043035R PC,1    ADA .12       FORM LINK ADDRESS
0231  00116 174000         STB A,I       STORE LINK VALUE
0232  00117 102600  PI,X    OTA 0          FORCE COMPLETION INTERRUPT
0233  00120 126112R         JMP $PCOM,I       RETURN
0234  00121 000000  PRLST  NOP           TOP OF PRIV DRIVER COMPLETION LI
0235*
0236*
0237  00122 000000  $EOAB  NOP
0238  00123 060241         LDA XEO
0239  00124 103101         CLO           RESTORE
0240  00125 000036         SLA,ELA         E,
```

```
0241  00126 102101          STF 1             0,
0242  00127 060237          LDA XA            A, AND
0243  00130 064240          LDB XB            B REGISTERS
0244  00131 126122R         JMP SEOAB,I
0245*
0246  00132 000000  SEOAB   NOP
0247  00133 070237          STA XA          SAVE
0248  00134 074240          STB XB          A,
0249  00135 001520          ERA,ALS         B,
0250  00136 102201          SOC             E,
0251  00137 002004          INA             AND
0252  00140 070241          STA XEO         O REGISTERS
0253  00141 126132R         JMP SEOAB,I     RETURN
0254*
0255  00142 000000  ADCHK   NOP
0256  00143 003000          CMA
0257  00144 040254          ADA UMFWA
0258  00145 002020          SSA
0259  00146 036142R         ISZ ADCHK
0260  00147 126142R         JMP ADCHK,I
0261*
0262  00150 000000  OPRAT   NOP
0263  00151 060260          LDA OPATN
0264  00152 002003          SZA,RSS         OPRTR TRYING TO SAY SOMETHING?
0265  00153 126150R         JMP OPRAT,I      =NO, BACK TO WORK
0266  00154 016167R         JSB LEQT4       GO GET DISC EQT4
0267*                                      ON RETURN:
0268*                                        A = ADDRESS OF EQT4
0269*                                        B = CONTENTS OF EQT4
0270  00155 006020          SSB             IF DISC IS BUSY
0271  00156 126150R         JMP OPRAT,I       DO NOT SERVICE OPR, ATT,
0272  00157 160333          LDA CHARC+1,I   GET SYST, TTY STATUS FROM EQT
0273  00160 064261          LDB OPFLG       GET TTY BUSY FLAG
0274  00161 046635R         ADB SOPER       ADD OP, ATTN, LOCKOUT FLAG
0275  00162 006003          SZB,RSS         SAFE TO LET
0276  00163 002020          SSA               OPRTR IN?
0277  00164 126150R         JMP OPRAT,I      =NO, LET HIM COOL HIS HEELS
0278*
0279  00165 074260          STB OPATN       CLEAR OP, ATTN, FLAG
0280  00166 026155R         JMP STYPE       GO SEE WHAT OPRTR WANTS
0281  00167 000000  LEQT4   NOP
0282  00170 060055          LDA .2          GET DISC LU #
0283  00171 040121          ADA LUTAB         GET ADDRESS OF LU TABLE
0284  00172 160000          LDA A,I             AND
0285  00173 040052          ADA N1                CALCULATE
0286  00174 017016R         JSB MPY17               ADDRESS OF
0287  00175 040056          ADA .3                    EQT4
0288  00176 164000          LDB A,I                     LOAD EQT4,
0289  00177 126167R         JMP LEQT4,I
```

```
0291*
0292***  $INT SETS MPTFL.  IF THE PRIVILEGED INTERRUPT
0293*          CARD IS PRESENT, IT SETS CONTROL TO THE
0294*          SPECIAL I/O CARD, DEFERS DMA COMPLETION
0295*          INTERRUPTS AND RE-ENABLES THE INTERRUPT SYSTEM.
0296*
0297  00200 000000  $INT  NOP
0298  00201 002404        CLA,INA  SET MPTFL TO 1 -- MEM PROT IS OFF.
0299  00202 070271        STA MPTFL
0300  00203 126200R SKIP2 JMP $INT,I    NOP IF PRIV. INT.
0301  00204 102700  STC1  STC 0     CONFIGURED BY CONFG AT SYSTEM STARTU
0302  00205 106706        CLC 6
0303  00206 060165        LDA CUMID     0=2 DMA; 1= 1 DMA
0304  00207 002003        SZA,RSS
0305  00210 106707        CLC 7       DEFER DMA COMPLETION INTERRUPTS
0306  00211 102100        STF 0       RE-ENABLE INT. SYS FOR PRIVILEGED
0307*                                     INTERRUPTS ONLY.
0308  00212 126200R       JMP $INT,I    RETURN
0309*
0310*
0311***  $IRT IS JUMPED TO AFTER COMPLETION OF NORMAL
0312*      SYSTEM PROCESSING FOR PROPER RESTORATION OF
0313*      MEMORY PROTECT AND INTERRUPT SYSTEM.
0314*      IF PRIVILEGED INTERRUPT CARD IS PRESENT, $IRT
0315*      CLEARS CONTROL & SETS FLAG ON THE SPECIAL I/O
0316*      CARD, AND ENABLES THE ACTIVE DMA CHANNELS
0317*      MEMORAY PROTECT IS TURNED ON AND MPTFL IS SET
0318*      TO 0 IF MPCOD HAS THE CODE STC 5,  MEMORAY PROTECT
0319*      IS REMAINED OFF AND MPTFL IS SET TO 1 IF MPCOD IS
0320*      AN NOP (USER WANTS MEMORAY PROTECT OFF).
0321*      A CHECK IS MADE WHETHER THE RETURN ADDRESS IS IN
0322*      SYSTEM OR USER AREA. IF IN SYSTEM AREA, INTERRUPTS
0323*      AND MEMORY PROTECT ARE NOT ENABLED. IF FROM USER
0324*      AREA, INTERRUPTS AND MEMORY PROTECT ARE ENABLED.
0325*      CONTROL IS THEN RETURNED TO LOCATION SPECIFIED
0326*      IN XIRT
0327*
0328*  CALLING SEQUENCE:    LDA < TRANSFER ADDRESS >
0329*                       STA XIRT
0330*                       JMP $IRT
0331*
0332*
0333  00213 103100  $IRT  CLF 0         DISABLE INTERRUPT SYSTEM
0334  00214 016234R SKIP1 JSB $IRT1    NOP IF NO PRIV.INT. CARD
0335  00215 072674R       STA TEMPZ   SAVE A-REG
0336  00216 062230R       LDA MPCOD
0337  00217 053124R       CPA CLC5      IF CLC 5, THEN SET MPTFL TO 1
0338  00220 002405        CLA,INA,RSS
0339  00221 002400        CLA           IF STC 5, THEN SET MPTFL TO 0
0340  00222 070271        STA MPTFL
0341  00223 060137        LDA XIRT     CHECK IF SYSTEM OR USER RETURN
0342  00224 016142R       JSB ADCHK
0343  00225 026232R       JMP IRT10       SYSTEM AREA RETURN
0344  00226 062674R       LDA TEMPZ     RESTORE REG A
0345  00227 102100        STF 0
0346  00230 102705  MPCOD STC 5     THIS IS NOP IF USER REQ. MEM PROT OF
```

```
0347  00231 124137         JMP XIRT,I     XIRT IS THE TRANSFER ADDRESS,
0348  00232 062674R IRT10  LDA TEMPZ     BYPASS TURNING ON INTERRUPTS
0349  00233 124137         JMP XIRT,I
0350*
0351*
0352****** SIRT1 CHECKS THE CONDITION OF DMA CHANNELS
0353*
0354*         IF NON-ZERO (ACTIVE ASSIGNED) AND BIT 15 SET
0355*         TO INDICATE DMA INTERRUPT EXPECTED, THEN
0356*
0357*         STC 6 OR 7 IS EXECUTED TO ENABLE THE DMA
0358*         INTERRUPT
0359*
0360*         THE ROUTINE ALSO CLEARS CONTROL AND SETS FLAG
0361*         ON THE PRIV. INTERRUPT CARD.
0362*
0363  00234 000000  SIRT1 NOP
0364  00235 103100        CLF 0          TURN INTERRUPT OFF.
0365  00236 072674R       STA TEMPZ      SAVE A-REG.
0366  00237 076257R       STB TEMPW
0367  00240 064201        LDB INTAB
0368  00241 160001        LDA B,I         GET DMA 6 INTERRUPT TABLE ENTRY
0369  00242 002020        SSA                  CHECK IF DMA INT. EXPECTED
0370  00243 102706        STC 6                YES, SO ENABLE DMA 6
0371  00244 006004        INB
0372  00245 160001        LDA B,I         GET DMA 7 INTERRUPT TABLE ENTRY
0373  00246 002020        SSA                  CHECK IF DMA INT. EXPECTED
0374  00247 102707        STC 7                YES, SO ENABLE DMA 7
0375  00250 002400  IRT3  CLA
0376  00251 072073R       STA INTSC       CLEAR INTERRUPT SELECT CODE
0377  00252 062674R       LDA TEMPZ      RESTORE A-REGISTER
0378  00253 066257R       LDB TEMPW
0379  00254 106700  CLC1  CLC 0       CLEAR CONTROL &
0380  00255 102100  STF1  STF 0       SET FLAG ON PRIV. INT CARD
0381  00256 126234R       JMP SIRT1,I      RETURN
0382  00257 000000  TEMPW NOP
0383*
```

```
0385*****  <$CLCK> PROCESSES AN INTERRUPT FROM THE TIME BASE GENERATOR
0386*                EVERY 1/10TH OF A SECOND, THE FUNCTION OF $CLCK
0387*                ROUTINE IS TO:
0388*                   1. INCREMENT TIME OF DAY CLOCK
0389*                   2. INCREMENT NEGATIVE COUNT OF PROGRAMS IN TIME
0390*                      LIST AND CALL THE PROCESSORS IF ZERO COUNT,
0391*                      UPON RETURN FROM PROCESSOR, REMOVE FROM LIST.
0392*                      REPEAT FOR ALL PROGRAMS IN LIST.
0393*                   3. THE ROUTINE CHECKS WHETHER ENTRIES ARE IN THE
0394*                      TIME LIST (TMBEG). IF SO, EACH TIME COUNTER IS
0395*                      INCREMENTED. AFTER EACH HAS BEEN INCREMENTED, A
0396*                      CHECK IS MADE BEGINNING FROM THE TOP OF LIST IF
0397*                      TIMEOUT HAS OCCURRED. IF NOT, SUBSEQUENT ENTRIES
0398*                      ARE CHECKED UNTIL END OF LIST OR A TIMEOUT HAS
0399*                      BEEN DETECTED. IF TIMEOUT HAS BEEN DETECTED,
0400*                      REMOVE ENTRY FROM LIST VIA $TIME AND TRANSFER TO
0401*                      THE SPECIFIED TIMEOUT PROCESSOR ADDRESS. UPON
0402*                      RETURN FROM THE TIMEOUT PROCESSOR SUBROUTINE, TH
0403*                      TIMEOUT CHECKING MUST BEGIN AT THE TOP OF THE LI
0404*                      SINCE THE PREVIOUS TIMEOUT PROCESSOR ITSELF MAY
0405*                      HAVE MADE REQUESTS TO $TIME WHICH WOULD CHANGE
0406*                      THE TIMEOUT LIST.
0407*                   4. IF PROGRAM IN EXECUTION MODE (!RUN) THEN
0408*                      INCREMENT EXECUTION CLOCK AND CHECK IF SPECIFIED
0409*                      MAXIMUM EXECTION TIME EXCEEDED.
0410*                      IF TIME EXCEEDED THEN GO TO PRINT MESSAGE WITH
0411*                      VIOLATING ADDRESS PRINTED.
0412*                THIS ROUTINE IS ENTERED AT EACH TBG INTERRUPT
0413*       INCREMENT TIME OF DAY COUNTER
0414   00260 034105  $CLCK ISZ CLOCK+1    INCR 600'S OF MIN COUNTER
0415   00261 026265R       JMP CLK0
0416   00262 062357R       LDA N600       RESET SECONDS COUNTER
0417   00263 070105        STA CLOCK+1
0418   00264 034104        ISZ CLOCK      INCREMENT MINUTES COUNTER
0419*
0420   00265 064336  CLK0  LDB TMBEG      CHECK IF ENTRIES IN TIME LIST
0421   00266 006003        SZB,RSS
0422   00267 026335R       JMP CLK20           NO
0423*
0424*    INCREMENT TIMEOUT PROCESSOR COUNTERS
0425*
0426   00270 006003  CLK00 SZB,RSS        CHECK IF AT END OF LIST
0427   00271 026300R       JMP CLK1            AT END, GO CHECK FOR TIMEOUT
0428   00272 044055        ADB .2
0429   00273 134001        ISZ B,I        INCREMENT COUNT
0430   00274 000000        NOP
0431   00275 006004        INB
0432   00276 164001        LDB B,I        GET NEXT ENTRY IN LIST
0433   00277 026270R       JMP CLK00       GO TO NEXT TIMER
0434*
0435*       CHECK FOR TIMEOUT PROCESSING
0436*
0437   00300 064336  CLK1  LDB TMBEG      CHECK IF ENTRIES IN TIME LIST
0438   00301 006003        SZB,RSS             YES
0439   00302 026335R       JMP CLK20           NO
0440   00303 076360R       STB TEMPX      SAVE ID VALUE ADDRESS
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0441  00304 006004          INB
0442  00305 160001          LDA B,I
0443  00306 002001          RSS
0444  00307 160000          LDA A,I
0445  00310 001275          RAL,CLE,SLA,ERA     RESOLVE INDIRECT LEVELS
0446  00311 026307R         JMP *-2
0447  00312 072361R         STA TEMPX+1    SAVE TIMEOUT PROCESSOR ADDRESS
0448  00313 006004          INB
0449  00314 076362R         STB TEMPX+2    SAVE TIME OUT COUNTER ADDRESS
0450  00315 006004          INB
0451  00316 076363R         STB TEMPX+3    SAVE NEXT LINK VALUE ADDRESS
0452  00317 162363R         LDA TEMPX+3,I  SAVE LINK VALUE FOR NEXT ENTRY
0453  00320 072364R         STA TEMPX+4
0454  00321 162362R         LDA TEMPX+2,I  GET TIME COUNTER VALUE
0455  00322 002002          SZA                 CHECK FOR ZERO COUNT
0456  00323 026333R         JMP CLK10           NOT ZERO SO GO TO NEXT
0457  00324 002400          CLA            REMOVE ENTRY FROM TIME LIST
0458  00325 066360R         LDB TEMPX           B IS ADDRESS OF BUFFER
0459  00326 016001X         JSB $TIME
0460  00327 162360R         LDA TEMPX,I    LOAD A REG WITH ID #
0461  00330 066360R         LDB TEMPX      LOAD B REG WITH BUFFER ADDRESS
0462  00331 116361R         JSB TEMPX+1,I  TRANSFER TO TIMEOUT PROCESSOR
0463  00332 026300R         JMP CLK1       START OVER SINCE LIST MAY BE ALT
0464  00333 066364R CLK10   LDB TEMPX+4    LOAD LINK VALUE FOR NEXT ENTRY
0465  00334 026301R         JMP CLK1+1     GO TO PROCESS NEXT ENTRY
0466*
0467  00335 060106  CLK20   LDA CLEX       CHECK IF PROGRAM EXECUTING
0468  00336 002025          SSA,INA,RSS
0469  00337 034107          ISZ CLEX+1          INCR  600'S OF MIN EXEC, CO
0470  00340 026051R         JMP $CIC3-1
0471  00341 070106          STA CLEX       SAVE NEW MIN COUNTER
0472  00342 062357R         LDA N600
0473  00343 070107          STA CLEX+1     RESET 600'S MIN COUNTER
0474  00344 060106          LDA CLEX       CHECK IF MAXIMUM EXECUTION EXCEE
0475  00345 050110          CPA CXMX
0476  00346 002001          RSS                 EXCEEDED
0477  00347 026051R         JMP $CIC3-1
0478  00350 016554R         JSB $CLER      $CLER ABORTS THE CURRENT PROGRAM
0479  00351 064056          LDB .3              FOR TM PRINTOUT PURPOSES EI
0480  00352 060242          LDA XSUSP                VADR OR XSUP IS USED
0481  00353 016142R         JSB ADCHK
0482  00354 027516R         JMP MD13            GO TO TM PRINT ROUTINE
0483  00355 060242          LDA XSUSP                USE INTERRUPT ADDRESS
0484  00356 027517R         JMP MD13+1          GO TO TM PRINT ROUTINE
0485  00357 176650  N600    DEC -600
0486  00360 000000  TEMPX   BSS 5
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0488***** INPUT/OUTPUT COMPLETION PROCESSOR *****
0489*
0490*     <$IOCM> IS ENTERED DIRECTLY FROM CENTRAL INTERRUPT CONTROL
0491*   PROCESSOR WHEN AN I/O OPERATION IS TERMINATED AND ALL ERROR
0492*   RECOVERY PROCEDURES HAVE BEEN ATTEMPTED.
0493**    ON ENTRY TO THIS ROUTINE, (A) IS STATUS FROM DRIVER AND (B)
0494*   CONTAINS THE NUMBER OF WORDS/CHARACTERS TRANSFERRED.
0495*     THE CENTRAL INTERRUPT PROCESSOR HAS SET ADDRESSES OF EQUIPMENT
0496*   TABLE ENTRY INTO EQT1-EQT17.
0497*     THE ROUTINE RELEASES THE DMA CHANNEL IF ASSIGNED.
0498*     IF MALFUNCTION HAS OCCURRED, THE NECESSARY PROCESSING AND
0499*   MESSAGE IS OUTPUT PRIOR TO SETTING DEVICE DOWN.
0500*
0501  00365 170217  $IOCM STA EQT13,I   SAVE DRIVER STATUS
0502  00366 174220        STB EQT14,I  SAVE TRANSMISSION LOG
0503  00367 016040R       JSB RCHAN    GO TO RELEASE DMA IF ASSIGNED
0504  00370 160206        LDA EQT4,I    SET AV FIELD TO AVAILABLE
0505  00371 001265        RAL,CLE,ERA
0506  00372 170206        STA EQT4,I
0507  00373 060315        LDA IODMD     CHECK IF DRIVER IN I/O
0508  00374 003004        CMA,INA           DRIVER MODULE AREA
0509  00375 050203        CPA EQT1
0510  00376 070315        STA IODMD     YES, SO SET AREA AVAILABLE
0511  00377 160217        LDA EQT13,I
0512  00400 073645R       STA ECODE  SAVE COMP.CODE FOR EX13
0513  00401 072627R       STA EC2    SAVE COMPL.CODE FOR PRIV. MODE
0514  00402 002002        SZA           MALFUNCTION OCCURRED?
0515  00403 026502R       JMP IOC10      -YES
0516  00404 160211        LDA EQT7,I
0517  00405 070307        STA TEMP2     SAVE RETURN ADDRESS
0518  00406 016142R       JSB ADCHK     SYSTEM RETURN?
0519  00407 026457R       JMP IOC50    YES,
0520  00410 064262        LDB SWAP      GET JOB PROCESSOR IN/OUT FLAG
0521  00411 060141        LDA EXPG
0522  00412 006011        SLB,RSS
0523  00413 002003        SZA,RSS
0524  00414 026437R       JMP IOC04
0525  00415 160212        LDA EQT8,I
0001  00416 002021        SSA,RSS
0002  00417 003004        CMA,INA
0003  00420 050052        CPA N1        CHECK IF INPUT REQUEST
0004  00421 007401        CCB,RSS            YES
0005  00422 026437R       JMP IOC04          NO
0006  00423 044111        ADB BATCH          EQUIPMENT ADDRESS
0007  00424 044121        ADB LUTAB
0008  00425 140001        ADA B,I
0009  00426 017016R       JSB MPY17     MULTIPLY BY 17
0010  00427 050203        CPA EQT1      CHECK IF BATCH IS CURRENT DEVICE
0011  00430 002001        RSS                YES
0012  00431 026437R       JMP IOC04          NO
0013  00432 160214        LDA EQT10,I   CHECK IF 1ST CHAR IS COLON
0014  00433 160000        LDA A,I
0015  00434 010075        AND M1774
0016  00435 052671R       CPA COLON
0017  00436 026465R       JMP IOC05      -YES
0018  00437 164213  IOC04 LDB EQT9,I
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0019  00440 005222          RBL,RBL
0020  00441 006020          SSB             I/O W/O WAIT?
0021  00442 026450R         JMP IOC06        -SYSTEM OR NO WAIT
0022  00443 160206  OPAGO   LDA EQT4,I
0023  00444 164220          LDB EQT14,I
0024  00445 016132R         JSB SEOAB       SAVE A AND B VALUES
0025  00446 150211          LDA EQT7,I
0026  00447 070242          STA XSUSP      SET RETURN ADDRESS
0027  00450 016150R IOC06   JSB OPRAT       CHECK IF OPRTR POUNDING ON KYBD
0028  00451 016312R         JSB SAVES       SAVE REGS FOR EXEC MODS
0029  00452 062707R         LDA PAFLG
0030  00453 052505R         CPA CODE+1
0031  00454 026462R         JMP IOC60
0032  00455 017756R         JSB WAITX       CHECK IF ANYTHING QUEUED UP
0033  00456 026554R         JMP IOCWT      CHECK IF I/O WITH WAIT
0034*
0035*
0036  00457 160206  IOC50   LDA EQT4,I     GET DEVICE STATUS,
0037  00460 164220          LDB EQT14,I       AND TRANSMISSION LOG
0038  00461 124307          JMP TEMP2,I      -SYSTEM RETURN
0039*
0040*
0041  00462 060203  IOC60   LDA EQT1
0042  00463 072636R         STA SVEQT
0043  00464 026013R         JMP $WAIT
0044  00465 160214  IOC05   LDA EQT10,I
0045  00466 066634R         LDB N36
0046  00467 016065R         JSB $MOVE       MOVE DATA FROM USER BUFFER
0047  00470 000470R IOC02   DEF *             TO JOB INPUT BUFFER
0048  00471 160220          LDA EQT14,I     CHECK IF USER REQ'D CHAR OR WORD
0049  00472 164215          LDB EQT11,I       AND CONVERT TO WORDS
0050  00473 006021          SSB,RSS
0051  00474 026477R         JMP *+3
0052  00475 002004          INA
0053  00476 001100  .1100   OCT 1100        -ARS- INSTRUCTION
0054  00477 070332          STA CHARC       SAVE INPUT WORD COUNT
0055  00500 066126R         LDB .13         SET FOR ILLEGAL INPUT MSG,
0056  00501 026530R         JMP ERR
0057  00502 070275  IOC10   STA $MDBF+1     SAVE ERROR CODE FOR $EX13
0058*
0059  00503 160213          LDA EQT9,I
0060  00504 001222          RAL,RAL            I/O W/O WAIT
0061  00505 010133          AND MDFLG           & MDFLG BIT 15 SET?
0062  00506 002021          SSA,RSS
0063  00507 026514R         JMP IOC20          -NO
0064  00510 060275          LDA $MDBF+1        GET ERROR CODE BACK
0065  00511 050056          CPA .3             PARITY ERR?
0066  00512 026521R         JMP IOC30          -YES
0067  00513 026526R         JMP IOC40          -NO
0068  00514 060275  IOC20   LDA $MDBF+1
0069  00515 050054          CPA .1          POSSIBLE DISC NOT READY?
0070  00516 006400          CLB              -YES, SET B=0 FOR $EX17, $EX04
0071*     NOTE - NRPAR DOES NOT RETURN IF DISC ERROR
0072*            INTERCEPT FLAG SET BY EXEC MODULE
0073  00517 017454R         JSB NRPAR       CHECK IF $EX17,$EX20, OR $SRCH
0074  00520 006002          SZB              -NO, CHECK IF DISC PARITY ERR,
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0075  00521 160206  IOC30 LDA EQT4,I
0076  00522 012632R        AND ETYPE      ISOLATE EQPMT, TYPE CODE
0077  00523 067035R        LDB .12
0078  00524 052633R        CPA DISC       DISC PARITY ERROR?
0079  00525 026530R        JMP ERR
0080  00526 016312R IOC40  JSB SAVE$
0081  00527 064057         LDB .4         SET FOR I/O ERR MSG
0082*
0083*     SAVE ERROR CODE FOR EX13 IN ECODE & THAT FOR PRIV. INT
0084*        IN EC2 WHICH IS:
0085*            0   FOR I/O COMPLETED WITHOUT ERRORS
0086*           -1       DEVICE NOT READY
0087*           -2       END OF TAPE
0088*           -3       PARITY ERROR
0089*           -4       BATCH INPUT DETECTED ':'
0090*
0091  00530 077645R ERR    STB ECODE
0092  00531 062627R        LDA EC2
0093  00532 056126R        CPB .13        BATCH INPUT ERR?
0094  00533 060057         LDA .4         YES, #4 FOR PRIV. MODE
0095  00534 003004         CMA,INA
0096  00535 072627R        STA EC2
0097*
0098**** IF I/O ERROR, SET DEVICE DOWN.
0099*
0100  00536 054057         CPB .4  I/O ERROR?
0101  00537 002001         RSS     YES
0102  00540 026554R        JMP IOCWT      NO, DON'T SET DEV DOWN
0103  00541 060206         LDA EQT4
0104  00542 050333         CPA TYEQT      SYSTEM TTY?
0105  00543 026554R        JMP IOCWT      NO, DON'T SET IT DOWN
0106  00544 160206         LDA EQT4,I     ISOLATE EQUIPMENT TYPE.
0107  00545 001727         ALF,ALF
0108  00546 010072         AND M77
0109  00547 053650R        CPA B31        DON'T SET DISC DOWN
0110  00550 026554R        JMP IOCWT
0111  00551 160206         LDA EQT4,I     SET BIT 14
0112  00552 033647R        IOR MASK8
0113  00553 170206         STA EQT4,I
0114*
0115*
0116  00554 067645R IOCWT  LDB ECODE
0117  00555 160211         LDA EQT7,I      GET RETURN ADDR
0118  00556 016142R        JSB ADCHK       RETURN TO SYS?
0119  00557 026617R        JMP CKSRH          CHECK FILE SEARCH
0120  00560 160213         LDA EQT9,I
0121  00561 001222         RAL,RAL
0122  00562 002020         SSA          I/O WITH WAIT?
0123  00563 026601R        JMP BIT15     NO, CHECK BIT 15 OF MDFLG
0124*
0125***** PROCESS I/O WITH WAIT ******
0126*
0127  00564 160211         LDA EQT7,I     SET SUSPENSION PT. TO
0128  00565 070242         STA XSUSP      RETURN ADDRESS
0129  00566 060133         LDA MDFLG      BIT 0 OF MDFLG = 1?
0130  00567 000010         SLA
```

```
0131  00570 026574R        JMP IOWT1     YES, BYPASS SYSTEM ERR HANDLING
0132  00571 006002  IOWT0  SZB           NO, RETURN IF NO ERR &
0133  00572 027516R        JMP MD13      LOAD EXEC 13 IF THERE IS ERR,
0134  00573 026052R        JMP SCIC3
0135*
0136*----- PROCESS I/O WITH WAIT & MDFLG BIT 0=1 ----
0137*
0138  00574 060242  IOWT1  LDA XSUSP      SET UP XIRT
0139  00575 070137         STA XIRT
0140  00576 062627R        LDA EC2       RETURN TO USER WITH A-REG=ERR COD
0141  00577 164220         LDB EQT14,I     AND B-REG WITH TLOG
0142  00600 026213R        JMP SIRT
0143*
0144*
0145*******  PROCESS I/O WITHOUT WAIT  *******
0146*
0147  00601 060133  BIT15  LDA MDFLG    BIT 15 OF MDFLG = 1?
0148  00602 002021         SSA,RSS
0149  00603 026612R        JMP IONW      NO
0150  00604 160211         LDA EQT7,I    YES, GET USER SUBROUTINE ADDR
0151  00605 002004         INA
0152  00606 073646R        STA SUBAD
0153  00607 062627R        LDA EC2       LOAD A-REG W/ RETURN CODE
0154  00610 164220         LDB EQT14,I   LOAD B REG W/ TRANSMISSION LOG
0155  00611 117646R        JSB SUBAD,I   EXECUTE USER SUBROUTINE
0156*
0157  00612 060133  IONW   LDA MDFLG      BIT  0 = 1?
0158  00613 000010         SLA
0159  00614 026052R        JMP SCIC3
0160  00615 067645R        LDB ECODE     NO, GO CHECK IF ERR OCCURRED
0161  00616 026571R        JMP IOWT0
0162*
0163*
0164  00617 060164  CKSRH  LDA FILRW        FILE SRCH W/O WAIT?
0165  00620 002003         SZA,RSS
0166  00621 026571R        JMP IOWT0       -NO,
0167  00622 001665         ELA,CLE,ERA     -YES, CLEAR BIT 15 TO GET
0168  00623 170211         STA EQT7,I       RETRN ADDR IN EQT7
0169  00624 002400         CLA             CLEAR FILE R/W FLAG
0170  00625 070164         STA FILRW
0171  00626 026601R        JMP BIT15
0172  00627 000000  EC2    NOP
0173*
0174  00630 000637R EXECA  DEF EXEC
0175  00631 176000  MASK1  OCT 176000
0176  00632 077400  ETYPE  OCT 77400
0177  00633 014400  DISC   OCT 14400
0178  00634 177734  N36    DEC -36
0179  00635 000000  SOPER  NOP
0180  00636 000000  SVEQT  NOP
```

```
0182****** EXECUTIVE SUPERVISOR *****
0183*
0184*        THE PRIMARY FUNCTION OF THE EXECUTIVE SUPERVISOR IS TO
0185*     PROVIDE GENERAL CHECKING AND EXAMINATION OF SYSTEM SERVICE
0186*     REQUESTS AND TO CALL THE APPROPRIATE PROCESSING EXECUTIVE
0187*     MODULE OR I/O SUPERVISOR MODULE
0188*
0189*        THIS PROGRAM IS ENTERED EITHER FROM CENTRAL INTERRUPT
0190*     CONTROL<$CIC> SECTION WHEN A MEMORY PROTECT VIOLATION IS
0191*     ACKNOWLEDGED(ONLY IN A 2116 WITH THE MEMORY PROTECT OPTION)
0192*     OR BY A DIRECT JSB EXEC.  WHILE IN SYSTEM (JOB PROCESSOR
0193*     OR FILE MANAGER) A DIRECT CALL MAY BE MADE TO EXEC.
0194*
0195*     SYSTEM REQUEST FORMAT:
0196*
0197*        THE GENERAL FORMAT OF A SYSTEM REQUEST IS BLOCK CONTAIN-
0198*     ING AN EXECUTABLE INSTRUCTION TO GAIN ENTRY TO THE EXECUTIVE
0199*     AND AN ADDRESS LIST OF PARAMETERS, THE FIRST PARAMETER IS A
0200*     NUMERIC CODE IDENTIFYING THE REQUEST TYPE, A NEGATIVE REQUEST
0201*     CODE IS FROM OTHER PARTS OF SYSTEM AND A POSITIVE REQUEST
0202*     CODE IS FROM USER PROGRAM, THE LENGTH OF THE PARAMETER LIST
0203*     VARIES ACCORDING TO THE AMOUNT OF INFORMATION REQUIRED FOR
0204*     EACH REQUEST, THE CALLS MAY BE SPECIFIED IN FORTRAN OR
0205*     ASSEMBLY LANGUAGE:
0206*
0207*           CALL EXEC(P1,P2,...,PN)
0208*
0209*        OR
0210*
0211*           EXT EXEC
0212*           JSB EXEC
0213*           DEF *+1+N
0214*           DEF RCODE
0215*           DEF P1
0216*           DEF P2
0217*           .
0218*           .
0219*           .
0220*           DEF PN
0221*         -RETURN POINT-
0222*
0223*      RCODE DEC N     (N IS NEGATIVE IF SYSTEM)
0224*      P1
0225*      P2
0226*      .     DEF/OCT/DEC,ETC TO DEFINE A ADDRESS, CONSTANT
0227*      .
0228*      .
0229*      PN
0230*
0231*     MEMORY PROTECT ERROR:
0232*
0233*        IF THE INSTRUCTION CAUSING THE PROTECT VIOLATION IS NOT A
0234*     JSB EXEC, THEN AN ERROR IS ASSUMED, A DIAGNOSTIC IS OUTPUT TO
0235*     THE SYSTEM TELETYPE LISTING THE ADDRESS OF THE
0236*     VIOLATING INSTRUCTION, IF ABORT DUMP IS SPECIFIED, IT IS TAKEN
0237*     PRIOR TO LOOKING FOR NEXT ;JOB STATEMENT
```

```
0238*     THE FOLLOWING EXEC REQUESTS RESULT IN AN EXECUTIVE MODULE
0239*    PROCESSOR BEING READ IN AN EXECUTED.
0240*
0241*     A. TRANSFER INFORMATION TO/FROM AN EXTERNAL I/O DEVICE
0242*               OR THE WORK AREA OF THE DISC
0243*
0244*               (P)       JSB  EXEC
0245*               (P+1)     DEF  *+5(OR 7) RETURN
0246*               (P+2)     DEF  RCODE     REQUEST CODE
0247*               (P+3)     DEF  CONWD     CONTROL INFORMATION
0248*               (P+4)     DEF  BUFFR     BUFFER LOCATION
0249*               (P+5)     DEF  BUFFL     BUFFER LENGTH
0250*               (P+6)     DEF  DTRAK     TRACK # - DISC TRANSFER ONLY
0251*               (P+7)     DEF  DSECT     SECTER #- DISC TRANSFER ONLY
0252*               (P+8)     ---
0253*
0254*                  RCODE  DEC  1(OR 2)   1= READ, 2= WRITE
0255*                  CONWD  SEE MANUAL FOR DETAILS
0256*                  BUFFR  BSS  N         N WORD BUFFER
0257*                  BUFFL  DEC  N(OR -2N) N WORDS OR -2N CHARACTERS
0258*                  DTRAK  DEC  F         WORK AREA TRACK IN DECIMAL
0259*                  DSECT  DEC  G         WORK AREA SECTOR IN DECIMAL
0260*
0261*     B. CONTROL REQUEST
0262*
0263*               (P)       JSB  EXEC
0264*               (P+1)     DEF  *+4(OR 3) RETURN
0265*               (P+2)     DEF  RCODE     REQUEST CODE
0266*               (P+3)     DEF  CONWD     CONTROL INFORMATION
0267*               (P+4)     DEF  PARAM     OPTIONAL PARAMETER
0268*               (P+5)     ---
0269*
0270*                  RCODE  DEC  3         REQUEST CODE
0271*                  CONWD  SEE MANUAL FOR DETAILS
0272*                  PARAM  SEE MANUAL FOR OPTIONAL PARAMETERS
0273*
0274*     C. DISC TRACK ALLOCATION - THIS IS A SPECIAL ROUTINE TO ACCOMO-
0275*               DATE CHECKOUT OF REAL TIME EXECUTIVE PROGRAMS ON DISC
0276*               MONITOR. THIS ROUTINE PROVIDES USER WITH NEXT WORK
0277*               TRACK. INITAL REQUEST RETURNS FIRST WORK TRACK.
0278*
0279*               (P)       JSB  EXEC
0280*               (P+1)     DEF  *+6       DEFINE EXIT POINT
0281*               (P+2)     DEF  RCODE     DEFINE REQUEST CODE
0282*               (P+3)     DEF  #TRAK     DEFINE # CONTIGUOUS TRACKS
0283*               (P+4)     DEF  TRACK     DEFINE TRACK ADDRESS
0284*               (P+5)     DEF  DISC      DEFINE DISC LOGICAL UNIT ADD
0285*               (P+6)     DEF  SECT#     DEFINE # SECTORS/TRACK
0286*               (P+7)     ---
0287*                  RCODE  DEC  4
0288*                  #TRAK  DEC  N (# TRACKS) 15=0 FOR ABORT
0289*                  TRACK  NOP          (STORE TRACK #) SET=-1 IF UNAVA
0290*                  DISC   NOP          (STORE DISC LOGICAL UNIT #)
0291*                  SECT#  NOP          (STORE # SECTORS/TRACK)
0292*
0293*     D. PROGRAM COMPLETION -
```

```
0294*
0295*                (P)       JSB  EXEC      CALL TO EXEC
0296*                (P+1)     DEF  *+2       DEFINE RETURN ADDRESS
0297*                (P+2)     DEF  RCODE     DEFINE REQUEST CODE
0298*                (P+3)     ---
0299*                   RCODE  DEC  6
0300*
0301*     E. PROGRAM SUSPENSION -
0302*
0303*                (P)       JSB  EXEC      CALL TO EXEC
0304*                (P+1)     DEF  *+2       DEFINE RETURN ADDRESS
0305*                (P+2)     DEF  RCODE     DEFINE REQUEST CODE
0306*                (P+3)     ---
0307*                   RCODE  DEC  7
0308*
0309*     F. PROGRAM SEGMENT LOAD - LOAD PROGRAM SEGMENT AND EXECUTE
0310*
0311*                (P)       JSB  EXEC      CALL TO EXEC
0312*                (P+1)     DEF  *+3       DEFINE RETURN ADDRESS
0313*                (P+2)     DEF  RCODE     DEFINE REQUEST CODE
0314*                (P+3)     DEF  SNAME     DEFINE ASCII SEGMENT ADDRESS
0315*                (P+4)     ---
0316*                   RCODE  DEC  8,9,10
0317*                   SNAME  ASC  3,XXXXX
0318*
```

```
0320*     G. TIME REQUEST - STORE  CURRENT CLOCK TIME IN USER'S ARRAY
0321*
0322*               (P)       JSB  EXEC       CALL TO EXEC
0323*               (P+1)     DEF  *+3        DEFINE RETURN ADDRESS
0324*               (P+2)     DEF  RCODE      DEFINE REQUEST CODE
0325*               (P+3)     DEF  ARRAY      DEFINE 5 WORD TIME ARRAY ADD
0326*               (P+4)     ---
0327*                  RCODE  DEC  11
0328*                  ARRAY  BSS  5     (1)=100TH OF SECONDS
0329*                                    (2)=SECONDS
0330*                                    (3)=MINUTES
0331*                                    (4)=HOURS
0332*                                    (5)=DAYS WILL BE SET TO 0
0333*
0334*
0335*     H. FILE READ/WRITE
0336*
0337*               (P)       JSB  EXEC
0338*               (P+1)     DEF  *+7(OR 8) RETURN
0339*               (P+2)     DEF  RCODE      REQUEST CODE
0340*               (P+3)     DEF  CONWD      CONTROL INFORMATION
0341*               (P+4)     DEF  BUFFR      BUFFER LOCATION
0342*               (P+5)     DEF  BUFFL      BUFFER LENGTH
0343*               (P+6)     DEF  FNAME      FILE NAME
0344*               (P+7)     DEF  RSECT      RELATIVE SECTOR WINTIN FILE
0345*               (P+8)     DEF  IPRAM      OPTIONAL PARAMETER
0346*                         ---
0347*                   RCODE DEC  14 OR 15
0348*                   CONWD SEE MANUAL FOR DETAILS
0349*                   BUFFR BSS N           BUFFER OF N WORDS
0350*                   BUFFL DEC  N OR -2N   N WORDS OR -2N CHARACTERS
0351*                   FNAME ASC  3,XXXXX    USER FILE NAME # XXXXX
0352*                   RSECT DEC  M          RELATIVE SECTOR WITHIN FILE
0353*                   IPRAM SEE MANUAL FOR DETAILS
0354*
0355*     I. DISC TRACK STATUS OF WORK AREA
0356*
0357*               (P)       JSB  EXEC       CALL TO EXEC
0358*               (P+1)     DEF  *+5        DEFINE RETURN ADDRESS
0359*               (P+2)     DEF  RCODE      DEFINE REQUEST CODE
0360*               (P+3)     DEF  NTRAK      DEFINE DESIRED # OF TRACKS
0361*               (P+4)     DEF  TRACK      DEFINE STARTING TRACK #
0362*               (P+5)     DEF  STRAK      DEFINE ADDR FOR ACTUAL TRK#
0363*               (P+6)     ---
0364*                  RCODE  DEC  16
0365*                  NTRAK  DEC  N          # CONSECUTIVE TRACKS
0366*                  TRACK  DEC  M          DESIRED STARTING TRACK #
0367*                  STRAK  NOP             ACTUAL STARTING TRACK #
0368*
0369*     J. DISC TRACK LIMITS FOR WORK AREA
0370*
0371*               (P)       JSB  EXEC       CALL TO EXEC
0372*               (P+1)     DEF  *+5( OR 6)  DEFINE RETURN ADDRESS
0373*               (P+2)     DEF  RCODE      DEFINE REQUEST CODE
0374*               (P+3)     DEF  FTRAK      DEFINE ADDR FOR FIST TRACK
0375*               (P+4)     DEF  LTRAK      DEFINE ADDR FOR LAST TRACK
```

```
0376*                (P+5)      DEF  SIZE       DEFINE ADDR FOR #SECT/TRACK
0377*                (P+6)       DEF DISC (OPTIONAL PARAMETER)
0378*                (P+7)       ---
0379*                   RCODE   DEC  17
0380*                   FTRAK   NOP              FIRST WORK TRACK #
0381*                   LTRAK   NOP              LAST WORK TRACK #
0382*                   SIZE    NOP              # SECTORS PER TRACK
0383*                   DISC    DEC N                 N=0 FOR SYSTEM DISC
0384*                                        N= NON-0 FOR CURRENT USER DISC
0385*
0386*     K. FILE NAME SEARCH
0387*
0388*                (P)        JSB  EXEC       CALL TO EXEC
0389*                (P+1)      DEF  *+4        DEFINE RETURN ADDRESS
0390*                (P+2)      DEF  RCODE      DEFINE REQUEST CODE
0391*                (P+3)      DEF  FNAME      DEFINE ADDR FOR FILE NAME
0392*                (P+4)      DEF  NSECT      DEFINE ADDR FOR #SECTORS
0393*                (P+5)      ---
0394*                   RCODE   DEC  18
0395*                   FNAME   ASC  3,XXXXX    ASCII FILE NAME
0396*                   NSECT   NOP              # SECTORS IN FILE; 0 IF FILE
0397*                                                 CANNOT BE FOUND
0398*
```

```
0400*
0401*     L. CHANGE USER DISC ASSIGNMENTS
0402*
0403*              (P)       JSB  EXEC
0404*              (P+1)     DEF  *+3(*+4 IF OPTIONAL PARAM USED)
0405*              (P+2)     DEF  RCODE
0406*              (P+3)     DEF  LABEL
0407*              (P+4)     DEF  SUBCH(OPTIONAL)
0408*              (P+5)     ---
0409*
0410*                 RCODE  DEC  23          REQUEST CODE
0411*                 LABEL  ASC  3,XXXXXX    XXXXXX IS DISC LABEL
0412*                 SUBCH  DEC  (0-7)       IF PRESENT, IT DEFINES THE
0413*                                           REQUESTED DISC SUBCHANNEL
0414*
0415*     M. LOAD AND EXECUTE USER EXEC MODULES, PASSING 0-5
0416*
0417*              (P)        JSB EXEC
0418*              (P+1)      DEF *+2(UP TO 7)      DEFINE RETURN ADDRES
0419*              (P+2)      DEF  RCODE     DEFINE REQUEST CODE
0420*              (P+3)      DEF  PARM1     DEFINE 1ST PARAMETER ADDRESS
0421*              (P+4)      ---
0422*                 RCODE  DEC 27 ( OR 28 )
0423*
0424*     N. CREATE A FILE - PROGRAMMATIC
0425*
0426*              (P)       JSB  EXEC
0427*              (P+1)     DEF  *+6        RETURN
0428*              (P+2)     DEF  RCODE      REQUEST CODE
0429*              (P+3)     DEF  RSTAT      RETURN STATUS
0430*              (P+4)     DEF  FNAME      FILE NAME
0431*              (P+5)     DEF  TYPE       FILE TYPE
0432*              (P+6)     DEF  DSKLN      FILE LENGTH IN SECTORS
0433*                        ---
0434*                  RCODE DEC  32         REQUEST CODE
0435*                  RSTAT SEE MANUAL FOR  DETAILS
0436*                  FNAME ASC  3,XXXXX    5 CHARACTER FILE NAME
0437*                  TYPE  OCT  N          PROGRAM TYPE,PERMANENT/TEMP
0438*                  DSKLN DEC  L          LENGTH IN SECTORS
0439*
0440*     O. PURGE A FILE - PROGRAMMATIC
0441*
0442*              (P)       JSB  EXEC
0443*              (P+1)     DEF  *+3(OR 4)
0444*              (P+2)     DEF  RCODE
0445*              (P+3)     DEF  RSTAT
0446*              (P+4)     DEF  FNAME
0447*                        ---
0448*                  RCODE DEC  33         REQUEST CODE
0449*                  RSTAT SEE MANUAL FOR  DETAILS
0450*                  FNAME ASC  3,XXXXX    5 CHARACTER FILE NAME
0451*
0452*     P. RENAME A FILE - PROGRAMMATIC
0453*
0454*              (P)       JSB  EXEC
0455*              (P+1)     DEF  *+5(OR 6)
```

```
0456*              (P+2)      DEF  RCODE
0457*              (P+3)      DEF  RSTAT
0458*              (P+4)      DEF  ONAME
0459*              (P+5)      DEF  NNAME
0460*              (P+6)      DEF  NTYPE
0461*                         ---
0462*                  RCODE DEC  34          REQUEST CODE
0463*                  RSTAT SEE MANUAL FOR DETAILS
0464*                  ONAME ASC  3,XXXXX     FILE NAME TO BE CHANGED
0465*                  NNAME ASC  3,YYYYY     NEW FILE NAME
0466*                  NTYPE OCT  M           PROG TYPE,PERMANENT/TEMP
```

```
0468  00637 000000  EXEC  NOP
0469  00640 103100        CLF 0
0470  00641 016132R       JSB SEOAB      SAVE EOAB REGISTERS
0471  00642 016200R       JSB $INT        SET MPTFL, TURN INTERRUPT,ETC I
0472  00643 062637R       LDA EXEC       GET ADDRESS OF CALL TO EXEC
0473  00644 040052        ADA N1
0474*
0475  00645 070314  $EXEC STA VADR       SAVE VIOLATION ADDRESS
0476  00646 070242        STA XSUSP      SAVE POINT OF SUSPENSION
0477  00647 070306        STA TEMP1
0478  00650 034306        ISZ TEMP1      SAVE (P+1) OF CALL
0479  00651 160000        LDA A,I        GET VIOLATING INSTRUCTION
0001  00652 052001R       CPA $CIC+1
0002  00653 026061R       JMP CIC,4
0003  00654 012631R       AND MASK1           AND CHECK IF IT IS
0004  00655 052532R       CPA JSBI            JSB  ,I
0005  00656 002001        RSS                YES
0006  00657 026664R       JMP MPERR          NO, SO MEMORY PROTECT ERROR
0007  00660 120314        XOR VADR,I     CHECK IF EFF. OPERAND IS EXEC
0008  00661 160000        LDA A,I
0009  00662 052630R       CPA EXECA
0010  00663 026667R       JMP JSBEX
0011  00664 006405  MPERR CLB,INB,RSS   SET FOR MEMORY PROTECT MSG
0012  00665 064060  ERR01 LDB ,5
0013  00666 027516R       JMP MD13
0014  00667 064306  JSBEX LDB TEMP1      CHECK RETURN ADDRESS
0015  00670 160001        LDA B,I
0016  00671 016142R       JSB ADCHK
0017  00672 027502R       JMP RQERR
0018*
0019  00673 060164        LDA FILRW        FILE R/W W/O WAIT IN PROCESS?
0020  00674 002003        SZA,RSS
0021  00675 026712R       JMP EX2          -NO, CONTINUE
0022  00676 060133        LDA MDFLG
0023  00677 001310        RAR,SLA          MODE FLAG BIT 1 SET?
0024  00700 026706R       JMP EX1          -YES,
0025*
0026*  WHEN FILE SEARCH W/O WAIT & MDFLG BIT 1=0, HOLD OFF EXEC
0027*    CALL BY SAVING CALLING POINT IN RQRTN & SET BIT 15 OF
0028*    RQRTN (FOR $EX06), AND GO TO WAIT LOOP AT THE MEANTIME.
0029*
0030  00701 060054        LDA ,1
0031  00702 001300        RAR              (CAN'T DO ELA,CCE,ERA!)
0032  00703 030314        IOR VADR
0033  00704 070225        STA RQRTN
0034  00705 026013R       JMP $WAIT
0035*
0036*-- WHEN FILE SEARCH W/O WAIT & BIT 1 OF MDFLG = 1 , INSTEAD OF
0037*     GOING TO WAIT LOOP, RETURN TO USER WITH A-REG=8.
0038*
0039  00706 160001  EX1   LDA B,I          GET RETURN ADDR
0040  00707 070137        STA XIRT
0041  00710 060063        LDA ,8
0042  00711 026213R       JMP $IRT
0043*
0044  00712 160001  EX2   LDA B,I
```

```
0045  00713 070225          STA RQRTN      SAVE RETURN ADDRESS
0046  00714 007004          CMB,INB        CHECK IF REQUEST CODE GIVEN
0047  00715 040001          ADA B
0048  00716 002003          SZA,RSS
0049  00717 027502R         JMP RQERR         NO REQUEST CODE
0050  00720 040052          ADA N1
0051  00721 070224          STA RQCNT      SAVE # OF ACTUAL PARAMETERS
0052  00722 002020          SSA            CHECK IF LEGAL NUMBER OF PARAM
0053  00723 027502R         JMP RQERR         NEGATIVE, SO ILLEGAL
0054  00724 040042          ADA N9
0055  00725 002021          SSA,RSS
0056  00726 027502R         JMP RQERR         GREATER THAN 9, SO ILLEGAL
0057  00727 064043          LDB N8
0058  00730 002400          CLA
0059  00731 016065R         JSB $MOVE
0060  00732 000226  RQP1A    DEF RQP1
0061  00733 064224          LDB RQCNT
0062  00734 007004          CMB,INB
0063  00735 034306          ISZ TEMP1      INCR TO ADDR OF WORD 2
0064  00736 062732R         LDA RQP1A
0065  00737 070307          STA TEMP2      SET TEMP2 TO ADDRESS OF RQP1
0066  00740 060306  R1      LDA TEMP1
0067  00741 160000          LDA A,I
0068  00742 002002          SZA            ERROR IF
0069  00743 050054          CPA .1           0 OR 1
0070  00744 027502R         JMP RQERR
0071  00745 001275          RAL,CLE,SLA,ERA
0072  00746 026741R         JMP R1+1       GET NEXT LEVEL INDIRECT
0073  00747 170307          STA TEMP2,I          AND STORE IN REQUEST ADDR
0074  00750 034307          ISZ TEMP2
0075  00751 034306          ISZ TEMP1
0076  00752 006006          INB,SZB
0077  00753 026740R         JMP R1         GO TO GET NEXT ADDRESS
0078  00754 160226          LDA RQP1,I     GET REQUEST CODE
0079  00755 002003          SZA,RSS
0080  00756 027502R         JMP RQERR            ERROR IF ZERO
0081  00757 002021          SSA,RSS
0082  00760 003004          CMA,INA
0083  00761 043224R         ADA CODE#
0084  00762 002020          SSA
0085  00763 027502R         JMP RQERR            ERROR IF LARGER THAN # DEFI
0086  00764 003004          CMA,INA
0087  00765 043224R         ADA CODE#      FORM POSITIVE REQUEST CODE #
0088  00766 070316  R4      STA RCODE      SAVE POSITIVE REQUEST CODE VALUE
0089  00767 043151R         ADA RQTBL            REQUEST TABLE ADDRESS
0090  00770 164000          LDB A,I        GET LINK ADDRESS OF PROCESSOR
0091  00771 060316          LDA RCODE
0092  00772 000065          CLE,ERA
0093  00773 043225R         ADA MDTAB
0094  00774 160000          LDA A,I        GET EXEC MODULE#
0095  00775 002041          SEZ,RSS
0096  00776 001727          ALF,ALF        ROTATE IF NECESSARY
0097  00777 010074          AND M377       ISOLATE MODULE#
0098  01000 074305  R4A     STB TEMP0     SAVE LINK ADDRESS,
0099  01001 064316          LDB RCODE       -YES,
0100  01002 027541R         JMP $MDLD         GO LOAD EXEC MODULE
```

```
0101*
0102  01003 017476R R1,ST JSB RQNEG     CHECK IF NEG. REQ. CODE
0103  01004 016122R       JSB $EOAB
0104  01005 170001       STA B,I        STORE VALUE INTO BASE PAGE
0105  01006 006004       INB            INCREMENT STORE ADDRESS
0106  01007 073645R R1A  STA ECODE     SAVE A REGISTER TEMPORARILY,
0107  01010 060225       LDA RQRTN       SET UP RETURN ADDR FOR $IRT
0108  01011 070137       STA XIRT
0109  01012 063645R       LDA ECODE     RESTORE A REGISTER,
0110  01013 026213R       JMP $IRT      RESTORE INTERRUPT SYS, MEM PROT
0111*                                 & RETURN.
0112*
0113  01014 017476R R2X   JSB RQNEG     CHECK IF NEG. REQ. CODE
0114  01015 060237       LDA XA         GET EXECUTE I/O INSTRUCTION
0115  01016 073017R       STA **+1
0116  01017 000000       NOP            EXECUTE IT
0117  01020 027007R       JMP R1A        RETURN TO CALLER
0118  01021 034105  R1AX  ISZ CLOCK+1   SET TO NON-ZERO
0119  01022 027007R       JMP R1A
0120  01023 017476R R2A   JSB RQNEG     CHECK IF NEG. REQ. CODE
0121  01024 060103       LDA TBG         -YES
0122  01025 002003       SZA,RSS        CONTINUE IF TBG NON-ZERO
0123  01026 027021R       JMP R1AX       RETURN TO CALLER
0124  01027 033035R       IOR RTBG1
0125  01030 073035R       STA RTBG1      FORM AND STORE OTA TBG
0126  01031 042476R       ADA .1100
0127  01032 073036R       STA RTBG2      FORM AND STOTE STC TBG,C
0128  01033 072631R       STA CLTBG
0129  01034 060056       LDA .3
0130  01035 102600  RTBG1 OTA 0          OTA 3 TO TBG
0131  01036 000000  RTBG2 NOP            TURN ON TIME BASE GENERATOR
0132  01037 027007R       JMP R1A        RETURN TO CALLER
0133*
0134*
0135  01040 017476R R,LDX JSB RQNEG     CHECK IF NEG. REQ. CODE
0136  01041 060065  $LDEX LDA .10
0137  01042 067044R       LDB DEF10
0138  01043 027000R       JMP R4A
0139*
0140  01044 000013X DEF10 DEF $EX10
0141*
0142  01045 160227  STAT  LDA RQP2,I
0143  01046 050052       CPA N1         JOBPR PRIV. REQ.?
0144  01047 027102R       JMP JSTAT      -YES
0145  01050 073337R       STA SAVEA     SAVE LUN FOR NULL CHECK
0146  01051 017303R       JSB LUCHK
0147  01052 017325R       JSB NULCK     IS LUN NULL?
0148  01053 027067R       JMP STAT1      YES,
0149  01054 060133       LDA MDFLG      PUT BIT 0 IN "E"
0150  01055 001500       ERA
0151  01056 060224       LDA RQCNT
0152  01057 164220       LDB EQT14,I
0153  01060 050057       CPA ,4         2-WORD STATUS REQUEST?
0154  01061 174231       STB RQP4,I      -YES, SET TRANSMISSION LOG
0155  01062 160206       LDA EQT4,I
0156  01063 170230       STA RQP3,I     SET DEVICE STATUS
```

```
0157  01064 002040          SEZ             WAS MDFLG BIT 0 SET?
0158  01065 002400          CLA               YES- "A"=0 FOR OPERATION OK
0159  01066 027007R          JMP R1A
0160  01067 060224  STAT1    LDA RQCNT
0161  01070 064133           LDB MDFLG       PUT BIT 0 IN "E"
0162  01071 005500           ERB
0163  01072 006400           CLB             SET TRANSMISSION LOG TO 0
0164  01073 050057           CPA .4          2-WORD STATUS REQUEST?
0165  01074 174231           STB RQP4,I      YES, SET TRANSMISSIN LOG,
0166  01075 062672R          LDA .40         SET STATUS TO EOT
0167  01076 170230           STA RQP3,I
0168  01077 002040           SEZ             WAS MDFLG BIT 0 SET?
0169  01100 060070           LDA M17           YES- "A"=15  FOR UNASSIGN LU
0170  01101 027007R          JMP R1A
0171*
0172  01102 063114R JSTAT    LDA DFWAT
0173  01103 070242           STA XSUSP
0174  01104 070322           STA SXSUS
0175  01105 064240           LDB XB
0176  01106 016321R          JSB $TEST       GO PROCESS EQ,LU,UP,DN
0177  01107 027007R          JMP R1A
0178*
0179  01110 160227  RELTR    LDA RQP2,I
0180  01111 002007           INA,SZA,RSS
0181  01112 070267           STA RTRK
0182  01113 027007R          JMP R1A
0183*
0184  01114 002034R DFWAT    DEF WAITL
0185*
0186  01115 160227  MEMPT    LDA RQP2,I    IF PARAM=0, WANT MEM PROT ON, I,E,
0187  01116 067124R          LDB CLC5        SET MPCOD TO STC 5
0188  01117 002003           SZA,RSS       IF PARAM NON=0, WANT MEM PRO OFF
0189  01120 067123R          LDB STC5        I,E, SET MPCOD TO CLC 5
0190  01121 076230R          STB MPCOD
0191  01122 027007R          JMP R1A       RETURN TO CALLER,
0192  01123 102705  STC5     STC 5
0193  01124 106705  CLC5     CLC 5
0194*
0195  01125 060061  SEGRT    LDA .6        SET FOR COMPLETION REQUEST
0196  01126 064136           LDB SGRTN      CHECK IF SEGMENT LOADED
0197  01127 006003           SZB,RSS
0198  01130 026766R          JMP R4        NO-LOAD SEX03 FOR PROG COMPLETION
0199  01131 074137           STB XIRT      YES TO SET RETURN ADDRESS
0200  01132 064046           LDB N5
0201  01133 002400           CLA
0202  01134 070136           STA SGRTN           CLEAR RETURN ADDRESS
0203  01135 016065R          JSB $MOVE     CLEAR PARAMETER BUFFER
0204  01136 000126  DFRON    DEF RONBF
0205  01137 064224           LDB RQCNT     CHECK IF ANY PARAMETERS
0206  01140 044051           ADB N2
0207  01141 007021           CMB,SSB,RSS
0208  01142 027146R          JMP SEG1      NO-SO EXIT
0209  01143 063150R          LDA XRQP2     YES-SO MOVE PARAMETERS
0210  01144 016065R          JSB $MOVE           TO RONBF
0211  01145 000126           DEF RONBF
0212  01146 067136R SEG1     LDB DFRON     RETURN TO USER WITH B POINTING
```

```
0213  01147 026213R        JMP $IRT          TO PARAMETER BUFFER
0214  01150 000227  XRQP2 DEF RQP2
0215*
```

```
0217  01151 001152R RQTBL DEF *+1
0218  01152 000023X DEF18 DEF $EX18      CODE 0 - RETURN TO $EX18 FROM SF
0219  01153 000023X        DEF $EX18      CODE 1 - READ(WORK-IF DISC)
0220  01154 000023X        DEF $EX18      CODE 2 - WRITE(WORK-IF DISC)
0221  01155 000023X        DEF $EX18      CODE 3 - CONTROL
0222  01156 000011X        DEF $EX08      CODE 4    DISC TRACK ALLOC (RT)
0223  01157 001110R        DEF RELTR      CODE 5 - R/T DISC TRK RELEASE
0224  01160 000004X        DEF $EX03     CODE 6    PROGRAM COMPLETION
0225  01161 000005X DEF04  DEF $EX04     CODE 7   PROGRAM SUSPENSION
0226  01162 000006X        DEF $EX05     CODE 8   PROGRAM SEGMENT LOAD
0227  01163 000006X        DEF $EX05     CODE 9   SCHED WITH WAIT
0228  01164 000006X        DEF $EX05      CODE 10   SCHED WITHOUT WAIT
0229  01165 000010X        DEF $EX07      CODE 11  TIME REQUEST
0230  01166 001502R        DEF RQERR      CODE 12 - TIMER REQUEST (RT)
0231  01167 001045R        DEF STAT       CODE 13 - STATUS
0232  01170 000023X        DEF $EX18      CODE 14 - FILE READ (DISC)
0233  01171 000023X        DEF $EX18      CODE 15 - FILE WRITE(DISC)
0234  01172 000002X        DEF $EX01      CODE 16  DISC WORK TRACKS STATUS
0235  01173 000003X        DEF $EX02      CODE 17  DISC WORK TRACK LIMITS
0236  01174 000007X        DEF $EX06     CODE 18   USER FILE NAME SEARCH
0237  01175 001003R        DEF R1,ST      CODE 19 - BASE PAGE STORE
0238  01176 001040R        DEF R,LDX      CODE 20 - LOAD&EXECUTE PROGRAM
0239  01177 001023R        DEF R2A        CODE 21 - TURN ON TBG
0240  01200 001014R        DEF R2X        CODE 22 - EXECUTE I/O IN A-REG,
0241  01201 000022X DEF17  DEF $EX17      CODE 23 - CHANGE USER SUBCHANNEL
0242  01202 000030X DEF30  DEF $EX30      CODE 24 - EFMP REQUEST
0243  01203 000034X        DEF $EX34       CODE 25
0244  01204 000035X        DEF $EX35       CODE 26
0245  01205 000036X        DEF $EX36       CODE 27 - USER EXEC MODULE
0246  01206 000037X        DEF $EX37       CODE 28 - USER EXEC MODULE
0247  01207 001125R        DEF SEGRT   CODE 29  SEGMENT RETURN
0248  01210 001115R        DEF MEMPT   CODE 30- MEMPORY PROTECT
0249  01211 000040X        DEF $EX40    CODE 31 - DATA MANAGEMENT
0250  01212 000026X        DEF $EX21    CODE 32 - CREATE A FILE (PROGRAMMA
0251  01213 000026X        DEF $EX21    CODE 33 - PURGE A FILE(PROGRAMMATI
0252  01214 000026X        DEF $EX21    CODE 34 - RENAME A FILE(PROGRAMMAT
0253  01215 000027X        DEF $EX22    CODE 35 - MEM, MGMT -INITIALIZE
0254  01216 000027X        DEF $EX22    CODE 36 - MEM, MGMT -STATUS
0255  01217 000027X        DEF $EX22    CODE 37 - MEM, MGMT -ALLOCATE(MAPP
0256  01220 000027X        DEF $EX22    CODE 38 - MEM, MGMT -ALLOCATE(NON-
0257  01221 001502R        DEF RQERR    CODE 39 - MEM, MGMT -DEALLOCATE(MA
0258  01222 001502R        DEF RQERR    CODE 40 - MEM, MGMT -REALLOCATE(MA
0259  01223 000027X        DEF $EX22    CODE 41 - MEM, MGMT -RELEASE
0260  01224 000051  CODE# ABS *-2-RQTBL
0261*
0262  01225 001226R MDTAB DEF *+1
0263  01226 011022        OCT 11022      18,18
0264  01227 011022        OCT 11022      18,18
0265  01230 004377        OCT 4377       8,-1
0266  01231 001404        OCT 1404       3,4
0267  01232 002405        OCT 2405       5,5
0268  01233 002407        OCT 2407       5,7
0269  01234 177777        OCT 177777     -1,-1
0270  01235 011022        OCT 11022      18,18
0271  01236 000402        OCT 402        1,2
0272  01237 003377        OCT 3377       6,-1
```

```
0273  01240 177777          OCT 177777     -1,-1
0274  01241 177421          OCT 177421      -1,17
0275  01242 017042          OCT 17042     30,34
0276  01243 021444          OCT 21444     35,36
0277  01244 022777          OCT 22777       37,-1
0278  01245 177450          OCT 177450       -1,40
0279  01246 012425          OCT 012425     21,21
0280  01247 012426          OCT 012426      21,22
0281  01250 013026          OCT 013026      22,22
0282  01251 013377          OCT 013377
0283  01252 177426          OCT 177426
0284*
```

```
0286*
0287*     THE FOLLOWING CODE IS PART OF THE I/O CONTROL PROCESSING
0288*   MODULE($EX18).  IT IS REMOVED FROM THE EXEC MODULE BECAUSE
0289*   IT REQUIRES THE EXEC MODULE OVERLAY AREA TO DO A FILE
0290*   SEARCH($EX06)
0291*
0292  01253 060232  IO,40 LDA RQP5       CHECK IF LEGAL USER FILE NAME
0293  01254 070274        STA $MDBF      SAVE ADDRESS OF FILE NAME
0294  01255 067300R       LDB FLDEF
0295  01256 074275        STB $MDBF+1    SET RETURN ADDRESS
0296  01257 063302R       LDA .11
0297  01260 067301R       LDB DEF11
0298  01261 027000R       JMP R4A        READ IN $EX11
0299  01262 006003  IO,FL SZB,RSS
0300  01263 027515R       JMP ERR06           FILE NAME NOT FOUND
0301  01264 044055        ADB .2
0302  01265 160001        LDA B,I
0303  01266 010071        AND M37
0304  01267 053035R       CPA .12     TYPE IS ABSOLUTE?
0305  01270 002400        CLA        =YES,
0306  01271 040041        ADA N10        ASCII, BINARY +; OTHERS =
0307  01272 001000        ALS
0308  01273 030316        IOR RCODE      14=READ, 15=WRITE
0309  01274 002031        SSA,SLA,RSS    ERROR IF WRITE NOT ASCII OR BIN.
0310  01275 002401  IO,41 CLA,RSS          OK, SET TO RETURN TO $EX18
0311  01276 027504R       JMP ERRTN      OPERATION REJECTED
0312  01277 026766R       JMP R4
0313  01300 001262R FLDEF DEF IO,FL
0314  01301 000014X DEF11 DEF $EX11
0315  01302 000013  .11    DEC 11
0316*
```

```
0318*
0319*     LOGICAL UNIT # CHECK ROUTINE
0320*
0321*     LUCHK VARIFY THAT LU # SPECIFIED IS LEGAL I/O DEVICE,
0322*   IN ADDITION, IF LEGAL, THEN THE 17 WORD EQT TABLE ADDRESSES
0323*   ARE SET BEFORE RETURNING.
0324*
0325*     CALLING SEQUENCE:
0326*
0327*        LDA <L.U. #>
0328*        JSB LUCHK
0329*
0330  01303 000000  LUCHK NOP
0331  01304 010072        AND M77
0332  01305 002003        SZA,RSS
0333  01306 026665R       JMP ERR01
0334  01307 007400        CCB
0335  01310 044000        ADB A
0336  01311 003004        CMA,INA
0337  01312 040122        ADA LUT#
0338  01313 002020        SSA
0339  01314 026665R       JMP ERR01          EXCEEDS L.U. TABLE LENGTH
0340  01315 044121        ADB LUTAB
0341  01316 160001        LDA B,I
0342  01317 002003        SZA,RSS
0343  01320 127303R       JMP LUCHK,I  LU NULL, RETURN
0344  01321 040052        ADA N1       CONVERT L.U. TO ABSOLUTE ADDRESS
0345  01322 017016R       JSB MPY17     MULTIPLY BY 17
0346  01323 016057R       JSB SETEQ
0347  01324 127303R       JMP LUCHK,I
0348*
0349  01325 000000  NULCK NOP          SUBROUTINE TO CHECK IF LUN IS NUL
0350  01326 063337R       LDA SAVEA    GET SAVED LUN
0351  01327 010072        AND M77    MASK OUT LUN ONLY
0352  01330 040052        ADA N1
0353  01331 040121        ADA LUTAB    POINT TO LUTAB ENTRY
0354  01332 160000        LDA A,I      GET EQT ENTRY
0355  01333 002003        SZA,RSS    NULL?
0356  01334 127325R       JMP NULCK,I YES, RETURN TO P+1
0357  01335 037325R       ISZ NULCK    NO, RETURN TO P+2
0358  01336 127325R       JMP NULCK,I
0359  01337 000000  SAVEA NOP
0360*
0361***** I/O DRIVER INITIATION PROCESSOR *****
0362*
0363*     THIS ROUTINE PROVIDES A CENTRAL POINT FOR CALLING AN I/O
0364*   DRIVER TO INITIATE A NEW OPERATION,
0365*     THIS ROUTINE ASSIGNS A DMA CHANNEL, IF REQUIRED,
0366*     THE ADDRESSES OF THE EQUIPMENT TABLE ENTRY MUST BE SET IN
0367*   EQT1-EQT17 BEFORE THE ROUTINE IS CALLED,
0368*
0369*     CALLING SEQUENCE:
0370*        JSB DRIVR
0371*
0372*     RETURN:
0373*        (P+1) FOR OPERATION INITIATED
```

```
0374*          (P+2) FOR OPERATION REJECTED
0375*               (A) = 1 FOR READ OR WRITE ILLEGAL FOR DEVICE
0376*                   = 2 FOR CONTROL REQUEST ILLEGAL FOR DEVICE
0377*                   = 3 FOR EQUIPMENT MALFUNCTION OR NOT READY
0378*                   = 4 FOR IMMEDIATE COMPLETION
0379*                   = 5 FOR DMA UNAVAILABLE
0380*                   = 6 FOR DRIVER REQUIRE WAIT
0381*
0382  01340 000000  DRIVR NOP
0383  01341 160205        LDA EQT3,I   CHECK IF DMA REQUIRED
0384  01342 002021        SSA,RSS           YES
0385  01343 027372R       JMP DVR02
0386*
0387  01344 160212        LDA EQT8,I   *
0388  01345 002020        SSA          *  IF CLEAR DEVICE REQUEST,
0389  01346 003004        CMA,INA      *
0390  01347 050056        CPA .3       *  I.E., REQUEST CODE =3,
0391  01350 002001        RSS          *
0392  01351 027362R       JMP DVR00    *  & CONTROL FUNCTION = 0,
0393  01352 160213        LDA EQT9,I   *
0394  01353 013453R       AND MSKCL    *  THEN DON'T ASSIGN DMA.
0395  01354 001727        ALF,ALF      IF CONTROL REQUEST SUBFUNCTION
0396  01355 001222        RAL,RAL       CODE LESS THAN 100 DO NOT ASSIGN
0397  01356 003004        CMA,INA       DMA CHANNEL
0398  01357 040067        ADA .64
0399  01360 002021        SSA,RSS
0400  01361 027372R       JMP DVR02    *
0401*
0402  01362 060061  DVR00 LDA .6       CHECK TO ASSIGN DMA CHANNEL
0403  01363 070257        STA CHAN
0404  01364 017462R       JSB $DMAX     CHECK FOR DMA CHANNEL ASSIGNMENT
0405  01365 027370R       JMP DVR01
0406  01366 027427R       JMP DVR07
0407  01367 034257        ISZ CHAN
0408  01370 060203  DVR01 LDA EQT1      SET EQT ENTRY ADDRESSES IN
0409  01371 170001        STA B,I            INTERRUPT TABLE ENTRY
0410  01372 160213  DVR02 LDA EQT9,I
0411  01373 010077        AND M1777
0412  01374 070001        STA B
0413  01375 160212        LDA EQT8,I    GET REQUEST CODE
0414  01376 002020        SSA
0415  01377 003004        CMA,INA
0416  01400 053036R       CPA .14       USER FILE READ REQUEST
0417  01401 002404        CLA,INA
0418  01402 050070        CPA .15       USER FILE WRITE REQUEST
0419  01403 060055        LDA .2
0420  01404 030001        IOR B
0421  01405 170213        STA EQT9,I
0422  01406 160205        LDA EQT3,I    LOAD A WITH CHANNEL#
0423  01407 010072        AND M77
0424  01410 164203        LDB EQT1,I   CALL DRIVER INITIATION SECTION
0425  01411 114001        JSB B,I
0426*
0427* DRIVER RETURNS AN INDICATION OF ACCEPTANCE OR REJECTION OF THE
0428* REQUESTED OPERATION.
0429*  (A) = 0 FOR OPERATION SUCCESSFULLY INITIATED.
```

```
0430*       = 1 FOR READ OR WRITE REQUEST ILLEGAL FOR DEVICE
0431*       = 2 FOR CONTROL REQUEST ILLEGAL OR NOT DEFINED
0432*       = 3 FOR EQUIPMENT MALFUNCTION OR NOT READY
0433*        = 4 FOR IMMEDIATE COMPLETION
0434*        = 5 FOR WAITING FOR DMA
0435*        = 6 FOR DRIVER REQUIRE A WAIT
0436*
0437  01412 072674R         STA TEMPZ   SAVE INIT, CODE
0438  01413 002102         CLE,SZA
0439  01414 027431R         JMP DVR06          OPERATION REJECTED
0440  01415 164205         LDB EQT3,I
0441  01416 005222         RBL,RBL
0442  01417 062003         LDA EQT1
0443  01420 003004         CMA,INA
0444  01421 006311         CCE,SLB,RSS
0445  01422 070315         STA IODMD
0446  01423 162006         LDA EQT4,I   SET AV FIELD OF EQT4 TO 2 TO
0447  01424 001225         RAL,ERA             INDICATE DEVICE IN
0448  01425 172006         STA EQT4,I         OPERATION
0449  01426 127340R         JMP DRIVR,I
0450  01427 060060  DVR07 LDA .5
0451  01430 027451R         JMP DVR09
0452  01431 050056  DVR06 CPA .3          NOT READY?
0453  01432 002300         CCE             -YES
0454  01433 016040R         JSB RCHAN      RELEASE DMA CHANNEL
0455  01434 060133         LDA MDFLG        BIT 0 OF MDFLG=1?
0456  01435 000010         SLA
0457  01436 027441R         JMP DVR08       YES- SKIP NRPAR
0458  01437 006440         CLB,SEZ         NOT READY?
0459  01440 017454R         JSB NRPAR       -YES
0460  01441 062674R DVR08 LDA TEMPZ
0461  01442 050057         CPA .4          IMMED. COMPLETION?
0462  01443 002101         CLE,RSS         YES, CLEAR BUSY BIT.
0463  01444 027451R         JMP DVR09      NO.
0464  01445 162006         LDA EQT4,I
0465  01446 001225         RAL,ERA
0466  01447 172006         STA EQT4,I
0467  01450 062674R         LDA TEMPZ
0468  01451 037340R DVR09 ISZ DRIVR
0469  01452 127340R         JMP DRIVR,I  RETURN TO (P+2) EXIT
0470*
0471  01453 017700  MSKCL OCT 17700    MASK OUT FUNCTION CODE
0472  01454 000000  NRPAR NOP           CHECK IF EX11 OR 17 ACTIVE
0473  01455 060330         LDA XFLG      SET WITH ADDRESS IF TRUE
0474  01456 002003         SZA,RSS
0475  01457 127454R         JMP NRPAR,I   NO
0476  01460 076635R         STB $OPER   B MUST BE 0 ON ENTRY
0477  01461 124000         JMP A,I       YES
```

```
0479*
0480*              THIS ROUTINE CHECKS FOR AN AVAILABLE DMA CHANNEL AND S
0481*              UP  VIA ITS EXIT FOR THE ASSIGNMENT OF THE OF THE DMA
0482*
0483*
0484*              P+1 RETURN: DMA #6 AVAILABLE
0485*              P+2 RETURB: (A) DMA #6 AND #7 BUSY
0486*                          (B) DMA #6 BUSY AND #7 NOT IN 2114B
0487*              P+3 RETURN: DMA #7 AVAILABLE
0488*
0489  01462 000000  $DMAX NOP             CHECK DMA CHAN ASSIGNMENTS
0490  01463 064201        LDB INTAB
0491  01464 002400        CLA
0492  01465 150001        CPA B,I
0493  01466 127462R       JMP $DMAX,I
0494  01467 050165        CPA CUMID       CHECK IF 2116
0495  01470 006004        INB             CHECK FOR 2ND CHAN IF AVAIL
0496  01471 150001        CPA B,I
0497  01472 037462R       ISZ $DMAX       CHAN IS AVAIL
0498  01473 037462R       ISZ $DMAX
0499  01474 127462R       JMP $DMAX,I
0500*
0501  01475 000016X DEF13 DEF $EX13
0502*
0503*
0504*     THE FOLLOWING ARE ENTRIES FOR SYSTEM DETECTED ERRORS.,
0505*  THE NECESSARY INFORMATION NEEDED FOR THE ERROR CODE ARE SET
0506*  PRIOR TO CALLING THE ERROR PROCESSING ROUTINE.
0507*
0508  01476 000000  RQNEG NOP
0509  01477 164226        LDB RQP1,I
0510  01500 006020        SSB             REQUEST CODE NEGATIVE?
0511  01501 127476R       JMP RQNEG,I      =YES, SO OK
0512*
0513  01502 064055  RQERR LDB ,2          REQUEST ERROR
0514  01503 027516R       JMP MD13
0515  01502         $RQER EQU RQERR
0516  01504 006401  ERRTN CLB,RSS
0517  01505 064061  ERR02 LDB ,6          LOGICAL UNIT NOT ASSIGNED
0518  01506 027516R       JMP MD13
0519  01507 064062  ERR03 LDB ,7          ILLEGAL BUFFER ADDRESS
0520  01510 027516R       JMP MD13
0521  01511 064063  ERR04 LDB ,8          CORE WRAP AROUND
0522  01512 027516R       JMP MD13
0523  01513 064064  ERR05 LDB ,9          ILLEGAL TRACK ADDRESS
0524  01514 027516R       JMP MD13
0525  01515 064065  ERR06 LDB ,10         FILE NAME NOT FOUND
0526  01516 060314  MD13  LDA VADR
0527  01517 070274        STA $MDBF
0528*
0529* IF BIT 0 OF MDFLG SET, RETURN TO USER WITH
0530* PROPER ERROR CODE SET IN REG A. OTHERWISE GO TO Ex13
0531*
0532  01520 060133        LDA MDFLG     BIT 0
0533  01521 002011        SLA,RSS         OF MDFLG = 1?
0534  01522 027532R       JMP MD13B    NO. OK.
```

```
0535  01523 054054          CPB ,1        MEMORY PROTECT ERROR?
0536  01524 002001          RSS           YES, IGNORE MODE FLAG
0537  01525 054056          CPB ,3        TIME EXCEEDED?
0538  01526 027532R         JMP MD13B     YES, IGNORE MODE FLAG
0539  01527 044064          ADB ,9       ADJUST ERROR CODE
0540  01530 060001          LDA B        SET A TO ERROR CODE
0541  01531 027007R         JMP R1A       RETURN TO USER.
0542*
0543  01532 063475R MD13B   LDA DEF13
0544  01533 070305          STA TEMP0
0545  01534 002400          CLA
0546  01535 054057          CPB ,4         I/O ERROR?
0547  01536 002001          RSS             -YES, DON'T ZAP EXMOD
0548  01537 070245          STA EXMOD       -ZAP!
0549  01540 062126R         LDA ,13
0550*
0551*    NOTE - THIS CODING MUST FALL THRU TO $MDLD
0552*
```

```
0554*
0555***** MODULE LOADING ROUTINE *****
0556*
0557*      THIS ROUTINE IS USED BY EXEC WHEN AN EXEC MODULE IS REQUESTED
0558*
0559*      THE MODULE MAY BE CORE RESIDENT OR DISC RESIDENT:
0560*
0561*         1. IF CORE RESIDENT, THEN ENTER MODULE AT TRANSFER ADDRESS
0562*
0563*         2. IF DISC RESIDENT,
0564*
0565*            A. CURRENT RESIDENCE WORD:
0566*                    0 FOR NONE RESIDENT
0567*                   +N FOR MODULE N RESIDENT AND NOT BUSY
0568*                   -N FOR MODULE N RESIDENT AND BUSY
0569*            B. IF CURRENT RES WORD IS +N, THEN IF N IS THE DESIRED
0570*               MODULE, ENTER AT TRANSFER ADDRESS, IF N IS NOT THE
0571*               DESIRED MODULE, READ MODULE IN AND ENTER AT FIRST
0572*               LOCATION OF MODULE AREA
0573*            C.  IF CURRENT RESIDENCE WORD IS -N, THEN GO TO MODULE
0574*                WAIT ROUTINE (SEBSY)
0575*
0576*      CALLING SEQUENCE:
0577*
0578*          LDA <TRANSFER ADDRESS>
0579*          STA TEMP0
0580*          LDA <MODULE #>
0581*          LDB <INFORMATION NEEDED BY MODULE>
0582*          JMP $MDLD
0583*
0001  01541 072702R $MDLD STA TEMP+5     MODULE #
0002  01542 076701R       STB TEMP+4
0003  01543 060305        LDA TEMP0      GET MODULE TRANSFER ADDRESS
0004  01544 002001        RSS
0005  01545 160000        LDA A,I
0006  01546 001275        RAL,CLE,SLA,ERA    RESOLVE INDIRECTS
0007  01547 027545R       JMP *-2
0008  01550 070305        STA TEMP0
0009  01551 064246        LDB EXMAN
0010  01552 007004        CMB,INB
0011  01553 044000        ADB A
0012  01554 006020        SSB
0013  01555 027636R       JMP MDY
0014  01556 060243        LDA EXLOC
0015  01557 072700R       STA TEMP+3     LOCATION OF DOUBLETS
0016  01560 060244        LDA EX#
0017  01561 002003        SZA,RSS
0018  01562 027575R       JMP MDCOR
0019  01563 003004        CMA,INA
0020  01564 072677R       STA TEMP+2     DOUBLET COUNTER
0021  01565 162700R MD1   LDA TEMP+3,I   SEARCH DOUBLET TABLE FOR MODULE
0022  01566 010074        AND M377
0023  01567 052702R       CPA TEMP+5
0024  01570 027601R       JMP MD2              MODULE FOUND
0025  01571 036700R       ISZ TEMP+3
0026  01572 036700R       ISZ TEMP+3
```

```
0027  01573 036677R        ISZ TEMP+2
0028  01574 027565R        JMP MD1              GO TEST NEXT DOUBLET
0029  01575 060305  MDCOR LDA TEMP0     GET MODULE ADDRESS
0030  01576 002003         SZA,RSS       ANYTHING THERE?
0031  01577 027502R        JMP RQERR      -NO, GIVE REQUEST ERROR
0032  01600 124305         JMP TEMP0,I   YES, TRANSFER TO MODULE
0033  01601 064245  MD2    LDB EXMOD     CHECK IF EXEC OVERLAY BUSY
0034  01602 006020         SSB
0035  01603 027640R        JMP CHEKE    YES, CHECK MDFLG
0036  01604 003004         CMA,INA
0037  01605 070245         STA EXMOD     SET OVERLAY AREA BUSY
0038  01606 056702R        CPB TEMP+5
0039  01607 027636R        JMP MDY
0040  01610 064246         LDB EXMAN     SETUP TO READ IN MODULE MAIN
0041  01611 074167         STB DBUFR+1   SET CORE ADDRESS
0042  01612 007004         CMB,INB
0043  01613 044247         ADB EXMAN+1   SAVE OVERLAY SIZE
0044  01614 074170         STB DBUFR+2     AS TENTATIVE WORD COUNT
0045  01615 162700R        LDA TEMP+3,I  #SECTOR MAIN IN UPPER 5 BITS
0046  01616 010075         AND M1774     ISOLATE
0047  01617 001727         ALF,ALF         AND CONVERT
0048  01620 001700         ALF             TO #WORDS
0049  01621 007004         CMB,INB
0050  01622 044000         ADB A
0051  01623 006020         SSB           #WORDS > OVERLAY AREA SIZE?
0052  01624 070170         STA DBUFR+2    -NO, SET #WORDS FROM DBLT TABLE
0053  01625 036700R        ISZ TEMP+3
0054  01626 162700R        LDA TEMP+3,I  MAIN START TRACK/SECTOR
0055  01627 017651R        JSB DISCX     CALL TO READ THE DISC
0056  01630 064250         LDB EXBAS
0057  01631 074167         STB DBUFR+1   SET CORE ADDRESS
0058  01632 007004         CMB,INB
0059  01633 044251         ADB EXBAS+1
0060  01634 074170         STB DBUFR+2   SET NUMBER OF WORDS
0061*
0062*
0063  01635 017651R        JSB DISCX     READ IN B,P, LINKS
0064  01636 056701R MDY    LDB TEMP+4
0065  01637 124305         JMP TEMP0,I
0066*
0067  01640 064133  CHEKE LDB MDFLG
0068  01641 006011         SLB,RSS       BIT 0 = 1?
0069  01642 027737R        JMP $EBSY  NO, GO WAIT
0070  01643 060063         LDA .8     YES, SET CODE TO EXEC MOD AREA BUSY
0071  01644 027007R        JMP R1A      RETURN TO USER,
0072*
0073  01645 000000  ECODE NOP
0074  01646 000000  SUBAD NOP
0075  01647 040000  MASK8 OCT 40000
0076  01650 000031  B3i   OCT 31
0077  01651 000000  DISCX NOP
0078  01652 070166         STA DBUFR
0079  01653 002400         CLA
0080  01654 070162         STA CRFLG
0081  01655 060174         LDA TSONE     SAVE POSSIBLE USER
0082  01656 073670R        STA SVTSN       NEXT TRACK/SECTOR
```

```
0083  01657 063667R        LDA DBFR       PARAMETER ADDRESS FOR SYSTEM
0084  01660 006404          CLB,INB        B = -1 = SYSTEM READ
0085  01661 016114R         JSB $DISC      READ THE DISC
0086  01662 060174          LDA TSONE      SET UP POSSIBLE
0087  01663 070166          STA DBUFR        NEXT ACCESS
0088  01664 067670R         LDB SVTSN      RESTORE POSSIBLE USER
0089  01665 074174          STB TSONE        NEXT TRACK/SECTOR
0090  01666 127651R         JMP DISCX,I    RETURN
0091  01667 000166  DBFR    DEF  DBUFR
0092  01670 000000  SVTSN   NOP
0093*
0094*
0095***** <$LDVR> ROUTINE LOADS IN THE REQUESTED I/O DRIVER MODULE ****
0096*
0097*      THIS ROUTINE READS IN THE REQUESTED I/O DRIVER MODULE INTO
0098*    CORE.
0099*
0100*      CALLING SEQUENCE:
0101*
0102*         SET DRIVER EQT ADDRESSES IN BASE PAGE
0103*          JSB $LDVR
0104*
0105  01671 000000  $LDVR   NOP
0106  01672 164205          LDB EQT3,I
0107  01673 005222          RBL,RBL
0108  01674 004010          SLB            CORE-RESIDENT DRIVER?
0109  01675 127671R         JMP $LDVR,I      YES, EXIT
0110  01676 060315          LDA IODMD      GET CURRENT DRIVER EQT1 ADDRS.
0111  01677 002003          SZA,RSS
0112  01700 027707R         JMP LD10
0113  01701 040056          ADA .3          -INCR. TO EQT4 ADDRS.
0114  01702 160000          LDA A,I
0115  01703 120206          XOR EQT4,I     ZAP WITH REQ. EQT4
0116  01704 012632R         AND ETYPE       ISOLATE EQPMT, TYPE CODE
0117  01705 002003          SZA,RSS        DRIVER ALREADY IN CORE?
0118  01706 127671R         JMP $LDVR,I     -YES
0119*
0120  01707 063671R LD10    LDA $LDVR
0121  01710 073731R         STA LDRTN      SAVE RETURN ADDRS.
0122  01711 060203          LDA EQT1
0123  01712 070315          STA IODMD      SAVE I/O DRIVER MOD EQT ADDR
0124  01713 064252          LDB IODMN
0125  01714 074167          STB DBUFR+1    STORE START ADDRESS OF MAIN
0126  01715 007004          CMB,INB
0127  01716 144221          ADB EQT15,I
0128  01717 074170          STB DBUFR+2    STORE NUMBER OF WORDS OF MAIN
0129  01720 160223          LDA EQT17,I
0130  01721 017651R         JSB DISCX      LOAD DRIVER
0131  01722 064253          LDB IODBS
0132  01723 074167          STB DBUFR+1    STARTING B.P. CORE ADDRESS
0133  01724 007004          CMB,INB
0134  01725 144222          ADB EQT16,I
0135  01726 074170          STB DBUFR+2    SET B.P. LINK WORD COUNT
0136*
0137*
0138  01727 017651R         JSB DISCX
```

```
0139  01730 127731R        JMP LDRTN,I   RETURN
0140*
0141  01731 000000  LDRTN NOP
```

```
0143*
0144***** I/O DRIVER MODULE BUSY WAIT LOOP *****
0145*
0146*     EQT1-EQT17 SET PRIOR TO ENTRY
0147*
0148*     CALLING SEQUENCE:
0149*
0150*        JMP $MBSY
0151*
0152  01732 000000  $MBSY NOP
0153  01733 060203        LDA EQT1
0154  01734 073736R       STA MEQT
0155  01735 026013R       JMP $WAIT
0156  01736 000000  MEQT   NOP
0157*
0158*     $EBSY ROUTINE WAITS FOR EXEC MODULE AREA TO BECOME AVAILABLE
0159*
0160*
0161*     CALLING SEQUENCE:
0162*
0163*     JMP $EBSY
0164*
0165  01737 073751R $EBSY STA MDLDA     MODULE#
0166  01740 062701R       LDA TEMP+4
0167  01741 073752R       STA MDLDB
0168  01742 060305        LDA TEMP0
0169  01743 073753R       STA MDLDT     TRANSFER ADDRESS
0170  01744 060274        LDA $MDBF     INFO TO MODULE
0171  01745 073754R       STA MDLD1
0172  01746 060275        LDA $MDBF+1
0173  01747 073755R       STA MDLD2
0174  01750 026013R       JMP $WAIT
0175  01751 000000  MDLDA  NOP
0176  01752 000000  MDLDB  NOP
0177  01753 000000  MDLDT  NOP
0178  01754 000000  MDLD1  NOP
0179  01755 000000  MDLD2  NOP
0180  01751         ERETN  EQU MDLDA
0181*
0182***** ROUTINE TO WAIT FOR I/O REQUEST COMPLETION *****
0183*
0184*     $WAIT ROUTINE PROVIDES CENTRAL POINT FOR SYSTEM IDLING AND
0185*  WAITING FOR I/O COMPLETION.
0186*     $WAIT ALSO ACTS AS CHECKING POINT FOR DEVICE BUSY, I/O MODULE
0187*  AREA BUSY, DMA AVAILABILITY AND EXEC MODULE AREA BUSY.
0188*
0189*     CALLING SEQUENCE:
0190*
0191*        JMP $WAIT
0192*
0193  01756 000000  WAITX NOP
0194  01757 066754R       LDB IOCNT
0195  01760 162705R       LDA DBUSY,I   ISOLATE AVAILABILITY BITS
0196  01761 001222        RAL,RAL
0197  01762 010056        AND ,3
0198  01763 006002        SZB
```

```
0199  01764 002002          SZA
0200  01765 027772R         JMP WA10      STILL BUSY
0201  01766 072754R         STA IOCNT
0202  01767 062755R         LDA CRFTM     RESTORE CRFLG
0203  01770 070162          STA CRFLG
0204  01771 126706R         JMP CALAD,I
0205*
0206  01772 063736R WA10    LDA MEQT      CHECK I/O DRIVER MODULE BUSY
0207  01773 064315          LDB IODMD
0208  01774 002002          SZA
0209  01775 006020          SSB            CHECK IF MODULE AREA FREE
0210  01776 026002R         JMP WA20       NO
0211  01777 016057R         JSB SETEQ     RESTORE ORIGINAL EQT ADDRESSES
0212  02000 073736R         STA MEQT      CLEAR WAITING FLAG
0213  02001 127732R         JMP $MBSY,I    TRANSFER TO ORIGINAL PT OF CALL
0214*
0215  02002 017462R WA20    JSB $DMAX      CHECK IF DMA AVAIL.
0216  02003 026005R         JMP WA30      CHANNEL 7 FREE
0217  02004 127756R         JMP WAITX,I    NEITHER CHANNEL FREE
0218  02005 062771R WA30    LDA DEQT
0219  02006 002003          SZA,RSS        WAITING FOR DMA?
0220  02007 127756R         JMP WAITX,I    -NO
0221  02010 016057R         JSB SETEQ
0222  02011 072771R         STA DEQT      CLEAR DMA WAITING FLAG
0223  02012 126704R         JMP DMAAD,I
0224*
0225*
0226  02013 017756R $WAIT   JSB WAITX     CHECK IF ANYTHING QUEUED UP
0227  02014 064245          LDB EXMOD
0228  02015 006021          SSB,RSS       MODULE AREA AVAILABLE?
0229  02016 053751R         CPA ERETN     ANYBODY WAITING FOR IT?
0230  02017 026033R         JMP SKIP5     NO
0231  02020 063754R         LDA MDLD1
0232  02021 070274          STA $MDBF
0233  02022 063755R         LDA MDLD2
0234  02023 070275          STA $MDBF+1
0235  02024 063753R         LDA MDLDT
0236  02025 070305          STA TEMP0
0237  02026 063751R         LDA MDLDA
0238  02027 006400          CLB
0239  02030 077751R         STB ERETN     CLEAR MODULE WAITING FLAG
0240  02031 067752R         LDB MDLDB
0241  02032 027541R         JMP $MDLD
0242*
0243  02033 016234R SKIP5   JSB $IRT1
0244  02034 102100  WAITL    STF 0     TURN ON INTERRUPT SYSTEM
0245  02035 003400          CCA
0246  02036 007400          CCB
0247  02037 026034R         JMP WAITL
0248*
0249*****  DMA CHANNEL ASSIGNMENT RELEASE *****
0250*
0251*       <RCHAN> RELEASES THE ASSIGNMENT OF A DMA CHANNEL FROM AN I/O
0252*    DEVICE. THE I/O DEVICE IS REFERENCED BY THE EQT ENTRY ADDRESSES,
0253*    IN EQTi-EQTi7
0254*       THE CHANNEL IS RELEASED BY SETTING THE INTERRUPT TABLE ENTRY
```

```
0255*   FOR THE CHANNEL = 0
0256*
0257*     CALLING SEQUENCE:
0258*
0259*     JSB RCHAN
0260*
0261  02040 000000  RCHAN NOP           ENTRY/EXIT
0262  02041 064201        LDB INTAB
0263  02042 060203        LDA EQT1      CHECK IF CHANNEL 6 OR 7
0264  02043 150001        CPA B,I
0265  02044 026051R      JMP RC6       CHANNEL 6 IN USE
0266  02045 006004        INB
0267  02046 150001        CPA B,I
0268  02047 026053R       JMP RC7       CHANNEL 7 IN USE
0269  02050 126040R       JMP RCHAN,I    NO DMA IN USE
0270  02051 102106  RC6    STF 6         CLEAR DMA 6
0271  02052 026054R       JMP RCCLR
0272  02053 102107  RC7    STF 7         CLEAR DMA 7
0273  02054 002400  RCCLR CLA
0274  02055 170001        STA B,I       CLEAR INTAB LOCATION
0275  02056 126040R      JMP RCHAN,I
0276*
0277*
0278*
0279***** SETEQ SETS ADDRESSES OF 17 WORD EQT ENTRY IN BASE PAGE AREA
0280*         COMMUNICATION AREA LABELED <EQT1-EQT17>
0281*
0282*     CALLING SEQUENCE
0283*
0284*        (A) = STARTING ADDRESS OF THE EQT ENTRY
0285*              FOR THE REFERENCED I/O UNIT
0286*        JSB SETEQ
0287*
0288  02057 000000  SETEQ NOP           ENTRY/EXIT
0289  02060 066064R       LDB DEFE1     SET STORE ADDRESS
0290  02061 016052X       JSB $SETP
0291  02062 000066        DEF ,17     # POINTERSTO SET
0292  02063 126057R       JMP SETEQ,I
0293  02064 000203  DEFE1 DEF EQT1
0294*
0295*
0296*
0297*     $MOVE TRANSFERS DATA FROM 1 BUFFER TO ANOTHER
0298*   OR CLEARS A SPECIFIED BUFFER
0299*     CALLING SEQUENCE
0300*         LDA <ADDR OF ORIG DATA><OR 0 FOR CLEAR>
0301*         LDB <NEGATIVE WORD COUNT>
0302*         JSB $MOVE
0303*         DEF <ADDR TO TRANSFER DATA>
0304*
0305  02065 000000  $MOVE NOP
0306  02066 002001        RSS           RESOLVE POSSIBLE INDIRECT LEVEL
0307  02067 160000        LDA A,I
0308  02070 001275        RAL,CLE,SLA,ERA
0309  02071 026067R       JMP *-2
0310  02072 072040R       STA TMPX0      ORIG DATA ADDR
```

```
0311  02073 077462R        STB TMPX2      NEGATIVE WORD COUNT
0312  02074 166065R        LDB $MOVE,I
0313  02075 002001         RSS
0314  02076 164001         LDB B,I
0315  02077 005275         RBL,CLE,SLB,ERB
0316  02100 026076R        JMP *-2
0317  02101 076057R        STB TMPX1      TRANSFER ADDR
0318  02102 036065R        ISZ $MOVE      INCR TO EXIT ADDR
0319  02103 006400  M010   CLB
0320  02104 002002         SZA            SKIP IF CLEAR BUFFER OPTION
0321  02105 166040R        LDB TMPX0,I    TRANSFER 1 DATA VALUE
0322  02106 176057R        STB TMPX1,I
0323  02107 036040R        ISZ TMPX0
0324  02110 036057R        ISZ TMPX1
0325  02111 037462R        ISZ TMPX2
0326  02112 026103R        JMP M010       GO TO TRANSFER NEXT DATA
0327  02113 126065R        JMP $MOVE,I    RETURN
0328*
0329*     $DISC ROUTINE GENERATES THE NECESSARY NUMBER OF $SYIO CALLS
0330*   TO READ OR WRITE DISC DATA. ROUTINE WAITS TILL TRANSFER IS
0331*   COMPLETE
0332*
0333*     CALLING SEQUENCE
0334*         LDB  1 FOR READ; 2 FOR WRITE
0335*         LDA  <PARAM BUF ADDR>
0336*         JSB  $DISC
0337*
0338  02114 000000  $DISC NOP
0339  02115 076123R        STB CSY10+1    STORE READ OR WRITE REQUEST CODE
0340  02116 064203         LDB EQT1
0341  02117 076147R        STB DEQT1
0342  02120 072125R        STA CSY10+3
0343  02121 036635R        ISZ $OPER
0344  02122 016710R CSY10  JSB $SYIO      CALL TO SYSTEM I/O ROUTINE
0345  02123 000000         DEC 0               READ OR WRITE
0346  02124 000002         DEC 2               LOGICAL UNIT
0347  02125 002125R        DEF *               BUFFER ADDRESS
0348  02126 000015  ,13    DEC 13              (IGNORED FOR DISC TRANSFER)
0349  02127 002143R        DEF DCOMP     COMPLETION RETURN ADDR
0350  02130 060164         LDA FILRW      FILE SEARCH W/O WAIT IN PROCESS
0351  02131 002003         SZA,RSS
0352  02132 026013R        JMP $WAIT        -NO, GO WAIT
0353  02133 002021         SSA,RSS          -YES, 1ST TIME CALL TO $DISC?
0354  02134 026052R        JMP $CIC3
0355  02135 001665         ELA,CLE,ERA           -YES, CLEAR 1ST TIME BIT
0356  02136 070164         STA FILRW
0357  02137 002400         CLA                -YES, RETURN TO USER WITH
0358  02140 064225         LDB RQRTN             INIT, CODE = 0 IN A-REG
0359  02141 074137         STB XIRT
0360  02142 026213R        JMP $IRT
0361  02143 062147R DCOMP  LDA DEQT1
0362  02144 016057R        JSB SETEQ
0363  02145 072635R        STA $OPER
0364  02146 126114R        JMP $DISC,I    RETURN
0365*
0366  02147 000000  DEQT1 NOP
```

```
0367*
0368*
0369  02150 064242  TE110 LDB XSUSP
0370  02151 074272        STB $GOPT     SAVE SUSPENSION ADDRESS
0371  02152 062506R       LDA CODE+2
0372  02153 070273        STA $IDCD     SET TO LOOK FOR 'GO'
0373  02154 072636R       STA $VEQT
0374*
0375*     NOTE - THIS CODING MUST FALL THROUGH TO $TYPE
0376*
```

```
0378*
0379*       $TYPE IS USED TO REQUEST INPUT FROM SYSTEM TELETYPE
0380*
0381*           ENTER WITH B = 0 TO RETURN TO PT OF SUSPENSION
0382*
0383*           ENTER WITH B NOT 0 TO WAIT TILL INPUT IN
0384*
0385  02155 076311R $TYPE STB IFLAG     SAVE TYPE FLAG
0386  02156 062307R       LDA ATT
0387  02157 006002       SZB            IF NOT OPERATOR ATTENTION
0388  02160 026170R       JMP TY002-1      CONTINUE.
0389  02161 016167R       JSB LEQT4      GO GET DISC EQT4
0390*                                    ON RETURN:
0391*                                      A = ADDRESS OF EQT4
0392*                                      B = CONTENTS OF EQT4
0393  02162 004066       CLE,ELB
0394  02163 002300       CCE
0395  02164 005500       ERB
0396  02165 174000       STB A,I        SET DISC TEMPORARILY BUSY
0397  02166 006400       CLB
0398  02167 062310R       LDA ASTRK
0399  02170 072306R       STA ASTAT+1
0400  02171 016312R TY002 JSB SAVES      SAVE INTERRUPT VALUES
0401  02172 034261       ISZ OPFLG      INCR SYS TTY BUSY FLAG
0402  02173 016710R       JSB $SYIO
0403  02174 000002       DEC 2          OUTPUT CR/LF*
0404  02175 000001       DEC 1
0405  02176 002305R       DEF ASTAT
0406  02177 000002       DEC 2
0407  02200 002220R       DEF TY015      COMPLETION RETURN ADDRESS
0408  02201 062311R TY005 LDA IFLAG      CHECK TYPE FLAG
0409  02202 002002       SZA            TRY TO RETURN
0410  02203 026013R       JMP $WAIT      WAIT TILL DONE
0411  02204 060322  TY010 LDA SXSUS      CHECK IF RETURN TO USER OR SYS
0412  02205 016142R       JSB ADCHK
0413  02206 026013R       JMP $WAIT      SYS, SO GO TO WAIT LOOP
0414  02207 060321  TY012 LDA SXEO
0415  02210 103101       CLO             RESTORE A, B, E, AND  O REGISTER
0416  02211 000036       SLA,ELA
0417  02212 102101       STF 1
0418  02213 060322       LDA SXSUS        SET UP RETURN ADDR FOR $IRT
0419  02214 070137       STA XIRT
0420  02215 060317       LDA SXA
0421  02216 064320       LDB SXB
0422  02217 026213R       JMP $IRT       RESTORE INTERRUPT SYS, MEM PROT
0423*                                        & RETURN.
0424  02220 016312R TY015 JSB SAVES      SAVE PT OF SUSP AND REGISTERS
0425  02221 060123       LDA JBUF
0426  02222 072470R       STA IOC02
0427  02223 072265R       STA ID008+1
0428  02224 072230R       STA *+4        SET INPUT BUFFER ADDRESS
0429  02225 016710R       JSB $SYIO      REQUEST INPUT FROM SYSTEM TELETY
0430  02226 000001       DEC 1
0431  02227 000401       OCT 401
0432  02230 002230R       DEF *
0433  02231 000044       DEC 36
```

```
0434  02232 002234R        DEF TY020
0435  02233 026201R        JMP TY005
0436  02234 074332  TY020  STB CHARC      SAVE WORD COUNT
0437  02235 016312R        JSB SAVE$      SAVE REGISTERS ETC
0438  02236 016167R        JSB LEQT4      GO GET DISC EQT4
0439*                                     ON RETURN:
0440*                                       A = ADDRESS OF EQT4
0441*                                       B = CONTENTS OF EQT4
0442  02237 005665         ELB,CLE,ERB
0443  02240 174000         STB A,I        CLEAR DISC IF BUSY
0444  02241 002400         CLA
0445  02242 070261         STA OPFLG      CLEAR SYS TTY BUSY FLAG
0446  02243 064332         LDB CHARC
0447  02244 016321R        JSB $TEST      TRANSFER TO INPUT TEST ROUTINE
0448  02245 060273         LDA $IDCD    RETURNS ONLY IF ERROR OR WAITING F
0449  02246 002002         SZA
0450  02247 026171R        JMP TY002
0451  02250 062311R        LDA IFLAG      IF OPERATOR ATTENTION, ATTEMPT T
0452  02251 002003         SZA,RSS           RETURN TO THE EXECUTING PROGR
0453  02252 026204R        JMP TY010         OTHERWISE, OUTPUT ANOTHER #
0454  02253 026171R        JMP TY002
0455*
0456  02207          $RTRN EQU TY012
0457*
0458*     $IDL1 IS USED TO READ INPUT FROM THE BATCH DEVICE
0459*
0460*           IF BATCH DEVICE IS SYSTEM TELETYPE, TRANSFER IS
0461*             MADE TO $TYPE ROUTINE
0462*
0463  02254 060111  $IDL1 LDA BATCH    CHECK IF BATCH IS SYS TTY
0464  02255 050054         CPA .1
0465  02256 026276R        JMP ID010      SYSTEM TELETYPE
0466  02257 072264R        STA ID008
0467  02260 017303R        JSB LUCHK      SET LU EQT ENTRIES
0468  02261 017671R        JSB $LDVR      NO, SO LOAD IN DRIVER
0469  02262 016710R        JSB $SYIO
0470  02263 000001         DEC 1
0471  02264 002264R ID008  DEF *
0472  02265 002265R        DEF *
0473  02266 000044         DEC 36
0474  02267 002271R        DEF *+2
0475  02270 026013R        JMP $WAIT      GO TO WAIT LOOP
0476  02271 160123         LDA JBUF,I
0477  02272 010075         AND M1774
0478  02273 052671R        CPA COLON
0479  02274 016321R        JSB $TEST      TRANSFER TO INPUT TEST ROUTINE
0480  02275 026254R        JMP $IDL1      ERROR, SO READ NEXT INPUT
0481*
0482  02276 060261  ID010  LDA OPFLG      CHECK IF TTY BUSY
0483  02277 002003         SZA,RSS
0484  02300 026303R        JMP ID020      NO
0485  02301 034260         ISZ OPATN      YES, SO SET OPERATOR ATTENTION FL
0486  02302 026013R        JMP $WAIT
0487  02303 007400  ID020  CCB            SET $TYPE TO WAIT TILL DONE
0488  02304 026155R        JMP $TYPE
0489  02305 006412  ASTAT  OCT 6412       CR/LF
```

```
0490   02306 000000         NOP              * OR *
0491   02307 040137  ATT    ASC 1,*
0492   02310 025137  ASTRK  ASC 1,**
0493   02311 000000  IFLAG  NOP
```

```
0495*
0496*     SAVES SAVES PT OF SUSPENSION AND REGISTERS FOR STYPE ROUTINE.
0497*
0498*     CALLING SEQUENCE
0499*
0500*        JSB SAVES
0501*
0502  02312 000000  SAVES NOP
0503  02313 062320R       LDA DEFXA
0504  02314 064047        LDB N4
0505  02315 016065R       JSB $MOVE
0506  02316 000317        DEF SXA
0507  02317 126312R       JMP SAVES,I
0508*
0509  02320 000237  DEFXA DEF XA
0510*
0511*
0512***** $TEST ROUTINE CHECKS IF DESIRED INPUT REQUEST HAS BEEN INPUT**
0513*
0514*   IF CORRECT INPUT NOT FOUND, RETURN IS MADE TO CALLER.
0515*
0516*     CALLING SEQUENCE:
0517*
0518*        JSB $TEST
0519*
0520  02321 000000  $TEST NOP
0521  02322 074332        STB CHARC     SAVE WORD COUNT
0522  02323 074274        STB $MDBF    STORE # WORDS INPUT
0523  02324 066321R       LDB $TEST
0524  02325 074275        STB $MDBF+1  STORE RETN ADDR FOR EXEC MODULES
0525  02326 064123        LDB JBUF
0526  02327 160001        LDA B,I
0527  02330 010075        AND M1774
0528  02331 052671R       CPA COLON
0529  02332 026355R       JMP TE05
0530  02333 034261  TE02  ISZ OPFLG    SET SYS TTY BUSY FLAG
0531  02334 016710R       JSB $SYIO
0532  02335 000002        DEC 2
0533  02336 000001        DEC 1
0534  02337 002351R       DEF IGN
0535  02340 177770        DEC -8
0536  02341 002472R       DEF TE55
0537  02342 064273        LDB $IDCD
0538  02343 056506R       CPB CODE+2
0539  02344 026013R       JMP $WAIT
0540  02345 060322        LDA $XSUS
0541  02346 016142R       JSB ADCHK
0542  02347 026052R       JMP $CIC3
0543  02350 026207R       JMP TY012
0544*
0545*
0546  02351 044507  IGN   ASC 4,IGNORED
      02352 047117
      02353 051105
      02354 042040
0547  02355 120001  TE05  XOR B,I       FORM CONTROL CODE
```

```
0548  02356 072707R        STA PAFLG
0549  02357 006004         INB
0550  02360 160001         LDA B,I
0551  02361 010075         AND M1774
0552  02362 032707R        IOR PAFLG
0553  02363 001727         ALF,ALF
0554  02364 072707R        STA PAFLG
0555  02365 064273         LDB $IDCD
0556  02366 056515R        CPB CODE+9     CHECK IF WAITING FOR :DATE INPUT
0557  02367 026424R        JMP TE20       NO
0558  02370 052504R        CPA CODE       CHECK IF INPUT :ABORT
0559  02371 026520R        JMP TE90
0560  02372 052507R        CPA CODE+3     CHECK IF INPUT :OFF
0561  02373 026520R        JMP TE90        -YES
0562  02374 056504R        CPB CODE
0563  02375 026333R        JMP TE02
0564  02376 052516R        CPA CODE+10    CHECK IF INPUT  :TYPE
0565  02377 026545R        JMP TE120
0566  02400 056506R        CPB CODE+2     CHECK IF WAITING FOR :GO INPUT
0567  02401 002001         RSS            YES
0568  02402 026427R        JMP TE22           NO
0569  02403 052506R        CPA CODE+2     CHECK IF INPUT :GO
0570  02404 006401         CLB,RSS
0571  02405 026436R        JMP TE25
0572  02406 074273         STB $IDCD
0573  02407 062636R        LDA SVEQT
0574  02410 076636R        STB SVEQT
0575  02411 002002         SZA
0576  02412 026420R        JMP TE10
0577  02413 062417R        LDA .16
0578  02414 066416R        LDB DEF16
0579  02415 027000R        JMP R4A
0580  02416 000021X DEF16  DEF $EX16
0581  02417 000020  .16    DEC 16
0582*
0583  02420 052506R TE10   CPA CODE+2
0584  02421 026204R        JMP TY010
0585  02422 016057R        JSB SETEQ
0586  02423 026443R        JMP OPAGO
0587  02424 052515R TE20   CPA CODE+9     CHECK IF INPUT IS :DATE
0588  02425 026476R        JMP $JLOD
0589  02426 026333R        JMP TE02           NO
0590  02427 056502R TE22   CPB AJO        CHECK IF WAITING FOR :JOB-:EJOB
0591  02430 026463R        JMP TE50           YES
0592  02431 052505R        CPA CODE+1     CHECK IF INPUT :PAUSE
0593  02432 026150R        JMP TE110          YES
0594  02433 064141         LDB EXPG      NO, SO CHECK IF USER PROG RUNNING
0595  02434 006003         SZB,RSS       YES
0596  02435 026476R        JMP $JLOD
0597  02436 052511R TE25   CPA CODE+5              :LU
0598  02437 026457R        JMP TE40
0599  02440 052501R        CPA TR         :TRACK REQUEST?
0600  02441 026453R        JMP TE35        -YES, GO PROCESS IN $EX09
0601  02442 052503R        CPA CODE-1
0602  02443 026457R        JMP TE40
0603  02444 052512R        CPA CODE+6              :EQ
```

```
0604  02445 026453R        JMP TE35
0605  02446 052513R        CPA CODE+7              ;UP
0606  02447 026457R        JMP TE40
0607  02450 052514R        CPA CODE+8              ;DN
0608  02451 026457R        JMP TE40
0609  02452 026333R        JMP TE02
0610  02453 060064  TE35   LDA .9
0611  02454 066456R        LDB DEF09
0612  02455 027000R        JMP R4A
0613  02456 000012X DEF09  DEF $EX09
0614  02457 063036R TE40   LDA .14
0615  02460 066462R        LDB DEF14
0616  02461 027000R        JMP R4A         LOAD + TRASFER TO $EX14
0617  02462 000017X DEF14  DEF $EX14
0618  02463 052502R TE50   CPA AJO         CHECK IF INPUT ;JO
0619  02464 026476R        JMP $JLOD
0620  02465 052510R        CPA CODE+4      CHECK IF INPUT ;EJ
0621  02466 026476R        JMP $JLOD
0622  02467 002404         CLA,INA
0623  02470 050111         CPA BATCH       IS TTY THE BATCH DEVICE?
0624  02471 026333R        JMP TE02
0625*
0626  02472 002400  TE55   CLA
0627  02473 070261         STA OPFLG
0628  02474 016312R        JSB $AVE$
0629  02475 126321R        JMP $TE$T,I
0630*
0631*     THIS PORTION OF $TEST LOADS IN THE JOB PROCESSOR/FILE MANAGER
0632*
0633  02476 016554R $JLOD  JSB $CLER
0634  02477 070141         STA EXPG
0635  02500 027041R        JMP $LDEX
0636*
0637  02501 052122  TR     ASC 1,TR
0638  02502 045117  AJO    ASC 1,JO
0639  02503 053510         OCT 53510
0640  02504 040502  CODE   ASC 12,ABPAGOOFEJLUEQUPDNDATYCL
      02505 050101
      02506 043517
      02507 047506
      02510 042512
      02511 046125
      02512 042521
      02513 052520
      02514 042116
      02515 042101
      02516 052131
      02517 041514
0641*
0642*     THIS PORTION OF $TEST PROCESSES SYSTEM ABORT REQUESTS
0643*
0644  02520 002404  TE90   CLA,INA
0645  02521 070111         STA BATCH
0646  02522 001300         RAR
0647  02523 010113  $ABRT  AND DUMPS       MASK WITH DUMP FLAG
0648  02524 070113         STA DUMPS       SET DUMP FLAG
```

```
0649   02525 060334         LDA DMFLG      DATA MANAGEMENT ACTIVE
0650   02526 002002         SZA
0651   02527 114000         JSB A,I              YES, GO TO ERROR PROCESSOR
0652   02530 060323         LDA EFMP
0653   02531 002002         SZA            EFMP ACTIVE?
0654   02532 114000  JSBI   JSB A,I         -YES, EXECUTE EFMP ERR. ROUT.
0655   02533 016554R        JSB $CLER
0656   02534 070262         STA SWAP
0657   02535 070245         STA EXMOD
0658   02536 060106         LDA CLEX
0659   02537 001225         RAL,ERA
0660   02540 070106         STA CLEX
0661   02541 060070         LDA .15
0662   02542 066544R        LDB DEF15
0663   02543 027000R        JMP R4A        LOAD IN PROG, DUMP MODULE
0664   02544 000020X DEF15  DEF $EX15
0665*
0666   02545 060141  TE120  LDA EXPG
0667   02546 002303         CCE,SZA,RSS
0668   02547 026476R        JMP $JLOD
0669   02550 060262         LDA SWAP
0670   02551 001225         RAL,ERA
0671   02552 070262         STA SWAP
0672   02553 126321R        JMP $TEST,I
0673*
0674   02554 000000  $CLER  NOP
0675*
0676*  ISSSE CLEAR REQUEST TO EACH BUSY DEVICE AND SET EQT
0677*    STATUS TO PHOTOREADER
0678*
0679   02555 060120         LDA EQT#     GET # OF EQT ENTRIES
0680   02556 003004         CMA,INA
0681   02557 072603R        STA EQTCT      SET UP CONTER
0682   02560 064117         LDB EQTAB
0683*
0684   02561 076604R $CL1   STB EQTPT     SAVE POINTER TO EQT1 OF EACH DEVI
0685   02562 044056         ADB .3       B POINTS TO EQR4
0686   02563 054333         CPB TYEQT     SYSTEM TTY?
0687   02564 026622R        JMP NXEQT    YES, DON'T CLEAR
0688   02565 160001         LDA B,I          AV/TYPE/STATUS
0689   02566 002021         SSA,RSS       DEVICE BUSY?
0690   02567 026622R        JMP NXEQT     NO- CONTINUE
0691   02570 012632R        AND ETYPE     ISOLATE TYPE
0692   02571 052673R        CPA DVRZZ     DVR01 - PHOTOREADER?
0693   02572 026605R        JMP SETET      - YES, GO SET EQT
0001   02573 052633R        CPA DISC      DISC BUSY?
0002   02574 002001         RSS            -YES, DON'T CLEAR BUT WAIT
0003   02575 026610R        JMP $CL2      -NOT DISC, GO CLEAR,
0004   02576 062602R        LDA ABRTN     SET DISC
0005   02577 044056         ADB .3           TO RETURN
0006   02600 170001         STA B,I          TO $CLER+1
0007   02601 026033R        JMP SKIP5
0008   02602 002555R ABRTN  DEF $CLER+1
0009   02603 000000  EQTCT  NOP
0010   02604 000000  EQTPT  NOP
0011*
```

```
0012  02605 160001  SETET LDA B,I
0013  02606 032672R       IOR .40
0014  02607 170001       STA B,I
0015*
0016  02610 062604R SCL2  LDA EQTPT       SET UP EQT1-EQT17
0017  02611 016057R       JSB SETEQ
0018  02612 062670R       LDA DEFNX      SET RETURN ADDR. IN EQT7
0019  02613 170211       STA EQT7,I
0020  02614 060056       LDA .3         SET CONTROL REQ.CODE IN EQT8
0021  02615 170212       STA EQT8,I
0022  02616 002400       CLA            SET FUNCTION CODE IN EQT9
0023  02617 170213       STA EQT9,I
0024  02620 017340R       JSB DRIVR      CLEAR DEVVCE
0025  02621 026033R       JMP SKIP5       WAIT UNTIL CLEAR IS COMPLETE
0026*
0027  02622 066604R NXEQT LDB EQTPT
0028  02623 044066       ADB .17        BUMP POINTER TO NEXT EQT1
0029  02624 036603R       ISZ EQTCT       ALL DEVICE GONE THROUGH?
0030  02625 026561R       JMP $CL1       NO, CONTINUE
0031*
0032  02626 062703R       LDA $STRT      GET STC 0,C INSTRUCTION
0033  02627 072630R       STA **1         FOR SYSTEM TTY
0034  02630 000000       NOP             AND EXECUTE
0035  02631 000000  CLTBG NOP            TURN ON TIME BASE GENERATOR
0036  02632 063123R       LDA STC5
0037  02633 072230R       STA MPCOD          TURN MPON
0038  02634 002700       CLA,CCE
0039  02635 064201       LDB INTAB
0040  02636 170001       STA B,I       CLEAR INTERRUPT 6
0041  02637 006004       INB
0042  02640 170001       STA B,I       CLEAR INTERRUPT 7
0043  02641 070315       STA IODMD
0044  02642 072754R       STA IOCNT
0045  02643 073736R       STA MEQT      CLEAR I/O MODULE AREA BUSY WAITIN
0046  02644 072771R       STA DEQT      CLEAR DMA BUSY WAITING FLAG
0047  02645 073751R       STA ERETN     CLEAR EXEC MODULE AREA BUSY WAITI
0048  02646 070261       STA OPFLG
0049  02647 070260       STA OPATN
0050  02650 072636R       STA $VEQT
0051  02651 070327       STA TRAK#
0052  02652 070133       STA MDFLG     CLEAR PRIVILEGED MODE FLAG
0053  02653 070134       STA DISP
0054  02654 070135       STA AEPF
0055  02655 070136       STA SGRTN
0056  02656 070164       STA FILRW
0057  02657 070304       STA IGNFL
0058  02660 070303       STA TBFLG
0059  02661 072121R       STA PRLST
0060  02662 070336       STA TMBEG
0061  02663 072667R       STA $MAVL
0062  02664 070124       STA JFILS
0063  02665 070125       STA JFILC
0064  02666 126554R       JMP $CLER,I
0065*
0066  02667 000000  $MAVL NOP            MEMORY MANAGEMENT FLAG
0067  02670 002622R DEFNX DEF NXEQT
```

```
0068   02671 035000  COLON OCT 35000      :/0
0069   02672 000040  .40   OCT 40         IGNORE LEADER CONSTANT
0070   02673 000400  DVRZZ OCT 400
0071   02674 000000  TEMPZ NOP
0072   02675 000000  TEMP  NOP
0073   02676 000000        NOP
0074   02677 000000        NOP            TEMP+2  TEMPORARIES FOR $MOLD
0075   02700 000000        NOP            TEMP+3
0076   02701 000000        NOP            TEMP+4
0077   02702 000000        NOP            TEMP+5
```

```
0079*
0080*****<$STRT> ROUTINE IS SYSTEM STARTUP PROCEDURE
0081*
0082*     SYSTEM GENERATOR SETS  LOADING TRANSFER ADDRESS TO $STRT
0083*
0084*
0085*     WHEN SYSTEM IS RUNNING, THE FOLLOWING 5 LOCATIONS
0086*       ARE USED FOR TEMPORARY STORAGE
0087*
0088  02703 017037R $STRT JSB CONFG     CONF INST FOR PRIV INTERRUPT
0089  02704 063035R       LDA .12
0090  02705 066707R       LDB DEF12
0091  02706 027000R       JMP R4A
0092*
0093  02707 000015X DEF12 DEF $EX12
0094  02707         PAFLG EQU DEF12
0095*
0096***** $SYIO HANDLES SYSTEM I/O REQUESTS *****
0097*
0098*
0099*     CALLING SEQUENCE
0100*        JSB $SYIO
0101*        DEC 1 FOR READ; 2 FOR WRITE; 3 FOR CONTROL
0102*        DEC <LOGICAL UNIT #>
0103*        DEF <BUFFER OR PARAMETER ADDRESS>
0104*        DEC <# CHARACTERS; OR 0 IF DISC>
0105*        DEF <COMPLETION RETURN ADDRESS>
0106*
0107  02710 000000  $SYIO NOP
0108  02711 062710R       LDA $SYIO
0109  02712 002004        INA
0110  02713 160000        LDA A,I
0111  02714 073337R       STA SAVEA
0112  02715 017303R       JSB LUCHK
0113  02716 017325R       JSB NULCK     LUN NULL?
0114  02717 027024R       JMP LUNUL     YES, COMPLETION RETURN
0115*
0116  02720 162710R       LDA $SYIO,I   *
0117  02721 002020        SSA           *  IF CLEAR DEVICE REQUEST,
0118  02722 003004        CMA,INA       *
0119  02723 050056        CPA .3        *  I.E., REQUEST CODE = 3
0120  02724 002001        RSS           *
0121  02725 026736R       JMP SY01      * & CONTROL FUNCTION = 0,
0122  02726 063337R       LDA SAVEA     *
0123  02727 013453R       AND MSKCL     *  THEN DON'T WAIT IN DEVICE
0124  02730 001727        ALF,ALF       DO NOT ASSIGN DMA IF CONTROL
0125  02731 001222        RAL,RAL            REQUEST LESS THAN 100 OCTAL
0126  02732 003004        CMA,INA
0127  02733 040067        ADA .64
0128  02734 002021        SSA,RSS
0129  02735 026772R       JMP SY10      *  BUSY LOOP.
0130*
0131  02736 160206  SY01  LDA EQT4,I     CHECK IF DEVICE BUSY
0132  02737 002021        SSA,RSS       -YES
0133  02740 026756R       JMP SY05      -NO
0134  02741 007400        CCB
```

```
0135  02742 046710R        ADB $SYIO
0136  02743 160205         LDA EQT3,I
0137  02744 010072         AND M77
0138***** DEVICE CURRENTLY BUSY WAIT LOOP *****
0139*
0140*      EQT1-EQT17 SET PRIOR TO ENTRY
0141*      CALLING SEQUENCE:
0142*
0143*         LDA <I/O CHANL#>
0144*         LDB <RETURN ADDRESS WHEN DEVICE BECOMES FREE>
0145*         JMP $BLOP
0146*
0147  02745 072754R $BLOP STA IOCNT      SAVE BUSY I/O CHNL
0148  02746 076706R       STB CALAD      SAVE RETURN ADDRESS
0149  02747 060206        LDA EQT4
0150  02750 072705R       STA DBUSY
0151  02751 060162        LDA CRFLG     SAVE CRFLG
0152  02752 072755R       STA CRFTM
0153  02753 026013R       JMP $WAIT
0154  02754 000000  IOCNT NOP
0155  02705         DBUSY EQU $STRT+2
0156  02706         CALAD EQU $STRT+3
0157  02755 000000  CRFTM NOP
0158*
0159  02756 164206  SY05  LDB EQT3,I
0160  02757 006020        SSB             DMA REQUIRED?
0161  02760 017462R       JSB $DMAX        =YES, CHECK IT
0162  02761 026772R       JMP SY10        CHAN 6 AVAIL
0163  02762 003401        CCA,RSS         NO CHAN AVAIL.
0164  02763 026772R       JMP SY10        CHAN 7 AVAIL.
0165  02764 042710R       ADA $SYIO
0166*
0167***** $DMA ROUTINE WAITS FOR AVAILABILITY OF DMA CHANNEL *****
0168*
0169*      EQT1-EQT17 ASSUMED TO BE SET PRIOR TO ENTRY
0170*
0171*      CALLING SEQUENCE:
0172*
0173*         LDA <RETURN ADDRESS WHEN DMA BECOMES FREE>
0174*         JMP $DMA
0175*
0176  02765 072704R $DMA  STA DMAAD    SAVE RETURN ADDRESS
0177  02766 060203        LDA EQT1
0178  02767 072771R       STA DEQT
0179  02770 026013R       JMP $WAIT
0180  02771 000000  DEQT  NOP
0181  02704         DMAAD EQU $STRT+1
0182*
0183  02772 162710R SY10  LDA $SYIO,I
0184  02773 002021        SSA,RSS
0185  02774 003004        CMA,INA
0186  02775 170212        STA EQT8,I     SET REQUEST CODE INTO EQT
0187  02776 036710R       ISZ $SYIO
0188  02777 162710R       LDA $SYIO,I
0189  03000 170213        STA EQT9,I     SET CONTROL WORD INTO EQT
0190  03001 036710R       ISZ $SYIO
```

```
0191   03002 162710R        LDA $SYIO,I
0192   03003 170214         STA EQT10,I    SET BUFFER OR TRIPLET ADDRESS
0193   03004 036710R        ISZ $SYIO           INTO EQT
0194   03005 162710R        LDA $SYIO,I
0195   03006 170215         STA EQT11,I    SET # WORDS INTO EQT
0196   03007 036710R        ISZ $SYIO
0197   03010 162710R        LDA $SYIO,I     SET COMPLETION RETURN ADDRESS
0198   03011 170211         STA EQT7,I
0199   03012 036710R        ISZ $SYIO
0200   03013 017340R        JSB DRIVR
0201   03014 126710R        JMP $SYIO,I    RETURN
0202   03015 027013R        JMP *-2
0203*
0204   03016 000000  MPY17   NOP
0205   03017 072040R        STA TMPX0
0206   03020 001700         ALF
0207   03021 042040R        ADA TMPX0
0208   03022 040117         ADA EQTAB
0209   03023 127016R        JMP MPY17,I
0210*
0211   03024 062710R LUNUL   LDA $SYIO
0212   03025 040057         ADA ..+4       RETURN TO P+4
0213   03026 006400         CLB
0214   03027 124000         JMP A,I
```

```
0216  03030 000024X DEF19 DEF $EX19
0217  03031 000025X DEF20 DEF $EX20
0218  03032 000031X DEF31 DEF $EX31
0219  03033 000032X DEF32 DEF $EX32
0220  03034 000033X DEF33 DEF $EX33
0221*
0222*
0223  03035 000014  .12   DEC 12
0224  03036 000016  .14   DEC 14
0225*
0226  02040         TMPX0 EQU RCHAN
0227  02057         TMPX1 EQU SETEQ
0228  01462         TMPX2 EQU $DMAX
0229*
0230*
0231* BUFFER TO HOLD SYSTEM BUFFER SECTOR
0232*
0233*
0234***  CONFG OVERLAYS $BUF  AND DISAPPEARS AFTER
0235*      SYSTEM STARTUP, IT CONFIGURES INSTRUCTIONS
0236*      FOR PRIVILEGED INTERRUPT,
0237*      CONFG THEN SENDS A CLEAR REQUEST TO ALL I/O DEVICES
0238*
0239  03037 000000  CONFG NOP
0240  03040 002404        CLA,INA       SET MPTFL TO INDICATE MP OFF
0241  03041 070271        STA MPTFL
0242  03042 060270        LDA DUMMY  PRIV. INTERRUPT PRESENT?
0243  03043 002003        SZA,RSS
0244  03044 027065R       JMP CONF2     NO,
0245  03045 032254R       IOR CLC1
0246  03046 072254R       STA CLC1    CLEAR CONTROL
0247  03047 062255R       LDA STF1    AND SET FLAG
0248  03050 030270        IOR DUMMY   ON THE SPECIAL I/O CARD
0249  03051 072255R       STA STF1    IN $IRT
0250  03052 062204R       LDA STC1
0251  03053 030270        IOR DUMMY   SET CONTROL ON IT IN $INT
0252  03054 072204R       STA STC1
0253  03055 062117R       LDA PI,X     FORM PRIV INTERRUPT INSTRUCTIONS
0254  03056 030270        IOR DUMMY          AND STORE
0255  03057 072117R       STA PI,X
0256  03060 072104R       STA PCOMX
0257  03061 002400        CLA
0258  03062 072203R       STA SKIP2
0259  03063 017072R       JSB ICLR     CLEAR I/O DEVICES
0260  03064 127037R       JMP CONFG,I  RETUUN
0261  03065 072062R CONF2 STA SKIP3    SET NOP'S
0262  03066 072033R       STA SKIP5
0263  03067 072214R      STA SKIP1
0264  03070 017072R       JSB ICLR     CLEAR I/O DEVICES
0265  03071 127037R       JMP CONFG,I   RETURN,
0266*
0267*    INITIALIZE DEVICES WITH CLEAR REQUEST
0268*
0269  03072 000000  ICLR  NOP
0270  03073 060120        LDA EQT#      # OF EQT ENTRIES
0271  03074 003004        CMA,INA
```

```
0272  03075 072603R        STA EQTCT
0273  03076 060117         LDA EQTAB      POINTER TO EQT ENTRIES
0274  03077 072604R CONFA  STA EQTPT
0275  03100 016057R        JSB SETEQ      SET EQT1-EQT17 POINTERS
0276  03101 063117R        LDA DEFFB
0277  03102 170211         STA EQT7,I     SET RETURN ADDRESS
0278  03103 060056         LDA .3
0279  03104 170212         STA EQT8,I     SET CONTROL REQUEST
0280  03105 002400         CLA
0281  03106 170213         STA EQT9,I     SET CLEAR REQUEST
0282  03107 017671R        JSB $LDVR     LOAD DRIVER INTO CORE
0283  03110 017340R        JSB DRIVR      GO TO DRIVER
0284  03111 026033R        JMP SKIP5      WAIT TILL REQUEST COMPLETION
0285  03112 062604R CONFB  LDA EQTPT
0286  03113 040066         ADA .17        INCR TO NEXT EQT ENTRY
0287  03114 036603R        ISZ EQTCT      LAST EQT PROCESSED
0288  03115 027077R        JMP CONFA      GO TO NEXT EQT
0289  03116 127072R        JMP ICLR,I
0290  03117 003112R DEFFB  DEF CONFB
0291*
0292  03037          $BUF   EQU CONFG
0293  03120 000000          BSS CONFG-*+128
0294  03237 000000         NOP
0295  03040          $B1    EQU $BUF+1
0296  03041          $B2    EQU $BUF+2
0297  03042          $B3    EQU $BUF+3
0298  03043          $B4    EQU $BUF+4
0299  03044          $B5    EQU $BUF+5
0300  03076          $B31   EQU $BUF+31
0301  03102          $B35   EQU $BUF+35
0302  03137          $B64   EQU $BUF+64
0303  03140          $B65   EQU $BUF+65
0304  03141          $B66   EQU $BUF+66
0305  03154          $B77   EQU $BUF+77
0306  03176          $B95   EQU $BUF+95
0307  03234          $B125  EQU $BUF+125
0308  03236          $B127  EQU $BUF+127
0309  03237          $B128  EQU $BUF+128
```

```
0311*****************************************************
0312*                                                   *
0313*     THIS ROUTINE IS A CORE RESIDENT INTERFACE     *
0314*     BETWEEN A USER IN THE SYSTEM AREA AND THE     *
0315*     PROGRAMMATIC FILE CONTROL EXEC MODULE(SEX21)  *
0316*     ALL REQUESTS FROM THE SYSTEM AREA TO CREATE,  *
0317*     PURGE OR RENAME USER DISC FILES UNDER PROGRAM *
0318*     CONTROL WILL COME DIRECTLY TO ONE OF THE      *
0319*     FOLLOWING ENTRY POINTS:                       *
0320*                                                   *
0321*         $CREA = CREATE A USER DISC FILE           *
0322*                                                   *
0323*         $PURG = PURGE  A USER DISC FILE           *
0324*                                                   *
0325*         $RNME = RENAME A USER DISC FILE           *
0326*                                                   *
0327*     THE APPROPRIATE REQUEST CODE WILL BE PICKED   *
0328*     UP AND USED TO FIND THE LINK ADDRESS AND      *
0329*     MODULE NUMBER REQUIRED BY $MDLD TO LOAD THE   *
0330*     PROPER EXEC MODULE ($EX21).                   *
0331*                                                   *
0332*         ON ENTRY:   CONTENTS OF ENTRY POINT ARE   *
0333*                     SAVED IN FCNTL.               *
0334*                                                   *
0335*         ON EXIT: 1) "A" REGISTER CONTAINS THE     *
0336*                     DESTINATION MODULE'S NUMBER   *
0337*                     (USED BY $MDLD)               *
0338*                                                   *
0339*                  2) "B" REGISTER CONTAINS THE     *
0340*                     REQUEST CODE (USED BY $EX21)  *
0341*                                                   *
0342*****************************************************
0343  03240 000000  $CREA NOP             ENTRY POINT FOR PROGRAMMATIC
0344*                                       "CREATE" FROM SYSTEM AREA.
0345  03241 063240R       LDA $CREA       GET GET POINTER TO PARAMS
0346  03242 067270R       LDB RCDE1       GET REQUEST CODE
0347  03243 073273R LPREP STA SYSCL         SAVE FOR FUTURE REFERENCE
0348  03244 060001        LDA B
0349  03245 043151R       ADA RQTBL       ADD ADDRESS OF START OF REQUEST
0350*                                       TABLE.
0351  03246 160000        LDA A,I         GET LINK ADDRESS
0352  03247 070305        STA TEMP0       SAVE FOR $MDLD
0353  03250 060001        LDA B           GET REQUEST CODE
0354  03251 000065        CLE,ERA           ROUND OFF TO EVEN NUMBER
0355  03252 043225R       ADA MDTAB           AND FORM ADDRESS OF MODULE #
0356  03253 160000        LDA A,I         GET MODULE NUMBER OF DEST. MODUL
0357  03254 002041        SEZ,RSS
0358  03255 001727        ALF,ALF         ROTATE IF REQUEST CODE IS EVEN
0359  03256 010074        AND M377        ISOLATE MODULE # TO BE USED
0360  03257 027541R       JMP $MDLD       GO TO LOAD PROGRAMMATIC FILE
0361*                                       CONTROL EXEC MODULE ($EX21)
0362  03260 000000  $PURG NOP             ENTRY POINT FOR PROGRAMMATIC
0363*                                       "PURGE" FROM SYSTEM AREA.
0364  03261 063260R       LDA $PURG       GET GET POINTER TO PARAMS
0365  03262 067271R       LDB RCDE2       GET REQUEST CODE
0366  03263 027243R       JMP LPREP       GO TO PREPARE TO LOAD EXEC MOD
```

```
0367  03264 000000  $RNME NOP          ENTRY POINT FOR PROGRAMMATIC
0368*                                     "RENAME" FROM SYSTEM AREA.
0369  03265 063264R        LDA $RNME    GET GET POINTER TO PARAMS
0370  03266 067272R        LDB RCDE3    GET REQUEST CODE
0371  03267 027243R        JMP LPREP    GO TO PREPARE TO LOAD EXEC MOD
0372  03270 000040  RCDE1  DEC 32       REQUEST CODE FOR PROG "CREATE"
0373  03271 000041  RCDE2  DEC 33       REQUEST CODE FOR PROG "PURGE"
0374  03272 000042  RCDE3  DEC 34       REQUEST CODE FOR PROG "RENAME"
0375  03273 000000  SYSCL  DEC 0        SAVE AREA FOR POINTER TO PARAMS
0376*                                     ON CALLS FROM SYSTEM AREA
```

```
0378  00000          A      EQU 0
0379  00001          B      EQU 1
0380*
0381  00053          ..     EQU 53B
0382  00040          N64    EQU ..-11     DEC -64
0383  00041          N10    EQU ..-10     DEC -10
0384  00042          N9     EQU ..-9      DEC -9
0385  00043          N8     EQU ..-8      DEC -8
0386  00044          N7     EQU ..-7      DEC -7
0387  00045          N6     EQU ..-6      DEC -6
0388  00046          N5     EQU ..-5      DEC -5
0389  00047          N4     EQU ..-4      DEC -4
0390  00050          N3     EQU ..-3      DEC -3
0391  00051          N2     EQU ..-2      DEC -2
0392  00052          N1     EQU ..-1      DEC -1
0393*
0394  00053          N0     EQU ..        DEC 0
0395*
0396  00054          .1     EQU ..+1      DEC 1
0397  00055          .2     EQU ..+2      DEC 2
0398  00056          .3     EQU ..+3      DEC 3
0399  00057          .4     EQU ..+4      DEC 4
0400  00060          .5     EQU ..+5      DEC 5
0401  00061          .6     EQU ..+6      DEC 6
0402  00062          .7     EQU ..+7      DEC 7
0403  00063          .8     EQU ..+8      DEC 8
0404  00064          .9     EQU ..+9      DEC 9
0405  00065          .10    EQU ..+10     DEC 10
0406  00066          .17    EQU ..+11     DEC 17
0407  00067          .64    EQU ..+12     DEC 64
0408  00070          .15    EQU ..+13
0409*
0410  00070          M17    EQU ..+13     OCT 17
0411  00071          M37    EQU ..+14     OCT 37
0412  00072          M77    EQU ..+15     OCT 77
0413  00073          M177   EQU ..+16     OCT 177
0414  00074          M377   EQU ..+17     OCT 377
0415  00075          M1774  EQU ..+18     OCT 177400
0416  00076          M3777  EQU ..+19      OCT 3777
0417  00077          M1777  EQU ..+20      OCT 177700
0418*
```

```
0420  00100          .      EQU 100B       STARTING ADDR OF SYSTEM COMMUN.
0421*
0422  00100          UMLWA  EQU .+0        LWA OF USEABLE MEMORY
0423*
0424  00101          JBINS  EQU .+1        START TR/SEC OF JBIN AREA
0425  00102          JBINC  EQU .+2        CURRENT TR/SEC OF JBIN AREA
0426*
0427  00103          TBG    EQU .+3        TIME BASE GENERATOR I/O ADDRESS
0428  00104          CLOCK  EQU .+4        CURRENT SYSTEM CLOCK TIME
0429  00106          CLEX   EQU .+6        EXECUTION TIME CLOCK
0430  00110          CXMX   EQU .+8        MAXIMUM ALLOWABLE EXECUTION TIME
0431*
0432  00111          BATCH  EQU .+9        L. U. OF BATCH INPUT DEVICE
0433  00112          SYSTY  EQU .+10       L. U. OF SYSTEM TELETYPE
0434  00113          DUMPS  EQU .+11       ABORT /POST MORTEM DUMP FLAG
0435  00114          SYSDR  EQU .+12       SYSTEM DIRECTORY TRACK/SECTOR
0436*
0437  00115          SYSBF  EQU .+13       START SYS BUF T/USER DIRECT SECT
0438  00116          SECTR  EQU .+14      # OF SECTRS/TRACK
0439*
0440  00117          EQTAB  EQU .+15       FWA OF EQUIPMENT TABLE
0441  00120          EQT#   EQU .+16       # OF EQUIPMENT ENTRIES
0442*
0443  00121          LUTAB  EQU .+17       FWA OF LOGICAL UNIT TABLE
0444  00122          LUT#   EQU .+18       # OF LOGICAL UNIT ENTRIES
0445  00123          JBUF   EQU .+19       JOB INPUT BUFFER ADDRESS
0446*
0447  00124          JFILS  EQU .+20      SOURCE FILE START TRACK/SECTOR
0448  00125          JFILC  EQU .+21      SOURCE FILE CURRENT TRACK/SECTOR
0449*
0450*
0451  00126          RONBF  EQU .+22       USER AREA FILE NAME INFORMATION
0452  00133          MDFLG  EQU RONBF+5       PRIVILEGED MODE FLAG
0453  00134          DISP   EQU RONBF+6
0454  00135          AEPF   EQU RONBF+7  ALTERNATIVE TRANSFER ADDRESS
0455*                    FOR PROG OR SEG LOAD
0456  00136          SGRTN  EQU RONBF+8 SEGMENT RETURN ADDRESS.
0457*
0458  00137          XIRT   EQU RONBF+9    TRANSFER ADDRESS FOR SIRT
0459  00140          SVEQ   EQU RONBF+10    EXEC 18 NEEDS THIS LOC.
0460  00141          EXPG   EQU .+33       DIRECTORY ENTRY FOR CURRENT PROG
0461*
0462  00154          DISCO  EQU .+44       IO CHNL #/ LAST TRACK ON DISC
0463  00155          SYSSC  EQU .+45       SYSTEM SUBCHANNEL
0464  00156          SCCNT  EQU .+46       # OF SUBCHANNELS ON SYSTEM
0465  00157          UDNTS  EQU .+47       NEXT USER DISC TRACK/SECTOR
0466  00160          SYNTS  EQU .+48       NEXT SYSTEM DISC TRACK/SECTOR
0467  00161          CUDSC  EQU .+49       CURRENT USER DISC SUBCHANNEL
0468  00162          CRFLG  EQU .+50       0 FOR SYSTEM, NOT 0 FOR USER
0469  00163          CUDLA  EQU .+51       CURRENT USER DISC LAST ACCESS
0470  00164          FILRW  EQU .+52       FILE SEARCH W/O WAIT FLAG
0471  00165          CUMID  EQU .+53       COMPUTER IDENTIFICATION
0472  00166          DBUFR  EQU .+54       SYSTEM DISC TRIPLET PARAM BUFFER
0473  00171          UBUFR  EQU .+57       USER DISC TRIPLET PARAM BUFFER
0474  00174          TSONE  EQU .+60       LAST TRACK/SECTOR REFERENCED +1
0475  00175          GUDSC  EQU .+61       DEFAULT USER DISC SUBCHANNEL
```

```
0476  00176          SYSCD EQU .+62       SYSTEM GENERATION CODE
0477  00177          JFLSC EQU .+63       JFILE SUBCHANNEL
0478  00200          DISCL EQU .+64       T/S OF SYS BUF IF USER ON SYS DI
0479*
0480  00201          INTAB EQU .+65       FWA OF INTERRUPT TABLE
0481  00202          INT#  EQU .+66       # OF INTERRUPT ENTRIES
0482*
0483  00203          EQT1  EQU .+67       ADDRESSES
0484  00204          EQT2  EQU .+68
0485  00205          EQT3  EQU .+69       OF
0486  00206          EQT4  EQU .+70
0487  00207          EQT5  EQU .+71       CURRENT
0488  00210          EQT6  EQU .+72
0489  00211          EQT7  EQU .+73       EQUIPMENT
0490  00212          EQT8  EQU .+74
0491  00213          EQT9  EQU .+75       TABLE
0492  00214          EQT10 EQU .+76
0493  00215          EQT11 EQU .+77
0494  00216          EQT12 EQU .+78       ENTRY
0495  00217          EQT13 EQU .+79
0496  00220          EQT14 EQU .+80
0497  00221          EQT15 EQU .+81
0498  00222          EQT16 EQU .+82
0499  00223          EQT17 EQU .+83
0500*
0501  00224          RQCNT EQU .+84       # OF REQUEST PARAMETERS
0502  00225          RQRTN EQU .+85       REQUEST RETURN ADDRESS
0503*
0504  00226          RQP1  EQU .+86       ADDRESSES
0505  00227          RQP2  EQU .+87
0506  00230          RQP3  EQU .+88       OF
0507  00231          RQP4  EQU .+89
0508  00232          RQP5  EQU .+90       REQUEST
0509  00233          RQP6  EQU .+91
0510  00234          RQP7  EQU .+92       PARAMETERS
0511  00235          RQP8  EQU .+93
0512*
0513  00236          NABRT EQU .+94       ILL REQ ABORT/NO ABORT OPTION
0514*
0515  00237          XA    EQU .+95       A REGISTER
0516  00240          XB    EQU .+96       B REGISTER
0517  00241          XEO   EQU .+97       E AND O REGISTER
0518  00242          XSUSP EQU .+98       POINT OF SUSPENSION
0519*
0520  00243          EXLOC EQU .+99       LOC OF EX MOD DOUBLETS
0521  00244          EX#   EQU .+100      # OF EX MOD DOUBLETS
0522  00245          EXMOD EQU .+101      CURRENT EX MOD #
0523  00246          EXMAN EQU .+102      EX MOD MAIN LOAD ADDRESSES
0524  00250          EXBAS EQU .+104      EX MOD BASE LOAD ADDRESSES
0525*
0526  00252          IODMN EQU .+106      FWA OF IO DRIVER MOD MAIN AREA
0527  00253          IODBS EQU .+107      FWA OF IO DRIVER MOD BASE AREA
0528*
0529  00254          UMFWA EQU .+108      FWA OF USER MAIN AREA
0530  00255          UBFWA EQU .+109      FWA OF USER BASE AREA
0531  00256          UBLWA EQU .+110      LWA OF USER BASE AREA
```

```
0532*
0533  00257          CHAN   EQU .+111      CURRENT DMA CHANNEL NUMBER
0534*
0535  00260          OPATN  EQU .+112      OPERATOR/KEYBOARD ATTENTION FLAG
0536  00261          OPFLG  EQU .+113      OPERATOR COMMUNICATION FLAG
0537*
0538  00262          SWAP   EQU .+114      JOB PROCESSOR NOT IN/IN FLAG
0539*
0540  00263          JOBPM  EQU .+115     JOB PROC MAIN (T/S;#WORDS)
0541  00265          JOBPB  EQU .+117      JOB PROC BASE (#WORDS)
0542  00266          EJOBF  EQU .+118
0543  00267          RTRK   EQU .+119      RT DISC ALLOC TRACK #
0544*
0545  00270          DUMMY  EQU .+120      I/O ADDR OF PRIV INT CARD
0546  00271          MPTFL  EQU .+121      MEMORY PROTECT FLAG
0547*
0548  00272          $GOPT  EQU .+122      PT OF SUSP CONTINUATION ADDRESS
0549  00273          $IDCD  EQU .+123      INPUT REQUEST CODE
0550  00274          $MDBF  EQU .+124      EXEC MODULE DATA BUFFER
0551*
0552  00303          TBFLG  EQU .+131      DATA COMM TIME BASE GEN FLAG
0553  00304          IGNFL  EQU .+132    FLAG FOR DATA COMMUNICATIONS:
0554*                                       NON=0: DON'T PRINT 'IGNORED' MESS
0555  00305          TEMP0  EQU .+133        USED
0556  00306          TEMP1  EQU .+134          IN
0557  00307          TEMP2  EQU .+135            SYSTEM
0558  00310          UTMP0  EQU .+136      *
0559  00311          UTMP1  EQU .+137      * USER AVAILABLE BASE PAGE TEMP
0560  00312          UTMP2  EQU .+138      *
0561  00313          MSECT  EQU .+139      NEG OF SECTORS/TRACK VALUE
0562  00314          VADR   EQU .+140      ADDRESS OF VIOLATING INSTRUCTION
0563  00315          IODMD  EQU .+141      RES I/O DRIVER MODULE FLAG
0564  00316          RCODE  EQU .+142      POSITIVE REQUEST CODE VALUE
0565  00317          SXA    EQU .+143
0566  00320          SXB    EQU .+144
0567  00321          SXEO   EQU .+145
0568  00322          SXSUS  EQU .+146
0569  00323          EFMP   EQU .+147      EFMP FLAG
0570  00324          DSCLB  EQU .+148      DISC T/S OF RELOCATABLE LIBRARY
0571  00325          DSCL#  EQU .+149      # OF RELOCATABLE LIBRARY SECTORS
0572  00326          LSTCH  EQU .+150      LAST DISC REFERENCED
0573  00327          TRAK#  EQU .+151      # OF BAD TRACKS FOUND
0574  00330          XFLG   EQU .+152      END ADDRESS FOR DISC NOT READY
0575  00331          SSFLG  EQU .+153      SYSTEM SEARCH FLAG
0576  00332          CHARC  EQU .+154
0577  00333          TYEQT  EQU .+155
0578  00334          DMFLG  EQU .+156      DATA MANAGEMENT ERROR PROCESSOR
0579  00335          SSTBL  EQU .+157      SUBSYSTEM MEM MGMT TABLE ADDRESS
0580  00336          TMBEG  EQU .+158     BEGINNING OF TIMEOUT COUNTER LIST
0581                        END
** NO ERRORS*
```

```
$ABRT   00647/04 00005/01

$B1     00295/05 00024/01

$B125   00307/05 00025/01

$B127   00308/05 00025/01

$B128   00309/05 00025/01

$B2     00296/05 00024/01

$B3     00297/05 00024/01

$B31    00300/05 00024/01

$B35    00301/05 00024/01

$B4     00298/05 00024/01

$B5     00299/05 00024/01

$B64    00302/05 00024/01

$B65    00303/05 00025/01

$B66    00304/05 00025/01

$B77    00305/05 00025/01

$B95    00306/05 00025/01

$BLOP   00147/05 00005/01

$BUF    00292/05 00024/01 00295/05 00296/05 00297/05 00298/05 00299/05
        00300/05 00301/05 00302/05 00303/05 00304/05 00305/05 00306/05
        00307/05 00308/05 00309/05

$CIC    00129/01 00003/01 00140/01 00144/01 00001/03

$CIC3   00172/01 00006/01 00137/01 00156/01 00159/01 00165/01 00190/01
        00470/01 00477/01 00134/02 00159/02 00354/04 00542/04

$CL1    00684/04 00030/05

$CL2    00016/05 00003/05

$CLCK   00414/01 00026/01 00152/01

$CLER   00674/04 00006/01 00478/01 00633/04 00655/04 00006/05 00064/05

$CREA   00343/05 00023/01 00345/05

$DISC   00338/04 00003/01 00085/04 00364/04
```

```
$DMA    00176/05 00008/01

$DMAX   00489/03 00404/03 00493/03 00497/03 00498/03 00499/03 00215/04
        00161/05 00228/05

$EBSY   00165/04 00069/04

$EOAB   00237/01 00177/01 00180/01 00244/01 00103/03

$EX01   00014/01 00234/03

$EX02   00014/01 00235/03

$EX03   00014/01 00224/03

$EX04   00014/01 00225/03

$EX05   00014/01 00226/03 00227/03 00228/03

$EX06   00014/01 00236/03

$EX07   00014/01 00229/03

$EX08   00015/01 00222/03

$EX09   00015/01 00613/04

$EX10   00015/01 00140/03

$EX11   00015/01 00314/03

$EX12   00015/01 00093/05

$EX13   00015/01 00501/03

$EX14   00015/01 00617/04

$EX15   00016/01 00664/04

$EX16   00016/01 00580/04

$EX17   00016/01 00241/03

$EX18   00016/01 00218/03 00219/03 00220/03 00221/03 00232/03 00233/03

$EX19   00016/01 00216/05

$EX20   00016/01 00217/05

$EX21   00017/01 00250/03 00251/03 00252/03

$EX22   00017/01 00253/03 00254/03 00255/03 00256/03 00259/03

$EX30   00018/01 00242/03

$EX31   00018/01 00218/05
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 $EX33  00018/01 00220/05

 $EX34  00019/01 00243/03

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 $EX37  00019/01 00246/03

 $EX40  00020/01 00249/03

*$EX41  00020/01

*$EX42  00020/01

*$EX43  00020/01

*$EX44  00020/01

*$EX45  00020/01

*$EX46  00021/01

*$EX47  00021/01

*$EX48  00021/01

*$EX49  00021/01

 $EXEC  00475/02 00187/01

 $GOPT  00548/05 00370/04

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 $IDL1  00463/04 00003/01 00480/04

 $INT   00297/01 00143/01 00300/01 00308/01 00471/02

 $IOCM  00501/01 00170/01

 $IRT   00333/01 00026/01 00178/01 00142/02 00042/03 00110/03 00213/03
        00360/04 00422/04

 $IRT1  00363/01 00181/01 00334/01 00381/01 00243/04

 $JLOD  00633/04 00004/01 00588/04 00596/04 00619/04 00621/04 00668/04

 $LDEX  00136/03 00003/01 00635/04

 $LDVR  00105/04 00008/01 00109/04 00118/04 00120/04 00468/04 00282/05
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$MBSY 00152/04 00008/01 00213/04

$MDBF 00550/05 00057/02 00064/02 00068/02 00293/03 00295/03 00527/03
00170/04 00172/04 00232/04 00234/04 00522/04 00524/04

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$MOVE 00305/04 00004/01 00046/02 00059/03 00203/03 00210/03 00312/04
00318/04 00327/04 00505/04

$OPER 00179/02 00006/01 00274/01 00476/03 00343/04 00363/04

$PCOM 00227/01 00012/01 00233/01

$PFAL 00022/01 00136/01

$PURG 00362/05 00023/01 00364/05

$RNME 00367/05 00023/01 00369/05

$RQER 00515/03 00004/01

$RTRN 00456/04 00010/01

$SETP 00022/01 00290/04

$STRT 00088/05 00003/01 00032/05 00155/05 00156/05 00181/05

$SYIO 00107/05 00010/01 00344/04 00402/04 00429/04 00469/04 00531/04
00108/05 00116/05 00135/05 00165/05 00183/05 00187/05 00188/05
00190/05 00191/05 00193/05 00194/05 00196/05 00197/05 00199/05
00201/05 00211/05

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$TYPE 00385/04 00010/01 00280/01 00488/04

$WAIT 00226/04 00005/01 00043/02 00034/03 00155/04 00174/04 00352/04
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00430/05 00432/05 00433/05 00434/05 00435/05 00437/05 00438/05
00440/05 00441/05 00443/05 00444/05 00445/05 00447/05 00448/05
00451/05 00460/05 00462/05 00463/05 00464/05 00465/05 00466/05
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..    00381/05 00212/05 00382/05 00383/05 00384/05 00385/05 00386/05
      00387/05 00388/05 00389/05 00390/05 00391/05 00392/05 00394/05
      00396/05 00397/05 00398/05 00399/05 00400/05 00401/05 00402/05
      00403/05 00404/05 00405/05 00406/05 00407/05 00408/05 00410/05
      00411/05 00412/05 00413/05 00414/05 00415/05 00416/05 00417/05

.1    00396/05 00069/02 00030/03 00069/03 00535/03 00464/04

.10   00405/05 00136/03 00525/03

.11   00315/03 00296/03

.1100 00053/02 00126/03

.12   00223/05 00202/01 00230/01 00077/02 00304/03 00089/05

.13   00348/04 00055/02 00093/02 00549/03

.14   00224/05 00416/03 00614/04

.15   00408/05 00418/03 00661/04

.16   00581/04 00577/04

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.2    00397/05 00282/01 00428/01 00301/03 00419/03 00513/03

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      00537/03 00113/04 00197/04 00685/04 00005/05 00020/05 00119/05
      00278/05

.4    00399/05 00133/01 00081/02 00094/02 00100/02 00153/03 00164/03
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.40   00069/05 00166/03 00013/05

.5    00400/05 00149/01 00012/03 00450/03

.6    00401/05 00195/03 00402/03 00517/03

.64   00407/05 00398/03 00127/05

.7    00402/05 00519/03

.8    00403/05 00041/03 00521/03 00070/04

.9    00404/05 00523/03 00539/03 00610/04
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00477/03 00005/04 00011/04 00050/04 00114/04 00307/04 00396/04
00443/04 00651/04 00654/04 00110/05 00214/05 00351/05 00350/05

ABRTN 00008/05 00004/05

ADCHK 00255/01 00173/01 00259/01 00260/01 00342/01 00481/01 00518/01
00118/02 00016/03 00412/04 00541/04

AEPF 00454/05 00054/05

AJO 00638/04 00590/04 00618/04

ASTAT 00489/04 00399/04 00405/04

ASTRK 00492/04 00398/04

ATT 00491/04 00386/04

B 00379/05 00161/01 00169/01 00203/01 00368/01 00372/01 00429/01
00432/01 00442/01 00008/02 00015/03 00039/03 00044/03 00047/03
00104/03 00302/03 00341/03 00409/03 00412/03 00420/03 00425/03
00492/03 00496/03 00540/03 00264/04 00267/04 00274/04 00314/04
00526/04 00547/04 00550/04 00688/04 00006/05 00012/05 00014/05
00040/05 00042/05 00348/05 00353/05

B31 00076/04 00109/02

BATCH 00432/05 00006/02 00463/04 00623/04 00645/04

BIT15 00147/02 00123/02 00171/02

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CHAN 00533/05 00403/03 00407/03

CHARC 00576/05 00272/01 00054/02 00436/04 00446/04 00521/04

CHEKE 00067/04 00035/04

CIC.1 00139/01 00135/01

CIC.2 00167/01 00163/01 00212/01

CIC.4 00180/01 00174/01 00002/03

CIC.5 00184/01 00150/01

CKSRH 00164/02 00119/02

CLC1 00379/01 00245/05 00246/05

CLC5 00193/03 00337/01 00187/03

CLEX 00429/05 00467/01 00469/01 00471/01 00473/01 00474/01 00658/04

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CLK00   00426/01 00433/01

CLK1    00437/01 00427/01 00463/01 00465/01

CLK10   00464/01 00456/01

CLK20   00467/01 00422/01 00439/01

CLOCK   00426/05 00414/01 00417/01 00418/01 00118/03

CLTBG   00035/05 00128/03

CODE    00640/04 00030/02 00371/04 00538/04 00556/04 00558/04 00560/04
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        00597/04 00601/04 00603/04 00605/04 00607/04 00620/04

CODE#   00250/03 00083/03 00087/03

COLON   00068/05 00016/02 00478/04 00528/04

CONF2   00261/05 00244/05

CONFA   00274/05 00288/05

CONFB   00285/05 00290/05

CONFG   00239/05 00088/05 00260/05 00265/05 00292/05 00293/05

CRFLG   00468/05 00080/04 00203/04 00151/05

CRFTM   00157/05 00202/04 00152/05

CSY10   00344/04 00339/04 00342/04

*CUDLA  00469/05

*CUDSC  00467/05

CUMID   00471/05 00303/01 00494/03

CXMX    00430/05 00475/01

DBFR    00091/04 00083/04

DBUFR   00472/05 00041/04 00044/04 00052/04 00057/04 00060/04 00078/04
        00087/04 00091/04 00125/04 00128/04 00132/04 00135/04

DBUSY   00155/05 00195/04 00150/05

DCOMP   00361/04 00349/04

DEF04   00225/03 00011/01
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 DEF11  00314/03 00297/03
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 DEF31  00218/05 00011/01
 DEF32  00219/05 00011/01
 DEF33  00220/05 00011/01
 DEFE1  00293/04 00289/04
 DEFFB  00290/05 00276/05
 DEFNX  00067/05 00018/05
 DEFXA  00509/04 00503/04
 DEQT   00180/05 00218/04 00222/04 00046/05 00178/05
 DEQT1  00366/04 00341/04 00361/04
 DFRON  00204/03 00212/03
 DFWAT  00184/03 00172/03
 DISC   00177/02 00078/02 00001/05
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 DISCX  00077/04 00055/04 00063/04 00090/04 00130/04 00138/04
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 DMAAD   00181/05 00223/04 00176/06

 DMFLG   00578/05 00649/04

 DRIVR   00382/03 00009/01 00449/03 00468/03 00469/03 00024/05 00200/05
         00283/05

*DSCL#   00571/05

*DSCLB   00570/05

 DUMMY   00545/05 00147/01 00242/05 00248/05 00251/05 00254/05

 DUMPS   00434/05 00647/04 00648/04

 DVR00   00402/03 00392/03

 DVR01   00408/03 00405/03

 DVR02   00410/03 00388/03 00400/03

 DVR06   00452/03 00439/03

 DVR07   00450/03 00406/03

 DVR08   00468/03 00457/03

 DVR09   00468/03 00451/03 00463/03

 DVRZZ   00070/05 00692/04

 EC2     00172/02 00513/01 00092/02 00096/02 00140/02 00153/02

 ECODE   00073/04 00512/01 00091/02 00116/02 00160/02 00186/03 00189/03

 EFMP    00569/05 00652/04

*EJOBF   00542/05

 EQT#    00441/05 00679/04 00270/05

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         00442/03 00122/04 00153/04 00263/04 00293/04 00340/04 00177/05

 EQT10   00492/05 00013/02 00044/02 00192/05

 EQT11   00493/05 00049/02 00195/05

*EQT12   00494/05

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 EQT14   00496/05 00502/01 00023/02 00037/02 00048/02 00141/02 00154/02
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 EQT2   00484/05 00168/01

 EQT3   00485/05 00209/01 00383/03 00422/03 00440/03 00106/04 00136/05
        00159/05

 EQT4   00486/05 00504/01 00506/01 00022/02 00036/02 00075/02 00103/02
        00106/02 00111/02 00113/02 00155/03 00446/03 00448/03 00464/03
        00466/03 00115/04 00131/05 00149/05

*EQT5   00487/05

*EQT6   00488/05

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        00019/05 00198/05 00277/05

 EQT8   00490/05 00525/01 00387/03 00413/03 00021/05 00186/05 00279/05

 EQT9   00491/05 00018/02 00059/02 00120/02 00393/03 00410/03 00421/03
        00023/05 00189/05 00281/05

 EQTAB  00440/05 00682/04 00208/05 00273/05

 EQTCT  00009/05 00681/04 00029/05 00272/05 00287/05

 EQTPT  00010/05 00684/04 00016/05 00027/05 00274/05 00285/05

 ERETN  00180/04 00229/04 00239/04 00047/05

 ERR    00091/02 00056/02 00079/02

 ERR01  00012/03 00007/01 00333/03 00339/03

*ERR02  00517/03

 ERR03  00519/03 00007/01

 ERR04  00521/03 00007/01

 ERR05  00523/03 00007/01

 ERR06  00525/03 00300/03

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 ETYPE  00176/02 00076/02 00116/04 00691/04

 EX#    00521/05 00016/04
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 EX2     00044/03 00021/03
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 EXEC    00468/02 00003/01 00174/02 00472/02
 EXECA   00174/02 00009/03
 EXLOC   00520/05 00014/04
 EXMAN   00523/05 00009/04 00040/04 00043/04
 EXMOD   00522/05 00548/03 00033/04 00037/04 00227/04 00657/04
 EXPG    00460/05 00521/01 00594/04 00634/04 00666/04
 FILRW   00470/05 00164/02 00170/02 00019/03 00350/04 00356/04 00056/05
 FLDEF   00313/03 00294/03
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 ID008   00471/04 00427/04 00466/04
 ID010   00482/04 00465/04
 ID020   00487/04 00484/04
 IFLAG   00493/04 00385/04 00408/04 00451/04
 IGN     00546/04 00534/04
 IGNFL   00553/05 00057/05
 INT#    00481/05 00157/01
 INTAB   00480/05 00160/01 00367/01 00490/03 00262/04 00039/05
 INTSC   00191/01 00139/01 00146/01 00167/01 00211/01 00376/01
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*IO.41   00310/03
 IO.FL   00299/03 00313/03
 IOC02   00047/02 00426/04
 IOC04   00018/02 00524/01 00005/02 00012/02
 IOC05   00044/02 00017/02
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IOC10 00057/02 00515/01

IOC20 00068/02 00063/02

IOC30 00075/02 00066/02

IOC40 00080/02 00067/02

IOC50 00036/02 00519/01

IOC60 00041/02 00031/02

IOCNT 00154/05 00194/04 00201/04 00044/05 00147/05

IOCWT 00116/02 00033/02 00102/02 00105/02 00110/02

IODBS 00527/05 00131/04

IODMD 00563/05 00507/01 00510/01 00445/03 00110/04 00123/04 00207/04
00043/05

IODMN 00526/05 00124/04

IONW 00157/02 00149/02

IOWT0 00132/02 00161/02 00166/02

IOWT1 00138/02 00131/02

IRT10 00348/01 00343/01

*IRT3 00375/01

*JBINC 00425/05

*JBINS 00424/05

JBUF 00445/05 00425/04 00476/04 00525/04

JFILC 00448/05 00063/05

JFILS 00447/05 00062/05

*JFLSC 00477/05

*JOBPB 00541/05

*JOBPM 00540/05

JSBEX 00014/03 00010/03

JSBI 00654/04 00004/03

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 LD10    00120/04 00112/04

 LDRTN   00141/04 00121/04 00139/04

 LEQT4   00281/01 00266/01 00289/01 00389/04 00438/04

 LPREP   00347/05 00366/05 00371/05

*LSTCH   00572/05

 LUCHK   00330/03 00008/01 00146/03 00343/03 00347/03 00467/04 00112/05

 LUNUL   00211/05 00114/05

 LUT#    00444/05 00337/03

 LUTAB   00443/05 00283/01 00007/02 00340/03 00353/03

 M010    00319/04 00326/04

 M17     00410/05 00169/03

*M177    00413/05

 M1774   00415/05 00015/02 00046/04 00477/04 00527/04 00551/04

 M1777   00417/05 00411/03

 M37     00411/05 00303/03

 M377    00414/05 00097/03 00022/04 00359/05

*M3777   00416/05

 M77     00412/05 00210/01 00108/02 00331/03 00351/03 00423/03 00137/05

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 MASK8   00075/04 00112/02

 MD1     00021/04 00028/04

 MD13    00526/03 00482/01 00484/01 00133/02 00013/03 00514/03 00518/03
         00520/03 00522/03 00524/03

 MD13B   00543/03 00534/03 00538/03

 MD2     00033/04 00024/04

 MDCOR   00029/04 00018/04

 MDFLG   00452/05 00061/02 00129/02 00147/02 00157/02 00022/03 00149/03
         00161/03 00455/03 00532/03 00067/04 00052/05
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 MDLD2   00179/04 00173/04 00233/04

 MDLDA   00175/04 00165/04 00180/04 00237/04

 MDLDB   00176/04 00167/04 00240/04

 MDLDT   00177/04 00169/04 00235/04

 MDTAB   00262/03 00027/01 00093/03 00355/05

 MDY     00064/04 00013/04 00039/04

 MEMPT   00186/03 00248/03

 MEQT    00156/04 00154/04 00206/04 00212/04 00045/05

 MPCOD   00346/01 00336/01 00190/03 00037/05

 MPERR   00011/03 00006/03

 MPTFL   00546/05 00299/01 00340/01 00241/05

 MPY17   00204/05 00286/01 00009/02 00345/03 00209/05

*MSECT   00561/05

 MSKCL   00471/03 00394/03 00123/05

*N0      00394/05

 N1      00392/05 00285/01 00003/02 00473/02 00050/03 00143/03 00344/03
         00352/03

 N10     00383/05 00306/03

 N2      00391/05 00206/03

*N3      00390/05

 N36     00178/02 00045/02

 N4      00389/05 00504/04

 N5      00388/05 00200/03

 N6      00387/05 00153/01

 N600    00485/01 00416/01 00472/01

*N64     00382/05

*N7      00386/05

 N8      00385/05 00057/03
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 N9      00384/05 00054/03

*NABRT   00513/05

 NRPAR   00472/03 00073/02 00459/03 00475/03

 NULCK   00349/03 00147/03 00356/03 00367/03 00358/03 00113/05

 NXEQT   00027/05 00687/04 00690/04 00067/05

 OPAGO   00022/02 00586/04

 OPATN   00535/05 00263/01 00279/01 00485/04 00049/05

 OPFLG   00536/05 00273/01 00401/04 00445/04 00482/04 00530/04 00627/04
         00048/05

 OPRAT   00262/01 00171/01 00265/01 00271/01 00277/01 00027/02

 PAFLG   00094/05 00029/02 00548/04 00552/04 00554/04

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 PCOM    00199/01 00148/01

 PCOMX   00207/01 00256/05

 PI.X    00232/01 00253/05 00255/05

 PRLST   00234/01 00200/01 00201/01 00204/01 00228/01 00229/01 00059/05

 R.LDX   00135/03 00238/03

 R1      00066/03 00072/03 00077/03

 R1.ST   00102/03 00237/03

 R1A     00106/03 00117/03 00119/03 00132/03 00159/03 00170/03 00177/03
         00182/03 00191/03 00541/03 00071/04

 R1AX    00118/03 00123/03

 R2A     00120/03 00239/03

 R2X     00113/03 00240/03

 R4      00088/03 00198/03 00312/03

 R4A     00098/03 00138/03 00298/03 00579/04 00612/04 00616/04 00663/04
         00091/05

 RC6     00270/04 00266/04

 RC7     00272/04 00268/04
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RCCLR 00273/04 00271/04

RCDE1 00372/05 00346/05

RCDE2 00373/05 00365/05

RCDE3 00374/05 00370/05

RCHAN 00261/04 00503/01 00454/03 00269/04 00275/04 00226/05

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RONBF 00451/05 00204/03 00211/03 00452/05 00453/05 00454/05 00456/05
00458/05 00459/05

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RQERR 00513/03 00017/03 00049/03 00053/03 00056/03 00070/03 00080/03
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RQNEG 00508/03 00102/03 00113/03 00120/03 00135/03 00511/03

RQP1 00504/05 00060/03 00078/03 00509/03

RQP1A 00060/03 00064/03

RQP2 00505/05 00142/03 00179/03 00186/03 00214/03

RQP3 00506/05 00156/03 00167/03

RQP4 00507/05 00154/03 00165/03

RQP5 00508/05 00292/03

*RQP6 00509/05

*RQP7 00510/05

*RQP8 00511/05

RQRTN 00502/05 00033/03 00045/03 00107/03 00358/04

RQTBL 00217/03 00027/01 00089/03 00260/03 00349/05

RTBG1 00130/03 00124/03 00125/03

RTBG2 00131/03 00127/03

RTRK 00543/05 00181/03

SAVE$ 00502/04 00006/01 00028/02 00080/02 00400/04 00424/04 00437/04
00507/04 00628/04

SAVEA 00359/03 00145/03 00350/03 00111/05 00122/05

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*SCCNT  00464/05

*SECTR  00438/05

 SEG1   00212/03 00208/03

 SEGRT  00195/03 00247/03

 SEOAB  00246/01 00026/01 00131/01 00253/01 00024/02 00470/02

 SETEQ  00288/04 00005/01 00166/01 00208/01 00346/03 00211/04 00221/04
        00292/04 00362/04 00585/04 00017/05 00227/05 00275/05

 SETET  00012/05 00693/04

 SGRTN  00456/05 00196/03 00202/03 00055/05

 SKIP1  00334/01 00263/05

 SKIP2  00300/01 00258/05

 SKIP3  00181/01 00261/05

 SKIP5  00243/04 00230/04 00007/05 00025/05 00262/05 00284/05

*SSFLG  00575/05

*SSTBL  00579/05

 STAT   00142/03 00231/03

 STAT1  00160/03 00148/03

 STC1   00301/01 00250/05 00252/05

 STC5   00192/03 00189/03 00036/05

 STF1   00380/01 00247/05 00249/05

 SUBAD  00074/04 00152/02 00155/02

*SVEQ   00459/05

 SVEQT  00180/02 00042/02 00373/04 00573/04 00574/04 00050/05

 SVTSN  00092/04 00082/04 00088/04

 SWAP   00538/05 00520/01 00656/04 00669/04 00671/04

 SXA    00565/05 00420/04 00506/04

 SXB    00566/05 00421/04

 SXEQ   00567/05 00414/04
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 SXSUS   00568/05 00174/03 00411/04 00418/04 00540/04

 SY01    00131/05 00121/05

 SY05    00159/05 00133/05

 SY10    00183/05 00129/05 00162/05 00164/05

*SYNTS   00466/05

*SYSBF   00437/05

*SYSCD   00476/05

 SYSCL   00375/05 00023/01 00347/05

*SYSDR   00435/05

*SYSSC   00463/05

*SYSTY   00433/05

 TBFLG   00552/05 00058/05

 TBG     00427/05 00151/01 00121/03

 TE02    00530/04 00563/04 00589/04 00609/04 00624/04

 TE05    00547/04 00529/04

 TE10    00583/04 00576/04

 TE110   00369/04 00593/04

 TE120   00666/04 00565/04

 TE20    00587/04 00557/04

 TE22    00590/04 00568/04

 TE25    00597/04 00571/04

 TE35    00610/04 00600/04 00604/04

 TE40    00614/04 00598/04 00602/04 00606/04 00608/04

 TE50    00618/04 00591/04

 TE55    00626/04 00536/04

 TE90    00644/04 00559/04 00561/04

 TEMP    00072/05 00001/04 00002/04 00015/04 00020/04 00021/04 00023/04
         00025/04 00026/04 00027/04 00038/04 00045/04 00053/04 00054/04
         00064/04 00166/04
```

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 TEMP0   00555/05 00098/03 00544/03 00003/04 00008/04 00029/04 00032/04
         00065/04 00168/04 00236/04 00352/05

 TEMP1   00556/05 00477/02 00478/02 00014/03 00063/03 00066/03 00075/03

 TEMP2   00557/05 00517/01 00038/02 00065/03 00073/03 00074/03

 TEMPW   00382/01 00366/01 00378/01

 TEMPX   00486/01 00440/01 00447/01 00449/01 00451/01 00452/01 00453/01
         00454/01 00458/01 00460/01 00461/01 00462/01 00464/01

 TEMPZ   00071/05 00335/01 00344/01 00348/01 00365/01 00377/01 00437/03
         00460/03 00467/03

 TMBEG   00580/05 00420/01 00437/01 00060/05

 TMPX0   00226/05 00310/04 00321/04 00323/04 00205/05 00207/05

 TMPX1   00227/05 00317/04 00322/04 00324/04

 TMPX2   00228/05 00311/04 00325/04

 TR      00637/04 00599/04

 TRAK#   00573/05 00051/05

 TSONE   00474/05 00081/04 00086/04 00089/04

 TY002   00400/04 00388/04 00450/04 00454/04

 TY005   00408/04 00435/04

 TY010   00411/04 00453/04 00504/04

 TY012   00414/04 00456/04 00543/04

 TY015   00424/04 00407/04

 TY020   00436/04 00434/04

 TYEQT   00577/05 00104/02 00686/04

*UBFWA   00530/05

*UBLWA   00531/05

*UBUFR   00473/05

*UDNTS   00465/05

 UMFWA   00529/05 00257/01

*UMLWA   00422/05

*UTMP0   00558/05
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```
*UTMP1  00559/05

*UTMP2  00560/05

 VADR   00562/05 00475/02 00007/03 00032/03 00526/03

 WA10   00206/04 00200/04

 WA20   00215/04 00210/04

 WA30   00218/04 00216/04

 WAITL  00244/04 00184/03 00247/04

 WAITX  00193/04 00032/02 00217/04 00220/04 00226/04

 XA     00515/05 00242/01 00247/01 00114/03 00509/04

 XB     00516/05 00243/01 00248/01 00175/03

 XEO    00517/05 00238/01 00252/01

 XFLG   00574/05 00473/03

 XIRT   00458/05 00176/01 00341/01 00347/01 00349/01 00139/02 00040/03
        00108/03 00199/03 00359/04 00419/04

 XRQP2  00214/03 00209/03

 XSUSP  00518/05 00145/01 00172/01 00175/01 00182/01 00480/01 00483/01
        00026/02 00128/02 00138/02 00476/02 00173/03 00369/04
```

```
0001                ASMB,L,X,C,N,R,B     DOS-IIIB JOB PROCESSOR (JOBPR)
**  NO ERRORS*
```

```
0001                    ASMB,L,X,C,N,R,B    DOS-IIIB JOB PROCESSOR (JOBPR)
0002  00000                   NAM JOBPR,3,1
0003                          SUP
0004                          EXT EXEC
0005                          ENT JOBPR
0006*
0007  00000           A    EQU 0
0008  00001           B    EQU 1
0009*
0010  00053           .      EQU 53B          =0 (+AND= 1 THRU 10 FROM .)
0011  00066           D17    EQU .+11         EQT LENGTH
0012  00067           D64    EQU .+12         =B100
0013  00071           B37    EQU .+14          MASK FOR LOWER 5 BITS
0014  00072           B77    EQU .+15         =D63
0015  00073           B177   EQU .+16         =D127
0016  00074           B377   EQU .+17         =D255  (LOWER MASK)
0017  00075           B1774  EQU .+18         UPPER MASK = -4000
0018*
0019  00100           *      EQU 100B        START OF SYSTEM COMMUN. AREA
0020  00100           UMLWA  EQU *            LAST WORD ADDRESS OF USER
0021*                                           AVAILABLE MEMORY.
0022  00101           JBINS  EQU *+1          START TR/SEC OF JBIN AREA
0023*                     *                   JBINS=-1 AT END OF ASSEMBLY IF
0024*                     *                    THE JBIN AREA HAS OVERFLOWED.
0025  00102           JBINC  EQU *+2          CURRENT TR/SEC OF JBI"
0026  00103           TBG   EQU *+3          TIME BASE GEN. CHANNEL
0027  00104           CLOCK  EQU *+4          CURRENT SYSTEM TIME CLOCK
0028  00106           CLEX   EQU *+6          EXECUTION TIME CLOCK
0029  00110           CXMX   EQU *+8          MAXIMUM ALLOWABLE EXECUTION TIME
0030  00111           BATCH  EQU *+9          L. U. OF BATCH INPUT DEVICE
0031  00112           SYSTY  EQU *+10         L. U. OF SYSTEM TELETYPE
0032  00113           DUMPS  EQU *+11         ABORT /POST MORTEM DUMP FLAG
0033  00114           SYSDR  EQU *+12         SYSTEM DIRECTORY TRACK/SECTOR
0034  00115           UDIRT  EQU *+13         SYSTEM BUFFER TRACK/SECTOR
0035  00115           SYSBF  EQU UDIRT
0036  00116           SECTR  EQU *+14        # OF SECTS/SCK
0037  00117           EQTAB  EQU *+15         FWA OF EQUIPMENT TABLE
0038  00120           EQT#   EQU *+16         # OF EQUIPMENT ENTRIES
0039  00121           LUTAB  EQU *+17         FWA OF LOGICAL UNIT TABLE
0040  00122           LUT#   EQU *+18         # OF LOGICAL UNIT ENTRIES
0041  00123           JBUFF  EQU *+19         JOB INPUT BUFFER ASDRESS
0042  00124           JFILS  EQU *+20        SOURCE FILE START TRACK/SECTOR
0043  00125           JFILC  EQU *+21        SOURCE FILE CURRENT TRACK/SECTOR
0044  00126           RONBF  EQU *+22         USER AREA FILE NAME INFORMATION
0045  00141           EXPG   EQU *+33         DIRECTORY ENTRY FOR CURRENT PROG
0046  00154           DISCO  EQU *+44         IO CHNL #/ LAST TRACK ON DISC
0047  00155           SYSSC  EQU *+45
0048  00156           LSTSC  EQU *+46         LAST SUBCHNL ON SYSTEM
0049  00157           UDNTS  EQU *+47         NEXT USER DISC TRACK/SECTOR
0050  00157           NXTTS  EQU UDNTS
0051  00160           SYNTS  EQU *+48         NEXT SYSTEM DISC TRACK/SECTOR
0052  00160           SYSTS  EQU SYNTS
0053  00161           CUDSC  EQU *+49         CURRENT USER DISC SUBCHANNEL
0054  00174           TSONE  EQU *+60         NEXT T/S AVAILABLE
0055  00175           GUDSC  EQU *+61
0056  00177           JFLSC  EQU *+63         JFILE SUBCHANNEL
```

```
0057  00200          DISCL EQU *+64       POINTS AT USER BUFFER T/S
0058  00206          EQT4  EQU *+70       CURRENT DEVICE STATUS EQT ADDR.
0059  00236          NFLAG EQU *+94       FLAG FOR RUN TIME ABORT(0=ABORT)
0060  00245          EXMOD EQU *+101
0061  00254          UMFWA EQU *+108      FIRST WORD ADDRESS OF USER
0062*                                         AVAILABLE MEMORY.
0063  00260          OPATN EQU *+112
0064  00261          OPFLG EQU *+113
0065  00262          SWAP  EQU *+114
0066  00266          EJOBF EQU *+118
0067  00267          RTRK  EQU *+119      SET = 0 FOR REAL TIME SIMULATION
0068  00313          MSECT EQU *+139
0069  00323          EFMP  EQU *+147
0070  00326          LSTCH EQU *+150      FOR SLDE: 0=SYS DISC,NOT 0=USER
0071  00327          TRAK# EQU *+151  FILE VALIDITY FLAG
0072  00331          SSFLG EQU *+153
0073  00333          TYEQ4 EQU *+155
0074  00334          DMFLG EQU *+156      DATA MANAGEMENT ACTIVE FLAG
0075  00335          SSTBL EQU *+157      ADDRESS OF SUBSYSTEM TABLE
0076  00332          CHARC EQU *+232B
```

```
0078*          ************************************************************
0079*          * REQUESTS MADE TO 'EXEC' - GENERAL FORMAT -                *
0080*          * ( P )    JSB EXEC                                         *
0081*          * (P+1)    DEF *+N    (RETURN ADDRESS)                      *
0082*          * (P+2)    DEF RCODE                                        *
0083*          * (P+3)    DEF ERROR (READ/WRITE ONLY)ERROR ROUTINE LOCN.   *
0084*          * (P+4)    DEF ETYPE (READ/WRITE ONLY)ERROR TYPE LOCN.      *
0085*          * (P+5)    DEF CONWD                  CONTROL WORD LOCN.    *
0086*          * (P+6)    DEF BUFFR (I/O ONLY)       BUFFER LOCATION       *
0087*          * (P+7)    DEF BUFFL (I/O ONLY)       BUFFER LENGTH LOCN.   *
0088*          * (P+8)    DEF DTRAK (DISC I/O ONLY)  TRACK NUMBER LOCN.    *
0089*          * (P+9)    DEF DSECT (DISC I/O ONLY)  SECTOR NUMBER LOCN.   *
0090*          * REQUEST CODES(WHEN USED IN JOB/FILE PROCESSOR ALL         *
0091*          *                 REQUEST CODES MUST BE NEGATIVE).           *
0092*          *   1      READ FROM DEVICE OTHER THAN DISC USER AREA.      *
0093*          *   2      WRITE ON DEVICE OTHER THAN DISC USER AREA.       *
0094*          *   3      CONTROL REQUEST(FUNCTION IS IN UPPER 1/2 CONWD)  *
0095*          *   7      PAUSE FOR PROGRAM SUSPENSION                     *
0096*          *  19      STORE A IN B(IN PROTECTED MEMORY)                *
0097*          *  20      TURN ON THE LOADER                               *
0098*          *  21      TURN ON THE TIME BASE GENERATOR                  *
0099*          *  22      EXECUTE THE INSTRUCTION IN THE 'A' REGISTER      *
0100*          *    CONTROL REQUEST (TYPE 3,ABOVE)FUNCTIONS ARE IN UPPER   *
0101*          *         8 BITS, L.U.N. IN LOWER 8 BITS OF 'CONWD'         *
0102*          *    FUNCTION CODE(OCTAL)      ACTION                       *
0103*          *           7                SET SIMULATED END OF TAPE STATUS*
0104*          *                            FOR PAPER TAPE INPUT DEVICE    *
0105*          *          10                GENERATE PAPER TAPE LEADER/TRLR*
0106*          *          11                LINE SPACING FOR LIST DEVICE   *
0107*          *              (A PARAMETER FOLLOWS THE CONTROL REQUEST     *
0108*          *               FUNCTION WHEN LINE SPACING IS REQUESTED.    *
0109*          *               IF POSITIVE IT'S THE LINE COUNT, IF NEGA-   *
0110*          *              TIVE IT SKIPS TO TOP OF FORM.)               *
0111*          *    THE CONTROL WORD(ALL REQ,CODE TYPES OTHER THAN 3)      *
0112*          *     STRUCTURE IS AS FOLLOWS:                              *
0113*          * BIT= 15 14 13 12 11 10  9  8  7  6  5  4  3  2  1  0     *
0114*          *       0  0  W        A     K  V  M  (LOGICAL UNIT #)      *
0115*          *    W: 0 = WAIT FOR TRANSFER COMPLETION                   *
0116*          *       1 = NO WAIT FOR COMPLETION                         *
0117*          *    K: 0 = INPUT FROM TTY KEYBOARD/READER NOT PRINTED.    *
0118*          *       1 = INPUT PRINTED AS RECEIVED FROM TTY             *
0119*          *    M: 0 = DATA TRANSFER FORMAT IS IN ASCII.              *
0120*          *       1 = DATA TRANSFER IS IN BINARY(ALWAYS =1 ON DISC)  *
0121*          *       V: = VARIABLE LENGTH BINARY INPUT(M=1,PAPER TAPE)  *
0122*          *        0=LENGTH DETERMINED BY BUFFER LENGTH WORD          *
0123*          *    A: 0 = DATA TRANSFER IN REL. BINARY, IF M & V= 1       *
0124*          *        1 = DATA TRANSFER IN ABS. BINARY, IF M & V=1       *
0125*          *       OTHERWISE IGNORED.                                 *
0126*          *    BITS 9, 10 AND 12 ARE IGNORED.                        *
0127*          ************************************************************
```

```
0129*                ***************************************************
0130*                * JOBPR - DISC OPERATING SYSTEM JOB PROCESSOR *
0131*                *   1. SCANS CURRENT JOB CONTROL STATEMENT.   *
0132*                *   2. SETS UP PARAMETER TABLE FOR USE BY     *
0133*                *      THE CONTROL STATEMENT PROCESSORS.      *
0134*                *   3. PRINTS THE STATEMENT IF INDICATED.     *
0135*                *   4. JUMPS TO OR CALLS THE PROCESSOR REQ'STD*
0136*                ***************************************************
0137  00000 077110R JOBPR STB STLEN
0138  00001 006400        CLB
0139  00002 076766R       STB EDITF      CLEAR EDIT FLAG
0140  00003 077647R       STB RBINF      CLEAR 'RELOC. BINARY' FLAG
0141  00004 077650R       STB ABINF      CLEAR ABSOLUTE BIN. FLAG
0142  00005 076324R       STB MVALU      CLEAR LOW LIMIT FOR SEC. PUNCHIN
0143  00006 076330R       STB DOSM       CLEAR 'WORK FILE' EDIT FLAG
0144  00007 077670R       STB TRFLG
0145  00010 077243R       STB INFL
0146  00011 077244R       STB ABFL
0147  00012 077242R       STB JOBFL
0148  00013 064200        LDB DISCL
0149  00014 006004        INB
0150  00015 076771R       STB USDIR      SET USER DIRECTORY T/S
0151  00016 060115        LDA SYSBF
0152  00017 040075        ADA B1774
0153  00020 072413R       STA JOBTR
0154  00021 062326R       LDA LUN3       SET DISC LUN=3 FOR DIRECTORY PRO
0155  00022 072451R       STA FLUN
0156  00023 060266        LDA EJOBF
0157  00024 002302        CCE,SZA
0158  00025 026400R       JMP RNSJ
0159*
0160  00026 001500  JOBCN ERA
0161  00027 030106        IOR CLEX
0162  00030 067210R       LDB XCLEX
0163  00031 017042R       JSB EXSET      TURN OFF EXECUTION CLOCK
0164  00032 017476R       JSB SCANR
0165  00033 160123        LDA JBUFF,I    GET 1ST CHARACTER
0166  00034 010075        AND B1774
0167  00035 052342R       CPA B35K       COLON?
0168  00036 006401        CLB,RSS         =YES
0169  00037 173602R       STA PMTBL,I    NO = SET FOR BAD CONTROL REQUEST
0170  00040 163602R       LDA PMTBL,I
0171  00041 053037R       CPA AJO        'JOB'?
0172  00042 026126R       JMP JOB
0173  00043 053230R       CPA AEJ        'EJOB'?
0174  00044 026113R       JMP EJOB
0175  00045 053167R       CPA CHARS+23   'UD'?
0176  00046 002001        RSS             =]
0177  00047 016321R       JSB CLRDD      GO CLEAR "DDFLG" AND "OVFLG"

0179  00050 060111        LDA BATCH
0180  00051 050112        CPA SYSTY      INPUT ON TTY?
0181  00052 026056R       JMP *+4        YES
0182  00053 060123        LDA JBUFF
0183  00054 067110R       LDB STLEN
0184  00055 017356R       JSB ERRDG      GO PRINT THE STATE.ON TTY
```

```
0185  00056 002400          CLA
0186*
0187*                 * SET UP PARAMETERS FOR TESTING AND *
0188*                 *  JUMPS TO DOS PROCESSOR ROUTINES, *
0189*                 *  PMLOC PNTS AT PMTBL AT THIS TIME,*
0190*
0191  00057 067067R          LDB PROC8       B=ADDRESS OF 1ST PROCESS JUMP
0192  00060 063140R          LDA CHARS
0193  00061 072765R          STA TSAVE       TSAVE=ADDRESS OF 1ST CHAR PAIR
0194  00062 063137R          LDA PROC#
0195  00063 072426R          STA TEMP        TEMP = # OF CHAR. PAIRS TO TEST.
0196  00064 163602R          LDA PMTBL,I     GET CHAR. PAIR FROM CONTRL.STATM
0197  00065 152765R JOBTS    CPA TSAVE,I     IS THIS THE PAIR?
0198  00066 124001           JMP B,I         YES - JUMP TO PROCESSOR
0199  00067 036765R          ISZ TSAVE
0200  00070 006004           INB
0201  00071 036426R          ISZ TEMP        LIST FINISHED?
0202  00072 026065R          JMP JOBTS       NO - GO CHECK NEXT PAIR
0203*
0204*                 * ILLEGAL JOB CONTROL STATEMENT *
0205*
0206  00073 062075R BDCTL    LDA *+2
0207  00074 026751R          JMP PMISS+1
0208  00075 000076R          DEF *+1
0209  00076 041101           ASC 9,BAD CONTROL STATE,
0210*
0211  00107 016001X PAUSE    JSB EXEC        'PAUSE' - GO TO PROGRAM SUSPEND
0212  00110 000112R          DEF *+2
0213  00111 000044           DEF .-7
0214  00112 026306R          JMP RNS
```

```
0216*                ******************************************
0217*                *JOB - 'JOB' STATEMEN ROESSOR       *
0218*                * EJOB - PROCESSING DONE AT END OF JOB *
0219*                ******************************************
0220   00113 060054  EJOB  LDA ,+1
0221   00114 067211R       LDB XBATC      RESET BATCH TO LUN 1
0222   00115 017042R       JSB EXSET      GO SET INTO BASE PAGE
0223   00116 060051        LDA ,-2
0224   00117 066767R       LDB XEJOB
0225   00120 017042R       JSB EXSET
0226   00121 002400        CLA
0227   00122 073243R       STA INFL
0228   00123 073244R       STA ABFL
0229   00124 072766R       STA EDITF
0230   00125 026135R       JMP JOB01
0231   00126 002400  JOB   CLA             SET JOBFL TO 0 FOR JOB
0232   00127 073243R       STA INFL
0233   00130 073244R       STA ABFL
0234   00131 073242R       STA JOBFL
0235   00132 060266        LDA EJOBF
0236   00133 002002        SZA             IS END JOB FLAG ON?
0237   00134 026221R       JMP JOB03       -YES
0238*
0239*                * COMPUTE RUN TIME *
0240*
0241   00135 002004  JOB01 INA
0242   00136 017377R       JSB OPONF      DISABLE OPERATOR ATTENTION
0243   00137 016001X       JSB EXEC       TURN ON TIME BASE GENERATOR
0244   00140 000142R       DEF *+2
0245   00141 001234R       DEF DM21
0246*
0247   00142 002404        CLA,INA      SET JOBFL TO 1 FOR ENDJOB
0248   00143 073242R       STA JOBFL
0249   00144 160333        LDA TYEQ4,I
0250   00145 001265        RAL,CLE,ERA
0251   00146 064333        LDB TYEQ4
0252   00147 017042R       JSB EXSET      MAKE SURE TTY AVAIL.
0253   00150 002400        CLA
0254   00151 067224R       LDB XXMOD
0255   00152 017042R       JSB EXSET      MAKE SURE EXEC MOD AREA AVAIL.
0256*
0257   00153 067764R       LDB RDSYS      READ IN SYSTEM BUFFER SECTOR
0258   00154 017767R       JSB SYSB
0259*
0260   00155 063226R       LDA XSYLB      * GET LABEL SAVED
0261   00156 066601R       LDB DFLBL      *   AT JOB START
0262   00157 017461R       JSB WMOVE      *   TO RESTORE
0263   00160 000003        DEC 3          *   DEFAULT USER DISC
0264*
0265*     ****************************************************************
0266*     ****************************************************************
0267   00161 063764R       LDA STIME      GET START TIME(MIN)
0268   00162 003000        CMA
0269   00163 040104        ADA CLOCK      A = ELAPSED MINUTES
0270   00164 067765R       LDB STIME+1    GET START TIME(SECS,)
0271   00165 007004        CMB,INB
```

```
0272  00166 044105          ADB CLOCK+1    B = ELAPSED SECONDS + .10S
0273  00167 006021          SSB,RSS        BORROW A MINUTE?
0274  00170 002005          INA,RSS         =NO
0275  00171 047231R          ADB D600       ADD TO SECONDS + TENTHS
0276  00172 077765R          STB STIME+1    SAVE SECONDS +.10S
0277  00173 017137R          JSB CNDEC      CONVERT A TO   DECIMAL DIGITS
0278  00174 077005R          STB RNTIM
0279  00175 073006R          STA RNTIM+1    MINUTE IN BUFFER
0280  00176 063765R          LDA STIME+1
0281  00177 016675R          JSB CNSEC     CONVERT A TO SECONDS AND TENTHS,
0282  00200 077012R          STB RNTIM+5
0283  00201 073013R          STA RNTIM+6    RUN TIME COMPLETE
0284*
0285*               * CONVERT AND STORE EXECUTION TIME *
0286*
0287  00202 060106          LDA CLEX
0288  00203 001665          ELA,CLE,ERA    CLEAR EXECUTION BIT
0289  00204 017137R          JSB CNDEC      CONVERT A TO   DECIMAL DIGITS
0290  00205 077022R          STB EXTIM
0291  00206 073023R          STA EXTIM+1    SET EXECUTION MINUTES
0292  00207 060107          LDA CLEX+1
0293  00210 002002          SZA
0294  00211 043231R          ADA D600
0295  00212 016675R          JSB CNSEC     CONVERT A TO SECONDS AND TENTHS,
0296  00213 077027R          STB EXTIM+5
0297  00214 073030R          STA EXTIM+6    SET EXECUTION SECONDS+10THS
0298*
0299*               * MOVE 'JOB NAME' TO OUTPUT BUFFER *
0300*
0301  00215 063573R          LDA JNAML
0302  00216 066772R          LDB ENJP5
0303  00217 017461R          JSB WMOVE
0304  00220 000003          DEC 3
0305*
0306*               * MOVE 'JOB NAME' TO 'BUFFR' AREA *
0307*
0308  00221 067764R JOB03   LDB RDSYS
0309  00222 017767R          JSB SYSB
0310  00223 062412R          LDA BLNKS      SET NAME AREA TO BLANKS
0311  00224 073766R          STA JNAME
0312  00225 073767R          STA JNAME+1
0313  00226 073770R          STA JNAME+2
0314  00227 017625R          JSB PMNXT
0315  00230 072245R          STA JOB16      SET ORIGIN OF MOVE
0316  00231 002003          SZA,RSS        IS THE JOB NAME PRESENT?
0317  00232 026247R          JMP JOB05       =NO, SKIP MOVING IT
0318  00233 017625R          JSB PMNXT
0319  00234 002020          SSA            IS IT ALPHA?
0320  00235 026247R          JMP JOB05       =NO
0321*
0322*    ****************************************************************
0323  00236 067573R          LDB JNAML
0324  00237 005200          RBL            B = DEST. ADDR
0325  00240 040045          ADA .-6        START FOR CHECK ON CHAR. COUNT
0326  00241 002021          SSA,RSS        MORE THAN 5 CHARS IN JOB NAME?
0327  00242 003400          CCA            YES, SET A TO GIVE 5 CHARS
```

```
0328  00243 040061         ADA .+6        A NOW = NO. OF CHARS IN JOB NAME
0329  00244 017415R         JSB MOVE
0330  00245 000000  JOB16   NOP
0331  00246 002400         CLA
0332*
0333  00247 072612R JOB05   STA NMFLG      GET JOB NAME FLAG
0334  00250 067765R         LDB WRSYS
0335  00251 017767R         JSB SYSB       WRITE SYST. BFR SECTOR
0336  00252 060266          LDA EJOBF
0337  00253 003026          CMA,SSA,INA,SZA
0338  00254 026300R         JMP JOB10
0339*
0340*                * GO PRINT THE END STATEMENT *
0341*
0342  00255 060103          LDA TBG
0343  00256 064062          LDB .+7        SET FOR 7 WORD BUFFER
0344  00257 002002          SZA
0345  00260 067574R         LDB D32        NO
0346  00261 062773R         LDA PREND      BUFFER ORGIN 'A'
0347  00262 016647R         JSB PRLST      LIST ON TTY AND LIST DEV.IF #TTY
0348  00263 063242R         LDA JOBFL      IF PROCESSING ;EJ, RESET LUN'S
0349  00264 002002          SZA           AFTER PRINTING END STATEMENT.
0350  00265 016632R         JSB STLUN
0351*
0352*                    PURGE USER TEMP FILES
0353*
0354  00266 063644R         LDA PMLOC
0355  00267 016542R         JSB NXSET
0356  00270 002404          CLA,INA
0357  00271 006400          CLB
0358  00272 016647R         JSB PURGE
0359  00273 062606R         LDA SAVPM
0360  00274 073644R         STA PMLOC
0361*
0362  00275 060175          LDA GUDSC      GET DEFAU\ USER SUNL
0363  00276 006404          CLB,INB          AND
0364  00277 016573R         JSB JEXUD       RESET
0365*
0366  00300 060266  JOB10   LDA EJOBF
0367  00301 002021          SSA,RSS        WAS THIS AN 'EJOB' ENTRY?
0368  00302 026430R         JMP JOB11      NO -
0369  00303 003004          CMA,INA
0370  00304 066767R         LDB XEJOB
0371  00305 017042R         JSB EXSET
0372*
0373  00306 060262  RNS     LDA SWAP
0374  00307 002020          SSA            ;TY FROM DISCM
0375  00310 026617R         JMP OFF1      YES,
0376  00311 063034R RNSB    LDA PRINP      PRINT ENTER ACCEPTED CHAR(0,BELL
0377  00312 064111          LDB BATCH
0378  00313 007000          CMB
0379  00314 054051          CPB .-2        TTY INPUT BATCH DEVICE?
0380  00315 017356R         JSB ERRDG      YES, PRINT '0,BELL' FOR INPUT RQ
0381  00316 060111          LDA BATCH       IF BATCH MODE, DON'T READ NEW S
0382  00317 050112          CPA SYSTY      IF THE PREVIOUS JOB HAS BEEN ABO
0383  00320 026354R         JMP RNSK
```

```
0384   00321 063244R        LDA ABFL        ABFL=1 IF RETURN FROM ABORT
0385   00322 002003         SZA,RSS         = 0 IF NORMAL RETURN
0386   00323 026354R        JMP RNSK
0387   00324 063243R        LDA INFL        IF ABORT FROM :ST OR :ED, DON'T
0388   00325 002003         SZA,RSS         INFL=1 IF FROM :ST OR :ED.
0389   00326 016560R        JSB INPUT    BATCH MODE. ABFL=1,INFL=0. SO INPU
0390*
0391*       *  BATCH ABORT  *
0392*
0393   00327 016321R RNSI   JSB CLRDD      GO CLEAR "DDFLG" AND "OVFLG"
0394   00330 160123         LDA JBUFF,I    CHECK IF DJO OR :EJ
0395   00331 006400         CLB
0396   00332 076766R        STB EDITF
0397   00333 064123         LDB JBUFF
0398   00334 006004         INB
0399   00335 164001         LDB B,I
0400   00336 017050R        JSB .,RRL
0401   00337 177750         DEC -24
0402   00340 010074         AND B377
0403   00341 053235R        CPA B72        COLON?
0404   00342 002701         CLA,CCE,RSS
0405   00343 026352R        JMP RNSL
0406   00344 057037R        CPB AJO        :JO?
0407   00345 026026R        JMP JOBCN
0408   00346 057230R        CPB AEJ        :EJ?
0409   00347 026113R        JMP EJOB
0410   00350 057157R        CPB CHARS+15   :TY?
0411   00351 026026R        JMP JOBCN
0412   00352 016560R RNSL   JSB INPUT      INPUT NEXT STATEMENT,
0413   00353 026327R        JMP RNSI       SHUFFLE UNTIL :EJ, OR :JO
0414*
0415   00354 016560R RNSK   JSB INPUT
0416   00355 006003         SZB,RSS         WAS A STATEMENT READ?
0417   00356 026354R        JMP RNSK        NO - GO BACK AND RE-READ
0418   00357 002400         CLA
0419   00360 073243R        STA INFL
0420   00361 073244R        STA ABFL
0421   00362 060111         LDA BATCH      IF IN BATCH MODE, EDITF IS IGNORE
0422   00363 050112         CPA SYSTY
0423   00364 002001         RSS
0424   00365 026371R        JMP RNSH
0425   00366 062766R        LDA EDITF
0426   00367 002002         SZA             EDIT FLAG ON?
0427   00370 027570R        JMP EDITA       YES - GO BACK TO EDIT ROUTINE
0428   00371 054054  RNSH   CPB .+1        STLEN = 1 WORD?
0429   00372 026073R        JMP BDCTL        -TOO SHORT - REJECT!
0430   00373 060266         LDA EJOBF
0431   00374 052412R        CPA BLNK8       DID IT RE-READ "DATE"?
0432   00375 026704R        JMP DATE        YES
0433   00376 002003         SZA,RSS         IS END JOB FLAG ON?
0434   00377 026000R        JMP JOBPR       NO - SKIP JOB TEST
0435   00400 160123  RNSJ   LDA JBUFF,I
0436   00401 064123         LDB JBUFF
0437   00402 006004         INB
0438   00403 164001         LDB B,I         GET 3RD AND 4TH CHARS
0439*    ************************************************************
```

```
0440  00404 017050R        JSB ..RRL
0441  00405 177750         DEC -24
0442* ********************************************************************
0443  00406 010074         AND B377       ISOLATE 1ST CHAR
0444  00407 053235R        CPA B72        IS IT A COLON?
0445  00410 002701         CLA,CCE,RSS     -YES
0446  00411 026424R        JMP JOBB       NO - GO TO TTY INPUT CHECK
0447  00412 057037R        CPB AJO        'JOB'?
0448  00413 002001         RSS             -YES
0449  00414 057156R        CPB CHARS+14   'BATCH?'
0450  00415 002001         RSS             -YES
0451  00416 057157R        CPB CHARS+15   'TYPE'?
0452  00417 026026R        JMP JOBCN      YES
0453  00420 057160R        CPB CHARS+16   'TRACKS'?
0454  00421 026761R        JMP TRACK      YES
0455  00422 057203R        CPB AOF
0456  00423 026613R        JMP OFF
0457  00424 060111  JOBB    LDA BATCH
0458  00425 050112          CPA SYSTY      INPUT ON TTY?
0459  00426 026707R        JMP IGNOR      YES - PRINT '*IGNORE'
0460  00427 026306R        JMP RNS        NO
0461  00430 067764R JOB11   LDB RDSYS      READ IN SYSTEM BUFFER SECTOR
0462  00431 017767R         JSB SYSB
0463  00432 016321R         JSB CLRDD      GO CLEAR "DDFLG" AND "OVFLG"
0464  00433 072666R         STA JSFLG
0465  00434 073670R         STA TRFLG
0466  00435 066767R         LDB XEJOB
0467  00436 017042R         JSB EXSET
0468  00437 067212R         LDB XJBIN      SETUP TO CLEAR PARAMETERS
0469  00440 017042R         JSB EXSET      JBINS
0470  00441 017042R         JSB EXSET      JBINC
0471  00442 067213R         LDB XJFIL
0472  00443 017042R         JSB EXSET      JFILS
0473  00444 017042R         JSB EXSET      JFILC
0474  00445 017042R         JSB EXSET      RONBF+0
0475  00446 044057          ADB .+4
0476  00447 017042R         JSB EXSET      RONBF+5
0477  00450 067214R         LDB XCXMX
0478  00451 017042R         JSB EXSET      CXMX
0479  00452 067215R         LDB XDUMP
0480  00453 017042R         JSB EXSET      DUMPS
0481  00454 067216R         LDB XRTRK
0482  00455 017042R         JSB EXSET      RTRK
0483  00456 067217R         LDB XNFLA
0484  00457 017042R         JSB EXSET      NFLAG
0485  00460 067222R         LDB XEFMP
0486  00461 017042R         JSB EXSET      CLEAR EFMP ACTIVE FLAG
0487  00462 067223R         LDB XMFLG
0488  00463 017042R         JSB EXSET      CLEAR DATA MANAGEMENT FLAG
0489  00464 064331          LDB SSFLG
0490  00465 057215R         CPB ANO
0491  00466 063215R         LDA ANO
0492  00467 067221R         LDB XSFLG
0493  00470 017042R         JSB EXSET
0494*
0495  00471 016632R         JSB STLUN      RESET 1ST 9 LUNIS
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0496*
0497  00472 062612R        LDA NMFLG      GET JOB NAME FLAG
0498  00473 002021         SSA,RSS        IS IT ALPHA?
0499  00474 026500R        JMP JOB20       =YES
0500  00475 064061         LDB .+6
0501  00476 062602R        LDA NMIGN
0502  00477 017356R        JSB ERRDG
0503*
0504*               * INITIALIZE EXEC TIMER AND START TIME *
0505*
0506*
0507  00500 060175  JOB20 LDA GUDSC
0508  00501 006404         CLB,INB
0509  00502 016573R        JSB JEXUD      SET CURRENT USER DISC = DEFAULT
0510*
0511  00503 003400         CCA
0512  00504 040001         ADA B
0513  00505 006404         CLB,INB
0514  00506 016243R        JSB RDISC      GET USER DISC LABEL SECTOR
0515  00507 012413R        DEF INBUF
0516*
0517  00510 063226R        LDA XDLBL      *
0518  00511 067226R        LDB XSYLB
0519  00512 017461R        JSB WMOVE      * SAVE LABEL ON
0520  00513 000003         DEC 3
0521*
0522  00514 062413R        LDA INBUF
0523  00515 066615R        LDB UPAST
0524  00516 053227R        CPA ASCLB
0525  00517 002001         RSS
0526  00520 076020R        STB LBLSV
0527*
0528  00521 060104         LDA CLOCK
0529  00522 073764R        STA STIME
0530  00523 060105         LDA CLOCK+1
0531  00524 073765R        STA STIME+1
0532  00525 067765R        LDB WRSYS      RESTORE SYS BUF SECTOR
0533  00526 017767R        JSB SYSB
0534*
0535  00527 001500         ERA
0536  00530 067210R        LDB XCLEX
0537  00531 017042R        JSB EXSET      CLEX   (MINUTES)
0538  00532 063232R        LDA DM600
0539  00533 017042R        JSB EXSET      CLEX+1 (TENTHS OF SECONDS)
0540*
0541*               * SET UP TO PRINT JOB STATEMENT *
0542*
0543  00534 063573R        LDA JNAML      THIS MOVES BOTH JOB AND DATE,
0544  00535 067066R        LDB JOBUG
0545  00536 017461R        JSB WMOVE      MOVE THEN
0546  00537 000010         DEC 8          FOR AN 8 WORD MOVE
0547  00540 063764R        LDA STIME
0548  00541 017137R        JSB CNDEC      CONVERT A TO   DECIMAL DIGITS
0549  00542 077054R        STB JOBUF+14
0550  00543 073055R        STA JOBUF+15   'MINUTES' STORED
0551  00544 063765R        LDA STIME+1
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0552  00545 043231R        ADA D600
0553  00546 016675R        JSB CNSEC     CONVERT A TO SECONDS AND TENTHS.
0554  00547 077061R        STB JOBUF+19
0555  00550 073062R        STA JOBUF+20  'SECS. + 10THS' STORED
0556  00551 064065         LDB .+10
0557  00552 060103         LDA TBG
0558  00553 002002         SZA           TBG?
0559  00554 066473R        LDB D23       YES
0560  00555 063036R        LDA JOBUF     GET START OF JOB OUTPUT BUFFER
0561  00556 016647R        JSB PRLST     LIST ON TTY AND LIST DEV.IF #TTY
0562  00557 026306R        JMP RNS       GO READ NEXT STATEMENT
0563*
0564*          *  SUBROUTINE TO INPUT NEXT STATEMENT  *
0565  00560 000000  INPUT NOP
0566  00561 060111         LDA BATCH
0567  00562 033236R        IOR B400
0568  00563 072770R        STA RNLUN
0569  00564 006404         CLB,INB       SET B = +1 FOR INPUT
0570  00565 016434R        JSB LUCHK     CHECK LUN STATUS
0571  00566 060261         LDA OPFLG
0572  00567 002002         SZA
0573  00570 026566R        JMP *-2
0574  00571 016001X        JSB EXEC      INPUT NEXT STAT.
0575  00572 000577R        DEF *+5
0576  00573 000002         DEF .-1
0577  00574 000770R        DEF RNLUN
0578  00575 100123         DEF JBUFF,I   JOB BUFFER ORIGIN
0579  00576 006722R        DEF D36       36 WORDS (=72 CHARACTERS)
0001  00577 077043R        STB SAVL      SAVE STAT. LENGTH
0002  00600 077110R        STB STLEN     I.E. WORD COUNT.
0003  00601 126560R        JMP INPUT,I
0004*
0005  00602 000603R NMIGN  DEF *+1
0006  00603 047101         ASC 6,NAME*IGNORED
0007  00611 000605R IGN    DEF *-4       LOC OF '*IGNORED'
0008  00612 000000  NMFLG  NOP
0009*
0010  00613 060111  OFF    LDA BATCH     ********* KEYBOARD MODE ONLY *
0011  00614 050112         CPA SYSTY
0012  00615 002001         RSS
0013  00616 026707R        JMP IGNOR
0014  00617 016321R OFF1   JSB CLRDD     GO CLEAR "DDFLG" AND "OVFLG"
0015  00620 072766R        STA EDITF     CLEAR EDIT FLAG
0016  00621 067215R        LDB XDUMP
0017  00622 017042R        JSB EXSET
0018  00623 002404         CLA,INA
0019  00624 067211R        LDB XBATC
0020  00625 017042R        JSB EXSET
0021  00626 066631R        LDB XSWAP     CLEAR BIT 15 OF SWAP
0022  00627 017042R        JSB EXSET
0023  00630 026311R        JMP RNSB
0024*
0025  00631 000252  XSWAP  DEF SWAP
0026*
0027*                ***********************************************
0028*                * STLUN - RESET EQPMT IN 1ST 9 LUN ENTRIES *
```

```
0029*                 ***********************************************
0030  00632 000000  STLUN NOP
0031  00633 060042        LDA .-9
0032  00634 072426R       STA TEMP       SET TEMP FOR 9 PASSES
0033  00635 062646R       LDA SLUNL
0034  00636 072747R       STA EOTST      SET LOCN OF SAVED LUN ENTRIES
0035  00637 064121        LDB LUTAB      B = 1ST LOCN OF LUN TABLE
0036  00640 162747R       LDA EOTST,I    GET AN ENTRY
0037  00641 017042R       JSB EXSET      STORE IT
0038  00642 036747R       ISZ EOTST      SET FOR NEXT ENTRY
0039  00643 036426R       ISZ TEMP       DONE?
0040  00644 026640R       JMP *-4        NO, GO STORE NEXT ONE
0041  00645 126632R       JMP STLUN,I    YES, RETURN TO PROGRAM
0042*
0043  00646 010007R SLUNL DEF LUSAV
0044*                 ***************************************************
0045*                 * PRLST - LIST JOB OR END JOB STATEMENT ON TTY, *
0046*                 *         IF TTY IS NOT SYS, LIST DEVICE THEN   *
0047*                 *         REPEAT LISTING ON SYSTEM LIST DEVICE, *
0048*                 ***************************************************
0049  00647 000000  PRLST NOP
0050  00650 073171R       STA LSTBF      SAVE 'LIST' PARAMETERS
0051  00651 076641R       STB LSTBL
0052  00652 017356R       JSB ERRDQ      PRINT ON TTY
0053  00653 007400        CCB            B=-1 MEANS OUTPUT DEVICE
0054  00654 060061        LDA .+6
0055  00655 073105R       STA LSTLN      SET LSTLN = LUN 6 FOR LSTIO SR
0056  00656 072603R       STA SAVEA
0057  00657 016434R       JSB LUCHK      CHECK FOR VALID LUN 6,
0058  00660 016570R       JSB NULCK     LUN NULL?
0059  00661 126647R       JMP PRLST,I   YES, RETURN IMMEDIATELY
0060  00662 064121        LDB LUTAB      GET ADDRESS OF LUN TABLE
0061  00663 044060        ADB .+5        ADDRESS OF LUN 6(LIST DEVICE)
0062  00664 164001        LDB B,I        B=EQT FOR LUN 6
0063  00665 154121        CPB LUTAB,I    IS IT THE SAME AS THE TTY?
0064  00666 126647R       JMP PRLST,I    YES - RETURN
0065  00667 063105R       LDA LSTLN
0066  00670 017515R       JSB PGEJ
0067  00671 063171R       LDA LSTBF
0068  00672 066641R       LDB LSTBL
0069  00673 017150R       JSB LSTIO      PRINT ON SYS, LIST DEVICE
0070  00674 126647R       JMP PRLST,I    RETURN
0071*
0072*                    ****************************************
0073*                    * CNSEC - CONVERT A TO ASCII DECIMAL   *
0074*                    *  LOW ORDER 3 DIGITS IN B AND A WITH *
0075*                    *  DECIMAL PNT BEFORE TENTHS OF SECS, *
0076*                    ****************************************
0077  00675 000000  CNSEC NOP
0078  00676 017137R       JSB CNDEC      CONVERT A TO   DECIMAL DIGITS
0079  00677 047240R       ADB BM1K       CONVERT 0 TO , (B=1000)
0080*    ***************************************************************
0081  00700 017050R       JSB ..RRL
0082  00701 177770        DEC -8
0083*    ***************************************************************
0084  00702 001727        ALF,ALF
```

```
0085  00703 126675R        JMP CNSEC,I  RETURN
```

```
0087*                 ***********************************
0088*                 * PROCESS THE 'DATE' PARAMETER *
0089*                 ***********************************
0090  00704 060105  DATE  LDA CLOCK+1
0091  00705 002003        SZA,RSS         IS THIS A FRESH START?
0092  00706 026413R       JMP DATE1       YES
0093  00707 064057  IGNOR LDB .+4         NO -
0094  00710 062611R       LDA IGN         PRINT '*IGNORED' ON TTY
0095  00711 017356R       JSB ERRDG
0096  00712 026306R       JMP RNS
0097*
0098*                 ***********************************
0099*                 * PROCESS THE 'BATCH' STATEMENT *
0100*                 ***********************************
0101  00713 060122  PBATC LDA LUT#        GET NO. O F LUNS
0102  00714 017543R       JSB TBSET       CONVERT AND CHECK THE LUN PARAM
0103  00715 026750R       JMP PMISS       ERROR, LUN IS MISSING
0104  00716 063567R       LDA EQTNM       GET THE LUN NO.
0105  00717 072603R       STA SAVEA
0106  00720 016570R       JSB NULCK       ****** CAN'T SET NUL LUN TO BE
0107  00721 026514R       JMP LUCH3               BATCH DEVICE  *********
0108  00722 063567R       LDA EQTNM
0109  00723 064054        LDB .+1     INPUT
0110  00724 016434R       JSB LUCHK
0111  00725 063567R       LDA EQTNM
0112  00726 016662R       JSB DSCLU       CHECK IF DISC
0113  00727 016747R       JSB EOTST       GO SET EOT STATUS IN CASE NEEDED
0114  00730 063567R       LDA EQTNM       RESTORE LUN TO A
0115  00731 064121        LDB LUTAB      (A=VALUE)PICK LUN TABLE FWA
0116  00732 044052        ADB .-1
0117  00733 044000        ADB A           B POINTS AT ENTRY IN LUN TABLE
0118  00734 164001        LDB B,I
0119  00735 006002        SZB             IS AN EQT ENTRY THERE FOR IT?
0120  00736 026743R       JMP PBAT2       YES - CONTINUE
0121*
0122  00737 062741R PILLG LDA *+2
0123  00740 026751R       JMP PMISS+1     GO PRINT 'ILLEG PARAM' DIAG.
0124  00741 004771R       DEF SSIMP+5
0125*
0126  00742 060054  TYPE  LDA .+1         ***PROCESS 'TYPE' CONTROL WORD**
0127  00743 067211R PBAT2 LDB XBATC
0128  00744 017042R       JSB EXSET       SET BATCH = LUN IN PARAMETER
0129  00745 026306R       JMP RNS         NO - GO READ NEXT CONTROL STATE.
0130  00746 177756  N18   DEC -18
0131*
0132*                 ***********************************
0133*                 * SET SIMULATED END OF PAPER TAPE *
0134*                 *  ON ENTRY A = LOG UNIT NO.      *
0135*                 ***********************************
0136  00747 000000  EOTST NOP
0137  00750 002003        SZA,RSS         IS LUN = 0?
0138  00751 126747R       JMP EOTST,I     YES, RETURN
0139  00752 033237R       IOR B700        SET UP CONTROL WORD
0140  00753 072426R       STA TEMP
0141  00754 016001X       JSB EXEC
0142  00755 000760R       DEF *+3
```

```
0143   00756 000050          DEF .-3         SET SIM EOT STATUS
0144   00757 004426R         DEF TEMP        CONWD
0145   00760 126747R         JMP EOTST,I     EXIT FROM SUBROUTINE
```

```
0147*                ****************************************
0148*                * PRINT 'TRACK' STATUS AS PER REQUEST *
0149*                * AND SET SPECIFIED TRACKS TO 'BAD'.  *
0150*                ****************************************
0151  00761 067764R TRACK LDB RDSYS
0152  00762 017777R       JSB LBLIO      READ USER LABEL SECTOR
0153  00763 067762R       LDB BUFFR+65   GET BAD TRACK COUNT
0154  00764 027533R       JMP UP.1      GO PROCESS IN $EX09

0156  00765 000000  TSAVE BSS 1
0157  00766 000000  EDITF NOP            WHEN EDITING EDITF NON ZERO
0158  00767 000266  XEJOB DEF EJOBF
0159  00770 000000  RNLUN NOP            SYSTEM INPUT CONTROL WORD
0160  00771 000000  USDIR NOP            T/S OF USER DIRECTORY
0161*
0162  00772 001000R ENJP5 DEF PREND+5
0163  00773 000774R PREND DEF *+1
0164  00774 042516        ASC 18,END JOB XXXXX RUN=XXXX MIN. XX.X SEC
0165  01016 027040        ASC 14,.  EXEC=XXXX MIN. XX.X SEC.
0166  01005         RNTIM EQU PREND+10
0167  01022         EXTIM EQU PREND+23
0168  01034 001035R PRINP DEF *+1
0169  01035 040007        OCT 40007      @ FOLLOWED BY BELL
0170  01036 001037R JOBUF DEF *+1        START OF 'JOB' STATEMENT OUTPUT
0171  01037 045117  AJO   ASC 18,JOB XXXXX XXXXXXXXXX TIME=XXXX MIN.
0172  01061 054130        ASC  5,XX.X SECS.
0173  01066 001041R JOBUG DEF JOBUF+3    START OF JOB/DATE DEST. BUFFER
0174  01067 101070R PROCS DEF *+1,I  ***ADDRESSES OF DOS PROCESSORS
0175  01070 000306R       DEF RNS        COMMENT
0176  01071 005353R       DEF ABORT
0177  01072 000704R       DEF DATE       DATE
0178  01073 001526R       DEF EQ         EQ
0179  01074 001526R       DEF UP         DN
0180  01075 001526R       DEF UP         UP
0181  01076 001526R       DEF UP
0182  01077 000107R       DEF PAUSE
0183  01100 001757R       DEF JFILE      JFILE
0184  01101 003064R       DEF PROG       PROGRAM
0185  01102 001632R       DEF PDUMP      POST MORTE DUMP
0186  01103 001635R       DEF ADUMP      ABORT DUMP
0187  01104 002742R       DEF RUN        RUN
0188  01105 000713R       DEF PBATC      BATCH
0189  01106 000742R       DEF TYPE       TYPE
0190  01107 000761R       DEF TRACK      TRACKS
0191  01110 004677R       DEF STORE      STORE
0192  01111 006266R       DEF LIST        LIST
0193  01112 007235R       DEF DUMP       DUMP
0194  01113 004633R       DEF DELET      DELETE
0195  01114 011241R       DEF EDIT
0196  01115 007652R       DEF DDUMP      DISC TO DISC DUMP
0197  01116 002415R       DEF UDISC      USER DISC ASSIGN
0198  01117 002410R       DEF INDSC      INIT. USER DISC
0199  01120 001245R       DEF CLEAR
0200  01121 001270R       DEF REWIN
0201  01122 001426R       DEF TOF
0202  01123 001304R       DEF RENAM
```

```
0203  01124 031437R        DEF EA
0204  01125 001441R        DEF EB
0205  01126 010642R        DEF RPACK      ;RPACK
0206  01127 004026R        DEF MMGT       ;MMGT
0207*                 * SPECIAL DOS ADDRESSES *
0208  01130 010604R        DEF SOSA
0209  01131 010604R        DEF SOSA
0210  01132 000613R        DEF OFF
0211  01133 002625R        DEF SSRCH
0212  01134 000707R        DEF IGNOR
0213  01135 007523R        DEF MTEOF
0214  01136 001526R        DEF UP
0215  01137 177731  PROC#  ABS -**+PROCS+1      COUNT FOR TESTING CHARS.
0216  01140 001141R CHARS   DEF **+1       **CHARACTER PAIRS USED FOR PROGRMS
0217  01141 041517          ASC 12,COABDAEQDNUPLUPAJFPRPDAD
0218  01155 051125          ASC 12,RUBATYTRSTLIDUPUEDDDUDIN
0219  01171 041514          ASC 8,CLRWTORNEAEBRPMM
0220*                 * SPECIAL DOS CHARACTER PAIRS *
0221  01201 051517  ASO     ASC 2,SOSA
0222  01203 047506  AOF     ASC 1,OF
0223  01204 051523  ASS     ASC 1,SS
0224  01205 043517          ASC 1,GO
0225  01206 042506          ASC 1,EF
0226  01207 053510          OCT 53510
0227*
0228  01210 000106  XCLEX   DEF CLEX
0229  01211 000111  XBATC   DEF BATCH
0230  01212 000101  XJBIN   DEF JBINS
0231  01213 000124  XJFIL   DEF JFILS
0232  01214 000110  XCXMX   DEF CXMX
0233  01215 000113  XDUMP   DEF DUMPS
0234  01216 000267  XRTRK   DEF RTRK
0235  01217 000236  XNFLA   DEF NFLAG
0236  00073         XJFSC   EQU B177       (DEF JFLSC)
0237  01220 000161  XCUSC   DEF CUDSC
0238  01221 000331  XSFLG   DEF SSFLG
0239  01222 000323  XEFMP   DEF EFMP
0240  01223 000334  XMFLG   DEF DMFLG
0241  01224 000245  XXMOD   DEF EXMOD
0242  01225 012416R XDLBL   DEF INBUF+3
0243  01226 010020R XSYLB   DEF LBLSV
0244  01227 046102  ASCLB   ASC 1,LB
0245  01230 042512  AEJ     ASC 1,EJ       EJOB
0246  01231 001130  D600    DEC 600
0247  01232 176650  DM600   DEC -600
0248  01233 177752  DM22    DEC -22
0249  01234 177753  DM21    DEC -21
0250  01235 000072  B72     OCT 72
0251  01236 000400  B400    OCT 400
0252  01237 000700  B700    OCT 700        700 OCTAL
0253  01240 177000  BM1K    OCT -1000
0254  01241 001106  B1106   OCT 1106       CONTROL WORD FOR LINE SPACE LUN6
0255  01242 000000  JOBFL   NOP
0256  01243 000000  INFL    NOP
0257  01244 000000  ABFL    NOP
0258*
```

```
0259*          ****************************************
0260*          *    PROCESS :CLEAR (,LUN) DIRECTIVE   *
0261*          ****************************************
0262*
0263  01245 017127R CLEAR JSB ASCDC
0264  01246 027263R       JMP CBIN      NO LUN, CLEAR JBIN FLAG,
0265  01247 016562R       JSB DSCLU     CHECK FOR LU 2 OR 3
0266  01250 073262R       STA CW         NO, SAVE LOGICAL UNIT
0267  01251 006400        CLB           B=0 FOR LUCHK
0268  01252 016434R       JSB LUCHK     CHECK FOR VALID LU
0269  01253 063262R       LDA CW         YES, RESTORE LOGICAL UNIT
0270  01254 073262R CL.1  STA CW
0271  01255 016001X       JSB EXEC
0272  01256 001261R       DEF *+3
0273  01257 000050        DEF .-3       REQUEST CODE=3, I/O CONTROL
0274  01260 001262R       DEF CW        CONTROL CARD,  FUNCTION CODE = 0
0275  01261 026306R       JMP RNS
0276  01262 000000  CW     NOP
0277  01263 002400  CBIN   CLA
0278  01264 067212R       LDB XJBIN
0279  01265 017042R       JSB EXSET
0280  01266 017042R       JSB EXSET
0281  01267 026306R       JMP RNS
0282*
0283*          ****************************************
0284*          *    PROCESS :RWIND (,LUN) DIRECTIVE   *
0285*          ****************************************
0286*
0287  01270 017127R REWIN JSB ASCDC
0288  01271 060063        LDA .+8        DEFAULT IS 8
0289  01272 064047        LDB .-4
0290  01273 044000        ADB A          CAN'T REWIND LUN 1,2, OR 3,
0291  01274 006020        SSB
0292  01275 026514R       JMP LUCH3
0293  01276 073262R       STA CW        SAVE LU
0294  01277 006400        CLB           B=0 FOR LUCHK
0295  01300 016434R       JSB LUCHK     CHECK FOR VALID LU
0296  01301 063262R       LDA CW        RESTORE LU
0297  01302 043236R       ADA B400       CONFIGURE REWIND REQUEST
0298  01303 027254R       JMP CL.1
0299*
0300*          ********************************************************
0301*          *   PROCESS :RNAME,OLDNAME,NEWNAME(,NEWTYPE) DIRECTIVE *
0302*          *           IF NEWTYPE PARAM. IS SPECIFIED, IT HAS TO  *
0303*          *   BE IN THE RANGE 0 - 12, AND COMPATABLE WITH THE    *
0304*          *   OLD FILE TYPE. (I.E. REMAIN IN THE RANGE 0-5,OR 6-12*
0305*          ********************************************************
0306*
0307  01304 016477R RENAM JSB USERD     SEARCH OLD FILENAME
0308  01305 026750R       JMP PMISS
0309  01306 002103        CLE,SZA,RSS
0310  01307 026707R       JMP RUN2      FILENAME UNDEFINED
0311  01310 072274R       STA TEMP1     SAVE MLOCN - MEMORY LOC OF ENTRY
0312  01311 066414R       LDB CURTS     SAVE T/S CONTAINING ENTRY
0313  01312 076275R       STB TEMP2
0314  01313 060161        LDA CUDSC
```

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0315  01314 064073          LDB XJFSC       SAVE CUDSC FOR READING BACK IS
0316  01315 017042R         JSB EXSET
0317  01316 016477R         JSB USERD       SEARCH 2ND CH
0318  01317 026750R         JMP PMISS
0319  01320 002003          SZA,RSS         SAME NAME IN DIRECTORY?
0320  01321 027331R         JMP RN2         NO, OK.
0321  01322 052274R         CPA TEMP1      YES, SEE IF SAME AS 1ST FILENAME
0322  01323 002001          RSS            BY COMPARING MEM LOC OF DIR, ENTR
0323  01324 026715R         JMP NMDUP      AND T/S CONTAINING THE ENTRY OF
0324  01325 066414R         LDB CURTS      THE 1ST FILENAME
0325  01326 056275R         CPB TEMP2
0326  01327 002001          RSS
0327  01330 026715R         JMP NMDUP
0328  01331 017127R RN2     JSB ASCDC      TYPE PARM PRESENT?
0329  01332 003400          CCA            SET NUTYP <0 IF NO TYPE CHANGE
0330  01333 073425R         STA NUTYP
0331  01334 003004          CMA,INA          CHECK IF LEGAL TYPE
0332  01335 043422R         ADA D12
0333  01336 002020          SSA              NUTYP > 12?
0334  01337 026737R         JMP PILLG        YES = TOO BIG
0335  01340 052275R         LDA TEMP2      A = T/S CONTAINING 1ST FILENAME
0336  01341 010074          AND B377       CHECK IF ON TRACK BOUNDARY
0337  01342 002003          SZA,RSS
0338  01343 027416R         JMP RN4
0339  01344 052275R         LDA TEMP2
0340  01345 040052 RN3      ADA .-1          MINUS 1 SECTOR
0341  01346 072275R         STA TEMP2
0342  01347 067507R         LDB N3         SET LUN TO =3
0343  01350 076304R         STB RWLUN
0344  01351 006404          CLB,INB        B=1 SECTOR TO READ.
0345  01352 016243R         JSB RDISC
0346  01353 011364R         DEF DICBF        READ DIRECTORY SECTOR INTO DICB
0347  01354 063510R          LDA XNMBU          GET BUF ORIGIN )CHAR ADDR)
0348  01355 001200          RAL
0349  01356 073363R         STA ORIGB          SET BUF ORIGIN FOR MOVE
0350  01357 060060          LDA .+5        MOVE 5 CHAR (NEW FILE NAME) INTO
0351  01360 066274R         LDB TEMP1      MEM LOC OF ENTRY
0352  01361 005200          RBL            B =DEST, ADDR
0353  01362 017415R         JSB MOVE
0354  01363 001363R ORIGB   DEF *              NMBUF CHAR ADDR
0355  01364 063425R         LDA NUTYP      NEED TO CHANGE TYPE?
0356  01365 002020          SSA            NO IF < 0
0357  01366 027407R         JMP RN1          NO
0358  01367 040045          ADA .-6        < 0 IF NUTYP < 6
0359  01370 013424R         AND SIGN       ONLY NEED SIGN BIT
0360  01371 072603R         STA SAVEA
0361  01372 066274R         LDB TEMP1        GET STARTING LOC OF ENTRY
0362  01373 044055          ADB .+2          POINT TO 3RD WORD
0363  01374 160001          LDA B,I          GET 3RD WORD
0364  01375 010071          AND B37        GET OLD TYPE ONLY
0365  01376 040045          ADA .-6        < 0 IF OLD TYPE < 6
0366  01377 013424R         AND SIGN       ONLY NEED SIGN BIT.
0367  01400 052603R         CPA SAVEA      SAME TYPE CATEGORY AS NUTYP?
0368  01401 002001          RSS            YES, GO AHEAD TO CHANGE.
0369  01402 026737R         JMP PILLG      NO, ILLEGAL.
0370  01403 160001          LDA B,I        GET BACK 3RD WORD IN DIR.ENTRY
```

```
0371  01404 013423R        AND MSKT        MASK OUT TYPE
0372  01405 033425R        IOR NUTYP       SET NEW TYPE
0373  01406 170001         STA B,I         STORE IT BACK
0374  01407 062275R RN1    LDA TEMP2       SET PARAM TO WRITE BACK ENTRY
0375  01410 067507R        LDB N3         SET LUN TO -3
0376  01411 076304R        STB RWLUN
0377  01412 006404         CLB,INB
0378  01413 016253R        JSB WDISC
0379  01414 011364R        DEF DICBF
0380  01415 026306R        JMP RNS
0381*
0382  01416 062275R RN4    LDA TEMP2
0383  01417 042676R        ADA MITRK       MINUS 1 TRACK
0384  01420 040116         ADA SECTR       COMBINE LAST SECTOR #
0385  01421 027345R        JMP RN3
0386  01422 000014  D12    DEC 12
0387  01423 177740  MSKT   OCT 177740
0388  01424 100000  SIGN   OCT 100000
0389  01425 000000  NUTYP  NOP
0390*
0391*          ************************************
0392*          *     :TOF (,LUN) DIRECTIVE        *
0393*          ************************************
0394*
0395  01426 017127R TOF    JSB ASCDC       GET LUN
0396  01427 060061         LDA .+6         DEFAULT IS 6.
0397  01430 016562R        JSB DSCLU
0398  01431 073515R        STA PGEJ        SAVE LU
0399  01432 006400         CLB             B=0 FOR LUCHK
0400  01433 016434R        JSB LUCHK       CHECK FOR VALID LU
0401  01434 063515R        LDA PGEJ        RESTORE LU
0402  01435 017515R        JSB PGEJ        PAGE EJECT.
0403  01436 026306R        JMP RNS
0404*
0405*          ************************************
0406*          *     EXECUTE USER EXEC MODULES    *
0407*          ************************************A
0408*
0409  01437 063512R EA     LDA XD27    REQ CODE = 27
0410  01440 002001         RSS
0411  01441 063513R EB     LDA XD28  REQ CODE = 28 FOR EB
0412  01442 073476R        STA REQC
0413*
0414*  SET UP PARAMETERS
0415  01443 067511R        LDB XTMP1     STARTING ADDR FOR PARAM
0416  01444 076324R        STB MVALU       SAVE FOR STORING PARAM LATER.
0417  01445 002400         CLA             INIT. PARAM CNTER
0418  01446 073570R        STA EQCNT
0419*  ADJUST DEF'S (MAY HAVE BEEN WIPED OUT BY PREVIOUS :EA,:EB)
0420  01447 060046         LDA .-5
0421  01450 072426R        STA TEMP        SET COUNTER FOR MAX OF 5 PARAM.
0422  01451 063514R        LDA XEAEB  GET LOC FOR 1ST DEF
0423  01452 067511R        LDB XTMP1       GET LOC FOR 1ST PARAM
0424  01453 174000  EAEB3  STB A,I         SET IT.
0425  01454 002004         INA
0426  01455 006004         INB
```

```
0427  01456 036426R        ISZ TEMP        ALL FIVE SET?
0428  01457 027453R        JMP EAEB3       NO, NEXT ONE
0429  01460 017127R EAEB1  JSB ASCDC       ANY PARAMETERS?
0430  01461 027467R        JMP EAEB2       NO,
0431  01462 172324R        STA MVALU,I     STORE PARAM,
0432  01463 037570R        ISZ EQCNT       BUMP PARAM COUNTER
0433  01464 036324R        ISZ MVALU       BUMP PARAM POINTER,
0434  01465 037644R        ISZ PMLOC       BUMP PMTBL POINTER
0435  01466 027460R        JMP EAEB1       GET NEXT ONE
0436*
0437*  ADJUST RETURN ADDRESS FOR VARIABLE PARAM EXEC CALL
0438*
0439*
0440  01467 063514R EAEB2 LDA XEAEB
0441  01470 043570R        ADA EQCNT       ADD PARAM CNT TO RET,ADDR,
0442  01471 073475R        STA REQC-1
0443  01472 067504R        LDB JMP         SET INSTRUCTION AT RITE RETURN
0444  01473 174000         STB A,I        POINT,
0445*
0446  01474 016001X        JSB EXEC
0447  01475 001477R        DEF *+2         TEMPORARY RETURN POINT,
0448  01476 001476R REQC   DEF *
0449  01477 012274R EAEB4  DEF TEMP1
0450  01500 012275R        DEF TEMP2
0451  01501 012276R        DEF TEMP3
0452  01502 012277R        DEF TEMP4
0453  01503 012300R        DEF TEMP5
0454  01504 026306R JMP    JMP RNS
0455*
0456  01505 177745  D27     DEC -27
0457  01506 177744  D28     DEC -28
0458  01507 000050  N3      DEF ,-3
0459  01510 004416R XNMBU  DEF NMBUF
0460  01511 012274R XTMP1  DEF TEMP1
0461  01512 001505R XD27   DEF D27
0462  01513 001506R XD28   DEF D28
0463  01514 001477R XEAEB  DEF EAEB4
0464*
0465*              ************************************
0466*              * EJECT PAGE ON STANDRD LIST UNIT *
0467*              ************************************
0468*
0469  01515 000000  PGEJ   NOP
0470  01516 043643R        ADA B1100       A = LUN, FOR LIST DEVICE
0471  01517 073262R        STA CW
0472  01520 016001X        JSB EXEC
0473  01521 001525R        DEF *+4
0474  01522 000050         DEF ,-3
0475  01523 001262R        DEF CW
0476  01524 000051         DEF ,-2
0477  01525 127515R        JMP PGEJ,I
```

```
0479*                ************************************
0480*                * PROCESS 'EQ','LU','DN'AND 'UP' *
0481*                ************************************
0482*
0483*
0484*
0485  01526 017377R UP     JSB OPONF      LOCK OUT OP, ATTN,
0486  01527 063110R        LDA STLEN
0487  01530 067542R        LDB XCHAR
0488  01531 017042R        JSB EXSET
0489  01532 067110R        LDB STLEN
0490  01533 016001X UP.1    JSB EXEC      SPECIAL STATUS
0491  01534 001537R        DEF *+3          EXEC CALL TO
0492  01535 001575R        DEF D13          HANDLE EQ,LU,UP,DN
0493  01536 000052         DEF .-1          IN EXEC MODULES
0494  01537 002400         CLA
0495  01540 017377R        JSB OPONF     ENABLE OP, ATTN,
0496  01541 026306R        JMP RNS
0497*
0498  01542 000332  XCHAR DEF CHARC
0499*                ************************************************
0500*                * TBSET - SET UP AND CHECK LUN OR EQT VALUE *
0501*                ************************************************
0502  01543 000000  TBSET NOP
0503  01544 003004        CMA,INA
0504  01545 073570R        STA EQCNT      SET UP NO, OF TABLE ENTRIES(CNT)
0505  01546 002404         CLA,INA
0506  01547 073567R        STA EQTNM      SET ENTRY VALUE = 1
0507  01550 017127R        JSB ASCDC
0508  01551 127543R        JMP TBSET,I    TAKE L+1(VAL, MISSING) EXIT
0509  01552 037543R        ISZ TBSET
0510  01553 073567R        STA EQTNM      SET ENTRY VALUE FROM STATE,
0511  01554 002003         SZA,RSS
0512  01555 026737R        JMP PILLG      ERROR - VALUE = 0
0513  01556 043570R        ADA EQCNT
0514  01557 002003         SZA,RSS        TEST FOR VALUE IN RANGE,
0515  01560 027563R        JMP *+3
0516  01561 002021         SSA,RSS
0517  01562 026737R        JMP PILLG
0518  01563 003400         CCA
0519  01564 073570R        STA EQCNT      SET COUNTER FOR 1 VALUE,
0520  01565 127543R        JMP TBSET,I
0521*
0522  01566 000000  EQLST NOP
0523  01567 000000  EQTNM NOP             EQT NUMBER = N OR STARTS AT 1
0524  01570 000000  EQCNT NOP             EQUIPMENT TABLE COUNTER
0525  01571 000000  EQPNT NOP             EQT ENTRY ADDRESS POINTER
0526  01572 000126  RONLC DEF RONBF       LOC, OF RONBF
0527  01573 007766R JNAML DEF JNAME       LOC OF JOBNAME IN BUFFR
0528  01526         EQ     EQU UP
0529  01574 000040  B40    OCT 40
0530  01575 000015  D13    DEC 13
0531  01576 020060  A0     ASC 1, 0
```

```
0533*                ****************************************
0534*                * PMTST - TEST NEXT DUMP PARAMETER *
0535*                *   ON ENTRY;PMLOC PTS TO LAST WORD*
0536*                *            OF PREVIOUS PARAMETER. *
0537*                * LINKAGE: L   JSB PMTST            *
0538*                *          L+1  NO PARAMETER        *
0539*                *          L+2  1 CHAR ALFA; A=CHAR *
0540*                *          L+3  NUMERIC; A=POINTER  *
0541*                ****************************************
0542  01577 000000  PMTST NOP
0543  01600 017625R       JSB PMNXT
0544  01601 002003        SZA,RSS         IS PARAMETER THERE?
0545  01602 127577R       JMP PMTST,I     NO - TAKE L+1 EXIT
0546  01603 037577R       ISZ PMTST
0547  01604 067644R       LDB PMLOC
0548  01605 006004        INB             SET UP TO GET TYPE
0549  01606 164001        LDB B,I         B= TYPE/SIZE
0550  01607 006021        SSB,RSS         ALPHABETIC?
0551  01610 027613R       JMP *+3
0552  01611 037577R       ISZ PMTST       NO - NUMERIC
0553  01612 127577R       JMP PMTST,I     TAKE L+3 EXIT
0554  01613 054054        CPB .+1         1 CHAR?
0555  01614 002001        RSS             YES
0556  01615 026737R       JMP PILLG      *NO - TAKE 'ILLEG.PARM.' EXIT ***
0557  01616 017406R       JSB GETC        GET THE CHARACTER
0558  01617 127577R       JMP PMTST,I     TAKE L+2 EXIT
0559*
0560*             ** BMPNT  - SET DUMP PARAM = -1 AND BUMP POINTER **
0561*
0562  01620 000000  BMPNT NOP
0563  01621 003400  B3400 OCT 3400        -CCA- INSTRUCTION
0564  01622 173571R       STA EQPNT,I
0565  01623 037571R       ISZ EQPNT
0566  01624 127620R       JMP BMPNT,I
0567*
0568  01625 000000  PMNXT NOP
0569  01626 037644R       ISZ PMLOC
0570  01627 163644R       LDA PMLOC,I
0571  01630 127625R       JMP PMNXT,I
0572*
0573*                ****************************************************
0574*                * PDUMP/ADUMP - SET PARAMETERS FOR POST-MORTEM *
0575*                *                OR ABORT DUMPS.                   *
0576*                * FORMAT: WORD 1  FWA PROGRAM (-1=USE PROG VAL)*
0577*                *         WORD 2  LWA PROGRAM (-1=USE PROG VAL)*
0578*                *         WORD 3  B,P, LINKAGE AREA (-1=DUMP)  *
0579*                *         WORD 4  SYSTEM AREA (-1=DUMP)        *
0580*                *     FOR ALL 0 = DO NOT DUMP THAT PORTION     *
0581*                ****************************************************
0582  01631 010002R       DEF SPDMP
0583  01632 063631R PDUMP LDA *-1
0584  01633 027636R       JMP ADUMP+1     SET POST-MORTEM POINTER
0585  01634 007776R DMPAD DEF SADMP
0586  01635 063634R ADUMP LDA *-1         SET ABORT POINTER
0587  01636 073571R       STA EQPNT
0588  01637 067764R       LDB RDSYS       READ IN SYSTEM BUFFER SECTOR
```

```
0589  01640 017767R        JSB SYSB
0590  01641 170001         STA B,I
0591  01642 006004         INB
0592  01643 170001         STA B,I
0593  01644 006004         INB
0594  01645 170001         STA B,I
0595  01646 006004         INB
0596  01647 170001         STA B,I
0597  01650 017577R        JSB PMTST
0598  01651 027751R        JMP ADMP9      NO PARAMS
0599  01652 027735R        JMP ADMP7      1 CHAR ALFA,
0600  01653 064043         LDB .-8        NUMERIC, CONVERT FWA TO BINARY
0601  01654 017217R        JSB ASCNV
0602  01655 173571R        STA EQPNT,I
0603  01656 003004         CMA,INA
0604  01657 073566R        STA EQLST
0605  01660 037571R        ISZ EQPNT
0606  01661 003400         CCA
0607  01662 173571R        STA EQPNT,I    SET LWA = -1 IN CASE OF SKIP
0608  01663 037644R        ISZ PMLOC
0609  01664 017577R        JSB PMTST      GET POSSIBLE LWA
0610  01665 027722R        JMP ADMPX      NO PARAMETERS
0611  01666 027703R        JMP ADMP2      ALFA
0612  01667 064043         LDB .-8        NUMERIC
0613  01670 017217R        JSB ASCNV      GO CONVERT LWA
0614  01671 173571R        STA EQPNT,I
0615  01672 043566R        ADA EQLST      LWA-FWA OF DUMP
0616  01673 002020         SSA            FWA GRTR THAN LWA?
0617  01674 026557R        JMP SLSTE      YES, IT'S A LIMIT ERROR
0001  01675 037571R        ISZ EQPNT
0002  01676 037644R        ISZ PMLOC      BUMP PARAMETER POINTER
0003  01677 017577R        JSB PMTST      GET POSSIBLE B
0004  01700 027722R        JMP ADMPX      NO PARAMETERS
0005  01701 027704R        JMP *+3
0006  01702 026737R        JMP PILLG      NUMERIC- ERROR 'ILLEGAL PARAM'
0007  01703 037571R ADMP2  ISZ EQPNT      BUMP DUMP POINTER
0008  01704 052323R        CPA B102       IS NEXT PARAM, B?
0009  01705 027710R        JMP ADMP3      YES
0010  01706 037571R        ISZ EQPNT      NO - SKIP POINTER AROUNT 'B' PRA
0011  01707 027716R        JMP ADMP4
0012  01710 017620R ADMP3  JSB BMPNT      SET 'B' PARAMETER
0013  01711 037644R        ISZ PMLOC      BUMP PARAMETER POINTER
0014  01712 017577R        JSB PMTST       GET POSSIBLE 'S'
0015  01713 027722R        JMP ADMPX      NO PARAMS,
0016  01714 002001         RSS            ALFA
0017  01715 026737R        JMP PILLG      NUMERIC PARAM, - 'ILLEGAL PARAM.
0018  01716 053730R ADMP4  CPA B123       CHARACTER = 'S'?
0019  01717 002001         RSS            YES
0020  01720 026737R        JMP PILLG      NO - 'ILLEGAL PARAMETER'
0021  01721 017620R ADMP6  JSB BMPNT      SET 'S' DUMP FLAG
0022  01722 067765R ADMPX  LDB WRSYS      WRITE 'BUFFR' TO SYSTEM BUFFER
0023  01723 017767R        JSB SYSB
0024  01724 002404         CLA,INA        PUT FLAG BIT IN POSN 0
0025  01725 007004         CMB,INB
0026  01726 047631R        ADB PDUMP-1
0027  01727 006021         SSB,RSS        ABORT DUMP PROCESSING?
```

```
0028  01730 000123  B123   OCT 123        =RAR= INSTRUCTION
0029  01731 030113         IOR DUMPS      NO  = LEAVE ALONE
0030  01732 067215R        LDB XDUMP
0031  01733 017042R        JSB EXSET      SET DUMP FLAG BIT
0032  01734 026306R        JMP RN$        GO READ NEXT STATE.
0033*
0034  01735 053730R ADMP7  CPA B123       CHARACTER = 'S'?
0035  01736 027745R        JMP ADMP8      YES
0036  01737 052323R        CPA B102       NO - IS CHAR. B?
0037  01740 002001         RSS            YES
0038  01741 026737R        JMP PILLG      NO - ERROR 'ILLEGAL PARAM'
0039  01742 017620R        JSB BMPNT      SET FLAGS FOR MAIN PROG DUMP
0040  01743 017620R        JSB BMPNT
0041  01744 027710R        JMP ADMP3
0042*
0043  01745 063571R ADMP8  LDA EQPNT
0044  01746 040056         ADA .+3
0045  01747 073571R        STA EQPNT      SKIP OVER PROG AND 'B' PARAMS.
0046  01750 027721R        JMP ADMP6
0047*
0048  01751 017620R ADMP9  JSB BMPNT      SET FLAGS FOR COMPLETE DUMP
0049  01752 017620R        JSB BMPNT
0050  01753 017620R        JSB BMPNT
0051  01754 027722R        JMP ADMPX
0052*
0053  01755 000116  B116   OCT 116        'N'
0054  01756 000454  D300   DEC 300
0055*
```

```
0057*              ********************************************************
0058*              *                                                      *
0059*              * :JFILE - SET UP PARAMETERS TO GET SOURCE FILE       *
0060*              *          DISC ADDRESS (TRACK/SECTOR) FROM USER       *
0061*              *          DIRECTORY.                                  *
0062*              *                                                      *
0063*              *          SINGLE FILE REQUEST                         *
0064*              *            JFILS = DISC ADDR (TRK/SEC) OF SRC FILE*
0065*              *            JFILC = DISC ADDR (TRK/SEC) OF SRC FILE*
0066*              *            JFSHC = SUBCHANNEL NUMBER                 *
0067*              *                                                      *
0068*              *          MULTI-FILE REQUEST                          *
0069*              *            JFILS = DISC ADDR (TRK/SEC) OF SRC FILE*
0070*              *                    TABLE.                            *
0071*              *            JFILC = ZERO                              *
0072*              *            JFSHC = SUBCHANNEL NUMBER                 *
0073*              *                                                      *
0074*              ********************************************************
0075  01757 002004  JFILE INA
0076  01760 017377R       JSB OPONF     DISABLE OPERATOR ATTENTION
0077  01761 016035R       JSB JFINI     GO INITIALIZE POINTERS & COUNTER
0078  01762 016477R       JSB USERD     SEARCH USER DIR. FOR FILE NAME
0079  01763 026750R       JMP PMISS     NO FILE NAME FOUND - GO OUTPUT
0080*                                     "PARAM MISSING" DIAG.
0081  01764 002102        CLE,SZA       WAS FILE NAME FOUND?
0082  01765 027770R       JMP JFIL2     YES- GO CHECK FILE TYPE
0083  01766 062156R       LDA MPTR2     GET ADDR OF "XXXXX--UNDEFINED"
0084  01767 016060R       JSB JFERR     GO OUTPUT DIAG.
0085  01770 067644R JFIL2 LDB PMLOC     IF MORE
0086  01771 006004        INB             PARAMETERS ARE
0087  01772 164001        LDB B,I           PRESENT, ASSUME IT IS
0088  01773 006002        SZB                 A MULTIPLE FILE REQUEST
0089  01774 026012R       JMP MJFL1           AND GO PROCESS MORE FILES
0090  01775 002002        SZA           IF A ERROR DIAG. WAS PRINTED
0091*                                     SKIP NEXT CHECK AND EXIT.
0092  01776 016043R       JSB TYCHK     GO CHECK FILE TYPE
0093  01777 026007R       JMP JFXIT     GO TERMINATE CURRENT DIRECTIVE
0094  02000 160001        LDA B,I       GET SOURCE FILE STARTING
0095*                                     TRACK/SECTOR.
0096  02001 067213R       LDB XJFIL     SET PARAMETERS IN BASE PAGE LOC.
0097  02002 017042R       JSB EXSET     -JFILS
0098  02003 017042R       JSB EXSET     -JFILC
0099  02004 060161        LDA CUDSC
0100  02005 064073        LDB XJFSC
0101  02006 017042R       JSB EXSET     -JFSHC
0102  02007 002400  JFXIT CLA
0103  02010 017377R       JSB OPONF     ENABLE OPERATOR ATTENTION
0104  02011 026306R       JMP RNS       GO READ NEXT CONTROL STATEMENT
0105  02012 002002  MJFL1 SZA           IF NO ERROR OCURRED
0106  02013 016113R       JSB MBLD1       GO ENTER DISC ADDRESS IN TABLE
0107  02014 002400        CLA
0108  02015 067213R       LDB XJFIL
0109  02016 017042R       JSB EXSET     CLEAR "JFILS" IN BASE PAGE
0110  02017 016477R MJFL2 JSB USERD     GO SEARCH DIR FOR FILE NAME
0111  02020 026026R       JMP MJFL3     NO MORE NAMES IN PARAMETER LIST
0112  02021 002103        CLE,SZA,RSS
```

```
0113  02022 026032R        JMP MJFL4      FILE NAME WAS NOT FOUND IN DIR
0114*                                        GO PRINT ERROR MESSAGE.
0115  02023 016113R        JSB MBLD1      GO ENTER DISC ADDRESS IN TABLE
0116*                                        AND WRITE TO DISC WHEN FULL.
0117  02024 026017R        JMP MJFL2      GO GET NEXT FILE NAME
0118  02025 026007R        JMP JFXIT      TABLE IS FULL-- GO ENABLE
0119*                                        OPERATOR ATTENTION.
0120  02026 002400  MJFL3 CLA
0121  02027 016113R        JSB MBLD1      GO MARK END OF TABLE
0122  02030 026007R        JMP JFXIT      GO ENABLE OPERATOR ATTENTION
0123  02031 026007R        JMP JFXIT      GO ENABLE OPERATOR ATTENTION
0124  02032 062156R MJFL4 LDA MPTR2      GET ADDRESS OF ERROR MESSAGE-
0125*                                        "XXXXX--UNDEFINED"
0126  02033 016060R        JSB JFERR      GO PRINT ERROR MESSAGE
0127  02034 026017R        JMP MJFL2      GO GET NEXT FILE NAME
0128*                ********************************************************
0129*                *                                                      *
0130*                * INITIALIZE POINTER TO SOURCE FILE TABLE              *
0131*                * AND ENTRY # COUNTER.                                 *
0132*                *                                                      *
0133*                ********************************************************
0134  02035 000000  JFINI NOP
0135  02036 062152R        LDA MFPTR
0136  02037 072162R        STA MFTBL      INITIALIZE START OF TABLE
0137  02040 060040         LDA .-11       GET A MINUS 64
0138  02041 072160R        STA ENCTR      INITIALIZE ENTRY COUNTER
0139  02042 126035R        JMP JFINI,I
0140*                ********************************************************
0141*                *                                                      *
0142*                * CHECK FILE TYPE AND OUTPUT DIAGNOSTIC IF             *
0143*                * NOT A SOURCE FILE.                                   *
0144*                *                                                      *
0145*                ********************************************************
0146  02043 000000  TYCHK NOP
0147  02044 064000         LDB A          CHECK FOR SOURCE FILE
0148  02045 044055         ADB .+2        B = ADDR OF 3RD WORD IN ENTRY
0149  02046 160001         LDA B,I
0150  02047 010073         AND B177       EXTRACT TYPE
0151  02050 050064         CPA .+9        IS IT A SOURCE FILE?
0152  02051 006005         INB,RSS
0153  02052 026055R        JMP NSRCE      NO- GO PRINT ERROR MESSAGE
0154  02053 036043R        ISZ TYCHK
0155  02054 126043R        JMP TYCHK,I    YES-RETURN TO CALLER - P+2
0156  02055 062155R NSRCE LDA MPTR1      GET POINTER TO ERROR MESSAGE
0157  02056 016060R        JSB JFERR      GO PRINT "XXXXX--NOT SRCE FILE"
0158  02057 126043R        JMP TYCHK,I    RETURN TO CALLER - P+1
0159*                ********************************************************
0160*                *                                                      *
0161*                * MOVE FILE NAME TO ERROR MESSAGE AND PRINT            *
0162*                * IT ON TTY.                                           *
0163*                * ON ENTRY "A" REGISTER SHOULD CONTAIN                 *
0164*                * ADDRESS OF ERROR MESSAGE.                            *
0165*                *                                                      *
0166*                ********************************************************
0167  02060 000000  JFERR NOP
0168  02061 072161R        STA JTEMP      SAVE POINTER TO ERROR MESSAGE
```

```
0169  02062 064000         LDB A          SET DESTINATION ADDRESS FOR MOVE
0170  02063 005200         RBL            SET POSITION BIT TO ZERO
0171  02064 062157R        LDA MPTR3
0172  02065 001200         RAL            SET POSITION BIT TO ZERO
0173  02066 072071R        STA SPORG      SET ORIGIN ADDR FOR SPACE MOVE
0174  02067 060060         LDA .+5        SET MOVE LENGTH
0175  02070 017415R        JSB MOVE       GO MOVE 5 SPACES TO BUFFER
0176  02071 002071R SPORG  DEF *
0177  02072 067644R        LDB PMLOC
0178  02073 044052         ADB .-1
0179  02074 164001         LDB B,I        GET ADDRESS OF FILE NAME
0180  02075 076103R        STB MSORG      SET ORIGIN ADDRESS FOR MOVE
0181  02076 066161R        LDB JTEMP      SET DESTINATION ADDR FOR MOVE
0182  02077 163644R        LDA PMLOC,I    GET LENGTH OF FILE NAME
0183  02100 001665         ELA,CLE,ERA    CLEAR TYPE BIT IF ANY
0184  02101 005200         RBL            SET POSITION BIT TO ZERO
0185  02102 017415R        JSB MOVE       GO MOVE FILE NAME TO MESSAGE
0186  02103 002103R MSORG  DEF *          ORIGIN ADDRESS FOR MOVE
0187  02104 062161R        LDA JTEMP
0188*                                       SET BUFFER ADDRESS,
0189  02105 064065         LDB .+10       AND MESSAGE LENGTH
0190  02106 017356R        JSB ERRDG        AND GO PRINT MESSAGE
0191  02107 002004         INA
0192  02110 017377R        JSB OPONF      DISABLE OPERATOR ATTENTION
0193  02111 002400         CLA            SET ERROR DIAG. PRINTED INDICATR
0194  02112 126060R        JMP JFERR,I    RETURN TO CALLING ROUTINE
0195*                 ********************************************************
0196*                 *                                                      *
0197*                 * ENTER A SOURCE FILE NAME INTO TABLE AND              *
0198*                 * WRITE TO DISC WHEN 64 ENTRIES ARE                    *
0199*                 * ACCUMULATED OR WHEN INPUT IS EXHAUSTED.              *
0200*                 *                                                      *
0201*                 * ON ENTRY "A" REGISTER SHOULD CONTAIN                 *
0202*                 * POINTER TO DIRECTORY ENTRY.                          *
0203*                 ********************************************************
0204  02113 000000  MBLD1 NOP
0205  02114 002003         SZA,RSS        IF NO MORE ENTRIES
0206  02115 026121R        JMP MBLD2        GO MARK END OF TABLE.
0207  02116 016043R        JSB TYCHK      GO CHECK FILE
0208  02117 126113R        JMP MBLD1,I    FILE WAS NOT A SOURCE FILE
0209  02120 160001         LDA B,I        GET DISC ADDRESS OF FILE
0210  02121 172162R MBLD2  STA MFTBL,I    MAKE ENTRY IN TABLE
0211  02122 002003         SZA,RSS
0212  02123 026132R        JMP MBLD3
0213  02124 036162R        ISZ MFTBL
0214  02125 060161         LDA CUDSC      GET SUBCHANNEL #
0215  02126 172162R        STA MFTBL,I      AND STORE IN TABLE.
0216  02127 036162R        ISZ MFTBL
0217  02130 036160R        ISZ ENCTR
0218  02131 126113R        JMP MBLD1,I    RETURN TO CALLER - P+1
0219  02132 064124  MBLD3  LDB JFILS      IF SECOND TIME THRU
0220  02133 002404         CLA,INA          INCREMENT SECTOR ADDRESS
0221  02134 006003         SZB,RSS            AND SKIP NEXT INST.
0222  02135 026140R        JMP MBLD4
0223  02136 036113R        ISZ MBLD1      SET RETURN TO P+2
0224  02137 026147R        JMP MBLD5      GO WRITE SECTOR TO DISC
```

```
0225  02140 060115  MBLD4 LDA SYSBF      SET UP DISC
0226  02141 040075        ADA B1774       ADDRESS OF
0227  02142 040061        ADA .+6           SOURCE FILE TABLE.
0228  02143 067213R        LDB XJFIL     SET PARAMETERS IN-
0229  02144 017042R        JSB EXSET     -JFILS
0230  02145 002400        CLA
0231  02146 017042R        JSB EXSET     -JFILC
0232  02147 040124  MBLD5 ADA JFILS      GET DISC ADDRESS
0233  02150 006404        CLB,INB         TO WRITE CURRENT
0234  02151 016253R        JSB WDISC         SECTOR TO DISC.
0235  02152 002163R MFPTR DEF MFBUF
0236  02153 016035R        JSB JFINI     GO INITIALIZE POINTER & COUNTER
0237  02154 126113R        JMP MBLD1,I   RETURN TO CALLER
0238  02155 002363R MPTR1 DEF JFER1
0239  02156 002375R MPTR2 DEF JFER2
0240  02157 002405R MPTR3 DEF JFSPC
0241  02160 000000  ENCTR BSS 1          CURRENT # OF ENTRIES IN
0242*                                       SOURCE FILE TB
0243  02161 000000  JTEMP BSS 1          TEMPORARY WORK AREA
0244  02162 000000  MFTBL BSS 1          POINTER TO CURRENT ENTRY IN
0245*                                       SOURCE FILE TB
0246  02163 000000  MFBUF BSS 128        SOURCE FILE TABLE
0247  02363 054130  JFER1 ASC 10,XXXXX--NOT SRCE FILE
0248  02375 054130  JFER2 ASC 8,XXXXX--UNDEFINED
0249  02405 020040  JFSPC ASC 3,
```

```
0252*                ****************************************
0253*                * INDSC - INIT. LABEL ON USER DISC     *
0254*                *                                      *
0255*                * UDISC - CHANGE USER DISC SUBCHNL     *
0256*                ****************************************
0257  02410 060111   INDSC LDA BATCH
0258  02411 050054         CPA .+1        REQUEST FROM SYS TTY?
0259  02412 002001         RSS             -YES
0260  02413 026707R        JMP IGNOR       -NO, ILLEGAL
0261  02414 003401         CCA,RSS
0262  02415 002400   UDISC CLA
0263  02416 072610R        STA IUFLG       SET IN/UD FLAG = -1/0
0264  02417 037644R        ISZ PMLOC
0265  02420 167644R        LDB PMLOC,I     GET ADDRS; LABEL PARAMETER
0266  02421 037644R        ISZ PMLOC
0267  02422 076617R        STB LABEL
0268  02423 006003         SZB,RSS         IS THERE A LABEL PARAM?
0269  02424 026474R        JMP IU1          -NO
0270  02425 076443R        STB LBLMV       -YES, SET ADDRS FOR MOVE
0271  02426 066412R        LDB BLNKS
0272  02427 076617R        STB LABEL
0273  02430 076620R        STB LABEL+1
0274  02431 076621R        STB LABEL+2
0275  02432 167644R        LDB PMLOC,I     GET LABEL LENGTH
0276  02433 005423         BLR,RBR
0277  02434 060001         LDA B
0278  02435 044044         ADB .-7
0279  02436 006021         SSB,RSS         LENGTH > 6?
0280  02437 060061         LDA .+6          -YES, SET TO 6
0281  02440 066601R        LDB DFLBL       GET DEST. LABEL ADDRS
0282  02441 005200         RBL               AND ADJUST FOR MOVE
0283  02442 017415R        JSB MOVE
0284  02443 000000   LBLMV NOP
0285  02444 062617R        LDA LABEL       GET 1ST 2 CHARS OF LABEL
0286  02445 010075         AND B1774       MASK OFF UPPER CHAR
0287  02446 052615R        CPA UPAST       1ST CHAR = "*"?
0288  02447 026502R        JMP IU1.1        -YES
0289  02450 052613R        CPA UPCOM
0290  02451 026566R        JMP SKPPR
0291  02452 066403R        LDB DDFLG       GET DISC DUMP FLAG
0292  02453 004010         SLB             DUMP SYSTEM OR ENTIRE DISC?
0293  02454 026737R        JMP PILLG        -YES, LABEL ILLEGAL
0294  02455 052614R        CPA UBLNK       1ST CHAR = BLANK
0295  02456 026737R        JMP PILLG        -YES, ILLEGAL
0296  02457 002003         SZA,RSS         1ST CHAR = ZERO
0297  02460 026737R        JMP PILLG        -YES, ILLEGAL
0298  02461 062610R        LDA IUFLG
0299  02462 002021         SSA,RSS         INIT. LABEL?
0300  02463 026606R        JMP IU2          -NO, DON'T CHECK 'SYSTEM'
0301  02464 062622R        LDA ASCSY       *
0302  02465 052617R        CPA LABEL       *
0303  02466 066620R        LDB LABEL+1     * LABEL
0304  02467 056623R        CPB ASCSY+1     *  =
0305  02470 062621R        LDA LABEL+2     * 'SYSTEM'?
0306  02471 052624R        CPA ASCSY+2     *
0307  02472 026737R        JMP PILLG        -YES, ILLEGAL
```

```
0308  02473 026506R        JMP IU2
0309  02474 066610R IU1    LDB IUFLG
0310  02475 006002         SZB              IS THIS AN *IN* REQUEST?
0311  02476 026750R         JMP PMISS        =YES, MUST HAVE LABEL
0312  02477 063603R         LDA PMCNT
0313  02500 002003         SZA,RSS
0314  02501 026532R         JMP IU3,5
0315  02502 062617R IU1,1  LDA LABEL        GET 1ST 2 CHARS OF LABEL
0316  02503 052616R         CPA ASTBK        IF EQUAL TO ASTERISK AND BLANK
0317  02504 002001         RSS                CONTINUE
0318  02505 026737R         JMP PILLG          OTHERWISE PRINT DIAG.
0319  02506 017127R IU2    JSB ASCDC
0320  02507 026527R         JMP IU3
0321  02510 066403R         LDB DDFLG
0322  02511 050155         CPA SYSSC
0323  02512 006011         SLB,RSS          DD OR DD,X TO SYSTEM?
0324  02513 002001         RSS
0325  02514 026737R         JMP PILLG        =YES, ILLEGAL
0326  02515 037644R         ISZ PMLOC
0327  02516 167644R         LDB PMLOC,I
0328  02517 006021         SSB,RSS
0329  02520 026737R         JMP PILLG        =NO, ILLEGAL
0330  02521 072611R IU2,5  STA SCHNL
0331  02522 003004         CMA,INA
0332  02523 040156         ADA LSTSC
0333  02524 002020         SSA              IS SUBCHNL ON SYSTEM?
0334  02525 026737R         JMP PILLG        =NO, ILLEGAL
0335  02526 026534R         JMP IU4
0336  02527 066403R IU3    LDB DDFLG
0337  02530 004010         SLB              DD OR DD,X?
0338  02531 026750R         JMP PMISS        =YES, MUST HAVE SUBCHNL
0339  02532 060156  IU3,5  LDA LSTSC
0340  02533 003001         CMA,RSS
0341*
0342  02534 062611R IU4    LDA SCHNL
0343  02535 066610R         LDB IUFLG
0344  02536 016573R         JSB JEXUD
0345*
0346  02537 066610R         LDB IUFLG
0347  02540 006020         SSB
0348  02541 026557R         JMP INCHK
0349  02542 066617R         LDB LABEL        ANY LABEL?
0350  02543 006003         SZB,RSS
0351  02544 026306R         JMP RNS          NO= DIRECTIVE IS ;UD
0352  02545 002002         SZA              YES= IS UD REJECTED?
0353  02546 026553R         JMP IU5          YES
0354  02547 066403R         LDB DDFLG        GET DISC DUMP FLAG
0355  02550 006003         SZB,RSS          DDUMP REQ?
0356  02551 026306R         JMP RNS          =NO
0357  02552 026047R         JMP DDCMP        =YES
0358*
0359  02553 060111  IU5    LDA BATCH        BATCH MODE?
0360  02554 050112         CPA SYSTY
0361  02555 026760R         JMP RNSY         NO,
0362  02556 027315R         JMP EJOBX+1      YES= BATCH ABORT;
0363*
```

```
0364  02557 002303  INCHK CCE,SZA,RSS
0365  02560 026306R       JMP RNS
0366  02561 001225       RAL,ERA
0367  02562 064000       LDB A
0368  02563 002400       CLA
0369  02564 016647R       JSB PURGE
0370  02565 026306R       JMP RNS
0371* 
0372  02566 022617R SKPPR XOR LABEL
0373  02567 022612R       XOR B60
0374  02570 006400       CLB
0375  02571 076617R       STB LABEL
0376  02572 026521R       JMP IU2,5
0377* 
0378  02573 000000  JEXUD NOP
0379  02574 072611R       STA SCHNL
0380  02575 076610R       STB IUFLG
0381  02576 016001X       JSB EXEC
0382  02577 002604R       DEF *+5
0383  02600 010473R       DEF D23
0384  02601 002617R DFLBL DEF LABEL
0385  02602 002611R       DEF SCHNL
0386  02603 002610R       DEF IUFLG
0387  02604 064200       LDB DISCL
0388  02605 006004       INB
0389  02606 076771R       STB USDIR
0390  02607 126573R       JMP JEXUD,I
0391* 
0392  02610 000000  IUFLG NOP
0393  02611 000000  SCHNL NOP
0394  02612 000060  B60   OCT 60
0395  02613 026000  UPCOM OCT 026000
0396  02614 020000  UBLNK OCT 020000
0397  02615 025000  UPAST OCT 025000
0398  02616 025040  ASTBK ASC 1,*
0399  02617 000000  LABEL BSS 3
0400  02622 051531  ASCSY ASC 3,SYSTEM
```

```
0402*
0403   02625 064331  SSRCH LDB SSFLG
0404   02626 057215R       CPB ANO        ;SS ALLOWED?
0405   02627 026073R       JMP BDCTL       =NO, BAD CNTRL STATEMENT
0406   02630 006400        CLB
0407   02631 076666R       STB JSFLG
0408   02632 017127R       JSB ASCDC      GET 1ST SUBCHNL PARAM
0409   02633 026660R       JMP SCALL      NONE = SET TO SRCH ALL SUBCHNLS
0410   02634 052667R       CPA D99        PARAM = 99?
0411   02635 026662R       JMP SSSET       =YES, TURN OFF SRCH
0412   02636 006404  SLOOP CLB,INB        *
0413   02637 002003        SZA,RSS        *
0414   02640 026651R       JMP STBIT      *
0415   02641 003004        CMA,INA        *  SET TO
0416   02642 072650R       STA RRLSC      *
0417   02643 040156        ADA LSTSC      *
0418   02644 002020        SSA            *  SEARCH
0419   02645 026737R       JMP PILLG      *
0420   02646 002400        CLA            *
0421   02647 017050R       JSB ..RRL      *  SPECIFIED
0422   02650 000000  RRLSC NOP            *
0423   02651 062666R STBIT LDA JSFLG      *
0424   02652 030001        IOR B          *  SUBCHANNELS
0425   02653 072666R       STA JSFLG      *
0426   02654 037644R       ISZ PMLOC
0427   02655 017127R       JSB ASCDC      *
0428   02656 026662R       JMP SSSET      *
0429   02657 026636R       JMP SLOOP      *
0430   02660 060156  SCALL LDA LSTSC
0431   02661 003001        CMA,RSS
0432   02662 062666R SSSET LDA JSFLG
0433   02663 067221R       LDB XSFLG
0434   02664 017042R       JSB EXSET      SET SS FLAG IN BASE PAGE
0435   02665 026306R       JMP RNS
0436*
0437   02666 000000  JSFLG NOP
0438   02667 000143  D99   DEC 99
```

```
0440*                ****************************************
0441*                * LSTRT - STARTUP FOR 'RUN' AND 'PROG'  *
0442*                ****************************************
0443*                * MVENT - MOVE A PROG ENTRY LIST TO *
0444*                * 'EXPG'AND CLEAR RONBF, (A=ENT LOC)*
0445*                *  IF NON-LEGAL PROG TAKE ERROR EXIT*
0446*                ****************************************
0447  02670 000000  LSTRT NOP
0448  02671 016477R       JSB USERD
0449  02672 026750R       JMP PMISS
0450  02673 002002       SZA
0451  02674 026711R       JMP LSTR1
0452  02675 062606R       LDA SAVPM
0453  02676 073644R      STA PMLOC
0454  02677 066325R       LDB LUN2
0455  02700 076451R       STB FLUN
0456  02701 167644R       LDB PMLOC,I   GET PARAMETER ORIGIN
0457  02702 017625R       JSB PMNXT     GET CHAR COUNT OF PARAM, NAME
0458  02703 016327R       JSB DIRSR
0459  02704 000114        DEF SYSDR     SYST DIRECTORY T/S
0460  02705 002102        CLE,SZA       NAME IN FILE?
0461  02706 026711R       JMP LSTR1     YES
0462  02707 017771R RUN2  JSB FNUND     GO GIVE UNDEF, FILENAME DIAG,
0463  02710 026755R       JMP PMS      BATCH ABORT
0464  02711 072426R LSTR1 STA TEMP      SAVE ADDRESS OF ENTRY
0465  02712 040055        ADA .+2
0466  02713 160000        LDA A,I       EXTRACT ENTRY TYPE
0467  02714 010073        AND  B177     EXTRACT ENTRY TYPE
0468  02715 050056        CPA .+3       MAIN USER PROG?
0469  02716 026722R       JMP MVEN4     YES
0470  02717 062721R       LDA *+2       NO - ERROR
0471  02720 026751R       JMP PMISS+1   'ILLEGAL PROG, TYPE'
0472  02721 004776R       DEF SSIMP+10
0473*
0474  02722 067126R MVEN4 LDB EXPGL     MOVE ENTRY TO DEST, BUFFER (EXPG
0475  02723 063125R       LDA DM11      -11
0476  02724 073460R       STA MORG
0477  02725 162426R       LDA TEMP,I    GET WORD TO BE STORED
0478  02726 017042R       JSB EXSET     STORE IT
0479  02727 036426R       ISZ TEMP
0480  02730 037460R       ISZ MORG      IS 11TH WORD STORED?
0481  02731 026725R       JMP *-4       NO
0482  02732 002400        CLA           * * *
0483  02733 067572R       LDB RONLC     * CLEAR
0484  02734 017042R       JSB EXSET     *  RONBF
0485  02735 017042R       JSB EXSET     *   THRU
0486  02736 017042R       JSB EXSET     *    RONBF+4
0487  02737 017042R       JSB EXSET     *     (5 PARAM LOCNS)
0488  02740 017042R       JSB EXSET     * * *
0489  02741 126670R       JMP LSTRT,I
0490*
0491*                ****************************************
0492*                * RUN - SET UP FILENAME AND THEN    *
0493*                *    LOAD AND EXECUTE THE PROGRAM,   *
0494*                ****************************************
0495  02742 016670R RUN   JSB LSTRT     GO TO FILENAME SEARCH AND MISC,
```

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0496   02743 017625R        JSB PMNXT
0497   02744 002002        SZA             PARAMETER PRESENT?
0498   02745 026750R        JMP *+3         YES
0499   02746 060046  RUN3   LDA .-6         NO
0500   02747 026757R        JMP RUN3A
0501   02750 063644R        LDA PMLOC       (PARAM, PRESENT IF HERE)
0502   02751 002004        INA
0503   02752 160000        LDA A,I
0504   02753 002021        SSA,RSS         IS PARAM, NUMERIC?
0505   02754 026746R        JMP RUN3        NO
0506   02755 064041        LDB .-10        YES
0507   02756 017217R        JSB ASCNV       GO CONVERT A DEC, PARAMETER
0508   02757 072426R RUN3A  STA TEMP
0509   02760 167644R        LDB PMLOC,I
0510   02761 006003        SZB,RSS         IS 'N' PRESENT?
0511   02762 027004R        JMP RUN4        NO
0512   02763 002020        SSA             MAYBE, IS TIME THERE?
0513   02764 026767R        JMP *+3         NO
0514   02765 037644R        ISZ PMLOC
0515   02766 037644R        ISZ PMLOC
0516   02767 163644R        LDA PMLOC,I
0517   02770 002003        SZA,RSS         IS 'N' PRESENT(MAYBE)?
0518   02771 027004R        JMP RUN4        NO
0519   02772 017406R        JSB GETC        GET THE CHARACTER
0520   02773 037644R        ISZ PMLOC
0521   02774 053755R        CPA B116        IS CHAR='N'?
0522   02775 060051        LDA .-2         YES - SETUP TO TEST FOR RT,COUNT
0523   02776 143644R        ADA PMLOC,I
0524   02777 050052        CPA .-1         WAS IT 1 CHAR - N?
0525   03000 002001        RSS             YES
0526   03001 026737R        JMP PILLG       NO - ILLEGAL CHAR
0527   03002 057217R        LDB XNFLA
0528   03003 017042R        JSB EXSET       SET 'N' FLAG(NO ABORT)
0529   03004 060106  RUN4   LDA CLEX        GET CURRENT EXECUTION TIME
0530   03005 001665        ELA,CLE,ERA     CLEAR THE EXECUTION BIT
0531   03006 064107        LDB CLEX+1      GET  THE 1/100 MINUTE COUNTER
0532   03007 047756R        ADB D30@
0533   03010 006021        SSB,RSS         IS MORE THAN 1/2 MIN LEFT IN CNT
0534   03011 002004        INA             YES, ADD 1 TO EXEC TIME COUNT
0535   03012 072670R        STA LSTRA       SAVE NEW EXEC TIME
0536   03013 057210R        LDB XCLEX
0537   03014 006004        INB             B POINTS AT CLEX+1
0538   03015 063232R        LDA DM600
0539   03016 017042R        JSB EXSET       RESET CLEX+1 = -600
0540   03017 062426R        LDA TEMP        GET TIME LIMIT FOR RUN
0541   03020 002020        SSA
0542   03021 003004        CMA,INA
0543   03022 042670R        ADA LSTRA       ADD CURRENT EXEC TIME
0544   03023 017042R        JSB EXSET       SET EXECUTION MAXIMUM TIME
0001   03024 062670R        LDA LSTRA       GET EXEC TIME TO SET RUNNING
0002   03025 057210R        LDB XCLEX
0003   03026 017042R        JSB EXSET       START EXECUTION TIMER
0004   03027 062451R SLDEX  LDA FLUN
0005   03030 057041R        LDB SLFLO
0006   03031 052325R        CPA LUN2
0007   03032 002400        CLA
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0008  03033 017042R        JSB EXSET      SET LSTCH NOT 0
0009  03034 016001X        JSB EXEC
0010  03035 003037R        DEF *+2
0011  03036 003040R        DEF *+2
0012  03037 027315R        JMP EJOBX+1
0013  03040 177754         DEC -20
0014  03041 000326  SLFLO  DEF LSTCH
0015  02670          LSTRA EQU LSTRT
0016*
0017*                ********************************************************
0018*                * EXSET - STORE DATA IN PROTECTED AREA OF MEMORY       *
0019*                *  A = VALUE TO BE STORED; B = LOCATION IN CORE,       *
0020*                *  ON RETURN A IS UNCHANGED; B IS 1 GREATER,           *
0021*                ********************************************************
0022  03042 000000  EXSET NOP
0023  03043 016001X        JSB EXEC       GO TO EXEC
0024  03044 003046R        DEF *+2
0025  03045 003047R        DEF *+2
0026  03046 127042R        JMP EXSET,I
0027  03047 177755         DEC -19
0028*
0029  03050 000000  ..RRL  NOP
0030  03051 072573R        STA JEXUD
0031  03052 163050R        LDA ..RRL,I
0032  03053 073042R        STA EXSET
0033  03054 062573R        LDA JEXUD
0034  03055 037050R        ISZ ..RRL
0035  03056 000066  .RRL1  CLE,ELA
0036  03057 005600         ELB
0037  03060 001326         RAR,ELA
0038  03061 037042R        ISZ EXSET
0039  03062 027056R        JMP .RRL1
0040  03063 127050R        JMP ..RRL,I
0041*
0042*                ********************************************************
0043*                * PROG - SET UP PROGNAME AND ITS 5 PARAMETERS           *
0044*                *  FOR ENTRY TO LOAD AND EXECUTION OF SAME,            *
0045*                ********************************************************
0046  03064 016670R PROG   JSB LSTRT      GO TO FILENAM SEARCH AND MISC,
0047  03065 064101  PRG20  LDB JBINS
0048  03066 006002         SZB            HAS A JBIN TRACK BEEN SAVED?
0049  03067 027107R        JMP PRG10      YES - GO BACK
0050  03070 060160         LDA SYSTS      GET NEXT T/S (B=0)
0051  03071 017050R        JSB ..RRL      TRK TO LOWER B, SECTR IN A
0052  03072 177770         DEC -8
0053  03073 002002         SZA            IS IT A FRESH TRACK?
0054  03074 006004         INB            NO, BUMP TRK NO,
0055  03075 007004         CMB,INB        SET B = NEG, OF 1ST AVAIL WK TRK
0056  03076 060154         LDA DISCO
0057  03077 010074         AND B377
0058  03100 044000         ADB A
0059  03101 006020         SSB            WILL JBIN TRK BE IN 'USER' AREA?
0060  03102 027107R        JMP PRG10      YES, DO NOT SET JBIN TRACK,
0061  03103 001727         ALF,ALF        POSITION THE TRACK
0062  03104 067212R        LDB XJBIN      SET JOB BIN, TRACK # INTO -
0063  03105 017042R        JSB EXSET      - JBINS
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0064  03106 017042R        JSB EXSET     - JBINC
0065  03107 060046  PRG10  LDA .-5      * PICK UP AND STORE PROG. PARAMS*
0066  03110 073670R        STA EQCNT     SET COUNTER FOR MAX OF 5
0067  03111 063572R        LDA RONLC
0068  03112 073571R        STA EQPNT     SET POINTER TO 1ST LOC IN RONBF
0069  03113 017127R PRG11  JSB ASCDC     TEST PARAM AND CONVERT TO BIN.
0070  03114 027027R        JMP $LDEX     NOT THERE - GO TO RON'S LOADER
0071  03115 067571R        LDB EQPNT
0072  03116 017042R        JSB EXSET     STORE A PARAMETER
0073  03117 037571R PRG12  ISZ EQPNT     BUMP RONBF POINTER
0074  03120 037644R        ISZ PMLOC     BUMP PMTBL POINTER
0075  03121 037570R        ISZ EQCNT     LAST PARAM IN?
0076  03122 027113R        JMP PRG11     NO
0077  03123 027027R        JMP $LDEX     YES - GO TO RON'S LOADER/EXEC.
0078*
0079  03124 020000  B20K   OCT 20000
0080  03125 177765  DM11   DEC -11
0081  03126 000141  EXPGL  DEF EXPG      LOCN OF EXECUTING POS BUFFER
```

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0083*                ********************************************
0084*                * ASCDC - TEST FOR PARAMETER IN PMTBL      *
0085*                *          AND CONVERT IT TO DECIMAL.      *
0086*                *  EXIT L+1 : PARAMETER ABSENT             *
0087*                *  EXIT L+2 : A = BIN.VALUE OF DEC.PARAM.  *
0088*                ********************************************
0089  03127 000000  ASCDC NOP
0090  03130 017625R       JSB PMNXT
0091  03131 002003       SZA,RSS         IS NEXT PARAMETER THERE?
0092  03132 127127R       JMP ASCDC,I     NO - EXIT L+1
0093  03133 064041        LDB .-10        SET B FOR DEC CONVERSION
0094  03134 017217R       JSB ASCNV       GO TO ASCII CONVERSION ROUTINE
0095  03135 037127R       ISZ ASCDC
0096  03136 127127R       JMP ASCDC,I     EXIT L+2, A=BINARY VALUE
0097*
0098*                ********************************************
0099*                * CNDEC - CONVERT BINARY TO ASCII DECIMAL  *
0100*                * CNOCT - CONVERT BINARY TO ASCII OCTAL    *
0101*                * - A = NUMBER TO BE CONVERTED             *
0102*                * -ON EXIT 6 CHARACTER NUMBER RIGHT JUS-   *
0103*                *   TIFIED, ZERO FILLED IS IN 3 LOCATIONS *
0104*                *   STARTING AT 'CNMBR+1', A CONTAINS THE *
0105*                *   LOWEST 2 DIGITS, B THE NEXT LOWER 2.  *
0106*                ********************************************
0107  03137 000000  CNDEC NOP             ENTER DECIMAL
0108  03140 067170R       LDB A00         '00'?
0109  03141 077173R       STB CNMBR+1
0110  03142 077174R       STB CNMBR+2
0111  03143 077175R       STB CNMBR+3
0112  03144 067172R       LDB CNMBR
0113  03145 044056        ADB .+3
0114  03146 044052  CNORG ADB .-1
0115  03147 077171R       STB CNMLC       SET STORAGE LOCATION
0116  03150 002003        SZA,RSS         IS A=0? (ARE WE DONE?)
0117  03151 027165R       JMP CNOUT       YES - GO TO EXIT
0118  03152 017176R       JSB DVUKN       DIVIDE BY 8 OR 10
0119  03153 147171R       ADB CNMLC,I
0120  03154 177171R       STB CNMLC,I     SET IT IN NUMBER BUFFER
0121  03155 002003        SZA,RSS         ARE WE DONE?
0122  03156 027165R       JMP CNOUT       YES - GO TO EXIT
0123  03157 017176R       JSB DVUKN       DIVIDE BY 8 OR 10
0124  03160 005727        BLF,BLF
0125  03161 147171R       ADB CNMLC,I
0126  03162 177171R       STB CNMLC,I     SET IT IN NUMBER BUFFER
0127  03163 067171R       LDB CNMLC
0128  03164 027146R       JMP CNORG       GO GET NEXT 2 DIGITS
0129*
0130  03165 063175R CNOUT LDA CNMBR+3
0131  03166 067174R       LDB CNMBR+2
0132  03167 127137R       JMP CNDEC,I
0133*
0134  03170 030060  A00   ASC 1,00
0135  03171 000000  CNMLC NOP
0136  03172 003173R CNMBR DEF *+1
0137  03173 000000        OCT 0,0,0       NUMBER BUFFER
0138*
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0139  03176 000000  DVUKN NOP
0140  03177 006400        CLB             CLEAR LOOP COUNTER & QUOTIENT &
0141  03200 077216R       STB DVTMP
0142  03201 070001  DVU00 STA B           FLAG ALLOW BIT15 OF # TO BE SET
0143  03202 040041  DVU01 ADA .-10        DIVIDE BY SUCCESSIVE SUBTRACTION
0144  03203 037216R       ISZ DVTMP
0145  03204 002021        SSA,RSS         DONE IF A IS NEG AND B IS POS
0146  03205 027201R       JMP DVU00       CLEAR B TO ALLOW EXIT
0147  03206 006020        SSB             EXIT IF POS
0148  03207 027202R       JMP DVU01       ORIGINAL # TO CONVERT WAS NEG
0149  03210 064041        LDB .-10        DONE
0150  03211 007004        CMB,INB
0151  03212 044000        ADB A           REMAINDER TO B
0152  03213 063216R       LDA DVTMP
0153  03214 040002        ADA .-1         QUOTIENT TO A
0154  03215 127176R       JMP DVUKN,I     EXIT
0155  03216 000000  DVTMP BSS 1
0156* *****************************************************************
0157*               ***************************************************
0158*               * ASCNV - CONVERT AN ASCII INTEGER TO BINARY       *
0159*               *  ENTRY -  B = -10 FOR DECIMAL CONVERSION        *
0160*               *           B = -8  FOR OCTAL CONVERSION          *
0161*               *           PMLOC POINTS TO CURR. PMTBL ENTRY     *
0162*               *   EXIT  - VALUE IS IN A.                        *
0163*               * AN ERROR WILL RETURN TO 'RNSX' TO RE-READ.      *
0164*               ***************************************************
0165  03217 000000  ASCNV NOP
0166  03220 077347R       STB ASMOD       SET MODE PARAMETER
0167  03221 163644R ASCNW LDA PMLOC,I     GET VALUE OF CURRENT PARAMETER
0168  03222 073351R       STA PNTR        SET ADDR AND POS'N OF ASCII CHAR
0169  03223 063644R       LDA PMLOC       GET PMTBL POINTER
0170  03224 002004        INA
0171  03225 160000        LDA A,I         TYPE/CHAR COUNT TO A
0172  03226 002021        SSA,RSS         IS TYPE NUMBERIC? SKIP IF TRUE.
0173  03227 027306R       JMP ASCHR       JUMP TO 'NON-NUM. PARAM.' EXIT
0174  03230 001665        ELA,CLE,ERA     CLEAR TYPE BIT
0175  03231 003004        CMA,INA
0176  03232 073346R       STA ASCNT       SAVE CHARACTER COUNT
0177  03233 002400        CLA
0178  03234 073352R ASCN1 STA VALUE       SAVE CURRENT NUMBER VALUE.
0179  03235 063351R       LDA PNTR        GET POINTER TO ASCII DIGIT
0180  03236 017406R       JSB GETC        GET DIGIT FROM PARAMETER STRING
0181  03237 037351R       ISZ PNTR        BUMP PARAMETER POINTER
0182  03240 043355R       ADA BM60        -60B(ASCII 0) FROM CHAR.
0183  03241 067347R       LDB ASMOD
0184  03242 002020        SSA             IS DIGIT NUMERIC?
0185  03243 027306R       JMP ASCHR       NO - JUMP TO 'NON-NUM. CHAR.'EXI
0186  03244 044000        ADB A
0187  03245 006021        SSB,RSS         IS DIGIT NUMERIC?
0188  03246 027306R       JMP ASCHR       NO - JUMP AS ABOVE
0189  03247 073350R       STA DIGIT       SAVE VALUE OF DIGIT
0190  03250 063352R       LDA VALUE       GET CURRENT VALUE
0191  03251 000066        CLE,ELA
0192  03252 001610        ELA,SLA         WILL NUMBER OVER FLOW?
0193  03253 027274R       JMP ASCOV       YES - GO TO OV EXIT.
0194  03254 002040        SEZ             WILL IT OVER FLOW?
```

```
0195  03255 027274R        JMP ASCOV      YES - GO TO OV EXIT.
0196  03256 067347R        LDB ASMOD
0197  03257 054041         CPB .-10       IS MODE OCTAL?
0198  03260 043352R        ADA VALUE      NO
0199  03261 001610         ELA,SLA        OVERFLOW?
0200  03262 027274R        JMP ASCOV      YES - GO TO OV EXIT.
0201  03263 043350R        ADA DIGIT      ADD IN NEW DIGIT
0202  03264 002040         SEZ            OVERFLOW?
0203  03265 027274R        JMP ASCOV      YES - GO TO OV EXIT.
0204  03266 037346R        ISZ ASCNT      LAST DIGIT PROCESSED?
0205  03267 027234R        JMP ASCN1      NO - GO BACK FOR NEXT
0206  03270 073352R        STA VALUE
0207  03271 002020         SSA            IS NUMBER NEG?
0208  03272 054043         CPB .-8        YES, IS IT OCTAL?
0209  03273 127217R        JMP ASCNV,I    YES, TAKE NORMAL RETURN

0211  03274 063276R ASCOV  LDA *+2
0212  03275 027312R        JMP ASCER
0213  03276 003277R        DEF *+1
0214  03277 047125         ASC 7,NUMBER OVERFLO

0216  03306 063127R ASCHR  LDA ASCDC
0217  03307 053353R        CPA PROGX      WAS ENTRY FROM 'PROG'?
0218  03310 027324R        JMP ASCH5      YES, GO TEST FOR A COMMA
0219  03311 063314R ASCH1  LDA ILDIG
0220  03312 064062  ASCER  LDB .+7        7 WORD MESSAGE
0221  03313 026752R        JMP PMISS+2
0222  03314 003315R ILDIG  DEF *+1
0223  03315 044514         ASC 7,ILLEGAL DIGIT
0224  03324 163644R ASCH5  LDA PMLOC,I    GET THE ILLEGAL CHARACTER
0225  03325 017406R        JSB GETC
0226  03326 053665R        CPA B54        IS IT A COMMA?
0227  03327 002001         RSS            YES
0228  03330 027311R        JMP ASCH1      NO, GO PRINT 'ILLEGAL DIGIT'
0229  03331 037571R        ISZ EQPNT      BUMP RONBF POINTER
0230  03332 063644R        LDA PMLOC
0231  03333 002004         INA
0232  03334 164000         LDB A,I        GET # OF CHARS IN PARAMETER
0233  03335 054054         CPB .+1        WAS IT JUST ONE CHARACTER?
0234  03336 027343R        JMP ASCH8      YES,GO BACK TO 'PROG' VIA BUMPR
0235  03337 047354R        ADB B7777      B-1 TO B AND SET SIGN BIT
0236  03340 174000         STB A,I        PUT INTO PARAMETER TABLE
0237  03341 137644R        ISZ PMLOC,I    BUMP PARAMETER ORIGIN IN BUFFER
0238  03342 027221R        JMP ASCNW      GO BACK AND RESTART PARAMETER
0239  03343 037570R ASCH8  ISZ EQCNT      LAST 'PROG' PARAMETER?
0240  03344 027117R        JMP PRG12      NO, GO BACK TO 'PROG' ROUTINE
0241  03345 027027R        JMP SLDEX      YES, GO TO RON'S LOADER
0242*
0243  03346 000000  ASCNT  NOP            SAVE CHARACTER COUNT
0244  03347 000000  ASMOD  NOP            SAVE MODE
0245  03350 000000  DIGIT  NOP            DIGIT STORED HERE
0246  03351 000000  PNTR   NOP            CHARACTER POINTER
0247  03352 000000  VALUE  NOP            VALUE ACCUMULATED HERE
0248  03353 003114R PROGX  DEF PRG11+1    CONVERSION RETURN IN 'PROG'
0249  03354 077777  B7777  OCT 77777
0250  03355 177720  BM60   OCT -60
```

```
0252*                ****************************************
0253*                * ERRDG - PRINT A DIAGNOSTIC ON TTY *
0254*                *    A = BUFFER ORIGIN                 *
0255*                *    B = CHARACTER OR WORD COUNT       *
0256*                ****************************************
0257  03356 000000  ERRDG NOP
0258  03357 073365R       STA WRBUF
0259  03360 077376R       STB WRLEN
0260  03361 016001X       JSB EXEC
0261  03362 003367R       DEF *+5
0262  03363 000051        DEF .-2         WRITE ON TTY
0263  03364 000054        DEF .+1          WITH WAIT
0264  03365 003365R WRBUF DEF *
0265  03366 003376R       DEF WRLEN
0266  03367 002400        CLA
0267  03370 017377R       JSB OPONF       ENABLE OP, ATTN,
0268  03371 027374R       JMP *+3        DON'T CLEAR BIT 15 OF SWAP
0269  03372 002404        CLA,INA
0270  03373 017042R       JSB EXSET
0271  03374 127356R       JMP ERRDG,I
0272  03375 000000  WRLEN NOP
0273  03376 000260  XOPTN DEF OPATN
0274*
0275  03377 000000  OPONF NOP
0276  03400 067376R       LDB XOPTN
0277  03401 002002        SZA             CHECK IF ENABLE/DISABLE
0278  03402 006005        INB,RSS          =DISABLE, DON'T SET OP, ATTN,
0279  03403 017042R       JSB EXSET        =ENABLE, CLEAR OP, ATTN,
0280  03404 017042R       JSB EXSET       SET OPFLG ZERO/NON-ZERO
0281  03405 127377R       JMP OPONF,I
0282*
0283*                ************************************
0284*                * GETC - GET AN ASCII CHARACTER *
0285*                *  A = ADDR/POSITN OF CHARACTER  *
0286*                *  ON EXIT CHARACTER IS IN A(L) *
0287*                ************************************
0288  03406 000000  GETC  NOP
0289  03407 000065        CLE,ERA
0290  03410 160000        LDA A,I         GET WORD WITH CHARACTER
0291  03411 002041        SEZ,RSS         IS IT IN UPPER?
0292  03412 001727        ALF,ALF         YES - SHIFT TO LOWER A
0293  03413 010074        AND B377        CLEAR A UPPER
0294  03414 127406R       JMP GETC,I
0295*
0296*                ****************************************
0297*                * MOVE - MOVE A STRING OF CHARACTERS *
0298*                *  A = NO. OF CHARACTERS IN STRING  *
0299*                *      LIMIT OF 256 CHARACTERS       *
0300*                *   B = ADDRESS/POSN OF DESTINATION  *
0301*                *   2ND WORD OF LINK=ADDR/POS OF=ORG *
0302*                *  LAST CHAR OF STRING IN 'A' ON EXIT*
0303*                ****************************************
0304  03415 000000  MOVE  NOP
0305  03416 077456R       STB MDEST       SET DESTINATION OF STRING
0306  03417 010074        AND B377        CLEAR UPPER 1/2 OF COUNT
0307  03420 003004        CMA,INA
```

```
0308  03421 073457R        STA MCNTR      SET CHARACTER COUNTER
0309  03422 163415R        LDA MOVE,I
0310  03423 073460R        STA MORG       SET ORIGIN OF STRING
0311  03424 037415R        ISZ MOVE       BUMP EXIT FOR NORMAL RETURN
0312  03425 067457R        LDB  MCNTR
0313  03426 006003          SZB,RSS       COUNT=0?
0314  03427 127415R         JMP  MOVE,I   YES, EXIT
0315  03430 067460R MOVER   LDB MORG      GET CURRENT CHAR. POINTER
0316  03431 004065          CLE,ERB
0317  03432 160001          LDA B,I       GET CURR. CHAR.
0318  03433 002041          SEZ,RSS
0319  03434 001727          ALF,ALF       POSITION IT
0320  03435 010074          AND B377      CLEAR A UPPER
0321  03436 072426R         STA TEMP      SAVE IT
0322  03437 067456R         LDB MDEST     GET CURR. DESTINATION POINTER
0323  03440 004065          CLE,ERB
0324  03441 160001          LDA B,I       GET CURR. SLOT FOR CHAR.
0325  03442 002041          SEZ,RSS
0326  03443 001727          ALF,ALF       POSITION IT
0327  03444 010075          AND B1774     CLEAR A LOWER
0328  03445 032426R         IOR TEMP      ADD IN NEW CHAR.
0329  03446 002041          SEZ,RSS
0330  03447 001727          ALF,ALF       POSITION SET OF 2
0331  03450 170001          STA B,I       STORE THEM
0332  03451 037456R         ISZ MDEST     BUMP DESTINATION
0333  03452 037460R         ISZ MORG      AND ORIGIN POINTERS
0334  03453 037457R         ISZ MCNTR     IS LAST CHAR.MOVED?
0335  03454 027430R         JMP MOVER     NO - MOVE ANOTHER
0336  03455 127415R         JMP MOVE,I    RETURN HERE
0337*
0338  03456 000000  MDEST NOP            STRING DESTINATION
0339  03457 000000  MCNTR NOP            CHARACTER COUNTER
0340  03460 000000  MORG  NOP            STRING ORIGIN
0341*
0342*                ********************************************
0343*                * WMOVE - MOVE L+1 WORDS FROM 'A' TO 'B'.  *
0344*                *  A=FWA OF ORIGIN; B=FWA OF DESTINATION   *
0345*                *  L+1 = NO. OF WORDS TO BE MOVED          *
0346*                ********************************************
0347  03461 000000  WMOVE NOP
0348  03462 073460R         STA MORG      SET FWA OF ORIGIN
0349  03463 163461R         LDA WMOVE,I
0350  03464 037461R         ISZ WMOVE
0351  03465 003004          CMA,INA
0352  03466 072426R         STA TEMP      STORE WORD COUNT
0353  03467 163460R         LDA MORG,I
0354  03470 170001          STA B,I       STORE A WORD
0355  03471 006004          INB
0356  03472 037460R         ISZ MORG
0357  03473 036426R         ISZ TEMP      DONE?
0358  03474 027467R         JMP *-5       NO
0359  03475 127461R         JMP WMOVE,I   YES - RETURN
```

```
0361*                ****************************************
0362*                * SCANR - SCAN A JOB CONTROL STATEMENT *
0363*                * - SETS FLAGS AND POINTERS IN THE     *
0364*                *   PARAMETER TABLE (PMTBL)            *
0365*                * -ON EXIT PMTBL IS SET UP FOR USE,    *
0366*                *  'PMLOC' POINTS AT PMCNT+1           *
0367*                *                                      *
0368*                * PMTBL(PARAMETER TABLE) FORMAT        *
0369*                *       ******************************  *
0370*                * PMTBL * DEF * + 2                  *  *
0371*                *       ******************************  *
0372*                * PMCNT * NO. OF PARAMETERS IN TABLE*  *
0373*                *       ******************************  *
0374*                *       *1ST CONT CHAR*2ND CONT CHAR*  *
0375*                *       ******************************  *
0376*                * PARAM-* ADDR. OF 1ST CHARACTER  SPS  *
0377*                *ETER  ******************************  *
0378*                *   # 1 *T*           * # OF CHARS, *  *
0379*                *       ******************************  *
0380*                * PARAM-* ADDR. OF 1ST CHARACTER  *P*  *
0381*                * ETER  ******************************  *
0382*                *   # 2 *T*           * # OF CHARS, *  *
0383*                *       ******************************  *
0384*                *    .  *              .            *  *
0385*                *    .                 .               *
0386*                * (THERE IS ROOM FOR 15 PARAMETERS,)   *
0387*                *         P=0; 1ST CHAR IS UPPER       *
0388*                *         P=1; 1ST CHAR IS LOWER       *
0389*                *         T=0; 1ST CHAR IS NON-NUMERIC *
0390*                *         T=1; 1ST CHAR IS NUMERIC     *
0391*                *         (T IS BIT 15, THE SIGN BIT)  *
0392*                *    THE LAST PARAMETER IS FOLLOWED    *
0393*                *      BY A WORD OF ZEROS,             *
0394*                ****************************************
0395  03476 000000  SCANR NOP
0396  03477 063110R       LDA STLEN     GET STATEMENT LENGTH(WORDS)
0397  03500 040123        ADA JBUFF
0398  03501 000066        CLE,ELA       SET ADRESS OF LAST CHAR+1
0399  03502 073646R       STA STEND     SAVE IT
0400  03503 002400        CLA
0401  03504 073603R       STA PMCNT     SET PARAM COUNT = 0
0402  03505 067602R       LDB PMTBL
0403  03506 077644R       STB PMLOC     SET PMLOC = 2ND LOCN IN PMTBL
0404  03507 004066        CLE,ELB       NOW POINTS TO UPPER HALF LOC'N,
0405  03510 060123        LDA JBUFF     PICK UP ADDR,OF JBUF
0406  03511 000066        CLE,ELA
0407  03512 002004        INA
0408  03513 073517R       STA SCNMV     SET ORG FOR 2 CHAR MOVE
0409  03514 073645R       STA JPNTR     SET JPNTR TO 2ND CHAR OF JOB CRD
0410  03515 060055        LDA .+2       MOVE 2 CHARS TO PMTBL
0411  03516 017415R       JSB MOVE
0412  03517 000000  SCNMV NOP           POINTS TO 2ND CHAR JOB STATE,
0413  03520 017650R       JSB JSRCH     PASS OVER REST OF JOB CONT,WORD
0414  03521 037644R SCAN1 ISZ PMLOC
0415  03522 053574R       CPA B40       LOWER BLANK
0416  03523 027563R       JMP SEXIT
```

```
0417  03524 053646R        CPA  STEND     LAST WORD SCANNED?
0418  03525 027563R        JMP  SEXIT     YES - EXIT
0419  03526 037645R SCAN2  ISZ  JPNTR     SET JBUF POINTER TO NXT CHAR.
0420*                      * TEST FOR 1ST CHAR NUMERIC OR ALPHA
0421  03527 063645R        LDA  JPNTR     GET JBUF POINTER
0422  03530 053646R        CPA  STEND     HAVE WE SCANNED LAST CHARACTER?
0423  03531 027563R        JMP  SEXIT     YES,  GO TO  SET UP EXIT
0424  03532 173644R        STA  PMLOC,I   STORE IN PARAMETER TABLE
0425  03533 017406R        JSB  GETC      GET 1ST CHAR OF PARAMETER
0426  03534 053574R        CPA  B40       IS IT A BLANK?
0427  03535 027526R        JMP  SCAN2     YES - GO BACK
0428  03536 037603R        ISZ  PMCNT     TEST FOR MORE THAN 15 PARAMETERS
0429  03537 067603R        LDB  PMCNT
0430  03540 057671R        CPB  D16       HAS LIMIT BEEN REACHED?
0431  03541 027560R        JMP  SCAN5     YES, SKIP TO DEAGNOSTIC
0432  03542 037644R        ISZ  PMLOC     BUMP TBL PNTR
0433  03543 067601R        LDB  PMASK     A LOW =1ST CHAR; B = NUM,TYPE
0434  03544 043666R        ADA  BM72      -72B
0435  03545 002021         SSA,RSS        GRTR THAN 71B?
0436  03546 027561R        JMP  *+3       YES, NOT NUMERIC
0437  03547 040065         ADA  .+12B
0438  03550 002020         SSA            LESS THAN 60B?
0439  03551 005665         ELB,CLE,ERB    YES, NON-NUMBERIC, SET TYPE=0
0440  03552 177644R        STB  PMLOC,I   SET TYPE OF PARAMETER
0441  03553 037645R        ISZ  JPNTR     BUMP JBUF POINTER
0442  03554 017650R        JSB  JSRCH     SCAN PARAMETER FOR ITS LENGTH
0443  03555 147644R        ADB  PMLOC,I   ADD TYPE TO LENGTH
0444  03556 177644R        STB  PMLOC,I   SAVE 2ND WORD OF PARAM,PAIR
0445  03557 027521R        JMP  SCAN1        - GO GET THE NEXT ONE
0446  03560 064063  SCAN5  LDB  .+8
0447  03561 063570R        LDA  EXCES
0448  03562 017356R        JSB  ERRDG
0449  03563 006400  SEXIT  CLB
0450  03564 177644R        STB  PMLOC,I   CLEAR LAST WORD IN TABLE
0451  03565 063602R        LDA  PMTBL
0452  03566 073644R        STA  PMLOC     SET PMLOC=2ND WORD IN TABLE
0453  03567 127476R        JMP  SCANR,I   RETURN

0455  03570 003571R EXCES  DEF  *+1
0456  03571 042530         ASC  8,EXTRA PARAMETERS
0457  03601 100001  PMASK  OCT  100001
0458  03602 003604R PMTBL  DEF  *+2
0459  03603 000000  PMCNT  BSS  33        PARAM COUNT IS IN 1ST LOCN,
0460  03644 000000  PMLOC  NOP           POINTER FOR PMTBL
0461  03645 000000  JPNTR  NOP           POINTER FOR JBUF CHARACTERS
0462  03646 000000  STEND  NOP           ADDRESS OF LAST CHAR IN STATEMEN
0463  03647 177760  DM16   DEC  -16
```

```
0465*                ****************************************
0466*                * JSRCH - SCAN JBUF TO BLANK OR COMMA *
0467*                *  - JPNTR POINTS TO CURRENT CHAR,     *
0468*                *  -ON EXIT B CONTAINS CHAR, COUNT     *
0469*                *      A CONTAINS THE BLANK OR COMMA   *
0470*                ****************************************
0471  03650 000000  JSRCH NOP
0472  03651 006400        CLB
0473  03652 063645R JSRC1 LDA JPNTR
0474  03653 053646R       CPA STEND      HAVE WE SCANNED LAST CHAR IN STA
0475  03654 127650R       JMP JSRCH,I    YES, RETURN TO SCANR
0476  03655 017406R       JSB GETC       GET THE CURR.CHAR,
0477  03656 053574R       CPA B40        BLANK?
0478  03657 002001        RSS
0479  03660 053665R       CPA B54        COMMA?
0480  03661 127650R       JMP JSRCH,I    EXIT IF BLANK OR COMMA
0481  03662 006004        INB            BUMP CHARACTER COUNT
0482  03663 037645R       ISZ JPNTR      BUMP ORIGIN POINTER
0483  03664 027652R       JMP JSRC1
0484*
0485  03665 000054  B54    OCT 54
0486  03666 177706  BM72   OCT -72
0487  03667 000000  CSAVE  NOP            CURRENT TRACK NO, BEING TESTED
0488  03670 000000  TRFLG  NOP
0489  03671 000020  D16    DEC 16
0490*
0491*                ********************************************
0492*                * CKTRK - CHECK AVAILABLE TRACKS           *
0493*                *   ENTRY - A = TRACK TO BE CHECKED        *
0494*                *  LINKAGE - L    JSB CKTRK                *
0495*                *            L+1  ERROR EXIT(NO TRACKS AVL)*
0496*                *            L+2  NORMAL RETURN           *
0497*                *   EXIT  - A = 1ST AVAILABLE TRACK        *
0498*                *   ON ERROR B=0 FOR TRACKS BEYOND TABLE   *
0499*                ********************************************

0501  03672 004301R CKENT DEF RETRY
0502  03673 000000  CKTRK NOP
0503  03674 073667R       STA CSAVE
0504  03675 062403R       LDA DDFLG
0505  03676 033670R       IOR TRFLG
0506  03677 000313  D203   DEC 203        -SLA- INSTRUCTION
0507  03700 027752R       JMP CKT99
0508  03701 060154        LDA DISCO
0509  03702 010074        AND B377       LOW 8 BIT = # OF TRACK IN SYSTEM
0510  03703 003000        CMA
0511  03704 043667R       ADA CSAVE
0512  03705 002021        SSA,RSS        TRACK # TOO BIG
0513  03706 027725R       JMP TBOMB      YES: PRINT MESSAGE
0514  03707 060102        LDA JBINC
0515  03710 064161        LDB CUDSC
0516  03711 054155        CPB SYSSC      CHECK IF USER ON SYSTEM DISC
0517  03712 002003        SZA,RSS        IS THERE A JBIN
0518  03713 027752R       JMP CKT99      NO: EXIT
0519  03714 001727        ALF,ALF        YES
0520  03715 010074        AND B377
```

```
0521  03716 003004         CMA,INA
0522  03717 043667R        ADA CSAVE
0523  03720 002020         SSA               IS TRACK IN JBIN?
0524  03721 027752R        JMP CKT99         NO: EXIT
0525  03722 063673R        LDA CKTRK
0526  03723 053672R        CPA CKENT         ENTRY FROM DISC PROCESSOR
0001  03724 027746R        JMP CKT60         YES
0002  03725 064062  TBOMB  LDB .+7           GO TO PRINT 'TRAC TOO BIG'
0003  03726 063736R        LDA BMMSG
0004  03727 072274R        STA TEMP1
0005  03730 076275R        STB TEMP2       SAVE REG A & B IN CASE OF LISTING
0006  03731 017356R        JSB ERRDG         PRINT IT
0007  03732 016321R        JSB CLRDD         GO CLEAR "DDFLG" AND "OVFLG"
0008  03733 073670R        STA TRFLG
0009  03734 072766R        STA EDITF         DON'T ALLOW RETURN TO EDIT
0010  03735 026755R        JMP PMS
0011  03736 003737R BMMSG  DEF *+1
0012  03737 052122         ASC 7,TRAC # TOO BIG
0013  03746 066322R CKT60  LDB CKJBS
0014  03747 056320R        CPB PDISC         ENTRY FROM JBIN?
0015  03750 002001         RSS               YES
0016  03751 027725R        JMP TBOMB         NO
0017  03752 063667R CKT99  LDA CSAVE         FIRST AVAILABLE TRACK
0018  03753 052401R        CPA D200
0019  03754 027725R        JMP TBOMB
0020  03755 127673R        JMP CKTRK,I       RETURN

0022*                ****************************************
0023*                * DIOP = READ OR WRITE CONTENTS OF     *
0024*                * 'BUFFR' FROM/TO THE SYSTEM BUF SEC   *
0025*                * ON ENTRY: A = SYS BUF T/S            *
0026*                *            B = RDSYS/WRSYS           *
0027*                ****************************************


0029  03756 000000  DIOP   NOP
0030  03757 077766R        STB DIO           SET FOR RDISC/WDISC
0031  03760 006404         CLB,INB
0032  03761 117766R        JSB DIO,I         READ OR WRITE SECTOR
0033  03762 007661R BFFAD  DEF BUFFR         TO 'BUFFR'
0034  03763 127756R        JMP DIOP,I
0035*
0036  03764 004243R RDSYS  DEF RDISC
0037  03765 004253R WRSYS  DEF WDISC
0038  03766 003766R DIO    DEF *



0040*                ********************************
0041*                * ON ENTRY TO SYSB             *
0042*                * B = LOCN OF RDISC OR WDISC   *
0043*                ********************************


0045  03767 000000  SYSB   NOP
```

```
0046  03770 062325R        LDA LUN2
0047  03771 072304R        STA RWLUN      SET TO READ SYSTEM DISC
0048  03772 060115         LDA UDIRT
0049  03773 017756R        JSB DIOP       DO THE READ OR WRITE
0050  03774 002700         CLA,CCE
0051  03775 067571R        LDB EQPNT
0052  03776 127767R        JMP SYSB,I     EXIT
0053*
0054  03777 000000  LBLIO NOP             B = RDSYS/WRSYS
0055  04000 060200         LDA DISCL      SET TO READ USER LABEL SECTOR
0056  04001 017756R        JSB DIOP
0057  04002 127777R        JMP LBLIO,I

0059*                ************************************
0060*                * SETNX SETS NXTTS IN CORE AND ON *
0061*                * USER BUFFER SECTOR              *
0062*                * ON ENTRY: A = T/S TO BE STORED  *
0063*                ************************************


0065  04003 000000  SETNX NOP
0066  04004 073767R        STA SYSB       SAVE T/S
0067  04005 067764R        LDB RDSYS
0068  04006 017777R        JSB LBLIO      READ USER LABEL SECTOR
0069  04007 063767R        LDA SYSB       GET T/S
0070  04010 066025R        LDB MTABL
0071  04011 017042R        JSB EXSET      STORE INTO NXTTS
0072  04012 077767R        STB SYSB
0073  04013 073761R        STA SNXTS
0074  04014 064155         LDB SYSSC
0075  04015 054161         CPB CUDSC      SYST, SUBCHNL = USER SUBCHNL?
0076  04016 066024R        LDB DISCB
0077  04017 056024R        CPB DISCB
0078  04020 017042R        JSB EXSET       =YES, UPDATE SYS NXT T/S TOO
0079  04021 067765R        LDB WRSYS
0080  04022 017777R        JSB LBLIO      WRITE UPDATED LBL SCTR
0081  04023 126003R        JMP SETNX,I
0082  04024 000160  DISCB DEF SYSTS
0083  04025 000157  MTABL DEF  NXTTS
```

```
0085*              ********************************************************
0086*              *                                                      *
0087*              * :MMGT -- MEMORY MANAGEMENT DIRECTIVE                 *
0088*              * THE MEMORY MANAGEMENT DIRECTIVE PROVIDES THE         *
0089*              * USER WITH 2 CAPABILITIES:                            *
0090*              *                                                      *
0091*              * 1) IF NO PARAMETERS ARE SPECIFIED THE                *
0092*              * SUBSYSTEM TABLE IS OUTPUT ON THE TTY                 *
0093*              *                                                      *
0094*              * 2) THE USER MAY SPECIFY A PREVIOUSLY                 *
0095*              * DEFINED (SYS=GEN) 4 CHARACTER                        *
0096*              * SUBSYSTEM NAME FOLLOWED BY A DECIMAL                 *
0097*              * NUMBER NOT LARGER THAN 5 DIGITS TO                   *
0098*              * SPECIFY THE NUMBER OF WORDS REQUIRED                 *
0099*              * BY THE SUBSYSTEM.                                    *
0100*              *                                                      *
0101*              *    EX.: MODA,100,--------M,N                         *
0102*              *                                                      *
0103*              ********************************************************
0104  04026 017625R MMGT   JSB PMNXT     GO GET FIRST PARAMETER
0105  04027 002003         SZA,RSS       IF NO PARAMETERS WERE ENTERED
0106  04030 026133R         JMP SSLST      GO LIST SUBSYSTEM TABLE.
0107  04031 016164R         JSB MINIT     GO INITIALIZE POINTERS
0108  04032 066201R         LDB TRIP#
0109  04033 060254          LDA UMFWA     GET ADDRESS OF FIRST WORD OF
0110*                                       USER AVAILABLE MEMORY.
0111  04034 044056  GETOT   ADB .+3       ADJUST PTR TO # OF WORDS RSVD
0112  04035 140001          ADA B,I       ADD IN CURRENT ENTRIES VALUE
0113  04036 036202R         ISZ ENTR#     DECREMENT # OF ENTRIES
0114  04037 026034R         JMP GETOT     GO GET NEXT ENTRY
0115  04040 072203R         STA CUMEM     SAVE TOTAL # NO OF WORDS RESERVE
0116  04041 163644R         LDA PMLOC,I   GET FIRST PARAMETER
0117  04042 016164R NXSUB   JSB MINIT     GO INITIALIZE POINTERS
0118  04043 037644R         ISZ PMLOC     UPDATE POINTER TO PARAMETER LENG
0119  04044 167644R         LDB PMLOC,I   GET LENGTH OF FILE NAME
0120  04045 005665          ELB,CLE,ERB   CLEAR TYPE BIT IF ANY
0121  04046 044046          ADB .-5       IF LENGTH IS GREATER
0122  04047 006021          SSB,RSS         THAN 4
0123  04050 026070R         JMP MMERR          GO PRINT ERROR DIAG.
0124  04051 072056R         STA PORIG     SET ORIGIN ADDRESS FOR BYTE MOVE
0125  04052 060057          LDA .+4
0126  04053 066206R         LDB PDEST
0127  04054 005200          RBL
0128  04055 017415R         JSB MOVE
0129  04056 004056R PORIG   DEF *
0130  04057 066206R         LDB PDEST     GET ADDRESS OF TEMPORARY BUFFER
0131  04060 160001          LDA B,I       GET 1ST 2 CHARS OF
0132*                                       SUBSYSTEM NAME IN TABLE
0133  04061 036201R         ISZ TRIP#
0134  04062 152201R         CPA TRIP#,I   IF EQUAL TO 1ST 2 CHARS OF PARAM
0135  04063 026100R         JMP CHK2       GO CHECK NEXT 2 CHARS.
0136  04064 036201R         ISZ TRIP#
0137  04065 036201R CHK1    ISZ TRIP#     UPDATE POINTER TO NEXT ENTRY
0138  04066 036202R         ISZ ENTR#     DECREMENT # OF ENTRIES COUNT
0139*                                       FALL THROUGH IF NAME NOT FOUND
0140  04067 026057R         JMP PORIG+1   GO COMPARE TO NEXT ENTRY IN TBL
```

```
0141  04070 062156R MMERR LDA MPTR2     GET ADDR OF "XXXXX--UNDEFINED"
0142  04071 016063R       JSB JFERR     GO PRINT "XXXXX--UNDEFINED"
0143*                                      DIAG. ON TTY.
0144  04072 037644R       ISZ PMLOC     UPDATE POINTER TO NEXT PARAM
0145  04073 037644R NXPRM ISZ PMLOC     UPDATE POINTER TO NEXT PARAM LEN
0146  04074 017625R       JSB PMNXT     GET NEXT PARAMETER
0147  04075 002002        SZA           IF ZERO PREPARE TO EXIT
0148  04076 026042R       JMP NXSUB     GO PROCESS NEXT PARAMETER.
0149  04077 026306R       JMP RNS       GO READ NEXT CONTROL STATEMENT
0150  04100 006004  CHK2  INB
0151  04101 160001        LDA B,I       GET LAST 2 CHARS OF
0152*                                      SUBSYSTEM NAME IN TABLE.
0153  04102 036201R       ISZ TRIP#
0154  04103 152201R       CPA TRIP#,I   IF LAST 2 CHARS OF SUBSYSTEM
0155  04104 002001        RSS             ARE EQUAL FALL THROUGH
0156  04105 026065R       JMP CHK1
0157  04106 017127R       JSB ASCDC     GO TO CONVERT # OF WORDS TO BIN.
0158  04107 026750R       JMP PMISS     NO PARAM--MISSING PARAMETER
0159  04110 036201R       ISZ TRIP#     UPDATE POINTER TO NEXT ENTRY
0160  04111 072232R       STA MMLN2     SAVE # OF WORDS RESERVED
0161  04112 062203R       LDA CUMEM     GET CURRENT TOTAL
0162  04113 166201R       LDB TRIP#,I   GET # OF WORDS RESERVED
0163  04114 006003        SZB,RSS       IF NOT ZERO
0164  04115 026120R       JMP NUENT
0165  04116 007004        CMB,INB
0166  04117 040001        ADA B         SUBTRACT OLD VALUE
0167  04120 042232R NUENT ADA MMLN2     ADD IN NEW VALUE AND
0168  04121 072203R       STA CUMEM       STORE NEW TOTAL,
0169  04122 064100        LDB UMLWA     IF TOTAL IS GREATER
0170  04123 007004        CMB,INB         THAN THE LAST WORD ADDRESS
0171  04124 040001        ADA B             OF USER AVAILABLE MEMORY
0172  04125 002021        SSA,RSS             GO PRINT
0173  04126 026557R       JMP SLSTE             ERROR DIAG. "LIMIT ERROR
0174  04127 062232R       LDA MMLN2     GET # OF WORDS RESERVED
0175  04130 066201R       LDB TRIP#
0176  04131 017042R       JSB EXSET     GO STORE # OF WORDS RESERVED
0177*                                      FOR CURRENT SUBSYSTEM
0178*                                        IN PROTECTED MEMORY.
0179  04132 026073R       JMP NXPRM     GO GET NEXT PARAMETER
0180  04133 016164R SSLST JSB MINIT     GO INITIALIZE POINTERS
0181  04134 062205R       LDA L1PTR     GET ADDRESS OF HEADING
0182  04135 064063        LDB .+8
0183  04136 017356R       JSB ERRDG     GO PRINT HEADING ON TTY
0184  04137 036201R NXMOD ISZ TRIP#
0185  04140 162201R       LDA TRIP#,I
0186  04141 072232R       STA MMLN2     STORE 1ST 2 CHAR OF MODULE NAME
0187  04142 036201R       ISZ TRIP#       IN PRINT LINE.
0188  04143 162201R       LDA TRIP#,I
0189  04144 072233R       STA MMLN2+1   STORE LAST 2 CHAR OF MODULE NAME
0190  04145 036201R       ISZ TRIP#       IN PRINT LINE.
0191  04146 162201R       LDA TRIP#,I
0192  04147 017137R       JSB CNDEC     GO CONVER # OF RESERVED WORDS
0193  04150 072241R       STA MMLN2+7     OF SUBSYSTEM
0194  04151 076240R       STB MMLN2+6       AND STORE IN PRINT LINE.
0195  04152 063173R       LDA CNMBR+1   GET LAST DIGIT
0196  04153 010074        AND B377
```

```
0197  04154 042242R        ADA MMSPC      ADD IN A SPACE CHARACTER
0198  04155 072237R        STA MMLN2+5
0199  04156 062206R        LDA L2PTR
0200  04157 064063         LDB .+8
0201  04160 017356R        JSB ERRDG      GO PRINT 1 LINE ON TTY
0202  04161 036202R        ISZ ENTR#      SKIP NEXT INST. IF ALL MODULES
0203*                                      HAVE BEEN LISTED.
0204  04162 026137R        JMP NXMOD      GO GET NEXT MODULE NAME
0205  04163 026306R        JMP RNS        RETURN CONTROL
0206  04164 000000  MINIT   NOP
0207  04165 064335         LDB SSTBL      GET POINTER TO SUBSYSTEM TABLE
0208  04166 076201R        STB TRIP#      SAVE POINTER TO NEXT ENTRY
0209  04167 164001         LDB B,I        GET NUMBER OF ENTRIES.
0210  04170 006003         SZB,RSS        IF SS TABLE IS EMPTY
0211  04171 026175R        JMP NOSUB        GO PRINT DIAG. ON TTY.
0212  04172 007004         CMB,INB
0213  04173 076202R        STB ENTR#      SAVE  (NEGATIVE) # OF ENTRIES
0214  04174 126164R        JMP MINIT,I    RETURN TO CALLING ROUTINE
0215  04175 062204R NOSUB  LDA E2PTR      GET ADDRESS OF "NO SUBSYSTEMS
0216  04176 067646R        LDB D11          DEFINED" MESSAGE AND
0217  04177 017356R        JSB ERRDG          GO PRINT ON TTY.
0218  04200 026306R        JMP RNS        GO READ NEXT CONTROL STATEMENT
0219  04201 000000  TRIP#  BSS 1          POINTER TO NEXT ENTRY IS
0220*                                      IN SUBSYSTEM TABLE.
0221  04202 000000  ENTR#  BSS 1          # OF ENTRIES IN SUBSYSTEM TABLE
0222  04203 000000  CUMEM  BSS 1          LAST WORD OF USER MEMORY RESERVE
0223  04204 004207R E2PTR  DEF MMER1
0224  04205 004222R L1PTR  DEF MMLN1
0225  04206 004232R L2PTR  DEF MMLN2
0226  04206         PDEST  EQU L2PTR
0227  04207 047117  MMER1  ASC 11,NO SUBSYSTEMS DEFINED
0228  04222 051525  MMLN1  ASC 8,SUBSYSTEM  WORDS
0229  04232 054130  MMLN2  ASC 8,XXXX       XXXXX
0230  04242 020000  MMSPC  OCT 020000     SPACE CHARACTER
```

```
0233*                ************************************************
0234*                * RDISC/WDISC - READ OR WRITE 'B' SECTORS OF   *
0235*                *                INFORMATION FROM OR TO A DISC *
0236*                *   ENTRY - A = STARTING TRACK/SECTOR OF I/O   *
0237*                *           B = NO. OF SECTORS TO BE PROCESSED*
0238*                *         L+1 = BUFFER ORIGIN
0239*                * LINKAGE L    JSB RDISC/WDISC                 *
0240*                *        L+1     BUFFER ORIGIN                 *
0241*                *       L+2      NORMAL RETURN                *
0242*                * AND LUN OF DISC RESET TO 3                   *
0243*                *  (IF NO TRACKS ARE AVAILABLE JOB IS ABORTED)*
0244*                ************************************************
0245  04243 000000  RDISC NOP             READ
0246  04244 072315R       STA PTRAK       SAVE TRK/SET
0247  04245 062243R       LDA *-2         GET ENTRY ADDR
0248  04246 005722        BLF,RBL         SECTOR COUNT X 128
0249  04247 005222        RBL,RBL
0250  04250 076321R       STB MORSC       SAVE SECTOR COUNT
0251  04251 064052        LDB .-1         SET READ PARAM.
0252  04252 026262R       JMP PDSC

0254  04253 000000  WDISC NOP             WRITE
0255  04254 072315R       STA PTRAK       SAVE TRK/SECT
0256  04255 062253R       LDA *-2         GET ENTRY ADDR
0257  04256 005722        BLF,RBL         SECTOR COUNT X 128
0258  04257 005222        RBL,RBL
0259  04260 076321R       STB MORSC       SAVE SECTOR COUNT
0260  04261 064051        LDB .-2         SET WRITE PARAM.
0261*
0262  04262 072320R PDSC  STA PDISC       SET SUBROUTINE ENTRY+1
0263  04263 076317R       STB PCODE       SAVE I/O MODE
0264  04264 036320R       ISZ PDISC       BUMP EXIT TO LINKAGE+2
0265  04265 160000        LDA A,I
0266  04266 072305R       STA PBUFF       SET BUFFER ORIGIN
0267  04267 062315R       LDA PTRAK       GET TRACK/SECTOR
0268*      ****************************************************************
0269  04270 010075        AND B1774       PICK UP HIGH 8 BITS
0270  04271 070001        STA B
0271  04272 005727        BLF,BLF         RIGHT JUSTIFY
0272  04273 062315R       LDA PTRAK       GET TRACK/SECTOR
0273  04274 010074        AND B377        PICK UP LOW 8 BITS
0274*      ****************************************************************
0275  04275 076315R       STB PTRAK
0276  04276 072316R       STA PSECT
0277  04277 062315R       LDA PTRAK
0278  04300 017673R       JSB CKTRK       IS TRACK TO BE USED IN TABLE?
0279  04301 016001X RETRY JSB EXEC
0280  04302 004311R       DEF *+7
0281  04303 004317R       DEF PCODE       REQ. CODE=-1(READ) OR -2(WRITE)
0282  04304 004324R RWLUN DEF B103
0283  04305 000000  PBUFF NOP             BUFFER ADDRESS
0284  04306 004321R       DEF MORSC       BUFFER WORD COUNT
0285  04307 004315R       DEF PTRAK       TRACK ORG.
0286  04310 004316R       DEF PSECT       SECTOR ORG.
0287  04311 062326R       LDA LUN3
0288  04312 072304R       STA RWLUN
```

```
0289  04313 060174          LDA TSONE      GET NEXT T/S
0290  04314 126320R         JMP PDISC,I    RETURN

0292  04315 000000  PTRAK  BSS 1          TRACK ADDRESS
0293  04316 000000  PSECT  BSS 1          SECTOR ADDRESS
0294  04317 000000  PCODE  BSS 1          REQUEST CODE
0295  04320 000000  PDISC  BSS 1          SUBROUTINE JUMP ADDRESSES
0296  04321 000000  MORSC  BSS 1          BUFFER WORD COUNT
0297  04322 005277R CKJBS  DEF RPRCX     ADDRESS OF RETURN TO JOIN STORE.
0298  04323 000102  B102   OCT 102
0299  04324 000103  B103   OCT 103
0300  04325 004323R LUN2   DEF B102
0301  04326 004324R LUN3   DEF B103
```

```
0303*              ****************************************************
0304*              * DIRSR - SEARCH DIRECTORY FOR A GIVEN FILENAME    *
0305*              *   INPUT: A = NUMBER OF CHARACTERS IN NAME,       *
0306*              *          B = CHARACTER LOCATION OF THE NAME,     *
0307*              * (CHAR LOCN = ADDR,OF NAME OFFSET 1 BIT TO THE    *
0308*              *    LEFT; LOWEST BIT OF LOCN IS UPPER/LOWER       *
0309*              *    START POSITION - 0=UPPER, 1=LOWER)            *
0310*              *  2ND WORD OF LINKAGE = TRACK/SECTOR OF DIRCTRY   *
0311*              * 3RD WORD OF LINKAGE IS THE RETURN,               *
0312*              * OUTPUT: A = MEMORY LOCN OF ENTRY (0=NOT FOUND)   *
0313*              *         B = TRACK/SECTOR CONTAINING ENTRY        *
0314*              *                                                  *
0315*              * DIRECTORY ENTRY FORMAT                          *
0316*              *                                                  *
0317*              *          ****************************************  *
0318*              * WORD 1 *   1ST 2 CHARACTERS OF FILENAME      *   *
0319*              *          ****************************************  *
0320*              * WORD 2 *   NEXT 2 CHARACTERS OF FILENAME     *   *
0321*              *          ****************************************  *
0322*              * WORD 3 * LAST CHARACTER  *P*    TYPE         *   *
0323*              *          ****************************************  *
0324*              * WORD 4 * STARTING TRACK  * STARTING SECTOR   *   *
0325*              *          ****************************************  *
0326*              * WORD 5 *     FILE LENGTH (IN SECTORS)        *   *
0327*              *          ****************************************  *
0328*              * WORD 6 *          FWA OF THE PROGRAM         *   *
0329*              *          ****************************************  *
0330*              * WORD 7 *          LWA OF THE PROGRAM         *   *
0331*              *          ****************************************  *
0332*              * WORD 8 * FWA OF THE BASE PAGE LINKAGE AREA   *   *
0333*              *          ****************************************  *
0334*              * WORD 9 * LWA OF THE BASE PAGE LINKAGE AREA   *   *
0335*              *          ****************************************  *
0336*              *WORD 10 *         PROGRAM ENTRY POINT         *   *
0337*              *          ****************************************  *
0338*              *WORD 11 * FWA OF THE LIBRARY ROUTINE AREA     *   *
0339*              *          ****************************************  *
0340*              *                                                  *
0341*              * WORDS 6 THRU 11 ARE PRESENT FOR SYSTEM          *
0342*              *  GENERATED PROGRAMS ONLY(TYPES 0 THRU 6)        *
0343*              * IF P(IN WORD 3)=1, PURGE,(SYS GEN USER ONLY),   *
0344*              *                                                  *
0345*              *    TYPE CODE(OCTAL)  PROGRAM TYPE                *
0346*              *                                                  *
0347*              *         0          SYSTEM RESIDENT             *
0348*              *         1          DISC RES,EXEC,SUPERV,MODULE *
0349*              *         2          RESERVED FOR SYSTEM         *
0350*              *         3          USER PROGRAM, MAIN          *
0351*              *         4          DISC RESIDENT DEVICE DRIVER *
0352*              *         5          USER PROGRAM, SEGMENT       *
0353*              *         6          LIBRARY                     *
0354*              *        10          RELOCATABLE BINARY PROGRAM  *
0355*              *        11          ASCII SOURCE STATEMENTS     *
0356*              *        12          BINARY DATA                 *
0357*              *        13          ASCII DATA                  *
0358*              *        14          ABSOLUTE BINARY PROGRAM      *
```

```
0359*                ************************************************

0361  04327 000000  DIRSR NOP
0362  04330 072413R       STA MLOCN      SAVE TYPE/CHAR COUNT
0363  04331 076347R       STB DMOVE      SET ORIGIN ADDR OF FILENAME
0364  04332 066412R       LDB BLNKS      SET DESTINATION TO BLANKS
0365  04333 076416R       STB NMBUF
0366  04334 076417R       STB NMBUF+1
0367  04335 067124R       LDB B20K       BLNK UPPER
0368  04336 076420R       STB NMBUF+2
0369  04337 001665        ELA,CLE,ERA    CLEAR SIGN IN CASE IT'S NUMERIC
0370  04340 064000        LDB A
0371  04341 044045        ADB .-6
0372  04342 006021        SSB,RSS        MORE THAN 5 CHARS,?
0373  04343 060060        LDA .+5        YES, SET COUNT=5
0374  04344 066415R       LDB NMBUF-1    DESTINATION CHARPOS
0375  04345 005200        RBL
0376  04346 017415R       JSB MOVE
0377  04347 000000  DMOVE NOP            ORIGIN OF NAME
0378  04350 062416R       LDA NMBUF
0379  04351 010075        AND B1774
0380  04352 052430R       CPA ULPAR
0381  04353 026607R       JMP FNILL
0382  04354 062413R       LDA MLOCN      GET WORD WITH TYPE BIT IN IT
0383  04355 002020        SSA            IS IT AN ALPHA NAME?
0384  04356 026607R       JMP FNILL      NO - IT'S ILLEGAL
0385  04357 162327R       LDA DIRSR,I    GET TRK/SECTOR OF DIRECTORY
0386  04360 160000        LDA A,I        TRK/SECTOR NOW IN 'A'
0387  04361 016452R       JSB READ1      INIT CURTS,MLOCN AND READ SECT 1
0388  04362 002001        RSS
0389  04363 016431R DRSR2 JSB GETNX
0390  04364 162413R       LDA MLOCN,I
0391  04365 002003        SZA,RSS        END OF TABLE?
0392  04366 026407R       JMP DRSRX      YES - GO TO EXIT
0393  04367 052416R       CPA NMBUF      NO - CHECK THE NAME
0394  04370 002001        RSS            1ST CHARS ARE SAME
0395  04371 026363R       JMP DRSR2      MISMATCH, GET NEXT ENTRY
0396  04372 066413R       LDB MLOCN
0397  04373 006004        INB
0398  04374 160001        LDA B,I        GET 2ND 2 CHARACTERS
0399  04375 052417R       CPA NMBUF+1
0400  04376 002001        RSS            THEY CHECK
0401  04377 026363R       JMP DRSR2
0402  04400 006004        INB
0403  04401 160001        LDA B,I        GET LAST CHARACTER
0404  04402 010075        AND B1774      MASK OUT LOWER 1/2 WORD
0405  04403 052420R       CPA NMBUF+2
0406  04404 002001        RSS            THE NAME IS FOUND
0407  04405 026363R       JMP DRSR2
0408  04406 062413R       LDA MLOCN
0409  04407 066414R DRSRX LDB CURTS
0410  04410 044052        ADB .-1        SET B=TRK/SECTOR OF NAME
0411  04411 036327R       ISZ DIRSR
0412  04412 126327R       JMP DIRSR,I    EXIT HERE

0414  04413 000000  MLOCN NOP            MEMORY LOCATION POINTER
```

```
0415  04414 000000  CURTS NOP            TRACK/SECTOR OF ENTRY
0416  04415 004416R       DEF *+1
0417  04416 000000  NMBUF BSS 3          NAME BUFFER
0418  04421 052516       ASC 5,UNDEFINED,
0419  04426 000000  TEMP  NOP
0420  04427 011564R DICND DEF DICBF+128 END OF DICTIONARY BUFFER
0421  04430 024000  ULPAR OCT 024000
```

```
0423*                ******************************************
0424*                * GETNX - GET NEXT ENTRY IN A DICTIONARY *
0425*                *  ENTRY: MLOCN PNTS TO CURR DICBF ENTRY *
0426*                *       CURTS CONTAINS TRK/SECTR OF ENTRY *
0427*                * EXIT: MLOCN PNTS TO NEW DICBF ENTRY    *
0428*                *       CURTS CONTAINS TRK/SECT OF NEW ENT*
0429*                ******************************************
0430  04431 000000  GETNX NOP
0431  04432 016460R       JSB CMPNX      COMPUTE NEW ENTRY LOCN
0432  04433 126431R       JMP GETNX,I    L+1 = ENTRY IN SAME SECTOR
0433  04434 062414R       LDA CURTS      L+2 = ENTRY IN NEXT SECTOR
0434  04435 010074        AND B377
0435  04436 073364R       STA DICBF      (IF END OF DICT TRK, DICBF=0)
0436  04437 002003        SZA,RSS        END OF DICT.?
0437  04440 126431R       JMP GETNX,I    YES = RETURN
0438  04441 062414R       LDA CURTS
0439  04442 066451R GETEX LDB FLUN
0440  04443 076304R       STB RWLUN      SET PROPER LUN
0441  04444 006404        CLB,INB
0442  04445 016243R       JSB RDISC      READ NEXT SECTOR
0443  04446 011364R DICAD DEF DICBF
0444  04447 072414R       STA CURTS
0445  04450 126431R       JMP GETNX,I
0446  04451 004324R FLUN  DEF B103
0447*
0448*                ******************************************
0449*                * READ1 - SET UP TO READ 1ST ENTRY FROM *
0450*                *         A DICTIONARY(USER OR SYSTEM), *
0451*                *  A = TRK/SECTOR OF DICTIONARY         *
0452*                *  MLOCN IS INITIALIZED TO DICAD        *
0453*                *  CURTS IS TRK/SECTOR OF 1ST SECTOR    *
0454*                ******************************************
0455  04452 000000  READ1 NOP
0456  04453 066446R       LDB DICAD
0457  04454 076413R       STB MLOCN      MLOCN = L(DICBF)
0458  04455 066452R       LDB READ1
0459  04456 076431R       STB GETNX
0460  04457 026442R       JMP GETEX
0461*
0462*                ******************************************************
0463*                * CMPNX - COMPUTE LOCATION OF NEXT ENTRY IN DICBF *
0464*                *  L+1 EXIT = NEXT ENTRY IN SAME SECTOR             *
0465*                *  L+2 EXIT = NEXT ENTRY IN NEXT SECTOR(GET ONE!) *
0001*                *  MLOCN = NEW LOC. OF NEXT ENTRY(EVEN IF NEW SC.)*
0002*                *   ---THE NEW SECTOR HAS NOT BEEN READ---        *
0003*                ******************************************************
0004  04460 000000  CMPNX NOP
0005  04461 062413R       LDA MLOCN
0006  04462 016326R       JSB DRADD      COMPUTE ENTRY LENGTH
0007  04463 046413R       ADB MLOCN
0008  04464 076413R       STB MLOCN
0009  04465 162413R       LDA MLOCN,I
0010  04466 056427R       CPB DICND      IS MLOCN=END DICBF?
0011  04467 002001        RSS            YES = NEW SECTOR NEEDED
0012  04470 050052        CPA .-1        IS LAST ENTRY IN SECTOR DONE?
0013  04471 002001        RSS            YES = NEW SECTOR NEEDED
```

```
0014  04472 126460R        JMP CMPNX,I   L+1 EXIT,NO NEW SECTOR;A=MLOCN,I
0015  04473 036460R        ISZ CMPNX
0016  04474 062446R        LDA DICAD
0017  04475 072413R        STA MLOCN
0018  04476 126460R        JMP CMPNX,I   L+2 EXIT, NEW SECTOR NEEDED
0019*
0020*               ********************************************
0021*               * USERD - SEARCH 'USER' DIRECTORY FOR      *
0022*               *    FILENAME FORM PARAMETER LIST,         *
0023*               * (PMLOC IS BUMPED TO CURRENT PARAMETER)   *
0024*               * EXITS: L+1  PARAMETER NOT PRESENT        *
0025*               *        L+2  NORMAL EXIT(FROM DIRSR)      *
0026*               ********************************************
0027  04477 000000  USERD NOP
0028  04500 037644R        ISZ PMLOC
0029  04501 063644R        LDA PMLOC
0030  04502 016542R        JSB NXSET
0031  04503 167644R USRD1  LDB PMLOC,I
0032  04504 006003         SZB,RSS       IS A PARAMETER THERE?
0033  04505 126477R        JMP USERD,I   NO - TAKE L+1 EXIT
0034  04506 062326R        LDA LUN3
0035  04507 072451R        STA FLUN
0036  04510 017626R        JSB PMNXT
0037  04511 016327R        JSB DIRSR     GO SEARCH USER DIRECTORY
0038  04512 000771R        DEF USDIR
0039  04513 002103         CLE,SZA,RSS
0040  04514 026525R        JMP USRD2
0041*
0042  04515 073650R        STA JSRCH
0043  04516 060161         LDA CUDSC
0044  04517 052404R        CPA SAVSC     SUBCHNL CHANGED?
0045  04520 026522R        JMP USRDX      -NO, EXIT
0046  04521 016671R        JSB RPTSC
0047  04522 063650R USRDX  LDA JSRCH
0048  04523 036477R        ISZ USERD
0049  04524 126477R        JMP USERD,I
0050*
0051  04525 016553R USRD2  JSB NXTSC     GET NEXT SUBCHNL TO SRCH
0052  04526 026532R        JMP NOMOR      -ALL DONE - FILE NOT FOUND
0053  04527 062606R        LDA SAVPM
0054  04530 073644R        STA PMLOC
0055  04531 026503R        JMP USRD1     GO SEARCH NEXT DIRECTORY
0056*
0057  04532 016365R NOMOR  JSB RESET
0058  04533 062606R        LDA SAVPM
0059  04534 164000         LDB A,I
0060  04535 002004         INA
0061  04536 160000  B160K  LDA A,I
0062  04537 016327R        JSB DIRSR     RESTORE CURRENT USER
0063  04540 000771R        DEF USDIR       DISC DIRECTORY
0064  04541 026523R        JMP USRDX+1
0065*
0066  04542 000000  NXSET  NOP
0067  04543 072606R        STA SAVPM     SAVE FILE-NAME ADDRESS
0068  04544 007400         CCB
0069  04545 076611R        STB SCHNL
```

```
0070  04546 064331         LDB SSFLG
0071  04547 076666R        STB JSFLG
0072  04550 064161         LDB CUDSC
0073  04551 076404R        STB SAVSC      SAVE CURRENT USER SUBCHNL
0074  04552 126542R        JMP NXSET,I
0075*
0076  04553 000000  NXTSC  NOP
0077  04554 062666R        LDA JSFLG
0078  04555 053215R        CPA ANO        ;SS ALLOWED?
0079  04556 126553R        JMP NXTSC,I     =NO, EXIT
0080  04557 002003         SZA,RSS        ;SS FLAG SET FOR SEARCH?
0081  04560 126553R        JMP NXTSC,I     =NO
0082  04561 002020         SSA            SEARCH ALL SUBCHNLS?
0083  04562 026572R        JMP ALLSC       =YES
0084  04563 036611R NXINC  ISZ SCHNL
0085  04564 000000         NOP
0086  04565 000031         SLA,ARS
0087  04566 002001         RSS
0088  04567 026563R        JMP NXINC
0089  04570 072666R        STA JSFLG
0090  04571 026575R        JMP SETSC
0091*
0092  04572 003000  ALLSC  CMA
0093  04573 072611R        STA SCHNL
0094  04574 036666R        ISZ JSFLG
0095*
0096  04575 062611R SETSC  LDA SCHNL
0097  04576 052404R        CPA SAVSC
0098  04577 026554R        JMP NXTSC+1
0099  04600 006404         CLB,INB
0100  04601 016573R        JSB JEXUD      MAKE PRIVILEGED SEX17 CALL
0101  04602 002002         SZA
0102  04603 026554R        JMP NXTSC+1     =YES, GO CHECK NEXT ONE
0103  04604 036553R        ISZ NXTSC
0104  04605 126553R        JMP NXTSC,I
0105*
0106  04606 000000  SAVPM  NOP
0107*
0108*                ****************************************
0109*                * FNILL - PRINT 'ILLEGAL FILENAME' *
0110*                ****************************************
0111  04607 062415R FNILL  LDA NMBUF-1    GET ORIGIN OF CURRENT NAME
0112  04610 064056         LDB .+3
0113  04611 017356R        JSB ERRDG      GO PRINT THE ILLEGAL NAME
0114  04612 064057         LDB .+4
0115  04613 062626R        LDA FNILM
0116  04614 072274R        STA TEMP1
0117  04615 076275R        STB TEMP2     SAVE A & B IN CASE OF ERR,MESS,LI
0118  04616 017356R        JSB ERRDG
0119  04617 063604R        LDA PMCNT+1    GET DIRECTIVE
0120  04620 053164R        CPA CHARS+20   WAS IT A PURGE?
0121  04621 026633R        JMP DELET      YES, GO BACK TO PURGE PROC.
0122  04622 062403R        LDA DDFLG
0123  04623 002002         SZA            DISC DUMP IN PROCESS?
0124  04624 026153R        JMP DCULP       =YES, GO BACK TO DUMP
0125  04625 026755R        JMP PMS
```

```
0126  04626 004627R FNILM DEF *+1
0127  04627 044514        ASC 4,ILLEGAL
```

```
0129*                ******************************************
0130*                * PURGE - DELETE GIVEN FILE NAMES FROM  *
0131*                *           THE 'USER' DICTIONARY, AFTER  *
0132*                *           ALL NAMES ARE DELETED A PURGE *
0133*                *           OF THE USER FILE IS EXECUTED. *
0134*                ******************************************
0135  04633 016477R DELET JSB USERD      GET A FILENAME
0136  04634 026654R       JMP DEL30      NO NAME
0137  04635 072413R DEL10 STA MLOCN      IF A=0 MLOCN IS CLEARED
0138  04636 002102        CLE,SZA        WAS IT FOUND?
0139  04637 026644R       JMP DEL20      YES
0140  04640 017771R       JSB FNUND      NO; GO TO 'FILENAME UNDEF.'
0141  04641 016477R DEL15 JSB USERD
0142  04642 027411R       JMP STRP3      GO CLEAR SBUF VALIDITY FLAG
0143  04643 026635R       JMP DEL10
0144*
0145  04644 062415R DEL20 LDA NMBUF-1
0146  04645 064056        LDB .+3
0147  04646 017356R       JSB ERRDG      PRINT FILE NAME
0148  04647 162413R       LDA MLOCN,I    CLEAR LOWER 1/2 OF 1ST WORD
0149  04650 010075        AND B1774       OF FILENAME TO BE DELETED
0150  04651 172413R       STA MLOCN,I
0151  04652 016656R       JSB WSECT      WRITE SECTOR BACK
0152  04653 026641R       JMP DEL15      GO FOR NEXT NAME
0153  04654 002404  DEL30  CLA,INA       GO SEARCH DIRECTORY AND DELETE
0154  04655 027374R       JMP STRP0-1      ALL TEMPORARY FILES.
0155*
0156*                ****************************************
0157*                * WRITE SECTOR BACK INTO DICTIONARY *
0158*                ****************************************
0159  04656 000000  WSECT NOP
0160  04657 062414R       LDA CURTS      GET TRACK/SECTOR FOR CURR. SECTO
0161  04660 010074        AND B377      CHECK IF ON TRACK BOUNDARY
0162  04661 002003        SZA,RSS       SECTOR 0?
0163  04662 026672R       JMP SEC0      = YES
0164  04663 062414R       LDA CURTS
0165  04664 040052  WS1    ADA .-1       REDUCE 1 SEC TO GET CURRENT SECT
0166  04665 006404        CLB,INB        B = WRITE 1 SECTOR
0167  04666 016253R       JSB WDISC
0168  04667 011364R       DEF DICBF      BUFFER ORIGIN
0169  04670 072414R       STA CURTS      SAVE TRK/SECT FOR NEXT WRITE
0170  04671 126656R       JMP WSECT,I    RETURN
0171  04672 062414R SEC0  LDA CURTS
0172  04673 042676R       ADA MITRK       MINUS 1 TRACK
0173  04674 040116        ADA SECTR     COMBINE LAST SEC#+1
0174  04675 026664R       JMP WS1
0175  04676 177400  MITRK OCT -400
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0177*          *     ************************************************
0178*          *     * STORE INFORMATION INTO THE DISC USER FILE *
0179*          *     * 'A': RESERVE 'N' SECTORS FOR ASCII DATA   *
0180*          *     * 'B': RESERVE 'N' SECTORS FOR BINARY DATA  *
0181*          *     * 'S': STORE SOURCE FILE FROM INDICATED LUN *
0182*          *     * 'R': STORE REL.BIN.PROGS FROM JBIN OR LUN *
0183*          *     * 'P': STORE SYS.GENER. PROGS FROM JBIN     *
0184*          *     * 'X': STORE ABS. BIN. PROGS FROM LUN       *
0185*          *     ************************************************
0186  04677 006400  STORE CLB          CLEAR COLON FLAG FOR :ST,S
0187  04700 077365R       STB COLF
0188  04701 077650R       STB ABINF      CLEAR ABS. BINARY FLAG
0189  04702 016655R       JSB TYPES     GET TYPE OF STORE
0190  04703 067603R       LDB PMCNT
0191  04704 054054        CPB .+1        1 PARAMETER?
0192  04705 027371R       JMP STORP      YES - GO TO STORE ALL
0193  04706 016477R STOR1 JSB USERD      SEARCH FOR A FILENAME
0194  04707 026306R       JMP RNS        NO MORE PRESENT
0195  04710 067631R       LDB CTEST      GET STORE TYPE
0196  04711 002003        SZA,RSS        WAS A NAME FOUND?
0197  04712 026733R       JMP STOR3      NO -
0198  04713 057360R       CPB B120       YES, IS STORE TYPE = P?
0199  04714 026731R       JMP STOR2      YES - OK
0200  04715 062717R NMDUP LDA STERR      NO - 'DUPLICATE NAME'
0201  04716 026751R       JMP PMISS+1
0202  04717 004720R STERR DEF *+1
0203  04720 042125        ASC  9,DUPLICATE FILENAME
0204*
0205  04731 016003R STOR2 JSB PCHEK      CLEAR 'P' AND WRITE BACK TO DICT
0206  04732 026706R       JMP STOR1
0207*
0208  04733 057360R STOR3 CPB B120       IS THIS P STORE?
0209  04734 002101        CLE,RSS        -YES - ERROR 'UNDEFINED PROGRAM
0210  04735 026740R       JMP STOR4
0211  04736 017771R       JSB FNUND      PRINT 'UNDEF. FILENAME'
0212  04737 026706R       JMP STOR1      GO GET NEXT FILENAME
0213*
0214  04740 017127R STOR4 JSB ASCDC      PICK UP LUN OR SECTOR COUNT
0215  04741 067631R       LDB CTEST      NO PARAMETER EXIT (A=0)
0216  04742 002002        SZA            IS NUMBER=0? (B=-10 ON EXIT)
0217  04743 027044R       JMP STOR5      NO
0218  04744 054041        CPB .-10       YES, WAS EXIT NORMAL?
0219  04745 026737R       JMP PILLG      YES - JUMP TO 'ILLEG.PARAM'
0220  04746 057363R       CPB B122       IS THIS TYPE R?
0221  04747 027044R       JMP STOR5      YES, OK
0222  04750 062764R PMISS LDA SSIMP
0223  04751 064064        LDB .+9
0224  04752 072274R       STA TEMP1     SAVE A & B IN CASE OF ERR MESS LI
0225  04753 076275R       STB TEMP2
0226  04754 017356R       JSB ERRDG     PRINT ERR MESS ON TTY
0227  04755 017025R PMS   JSB ERMES     PRINT OUT ERROR MESSAGES
0228  04756 002001        RSS           KEYBOARD MODE
0229  04757 027315R       JMP EJOBX+1       BATCH ABORT
0230*
0231  04760 063007R RNSY  LDA REREQ
0232  04761 067575R       LDB D13
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0233  04762 017356R        JSB ERRDG      PRINT 'RE-ENTER REQUEST'
0234  04763 026306R        JMP RNS        GO GET NEXT STATEMENT
0235  04764 004765R SSIMP  DEF *+1
0236  04765 046511         ASC 9,MISSING PARAMETER
0237  04776 044514         ASC 9,ILLEGAL PROG. TYPE  ('PR' AT SSIMP+14,,)
0238  05007 005010R REREQ  DEF *+1
0239  05010 051105         ASC 13,RE-ENTER STATEMENT ON TTY.
0240*
0241*
0242*****  IF KEYBOARD MODE, RETURN TO P+1.
0243*       IF BATCH MODE, PRINT THE ERRONEOUS DIRECTIVE & ERROR
0244*          MESSAGE ON THE STANDARD LIST DEVICE AND RETURN TO P+2.
0245*
0246  05025 000000  ERMES NOP
0247  05026 060111         LDA BATCH
0248  05027 050112         CPA SYSTY     KEYBOARD MODE?
0249  05030 127025R        JMP ERMES,I     YES, RETURN TO P+1
0250  05031 060061         LDA .+6         NO, LIST ERRONEOUS INPUT STATEM
0251  05032 073105R        STA LSTLN
0252  05033 060123         LDA JBUFF
0253  05034 067043R        LDB SAVL
0254  05035 017150R        JSB LSTIO
0255  05036 062274R        LDA TEMP1           LIST ERROR MESSAGE ON LIST
0256  05037 066275R        LDB TEMP2
0257  05040 017150R        JSB LSTIO
0258  05041 037025R        ISZ ERMES     RETURN TO P+2
0259  05042 127025R        JMP ERMES,I
0260  05043 000000  SAVL   NOP      LENGTH OF INPUT STAT IN JBUFF
0261*
0262*
0263  05044 072774R STOR5  STA ENTLN      SET LUN OR SECTOR COUNT
0264  05045 067631R        LDB CTEST
0265  05046 060063         LDA .+10B
0266  05047 057363R        CPB B122       TYPE R?
0267  05050 027065R        JMP STOR6
0268  05051 002004         INA            NO
0269  05052 057730R        CPB B123       TYPE S?
0270  05053 027065R        JMP STOR6
0271  05054 002004         INA            NO
0272  05055 056323R        CPB B102       TYPE = 'B'?
0273  05056 027065R        JMP STOR6
0274  05057 002004         INA
0275  05060 057357R        CPB B101      TYPE A?
0276  05061 027065R        JMP STOR6
0277  05062 056422R        CPB B130      TYPE X?
0278  05063 002005         INA,RSS
0279  05064 026737R        JMP PILLG      NO = 'ILLEG.PARAM.' EXIT
0280  05065 073636R STOR6  STA ENTYP      SET ENTRY TYPE
0281  05066 066413R        LDB MLOCN      SAVE DICT. POINTER(MLOCN)
0282  05067 077645R        STB SAVML
0283  05070 064157         LDB NXTTS      GET NEXT TRK/SECTOR IN USER FILE
0284  05071 077637R        STB ENTSC      STORE IT
0285  05072 077640R        STB NEWTS
0286  05073 053366R        CPA B14       TYPE X?
0287  05074 027100R        JMP STOR7
0288  05075 040041         ADA .-12B
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0289  05076 002021          SSA,RSS        TYPE 'A' OR 'B'?
0290  05077 027622R         JMP STRAB      YES, GO TO CORRESP. ROUTINE
0291  05100 062774R STOR7   LDA ENTLN
0292  05101 073643R         STA INLUN      SET CONTROL WORD FOR INPUT
0293  05102 072603R         STA SAVEA
0294  05103 016570R         JSB NULCK      LUN NULL?
0295  05104 026306R         JMP RNS        YES, RETURN
0296  05105 063643R         LDA INLUN     RESTORE A REG. FOR EOTST.
0297  05106 016747R         JSB EOTST      GO SET EOT STATUS IN CASE NEEDED
0298  05107 067631R         LDB CTEST      SET B = TYPE
0299  05110 063633R         LDA MINBF
0300  05111 072413R         STA MLOCN      MLOCN = L(INBUF-1)
0301  05112 002400          CLA
0302  05113 072774R         STA ENTLN      ENTLN=0
0303  05114 073632R         STA CDCNT      CLEAR STATEMENT COUNTER
0304  05115 056422R         CPB B130      TYPE X?
0305  05116 027547R         JMP STORX
0306  05117 057730R         CPB B123       TYPE S?
0307  05120 027415R         JMP SPROC      YES
0308*
0309*                 *********************************************
0310*                 * STORE RELOCATABLE PROGRAMS TO USER FILE *
0311*                 *********************************************
0312*
0313  05121 063643R         LDA INLUN
0314  05122 002003          SZA,RSS        ARE PROGRAMS FROM A LOGICAL UNIT
0315  05123 027243R         JMP RPRCJ      NO - THEY'RE FROM THE JBIN AREA
0316  05124 043362R         ADA B300
0317  05125 073643R         STA INLUN      SET CONTROL WORD FOR REL. BINRN.
0318  05126 002404          CLA,INA
0319  05127 073647R         STA RBINF      SET 'RELOC.BIN.' FLAG FOR DISCW
0320  05130 063361R         LDA B120K      SET BINARY END RECORD ID IN CASE
0321  05131 073660R         STA BUFFR-1      EOF IS ENCOUNTERED AS 1ST REC.
0322  05132 063364R STORR   LDA D60        FOR 60 WORD READ
0323  05133 067762R         LDB BFFAD      B= BUFFR ADDRESS
0324  05134 016026R         JSB STORD      GO READ A RECORD
0325  05135 027205R         JMP RPRC4      END OF TAPE EXIT.
0326*     ***************************************************************
0327  05136 044050          ADB .-3        ON EXIT B=NO. OF WORDS IN RECORD
0328  05137 007004          CMB,INB
0329  05140 076426R         STB TEMP
0330  05141 063663R         LDA BUFFR+2
0331  05142 003004          CMA,INA        A = -(CHECKSUM)
0332  05143 043662R         ADA BUFFR+1    ADD 'RECORD TYPE'
0333  05144 067762R         LDB BFFAD
0334  05145 044056          ADB .+3        B = LOCN OF 1ST WORD AFTER CKSUM
0335  05146 140001          ADA B,I        ADD IN REST OF RECORD
0336  05147 006004          INB
0337  05150 036426R         ISZ TEMP       DONE?
0338  05151 027146R         JMP *-3        NO - ADD IN NEXT.
0339  05152 002003          SZA,RSS        CHECKSUM OK?
0340  05153 027167R         JMP RPRC2      YES
0341  05154 064062  STRR2   LDB .+7
0342  05155 063157R         LDA *+2
0343  05156 026762R         JMP PMISS+2
0344  05157 005160R         DEF *+1
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0345  05160 041510         ASC 7,CHECKSUM ERROR
0346  05167 016153R RPRC2  JSB DISCW      GO STORE A RECORD TO THE FILE.
0347* ****************************************************************
0348  05170 063662R         LDA BUFFR+1
0349  05171 012536R         AND B160K      B160000
0350  05172 073660R         STA BUFFR-1    SAVE VALUE OF RECORD TYPE
0351  05173 053361R         CPA B120K      END RECRD WRITTEN (B120000)
0352  05174 002001          RSS            YES
0353  05175 027132R         JMP STORR      NO - GO GET AND WRITE NEXT REC.
0354  05176 062413R RPRC3   LDA MLOCN
0355  05177 053634R         CPA INB63      MLOCN AT END OF INBUF(+63)?
0356  05200 027132R         JMP STORR      YES - START NEXT PROGRAM
0357  05201 016203R         JSB DWRD       NO, CONTINUE SETTING ZEROS
0358  05202 002400          CLA
0359  05203 172413R         STA MLOCN,I
0360  05204 027176R         JMP RPRC3      GO CHECK FOR SECTOR END
0361  05205 016203R RPRC4   JSB DWRD       BUMP MLOCN
0362  05206 063660R         LDA BUFFR-1
0363  05207 053361R         CPA B120K      END COMPLETED?(B120000)
0364  05210 027222R         JMP RPRC5      YES - GO CHECK FOR EOF
0365  05211 064060          LDB .+5        NO
0366  05212 063214R         LDA *+2
0367  05213 026752R         JMP PMISS+2
0368  05214 005215R         DEF *+1
0369  05215 047117  ANO     ASC 5,NO BIN END
0370*
0371  05222 062774R RPRC5   LDA ENTLN      IF ANY RELOCATABLE
0372  05223 002002          SZA              DATA WAS READ
0373  05224 027625R         JMP XSTOR           GO DO EXIT PROCESSING.
0374  05225 064064  PRTEF   LDB .+9        SET UP MESSAGE LENGTH
0375  05226 063231R         LDA MSPTR      GET POINTER TO MESSAGE
0376  05227 017356R         JSB ERRDG      OUTPUT "EOF-NO DATA STORED" MSG.
0377  05230 027625R         JMP XSTOR      GO DO EXIT PROCESSING.
0378  05231 005232R MSPTR   DEF EOFMS
0379  05232 042517  EOFMS   ASC 9,EOF-NO DATA STORED
0380  05243 060101  RPRCJ   LDA JBINS      READ PROGRAM(S) FROM JBIN AREA
0381  05244 050052          CPA .-1        JBIN OVERFLOW?
0382  05245 027312R         JMP RPRJB      YES, ABORT
0383  05246 073631R         STA CTEST      SET START OF READ AREA
0384  05247 002003          SZA,RSS        IS JBIN AREA RESERVED?
0385  05250 026750R         JMP PMISS      PARAM,MISSING(LOG,UNIT NO.)ERROR
0386  05251 050102          CPA JBINC      WAS ANY BINARY EMITTED?
0387  05252 026750R         JMP PMISS      NO,  PARAMETER MISSING
0388  05253 003004          CMA,INA
0389  05254 040102          ADA JBINC      JBINC-JBINS IN A
0390  05255 006400          CLB            A(U)=NO.OF TRKS;A(L)=NO.OF SECT.
0391* ****************************************************************
0392  05256 017050R         JSB ..RRL
0393  05257 177750          DEC -24
0394* ****************************************************************
0395  05260 005727          BLF,BLF        POSITION SECTORS LEFT IN B
0396  05261 002003          SZA,RSS        FIRST JBIN TRACK ONLY?
0397  05262 027267R         JMP *+5        YES
0398  05263 040075          ADA B1774      MAKE A A NEG, VALUE
0399  05264 044116          ADB SECTR      ADD A SET OF SECTORS(A TRACKFUL)
0400  05265 034000          ISZ A          ANOTHER TRACK?
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0401   05266 027264R          JMP *-2         YES, GO BACK FOR ANOTHER BUMP
0402   05267 007004           CMB,INB
0403   05270 077644R          STB ENDFL       B=-(TOTAL # OF SECTORS IN JBIN)
0404   05271 063631R RPRC7    LDA CTEST
0405   05272 066325R          LDB LUN2
0406   05273 076304R          STB RWLUN       SET DISC = LUN2
0407   05274 006404           CLB,INB
0408   05275 016243R          JSB RDISC
0409   05276 012413R          DEF INBUF
0410   05277 073631R RPRCX    STA CTEST       SAVE NEXT T/S
0411   05300 006400           CLB
0412*      ********************************************************************
0413   05301 017050R          JSB ..RRL
0414   05302 177750           DEC -24
0415*      ********************************************************************
0416   05303 006003           SZB,RSS         START OF A NEW TRACK?
0417   05304 027347R          JMP RPRC0       YES
0418   05305 017613R RPRC8    JSB NUSET
0419   05306 036774R          ISZ ENTLN       BUMP THE ENTRY SECTOR COUNT
0420   05307 037644R          ISZ ENDFL       LAST SECTOR TRANSMITTED?
0421   05310 027271R          JMP RPRC7       NO
0422   05311 027626R          JMP XSTOR       YES GO SET UP DICT. ENTRY
0423*
0424   05312 063342R RPRJB    LDA JBINV
0425   05313 064057           LDB .+4
0426   05314 017356R EJOBX    JSB ERRDG       PRINT DIAGNOSTIC
0427   05315 064061           LDB .+6
0428   05316 063333R          LDA JBAB
0429   05317 072274R          STA TEMP1
0430   05320 076275R          STB TEMP2     SAVE A & B IN CASE LISTING MESS
0431   05321 017356R          JSB ERRDG     ON LIST DEV. IF IN BATCH MODE
0432   05322 060111           LDA BATCH
0433   05323 050112           CPA SYSTY
0434   05324 026116R          JMP EJOB+3    IF IN KEYBOARD MODE,DON'T LIST.
0435   05325 062274R          LDA TEMP1
0436   05326 066275R          LDB TEMP2
0437   05327 017150R          JSB LSTIO
0438   05330 002404           CLA,INA       SET BATCH ABORT FLAG.
0439   05331 073244R          STA ABFL
0440   05332 026306R          JMP RNS
0441   05333 005334R JBAB     DEF *+1
0442   05334 045117           ASC 6,JOB ABORTED!
0443   05342 005343R JBINV    DEF *+1
0444   05343 045102           ASC 4,JBIN OVF
0445   05347 040051  RPRC0    ADA .-2         GET NEXT LOWER TRACK
0446   05350 001727           ALF,ALF         REPOSITION THE TRACK NO.
0447   05351 073631R          STA CTEST        AND STORE IT
0448   05352 027305R          JMP RPRC8       RETURN TO PROCESSING
0449*
0450   05353 060111  ABORT    LDA BATCH       ******** KEYBOARD MODE ONLY  ****
0451   05354 050112           CPA SYSTY
0452   05355 027315R          JMP EJOBX+1
0453   05356 026707R          JMP IGNOR
0454   05357 000101  B101     OCT 101
0455   05360 000120  B120     OCT 120
0456   05361 120000  B120K    OCT 120000
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0457  05362 000300  B300  OCT 300        300B
0458  05363 000122  B122  OCT 122
0459  05364 000074  D60   DEC 60
0460  05365 000000  COLF  NOP
0461  05366 000014  B14   OCT 14
0462  05367 002300  B2300 OCT 2300
0463  05370 041400  B414  OCT 41400       CHAR C
```

```
0465*              ********************************************
0466*              * STORP - STORE SYS.GENERATED PROGRAMS    *
0467*              *   (I.E. CLEAR 'P' BIT IN DICT. ENTRIES *
0468*              ********************************************
0469  05371 053360R STORP CPA B120      P?
0470  05372 002001        RSS           YES
0471  05373 026750R       JMP PMISS     NO - "MISSING PARAMETER'
0472  05374 016542R       JSB NXSET
0473  05375 062771R STRP0 LDA USDIR
0474  05376 016462R       JSB READ1     INIT CURTS/MLOCN; READ SECTR 1.
0475  05377 162413R STRP1 LDA MLOCN,I
0476  05400 002003        SZA,RSS       END OF DICTIONARY?
0477  05401 027405R       JMP STRP2      -YES
0478  05402 016003R       JSB PCHEK     CHECK 'P' BIT
0479  05403 016431R       JSB GETNX     GET NEXT ENTRY
0480  05404 027377R       JMP STRP1
0481  05405 016553R STRP2 JSB NXTSC
0482  05406 002001        RSS
0483  05407 027375R       JMP STRP0
0484  05410 016365R       JSB RESET
0485  05411 002400  STRP3 CLA
0486  05412 067150R       LDB XTRAK
0487  05413 017042R       JSB EXSET     GO CLEAR SBUF VALIDITY FLAG
0488  05414 026306R       JMP RNS
0489*
0490*              ************************************
0491*              * SPROC - STORE SOURCE STATEMENTS *
0492*              ************************************
0493*               *  WHEN EXIT FROM ASCDC, PMLOC IS STILL POINTING   *
0494*               *  TO 1ST WORD OF PRESENT ENTRY IN PARAM. TABLE.   *
0495*               *  HAVE TO MAKE IT POINT TO 2ND WORD BEFORE GETTING*
0496*               *  NEXT PARAMETER ENTRY.                           *
0497*
0498  05415 037644R SPROC ISZ PMLOC
0499  05416 063644R       LDA PMLOC    SEE IF MORE PARAM
0500  05417 002004        INA
0501  05420 160000        LDA A,I       LAST WORD IN PARAM. TAB.
0502  05421 002003        SZA,RSS       END?
0503  05422 027440R       JMP SPR,1     YES, CONTINUE
0504  05423 016655R       JSB TYPES     GET NEXT PARAM.
0505  05424 001727        ALF,ALF      LEFT JUSTFIED
0506  05425 053370R       CPA B414      CHAR. C?
0507  05426 002001        RSS
0508  05427 026737R       JMP PILLG     NO, ILLEGAL PARAM.
0509  05430 063643R       LDA INLUN    INPUT LUN =BATCH LUN?
0510  05431 010072        AND B77    GET LUN ONLY
0511  05432 050112        CPA SYSTY
0512  05433 027436R       JMP *+3
0513  05434 050111        CPA BATCH    INPUT LUN =BATCH LUN?
0514  05435 026514R       JMP LUCH3    YES, ILLEGAL
0515  05436 006404        CLB,INB      SET FLAG
0516  05437 077365R       STB COLF
0517  05440 063516R SPR.1 LDA BELLS
0518  05441 067643R       LDB INLUN
0519  05442 007000        CMB
0520  05443 054051        CPB .-2
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0521  05444 017356R        JSB ERRDG
0522  05445 067762R SPRC1  LDB BFFAD      SET BUFFER=BUFFR
0523  05446 062343R        LDA D40        JO INPUT 80 CHARS,
0524  05447 016026R        JSB STORD      (ON EXIT STLEN = # WORDS IN ST,)
0525  05450 027462R        JMP SPRC2      END OF FILE EXIT
0526  05451 002404         CLA,INA      SET FLAG TO INDICATE STORE DIRECTI
0527  05452 073243R        STA INFL
0528  05453 162046R        LDA STRDB,I    GET WORD 1 OF INPUT
0529  05454 010075         AND B1774      MASK OUT 2ND CHARACTER
0530  05455 052342R        CPA B35K       IS 1ST CHAR = COLON?
0531  05456 027520R        JMP SPRC5
0532  05457 016153R SPRC3  JSB DISCW     WRITE A STAT,
0533  05460 037632R        ISZ CDCNT      BUMP STATEMEMNT COUNTER
0534  05461 027445R        JMP SPRC1
0535  05462 016203R SPRC2  JSB DWRD       (MLOCN IN A ON RETURN FROM DWRD)
0536  05463 002400         CLA
0537  05464 172413R        STA MLOCN,I    SET NEXT STATE, VAL=0
0538  05465 016203R        JSB DWRD
0539  05466 003400         CCA
0540  05467 172413R        STA MLOCN,I    SET EOF WORD(=-1)
0541  05470 016203R        JSB DWRD
0542  05471 053617R        CPA LNBUF      DID FILE END ON SECTOR BOUNDARY?
0543  05472 027500R        JMP SPRC4      YES
0544  05473 017613R        JSB NUSET      WRITE THE REST OF THE FILE
0545  05474 063632R        LDA CDCNT      IF NO SOURCE STATEMENTS
0546  05475 002003         SZA,RSS          WERE STORED
0547  05476 027225R        JMP PRTEF          GO OUTPUT DIAG,
0548  05477 036774R        ISZ ENTLN      BUMP SECTOR COUNT
0549  05500 063632R SPRC4  LDA CDCNT      GET STATEMENT COUNT
0550  05501 017137R        JSB CNDEC      GO CONVERT IT TO ASCII
0551  05502 073512R        STA SPRCX+2
0552  05503 077511R        STB SPRCX+1
0553  05504 064060         LDB .+5        WORD COUNT
0554  05505 063510R        LDA SPRCX      GET BUFFR ADDR
0555  05506 017356R        JSB ERRDG      PRINT THE LINE( STATEMENT) COUNT
0556  05507 027625R        JMP XSTOR
0557  05510 005511R SPRCX  DEF *+1        ADDR OF MESSG BUFFR
0558  05511 020040         ASC 5,     LINES
0559  05516 005517R BELLS  DEF *+1
0560  05517 003407         OCT 3407
0561*
0562*          *   STORE SOURCE WITH COLON OPTION   *
0563*
0564  05520 063365R SPRC5  LDA COLF       COLON OPTION?
0565  05521 002003         SZA,RSS
0566  05522 027661R        JMP EOFER      NO, CAN'T STORE IT,
0567  05523 063643R        LDA INLUN
0568  05524 010072         AND B77
0569  05525 050112         CPA SYSTY      STORING FRO, KEYBOARD?
0570  05526 002001         RSS            YES, CHECK :OF & :AB
0571  05527 027457R        JMP SPRC3      NO, CAN STORE EVERYTHING,
0572*
0573  05530 162046R        LDA STRDB,I    GET WORD 1
0574  05531 010074         AND B377       MASK OUT :
0575  05532 001727         ALF,ALF      LEFT JUSTIFY IT
0576  05533 070001         STA B          SAVE A
```

```
0577  05534 062046R        LDA STRDB
0578  05535 002004         INA              POINT TO 2ND WORD
0579  05536 160000         LDA A,I          GET 2ND WORD
0580  05537 010075         AND B1774      MASK OUT 2ND CHAR
0581  05540 001727         ALF,ALF        RIGHT JUSTIFY
0582  05541 030001         IOR B          MAKE INTO 1 WORD FOR COMPARING
0583  05542 053203R        CPA AOF        :OFF?
0584  05543 026613R        JMP OFF        YES, DON'T STORE IT
0585  05544 053142R        CPA CHARS+2    :AB?
0586  05545 027315R        JMP EJOBX+1     YES, ABORT IT
0587  05546 027457R        JMP SPRC3
0588*
0589*      ****************************************
0590*      *     STORE ABSOLUTE BINARY PROGS.     *
0001*      ****************************************
0002*
0003  05547 063643R STORX  LDA INLUN
0004  05550 010072         AND B77          GET LUN ONLY
0005  05551 043367R        ADA B2300        SET CONTROL WORD FOR ABSOLUTE RE
0006  05552 073643R        STA INLUN
0007  05553 002004         CLA,INA
0008  05554 073647R        STA RBINF        SET BIN FLAG FOR DISCW & STORD
0009  05555 073650R        STA ABINF         SET ABS. BINARY FLAG
0010  05556 063236R STRX   LDA B400         MAX. ABS. REC. LEN = 400 OCT.
0011  05557 067762R        LDB BFFAD
0012  05560 016026R        JSB STORD        READ A RECORD
0013  05561 027602R        JMP STRX1        END OF TAPE
0014*
0015*           *   CHECKSUM     *
0016*
0017  05562 044051         ADB .-2          ON EXIT,B=# WORDS IN RECORD
0018  05563 007004         CMB,INB
0019  05564 076426R        STB TEMP         MAKE IT A COUNTER
0020  05565 067762R        LDB BFFAD
0021  05566 006004         INB              B=LOC OF 2ND WORD IN RECORD
0022  05567 002400         CLA              INITIALIZE CHECKSUM
0023  05570 140001         ADA B,I          SUM IT UP.
0024  05571 006004         INB
0025  05572 036426R        ISZ TEMP         DONE?
0026  05573 027570R        JMP *-3          NO, ADD IN NEXT
0027  05574 164001         LDB B,I          GET CHECKSUM
0028  05575 054000         CPB A            SAME?
0029  05576 002001         RSS
0030  05577 027154R        JMP STRR2        NO, CHECKSUM ERROR
0031  05600 016153R        JSB DISCW        YES, STORE A REC. TO FILE
0032  05601 027556R        JMP STRX       GO GET NEXT REC
0033*
0034  05602 062413R STRX1  LDA MLOCN
0035  05603 053634R        CPA INB63      MLOCN AT ENT OF INBUF?
0036  05604 027611R        JMP STRX2      YES
0037  05605 016203R        JSB DWRD       NO, CONTINUE SETTING ZEROS
0038  05606 002400         CLA
0039  05607 172413R        STA MLOCN,I
0040  05610 027602R        JMP STRX1
0041  05611 016203R STRX2  JSB DWRD
0042  05612 027625R        JMP XSTOR
```

```
0044*                ***************************************************
0045*                * NUSET - WRITE A SECTOR FROM INBUF TO THE NEXT *
0046*                *         SECTOR IN THE USER FILE.                *
0047*                *       - TRACKS ARE SWITCHED AUTOMATICALLY.      *
0048*                *       - BAD TRACKS ARE IGNORED IF ENCOUNTERED.*
0049*                *  NEWTS = THE TRACK AND SECTOR TO BE WRITTEN.    *
0050*                ***************************************************
0051  05613 000000  NUSET NOP
0052  05614 063640R       LDA NEWTS
0053  05615 006404        CLB,INB         WRITE 1 SECTOR
0054  05616 016253R       JSB WDISC
0055  05617 012413R LNBUF DEF INBUF
0056  05620 073640R       STA NEWTS       SAVE NEW TRK/SECTOR POINTER
0057  05621 127613R       JMP NUSET,I     RETURN
0058*
0059*                ***********************************************
0060*                * STRAB - RESERVE ROOM IN THE USER FILE   *
0061*                *         FOR ASCII(A) AND BINARY(B) SETS.*
0062*                ***********************************************
0063  05622 062774R STRAB LDA ENTLN  ** ENTER STRAB ROUTINE HERE *******
0064*                     NEWTS IS IN 'B'
0065  05623 017114R       JSB STRAK       SKIP TO NEW TRK/SECTOR ORIGIN
0066  05624 077640R       STB NEWTS
0067*
0068  05625 063645R XSTOR LDA SAVML       RESTORE DICT. POINTER(MLOCN)
0069  05626 072413R       STA MLOCN
0070  05627 017646R       JSB DCSTR       GO STOR DIRECTORY ENTRY
0071  05630 026306R       JMP RN8         EXIT TO NEXT JOB STATEMENT
0072*
0073  05631 000000  CTEST NOP            'STORE' TYPE OR WORD COUNT
0074  05632 000000  CDCNT NOP            REL.INBUF LOCN. OR CARD SEQ. CNT
0075  05633 012412R MINBF DEF INBUF-1
0076  05634 012612R INB63 DEF INBUF+127
0077  05635 012613R DNBUF DEF INBUF+128
0078  05636 000000  ENTYP NOP            ENTRY TYPE
0079  05637 000000  ENTSC NOP            START TRACK/SECTOR OF ENTRY
0080  05640 000000  NEWTS NOP            START TRK/SECT FOR NEXT DISC J/O
0081  05641 000000  NEWSC NOP            CURR. ENTRY SECTOR COUNTER
0082  05642 000000  INLEN NOP            NO. OF WORDS READ FROM LUN
0083  05643 000000  INLUN NOP            L.U.N.
0084  05644 000000  ENDFL NOP            FLAG
0085  05645 000000  SAVML NOP            SAVE  MLOCN
0086*
0087*                ***********************************************
0088*                * DCSTR - EXIT PROCESSING FOR ;STORE AND ;EDIT*
0089*                *     SET UP AND STORE THE DIRECTORY ENTRY      *
0090*                ***********************************************
0091  05646 000000  DCSTR NOP
0092  05647 062427R       LDA DICND
0093  05650 003004        CMA,INA
0094  05651 042413R       ADA MLOCN
0095  05652 040057        ADA .+4
0096  05653 067636R       LDB ENTYP       GET ENTRY TYPE
0097  05654 044045        ADB .-6
0098  05655 006020        SSB             11-WORD ENTRY?
0099  05656 040061        ADA .+6          -YES
```

```
0100  05657 002020         SSA             ROOM FOR NEW ENTRY?
0101  05660 027673R        JMP XSTR3       YES - GO TO CONTINUE
0102  05661 003400         CCA
0103  05662 172413R        STA MLOCN,I
0104  05663 016656R        JSB WSECT       WRITE CURRENT DICTIONERY SECTOR
0105  05664 002004         INA
0106  05665 072414R        STA CURTS       CURTS SET TO REACT IN WSECT OK
0107  05666 010074         AND B377
0108  05667 050054         CPA .+1
0109  05670 027753R        JMP XSTOV       YES - OVERFLOW
0110  05671 062446R        LDA DICAD
0111  05672 072413R        STA MLOCN       RESET MLOCN TO START OF BUFFER.
0112  05673 062416R XSTR3  LDA NMBUF
0113  05674 172413R        STA MLOCN,I     *
0114  05675 036413R        ISZ MLOCN       *
0115  05676 062417R        LDA NMBUF+1     * STORE FILENAME INTO ENTRY * **
0116  05677 172413R        STA MLOCN,I     *
0117  05700 036413R        ISZ MLOCN       *
0118  05701 062420R        LDA NMBUF+2     * * * * * *
0119  05702 043636R        ADA ENTYP
0120  05703 172413R        STA MLOCN,I     STORE TYPE INTO ENTRY
0121  05704 036413R        ISZ MLOCN
0122  05705 063637R        LDA ENTSC       STORE STARTING TRACK/SECTOR
0123  05706 172413R        STA MLOCN,I
0124  05707 036413R        ISZ MLOCN
0125  05710 062774R        LDA ENTLN       STORE ENTRY LENGTH(IN SECTOR)
0126  05711 002003         SZA,RSS         ANYTHING STORED?
0127  05712 127646R        JMP DCSTR,I     NO..    EXIT
0128  05713 172413R        STA MLOCN,I
0129  05714 036413R        ISZ MLOCN
0130  05715 063636R        LDA ENTYP
0131  05716 040045         ADA .-6
0132  05717 002021         SSA,RSS         ENTRY COMPLETE?
0133  05720 027731R        JMP XSTR5        -YES
0134  05721 062416R        LDA DRNXT        -NO, 11-WORD ENTRY
0135  05722 040060         ADA .+5
0136  05723 066413R        LDB MLOCN
0137  05724 017461R        JSB WMOVE       MOVE 6 MORE WORDS
0138  05725 000006         DEC 6
0139  05726 066413R        LDB MLOCN
0140  05727 044061         ADB .+6
0141  05730 076413R        STB MLOCN       UPDATE MLOCN
0142  05731 063640R XSTR5  LDA NEWTS
0143  05732 016003R        JSB SETNX       SET NEXT AVAIL T/S
0144  05733 062413R        LDA MLOCN
0145  05734 052427R        CPA DICND       WAS SECTOR FILLED TO END?
0146  05735 027742R        JMP XSTR7       YES - GO FIX
0147  05736 006400  XSTR6  CLB             NO..
0148  05737 176413R        STB MLOCN,I     SET END OF DICTIONARY
0149  05740 016656R        JSB WSECT
0150  05741 127646R        JMP DCSTR,I     RETURN
0151*
0152  05742 016656R XSTR7  JSB WSECT       WRITE THE FULL SECTOR
0153  05743 002004         INA
0154  05744 072414R        STA CURTS
0155  05745 010074         AND B377
```

```
0156  05746 050054          CPA .+1
0157  05747 127646R         JMP DCSTR,I    YES - GO TO EXIT PROC
0158  05750 062446R         LDA DICAD
0159  05751 072413R         STA MLOCN
0160  05752 027736R         JMP XSTR6
0161*
0162  05753 064065  XSTOV    LDB .+10       DICTIONARY OVERFLOW EXIT
0163  05754 063756R         LDA *+2
0164  05755 027314R         JMP EJOBX      GO PRINT 'DIC OV' AND ABORT
0165  05756 005757R         DEF *+1
0166  05757 042111          ASC 10,DICTIONARY OVERFLOW.
```

```
0168*                ****************************************
0169*                * FNUND - PRINT'FILENAME UNDEFINED' *
0170*                ****************************************
0171   05771 000000  FNUND NOP
0172   05772 062420R       LDA NMBUF+2
0173   05773 043574R       ADA B40        40B
0174   05774 072420R       STA NMBUF+2    STORE A BLANK IN 6TH CHAR.
0175   05775 064063        LDB .+8
0176   05776 062415R       LDA NMBUF-1
0177   05777 072274R       STA TEMP1    SAVE A & B IN CASE OF LISTING ERR
0178   06000 076276R       STB TEMP2    ON LIST DEV.
0179   06001 016701R       JSB ERLST
0180   06002 127771R       JMP FNUND,I
0181*
0182*                ******************************************
0183*                * PCHEK - CHECK FOR 'P' BIT IN A DIREC- *
0184*                *         TORY ENTRY(SET BY LOADER).     *
0185*                *  IF PRESENT, WRITE ENTRY BACK TO DISC *
0186*                *  AFTER CLEAR IS EXCUTED.              *
0187*                ******************************************
0188   06003 000000  PCHEK NOP
0189   06004 066413R       LDB MLOCN      B = START ENTRY
0190   06005 044055        ADB .+2        B POINTS AT ENTRY TYPE WORD
0191   06006 160001        LDA B,I
0192   06007 001727        ALF,ALF        P BIT IN SIGN POSITION
0193   06010 002021        SSA,RSS        IS IT THERE?
0194   06011 126003R       JMP PCHEK,I    NO - LEAVE ROUTINE
0195*
0196   06012 001665        ELA,CLE,ERA    YES - CLEAR 'P' FROM ENTRY
0197   06013 001727        ALF,ALF
0198   06014 170001        STA B,I        RESTORE ENTRY TYPE WORD
0199   06015 163602R       LDA PMTBL,I    IF CURRENT DIRECTIVE
0200   06016 053164R       CPA CHARS+20     IS A PURGE COMMAND
0201   06017 026022R       JMP PTEMP          GO TO DELETE CURRENT ENTRY.
0202   06020 016656R WTEMP JSB WSECT      GO WRITE ENTRY BACK INTO DICT.
0203   06021 126003R       JMP PCHEK,I    RETURN
0204   06022 162413R PTEMP LDA MLOCN,I    GET 1ST 2 CHARACTERS OF FILE NME
0205   06023 010075        AND B1774      ZERO 2ND CHARACTER
0206   06024 172413R       STA MLOCN,I    STORE BACK INTO DIRECTORY ENTRY
0207   06025 026020R       JMP WTEMP      GO WRITE IT BACK TO DISC.
0208*
0209*                ******************************************************
0210*                * STORD - READ  FROM INPUT L,U,N; A = WORD COUNT *
0211*                *  L+1 EXIT = END OF FILE          B = BUFFER ORG. *
0212*                *  L+2 EXIT IS NORMAL; STLEN = NO. OF WORDS MOVED *
0213*                ******************************************************
0214   06026 000000  STORD NOP
0215   06027 073642R       STA INLEN      SET BUFFER LENGTH
0216   06030 076046R       STB STRDB
0217   06031 006404        CLB,INB        B=1 (FOR INPUT LUN)
0218   06032 063643R       LDA INLUN
0219   06033 050054        CPA .+1        IS IT THE TTY?
0220   06034 043236R       ADA B400       YES, SET IT TO ECHO INPUT CHARS.
0221   06035 072152R       STA LUNIT      SET INTO THE LUN
0222   06036 072603R       STA SAVEA
0223   06037 016434R       JSB LUCHK      CHECK STATUS OF LUN
```

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0224  06040 016570R        JSB NULCK
0225  06041 126026R        JMP STORD,I
0226  06042 016001X        JSB EXEC
0227  06043 006050R        DEF *+5
0228  06044 000052         DEF .-1          -1 = READ
0229  06045 006152R        DEF LUNIT         CONTROL WORD
0230  06046 000000  STRDB  NOP              L(BUFFER)
0231  06047 005642R        DEF INLEN         BUFFER LENGTH
0232  06050 012360R        AND B240
0233  06051 002002         SZA               END OF TAPE/FILE/ETC.?
0234  06052 026121R        JMP ASKER         YES - GO SEE IF THERE'S MORE.
0235  06053 162046R        LDA STRDB,I
0236  06054 052146R        CPA DBCOL         END OF INPUT? (1ST 2 CHARS = ::)
0237  06055 026105R        JMP COLTS
0238  06056 006003  NOTCO  SZB,RSS
0239  06057 026031R        JMP STORD+3       YES, IGNORE RECORD
0240  06060 077110R        STB STLEN         SAV STATEMENT LENGTH
0241  06061 036026R        ISZ STORD
0242  06062 010074         AND B377          CLEARS A IF BIN FILE IN..
0243  06063 067647R        LDB RBINF         B=0 IF SOURCE INPUT REQUEST
0244  06064 053647R        CPA RBINF         SORCE READ ON REL BIN REQ.?
0245  06065 026071R        JMP *+4           YES, ERROR
0246  06066 006002         SZB               REL. BINARY REQUESTED?
0247  06067 002003         SZA,RSS           YES, WAS SOURCE READ INSTEAD?
0248  06070 026103R        JMP STRDX          NO, IT'S OK.
0249  06071 064061         LDB .+6           START ERROR SETUP
0250  06072 062074R        LDA *+2
0251  06073 026752R        JMP PMISS+2       GO TO PRINT AND RE-READ..
0252  06074 006076R        DEF *+1
0253  06075 053522         ASC 6,WRONG INPUT!
0254  06103 067110R STRDX  LDB STLEN         RESET B TO = STATEMENT LENGTH.
0255  06104 126026R        JMP STORD,I       EXIT L+2 - NORMAL
0256*
0257*          *   IF STORE SOURCE WITH COLON OPTION, ::: IS ENDFILE  0*
0258*
0259  06105 072603R COLTS  STA SAVEA         SAVE A REGISTER
0260  06106 063365R        LDA COLF
0261  06107 002003         SZA,RSS          COLON FLAG ON?
0262  06110 126026R        JMP STORD,I      NO, END OF FILE
0263  06111 062046R        LDA STRDB         YES, CHECK IF TRIPLE COLON
0264  06112 002004         INA               POINT TO 2ND WORD
0265  06113 160000         LDA A,I           GET 2ND WORD
0266  06114 010075         AND B1774         MASK OUT 2ND CHAR
0267  06115 052342R        CPA B35K          COLON?
0268  06116 126026R        JMP STORD,I       YES, END OF FILE
0269  06117 062603R        LDA SAVEA         RESTORE A REG.
0270  06120 026056R        JMP NOTCO         NO, CONTINUE
0271*
0272*              * ASKER - CHECKS FOR END OF INPUT ON TELETYPE *
0273*              *         ASKS 'DONE ?'                      *
0274*              *   REPLY TYPED IN BY USER                   *
0275*              *         'YES' OR 'NO' OTHER REPLYS LOOP BACK*

0277  06121 017142R ASKER  JSB UPDVC         SET DEVICE AVAILABLE
0278  06122 062141R ASKX   LDA ADONE
0279  06123 064056         LDB .+3
```

```
0280   06124 017356R          JSB ERRDG      WRITE 'DONE?' ON TTY

0282   06125 016001X          JSB EXEC       READ REPLY FROM TTY
0283   06126 006133R          DEF *+5
0284   06127 000052           DEF ,-1
0285   06130 006145R          DEF B401       CONTROL WORD=401B
0286   06131 004426R          DEF TEMP       INPUT BUFFER
0287   06132 000054           DEF ,+1        = 1 WORD
0288   06133 062426R          LDA TEMP
0289   06134 053215R          CPA ANO        'NO'
0290   06135 026031R          JMP STORD+3    "NO" GO BACK AND RE-READ
0291   06136 052147R          CPA AYES
0292   06137 126026R          JMP STORD,I    "YES" TAKE END FILE(L+1) RETURN
0293   06140 026122R          JMP ASKX       WRONG ANSWER - ASK AGAIN

0295   06141 006142R ADONE    DEF *+1
0296   06142 042117           ASC 3,DONE?
0297   06145 000401   B401    OCT 401
0298   06146 035072   DBCOL   ASC 1,:
0299   06147 054505   AYES    ASC 1,YE
0300   06150 000000   TERMS   NOP            NO.OF WORDS TO TRANSFER
0301   06151 000000   SBUFF   NOP            POSITION IN TRANSFER BUFFER
0302   06152 000000   LUNIT   NOP            INPUT CONTROL WORD(LUN)
```

```
0304*              ***************************************************
0305*              * DISCW/DWRD WRITES ONE SOURCE STATEMENT INTO THE *
0306*              *   DISC INPUT BUFFER, WHEN THE BUFFER IS FILLED  *
0307*              *   IT IS WRITTEN ONTO THE DISC.                  *
0308*              * PARAMETERS:                                     *
0309*              *   INBUF = START OF 64(128 ACT.)WORD DISC BUFFER *
0310*              *   MLOCN = POINTER TO CURRENT LOCN IN INBUF      *
0311*              *   NEWTS = TRACK/SECTOR TO BE WRITTEN(CURRENT)   *
0312*              *   STLEN =# WORDS IN STATEMENT(PLACED IN WORD 1  *
0313*              *           OF EACH STATEMENT; IN UPPER HALF)     *
0314*              *   BFFAD = CONTAINS FWA OF STATE,BUFFER(BUFFR)   *
0315*              * INITIALLY:                                      *
0316*              *   MLOCN = A(INBUF-1)                            *
0317*              *   ENTLN = 0(COUNTS # OF SECTORS WRITTEN)        *
0318*              ***************************************************
0319  06153 000000  DISCW NOP
0320  06154 016203R       JSB DWRD
0321  06155 063110R       LDA STLEN     GET # WORDS IN STATEMENT
0322  06156 067650R       LDB ABINF      ABINF=1 IF ABSOLUTE BINARY
0323  06157 006002        SZB
0324  06160 040050        ADA .-3       FIX UP ABS BIN REC LENGTH
0325  06161 001727        ALF,ALF
0326  06162 172413R       STA MLOCN,I   SET IT INTO 1ST WORD OF BUFFER
0327  06163 063110R       LDA STLEN    GET # WORDS TRANSFERRED.
0328  06164 003004        CMA,INA
0329  06165 043647R       ADA RBINF     REDUCES COUNT BY 1 IF RELOC.BIN.
0330  06166 072150R       STA TERMS     SET WORD COUNTER
0331  06167 002003        SZA,RSS       WORD COUNT=0?
0332  06170 126163R       JMP DISCW,I   YES - TAKE EXIT
0333  06171 063762R       LDA BFFAD
0334  06172 043647R       ADA RBINF     BUMP FWA BY 1 IF REL BIN.
0335  06173 072151R       STA SBUFF     SET FWA OF 'BUFFR'
0336  06174 016203R DSCW2 JSB DWRD
0337  06175 166151R       LDB SBUFF,I   STORE A WORD
0338  06176 176413R       STB MLOCN,I
0339  06177 036151R       ISZ SBUFF
0340  06200 036150R       ISZ TERMS     ARE WE DONE?
0341  06201 026174R       JMP DSCW2     NO
0342  06202 126153R       JMP DISCW,I   EXIT ROUTINE
0343*
0344*                * DWRD BUMPS 'MLOCN'; IF INBUF IS FULL IT IS   *
0345*                *  WRITTEN ONTO THE DISC AT TRK/SECTOR 'NEWTS',*
0346*                *  AFTER WRITING 'ENTLN'(SECTOR COUNTER) IS    *
0347*                *  BUMPED AND 'MLOCN' IS POINTED TO 'INBUF'.   *
0348*
0349  06203 000000  DWRD  NOP
0350  06204 036413R       ISZ MLOCN
0351  06205 062413R       LDA MLOCN
0352  06206 053635R       CPA DNBUF     IS INBUF FILLED?
0353  06207 002001        RSS
0354  06210 126203R       JMP DWRD,I    NO - RETURN
0355  06211 017613R       JSB NUSET     YES - WRITE IT TO THE DISC
0356  06212 036774R       ISZ ENTLN     BUMP SECTOR COUNTER
0357  06213 063617R       LDA LNBUF
0358  06214 072413R       STA MLOCN     RESET MLOCN TO START OF INBUF
0359  06215 126203R       JMP DWRD,I
```

```
0361*              ************************************************************
0362*              * DISCR/DRORD READS A SOURCE STATEMENT FROM THE DISC *
0363*              *    OUTPUT BUFFER(INBUF). WHEN THE BUFFER IS EX-    *
0364*              *    HAUSTED ANOTHER SECTOR IS READ FROM THE DISC.   *
0365*              * PARAMETERS:                                        *
0366*              *    INBUF = START OF 64(128)WORD DISC BUFFER.       *
0367*              *    MLOCN = POINTER TO CURRENT LOC'N IN 'INBUF'.    *
0368*              *    CURTS = CURRENT TRK/SECTOR TO BE READ FROM DISC.*
0369*              *    STLEN = # OF WORDS IN STATEMENT READ FROM INBUF.*
0370*              *    BFFAD = FWA OF BUFFER CONTAINING THE STATEMENT. *
0371*              *    ENTLN = # OF SECTORS IN SOURCE FILE             *
0372*              * INITIALLY:                                         *
0373*              *    MLOCN = A(INBUF+64); THIS CAUSES THE 1ST READ.  *
0374*              *    ENTLN = -(SECTORS+1)                            *
0375*              * EXITS: L+1=END OF FILE(ENTLN OR STLEN = 0)         *
0376*              *        L+2= NORMAL WITH A = STLEN                  *
0377*              ************************************************************
0378  06216 000000  DISCR NOP
0379  06217 016250R       JSB DRORD     GO GET THE 1ST WORD(= # OF WRDS)
0380  06220 001727        ALF,ALF
0381  06221 073110R       STA STLEN     SAVE STATEMENT LENGTH
0382  06222 002003        SZA,RSS       IS IT=0
0383  06223 126216R       JMP DISCR,I   YES-END OF FILE EXIT
0384  06224 067650R       LDB ABINF      ABSOLUTE BINARY?
0385  06225 006002        SZB
0386  06226 040056        ADA .+3     YES, FIX UP REC. LENGTH
0387  06227 003004        CMA,INA
0388  06230 072150R       STA TERMS     SET WORD COUNTER
0389  06231 063762R       LDA BFFAD
0390  06232 072151R       STA SBUFF     SET START OF 'BUFFR'
0391  06233 063647R       LDA RBINF
0392  06234 002003        SZA,RSS       DUMPING REC,BIN,?
0393  06235 026240R       JMP DSCR2     NO
0394  06236 063110R       LDA STLEN     YES - SETUP TO DUMP OUT
0395  06237 001737        ALF,SLA,ALF   ENTRY LENGTH AS 1ST WORD
0396  06240 016250R DSCR2 JSB DRORD
0397  06241 172151R       STA SBUFF,I
0398  06242 036151R       ISZ SBUFF
0399  06243 036150R       ISZ TERMS     HAVE WE FINISHED THE STATEMENT?
0400  06244 026240R       JMP DSCR2     NO
0401  06245 036216R       ISZ DISCR     YES - RETURN TO MAIN
0402  06246 063110R       LDA STLEN     SETS A NON ZERO
0403  06247 126216R       JMP DISCR,I
0404*
0405*                 * DRORD PULLS A WORD FROM INBUF; WHEN INBUF IS EX- *
0406*                 *    HAUSTED A NEW SECTOR IS READ FROM THE DISC.   *
0407*                 *    BEFORE THE READ ENTLN IS BUMPED, IF=0 THEN THE*
0408*                 *    FILE IS FINISHED AND EOFIL IS SET =0          *
0409*
0410  06250 000000  DRORD NOP
0411  06251 062413R       LDA MLOCN
0412  06252 053635R       CPA DNBUF     MLOCN AT END OF INBUF?
0413  06253 002001        RSS           YES
0414  06254 026263R       JMP DWDS      NO - GO GET THE NEXT WORD
0415  06255 063617R       LDA LNBUF
0416  06256 072413R       STA MLOCN     SET MLOCN TO START OF INBUF
```

```
0417  06257 036774R        ISZ ENTLN      ARE WE AT THE END?
0418  06260 002001         RSS            NO - CONTINUE
0419  06261 126216R        JMP DISCR,I    YES - TAKE L+1 EXIT FROM DISCR
0420  06262 016425R DWD4   JSB RSECT
0421  06263 162413R DWD5   LDA MLOCN,I    GET NEXT WORD FROM BUFFER
0422  06264 036413R        ISZ MLOCN      BUMP POINTER
0423  06265 126250R        JMP DRORD,I    EXIT TO DISCR
```

```
0425*                ***************************************************
0426*                * LIST = LIST SOURCE STATEMENTS (TYPE S) *       *
0427*                *      = SYSTEM DIRECTORY ENTRY (TYPE X) *       *
0428*                *      = USER DIRECTORY ENTRIES (TYPE U) *       *
0429*                * FORMAT IS:                                     *
0430*                *NAME TYPE #SECS TRKORG PROG/B,P,LIMITS MEM,ORG,*
0431*                ***************************************************
0432  06266 016655R LIST  JSB TYPES      GO GET 'TYPE' CHARACTER
0433*                * ON EXIT THE 'TYPE' CHAR IS IN 'CTEST'
0434  06267 017127R       JSB ASCDC      GO GET L,U,N,
0435  06270 026750R       JMP PMISS      ERROR = NO PARAMETER
0436  06271 002103        CLE,SZA,RSS    IS VALUE = 0?
0437  06272 026514R       JMP LUCH3  ZERO = ILL LUN
0438  06273 073105R       STA LSTLN      SET LOG,UNIT IN LIST DRIVER
0439  06274 067631R       LDB CTEST      GET LIST TYPE
0440  06275 062771R       LDA USDIR
0441  06276 057730R       CPB B123       SOURCE?
0442  06277 026310R       JMP LIST5      YES
0443  06300 056421R       CPB B125       USER DIREC,?
0444  06301 026310R       JMP LIST5      YES
0445  06302 060114        LDA SYSDR
0446  06303 056422R       CPB B130       SYSTEM DIREC?
0447  06304 002301        CCE,RSS         =YES
0448  06305 026737R       JMP PILLG      NO = ILLEGAL PARAMETER
0449  06306 066325R       LDB LUN2
0450  06307 076451R       STB FLUN       SET DISC = LUN2
0451  06310 072420R LIST5 STA LIST6      SET TRK/SECTR OF CORRESP DIRECT,
0452  06311 060161        LDA CUDSC
0453  06312 002040        SEZ
0454  06313 060155        LDA SYSSC
0455  06314 072003R       STA PCHEK
0456  06315 063105R      LDA LSTLN     EJECT A PAGE BEFORE LISTING
0457  06316 017515R       JSB PGEJ
0458  06317 062571R       LDA LISTH
0459  06320 067631R       LDB CTEST
0460  06321 057730R       CPB B123       IS THIS A SOURCE LISTING?
0461  06322 026325R       JMP *+3        YES, SKIP HEADER PRINTOUT
0462  06323 066722R       LDB D36
0463  06324 017150R       JSB LSTIO      GO LIST THE HEADER
0464  06325 037644R       ISZ PMLOC
0465  06326 037644R       ISZ PMLOC
0466  06327 063644R       LDA PMLOC
0467  06330 016542R       JSB NXSET
0468  06331 063631R       LDA CTEST      GE T LIST TYPE,
0469  06332 167644R       LDB PMLOC,I
0470  06333 006002        SZB            IS A FILENAME PRESENT?
0471  06334 026365R       JMP LIST4      YES = GO LIST GIVEN FILENAMES
0472  06335 053730R       CPA B123       SOURCE LISTING?
0473  06336 026750R       JMP PMISS      YES, GO TO ERROR DIAGNOSTIC EXIT
0474  06337 062003R       LDA PCHEK
0475  06340 002300  LIST1 CCE
0476  06341 016671R       JSB RPTSC
0477  06342 062420R       LDA LIST6      NO=LIST ALL DIREC,(A=TRK/SECTR)
0478  06343 016452R       JSB READ1      INIT CURTS/MLOCN; READ SECTR 1,
0479  06344 026347R       JMP *+3
0480  06345 016716R LIST2 JSB LSENT      LIST AN ENTRY
```

```
0481  06346 016431R        JSB GETNX
0482  06347 162413R        LDA MLOCN,I
0483  06350 002002         SZA               IF A=0 WE'RE DONE.
0484  06351 026345R        JMP LIST2         GO LIST THE CURRENT ENTRY
0485  06352 016423R        JSB SCTST
0486  06353 026340R        JMP LIST1
0487  06354 016365R LIST9  JSB RESET
0488  06355 063631R        LDA CTEST
0489  06356 052421R        CPA B125
0490  06357 026306R        JMP RNS           DONE = EXIT
0491  06360 000240  B240    OCT 240           =CLE= INSTRUCTION
0492  06361 017771R        JSB FNUND
0493  06362 017025R        JSB ERMES       LIST ERR MESS ON LIST DEV IF BAT
0494  06363 026760R        JMP RNSY      KEYBOARD MODE
0495  06364 026306R        JMP RNS       BATCH MODE = DON'T ABORT.
0496*
0497  06365 053730R LIST4  CPA B123
0498  06366 026375R        JMP LIST8
0499  06367 002300         CCE
0500  06370 060161         LDA CUDSC
0501  06371 066451R        LDB FLUN
0502  06372 056325R        CPB LUN2          ;LI,X?
0503  06373 062003R        LDA PCHEK          =YES, SET SYSTEM SUBCHNL
0504  06374 016671R        JSB RPTSC
0505  06375 167644R LIST8  LDB PMLOC,I
0506  06376 017625R LIST3  JSB PMNXT
0507  06377 016327R        JSB DIRSR
0508  06400 006420R        DEF LIST6
0509  06401 002302         CCE,SZA           WAS FILENAME DEFINED?
0510  06402 026410R        JMP LIST7          =YES
0511  06403 063631R        LDA CTEST
0512  06404 053730R        CPA B123
0513  06405 026415R        JMP BGLBL
0514  06406 017771R        JSB FNUND
0515  06407 002001         RSS
0516  06410 016716R LIST7  JSB LSENT
0517  06411 037644R        ISZ PMLOC
0518  06412 167644R        LDB PMLOC,I
0519  06413 006002         SZB               NO = IS ANOTHER PARAM THERE?
0520  06414 026376R        JMP LIST3         YES = CONTINUE
0521  06415 016423R BGLBL  JSB SCTST
0522  06416 063631R        LDA CTEST
0523  06417 026365R        JMP LIST4
0524*
0525  06420 000000  LIST6  NOP               SAVE DICTIONARY TRK/SECTOR
0526  06421 000125  B125    OCT 125
0527  06422 000130  B130    OCT 130
0528*
0529  06423 000000  SCTST  NOP
0530  06424 062451R        LDA FLUN
0531  06425 052325R        CPA LUN2
0532  06426 026306R        JMP RNS
0533  06427 016553R        JSB NXTSC
0534  06430 026354R        JMP LIST9
0535  06431 062606R        LDA SAVPM
0536  06432 073644R        STA PMLOC
```

```
0537  06433 062771R        LDA USDIR
0538  06434 072420R        STA LIST6
0539  06435 060161         LDA CUDSC
0540  06436 126423R        JMP SCTST,I
```

```
0542*                ***********************************************
0543*                * SLIST - LIST SOURCE STAMENTS AS INDICATED *
0544*                * FORMAT * ;LIST,S,LUN,M,N                  *
0545*                ***********************************************
0001  06437 000043  SLIST DEC 35          -CLE- INSTRUCTION
0002  06440 060161         LDA CUDSC
0003  06441 052404R        CPA SAVSC
0004  06442 002001         RSS
0005  06443 016671R        JSB RPTSC
0006  06444 037644R        ISZ PMLOC
0007  06445 167644R        LDB PMLOC,I
0008  06446 062457R        LDA INBUF+36
0009  06447 050064         CPA .+11B       SOURCE FILE?
0010  06450 002001         RSS             YES
0011  06451 026607R        JMP FNILL       NO - ILLEGAL FILENAME
0012  06452 002404         CLA,INA         SET A=1
0013  06453 073632R        STA CDCNT
0014  06454 006003         SZB,RSS         IS 1ST LIMIT PRESENT?
0015  06455 026462R        JMP SLST1       NO - GO SET FOR COMPLETE FILE
0016  06456 064041         LDB .-10
0017  06457 017217R        JSB ASCNV
0018  06460 037644R        ISZ PMLOC       NO
0019  06461 037644R        ISZ PMLOC
0020  06462 073641R SLST1  STA NEWSC       SAVE STARTING LOCN
0021  06463 003400         CCA             A = -1
0022  06464 167644R        LDB PMLOC,I
0023  06465 006003         SZB,RSS         ANOTHER PARAMETER?
0024  06466 026476R        JMP SLST2       NO
0025  06467 064041         LDB .-10
0026  06470 017217R        JSB ASCNV       CONVERT UPPER LIMIT
0027  06471 067641R        LDB NEWSC       GET START
0028  06472 007004         CMB,INB
0029  06473 044000         ADB A
0030  06474 006020         SSB             IS START BEYOND FINISH?
0031  06475 026557R        JMP SLSTE       YES - RANGE ERROR
0032  06476 073644R SLST2  STA ENDFL       SAVE UPPER LIMIT OF LIST
0033  06477 063640R        LDA NEWTS
0034  06500 072414R        STA CURTS       SET STARTING TRK/SECTOR FOR READ
0035  06501 063635R        LDA DNBUF
0036  06502 072413R        STA MLOCN       INITIALIZE MLOCN
0037  06503 062774R        LDA ENTLN
0038  06504 003000         CMA
0039  06505 072774R        STA ENTLN       ENTLN = -(#SECTRS+1)
0040  06506 016216R SLST3  JSB DISCR       GO READ A STATEMENT
0041  06507 026554R        JMP SLST8       END-OF-FILE EXIT
0042  06510 063632R        LDA CDCNT
0043  06511 053641R        CPA NEWSC       DO WE LIST THE CURRENT STATE,?
0044  06512 002001         RSS             YES
0045  06513 026532R        JMP SLST4       NO - GO START FOR NEXT STATEMENT
0046  06514 017137R        JSB CNDEC       CONVERT A TO   DECIMAL DIGITS
0047  06515 077656R        STB BUFFR-3     STORE SEQ, NO
0048  06516 073657R        STA BUFFR-2
0049  06517 062412R        LDA BLNKS
0050  06520 073660R        STA BUFFR-1
0051  06521 067110R        LDB STLEN
0052  06522 044056         ADB .+3         B = STATE, LENGTH
```

```
0053  06523 062654R        LDA STBUF      A = BUFFER ORG.(STBUF)
0054  06524 017150R        JSB LSTIO      LIST THE STATEMENT
0055  06525 063632R        LDA CDCNT
0056  06526 053644R        CPA ENDFL      HAVE WE LISTED THE LAST LINE?
0057  06527 026534R        JMP SLST7      YES - GO PRINT 'LIST END'
0058  06530 002004         INA
0059  06531 073641R        STA NEWSC
0060  06532 037632R SLST4  ISZ CDCNT      NO, CONTINUE
0061  06533 026506R        JMP SLST3
0062  06534 064064  SLST7  LDB .+9
0063  06535 062540R        LDA **+3
0064  06536 017150R        JSB LSTIO
0065  06537 026306R        JMP RNS        GO GET NEXT STATEMENT
0066  06540 006541R        DEF **+1
0067  06541 025052         ASC 11,**** LIST END ****
0068*
0069  06554 063632R SLST8  LDA CDCNT
0070  06555 053641R        CPA NEWSC      HAVE WE LISTED ANY STATEMENTS.
0071  06556 026534R        JMP SLST7      YES - GO BACK TO NORMAL EXIT
0072  06557 064061  SLSTE  LDB .+6        PRINT ERROR DIAGNOSTIC
0073  06560 062562R        LDA **+2
0074  06561 026752R        JMP PMISS+2
0075  06562 006563R        DEF **+1
0076  06563 046111         ASC 6,LIMIT ERROR
0077*
0078  06571 006572R LISTH  DEF **+1
0079  06572 047101         ASC 21,NAME TYPE  SCTRS  DISC ORG   PROG LIMIT
0080  06617 020102         ASC 13, B.P. LIMITS   ENTRY FWAM
0081  06634 020040         ASC 2,  PB
0082*
0083*          * INFORMATION TO BE OUTPUT UNDER HEAD(ABOVE) IN 'INBUF'
0084*          * IT IS SET UP AS SHOWN BELOW(OFFSET BY 2)
0085*
0086*+0      3   5     8   10  12    15      19    22      26      30
0087* FNAME XX  XXXX  TXXX SXX LLLLL UUUUU   LLLLL UUUUU   AAAAA   BBBBB
0088*
0089  06636 006637R ETYPE  DEF **+1
0090  06637 051522         ASC 13,SRXS  UMDRUSLB  RBSSBDADAB  ENTRY TYPES
0091*
0092  06641          LSTBL  EQU ETYPE+3   BUFFER LENGTH HERE
0093  06646          STKTS  EQU ETYPE+8   SAVE TRACK/SECTOR FOR STRAK
0094  06654 007656R STBUF  DEF BUFFR-3
0095*
0096*               ********************************************************
0097*               * TYPES - GET 1ST PARAMETER, ASSUMED TO BE 'TYPE'      *
0098*               *  -ERROR IF MISSING OR MORE THAN 1 CHARACTER.         *
0099*               *  -EXIT WITH CHARACTER IN LOWER A(UPPER=0)            *
0100*               ********************************************************
0101  06655 000000  TYPES  NOP
0102  06656 017625R        JSB PMNXT      GET ADDRESS OF 'TYPE'
0103  06657 002003         SZA,RSS        MISSING?
0104  06660 026750R        JMP PMISS      YES - GO TO PARAM MISSING DIAG.
0105  06661 017406R        JSB GETC
0106  06662 037644R        ISZ PMLOC
0107  06663 167644R        LDB PMLOC,I
0108  06664 054054         CPB .+1        ONE NON-NUMERIC CHARACTER?
```

```
0109  06665 002001         RSS             YES = EXIT WITH THE 'TYPE' IN A.
0110  06666 026737R        JMP PILLG       NO = ITS ILLEGAL = GO TO DIAG.
0111  06667 073631R        STA CTEST
0112  06670 126655R        JMP TYPE8,I
0113*
0114  06671 000000  RPTSC  NOP
0115  06672 033576R        IOR UBB60
0116  06673 001727         ALF,ALF
0117  06674 072715R        STA SCMSG+5
0118  06675 062710R        LDA SCMSG
0119  06676 064060         LDB ,+5
0120  06677 016701R        JSB ERLST
0121  06700 126671R        JMP RPTSC,I
0122*
0123  06701 000000  ERLST  NOP
0124  06702 002041         SEZ,RSS
0125  06703 026706R        JMP *+3
0126  06704 017150R        JSB LSTIO
0127  06705 126701R        JMP ERLST,I
0128  06706 017356R        JSB ERRDG
0129  06707 126701R        JMP ERLST,I
0130*
0131  01576          UBB60  EQU A0          OCT 020060
0132*
0133  06710 006711R SCMSG  DEF *+1
0134  06711 051525         ASC 5,SUBCHAN*
```

```
0136*                ************************************
0137*                * LSENT - LIST THE INFORMATION IN *
0138*                *          A DICTIONARY ENTRY.     *
0139*                ************************************
0140*
0141   06716 000000  LSENT NOP
0142   06717 063633R       LDA MINBF
0143   06720 067617R       LDB LNBUF
0144   06721 017461R       JSB WMOVE      CLEAR PRINT BUFFER
0145   06722 000044  D36    DEC 36
0146   06723 066413R       LDB MLOCN
0147   06724 077106R       STB STEST      SET CTEST = START OF ENTRY
0148   06725 163106R       LDA STEST,I    * * *
0149   06726 010074        AND B377       * IF FILE HAS BEEN PURGED (2ND C
0150   06727 002003        SZA,RSS        *   DO NOT PRINT ENTRY AND
0151   06730 126716R       JMP LSENT,I    *     RETURN.
0152   06731 163106R       LDA STEST,I    * GET FILE NAME
0153   06732 072413R       STA INBUF      *
0154   06733 037106R       ISZ STEST      *
0155   06734 163106R       LDA STEST,I    *
0156   06735 072414R       STA INBUF+1    * STORE THE FILENAME INTO
0157   06736 037106R       ISZ STEST      * THE OUTPUT BUFFER
0158   06737 163106R       LDA STEST,I    *
0159   06740 010075        AND B1774      *
0160   06741 043574R       ADA B40
0161   06742 072415R       STA INBUF+2    * * *
0162   06743 163106R       LDA STEST,I
0163   06744 010073        AND B177       GET TYPE CODE
0164   06745 072457R       STA INBUF+36   SAVE IT
0165   06746 042636R       ADA ETYPE
0166   06747 164000        LDB A,I
0167   06750 076416R       STB INBUF+3    AND SET IT INTO THE LIST BUFFER
0168   06751 163106R       LDA STEST,I
0169   06752 001727        ALF,ALF
0170   06753 067111R       LDB UPT
0171   06754 002020        SSA
0172   06755 076456R       STB INBUF+35
0173   06756 037106R       ISZ STEST
0174   06757 163106R       LDA STEST,I    PICK UP TRACK ADDRESS
0175   06760 073640R       STA NEWTS      SAVE TRK/SECTOR FOR SLIST
0176   06761 001727        ALF,ALF
0177   06762 010074        AND B377
0178   06763 017137R       JSB CNDEC      CONVERT A TO   DECIMAL DIGITS
0179   06764 072425R       STA INBUF+10
0180   06765 060001        LDA B
0181   06766 010074        AND B377
0182   06767 043113R       ADA B52K       SET 'T' (B52000)
0183   06770 072424R       STA INBUF+9    TRACK ADDRESS
0184   06771 163106R       LDA STEST,I    PICK UP SECTOR ADDRESS
0185   06772 010074        AND B377
0186   06773 017137R       JSB CNDEC      CONVERT A TO   DECIMAL DIGITS
0187   06774 072427R       STA INBUF+12
0188   06775 060001        LDA B          UPPER 2 CHARS. TO B
0189   06776 013112R       AND B2037      BLANK OUT UPPER CHARACTER
0190   06777 072426R       STA INBUF+11     SECTOR NOW SET
0191   07000 037106R       ISZ STEST
```

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0192  07001 163106R        LDA STEST,I   GET SECTOR COUNT
0193  07002 072774R        STA ENTLN     SAVE FOR SLIST IF NEEDE
0194  07003 017137R        JSB CNDEC     CONVERT A TO   DECIMAL DIGITS
0195  07004 076421R        STB INBUF+6
0196  07005 072422R        STA INBUF+7   AND STORE COUNT
0197  07006 063173R        LDA CNMBR+1
0198  07007 013112R        AND B2037
0199  07010 072420R        STA INBUF+5
0200  07011 062457R        LDA INBUF+36
0201  07012 010073         AND B177
0202  07013 040045         ADA .-6
0203  07014 002020         SSA           5 WORD ENTRY?
0204  07015 027023R        JMP LSEN5     NO - CONTINUE
0205  07016 062456R        LDA INBUF+35  YES
0206  07017 053111R        CPA UPT       IS IT A TEMPORARY FILE?
0207  07020 027037R        JMP LSEN6     YES - GO SET BUFFER LENGTH TO 36
0208  07021 067575R        LDB D13       NO - SET BUFFER LENTH TO 13
0209  07022 027040R        JMP LSEN7     GO TO PRINT SECTION
0210  07023 063112R LSEN5  LDA B2037
0211  07024 063112R        LDA B2037
0212  07025 073104R        STA ANVAL     SET MASK VALUE TO BLNK 1ST DEGIT
0213  07026 063046R        LDA FWPRG
0214  07027 017047R        JSB ADSET     SET FWA PROGRAM
0215  07030 017047R        JSB ADSET     SETUP LWA PROGRAM
0216  07031 002004         INA
0217  07032 017047R        JSB ADSET     SETUP FWA B.P.
0218  07033 017047R        JSB ADSET     SETUP LWA B.P.
0219  07034 002004         INA
0220  07035 017047R        JSB ADSET     SETUP ENTRY POINT ADDRESS
0221  07036 017047R        JSB ADSET     SETUP LIB RTNS. ADDR.
0222  07037 066722R LSEN6  LDB D36
0223  07040 063631R LSEN7  LDA CTEST     GET LIST TYPE
0224  07041 053730R        CPA B123      IS IT SOURSE?(S)
0225  07042 026437R        JMP SLIST      YES GO ON TO SOURCE PROCESSOR
0226  07043 063617R        LDA LNBUF
0227  07044 017150R        JSB LSTIO     PRINT THE ENTRY INFO LINE
0228  07045 126716R        JMP LSENT,I   RETURN
0229  07046 012431R FWPRG  DEF INBUF+14  START LOCN OF ADDRESS SECTION
0230*
0231*              * SET UP AN OCTAL ADDRESS AND STORE IT IN INBUF  *
0232*
0233  07047 000000  ADSET NOP
0234  07050 072426R        STA TEMP
0235  07051 037106R        ISZ STEST
0236  07052 006400         CLB
0237  07053 163106R        LDA STEST,I   GET NUMBER TO BE CONVERTED
0238  07054 017050R        JSB ..RRL     POSITION FOR 1-DIGIT CNOCT
0239  07055 177762         DEC -14
0240  07056 017074R        JSB CNOCT     CONVERT UPPER DIGITS TO OCTAL
0241  07057 013104R        AND ANVAL     BLANK UPPER DIGIT IF SLIST
0242  07060 172426R        STA TEMP,I    STORE HIGH ORDER DIGITS
0243  07061 036426R        ISZ TEMP
0244  07062 002400         CLA
0245  07063 017074R        JSB CNOCT     CONVERT MIDDLE DIGITS TO OCTAL
0246  07064 172426R        STA TEMP,I
0247  07065 036426R        ISZ TEMP
```

```
0248  07066 002400          CLA
0249  07067 017074R         JSB CNOCT       CONVERT LOWER DIGITS TO OCTAL
0250  07070 172426R         STA TEMP,I      STORE LOW ORDER DIGITS
0251  07071 062426R         LDA TEMP
0252  07072 002004          INA             SET A FOR EXIT
0253  07073 127047R         JMP ADSET,I
0254*
0255  07074 000000  CNOCT NOP
0256  07075 017050R         JSB ..RRL       SHIFT 3 DIGITS FROM B TO A
0257  07076 177775          DEC -3
0258  07077 001722          ALF,RAL         POSITION IN A
0259  07100 017050R         JSB ..RRL       SHIFT NEXT 3 DIGITS FROM B TO A
0260  07101 177775          DEC -3
0261  07102 033170R         IOR A00         INCLUDE UPPER AND LOWER ASCII 0
0262  07103 127074R         JMP CNOCT,I
0263*
0264  07104 000000  ANVAL NOP
0265  07105 000000  LSTLN NOP              LOG,UNIT IN HERE
0266  07106 000000  STEST NOP              TEMP FOR ENTRY POINTER
0267  07107 000000  SKNTR NOP              SECTOR COUNTER FOR STRAK
0268  07110 000000  STLEN NOP              STATEMENT LENGTH
0269  07111 052040  UPT   OCT 52040
0270  07112 020377  B2037 OCT 20377
0271  07113 052000  B52K  OCT 52000
0272  01574         D32   EQU B40         32
```

```
0274*                ************************************************
0275*                * STRAK - ADD 'A' SECTORS TO TRACK/SECTOR 'B',*
0276*                *    ON EXIT 'B' = NEW TRACK/SECTOR,           *
0277*                * ERROR: IF NO TRACKS LEFT, MESSG THEN ABORT, *
0278*                ************************************************
0279  07114 000000  STRAK NOP
0280  07115 002003        SZA,RSS         A = 0
0281  07116 127114R       JMP STRAK,I     YES - TAKE IMMEDIATE EXIT
0282  07117 003004        CMA,INA
0283  07120 073107R       STA SKNTR       SKNTR = -NO. OF SECTORS
0284  07121 076646R       STB STKTS       STKTS = CURR.TRACK/SECTOR
0285  07122 036646R STRK1 ISZ STKTS
0286  07123 062646R       LDA STKTS
0287  07124 010075        AND B1774
0288  07125 070001        STA B           SAVE TRACK#
0289  07126 022646R       XOR STKTS       ISOLATE SECTOR#
0290  07127 050116        CPA SECTR       END OF TRACK?
0291  07130 063236R       LDA B400         -YES, SET TO BUMP TRACK#
0292  07131 040001        ADA B
0293  07132 072646R       STA STKTS       SET NEW TRACK/SECTOR
0294  07133 060001        LDA B
0295  07134 001727        ALF,ALF
0296  07135 017673R       JSB CKTRK       CHECK IF STILL ON DISC
0297  07136 037107R       ISZ SKNTR       NO - ALL SECTORS ADDED?
0298  07137 027122R       JMP STRK1       NO - GO ADD IN ANOTHER
0299  07140 066646R       LDB STKTS       B=NEW TRK/SECTR
0300  07141 127114R       JMP STRAK,I     RETURN
0301*
0302  07142 000000  UPDVC NOP
0303  07143 160206        LDA EQT4,I      GET DEVICE STATUS WORD
0304  07144 001423        ALR,RAR           AND CLEAR AVAILABILITY BITS
0305  07145 064206        LDB EQT4
0306  07146 017042R       JSB EXSET       SET DEVICE AVAILABLE
0307  07147 127142R       JMP UPDVC,I
0308*
0309*                ************************************************
0310*                * LSTIO - OUTPUT LIST INFORMATION OF SPECIFIED LUN*
0311*                *     A = LOCATION OF BUFFER                     *
0312*                *     B = BUFFER LENGTH                          *
0313*                ************************************************
0314  07150 000000  LSTIO NOP
0315  07151 073171R       STA LSTBF       SET BUFFER LOCATION
0316  07152 076641R       STB LSTBL       SET BUFFER LENGTH
0317  07153 007400  LST05 CCB             B = -1 (FOR OUTPUT LUN)
0318  07154 063105R       LDA LSTLN
0319  07155 072603R       STA SAVEA
0320  07156 016562R       JSB DSCLU
0321  07157 016434R       JSB LUCHK       CHECK LUN STATUS
0322  07160 016670R       JSB NULCK      LUN NULL?
0323  07161 127150R       JMP LSTIO,I    YES, RETURN
0324  07162 063105R       LDA LSTLN       CREATE CONWD BY INCLUDING BIT 7
0325  07163 033224R       IOR B200          ALONG WITH LOGICAL UNIT
0326  07164 073234R       STA LSTCW
0327  07165 016001X       JSB EXEC
0328  07166 007173R       DEF *+5
0329  07167 000051        DEF ,-2         -2 = WRITE
```

```
0330  07170 007234R        DEF LSTCW      LOGICAL UNIT #
0331  07171 007171R LSTBF  DEF *          BUFFER
0332  07172 006641R        DEF LSTBL      BUFFER LENGTH
0333* ********************************************************************
0334  07173 013574R        AND B40
0335  07174 002103         CLE,SZA,RSS    END OF TAPE?
0336  07175 127150R        JMP LSTIO,I    NO - END OF OUTPUT
0337  07176 017142R        JSB UPDVC      SET DEVICE AVAILABLE
0338  07177 064057         LDB .+4        YES - PRINT MESSAGE
0339  07200 063227R        LDA TEND
0340  07201 017356R        JSB ERRDG      "END OF TAPE"
0341  07202 063106R        LDA STEST      GET EQUIP. TYPE
0342  07203 050055         CPA .+2        PT PUNCH?
0343  07204 027215R        JMP LST10      YES
0344  07205 063105R        LDA LSTLN      NO - MAG. TAPE
0345  07206 043226R        ADA B500
0346  07207 072426R        STA TEMP
0347  07210 016001X        JSB EXEC       PERFORM REWIND AND UNLOAD
0348  07211 007214R        DEF *+3
0349  07212 000056         DEF .+3
0350  07213 004426R        DEF TEMP
0351  07214 027216R        JMP *+2
0352  07215 017611R LST10  JSB LEADR      OUTPUT PT TRAILER
0353  07216 017142R        JSB UPDVC      SET DEVICE AVAILABLE
0354  07217 016001X        JSB EXEC
0355  07220 007222R        DEF *+2        PAUSE HERE
0356  07221 000062         DEF .+7
0357  07222 063106R        LDA STEST
0358  07223 050055         CPA .+2        PT PUNCH BEING USED?
0359  07224 017611R        JSB LEADR      YES - OUTPUT LEADER
0360  07225 027153R        JMP LST05      GO AND CONTINUE.
0361  07226 000500  B500    OCT 500
0362  07227 007230R TEND    DEF *+1
0363  07230 052101          ASC 4,TAPE END
0364  07234 000000  LSTCW   NOP            CONWD FOR LIST OUTPUT
0365* ********************************************************************
```

```
0367*                ***********************************************
0368*                * DUMP - DUMP PART OR ALL OF THE CONTENTS     *
0369*                *        OF A USER FILE.                      *
0370*                * FORMAT: !;DUMP,LUN,FILENAME(,SEC1(,SEC2))*
0371*                *  - LUN IS ANY OUTPUT DEVICE                *
0372*                *  - SEC1 =  1ST SECTOR TO BE DUMPED         *
0373*                *  - SEC2 = LAST SECTOR TO BE DUMPED         *
0374*                *       IF FILE LENGTH IS NOT SPECIFIED,     *
0375*                *       THE ENTIRE FILE WILL BE DUMPED.      *
0376*                *  - ASCII FILES ARE PRINTED OR PUNCHED      *
0377*                *       IN ASCII                             *
0378*                *  - BINARY FILES WILL BE CONVERTED TO       *
0379*                *       ASCII(8 WORDS/LINE) IF THEY ARE TO   *
0380*                *       BE DUMPED ON A LIST DEVICE.          *
0381*                ***********************************************
0382  07235 017127R DUMP  JSB ASCDC      GO GET LUN PARAMETER
0383  07236 026750R       JMP PMISS      ERROR - 'PARAM. MISSING'
0384  07237 037644R       ISZ PMLOC      BUMP PARAM COUNTER
0385  07240 073105R       STA LSTLN      SAVE LUN
0386  07241 016477R       JSB USERD      GO SEARCH FOR FILENAME
0387  07242 026750R       JMP PMISS      NONE THERE - ERROR EXIT
0388  07243 002103        CLE,SZA,RSS    NAME PRESENT?
0389  07244 026707R       JMP RUN2       NO,  ERROR EXIT
0390  07245 040055        ADA .+2        BUMP POINTER TO TYPE
0391  07246 072413R       STA MLOCN
0392  07247 160000        LDA A,I
0393  07250 010073        AND B177       MASK IN TYPE
0394  07251 073636R       STA ENTYP      SAVE IT
0395  07252 036413R       ISZ MLOCN
0396  07253 162413R       LDA MLOCN,I
0397  07254 072414R       STA CURTS      CURTS=TRK/SECTOR OF ENTRY
0398  07255 036413R       ISZ MLOCN
0399  07256 162413R       LDA MLOCN,I
0400  07257 072774R       STA ENTLN
0401  07260 017127R       JSB ASCDC      GO PROCESS SECTOR PARAMETER
0402  07261 027314R       JMP DMP02      NO SECTOR PARAMETER IN STATEMENT
0403  07262 002003        SZA,RSS        FIRST SECTOR = 0?
0404  07263 026557R       JMP SLSTE      LIMIT ERROR
0405  07264 072325R       STA NVALU      SAVE VALUE OF 1ST SECTOR PARAMET
0406  07265 003004        CMA,INA
0407  07266 072324R       STA MVALU      SAVE -LOWER LIMIT
0408  07267 042774R       ADA ENTLN
0409  07270 002020        SSA            LOWER LIMIT BEYOND FILE?
0410  07271 026557R       JMP SLSTE      YES - LIMIT ERROR
0411  07272 037644R       ISZ PMLOC
0412  07273 062325R       LDA NVALU      GET FIRST SECTOR VALUE
0413  07274 040052        ADA .-1
0414  07275 066414R       LDB CURTS      GET CURRENT TRK/SEC OF FILE,
0415  07276 017114R       JSB STRAK      ADD SECTOR-1 TO CURTS
0416  07277 076414R       STB CURTS      CURTS=START OF DUMP(TRACK/SECTR)
0417  07300 017127R       JSB ASCDC      PROCESS UPPER SECTOR LIMIT
0418  07301 062774R       LDA ENTLN      MISSING - USE SECTOR LENGTH
0419  07302 072325R       STA NVALU      SAVE UPPER LIMIT
0420  07303 003004        CMA,INA
0421  07304 042774R       ADA ENTLN
0422  07305 002020        SSA            UPPER LIMIT BEYOND FILE?
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0423  07306 026557R        JMP SLSTE     YES = LIMIT ERROR
0424  07307 062324R        LDA MVALU
0425  07310 042325R        ADA NVALU
0426  07311 002020         SSA           LOWER LIMIT BEYOND UPPER LIMIT?
0427  07312 026557R        JMP SLSTE     YES = LIMIT ERROR
0428  07313 002005         INA,RSS       1+NVALU-MVALU
0429  07314 062774R DMP02  LDA ENTLN
0430  07315 003004         CMA,INA
0431  07316 072774R        STA ENTLN     ENTLN = -(# OF SECTORS)
0432  07317 007400         CCB           SET B FOR OUTPUT STATE
0433  07320 063105R        LDA LSTLN
0434  07321 072603R        STA SAVEA
0435  07322 016570R        JSB NULCK    LUN NULL?
0436  07323 026306R        JMP RNS      YES, RETURN
0437  07324 063105R        LDA LSTLN
0438  07325 016434R        JSB LUCHK
0439  07326 067105R        LDB LSTLN
0440  07327 054057         CPB .+4       IS THIS LUN 4(PUNCH UNIT?)
0441  07330 060055         LDA .+2        -YES, SET EQ TYPE = 2
0442  07331 054057         CPB .+4       LUN# = 4(PUNCH UNIT)?
0443  07332 044067         ADB D64        -YES, SET BIN, BIT
0444  07333 077105R        STB LSTLN
0445  07334 073106R        STA STEST
0446  07335 050055         CPA .+2       PAPER TAPE OUT?
0447  07336 017611R        JSB LEADR     YES - PUNCH LEADER
0448  07337 067636R        LDB ENTYP
0449  07340 054064         CPB .+9       ASCII SOURCE (=11B)
0450  07341 027372R        JMP DUMPC     YES - GO PROCESS IT
0451  07342 057646R        CPB D11       ASCII DATA? (=B13)
0452  07343 027563R        JMP DUMPA     YES - GO PROCESS
0453  07344 063106R        LDA STEST
0454  07345 002002         SZA           TTY?
0455  07346 050060         CPA .+5       TTY?
0456  07347 027447R        JMP DUMPL     YES
0457  07350 053562R        CPA B26       TERMINET?
0458  07351 027447R        JMP DUMPL     YES - GO LIST
0459  07352 050065         CPA .+10      LINE PRINTER(=12B)?
0460  07353 027447R        JMP DUMPL     YES
0461  07354 054063         CPB .+8       RELOC BINARY DUMP? (=B10)
0462  07355 027531R        JMP DUMPR     YES
0463  07356 057366R        CPB B14      ABS, BINARY DUMP (=B14)?
0464  07357 027527R        JMP DUMPX
0465*
0466*                  ****************************************
0467*                  * DUMPD - OUTPUT BINARY DATA TO DEVICE *
0468*                  *         OTHER THAN PUNCH OR LIST,    *
0469*                  ****************************************
0470  07360 016425R DUMPD  JSB RSECT     READ A SECTOR TO INBUF
0471  07361 063617R        LDA LNBUF
0472  07362 064067         LDB D64       FOR 64 WORDS
0473  07363 017150R        JSB LSTIO     OUTPUT TO SPECIFIED LUN
0474  07364 063617R        LDA LNBUF
0475  07365 040067         ADA D64
0476  07366 064067         LDB D64
0477  07367 017150R        JSB LSTIO
0478  07370 017600R        JSB DMTST     TEST FOR COMPLETION
```

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0479  07371 027360R        JMP DUMPD      GO BACK FOR NEXT SECTOR
```

```
0481*                ****************************************
0482*                * DUMPC - DUMP SOURCE STATEMENT FILE *
0483*                ****************************************
0484  07372 063617R DUMPC LDA LNBUF
0485  07373 072413R       STA MLOCN      SET MLOCN=START OF SECTOR BUFFER
0486  07374 063641R       LDA RT.LF
0487  07375 073660R       STA BUFFR-1    SET UP FOR POSSIBLE RETURN/LINFD
0488  07376 016425R       JSB RSECT      READ 1ST SECTOR OF SET
0489  07377 162413R       LDA MLOCN,I    SEARCH FOR 1ST RECORD IN SECTOR
0490  07400 010074        AND B377       MASK OUT UPPER 1/2 WORD
0491  07401 002003        SZA,RSS        IS IT A RECORD WORD COUNT?
0492  07402 027405R       JMP DMPC1      YES, GO START DUMP.
0493  07403 036413R       ISZ MLOCN      NO, BUMP TO NEXT WORD IN SECTOR
0494  07404 027377R       JMP *-5        GO CHECK AGAIN
0495  07405 062412R DMPC1 LDA BLNKS      SET 1ST 6 WORDS OF 'BUFFR'=BLANK
0496  07406 073662R       STA BUFFR+1
0497  07407 073663R       STA BUFFR+2
0498  07410 073664R       STA BUFFR+3
0499  07411 073665R       STA BUFFR+4
0500  07412 073666R       STA BUFFR+5
0501  07413 016216R       JSB DISCR      GET A STATEMENT
0502  07414 027436R       JMP DMPC4      END-OF-FILE OR LAST SECTOR EXIT.
0503  07415 073110R DMPC2 STA STLEN      ON NORMAL EXIT A=STLEN
0504  07416 063105R       LDA LSTLN
0505  07417 001727        ALF,ALF
0506  07420 001626        ELA,ELA        IF E=1 A PUNCH IS USED
0507  07421 067110R       LDB STLEN
0508  07422 063762R       LDA BFFAD        SET PARAMETERS FOR DUMPING
0509  07423 002040        SEZ
0510  07424 040052        ADA .-1        MOVE ORIGIN BACK 1
0511  07425 006003        SZB,RSS        WAS THIS AN END OF FILE?
0512  07426 027444R       JMP DMPCX      YES, GO TEST FOR PT OUTPUT
0513  07427 002040        SEZ
0514  07430 006004        INB            ADD 1 TO BUFFER LENGTH
0515  07431 017150R       JSB LSTIO      DUMP HERE
0516  07432 062774R       LDA ENTLN
0517  07433 002003        SZA,RSS        WAS LAST SECTOR PASSED?
0518  07434 027415R       JMP DMPC2      YES - GO ACT LIKE END OF FILE.
0519  07435 027405R       JMP DMPC1      GO GET NEXT STATEMENT
0520  07436 002003  DMPC4 SZA,RSS        END OF FILE FROM DISCR?
0521  07437 027415R       JMP DMPC2      YES (A=0)
0522  07440 062150R       LDA TERMS      GET INPUT WORD COUNT
0523  07441 002003        SZA,RSS        END OF STATE. AND END OF SECTOR?
0524  07442 027415R       JMP DMPC2      YES.
0525  07443 026262R       JMP DWD4       NO, GO BACK TO FINISH STATEMENT.
0526  07444 006044  DMPCX SEZ,INB        WAS THE PUNCH USED?
0527  07445 017150R       JSB LSTIO      YES, GO OUTPUT THE RETURN/LNFEED
0528  07446 027605R       JMP DMTSX      GO TO DUMP FINALIZER.
0529*
0530*                ************************************
0531*                * DUMPL - CONVERT BINARY INFO. TO  *
0532*                *       ASCII AND DUMP ON LIST LUN *
0533*                ************************************
0534  07447 002400  DUMPL CLA
0535  07450 073107R       STA SKNTR      INITIALIZE SECTOR COUNTER
0536  07451 037107R DMPL0 ISZ SKNTR      BUMP SECTOR COUNTER
```

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0537  07452 016425R        JSB RSECT      GET A SECTOR TO INPUT BUFFER
0538  07453 017456R        JSB DMPSC
0539  07454 017600R        JSB DMTST      CHECK FOR FINISH
0540  07455 027451R        JMP DMPL0      NO = DO ANOTHER
```

```
0542*                ************************************************
0543*                * DMPSC - DUMP SECTOR 'SKNTR' FROM THE DISC TO *
0544*                *         L.U.N. 'LSTLN' IS ASCII(OCTAL)FORMAT *
0545*                ************************************************
0546  07456 000000  DMPSC NOP
0547  07457 063647R       LDA DM16
0548  07460 073642R       STA INLEN     SET MASTER(I.E. LINE) CNTR = 16
0549  07461 007400        CCB
0550  07462 077104R       STB ANVAL     SET MASK VALUE TO -1
0551  07463 063617R       LDA LNBUF
0552  07464 040052        ADA .-1
0553  07465 073106R       STA STEST     SET STEST TO ORG OF INPUT BUFF-1
0554  07466 063107R       LDA SKNTR
0555  07467 017137R       JSB CNDEC     CONVERT SECTOR # TO ASCII
0556*     ********************************************************************
0557  07470 017050R       JSB ..RRL
0558  07471 177770        DEC -8
0559*     ********************************************************************
0560  07472 043647R       ADA BM20      SET A(LOWER)=BLANK (B=20)
0561  07473 076613R DMPL2 STB INBUF+128 SET 1ST 2 CHARS OF LINE
0562  07474 072614R       STA INBUF+129
0563  07475 060043        LDA .-8
0564  07476 073632R       STA CDCNT     SET NUMBERS(8) PER LINE
0565  07477 063635R       LDA DNBUF
0566  07500 040055        ADA .+2
0567  07501 017047R DMPL3 JSB ADSET     CONVERT AND STORE A WORD
0568  07502 066412R       LDB BLNKS     OUTPUT A WORD TO OUTPUT BUFFER
0569  07503 174000        STB A,I       SET BLANK FOLLOWING
0001  07504 002004        INA           BUMP STORAGE POINTER
0002  07505 037632R       ISZ CDCNT     HAVE WE FINISHED 8 WORDS?
0003  07506 027501R       JMP DMPL3     NO
0004  07507 063635R       LDA DNBUF     YES, GET SET FOR OUTPUT
0005  07510 067642R       LDB D34
0006  07511 017150R       JSB LSTIO     OUTPUT A LINE OF 8 WORDS OF DISC
0007  07512 062412R       LDA BLNKS     GET BLANKS FOR LINES FOLLOWING
0008  07513 066412R       LDB BLNKS       1ST ONE OF A SECTOR
0009  07514 037642R       ISZ INLEN     HAVE WE FINISHED A SECTOR?
0010  07515 027473R       JMP DMPL2     NO
0011*
0012*                * EXECUTE A LINE SPACE *
0013*
0014  07516 063105R       LDA LSTLN
0015  07517 043643R       ADA B1100     1100B
0016  07520 072426R       STA TEMP      SET CONWD
0017  07521 016001X       JSB EXEC
0018  07522 007526R       DEF *+4
0019  07523 000050        DEF .-3
0020  07524 004426R       DEF TEMP
0021  07525 000054        DEF .+1
0022  07526 127456R       JMP DMPSC,I
0023*
0024*                ********************************************
0025*                * DUMPX - DUMP ABSOLUTE BINARY RECORDS     *
0026*                ********************************************
0027  07527 006404  DUMPX  CLB,INB     SET ABS. BIN. FLAG
0028  07530 077650R       STB ABINF
```

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0029*
0030*                ********************************************
0031*                * DUMPR- DUMP RELOCATABLE BINARY RECORDS   *
0032*                ********************************************
0033  07531 063105R DUMPR LDA LSTLN
0034  07532 030067        IOR D64        SET BINARY BIT
0035  07533 073105R       STA LSTLN
0036  07534 062324R       LDA MVALU
0037  07535 002002        SZA            DUMPING ENTIRE FILE?
0038  07536 027360R       JMP DUMPD      NO - GO DUMP BY SECTORS
0039  07537 062774R       LDA ENTLN
0040  07540 040052        ADA .-1
0041  07541 072774R       STA ENTLN      INCREASE # OF SECTORS BY 1
0042  07542 073647R       STA RBINF      SET 'RELOC. BIN.' FLAG
0043  07543 063635R DMPR1 LDA DNBUF
0044  07544 072413R       STA MLOCN      SET MLOCN TO START A DISC READ
0045  07545 016216R DMPR2 JSB DISCR      READ A RECORD
0046  07546 027556R       JMP DMPR4      END OF FILE RETURN
0047  07547 067110R       LDB STLEN      NO
0048  07550 063650R       LDA ABINF       ABSOLUTE BINARY?
0049  07551 002002        SZA
0050  07552 044056        ADB .+3       YES, FIX UP REC. LEN
0051  07553 063762R       LDA BFFAD
0052  07554 017150R       JSB LSTIO
0053  07555 027545R       JMP DMPR2
0054*
0055  07556 062774R DMPR4 LDA ENTLN
0056  07557 002003        SZA,RSS        END OF DESIRED SECTOR COUNT?
0057  07560 027605R       JMP DMTSX      YES - GO TO LEADER/TRAILER EXIT
0058  07561 027543R       JMP DMPR1      GO START NEXT JOB
0059  07562 000026  B26    OCT 26         DUR# FOR TERMINET
0060*
0061*                ******************************
0062*                * DUMPA - DUMP ASCII DATA     *
0063*                ******************************
0064  07563 016425R DUMPA JSB RSECT      READ A SECTOR TO INBUF
0065*     ************************************************************
0066  07564 060047        LDA .-4        4 LOOP COUNTER
0067  07565 073644R       STA HSBUF
0068  07566 063617R       LDA LNBUF      START LOCATION OF BUFFER
0069  07567 073611R DUMPB STA LEADR       TEMP HOLD FOR NEXT BUFFER ADD
0070  07570 067574R       LDB D32        OUTPUT 32 WORDS 4 TIMES
0071  07571 017150R       JSB LSTIO      OUTPUT LIST INFO ON SPEC LUN
0072  07572 063611R       LDA LEADR      LOCATION OF BUFFER
0073  07573 043574R       ADA D32
0074  07574 037644R       ISZ HSBUF      4 LOOPS?
0075  07575 027567R       JMP DUMPB      NO
0076  07576 017600R       JSB DMTST      YES!  TEST FOR COMPLETION
0077*     ************************************************************
0078  07577 027563R       JMP DUMPA      GET ANOTHER SECTOR
0079*
0080*                ************************************
0081*                * DMTST - TEST FOR EXIT FROM DUMP   *
0082*                ************************************
0083  07600 000000  DMTST NOP
0084  07601 036774R       ISZ ENTLN      DONE ?
```

```
0085  07602 127600R        JMP DMTST,I    NO - RETURN
0086  07603 002400         CLA
0087  07604 073670R        STA TRFLG
0088  07605 063106R DMTSX  LDA STEST
0089  07606 050055         CPA .+2        PAPER TAPE PUNCH?
0090  07607 017611R        JSB LEADR      YES - OUTPUT TRAILER
0091  07610 026306R        JMP RNS        EXIT FROM DUMP HERE
0092*
0093*                ********************************************************
0094*                * LEADR - OUTPUT LEADER/TRAILER ON PAPER TAPE DEVICE*
0095*                ********************************************************
0096  07611 000000  LEADR NOP
0097  07612 063105R        LDA LSTLN
0098  07613 010072         AND B77        ISOLATE LUN
0099  07614 043637R        ADA B1000      1000B
0100  07615 072417R        STA DRTMP
0101  07616 016001X MTLDR  JSB EXEC
0102  07617 007622R        DEF *+3
0103  07620 000050         DEF .-3
0104  07621 010417R        DEF DRTMP
0105  07622 127611R        JMP LEADR,I
0106*
0107  07623 063645R MTEOF  LDA DFRNS
0108  07624 073611R        STA LEADR
0109  07625 017127R        JSB ASCDC
0110  07626 060063         LDA .+8
0111  07627 016562R        JSB DSCLU
0112  07630 030067         IOR D64
0113  07631 072417R        STA DRTMP
0114  07632 072603R        STA SAVEA
0115  07633 016434R        JSB LUCHK
0116  07634 016570R        JSB NULCK    LUN NULL?
0117  07635 026306R        JMP RNS      JUST RETURN.
0118  07636 027616R        JMP MTLDR
0119*
0120  07637 001000  B1000 OCT 1000
0121  07640 037400  EQP   OCT 37400      UPPPER = SIGN
0122  07641 006412  RT.LF OCT 6412       CARRIAGE RETRN/LINE FEED
0123  03647         BM20  EQU DM16       -20B
0124  07642 000042  D34   DEC 34
0125  07643 001100  B1100 OCT 1100
0126  07644 012453R HSBUF DEF INBUF+32
0127  07645 000306R DFRNS DEF RNS
0128  07646 000013  D11   DEC 11
0129  07647 000000  RBINF NOP            NON ZERO WHEN REL,BIN, IS PROCSD
0130  07650 000000  ABINF NOP             NON-ZERO WHEN ABS, BIN, IS PROC
0131  07651 002010  B2010 OCT 2010
```

```
0133*                ***********************************************
0134*                * DDUMP - DUMP SYSTEM AREA, ALL OR PART OF USER     *
0135*                *         AREA, OR ENTIRE DISC TO USER DISC         *
0136*                *         SPECIFIED BY SUBSEQUENT ';UP' DIRECTIVE.  *
0137*                * FORMAT - ';DDUMP,X' - DUMP SYSTEM AREA            *
0138*                *          ';DDUMP,U[,FILE1,(FILEA),FILE2,,...]'    *
0139*                *               - DUMP SPECIFIED USER FILES,        *
0140*                *                 OPTIONALLY RENAMING FILE1 TO FILEA*
0141*                *                 IF NO FILE PARAMETER ARE PRESENT, *
0142*                *                 THE ENTIRE USER AREA IS DUMPED.   *
0143*                *          ';DD' - THE ENTIRE DISC IS DUMPED        *
0144*                * NOTE - IN A USER AREA DUMP, THE SOURCE USER FILES *
0145*                *        ARE ADDED TO THE USER AREA ON THE          *
0146*                *        DESTINATION DISC. DUPLICATE FILENAMES ARE  *
0147*                *        REPORTED AND REJECTED.                     *
0148*                *        IN AN ENTIRE DISC DUMP, NO CHECKING IS     *
0149*                *        DONE.                                      *
0150*                ***********************************************
0151  07652 060056  DDUMP LDA .+3
0152  07653 067762R       LDB BFFAD
0153  07654 016354R       JSB CODIN     READ CODE SEG. INTO BUFFR
0154  07655 027661R       JMP BUFFR
0155*
0156  07656 000000        BSS 3         ALLOW BUFFR-3 REFERENCE
0157  07661         BUFFR EQU *
0158*****************************************************************
0159*
0160*     CAUTION: BEFORE MAKING ANY CHANGES IN THE NEXT 128 WORDS
0161*                OF CODING, MAKE SURE YOU UNDERSTAND THE
0162*                IMPLICATIONS OF THE EXTENT OF "BUFFR".
0163*
0164*****************************************************************
0165*
0166  07661 064161        LDB CUDSC
0167  07662 076411R       STB OLDSC
0168  07663 076423R       STB SC2
0169  07664 067603R       LDB PMCNT
0170  07665 006003        SZB,RSS
0171  07666 026044R       JMP DDALL
0172  07667 016655R       JSB TYPES
0173  07670 052422R       CPA B130
0174  07671 026043R       JMP DDSYS
0175  07672 064115        LDB SYSBF
0176  07673 044075        ADB B1774
0177  07674 052421R       CPA B125
0178  07675 006005        INB,RSS
0179  07676 026737R       JMP PILLG
0180*
0181  07677 076405R       STB SAVDD
0182  07700 076414R       STB DDTS
0183  07701 062332R       LDA EDTAD
0184  07702 072352R       STA DDIBF
0185  07703 072347R       STA DDOBF
0186  07704 072415R       STA DRCUR     SET DRCTRY POINTERS
0187  07705 072416R       STA DRNXT       FOR BUFFR
0188  07706 017625R       JSB PMNXT
```

```
0189  07707 002003         SZA,RSS       DUMP ENTIRE USER AREA?
0190  07710 027773R        JMP DDUAL      -YES
0191  07711 007400         CCB
0192  07712 076420R        STB RNFLG     SET FLAG TO ACCEPT ONLY SRC NAME
0193  07713 066325R        LDB LUN2
0194  07714 076412R        STB DDLUN
0195  07715 000065  DDU10  CLE,ERA
0196  07716 160000         LDA A,I
0197  07717 002040         SEZ
0198  07720 001727         ALF,ALF
0199  07721 010075         AND B1774
0200  07722 052430R        CPA ULPAR     SOURCE NAME?
0201  07723 026000R        JMP DDRNM      -NO, GO RENAME LAST SOURCE
0202  07724 167644R        LDB PMLOC,I
0203  07725 017625R        JSB PMNXT
0204  07726 016327R        JSB DIRSR     GO LOOK FOR FILE IN USER DRCTRY
0205  07727 000771R        DEF USDIR
0206  07730 002102         CLE,SZA       WAS IT THERE?
0207  07731 027741R        JMP DDU30      -YES
0208  07732 017771R        JSB FNUND      -NO, PRINT *FILE UNDEFINED*
0209  07733 006404         CLB,INB
0210  07734 076420R        STB RNFLG     SET FLAG TO IGNORE RENAME
0211  07735 017625R  DDU20  JSB PMNXT
0212  07736 002003         SZA,RSS       MORE PARAMS?
0213  07737 026036R        JMP DDUXT      -NO
0214  07740 027715R        JMP DDU10      -YES
0215*
0216  07741 006400  DDU30  CLB
0217  07742 076420R        STB RNFLG     SET FLAG TO ACCEPT ANYTHING
0218  07743 072421R        STA DRADR
0219  07744 016326R        JSB DRADD     COMPUTE ENTRY LENGTH
0220  07745 077761R        STB DRLNG     SAVE DRCTRY ENTRY LENGTH
0221  07746 062416R        LDA DRNXT
0222  07747 072415R  DDU35  STA DRCUR     UPDATE ENTRY ADDRS POINTER
0223  07750 046415R        ADB DRCUR
0224  07751 076416R        STB DRNXT     SET NEXT EFF. ENTRY ADDRS
0225  07752 007000         CMB
0226  07753 046334R        ADB EDTND
0227  07754 006020         SSB           WILL CURRENT O/F SECTOR
0228  07755 027763R        JMP DDU40      -YES, GO COMPLETE THIS SECTOR
0229  07756 062421R        LDA DRADR
0230  07757 066415R        LDB DRCUR
0231  07760 017461R        JSB WMOVE
0232  07761 000000  DRLNG  NOP
0233  07762 027735R        JMP DDU20     GO LOOK FOR MORE FILES
0234*
0235  07763 003400  DDU40  CCA
0236  07764 172415R        STA DRCUR,I   SET END-OF-SECTOR MARK
0237  07765 064055         LDB .+2
0238  07766 016337R        JSB DDIO      OUTPUT DRCTRY SECTOR
0239  07767 072414R        STA DDTS
0240  07770 062332R        LDA EDTAD
0241  07771 067761R        LDB DRLNG
0242  07772 027747R        JMP DDU35
0243*
0244  07773 062326R DDUAL  LDA LUN3
```

```
0245  07774 072412R        STA DDLUN
0246  07775 062771R        LDA USDIR
0247  07776 072405R        STA SAVDD
0248  07777 026041R        JMP DDUXX
0249  10000 066420R DDRNM  LDB RNFLG
0250  10001 003400         CCA
0251  10002 072420R        STA RNFLG      SET TO ACCEPT ONLY SRC F,N
0252  10003 006020         SSB            SOURCE F/NAME EXPECTED
0253  10004 026737R        JMP PILLG       -YES, ILLEGAL PARAMETER
0254  10005 006003         SZB,RSS        LAST SOURCE UNDEFINED?
0255  10006 026011R        JMP *+3         -NO, OK TO PROCESS
0256  10007 037644R        ISZ PMLOC       -YES, IGNORE THIS PARAM
0257  10010 027735R        JMP DDU20
0258  10011 066415R        LDB DRCUR
0259  10012 062412R        LDA BLNKS
0260  10013 170001         STA B,I
0261  10014 006004         INB
0262  10015 170001         STA B,I
0263  10016 006004         INB
0264  10017 160001         LDA B,I
0265  10020 010074         AND B377
0266  10021 032614R        IOR UBLNK
0267  10022 170001         STA B,I
0268  10023 167644R        LDB PMLOC,I
0269  10024 006004         INB
0270  10025 076034R        STB DDRMV
0271  10026 017625R        JSB PMNXT
0272  10027 001665         ELA,CLE,ERA
0273  10030 040051         ADA .-2
0274  10031 066415R        LDB DRCUR
0275  10032 005200         RBL
0276  10033 017415R        JSB MOVE       MOVE F/N TO LAST ENTRY
0277  10034 000000  DDRMV   NOP
0278  10035 027735R        JMP DDU20
0279*
0280  10036 172416R DDUXT  STA DRNXT,I    SET END-OF DRCTRY
0281  10037 064055         LDB .+2
0282  10040 016337R        JSB DDIO       OUTPUT LAST DRCTRY SECTOR
0283  10041 060055  DDUXX  LDA .+2
0284  10042 026045R        JMP DDALL+1
0285*
0286  10043 002405  DDSYS  CLA,INA,RSS
0287*
0288  10044 060056  DDALL  LDA .+3
0289  10045 072403R        STA DDFLG
0290  10046 026306R        JMP RNS
0291*
0292*
0293  10047 067762R DDCMP  LDB BFFAD
0294  10050 076352R        STB DDIBF
0295  10051 076347R        STB DDOBF
0296  10052 060161         LDA CUDSC
0297  10053 072404R        STA SAVSC
0298  10054 072422R        STA SC1
0299*
0300  10055 066332R        LDB EDTAD
```

```
0301   10056 060060          LDA .+5
0302   10057 016354R         JSB CODIN      READ CODE SEG, INTO EDTBF
0303*
0304   10060 067764R         LDB RDSYS
0305   10061 017777R         JSB LBLIO      READ USER LABEL SECTOR
0306*
0307   10062           EDTBF EQU *
0308*
0309   10062 063762R         LDA SBDTR
0310   10063 072407R         STA SVBAD      SAVE BAD TRACK COUNT
0311   10064 063763R         LDA SSPTR
0312   10065 072410R         STA SVSPR      SAVE NEXT SPARE TRACK
0313*
0314   10066 062403R         LDA DDFLG
0315   10067 050056          CPA .+3        DUMP ENTIRE DISC?
0316   10070 026262R         JMP DCALL       -YES
0317   10071 050054          CPA .+1        DUMP SYSTEM?
0318   10072 026240R         JMP DCSYS       -YES
0319*
0320   10073 062405R DCU10   LDA SAVDD
0321   10074 072414R         STA DDTS       RESET TEMP DRCTRY T/S
0322   10075 063762R         LDA BFFAD
0323   10076 072416R         STA DRNXT
0324   10077 062411R DCU13   LDA OLDSC
0325   10100 006404          CLB,INB
0326   10101 016573R         JSB JEXUD
0327   10102 006404          CLB,INB
0328   10103 016337R         JSB DDIO
0329   10104 072405R         STA SAVDD
0330   10105 016365R DCU15   JSB RESET
0331   10106 162416R         LDA DRNXT,I
0332   10107 002003          SZA,RSS        END OF TEMP DRCTRY?
0333   10110 026300R         JMP DDFIN       -YES
0334   10111 002020          SSA            END OF SECTOR?
0335   10112 026073R         JMP DCU10       -YES, GO GET ONE
0336   10113 062416R         LDA DRNXT
0337   10114 016326R         JSB DRADD
0338   10115 076417R         STB DRTMP
0339   10116 060060          LDA .+5
0340   10117 066416R         LDB DRNXT
0341   10120 005200          RBL
0342   10121 016327R         JSB DIRSR      GO CHECK FOR DUP FILE NAME
0343   10122 000771R         DEF USDIR
0344   10123 002002          SZA            IS IT A DUP?
0345   10124 026163R         JMP DDDUP       -YES
0346   10125 066416R         LDB DRNXT
0347   10126 044055          ADB .+2
0348   10127 160001          LDA B,I        GET ENTRY TYPE
0349   10130 010073          AND B177
0350   10131 073636R         STA ENTYP
0351   10132 006004          INB
0352   10133 160001          LDA B,I        GET SRC START T/S
0353   10134 073235R         STA PTSEC
0354   10135 006004          INB
0355   10136 160001          LDA B,I        GET SRC FILE LENGTH (SECTORS)
0356   10137 072774R         STA ENTLN
```

```
0357  10140 072406R        STA SAVLN
0358  10141 064157         LDB UDNTS
0359  10142 077637R        STB ENTSC      SAVE DEST, START T/S
0360  10143 077640R        STB NEWTS
0361  10144 017114R        JSB STRAK      COMPUTE UDNTS BEYOND THIS FILE
0362  10145 016214R        JSB DDXFR
0363*
0364  10146 016365R        JSB RESET
0365  10147 062406R        LDA SAVLN
0366  10150 072774R        STA ENTLN
0367  10151 017646R        JSB DCSTR       =YES, ADD FILE TO USER DRCTRY
0368  10152 016170R        JSB PRTNM      GO PRINT FILE NAME
0369  10153 066417R DCULP  LDB DRTMP
0370  10154 046416R        ADB DRNXT
0371  10155 076416R        STB DRNXT      SET ADDRS OF NEXT ENTRY
0372  10156 007000         CMB
0373  10157 046424R        ADB BFEND
0374  10160 006020         SSB
0375  10161 026073R        JMP DCU10
0376  10162 026077R        JMP DCU13
0377*
0378  10163 016170R DDDUP  JSB PRTNM      GO PRINT FILE NAME
0379  10164 062717R        LDA STERR
0380  10165 064064         LDB .+9
0381  10166 017356R        JSB ERRDG      PRINT *DUPLICATE FILE NAME*
0382  10167 026153R        JMP DCULP
0383*
0384  10170 000000  PRTNM  NOP
0385  10171 162415R        LDA NMBUF-1,I IF FILE NAME
0386  10172 010074         AND B377        HAS BEEN DELETED
0387  10173 002003         SZA,RSS           RETURN
0388  10174 026153R        JMP DCULP           WITHOUT PRINTING FILE NAME
0389  10175 062415R        LDA NMBUF-1    GET ADDRESS OF FILENAME
0390  10176 064056         LDB .+3
0391  10177 017356R        JSB ERRDG      GO PRINT FILE NAME
0392  10200 126170R        JMP PRTNM,I
0393  10201 000000  SWPSC  NOP
0394  10202 062423R        LDA SC2
0395  10203 066422R        LDB SC1
0396  10204 072422R        STA SC1
0397  10205 076423R        STB SC2
0398  10206 067220R        LDB XCUSC
0399  10207 017042R        JSB EXSET
0400  10210 060074         LDA B377
0401  10211 006004         INB
0402  10212 017042R        JSB EXSET
0403  10213 126201R        JMP SWPSC,I
0404*
0405  10214 000000  DDXFR  NOP
0406  10215 017152R        JSB MVSET
0407  10216 062774R DDXF1  LDA ENTLN
0408  10217 002020         SSA
0409  10220 026231R        JMP DDXF2      GO CHECK FOR TRUE END
0410  10221 002003         SZA,RSS
0411  10222 026231R        JMP DDXF2      GO CHECK FOR TRUE END
0412  10223 016201R        JSB SWPSC
```

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0413  10224 062774R        LDA ENTLN
0414  10225 017177R        JSB RDTSF      READ SOURCE DISC
0415  10226 016201R        JSB SWPSC
0416  10227 017215R        JSB WRTSF      WRITE DEST. DISC
0417  10230 026216R        JMP DDXF1
0418  10231 062402R DDXF2  LDA OVFLG      IF OVER FLOW INDICATOR
0419  10232 002003         SZA,RSS          IS RESET
0420  10233 126214R        JMP DDXFR,I        EXIT.
0421  10234 072774R        STA ENTLN      STORE SECOND HALF OF SECTOR
0422  10235 002400         CLA              COUNT,
0423  10236 072402R        STA OVFLG          CLEAR OVER-FLOW INDICATOR
0424  10237 026216R        JMP DDXF1            AND GO FINISH DD.
0425*
0426  10240 017152R DCSYS  JSB MVSET
0427  10241 062325R        LDA LUN2
0428  10242 072451R        STA FLUN       SET LUN=SYS
0429  10243 064115         LDB SYSBF      *
0430  10244 005727         BLF,BLF        * GET # OF SECTORS
0431  10245 016372R        JSB MPY24      *   TO TRANSFER
0432  10246 002004         INA
0433  10247 077235R        STB PTSEC
0434  10250 077640R        STB NEWTS
0435  10251 017165R        JSB MVTSF      DUMP SYSTEM
0436  10252 006400         CLB
0437  10253 076413R        STB INBUF
0438  10254 060115         LDA SYSBF
0439  10255 002004         INA
0440  10256 006404         CLB,INB
0441  10257 016253R        JSB WDISC      CLEAR USER DRCTRY
0442  10260 012413R        DEF INBUF
0443  10261 026300R        JMP DDFIN
0444*
0445  10262 066401R DCALL  LDB D200
0446  10263 016372R        JSB MPY24      * COMPUTE # OF SECTORS
0447  10264 077235R        STB PTSEC      CLEAR INPUT TRACK/SECTOR #
0448  10265 077640R        STB NEWTS      CLEAR OUTPUT TRACK/SECTOR
0449  10266 002021         SSA,RSS        IF SECTOR COUNT  <32768 THEN
0450  10267 026273R        JMP DCAL1        GO SAVE COUNT AS IS,
0451  10270 000075         CLE,SLA,ERA    DIVIDE COUNT BY 2, IF SECTOR
0452  10271 006004         INB              COUNT IS ODD ADD 1 TO B,
0453  10272 044000         ADB A          SET UP SECOND HALF OF COUNT
0454  10273 072774R DCAL1  STA ENTLN      SAVE # SECTORS-1ST PART
0455  10274 076402R        STB OVFLG      SAVE # SECTORS-2ND PART IF ANY
0456  10275 066326R        LDB LUN3
0457  10276 076451R        STB FLUN       SET LUN=USER
0458  10277 016214R        JSB DDXFR
0459*
0460  10300 016365R DDFIN  JSB RESET      MAKE SURE DISCL OK
0461  10301 067764R        LDB RDSYS
0462  10302 017777R        JSB LBLIO      READ LABEL SECTOR
0463  10303 062407R        LDA SVBAD
0464  10304 073762R        STA SBDTR      SET BAD TRACK COUNT
0465  10305 062410R        LDA SVSPR
0466  10306 073763R        STA SSPTR      SET NEXT SPARE TRACK
0467  10307 066403R        LDB DDFLG
0468  10310 060115         LDA SYSBF
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0469  10311 043236R        ADA B400
0470  10312 054054         CPB .+1          DD,X ?
0471  10313 073761R        STA SNXTS         =YES, SET NEXT TR/SCTR
0472  10314 067765R        LDB WR8YS
0473  10315 017777R        JSB LBLIO        RESTORE USER LABEL SECTOR
0474  10316 016365R        JSB RESET
0475  10317 016321R        JSB CLRDD        GO CLEAR "DDFLG" AND "OVFLG"
0476  10320 026306R        JMP RNS
0477  10321 000000  CLRDD  NOP
0478  10322 002400         CLA
0479  10323 072403R        STA DDFLG        CLEAR "DD" FLAG
0480  10324 072402R        STA OVFLG        CLEAR "DD" OVERFLOW FLAG
0481  10325 126321R        JMP CLRDD,I
0482*
0483*
0484  10326 000000  DRADD  NOP
0485  10327 040055         ADA .+2
0486  10330 160000         LDA A,I          GET ENTRY TYPE
0487  10331 010073         AND B177
0488  10332 040045         ADA .-6
0489  10333 064060         LDB .+5
0490  10334 002020         SSA              11 WORD ENTRY?
0491  10335 044061         ADB .+6          =YES
0492  10336 126326R        JMP DRADD,I
0493*
0494  10337 000000  DDIO   NOP
0495  10340 062412R        LDA DDLUN
0496  10341 072304R        STA RWLUN
0497  10342 062414R        LDA DDTS
0498  10343 004010         SLB
0499  10344 026351R        JMP DDRD
0500  10345 006404         CLB,INB
0501  10346 016253R        JSB WDISC
0502  10347 000000  DDOBF  NOP
0503  10350 126337R        JMP DDIO,I
0504  10351 016243R DDRD   JSB RDISC
0505  10352 000000  DDIBF  NOP
0506  10353 126337R        JMP DDIO,I
0507*
0508*     'CODIN' READS IN OVERLAYABLE CODE SEGMENTS
0509*
0510  10354 000000  CODIN  NOP
0511  10355 076363R        STB CODBF
0512  10356 066325R        LDB LUN2
0513  10357 076304R        STB RWLUN
0514  10360 042413R        ADA JOBTR
0515  10361 006404         CLB,INB
0516  10362 016243R        JSB RDISC
0517  10363 000000  CODBF  NOP
0518  10364 126354R        JMP CODIN,I
0519*
0520  10365 000000  RESET  NOP
0521  10366 062404R        LDA SAVSC
0522  10367 006404         CLB,INB
0523  10370 016573R        JSB JEXUD
0524  10371 126365R        JMP RESET,I
```

```
0525*
0526   10372 000000  MPY24 NOP
0527   10373 007004         CMB,INB
0528   10374 002400         CLA
0529   10375 040116         ADA SECTR
0530   10376 006006         INB,SZB
0531   10377 026375R        JMP *-2
0532   10400 126372R        JMP MPY24,I
0533*
0534   10401 000310  D200   DEC 200
0535   10402 000000  OVFLG  NOP
0536   10403 000000  DDFLG  NOP
0537   10404 000000  SAVSC  NOP
0538   10405 000000  SAVDD  NOP
0539   10406 000000  SAVLN  NOP
0540   10407 000000  SVBAD  NOP
0541   10410 000000  SVSPR  NOP
0542   10411 000000  OLDSC  NOP
0543   10412 000000  DDLUN  NOP
0544   10413 000000  JOBTR  NOP
0545   10414 000000  DDTS   NOP
0546   10415 000000  DRCUR  NOP
0547   10416 000000  DRNXT  NOP
0548   10417 000000  DRTMP  NOP
0549   10420 000000  RNFLG  NOP
0550   10421 000000  DRADR  NOP
0551   10422 000000  SC1    NOP
0552   10423 000000  SC2    NOP
0553   10424 010061R BFEND  DEF BUFFR+128
```

```
0555*                 ***************************************************
0556*                 * RSECT - READ A SECTOR FROM THE DISC USER FILE *
0557*                 *         TO INBUF                                *
0558*                 ***************************************************
0559  10425 000000  RSECT NOP
0560  10426 006404        CLB,INB         B=1 (1 SECTOR)
0561  10427 062414R       LDA CURTS
0562  10430 016243R       JSB RDISC
0563  10431 012413R       DEF INBUF
0564  10432 072414R       STA CURTS       SAVE NEW TRACK/SECTOR
0565  10433 126425R       JMP RSECT,I     RETURN TO PROGRAM
0566*
0567*                 ***************************************
0568*                 * LUCHK - CHECK L.U.N. STATUS AND     *
0569*                 *           GET EQUIPMENT CODE.       *
0570*                 * -ENTRY: A = L.U.N. TO BE TESTED;    *
0571*                 *  B>0(IN);B<0(OUT),B=0,EITHER        *
0572*                 * - EXIT: A = EQUIPMENT TYPE          *
0573*                 *         B = WORD 4 OF EQT ENTRY     *
0574*                 * -ERRORS:                            *
0575*                 * A=0 OR >LUT#, "ILLEGAL L.U.N."      *
0576*                 * LUTBL ENTRY A=0,"LUN UNASSIGNED"    *
0577*                 * UNIT DISABLED,"DEVICE DOWN"         *
0578*                 *  - ERROR EXIT VIA RNSX              *
0579*                 ***************************************
0580  10434 000000  LUCHK NOP
0581  10435 002003        SZA,RSS
0582  10436 026514R       JMP LUCH3       LUN =0 (ILLEGAL LUN)
0583  10437 010072        AND B77         ISOLATE L.U.N.
0584  10440 072426R       STA TEMP
0585  10441 003004        CMA,INA
0586  10442 040122        ADA LUT#        CHECK LUN VS. LUN COUNT
0587  10443 002020        SSA
0588  10444 026514R       JMP LUCH3       LUN > LUT#
0589  10445 063651R       LDA B2010       GET SLA FORMAT
0590  10446 006003        SZB,RSS         EITHER I/O
0591  10447 002400        CLA             YES, SET = NOP
0592  10450 006020        SSB             OUTPUT ONLY?
0593  10451 002004        INA             YES, SET A = SLA,RSS
0594  10452 072512R       STA LUTST
0595  10453 066426R LUCH1 LDB TEMP
0596  10454 044121        ADB LUTAB
0597  10455 044052        ADB .-1
0598  10456 160001        LDA B,I         A = EQT NUMBER
0599  10457 072547R       STA EDN         SAVE THE EQT#
0600  10460 002003        SZA,RSS
0601  10461 126434R       JMP LUCHK,I   RETURN IF NULL
0602  10462 040052        ADA .-1
0603  10463 070001        STA B           *
0604  10464 001700        ALF             * MULTIPLY BY 17
0605  10465 040001        ADA B           *
0606  10466 040117        ADA EQTAB
0607  10467 040056        ADA .+3         A=LOCN OF WORD 4 OF EQT ENTRY
0608  10470 164000        LDB A,I         B = CONTENTS OF WORD 4.
0609  10471 063640R       LDA EQP
0610  10472 010001        AND B
```

```
0611  10473 000027  D23   DEC 23          -ALF- INSTRUCTION
0612  10474 005210        RBL,SLB
0613  10475 026500R       JMP *+3
0614  10476 006020        SSB
0615  10477 026534R       JMP LUCH4    "DEVICE DOWN"
0616  10500 005300        RBR
0617  10501 002002        SZA            SKIP OUT IF TTY...
0618  10502 000037        SLA,ALF        I/O DEVICE(CODE 20 OR ABOVE)
0619  10503 126434R       JMP LUCHK,I    YES
0620  10504 050060        CPA .+5        ALLOW 0 OR 5
0621  10505 126434R       JMP LUCHK,I
0622  10506 043647R       ADA BM20       IGNORE I/O CHECK ON DEVICE
0623  10507 002021        SSA,RSS         CODES >= 20B
0624  10510 026553R       JMP LUCH5
0625  10511 043671R       ADA D16        RESET "A" REGISTER
0626  10512 000000  LUTST NOP            TEST HERE FOR LEGAL I/O
0627  10513 126434R       JMP LUCHK,I
0628  10514 064061  LUCH3 LDB .+6         SETUP FOR "ILLEGAL LUN"
0629  10515 062517R       LDA *+2
0630  10516 026752R       JMP PMISS+2
0631  10517 010520R       DEF *+1
0632  10520 044514        ASC 11 ILLEGAL LUN UNASSIGNED
0633  10533 010524R       DEF *-7
0634  10534 062547R LUCH4 LDA EDN         GET EQT#
0635  10535 017137R       JSB CNDEC      CONVERT IT TO DECIMAL
0636  10536 072547R       STA EDN        STORE IT IN LIST BUFFER
0637  10537 062542R       LDA DDOWN
0638  10540 064063        LDB .+8
0639  10541 026555R       JMP LUCH6
0640  10542 010543R DDOWN DEF *+1
0641  10543 042105        ASC 8,DEVICE #   DOWN
0642  10547         EDN   EQU *-4        LOC OF SAVED EQT#
0643*
0644  10553 043671R LUCH5 ADA D16        RESET "A" REGISTER TO EQUIP CODE
0645  10554 126434R       JMP LUCHK,I    RETURN
0646*
0647  10555 017356R LUCH6 JSB ERRDG
0648  10556 016001X       JSB EXEC
0649  10557 010561R       DEF *+2
0650  10560 000044        DEF .-7
0651  10561 026453R       JMP LUCH1
0652*
0653  10562 000000  DSCLU NOP
0654  10563 050055        CPA .+2
0655  10564 026514R       JMP LUCH3
0656  10565 050056        CPA .+3
0657  10566 026514R       JMP LUCH3
0658  10567 126562R       JMP DSCLU,I
0659*
0660*              ********************************************
0661*              * NULCK: IF LUN IS NULL, I.E., ITS EQT    *
0662*              *         ENTRY= 0, RETURN TO P+1.         *
0663*              *         OTHERWISE RETURN TO P+2.         *
0664*              ********************************************
0665*
0666  10570 000000  NULCK NOP          SUBROUTINE TO CHEK IF LUN IS NULL
```

```
0667  10571 062603R        LDA SAVEA    LUN IS ALWAYS STORED IN SAVEA
0668  10572 010072         AND B77      GET LUN ONLY
0669  10573 002003         SZA,RSS     RETURN TO P+2 IF LUN=0
0670  10574 026601R        JMP NL1
0671  10575 040052         ADA .-1
0672  10576 040121         ADA LUTAB    POINT TO RIGHT ENTRY
0673  10577 160000         LDA A,I      GET EQT ENTRY
0674  10600 002002         SZA          NULL? (=0?)
0675  10601 036570R NL1    ISZ NULCK
0676  10602 126570R        JMP NULCK,I  NO, RETURN TO P+2
0677  10603 000000  SAVEA   NOP
0678*
0679*                      ************************************************
0680*                      * SOSA - DUMP INDICATED TRACK/SECTOR IN OCTAL/ASCII *
0681*                      ************************************************
0682  10604 017127R SOSA   JSB ASCDC     GET TRACK #
0683  10605 026750R        JMP PMISS
0684  10606 070001         STA B
0685  10607 046641R        ADB N203
0686  10610 006021         SSB,RSS      LEGAL TRK#?
0687  10611 026737R        JMP PILLG     -NO
0688  10612 001727         ALF,ALF
0689  10613 072414R        STA CURTS
0690  10614 037644R        ISZ PMLOC
0691  10615 017127R        JSB ASCDC    GET SECTOR #
0692  10616 026750R        JMP PMISS
0693  10617 070001         STA B
0694  10620 044313         ADB MSECT
0695  10621 006021         SSB,RSS      LEGAL SECTR#?
0696  10622 026737R        JMP PILLG     -NO
0697  10623 042414R        ADA CURTS
0698  10624 072414R        STA CURTS
0699  10625 037644R        ISZ PMLOC    BUMP PARAMETER POINTER
0700  10626 017127R        JSB ASCDC    GO CONVERT # OF SECTORES
0701  10627 002404         CLA,INA      NO COUNT, SET = 1
0001  10630 003004         CMA,INA      SET NEGATIVE
0002  10631 072774R        STA ENTLN    SET DUMP COUNTER
0003  10632 060061         LDA .+6
0004  10633 073105R        STA LSTLN    ON LUN 6 (LIST DEVICE)
0005  10634 063604R        LDA PMTBL+2
0006  10635 037670R        ISZ TRFLG
0007  10636 053201R        CPA ASO      OCTAL DUMP?
0008  10637 027447R        JMP DUMPL    YES
0009  10640 027563R        JMP DUMPA    NO, ASCII
0010  10641 177465  N203   DEC -203
```

```
0012*                ************************************************************
0013*                *                                                          *
0014*                * :RPACK - PURGE FILES IN USER AREA THAT HAVE              *
0015*                * BEEN DELETED VIA :PURGE DIRECTIVE OR A                   *
0016*                * PROGRAMMATIC PURGE EXEC CALL AND PACK                    *
0017*                * REMAINING FILES.                                         *
0018*                *                                                          *
0019*                ************************************************************
0020  10642 002400  RPACK CLA
0021  10643 016542R       JSB NXSET
0022  10644 006400        CLB
0023  10645 016647R       JSB PURGE
0024  10646 026306R       JMP RNS       RETURN TO CONTROL STATE
```

```
0026*                ***************************************************
0027*                * PURGE - REMOVE FROM THE USER DIRECTORY AND FILES *
0028*                *      ALL ENTRIES THAT HAVE BEEN DELETED; AND AT   *
0029*                *      THE END OF A JOB ALL SYSTEM GENERATED PRO-   *
0030*                *      GRAMS THAT HAVE BEEN STORED(I.E. THE 'P' BI0 *
0031*                *      IS STILL SET).                               *
0032*                M***********************M*****************************
0033   10647 000000  PURGE NOP
0034   10650 073644R       STA ENDFL      SET FLAG FOR 'P' BIT TEST
0035   10651 002400        CLA
0036   10652 072402R       STA OVFLG      CLEAR OVERFLOW FLAG
0037   10653 060200        LDA DISCL
0038   10654 043236R       ADA B400
0039   10655 073235R       STA PTSEC      SET = USER FILE T/S
0040   10656 062326R       LDA LUN3
0041   10657 072451R       STA FLUN       SET DISC = LUN3
0042   10660 063602R       LDA PMTBL
0043   10661 073644R       STA PMLOC      SET START OF TRANSFER TABLE
0044   10662 177644R       STB PMLOC,I
0045   10663 005421        BLR,BRS
0046   10664 077236R       STB PTOTL
0047   10665 017377R       JSB OPONF      LOCK OUT OP, ATTN.
0048   10666 063617R       LDA LNBUF
0049   10667 073645R       STA JPNTR      SET JPNTR = START GF NEW DIC.BF.
0050   10670 062771R       LDA USDIR
0051   10671 073640R       STA NEWTS      NEWTS = START OF DICTIONARY TRAK
0052   10672 016452R       JSB READ1      INIT CURTS/MLOCN; READ SECTOR 1.
0053*
0054   10673 062446R       LDA DICAD
0055   10674 067617R       LDB LNBUF      PRESERVE 1ST DIRECTORY
0056   10675 017461R       JSB WMOVE        SECTOR FOR EFMP
0057   10676 000200        DEC 128
0058   10677 162413R PRG02 LDA MLOCN,I    GET 1ST WORD OF ENTRY
0059   10700 002003        SZA,RSS        NEXT INSTR. IF END OF DIREC.(=0)
0060   10701 027047R       JMP PRG50      GO TO FINALIZE
0061   10702 066402R       LDB OVFLG      IF OVERFLOW FLAG IS SET
0062   10703 006002        SZB              DO NOT PROCESS
0063   10704 026710R       JMP PRG2A          ANY MORE DELETED ENTRIES.
0064   10705 010074        AND B377
0065   10706 002003        SZA,RSS        WAS ENTRY DELETED?
0066   10707 027001R       JMP PRG30      YES - GO PROCESS IT
0067   10710 066413R PRG2A LDB MLOCN      NO - GO GET "P" BIT
0068   10711 044055        ADB .+2
0069   10712 076426R       STB TEMP       TEMP = 3RD LOCN OF ENTRY
0070   10713 160001        LDA B,I        GET 3RD WORD
0071   10714 013224R       AND B200       ISOLATE 'P' BIT
0072   10715 067644R       LDB ENDFL
0073   10716 006003        SZB,RSS        DO WE CHECK THE 'P' BIT?
0074   10717 026725R       JMP *+6        NO
0075   10720 066402R       LDB OVFLG      IF OVERFLOW FLAG IS SET
0076   10721 006002        SZB              DO NOT PROCESS
0077   10722 026730R       JMP PRG2B          ANY MORE DELETED ENTRIES.
0078   10723 002002        SZA            IS "P" BIT SET?
0079   10724 027001R       JMP PRG30      YES - GO PURGE THE ENTRY
0080   10725 163644R       LDA PMLOC,I
0081   10726 002021        SSA,RSS        IS PMLOC SET FOR PURGE
```

```
0082   10727 026733R        JMP **+4        NO
0083   10730 017034R PRG2B  JSB PRG37       YES--GO SET TO NEXT TABLE LOC.
0084   10731 002400         CLA
0085   10732 173644R        STA PMLOC,I     CLEAR NEXT TBL.LOCN.
0086   10733 036426R        ISZ TEMP        TEMP = LOCN OF TRK/SECTOR
0087   10734 067235R        LDB PTSEC
0088   10735 176426R        STB TEMP,I      STORE NEW TRK/SECTOR ORG.(=B)
0089   10736 036426R        ISZ TEMP        TEMP = LOCN OF ENTRY LENGTH
0090   10737 162426R        LDA TEMP,I      A = ENTRY LENGTH
0091   10740 143644R        ADA PMLOC,I     UPDATE SECTOR COUNT IN PMTBL
0092   10741 002021         SSA,RSS         IF SECTOR COUNT <32768
0093   10742 026750R        JMP PRG03         THEN CONTINUE,
0094   10743 000065         CLE,ERA             OTHERWISE DIVIDE COUNT BY 2
0095   10744 173644R        STA PMLOC,I     SAVE SECTOR COUNT
0096   10745 002040         SEZ             IF VALUE WAS ODD
0097   10746 002004         INA             ADD 1 TO SECOND HALF
0098   10747 017034R        JSB PRG37       GO SET TRANSFER TABLE POINTER
0099*                                          TO NEXT LOCATION.
0100   10750 173644R PRG03  STA PMLOC,I     SAVE SECTOR COUNT
0101   10751 162426R        LDA TEMP,I
0102   10752 017114R        JSB STRAK       COMPUTE NEW TRK/SECTOR ORG
0103   10753 077235R        STB PTSEC       PTSEC = NEW TRK/SECTOR(NXT ENTR)
0104   10754 062413R        LDA MLOCN       GET LENGTH OF DICT. ENTRY
0105   10755 016326R        JSB DRADD       COMPUTE DICT. ENTRY LENGTH
0106   10756 076774R        STB ENTLN       B = LENGTH GF DICT. ENTRY
0107   10757 047645R        ADB JPNTR
0108   10760 007004         CMB,INB
0109   10761 047633R        ADB DNBUF
0110   10762 006021         SSB,RSS         ROOM FOR ANOTHER ENTRY IN INBUF?
0111   10763 026771R        JMP PRG04       YES -
0112   10764 007400         CCB             NO - PUT OUT THE CURRENT BUFFER
0113   10765 177645R        STB JPNTR,I           SET END WORD (=-1)
0114   10766 017613R        JSB NUSET       WRITE INBUF (NEWTS ADVANCED TOO)
0115   10767 063617R        LDA LNBUF
0116   10770 073645R        STA JPNTR       JPNTR = START OF INBUF
0117   10771 062413R PRG04  LDA MLOCN       GET ORG OF MOVE
0118   10772 067645R        LDB JPNTR       GET DESTIN. OF MOVE
0119   10773 017461R        JSB WMOVE
0120   10774 000000  ENTLN   NOP
0121   10775 063645R        LDA JPNTR
0122   10776 042774R        ADA ENTLN
0123   10777 073645R        STA JPNTR       JPNTR = NEXT AVAIL LOCN IN INBUF
0124   11000 027032R        JMP PRG36
0125*
0126*                  * PROCESS A DELETED ENTRY HERE *
0127*
0128   11001 163644R PRG30  LDA PMLOC,I
0129   11002 002103         CLE,SZA,RSS     IS THIS THE FIRST FILE?
0130   11003 027014R        JMP PRG32       YES
0131   11004 002021         SSA,RSS         NO-IS IT POINT'G TO DELETE ENTRY
0132   11005 027011R        JMP PRG31       NO
0133   11006 001225         RAL,ERA         YES- STRIP BIT 15,
0134   11007 173644R        STA PMLOC,I       RESTORE CONTENTS,
0135   11010 027014R        JMP PRG32           AND GO PROCESS ENTRY.
0136   11011 017034R PRG31  JSB PRG37       GO SET TRANSFER TABLE POINTER
0137*                                          TO NEXT LOCATION.
```

```
0138  11012 002400         CLA              SET NEW ENTRY SLOT = 0
0139  11013 173644R        STA PMLOC,I
0140  11014 062413R PRG32  LDA MLOCN
0141  11015 040057         ADA .+4          MLOCN = -(ENTRY LENGTH)
0142  11016 160000         LDA A,I          A = ENTRY LENGTH(IN SECTORS)
0143  11017 037236R        ISZ PTOTL        SET   PTOTL NON ZERO
0144  11020 143644R        ADA PMLOC,I      A = # OF SECTORES PURGED
0145  11021 002321         CCE,SSA,RSS      IF SECTOR COUNT <32768
0146  11022 027030R        JMP PRG33          THEN CONTINUE,
0147  11023 001500         ERA                  OTHER WISE DIVIDE COUNT BY 2
0148  11024 173644R        STA PMLOC,I      SAVE SECTOR COUNT IN TRANS TABLE
0149  11025 002340         SEZ,CCE          IF VALUE WAS ODD
0150  11026 002004         INA                ADD 1 TO SECOND HALF.
0151  11027 017034R        JSB PRG37        GO SET TRANSFER TABLE POINTER
0152*                                         TO NEXT LOCATION.
0153  11030 001225  PRG33 RAL,ERA          SET BIT 15 IN SECTOR COUNT
0154  11031 173644R        STA PMLOC,I      SET INTO TRANSFER TABLE
0155*
0156  11032 015431R PRG36  JSB GETNX         GET NEXT DICT,ENTRY - CURTS AND
0157*                        *               MLOCN SET TO NEW ENTRY VALUES.
0158  11033 026677R        JMP PRG02        GO CHECK IT.
0159  11034 000000  PRG37  NOP
0160  11035 077046R        STB SAVEB        SAVE "B" REG
0161  11036 037644R        ISZ PMLOC        BUMP TRANS TABLE PNTR BY 1
0162  11037 067644R        LDB PMLOC        IF TRANSFER
0163  11040 007004         CMB,INB            TABLE
0164  11041 047151R        ADB ENTRN            IS FULL
0165  11042 006020         SSB                    THEN
0166  11043 036402R        ISZ OVFLG                 SET OVERFLOW FLAG.
0167  11044 067046R        LDB SAVEB        RESTORE "B" REG
0168  11045 127034R        JMP PRG37,I
0169  11046 000000  SAVEB  NOP              "B" REG SAVE AREA
```

```
0171*                ************************************************************
0172*                * FINALIZE THE PURGE - PACK THE REMAINING USER FILES*
0173*                ************************************************************
0174   11047 063236R PRG50 LDA PTOTL
0175   11050 002003        SZA,RSS
0176   11051 027130R        JMP PRG70
0177   11052 037644R        ISZ PMLOC
0178   11053 002400        CLA
0179   11054 173644R        STA PMLOC,I    SET END OF TRANSFER TABLE
0180   11055 173645R        STA JPNTR,I    SET END OF DIRECTORY
0181   11056 017613R        JSB NUSET      WRITE ON DIRECTORY TRACK
0182   11057 063640R        LDA NEWTS
0183   11060 010074        AND B377
0184   11061 002003        SZA,RSS        DRCTRY FULL?
0185   11062 027135R        JMP PRG71      -YES
0186   11063 002400        CLA
0187   11064 072413R        STA INBUF      CLEAR 1ST LOCN OF INBUF
0188   11065 063645R        LDA JPNTR
0189   11066 053635R        CPA DNBUF      WAS LAST SECTOR FILLED?
0190   11067 017613R        JSB NUSET      YES - OUTPUT INBUF AGAIN
0191   11070 063235R        LDA PTSEC      GET NEW USER T/S
0192   11071 016003R        JSB SETNX      SET NEW 'NXTTS'AND'SYSTS'IF IND.
0193   11072 017152R        JSB MVSET
0194*
0195   11073 060200        LDA DISCL
0196   11074 043236R        ADA B400
0197   11075 073235R        STA PTSEC      SET ORIGIN OF USER FILE
0198   11076 073640R        STA NEWTS      SET START OF NEW USER FILES
0199   11077 063602R        LDA PMTBL
0200   11100 073644R        STA PMLOC      PMLOC = START OF TRANSFER TABLE
0201   11101 163644R        LDA PMLOC,I
0202   11102 002020        SSA           IS 1ST ENTRY A DELETED SET?
0203   11103 027114R        JMP PRG60      YES
0204   11104 067640R        LDB NEWTS
0205   11105 017114R PRG55 JSB STRAK      GO FIND START OF SKIP AREA
0206   11106 077640R        STB NEWTS      SET START OF NEW
0207   11107 077235R        STB PTSEC         AND OLD USER FILES
0208   11110 037644R        ISZ PMLOC      BUMP TRANSFER TBL POINTER
0209   11111 163644R        LDA PMLOC,I    GET NEXT ENTRY
0210   11112 002021        SSA,RSS        IF ENTRY IS NOT A DELETE
0211   11113 027105R        JMP PRG55        GO BACK TO FIND START OF
0212*                                          SKIP AREA.
0213   11114 163644R PRG60 LDA PMLOC,I    GET # OF SECTORS PURGED
0214   11115 001665        ELA,CLE,ERA    CLEAR SIGN BIT
0215   11116 067235R        LDB PTSEC
0216   11117 017114R        JSB STRAK      GO TO END OF SKIP AREA
0217   11120 077235R        STB PTSEC      SET START OF TRANSFER AREA
0218   11121 017626R PRG65 JSB PMNXT      GET NEXT ENTRY
0219   11122 002003        SZA,RSS        END OF OLD USER FILE?
0220   11123 027130R        JMP PRG70      YES-GO CHECK FOR END OF REPACK
0221   11124 002020        SSA            IS THIS A DELETED ENTRY?
0222   11125 027114R        JMP PRG60      YES-GO PROCESS IT
0223   11126 017165R        JSB MVTSF      NO-MOVE "A" SECTORS ON DISC
0224   11127 027121R        JMP PRG65      GO GET NEXT ENTRY
0225   11130 066402R PRG70 LDB OVFLG      IF OVERFLOW INDICATOR
0226   11131 006003        SZB,RSS          IS OFF GO CHECK
```

```
0227   11132 027135R        JMP PRG71          NEXT SUBCHANNEL IF SS ACTIVE
0228   11133 006400         CLB
0229   11134 026651R        JMP PURGE+2    GO DO REPACK AGAIN
0230   11135 016553R PRG71  JSB NXTSC
0231   11136 027141R        JMP PRG75
0232   11137 006400         CLB
0233   11140 026651R        JMP PURGE+2
0234   11141 016365R PRG75  JSB RESET
0235   11142 002400         CLA       CLEAR FILE VALIDITY FLAG
0236   11143 067150R        LDB XTRAK
0237   11144 017042R        JSB EXSET
0238   11145 002400         CLA
0239   11146 017377R        JSB OPONF
0240   11147 125647R        JMP PURGE,I
0241*
0242   11150 000327  XTRAK  DEF TRAK#
0243   11151 003637R ENTRN  DEF PMCNT+28
```

```
0245*
0246*     ***************************************************************
0247*               * SETUP TO START USER FILE TRANSFERS *
0248*     ***************************************************************
0249*
0250  11152 000000  MVSET NOP
0251  11153 063212R       LDA RBUF
0252  11154 003004        CMA,INA          BUFFER LENGTH
0253  11155 040100        ADA UMLWA        LWA AVL. MEM - L(INBUF)
0254  11156 006400        CLB
0255*     ***************************************************************
0256  11157 017050R       JSB ..RRL
0257  11160 177747        DEC -25          DIVIDE BY 128
0258*     ***************************************************************
0259  11161 073237R       STA PSEC         +(SEC. COUNT)
0260  11162 003004        CMA,INA
0261  11163 073240R       STA MSEC         -(SEC. COUNT)
0262  11164 127152R       JMP MVSET,I
0263*
0264*               *****************************************
0265*               * TRANSFER MASS SECTORS ON DISC         *
0266*               * PTSEC = T/S OF ORIGIN                 *
0267*               * NEWTS = T/S OF NEW AREA               *
0268*               * MVSET MUST BE ENTERED PRIOR TO ENTRY  *
0269*               * A = # OF SECTORS TO TRANSFER          *
0270*               *****************************************
0271  11165 000000  MVTSF NOP
0272  11166 072774R       STA ENTLN        SET COUNTER FOR SECTOR MOVE
0273  11167 062774R MVTS1 LDA ENTLN        GET SECTOR COUNT OF ENTRY
0274  11170 002020        SSA              DONE WITH THIS ENTRY?
0275  11171 127165R       JMP MVTSF,I      YES
0276  11172 002003        SZA,RSS          DONE WITRH THIS ENTRY?
0277  11173 127165R       JMP MVTSF,I      YES
0278  11174 017177R       JSB RDTSF
0279  11175 017215R       JSB WRTSF
0280  11176 027167R       JMP MVTS1
0281*
0282  11177 000000  RDTSF NOP
0283  11200 043240R       ADA MSEC         -NO. SECTS IN MOVE BUFFER
0284  11201 066774R       LDB ENTLN
0285  11202 002021        SSA,RSS          MORE THAN N SECS LEFT?
0286  11203 067237R       LDB PSEC         YES - SET UP TO MOVE MAX. SELTS.
0287  11204 077236R       STB PTOTL        SAVE IT
0288  11205 072774R       STA ENTLN        SAVE REMAINING SECTORS, IF ANY
0289  11206 062451R       LDA FLUN
0290  11207 072304R       STA RWLUN        SET LUN = 2 IF WORK AREA
0291  11210 063235R       LDA PTSEC
0292  11211 016243R       JSB RDISC        READ N SECTORS OR LESS
0293  11212 012413R RBUF  DEF INBUF
0294  11213 073235R       STA PTSEC
0295  11214 127177R       JMP RDTSF,I
0296*
0297  11215 000000  WRTSF NOP
0298  11216 067236R       LDB PTOTL        GET SECTOR MOVE COUNTER
0299  11217 063640R       LDA NEWTS        GET NEW TRK/SECT ORIGIN
0300  11220 016253R       JSB WDISC        GO WRITE 6 SECTORS OR LESS
```

```
0301   11221 012413R        DEF INBUF
0302   11222 073640R        STA NEWTS      SAVE NEW TRK/SECT ORIGIN
0303   11223 127215R        JMP WRTSF,I
0304*
0305   11224 000200  B200    OCT 200
0306   11225 011226R BONLC   DEF BONBF      USED BY EDIT ROUTINE
0307   11226 000000  BONBF   BSS 7
0308   11235 000000  PTSEC   NOP           USER TRK/SECTOR
0309   11236 000000  PTOTL   NOP           # OF SECTORS PURGED
0310   11237 000000  PSEC    NOP           +(NO.SECTORS IN TRANSFER BUFFER)
0311   11240 000000  MSEC    NOP           =( DITTO)
```

```
0313*              ***********************************************
0314*              * EDIT - EDIT A USER SOURCE STATEMENT FILE.    *
0315*              *      - A NEW FILENAME MAY BE DECLARED FOR   *
0316*              *        THE EDITED FILE, IN WHICH CASE THE   *
0317*              *        ORIGINAL FILE IS NOT PURGED.         *
0318*              * FORMAT ':EDIT,FILENAME,LUN(,NEW FILENAME)'  *
0319*              * EDIT FILE FORMAT FROM LUN:                  *
0320*              *  /D(ELETE),M(,N)                           *
0321*              *  /I(NSERT),M       FOLLOWED BY SOURCE STMS.*
0322*              *  /R(EPLACE),M(,N) FOLLOWED BY SOURCE STMS.*
0323*              *  /E(ND)            INDICATES END OF EDITNG.*
0324*              *   /M(ERGE)(,K),FILE2(,M(,N))                *
0325*              *  /S(UPPRESS)                                  *
0326*              *  /U(NSUPPRESS)                                *
0327*              *                                             *
0328*              * ERRORS:                                     *
0329*              *1.FILENAME MISSING, UNDEFINED OR NON-SOURCE*
0330*              *2.NEW FILENAME ALREADY IN FILE.              *
0331*              *3.END OF FILENAME FILE REACHED BEFORE '/E'.*
0332*              *4.(CURR.SEQ.NO.)>M>N                         *
0333*              *5.AN 'N' ON A /I STATE. NOT =M               *
0334*              *6.M OR N BEYOND RANGE OF FILENAME FILE       *
0335*              *7.ILLEGAL EDIT REQUEST                       *
0336*              *                                             *
0337*              *'JOB' IS ABORTED ON ERRORS 3 AND 6           *
0338*              * ON ALL OTHER ERRORS THE EDIT FLAG 'EDITF'  *
0339*              *  IS SET NON-ZERO WHILE THE NEW STATEMENT   *
0340*              *  IS BEING READ THRU 'RN8'                  *
0341*              ***********************************************
0342  11241 006400  EDIT  CLB
0343  11242 077650R       STB ABINF     CLEAR ABS BIN FLAG
0344  11243 006004        INB           SET COLON FLAG TO ACCEPT
0345  11244 077365R       STB COLF        :: INPUT
0346  11245 016477R       JSB USERD     SEARCJ FOR OLD FILENAME
0347  11246 026750R       JMP PMISS     NONE THERE - ERROR EXIT
0348  11247 002103        CLE,SZA,RSS
0349  11250 026707R       JMP RUN2      FILENAME UNDEFINED
0350  11251 067225R       LDB BONLC    (A=ENTRY LOCN)
0351  11252 017461R       JSB WMOVE     MOVE ENTRY TO RONBF
0352  11253 000005        DEC 5
0353  11254 002400        CLA
0354  11255 072303R       STA SUPFL      CLEAR SUPPRESS FLAG.
0355  11256 163644R       LDA PMLOC,I
0356  11257 073233R       STA BONBF+5   SAVE CHAR.COUNT
0357  11260 063230R       LDA BONBF+2
0358  11261 010073        AND B177      GET ENTRY TYPE
0359  11262 050064        CPA .+11B     IS IT A SOURCE STATEMENT FILE?
0360  11263 002001        RSS           YES
0361  11264 026737R       JMP PILLG     NO - ILLEGAL FILE.
0362  11265 017127R       JSB ASCDC     GO GET L.U.N. PARAMETER
0363  11266 026750R       JMP PMISS     ERROR, IT ISN'T THERE
0364  11267 016562R       JSB DSCLU
0365  11270 073643R       STA INLUN
0366  11271 072603R       STA SAVEA
0367  11272 006404        CLB,INB       B>0 = INPUT DEVICE
0368  11273 016434R       JSB LUCHK     IS DEVICE OK?
```

```
0369   11274 016570R          JSB NULCK
0370   11275 026306R          JMP RNS
0371   11276 037644R          ISZ PMLOC       YES
0372   11277 063643R          LDA INLUN       LUN TO A
0373   11300 016747R          JSB EOTST       GO SET EOT STATUS IN CASE NEEDED
0374   11301 016477R          JSB USERD       'NEW' FILENAME PRESENT?
0375   11302 027320R          JMP EDIT1
0376   11303 002002           SZA             IS IT DUPLICATE?
0377   11304 026715R          JMP NMDUP       YES - ERROR, DUPLICATE FILENAME
0378   11305 163644R          LDA PMLOC,I
0379   11306 073233R          STA BONBF+5     SAVE CHAR,COUNT
0380   11307 062416R          LDA NMBUF       MOVE NEW FILENAME TO RONBF
0381   11310 073226R          STA BONBF
0382   11311 062417R          LDA NMBUF+1
0383   11312 073227R          STA BONBF+1
0384   11313 062420R          LDA NMBUF+2
0385   11314 073230R          STA BONBF+2
0386   11315 060161           LDA CUDSC       SAVE SUBCHANNEL OF
0387   11316 072306R          STA SVCUD         PRIMARY FILE
0388   11317 027325R          JMP EDIT2
0389   11320 060161  EDIT1 LDA CUDSC
0390   11321 072306R          STA SVCUD       SAVE SUBCHNL OF PRIMARY FILE
0391   11322 050155           CPA SYSSC       USER ON SYSTEM DISC?
0392   11323 002001           RSS              -YES, DON'T SET DOSM FLAG
0393   11324 036330R          ISZ DOSM         -NO, SET DOSM NON-ZERO
0394   11325 063232R EDIT2 LDA BONBF+4
0395   11326 003000           CMA
0396   11327 072774R          STA ENTLN       ENTLN = -(FILE LENGTH + 1)
0397   11330 063231R          LDA BONBF+3
0398   11331 072414R          STA CURTS       CURTS = TRK/SECT ORG OF FILENAME
0399   11332 060157           LDA NXTTS
0400   11333 073231R          STA BONBF+3     SET ORIGIN OF EDITED FILE
0401   11334 066330R          LDB DOSM
0402   11335 006002           SZB             USER WORK AREA?
0403   11336 060160           LDA SYSTS       YES: USE WORK AREA
0404   11337 072327R          STA SAVTS       SET TRK/SEC PNTR FOR NEW FILE.
0405   11340 002400           CLA
0406   11341 072331R          STA NOFLG
0407   11342 073632R          STA CDCNT       SET STATEMENT COUNT = 0
0408   11343 073232R          STA BONBF+4     CLEAR SECTOR COUNT OF EDITED FL.
0409   11344 062326R          LDA LUN3
0410   11345 006002           SZB             WRITE WORK AREA?
0411   11346 062325R          LDA LUN2        YES: SET LUN = 2
0412   11347 072451R          STA FLUN
0413   11350 063635R          LDA DNBUF
0414   11351 072413R          STA MLOCN       MLOCN=L(INBUF+128) INITIALLY
0415   11352 062333R          LDA MEDTB
0416   11353 072323R          STA ELOCN       ELOCN=L(DICBF-1) INITIALLY
0417   11354 002400           CLA           INIT. END OF FILE FLAG
0418   11355 072304R          STA EOFFL
0419   11356 072305R          STA DICBL       START WITH GOOD DICBF
0420   11357 002004           INA           SET INFL TO INDICATE :ED
0421   11360 073243R          STA INFL
0422*
0423   11361 060057           LDA .+4
0424   11362 066446R          LDB DICAD
```

```
0425  11363 016354R        JSB CODIN      READ CODE SEG. INTO DICBF
0426*
0427  11364          DICBF EQU *
0428*
0429*
0430*               ********************************************************
0431*               * EDITR - THIS IS THE MAIN EDITING PROCESSOR LOOP *
0432*               ********************************************************
0433  11364 064123  EDITR LDB JBUFF      SET BUFFER=JBUFF
0434  11365 017645R       JSB EDINP      GO INPUT A REQUEST
0435  11366 017476R EDIT3 JSB SCANR      GO SCAN THE EDIT STATEMENT
0436  11367 062303R       LDA SUPFL
0437  11370 002002        SZA
0438  11371 027400R       JMP EDTS        PRINTING SUPPRESSED
0439  11372 067110R       LDB STLEN
0440  11373 063643R       LDA INLUN
0441  11374 050054        CPA .+1        WAS REQUST FROM TTY?
0442  11375 027400R       JMP *+3        YES
0443  11376 060123        LDA JBUFF      NO, PRINT IT ON THE TTY NOW
0444  11377 017356R       JSB ERRDG
0445  11400 017634R EDTS  JSB SUM?       /S, /U OR /M?
0446  11401 056336R       CPB END     TRAP OUT /E AFTER /M AT
0447  11402 002001        RSS            END OF FILE=1
0448  11403 027407R       JMP EDTS1
0449  11404 062304R       LDA EOFFL       IF EOFFL=1 THEN IT'S END OF
0450  11405 002002        SZA              FILE ALREADY. DON'T READ ANY M
0451  11406 027671R       JMP EDITX
0452  11407 016216R EDTS1 JSB DISCR  READ A STAT. FROM FILE, BMP CNTR
0453  11410 002400        CLA            END OF FILE EXIT, SET A=0
0454  11411 073523R       STA EDLEN      SAVE STATEMENT LENGTH
0455  11412 037632R       ISZ CDCNT
0456  11413 164123  RNRET LDB JBUFF,I
0457  11414 056336R       CPB END        WAS '/E' READ FROM EDIT FILE?
0458  11415 027671R       JMP EDITX      YES=GO COMPLETE THE EDIT PROCESS
0459  11416 002003        SZA,RSS        NO - WAS THERE AN EOF FROM DISC?
0460  11417 027661R       JMP EOFER      YES - ERROR
0461  11420 160123        LDA JBUFF,I
0462  11421 072766R EDILG STA EDITF      SET EDIT FLAG NON-ZERO
0463  11422 010075        AND B1774
0464  11423 052341R       CPA SLUP       WAS A SLASH THERE?
0465  11424 002001        RSS             -YES
0466  11425 026737R       JMP PILLG      GO TO DIAGN. AND RE-READ
0467*
0468*               * EVALUATE 'M' AND 'N' HERE *
0469*
0470  11426 017127R       JSB ASCDC      GO GET 1ST LIMIT
0471  11427 026557R       JMP SLSTE      NO VALUE,  ERROR
0472  11430 072324R       STA MVALU      SAVE M
0473  11431 037644R       ISZ PMLOC
0474  11432 017127R       JSB ASCDC
0475  11433 062324R       LDA MVALU      NO N - SET=M
0476  11434 072325R       STA NVALU      SAVE N VALUE
0477  11435 066324R       LDB MVALU
0478  11436 007004        CMB,INB
0479  11437 040001        ADA B
0480  11440 072426R       STA TEMP       TEMP = M-N
```

```
0481  11441 002020          SSA             IS M GREATER THAN N?
0482  11442 026557R         JMP SLSTE       YES,  SEQUENCE ERROR
0483  11443 047632R         ADB CDCNT
0484  11444 044052          ADB .-1         B-1 TO B
0485  11445 006021          SSB,RSS         IS M GREATER THAN STATE. NO.?
0486  11446 026557R         JMP SLSTE       YES,  ERROR
0487  11447 160123          LDA JBUFF,I      NO, IT'S OK
0488  11450 052337R         CPA INS         WAS AN INSERT REQ?
0489  11451 002001          RSS             YES
0490  11452 027457R         JMP EDIT4       NO - GO TEST FOR /D OR /R
0491  11453 066426R         LDB TEMP
0492  11454 006003          SZB,RSS         M=N (I.E. M ONLY)?
0493  11455 027462R         JMP EDIT5       YES - SKIP TO CONTINUE
0494  11456 026557R         JMP SLSTE       GO PRINT LIMIT ERROR
0495  11457 052335R EDIT4   CPA DEL         /D?
0496  11460 027462R         JMP EDIT5       OK
0497  11461 052340R         CPA REP         /R?
0498  11462 002401  EDIT5   CLA,RSS         OK
0499  11463 026737R         JMP PILLG       ILLEGAL PARAMETER
0500  11464 072766R         STA EDITF       CLEAR THE EDIT FLAG
0501  11465 072326R         STA BTRAK       CLEAR THE SOURCE COUNTER
0502  11466 063632R         LDA CDCNT
0503  11467 052324R         CPA MVALU
0504  11470 027477R         JMP EDIT6       CDCNT=M (START OF NEW EDIT STS.)
0505  11471 016344R         JSB EDITW       WRITE CURR. BUFFR TO NEW FILE
0506  11472 016216R         JSB DISCR       READ NEXT STATE. FROM FILE
0507  11473 027661R         JMP EOFER       END OF FILE FROM DISC.
0508  11474 073523R         STA EDLEN       SAVE STATEMENT LENGTH
0509  11475 037632R         ISZ CDCNT
0510  11476 027462R         JMP EDIT5
0511*
0512  11477 160123  EDIT6   LDA JBUFF,I
0513  11500 052337R         CPA INS         IS THIS AN INSERT?
0514  11501 027533R         JMP EDIT9       YES
0515  11502 062325R         LDA NVALU       NO
0516  11503 053632R         CPA CDCNT       END OF STATES, TO BE DELETED?
0517  11504 027512R         JMP EDIT7       YES
0518  11505 016216R         JSB DISCR       NO
0519  11506 027661R         JMP EOFER       END OF FILE RETURN
0520  11507 073523R         STA EDLEN       SAVE STATEMENT LENGTH
0521  11510 037632R         ISZ CDCNT
0522  11511 027502R         JMP EDIT6+3        - GO BACK
0523  11512 160123  EDIT7   LDA JBUFF,I
0524  11513 052335R         CPA DEL         WAS THIS A DELETE?
0525  11514 027364R         JMP EDITR       YES - GO FOR NXT CONTROL(EDIT)
0526  11515 067762R EDIT8   LDB BFFAD
0527  11516 017645R         JSB EDINP       GO INPUT A STATEMENT
0528  11517 077523R         STB EDLEN       SAVE STATEMENT LENGTH
0529  11520 063762R         LDA BFFAD
0530  11521 064123          LDB JBUFF
0001  11522 017461R NORTN   JSB WMOVE
0002  11523 000000  EDLEN   NOP
0003  11524 063661R         LDA BUFFR
0004  11525 010075          AND  B1774
0005  11526 052341R         CPA SLUP        IS 1ST CHAR = /?
0006  11527 027535R         JMP EDIT0       YES - GO SET BUFFER
```

```
0007  11530 052342R        CPA R35K       1ST CHAR = COLON?
0008  11531 027545R        JMP EDT10
0009  11532 036326R        ISZ BTRAK      BUMP THE SOURCE COUNTER
0010  11533 016344R EDIT9  JSB EDITW      NO
0011  11534 027515R        JMP EDIT8
0012*
0013  11535 066326R EDIT0  LDB BTRAK
0014  11536 006002         SZB            WAS ANY SOURCE READ?
0015  11537 027366R        JMP EDIT3       -YES, GO PROCESS
0016  11540 062315R        LDA NOSOR
0017  11541 064060         LDB .+5
0018  11542 076331R        STB NOFLG      SET SOURCE FLAG NON-ZERO
0019  11543 076766R        STB EDITF      SET EDIT FLAG NON-ZERO
0020  11544 026752R        JMP PMISS+2
0021*
0022*              *  PROCESS INPUT WITH COLON IN COLUMN 1  *
0023*
0024  11545 063643R EDT10  LDA INLUN      IF EDIT FILE FROM TTY, CAN'T
0025  11546 050112         CPA SYSTY      HAVE :AB OR :OF
0026  11547 027553R        JMP *+4
0027  11550 050111         CPA BATCH      IF EDIT FILE FROM BATCH DEV.,
0028  11551 027535R        JMP EDIT0      CAN'T HAVE COLON IN COL 1
0029  11552 027532R        JMP EDIT9-1    OK IF FROM ANY OTHER DEVICE
0030  11553 063661R        LDA BUFFR      GET 1ST WORD
0031  11554 010074         AND B377       GET 1ST CHAR AFTER COLON
0032  11555 001727         ALF,ALF        LEFT JUSTIFY IT
0033  11556 070001         STA B          SAVE IT TEMPORARILY
0034  11557 063662R        LDA BUFFR+1    GET 2ND WORD
0035  11560 010075         AND B1774      GET 2ND CHAR AFTER COLON
0036  11561 001727         ALF,ALF        RIGHT JUSTIFY IT
0037  11562 030001         IOR B          MAKE INTO 1 WORD
0038  11563 053203R        CPA AOF        :OF?
0039  11564 026613R        JMP OFF
0040  11565 053142R        CPA CHARS+2    :AB?
0041  11566 027315R        JMP EJOBX+1
0042  11567 027532R        JMP EDIT9-1    NONE OF THESE, OK,
0043*
0044*              * RETURN FROM RNS(RE-REQUEST) HERE *
0045*
0046  11570 062305R EDITA  LDA DICBL      IS DICBF CLOBBERED BY /MERGE?
0047  11571 002003         SZA,RSS
0048  11572 027607R        JMP EDITC      NO,
0049  11573 006404         CLB,INB        RESTORE SUBCHNL OF PRIMARY
0050  11574 062306R        LDA SVCUD        EDIT FILE IF IT HAS BEEN
0051  11575 050161         CPA CUDSC        CHANGED DUE TO MERGE
0052  11576 002001         RSS
0053  11577 016573R        JSB JEXUD
0054  11600 060057         LDA .+4        YES, RESTORE CODE SEG. IN DICBF
0055  11601 066446R        LDB DICAD
0056  11602 016354R        JSB CODIN
0057  11603 002400         CLA            CLEAR FLAG TO SAY DICBF IS GOOD
0058  11604 072305R        STA DICBL
0059  11605 062277R        LDA TEMP4      RESTORE SAVED EDLEN
0060  11606 073523R        STA EDLEN
0061*
0062  11607 017476R EDITC  JSB SCANR      SET UP PARAMETER LIST
```

```
0063  11610 076766R        STB EDITF      CLEAR EDIT FLAG
0064  11611 160123         LDA JBUFF,I
0065  11612 010075         AND B1774
0066  11613 052342R        CPA B35K
0067  11614 067604R        LDB PMCNT+1
0068  11615 057142R        CPB CHARS+2    ;AB INPUT?
0069  11616 027315R        JMP EJOBX+1     =YES, GO ABORT JOB
0070  11617 057203R        CPB AOF        ;OF INPUT?
0071  11620 026613R        JMP OFF
0072  11621 006400         CLB
0073  11622 056331R        CPB NOFLG      LOOKING FOR SOURCE?
0074  11623 027632R        JMP EDITB          =NO
0075*
0076  11624 076331R        STB NOFLG
0077  11625 063110R        LDA STLEN
0078  11626 073523R        STA EDLEN
0079  11627 060123         LDA JBUFF
0080  11630 067762R        LDB BFFAD
0081  11631 027522R        JMP NORTN
0082*
0083  11632 017634R EDITB  JSB SUM?          /S,/U OR /M?
0084  11633 027413R        JMP RNRET         NO.
0085*
0086  11634 000000  SUM?    NOP
0087  11635 164123         LDB JBUFF,I
0088  11636 056311R        CPB SUP           /S?
0089  11637 027775R        JMP EDITS
0090  11640 056312R        CPB UNSUP         /U?
0091  11641 026000R        JMP EDITU
0092  11642 056310R        CPB MER            /M?
0093  11643 026003R        JMP EDITM
0094  11644 127634R        JMP SUM?,I         RETURN IF NONE OF ABOVE.
0095*
0096*
0097*              * ENTER AN EDIT REQUEST OR EDIT STATEMENT *
0098*
0099  11645 000000  EDINP  NOP
0100  11646 076426R        STB TEMP SAVE INPUT BUFFER LOCATION
0101  11647 063034R        LDA PRINP      A = '# FOLLOWED BY BELL'
0102  11650 067643R        LDB INLUN
0103  11651 007000        CMB
0104  11652 054051         CPB .-2        IS INPUT FROM TTY?
0105  11653 017356R        JSB ERRDG      GO PRINT '# FOLLOWD BY BELL'
0106  11654 066426R        LDB TEMP       RESTORE BUFFER LOCATION
0107  11655 062343R        LDA D40        40
0108  11656 016026R        JSB STORD      READ 80 OR LESS CHARS FROM LUN
0109  11657 027661R        JMP EOFER      END OF FILE EXIT(ILLEGAL)
0110  11660 127645R        JMP EDINP,I     RETURN
0111*
0112  11661 064057  EOFER  LDB .+4
0113  11662 063664R        LDA *+2
0114  11663 026752R        JMP PMISS+2
0115  11664 011665R        DEF *+1
0116  11665 042516         ASC 4,END FILE
0117*
0118*              * SET UP FOR EXIT FROM EDIT *
```

```
0119*
0120   11671 016344R EDITX JSB EDITW    WRITE A STAT.
0121   11672 016216R       JSB DISCR      READ A STATE.
0122   11673 002400       CLA            END OF FILE EXIT, SET A=0
0123   11674 073523R       STA EDLEN      SAVE STATEMENT LENGTH
0124   11675 027671R       JMP EDITX      NO, GO TRANSFER ANOTHER STATE.
0125   11676 073234R EDTX1 STA BONBF+6    CLEAR PURGE FLAG
0126   11677 003400       CCA
0127   11700 073523R       STA EDLEN      SET EOF WORD = -1
0128   11701 016344R       JSB EDITW
0129   11702 062327R       LDA SAVTS      WRITE LAST SECTOR OF EDITED FILE
0130   11703 066451R       LDB FLUN
0131   11704 076304R       STB RWLUN      SET CORRECT LUN
0132   11705 006404       CLB,INB
0133   11706 016253R       JSB WDISC
0134   11707 010062R       DEF EDTBF
0135   11710 067225R EDTX2 LDB BONLC
0136   11711 005200       RBL            ADDR. OF FILENAME
0137   11712 062326R       LDA LUN3
0138   11713 072451R       STA FLUN       SET LUN3 FOR DISC
0139   11714 063233R       LDA BONBF+5    # OF CHARS
0140   11715 016327R       JSB DIRSR      SEARCH DIRECTORY
0141   11716 000771R       DEF USDIR
0142   11717 002002       SZA            NO NAME
0143   11720 027770R       JMP EDTX3      OUT IF ENTRY IS FOUND
0144   11721 062330R       LDA DOSM
0145   11722 002002       SZA            WORK AREA USED?
0146   11723 027736R       JMP EDTXY      YES; DON'T PUT IN NEW ENTRY YET
0147   11724 060064       LDA .+11B      SET ENTRY TYPE FOR DICT. ENTRY
0148   11725 073636R       STA ENTYP
0149   11726 063232R       LDA BONBF+4    ENTRY LENGTH
0150   11727 002004       INA            ADD 1 FOR FINAL SECTOR
0151   11730 072774R       STA ENTLN
0152   11731 067231R       LDB BONBF+3    ENTRY ORG.
0153   11732 077637R       STB ENTSC
0154   11733 017114R       JSB STRAK
0155   11734 077640R       STB NEWTS
0156   11735 017646R       JSB DCSTR      GO STORE ENTRY IN DICTIONERY
0157   11736 067234R EDTXY LDB BONBF+6
0158   11737 006003       SZB,RSS
0159   11740 027745R       JMP EDNEW
0160   11741 016542R       JSB NXSET
0161   11742 002400       CLA
0162   11743 006400       CLB
0163   11744 016647R       JSB PURGE      NO = GO PURGE OLD ENTRY
0164   11745 062330R EDNEW LDA DOSM
0165   11746 002003       SZA,RSS        WORK AREA USED?
0166   11747 026306R       JMP RNS        NO; TAKE EXIT
0167   11750 060157       LDA NXTTS      YES; SETUP FOR SHIFT
0168   11751 073640R       STA NEWTS
0169   11752 073231R       STA BONBF+3
0170   11753 017152R       JSB MVSET      SET FILE TRANSFER COUNT
0171   11754 036330R       ISZ DOSM       SET DOSM = 2
0172   11755 060160       LDA SYSTS
0173   11756 073235R       STA PTSEC      SET W.A. ORIGIN
0174   11757 062325R       LDA LUN2
```

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0175  11760 072451R        STA FLUN
0176  11761 063232R        LDA BONBF+4
0177  11762 002004         INA              SET ENTRY LENGTH
0178  11763 017165R        JSB MVTSF        MOVE 'A' SECTORS FROM WORK AREA
0179  11764 002400         CLA
0180  11765 072330R        STA DOSM         CLEAR WORK AREA FLAG
0181  11766 073234R        STA BONBF+6      CLEAR PURGE FLAG
0182  11767 027710R        JMP EDTX2
0183*
0184  11770 073234R EDTX3  STA BONBF+6
0185  11771 060075         LDA B1774
0186  11772 172413R        STA MLOCN,I      DELETE OLD FILENAME
0187  11773 016656R        JSB WSECT        WRITE LAST SECTOR BACK
0188  11774 027710R        JMP EDTX2
0189*
0190*               *  SUPPRESS PRINTING EDIT COMMANDS ON TTY  *
0191*
0192  11775 060054  EDITS  LDA .+1           SET SUPPRESS FLAG.
0193  11776 072303R        STA SUPFL
0194  11777 027364R        JMP EDITR
0195*
0196*               *  UNSUPPRESS PRINTING EDIT COMMANDS ON TTY*
0197*
0198  12000 002400  EDITU  CLA
0199  12001 072303R        STA SUPFL        CLEAR   "    "
0200  12002 027364R        JMP EDITR
0201*
0202*
0203*               ******************************
0204*               *  PROCESS /MERGE COMMAND  *
0205*               *                          *
0206*
0207  12003 063644R EDITM  LDA PMLOC
0208  12004 072766R        STA EDITF        SET EDIT FLAG NON-ZERO
0209  12005 002004         INA              CHECK NEXT PARAMETER
0210  12006 164000         LDB A,I
0211  12007 006003         SZB,RSS          IS NEXT PARM THERE
0212  12010 026750R        JMP PMISS
0213  12011 002004         INA              INCREMENT PMTBL POINTER
0214  12012 164000         LDB A,I          TYPE/CHAR COUNT TO B
0215  12013 006021         SSB,RSS          IS TYPE NUMERIC?
0216  12014 026021R        JMP EDTM1        NO, SET DEFAULT VALUE
0217  12015 017127R        JSB ASCDC        YES - GO GET IT
0218  12016 026750R        JMP PMISS
0219  12017 037644R        ISZ PMLOC
0220  12020 026022R        JMP *+2
0221  12021 003400  EDTM1  CCA              DEFAULT=-1,EDN OF FILE
0222  12022 072324R        STA MVALU
0223  12023 062451R        LDA FLUN         SAVE LU OF OUTPUT FILE
0224  12024 072307R        STA SVFLN         (DESTROYED BY 'USERD' ROUTINE)
0225  12025 062413R         LDA MLOCN       SAVE MLOCN BEFORE USERD DESTROYS
0226  12026 072274R        STA TEMP1
0227  12027 072305R        STA DICBL        SET FLAG   0 ; 'DICBF CLOBBERED'
0228  12030 062414R        LDA CURTS        SAVE CURTS
0229  12031 072276R        STA TEMP2
0230  12032 063523R        LDA EDLEN    SAVE EDLEN BEFORE DICBF CLOBBERS I
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0231   12033 072277R        STA TEMP4
0232   12034 016477R        JSB USERD       GO SEARCH FOR FILENAME TO MERGE
0233   12035 026750R        JMP PMISS       NONE THERE - ERROR EXIT
0234   12036 002103         CLE,SZA,RSS
0235   12037 026707R        JMP RUN2        FILENAME UNDEFINED,
0236   12040 064000         LDB A           CHECK FOR SOURCE FILE
0237   12041 044055         ADB .+2         B = ADDR OF 3RD WORD IN ENTRY
0238   12042 160001         LDA B,I
0239   12043 010073         AND B177        EXTRACT TYPE
0240   12044 050064         CPA .+11B       SOURCE TYPE?
0241   12045 006005         INB,RSS         YES
0242   12046 026737R        JMP PILLG       NO - ERROR
0243   12047 160001          LDA B,I
0244   12050 072302R         STA CTS2       SAVE STARTING T/S
0245   12051 006004          INB
0246   12052 160001        LDA B,I        GET FILE LENGTH
0247   12053 003000        CMA        A = -(FILE LENGTH + 1)
0248   12054 072301R         STA FLN2       SAVE FILE LNGTH
0249   12055 060161        LDA CUDSC
0250   12056 064073        LDB XJFSC
0251   12057 017042R        JSB EXSET       SET SC
0252*
0253   12060 062307R        LDA SVFLN      RESTORE LU OF
0254   12061 072451R        STA FLUN         OUTPUT FILE
0255   12062 006404         CLB,INB        RESTORE SUBCHNL OF PRIMARY
0256   12063 062306R        LDA SVCUD        EDIT FILE IF IT HAS BEEN
0257   12064 050161         CPA CUDSC        CHANGED BY A MERGE COMMAND
0258   12065 002001         RSS
0259   12066 016573R        JSB JEXUD
0260   12067 062274R        LDA TEMP1      RESTORE MLOCN
0261   12070 072413R        STA MLOCN
0262   12071 062275R        LDA TEMP2      RESTORE CURTS
0263   12072 072414R        STA CURTS
0264*
0265   12073 060057        LDA .+4      READ IN CODE SEG,
0266   12074 066446R        LDB DICAD
0267   12075 016354R        JSB CODIN
0268   12076 002400         CLA              CLEAR FLAG TO SAY DICBF IS GOOD
0269   12077 072305R        STA DICBL
0270   12100 062277R        LDA TEMP4   RESTORE EDLEN
0271   12101 073523R        STA EDLEN
0272*
0273*          CHECK LIMITS       *
0274*
0275   12102 017127R        JSB ASCDC       GET 1ST LIMIT
0276   12103 026222R        JMP EDTM8       NO VALUE - DEFAULT ENTIRE FILE
0277   12104 072313R        STA MVAL2       SAVE M2
0278   12105 037644R        ISZ PMLOC
0279   12106 017127R        JSB ASCDC
0280   12107 062313R        LDA MVAL2       NO  N2 - SET = M2
0281   12110 072314R        STA NVAL2
0282   12111 002003         SZA,RSS     NVAL2=0?
0283   12112 026120R        JMP EDTM9   YES, NO NEED TO TEST LIMITS,
0284   12113 066313R        LDB MVAL2
0285   12114 007004         CMB,INB
0286   12115 040001         ADA B
```

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0287  12116 002020         SSA              MVAL2 > NVAL2?
0288  12117 026557R        JMP SLSTE        YES
0289  12120 002400  EDTM9  CLA
0290  12121 072766R        STA EDITF      CLEAR EDIT FLAG
0291  12122 072326R        STA BTRAK
0292  12123 062324R        LDA MVALU
0293  12124 002020         SSA       MVALU < 0?
0294  12125 026135R        JMP EDTM2      YES, MERGE AT END
0295  12126 067632R        LDB CDCNT
0296  12127 007004         CMB,INB          MVALU = CDCNT?
0297  12130 040001         ADA B
0298  12131 002003         SZA,RSS
0299  12132 026151R        JMP EDTM3        YES = START MERGE.
0300  12133 002020         SSA              MVALU < CDCNT?
0301  12134 026557R        JMP SLSTE        YES = ERROR
0302*
0303  12135 062304R EDTM2  LDA EOFFL      HAS EOF ON PRIMARY FILE
0304  12136 002002         SZA               BEEN ENCOUNTERED?
0305  12137 026227R        JMP TSEOF          YES= SKIP READ
0306  12140 016216R        JSB DISCR      READ NEXT STMT FROM PRIMARY FILE
0307  12141 026227R        JMP TSEOF       EOF = SEE IF MERGE AT END
0308  12142 073523R        STA EDLEN
0309  12143 016344R        JSB EDITW       WRITE STATEMENT
0310  12144 037632R        ISZ CDCNT
0311  12145 062324R        LDA MVALU
0312  12146 053632R        CPA CDCNT        MVALU = CDCNT?
0313  12147 002001         RSS              YES
0314  12150 026135R        JMP EDTM2        NO = CONTINUE READING
0315*
0316  12151 063523R EDTM3  LDA EDLEN    SAVE EDLEN,ETC BEFORE
0317  12152 072277R        STA TEMP4    READING FILE 2
0318  12153 062413R        LDA MLOCN
0319  12154 072274R        STA TEMP1
0320  12155 062414R        LDA CURTS
0321  12156 072275R        STA TEMP2
0322  12157 062774R        LDA ENTLN
0323  12160 072276R        STA TEMP3
0324  12161 002400         CLA
0325  12162 072300R        STA CDCN2    INIT. STAT. COUNTER
0326  12163 063635R        LDA DNBUF              INITIALIZE MLOCN,CURTS,EN
0327  12164 072413R        STA MLOCN              READING FILE 2
0328  12165 062302R        LDA CTS2
0329  12166 072414R        STA CURTS
0330  12167 062301R        LDA FLN2
0331  12170 072774R        STA ENTLN
0332  12171 063507R EDTM4  LDA N3               SET LUN TO =3 FOR READING
0333  12172 072304R        STA RWLUN              THE CORRECT SUBCHANNEL
0334  12173 016216R        JSB DISCR              READ A STATEMENT FROM FIL
0335  12174 027661R        JMP EOFER
0336  12175 073523R        STA EDLEN
0337  12176 036300R        ISZ CDCN2
0338  12177 062300R        LDA CDCN2
0339  12200 052313R        CPA MVAL2        START MERGING?
0340  12201 002001         RSS              YES = START MERGING
0341  12202 026171R        JMP EDTM4
0342  12203 016344R EDTM5  JSB EDITW              WRITE STAT. TO NEW FILE
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0343   12204 062300R        LDA CDCN2
0344   12205 052314R        CPA NVAL2       MERGING DONE?
0345   12206 026236R        JMP RESTR             YES, RESTORE PARAMS BEFOR
0346   12207 063507R        LDA N3                SET LUN TO -3
0347   12210 072304R        STA RWLUN
0348   12211 016216R        JSB DISCR       READ A STAT FROM FILE 2
0349   12212 026216R        JMP EDTM7       CHECK IF MERGE ENTIRE FILE
0350   12213 036300R        ISZ CDCN2       BUMP STAT CNTR
0351   12214 073523R        STA EDLEN
0352   12215 026203R        JMP EDTM5       CONTINUE TO MERGE
0353   12216 062314R EDTM7  LDA NVAL2
0354   12217 002002         SZA             WANT ENTIRE FILE?(NVAL2=0?)
0355   12220 027661R        JMP EOFER       NO-  ERROR END OFILE
0356   12221 026236R        JMP RESTR      YES, DONE,
0357   12222 002400  EDTM8  CLA
0358   12223 072314R        STA NVAL2
0359   12224 002004         INA
0360   12225 072313R        STA MVAL2
0361   12226 026120R        JMP EDTM9
0362   12227 062324R TSEOF  LDA MVALU       MERGE AT END?
0363   12230 002021         SSA,RSS         I.E. MVALU < 0?
0364   12231 027661R        JMP EOFER       NO - ERROR
0365   12232 002404         CLA,INA     SET EOFFL
0366   12233 072304R        STA EOFFL
0367   12234 002400         CLA
0368   12235 026152R        JMP EDTM3+1
0369*
0370   12236 062274R RESTR  LDA TEMP1             RESTORE SAVED MLOCN,ENTLN
0371   12237 072413R        STA MLOCN
0372   12240 062276R        LDA TEMP3
0373   12241 072774R        STA ENTLN
0374   12242 062277R        LDA TEMP4
0375   12243 073523R        STA EDLEN     RESTORE EDLEN,CURTS
0376   12244 062275R        LDA TEMP2
0377   12245 072414R        STA CURTS
0378*
0379*RESTORE INBUF IF NECESSARY.
0380*
0381   12246 067632R        LDB CDCNT           ANY STATEMENT READ FROM FI
0382   12247 006003         SZB,RSS        I.E. EDCNT = 0?
0383   12250 027364R        JMP EDITR
0384   12251 010074         AND B377            YES, GET T/S TO BE READ FR
0385   12252 040052         ADA .-1             A = SEC # THAT WAS IN INBU
0386   12253 002021         SSA,RSS             ON TRACK BOUNDARY?
0387   12254 026270R        JMP RST2            NO
0388   12255 062414R        LDA CURTS           YES, SHOULD BACK UP 1 TRAC
0389   12256 010075         AND B1774
0390   12257 001727         ALF,ALF             GET TR. # RIGHT JUSTIFIED
0391   12260 040052         ADA .-1
0392   12261 001727         ALF,ALF             LEFT JUSTIFY IT AGAIN
0393   12262 064116         LDB SECTR           B = # SEC/TRACK
0394   12263 044052         ADB .-1             LAST SEC # ON A TRACK IS 1
0395   12264 030001  RST1   IOR B               MAKE TR/SEC INTO 1 WORD
0396   12265 072414R        STA CURTS           SET CURTS FOR READING BACK
0397   12266 016425R        JSB RSECT           RESTORE INBUF
0398   12267 027364R        JMP EDITR
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0399  12270 070001  RST2   STA B                SAVE NEW SEC #
0400  12271 062414R        LDA CURTS            GET OLD TR #
0401  12272 010075         AND B1774
0402  12273 026264R        JMP RST1
0403  12274 000000  TEMP1  NOP
0404  12275 000000  TEMP2  NOP
0405  12276 000000  TEMP3  NOP
0406  12277 000000  TEMP4  NOP
0407  12300 000000  CDCN2  NOP
0408  12300          TEMP5  EQU CDCN2      USED BY !EA ,!EB DIRECTIVE.
0409  12301 000000  FLN2   NOP
0410  12302 000000  CTS2   NOP
0411  12303 000000  SUPFL  NOP
0412  12304 000000  EOFFL  NOP
0413  12305 000000  DICBL  NOP
0414  12306 000000  SVCUD  NOP
0415  12307 000000  SVFLN  NOP
0416  12310 027515  MER    ASC 1,/M
0417  12311 027523  SUP    ASC  1,/S
0418  12312 027525  UNSUP  ASC  1,/U
0419  12313 000000  MVAL2  NOP
0420  12314 000000  NVAL2  NOP
0421  12315 012316R NOSOR  DEF *+1
0422  12316 047117         ASC 5,NO SOURCE!
0423  12323 000000  ELOCN  NOP             DICBF POINTER
0424  12324 000000  MVALU  NOP             LOWER SEQUENCE NUMBER
0425  12325 000000  NVALU  NOP             UPPER SEQUENCE NUMBER
0426  12326 000000  BTBAK  NOP
0427  12327 000000  SAVTS  NOP
0428  12330 000000  DOSM   NOP
0429  12331 000000  NOFLG  NOP
0430  12332 010062R EDTAD  DEF EDTBF
0431  12333 010061R MEDTB  DEF EDTBF-1
0432  12334 010262R EDTND  DEF EDTBF+128
0433  12335 027504  DEL    ASC 1,/D
0434  12336 027505  END    ASC 1,/E
0435  12337 027511  INS    ASC 1,/I
0436  12340 027522  REP    ASC 1,/R
0437  12341 027400  SLUP   OCT 27400
0438  12342 035000  B35K   OCT 35000
0439  12343 000050  D40    DEC 40
```

```
0441*              ***************************************************
0442*              * EDITW/EDT - WRITES A SOURCE STATEMENT TO THE    *
0443*              *       NEWLY EDITED DISC FILE/DICBF: BUFFER).   *
0444*              * PARAMETERS:                                     *
0445*              *   DICBF = START OF 64 WORD DISC BUFFER          *
0446*              *   ELOCN = POINTER TO CURRENT LOCN IN DICBF.     *
0447*              *   RONBF+3 = CURRENT TRK/SECTOR TO BE WRITTEN.   *
0448*              *   RONBF+4 = SECTOR COUNTER                      *
0449*              *   STLEN = # WORDS IN STATEMENT TO BE MOVED.     *
0450*              *   BFFAD = FWA OF STATEMENT BUFFER               *
0451*              * INITIALLY:                                      *
0452*              *   ELOCN = ADDRESS OF DICBF-1                    *
0453*              *   RONBF+3 = 0                                   *
0454*              ***************************************************
0455  12344 000000  EDITW NOP
0456  12345 016371R       JSB EDT         GET LOCN FOR STATEMENT LENGTH
0457  12346 063523R       LDA EDLEN       GET STATEMENT LENGTH
0458  12347 001727        ALF,ALF
0459  12350 172323R       STA ELOCN,I
0460  12351 002003        SZA,RSS         END OF EDITED FILE?
0461  12352 027676R       JMP EDTX1       YES, GO WRITE LAST SECTOR
0462  12353 050052        CPA .-1         STORING AN END-OF-FILE?
0463  12354 126344R       JMP EDITW,I     YES - YOU'RE DONE.
0464  12355 001727        ALF,ALF
0465  12356 003004        CMA,INA
0466  12357 072150R       STA TERMS       SET WORD COUNT
0467  12360 063762R       LDA BFFAD
0468  12361 072151R       STA SBUFF       GET BUFFR ADDRESS
0469  12362 016371R EDTW1 JSB EDT
0470  12363 166151R       LDB SBUFF,I
0471  12364 176323R       STB ELOCN,I     STORE A WORD
0472  12365 036151R       ISZ SBUFF       BUMP ADDRESS
0473  12366 036150R       ISZ TERMS       ARE ALL WORDS MOVED?
0474  12367 026362R       JMP EDTW1       NO
0475  12370 126344R       JMP EDITW,I     YES- RETURN
0476*
0477*              * EDT - BUMPS 'ELOCN'; AT END OF DICBF IT IS      *
0478*              *  WRITTEN TO CURRENT AVAILABLE TRK/SECTOR,       *
0479*              *  IN RONBF+3.  ELOCN IS RESET TO L(DICBF).       *
0480*
0481  12371 000000  EDT   NOP
0482  12372 036323R       ISZ ELOCN       BUMP POINTER
0483  12373 052323R       LDA ELOCN
0484  12374 052334R       CPA EDTND
0485  12375 002001        RSS             YES
0486  12376 126371R       JMP EDT,I       NO - EXIT
0487  12377 062327R       LDA SAVTS       YES - WRITE BUFFER TO DISC
0488  12400 066451R       LDB FLUN
0489  12401 076304R       STB RWLUN       SET CORRECT LUN
0490  12402 006004        CLB,INB
0491  12403 016253R       JSB WDISC       WRITE THE SECTOR
0492  12404 010062R       DEF EDTBF
0493  12405 072327R       STA SAVTS       SAVE NEST TRACK/SECTOR
0494  12406 037232R       ISZ BONBF+4      BUMP FILE LENGTH
0495  12407 062332R       LDA EDTAD
0496  12410 072323R       STA ELOCN       RESET ELOCN TO START OF DICBF
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0497  12411 126371R        JMP EDT,I
0498  12412 020040  BLNKS  ASC 1,
0499  12413          INBUF  EQU *
0500*
0501*                * DATE RESET AREA * (GONE AFTER FIRST JOB REQUEST)
0502  12413 017476R DATE1  JSB SCANR     GO SCAN THE DATE STATEMENT
0503  12414 037644R        ISZ PMLOC     BUMP PARAM POINTER
0504  12415 064266         LDB EJOBF
0505  12416 056412R        CPB BLNKS     IS THIS A RE-READ?
0506  12417 026573R        JMP DATE3      -YES
0507  12420 062325R        LDA LUN2
0508  12421 072304R        STA RWLUN
0509  12422 060115         LDA SYSBF     *
0510  12423 040075         ADA B1774     *
0511  12424 072413R        STA JOBTR     * SAVE
0512  12425 040056         ADA .+3       *
0513  12426 067765R        LDB WRSYS     *
0514  12427 017756R        JSB DIOP      * OVERLAYABLE
0515  12430 066325R        LDB LUN2      *
0516  12431 076304R        STB RWLUN     *
0517  12432 006404         CLB,INB       *
0518  12433 016253R        JSB WDISC     *
0519  12434 011364R        DEF DICBF     *
0520  12435 066325R        LDB LUN2      *
0521  12436 076304R        STB RWLUN     * CODING
0522  12437 006404         CLB,INB       *
0523  12440 016253R        JSB WDISC     *
0524  12441 010062R        DEF EDTBF     *
0525  12442 060200  DATE2  LDA DISCL
0526  12443 006404         CLB,INB
0527  12444 016243R        JSB RDISC
0528  12445 010062R        DEF EDTBF
0529  12446 067764R        LDB RDSYS     READ IN SYS BUF SECTOR
0530  12447 017767R        JSB SYSB
0531  12450 062605R        LDA XXLBL
0532  12451 067226R        LDB XSYLB
0533  12452 017461R        JSB WMOVE
0534  12453 000003         DEC 3
0535  12454 062062R        LDA EDTBF
0536  12455 066615R        LDB UPAST
0537  12456 053227R        CPA ASCLB
0538  12457 002001         RSS
0539  12460 076020R        STB LBLSV
0540  12461 060042         LDA .-9       * SAVE 1ST 9 WORDS OF LUN TABLE*
0541  12462 072426R        STA TEMP
0542  12463 060121         LDA LUTAB     GET ADDRESS OF LUN TABLE LOC'N
0543  12464 066646R        LDB SLUNL
0544  12465 077771R        STB SDATE
0545  12466 164000         LDB A,I       GET AN LUN TABLE ENTRY
0546  12467 177771R        STB SDATE,I   STARE IT IN SYS BUFFR AREA
0547  12470 002004         INA           BUNP LUN TABLE POINTER
0548  12471 037771R        ISZ SDATE     BUMP SYS BUFFER POINTER
0549  12472 036426R        ISZ TEMP      ARE WE DONE?
0550  12473 026466R        JMP *-5       NO , GO BACK FOR NEXT ENTRY
0551  12474 062412R        LDA BLNKS
0552  12475 066767R        LDB XEJOB
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0553   12476 017042R        JSB EXSET
0554   12477 066412R        LDB BLNKS      B = BLANKS
0555   12500 077771R        STB SDATE      SET DATE BUFFER TO BLANKS
0556   12501 077772R        STB SDATE+1
0557   12502 077773R        STB SDATE+2
0558   12503 077774R        STB SDATE+3
0559   12504 077775R        STB SDATE+4
0560   12505 167644R        LDB PMLOC,I
0561   12506 006003         SZB,RSS        IS 'DATE' PARAM PRESENT?
0562   12507 026750R        JMP PMISS      NO:  "PARAM MISSING" DIAG.
0563   12510 017625R        JSB PMNXT
0564   12511 001665         ELA,CLE,ERA    CLEAR PARAMETER TYPE BIT
0565   12512 043125R        ADA DM11       -11
0566   12513 002021         SSA,RSS        MORE THAN 10 CHARS?
0567   12514 003400         CCA            YES; SET A TO GIVE 10 CHARS
0568   12515 043646R        ADA D11
0569   12516 076522R        STB *+4        STORE PARM LOCN IN 'MOVE' LINK.
0570   12517 066607R        LDB SDATL      A = NO. CHARS IN DATE
0571   12520 004066         CLE,ELB        SET B = ADDR IN 'DATE' BUFFER
0572   12521 017415R        JSB MOVE       MOVE 'DATE' TO BUFFER
0573   12522 000000         NOP
0574   12523 002400         CLA
0575   12524 066604R        LDB XCLOK
0576   12525 017042R        JSB EXSET      SET CLOCK = 0
0577   12526 017127R        JSB ASCDC      CHK AND CONVERT ASCII DECIMAL
0578   12527 026542R        JMP DATES      NO - GO TO FINAL CLOCK SETUP
0579   12530 001222         RAL,RAL        MULTIPLY BY DEC60
0580   12531 070001         STA B          SAVE 4X THE #
0581   12532 007004         CMB,INB             FOR SUB FROM 64X THE #
0582   12533 001700         ALF
0583   12534 040001         ADA B
0584   12535 066604R        LDB XCLOK
0585   12536 017042R        JSB EXSET      CLOCK SET TO MIN.S.
0586   12537 037644R        ISZ PMLOC
0587   12540 017127R        JSB ASCDC      CHK AND CONVERT ASCII DECIMAL
0588   12541 000000         NOP
0589   12542 040104  DATES  ADA CLOCK      ADD MINUTES
0590   12543 066604R        LDB XCLOK
0591   12544 017042R        JSB EXSET      CLOCK = START TIME
0592   12545 063232R        LDA DM600      SET SECONDS COUNTER
0593   12546 017042R        JSB EXSET     'CLOCK+1' = SECONDS
0594   12547 002404         CLA,INA
0595   12550 066767R        LDB XEJOB
0596   12551 017042R        JSB EXSET
0597   12552 067765R        LDB WRSYS      WRITE 'BUFFR' TO SYS BUF SECTOR
0598   12553 017767R        JSB SYSB
0599*
0600*                 * TURN ON TIME BASE GENERATOR *
0601*
0602   12554 016001X        JSB EXEC
0603   12555 012557R        DEF *+2
0604   12556 012603R        DEF TBREQ
0605   12557 060161         LDA CUDSC
0606   12560 006404         CLB,INB
0607   12561 016573R        JSB JEXUD
0608   12562 003400         CCA
```

```
0609  12563 006400          CLB
0610  12564 076617R         STB LABEL
0611  12565 016573R         JSB JEXUD
0612  12566 063226R         LDA XSYLB
0613  12567 066606R         LDB XBLBL
0614  12570 017461R         JSB WMOVE
0615  12571 000003          DEC 3
0616  12572 026306R         JMP RNS
0617*
0618  12573 160123  DATE3 LDA JBUFF,I
0619  12574 010075          AND B1774
0620  12575 052342R         CPA B35K        FIRST CHAR, A COLON?
0621  12576 167602R         LDB PMTBL,I      =YES
0622  12577 056602R         CPB DA          DIRECTIVE 'DATE'?
0623  12600 026442R         JMP DATE2        =YES, GO PROCESS
0624  12601 026707R         JMP IGNOR        =NO, REJECT
0625*
0626  12602 042101  DA      ASC 1,DA
0627  12603 177753  TBREQ DEC -21
0628  12604 000104  XCLOK DEF CLOCK
0629  12605 010065R XXLBL DEF EDTBF+3
0630  12606 002617R XBLBL DEF LABEL
0631  12607 007771R SDATL DEF SDATE
0632*     ************************************************
0633  12610 000000          BSS INBUF=*+128
0634*     ************************************************************************
0635  07761           SNXTS EQU BUFFR+64  NEXT USER FILE T/S(NXTTS)
0636  07762           SBDTR EQU BUFFR+65  # OF BAD TRACKS
0637  07763           SSPTR EQU BUFFR+66  NEXT AVAIL, SPARE TRACK
0638  07764           STIME EQU BUFFR+67  JOB START TIME          (=2 WORDS)
0639  07766           JNAME EQU BUFFR+69  'JOBNAME' BUFFER        (=3 WORDS)
0640  07771           SDATE EQU BUFFR+72  'DATE' PARAMETER        (=5 WORDS)
0641  07776           SADMP EQU BUFFR+77  ABORT DUMP PARAMS       (=4 WORDS)
0642  10002           SPDMP EQU BUFFR+81  POST-MORT, DUMP PARAMS(=4 WORDS)
0643  10006           JNAM# EQU BUFFR+85  # OF CHARS IN JOBNAME
0644  10007           LUSAV EQU BUFFR+86  9 WORD SAVE AREA FOR LUN TABLE
0645  10020           LBLSV EQU BUFFR+95  DEFAULT USER LABEL      (=3 WORDS)
0646*
0647*
0648  12613           Z     EQU *         LAST LOC + 1 OF PROGRAM
0649                        END JOBPR
**  NO ERRORS*
```

```
$LDEX   00004/04 00070/04 00077/04 00241/04

$LFLO   00014/04 00005/04

.       00010/01 00011/01 00012/01 00013/01 00014/01 00015/01 00016/01
        00017/01 00213/01 00220/01 00223/01 00325/01 00328/01 00343/01
        00379/01 00428/01 00475/01 00500/01 00556/01 00576/01 00031/02
        00054/02 00061/02 00093/02 00109/02 00116/02 00126/02 00143/02
        00273/02 00288/02 00289/02 00340/02 00350/02 00358/02 00362/02
        00365/02 00396/02 00420/02 00458/02 00474/02 00476/02 00493/02
        00554/02 00600/02 00612/02 00044/03 00137/03 00148/03 00151/03
        00174/03 00178/03 00189/03 00227/03 00258/03 00278/03 00280/03
        00465/03 00468/03 00499/03 00506/03 00522/03 00524/03 00065/04
        00093/04 00113/04 00114/04 00143/04 00149/04 00153/04 00197/04
        00208/04 00220/04 00233/04 00262/04 00263/04 00410/04 00437/04
        00446/04 00002/05 00111/05 00121/05 00125/05 00182/05 00200/05
        00251/05 00260/05 00371/05 00373/05 00410/05 00012/06 00112/06
        00114/06 00146/06 00165/06 00191/06 00218/06 00223/06 00250/06
        00265/06 00288/06 00327/06 00334/06 00341/06 00365/06 00374/06
        00381/06 00425/06 00427/06 00445/06 00520/06 00553/06 00017/07
        00095/07 00097/07 00099/07 00108/07 00131/07 00135/07 00140/07
        00156/07 00162/07 00175/07 00190/07 00219/07 00228/07 00249/07
        00279/07 00284/07 00287/07 00324/07 00386/07 00009/08 00016/08
        00025/08 00052/08 00062/08 00072/08 00108/08 00119/08 00202/08
        00329/08 00338/08 00342/08 00349/08 00356/08 00358/08 00390/08
        00413/08 00440/08 00441/08 00442/08 00446/08 00449/08 00455/08
        00459/08 00461/08 00510/08 00552/08 00563/08 00566/08 00019/09
        00021/09 00040/09 00050/09 00066/09 00089/09 00103/09 00110/09
        00151/09 00237/09 00273/09 00281/09 00283/09 00288/09 00301/09
        00315/09 00317/09 00339/09 00347/09 00380/09 00390/09 00470/09
        00485/09 00488/09 00489/09 00491/09 00597/09 00602/09 00607/09
        00620/09 00628/09 00638/09 00650/09 00654/09 00656/09 00671/09
        00003/10 00068/10 00141/10 00359/10 00423/10 00441/10 00484/10
        00017/11 00054/11 00104/11 00112/11 00147/11 00192/11 00237/11
        00240/11 00265/11 00385/11 00391/11 00394/11 00462/11 00512/11
        00540/11

..RRL   00029/04 00400/01 00440/01 00081/02 00421/03 00031/04 00034/04
        00040/04 00051/04 00392/06 00413/06 00238/08 00256/08 00259/08
        00557/08 00256/10

.RRL1   00035/04 00039/04

@       00019/01 00020/01 00022/01 00025/01 00026/01 00027/01 00028/01
        00029/01 00030/01 00031/01 00032/01 00033/01 00034/01 00036/01
        00037/01 00038/01 00039/01 00040/01 00041/01 00042/01 00043/01
        00044/01 00045/01 00046/01 00047/01 00048/01 00049/01 00051/01
        00053/01 00054/01 00055/01 00056/01 00057/01 00058/01 00059/01
        00060/01 00061/01 00063/01 00064/01 00065/01 00066/01 00067/01
        00068/01 00069/01 00070/01 00071/01 00072/01 00073/01 00074/01
        00075/01 00076/01

A       00007/01 00117/02 00290/02 00424/02 00444/02 00147/03 00169/03
        00367/03 00466/03 00503/03 00058/04 00151/04 00171/04 00186/04
        00232/04 00236/04 00290/04 00265/05 00370/05 00386/05 00059/06
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00061/06 00400/06 00501/06 00579/06 00028/07 00265/07 00029/08
00166/08 00392/08 00569/08 00196/09 00453/09 00486/09 00608/09
00673/09 00142/10 00210/11 00214/11 00236/11 00545/11

A0 00531/02 00131/08

A00 00134/04 00108/04 00261/08

ABFL 00257/02 00146/01 00228/01 00233/01 00384/01 00420/01 00439/06

ABINF 00130/09 00141/01 00168/06 00009/07 00322/07 00384/07 00028/09
00048/09 00343/10

ABORT 00450/06 00176/02

ADMP2 00007/03 00611/02

ADMP3 00012/03 00009/03 00041/03

ADMP4 00018/03 00011/03

ADMP6 00021/03 00046/03

ADMP7 00034/03 00599/02

ADMP8 00043/03 00035/03

ADMP9 00048/03 00598/02

ADMPX 00022/03 00610/02 00004/03 00015/03 00051/03

ADONE 00295/07 00278/07

ADSET 00233/08 00214/08 00215/08 00217/08 00218/08 00220/08 00221/08
00253/08 00567/08

ADUMP 00586/02 00186/02 00584/02

AEJ 00245/02 00173/01 00408/01

AJO 00171/02 00171/01 00406/01 00447/01

ALLSC 00092/06 00083/06

ANO 00369/06 00490/01 00491/01 00404/03 00078/06 00289/07

ANVAL 00264/08 00212/08 00241/08 00550/08

AOF 00222/02 00455/01 00583/06 00038/11 00070/11

ASCDC 00089/04 00263/02 00287/02 00328/02 00395/02 00429/02 00507/02
00319/03 00408/03 00427/03 00069/04 00092/04 00098/04 00096/04
00216/04 00157/05 00214/06 00434/07 00382/08 00401/08 00417/08
00109/09 00682/09 00691/09 00700/09 00362/10 00470/10 00474/10
00217/11 00275/11 00279/11 00577/11 00587/11

ASCER 00220/04 00212/04

ASCH1 00219/04 00228/04

ASCH5 00224/04 00218/04

ASCH8 00239/04 00234/04

ASCHR 00215/04 00173/04 00185/04 00188/04

ASCLB 00244/02 00524/01 00537/11

ASCN1 00178/04 00205/04

ASCNT 00243/04 00176/04 00204/04

ASCNV 00165/04 00601/02 00613/02 00507/03 00094/04 00209/04 00017/08
00026/08

ASCNW 00167/04 00238/04

ASCOV 00211/04 00193/04 00195/04 00200/04 00203/04

ASCSY 00400/03 00301/03 00304/03 00306/03

ASKER 00277/07 00234/07

ASKX 00278/07 00293/07

ASMOD 00244/04 00166/04 00183/04 00196/04

ASO 00221/02 00007/10

*ASS 00223/02

ASTBK 00398/03 00316/03

AYES 00299/07 00291/07

B 00008/01 00198/01 00399/01 00438/01 00512/01 00062/02 00118/02
00363/02 00370/02 00373/02 00549/02 00590/02 00592/02 00594/02
00596/02 00087/03 00094/03 00149/03 00179/03 00209/03 00277/03
00424/03 00142/04 00317/04 00324/04 00331/04 00354/04 00112/05
00131/05 00151/05 00166/05 00171/05 00209/05 00270/05 00398/05
00403/05 00335/06 00576/06 00582/06 00023/07 00027/07 00191/07
00198/07 00180/08 00188/08 00288/08 00292/08 00294/08 00260/09
00262/09 00264/09 00267/09 00348/09 00352/09 00355/09 00598/09
00603/09 00605/09 00610/09 00684/09 00693/09 00070/10 00479/10
00033/11 00037/11 00238/11 00243/11 00246/11 00286/11 00297/11
00395/11 00399/11 00580/11 00583/11

B1000 00120/09 00099/09

B101 00454/06 00275/06

B102 00298/05 00008/03 00036/03 00300/05 00272/06

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 B103    00299/05 00282/05 00301/05 00446/05

 B1100   00125/09 00470/02 00015/09

*B1106   00254/02

 B116    00053/03 00521/03

 B120    00455/06 00198/06 00208/06 00469/06

 B120K   00456/06 00320/06 00351/06 00363/06

 B122    00458/06 00220/06 00266/06

 B123    00028/03 00018/03 00034/03 00269/06 00306/06 00441/07 00460/07
         00472/07 00497/07 00512/07 00224/08

 B125    00526/07 00443/07 00489/07 00177/09

 B130    00527/07 00277/06 00304/06 00446/07 00173/09

 B14     00461/06 00286/06 00463/08

 B160K   00061/06 00349/06

 B177    00015/01 00236/02 00150/03 00467/03 00163/08 00201/08 00393/08
         00349/09 00487/09 00358/10 00239/11

 B1774   00017/01 00152/01 00166/01 00226/03 00286/03 00327/04 00269/05
         00379/05 00404/05 00149/06 00398/06 00529/06 00580/06 00205/07
         00266/07 00159/08 00287/08 00176/09 00199/09 00463/10 00004/11
         00035/11 00065/11 00185/11 00389/11 00401/11 00510/11 00619/11

 B200    00305/10 00325/08 00071/10

 B2010   00131/09 00589/09

 B2037   00270/08 00189/08 00198/08 00210/08 00211/08

 B20K    00079/04 00367/05

 B2300   00462/06 00005/07

 B240    00491/07 00232/07

 B26     00059/09 00457/08

 B300    00457/06 00316/06

*B3400   00563/02

 B35K    00438/11 00167/01 00530/06 00267/07 00007/11 00060/11 00620/11

 B37     00013/01 00364/02
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B377    00016/01 00402/01 00443/01 00336/02 00057/04 00293/04 00306/04
        00320/04 00509/04 00520/04 00196/05 00273/05 00434/05 00161/06
        00574/06 00107/07 00155/07 00242/07 00149/08 00177/08 00181/08
        00185/08 00490/08 00265/09 00386/09 00400/09 00064/10 00183/10
        00031/11 00384/11

B40     00529/02 00415/04 00426/04 00477/04 00173/07 00160/08 00272/08
        00334/08

B400    00251/02 00567/01 00297/02 00010/07 00220/07 00291/08 00469/09
        00038/10 00196/10

B401    00297/07 00285/07

B414    00463/06 00506/06

B500    00361/08 00345/08

B52K    00271/08 00182/08

B54     00485/04 00226/04 00479/04

B60     00394/03 00373/03

B700    00252/02 00139/02

B72     00250/02 00403/01 00444/01

B77     00014/01 00510/06 00568/06 00004/07 00098/09 00583/09 00668/09

B7777   00249/04 00235/04

BATCH   00030/01 00179/01 00377/01 00381/01 00421/01 00457/01 00566/01
        00010/02 00229/02 00257/03 00359/03 00247/06 00432/06 00450/06
        00513/06 00027/11

BDCTL   00206/01 00429/01 00405/03

BELLS   00559/06 00517/06

BFEND   00553/09 00373/09

BFFAD   00033/05 00323/06 00333/06 00522/06 00011/07 00020/07 00333/07
        00389/07 00508/08 00051/09 00152/09 00293/09 00322/09 00526/10
        00529/10 00080/11 00467/11

BGLBL   00521/07 00513/07

BLNKS   00498/11 00310/01 00431/01 00271/03 00364/05 00049/08 00495/08
        00568/08 00007/09 00008/09 00259/09 00505/11 00551/11 00554/11

BM1K    00253/02 00079/02

BM20    00123/09 00560/08 00622/09

BM60    00250/04 00182/04
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BM72    00486/04 00434/04

BMMSG   00011/05 00003/05

BMPNT   00562/02 00566/02 00012/03 00021/03 00039/03 00040/03 00048/03
        00049/03 00050/03

BONBF   00307/10 00306/10 00356/10 00357/10 00379/10 00381/10 00383/10
        00385/10 00394/10 00397/10 00400/10 00408/10 00125/11 00139/11
        00149/11 00152/11 00157/11 00169/11 00176/11 00181/11 00184/11
        00494/11

BONLC   00306/10 00350/10 00135/11

BTRAK   00426/11 00501/10 00009/11 00013/11 00291/11

BUFFR   00157/09 00153/02 00033/05 00321/06 00330/06 00332/06 00348/06
        00350/06 00362/06 00047/08 00048/08 00050/08 00094/08 00487/08
        00496/08 00497/08 00498/08 00499/08 00500/08 00154/09 00553/09
        00003/11 00030/11 00034/11 00635/11 00636/11 00637/11 00638/11
        00639/11 00640/11 00641/11 00642/11 00643/11 00644/11 00646/11

CBIN    00277/02 00264/02

CDCN2   00407/11 00325/11 00337/11 00338/11 00343/11 00350/11 00400/11

CDCNT   00074/07 00303/06 00533/06 00545/06 00549/06 00013/08 00042/08
        00055/08 00060/08 00069/08 00564/08 00002/09 00407/10 00455/10
        00483/10 00502/10 00509/10 00516/10 00521/10 00295/11 00310/11
        00312/11 00381/11

CHARC   00076/01 00498/02

CHARS   00216/02 00175/01 00192/01 00410/01 00449/01 00451/01 00453/01
        00120/06 00585/06 00200/07 00040/11 00068/11

CHK1    00137/05 00156/05

CHK2    00150/05 00135/05

CKENT   00501/04 00526/04

CKJBS   00297/05 00013/05

CKT60   00013/05 00001/05

CKT99   00017/05 00507/04 00518/04 00524/04

CKTRK   00502/04 00525/04 00020/05 00278/05 00296/08

CL.1    00270/02 00298/02

CLEAR   00263/02 00199/02

CLEX    00028/01 00161/01 00287/01 00292/01 00228/02 00529/03 00531/03
```

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CLOCK   00027/01 00269/01 00272/01 00528/01 00530/01 00090/02 00589/11
        00628/11

CLRDD   00477/09 00177/01 00393/01 00463/01 00014/02 00007/05 00475/09
        00481/09

CMPNX   00004/06 00431/05 00014/06 00015/06 00018/06

CNDEC   00107/04 00277/01 00289/01 00548/01 00078/02 00132/04 00192/05
        00550/06 00046/08 00178/08 00186/08 00194/08 00555/08 00635/09

CNMBR   00136/04 00109/04 00110/04 00111/04 00112/04 00130/04 00131/04
        00195/05 00197/08

CNMLC   00135/04 00115/04 00119/04 00120/04 00125/04 00126/04 00127/04

CNOCT   00255/08 00240/08 00245/08 00249/08 00262/08

CNORG   00114/04 00128/04

CNOUT   00130/04 00117/04 00122/04

CNSEC   00077/02 00281/01 00296/01 00553/01 00085/02

CODBF   00517/09 00511/09

CODIN   00510/09 00153/09 00302/09 00518/09 00425/10 00056/11 00267/11

COLF    00460/06 00187/06 00516/06 00564/06 00260/07 00345/10

COLTS   00259/07 00237/07

CSAVE   00487/04 00503/04 00511/04 00522/04 00017/05

CTEST   00073/07 00195/06 00215/06 00264/06 00298/06 00383/06 00404/06
        00410/06 00447/06 00439/07 00469/07 00468/07 00488/07 00511/07
        00522/07 00111/08 00223/08

CTS2    00410/11 00244/11 00328/11

CUDSC   00053/01 00237/02 00314/02 00099/03 00214/03 00515/04 00075/05
        00043/06 00072/06 00452/07 00500/07 00539/07 00002/08 00166/09
        00296/09 00386/10 00389/10 00051/11 00249/11 00257/11 00605/11

CUMEM   00222/05 00115/05 00161/05 00168/05

CURTS   00415/05 00312/02 00324/02 00409/05 00433/05 00438/05 00444/05
        00160/06 00164/06 00169/06 00171/06 00106/07 00154/07 00034/08
        00397/08 00414/08 00416/08 00561/09 00564/09 00689/09 00697/09
        00698/09 00399/10 00228/11 00253/11 00328/11 00329/11 00377/11
        00388/11 00396/11 00400/11

CW      00276/02 00266/02 00269/02 00270/02 00274/02 00293/02 00296/02
        00471/02 00475/02
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 CXMX    00029/01 00232/02
 D11     00128/09 00216/05 00451/08 00568/11
 D12     00385/02 00332/02
 D13     00530/02 00492/02 00232/06 00208/08
 D16     00489/04 00430/04 00625/09 00644/09
*D17     00011/01
 D200    00534/09 00018/05 00446/09
*D203    00506/04
 D23     00611/09 00559/01 00383/03
 D27     00456/02 00461/02
 D28     00457/02 00462/02
 D300    00054/03 00532/03
 D32     00272/08 00345/01 00070/09 00073/09
 D34     00124/09 00005/09
 D36     00145/08 00579/01 00462/07 00222/08
 D40     00439/11 00523/06 00107/11
 D60     00459/06 00322/06
 D600    00246/02 00275/01 00294/01 00552/01
 D64     00012/01 00443/08 00472/08 00475/08 00476/08 00034/09 00112/09
 D99     00438/03 00410/03
 DA      00626/11 00622/11
 DATE    00090/02 00432/01 00177/02
 DATE1   00502/11 00092/02
 DATE2   00525/11 00623/11
 DATE3   00618/11 00506/11
 DATE5   00589/11 00578/11
 DBCOL   00298/07 00236/07
 DCAL1   00454/09 00450/09
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DCALL 00445/09 00316/09

DCSTR 00091/07 00070/07 00127/07 00150/07 00157/07 00367/09 00156/11

DCSYS 00426/09 00318/09

DCU10 00320/09 00335/09 00375/09

DCU13 00324/09 00376/09

*DCU15 00330/09

DCULP 00369/09 00124/06 00382/09 00388/09

DDALL 00288/09 00171/09 00284/09

DDCMP 00293/09 00357/03

DDDUP 00378/09 00345/09

DDFIN 00460/09 00333/09 00443/09

DDFLG 00536/09 00291/03 00321/03 00336/03 00354/03 00504/04 00122/06
00289/09 00314/09 00467/09 00479/09

DDIBF 00505/09 00184/09 00294/09

DDIO 00494/09 00238/09 00282/09 00328/09 00503/09 00506/09

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DDOWN 00640/09 00637/09

DDRD 00504/09 00499/09

DDRMV 00277/09 00270/09

DDRNM 00249/09 00201/09

DDSYS 00286/09 00174/09

DDTS 00545/09 00182/09 00239/09 00321/09 00497/09

DDU10 00195/09 00214/09

DDU20 00211/09 00233/09 00257/09 00278/09

DDU30 00216/09 00207/09

DDU35 00222/09 00242/09

DDU40 00235/09 00228/09

DDUAL 00244/09 00190/09

DDUMP 00151/09 00196/02

DDUXT 00280/09 00213/09

DDUXX 00283/09 00248/09

DDXF1 00407/09 00417/09 00424/09

DDXF2 00418/09 00409/09 00411/09

DDXFR 00405/09 00362/09 00420/09 00458/09

DEL 00433/11 00495/10 00524/10

DEL10 00137/06 00143/06

DEL15 00141/06 00152/06

DEL20 00145/06 00139/06

DEL30 00153/06 00136/06

DELET 00135/06 00194/02 00121/06

DFLBL 00384/03 00261/01 00281/03

DFRNS 00127/09 00107/09

DICAD 00443/05 00456/05 00016/06 00110/07 00158/07 00054/10 00424/10
00055/11 00266/11

DICBF 00427/10 00346/02 00379/02 00420/05 00435/05 00443/05 00168/06
00519/11

DICBL 00413/11 00419/10 00046/11 00058/11 00227/11 00269/11

DICND 00420/05 00010/06 00092/07 00145/07

DIGIT 00245/04 00189/04 00201/04

DIO 00038/05 00030/05 00032/05

DIOP 00029/05 00034/05 00049/05 00056/05 00514/11

DIRSR 00361/05 00458/03 00385/05 00411/05 00412/05 00037/06 00062/06
00507/07 00204/09 00342/09 00140/11

DISCB 00082/05 00076/05 00077/05

DISCL 00057/01 00148/01 00387/03 00055/05 00037/10 00195/10 00525/11

DISCO 00046/01 00056/04 00508/04

DISCR 00378/07 00383/07 00401/07 00403/07 00419/07 00040/08 00501/08
00045/09 00452/10 00506/10 00518/10 00121/11 00306/11 00334/11

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 DM16   00463/04 00547/08 00123/09
 DM21   00249/02 00245/01
*DM22   00248/02
 DM600  00247/02 00538/01 00538/03 00592/11
 DMFLG  00074/01 00240/02
 DMOVE  00377/05 00363/05
 DMP02  00429/08 00402/08
*DMPAD  00585/02
 DMPC1  00495/08 00492/08 00519/08
 DMPC2  00503/08 00518/08 00521/08 00524/08
 DMPC4  00520/08 00502/08
 DMPCX  00526/08 00512/08
 DMPL0  00536/08 00540/08
 DMPL2  00561/08 00010/09
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 DMPR2  00045/09 00053/09
 DMPR4  00055/09 00046/09
 DMPSC  00546/08 00538/08 00022/09
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 DMTSX  00088/09 00528/08 00057/09
 DNBUF  00077/07 00352/07 00412/07 00035/08 00565/08 00004/09 00043/09
        00109/10 00189/10 00413/10 00326/11
 DOSM   00428/11 00143/01 00393/10 00401/10 00144/11 00164/11 00171/11
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DRLNG   00232/09 00220/09 00241/09

DRNXT   00547/09 00134/07 00187/09 00221/09 00224/09 00280/09 00323/09
        00331/09 00336/09 00340/09 00346/09 00370/09 00371/09

DRORD   00410/07 00379/07 00396/07 00423/07

DRSR2   00389/05 00395/05 00401/05 00407/05

DRSRX   00409/05 00392/05

DRTMP   00548/09 00100/09 00104/09 00113/09 00338/09 00369/09

DSCLU   00653/09 00112/02 00265/02 00397/02 00320/08 00111/09 00658/09
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DSCR2   00396/07 00393/07 00400/07

DSCW2   00336/07 00341/07

DUMP    00382/08 00193/02

DUMPA   00064/09 00452/08 00078/09 00009/10

DUMPB   00069/09 00075/09

DUMPC   00484/08 00450/08

DUMPD   00470/08 00479/08 00038/09

DUMPL   00534/08 00456/08 00458/08 00460/08 00008/10

DUMPR   00033/09 00462/08

DUMPS   00032/01 00233/02 00029/03

DUMPX   00027/09 00464/08

DVTMP   00155/04 00141/04 00144/04 00152/04

DVU00   00142/04 00146/04

DVU01   00143/04 00148/04

DVUKN   00139/04 00118/04 00123/04 00154/04

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DWRD    00349/07 00357/06 00361/06 00535/06 00538/06 00541/06 00837/07
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 EAEB2  00440/02 00430/02

 EAEB3  00424/02 00428/02

 EAEB4  00449/02 00463/02

 EB     00411/02 00204/02

*EDILG  00462/10

 EDINP  00099/11 00434/10 00527/10 00110/11

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 EDIT2  00394/10 00388/10

 EDIT3  00435/10 00015/11

 EDIT4  00495/10 00490/10

 EDIT5  00498/10 00493/10 00496/10 00510/10

 EDIT6  00512/10 00504/10 00522/10

 EDIT7  00523/10 00517/10

 EDIT8  00526/10 00011/11

 EDIT9  00010/11 00514/10 00029/11 00042/11

 EDITA  00046/11 00427/01

 EDITB  00083/11 00074/11

 EDITC  00062/11 00048/11

 EDITF  00157/02 00139/01 00229/01 00396/01 00425/01 00015/02 00009/05
        00462/10 00500/10 00019/11 00063/11 00208/11 00290/11

 EDITM  00207/11 00093/11

 EDITR  00433/10 00525/10 00194/11 00200/11 00383/11 00398/11

 EDITS  00192/11 00089/11
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        00351/11 00375/11 00457/11

EDN     00642/09 00599/09 00634/09 00636/09

EDNEW   00164/11 00159/11

EDT     00481/11 00456/11 00469/11 00486/11 00497/11

EDT10   00024/11 00008/11

EDTAD   00430/11 00183/09 00240/09 00300/09 00495/11

EDTBF   00307/09 00134/11 00430/11 00431/11 00432/11 00492/11 00524/11
        00528/11 00535/11 00629/11

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EDTM2   00303/11 00294/11 00314/11

EDTM3   00316/11 00299/11 00368/11

EDTM4   00332/11 00341/11

EDTM5   00342/11 00352/11

EDTM7   00353/11 00349/11

EDTM8   00357/11 00276/11

EDTM9   00289/11 00283/11 00361/11

EDTND   00432/11 00226/09 00484/11

EDTS    00445/10 00438/10

EDTS1   00452/10 00448/10

EDTW1   00469/11 00474/11

EDTX1   00125/11 00461/11

EDTX2   00135/11 00182/11 00188/11

EDTX3   00184/11 00143/11

EDTXY   00157/11 00146/11
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EJOBX   00426/06 00362/03 00012/04 00229/06 00452/06 00586/06 00164/07
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ENCTR   00241/03 00138/03 00217/03

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ENDFL   00084/07 00403/06 00420/06 00032/08 00056/08 00034/10 00072/10

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        00400/08 00408/08 00418/08 00421/08 00429/08 00431/08 00516/08
        00039/09 00041/09 00055/09 00084/09 00356/09 00366/09 00407/09
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        00273/10 00284/10 00288/10 00396/10 00151/11 00322/11 00331/11
        00373/11

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ENTRN   00243/10 00164/10

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ENTYP   00078/07 00280/06 00096/07 00119/07 00130/07 00394/08 00448/08
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EOFFL   00412/11 00418/10 00449/10 00303/11 00366/11

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EOTST   00136/02 00034/02 00036/02 00038/02 00113/02 00138/02 00145/02
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EQCNT   00524/02 00418/02 00432/02 00441/02 00504/02 00513/02 00519/02
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EQP     00121/09 00609/09
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 ERLST  00123/08 00179/07 00120/08 00127/08 00129/08

 ERMES  00246/06 00227/06 00249/06 00258/06 00259/06 00493/07

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        00521/06 00555/06 00280/07 00128/08 00340/08 00381/09 00391/09
        00647/09 00444/10 00105/11

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        00226/07 00282/07 00327/08 00347/08 00354/08 00017/09 00101/09
        00648/09 00602/11

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 EXPG   00045/01 00081/04

 EXPGL  00081/04 00474/03

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        00478/01 00480/01 00482/01 00484/01 00486/01 00488/01 00493/01
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        00576/11 00585/11 00591/11 00593/11 00596/11

 EXTIM  00167/02 00290/01 00291/01 00296/01 00297/01

 FLN2   00409/11 00248/11 00330/11

 FLUN   00446/05 00155/01 00455/03 00004/04 00439/05 00035/06 00450/07
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FNILM 00126/06 00115/06

FNUND 00171/07 00462/03 00140/06 00211/06 00180/07 00492/07 00514/07
00208/09

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00476/04 00105/08

GETEX 00439/05 00460/05

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GETOT 00111/05 00114/05

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ILDIG 00222/04 00219/04

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00196/08 00199/08 00200/08 00205/08 00229/08 00561/08 00562/08
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INDSC 00257/03 00198/02

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INS 00435/11 00488/10 00513/10

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 IU2.5   00330/03 00376/03

 IU3     00336/03 00320/03

 IU3.5   00339/03 00314/03

 IU4     00342/03 00335/03

 IU5     00359/03 00353/03

 IUFLG   00392/03 00263/03 00298/03 00309/03 00343/03 00346/03 00380/03
         00386/03

 JBAB    00441/06 00428/06

 JBINC   00025/01 00514/04 00386/06 00389/06

 JBINS   00022/01 00230/02 00047/04 00380/06

 JBINV   00443/06 00424/06

 JBUFF   00041/01 00165/01 00182/01 00394/01 00397/01 00435/01 00436/01
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         00461/10 00487/10 00512/10 00523/10 00530/10 00064/11 00079/11
         00087/11 00618/11

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         00100/06 00326/09 00523/09 00053/11 00259/11 00607/11 00611/11

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 JFER2   00248/03 00239/03

 JFERR   00167/03 00084/03 00126/03 00157/03 00194/03 00142/05

 JFIL2   00085/03 00082/03

*JFILC   00043/01

 JFILE   00075/03 00183/02

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*JFLSC   00056/01

 JFSPC   00249/03 00240/03
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JOB03   00308/01 00237/01

JOB05   00333/01 00317/01 00320/01

JOB10   00366/01 00338/01

JOB11   00461/01 00368/01

JOB16   00330/01 00315/01

JOB20   00507/01 00499/01

JOBB    00457/01 00446/01

JOBCN   00160/01 00407/01 00411/01 00452/01

JOBFL   00255/02 00147/01 00234/01 00248/01 00348/01

JOBPR   00137/01 00005/01 00434/01 00649/11

JOBTR   00544/09 00153/01 00514/09 00511/11

JOBTS   00197/01 00202/01

JOBUF   00170/02 00549/01 00550/01 00554/01 00555/01 00560/01 00173/02

JOBUG   00173/02 00544/01

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        00180/10 00188/10

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        00077/06 00089/06 00094/06

JSRC1   00473/04 00483/04

JSRCH   00471/04 00413/04 00442/04 00475/04 00480/04 00042/06 00047/06

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LBLIO 00054/05 00152/02 00057/05 00068/05 00080/05 00305/09 00462/09
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LBLMV 00284/03 00270/03

LBLSV 00645/11 00526/01 00243/02 00539/11

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LSEN6 00222/08 00207/08

LSEN7 00223/08 00209/08

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LST10 00352/08 00343/08

LSTBF 00331/08 00050/02 00067/02 00315/08

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LSTRA   00015/04 00535/03 00543/03 00001/04

LSTRT   00447/03 00489/03 00495/03 00015/04 00046/04

LSTSC   00048/01 00332/03 00339/03 00417/03 00430/03

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LUCH3   00628/09 00107/02 00292/02 00514/06 00437/07 00582/09 00588/09
        00655/09 00657/09

LUCH4   00634/09 00615/09

LUCH5   00644/09 00624/09

LUCH6   00647/09 00639/09

LUCHK   00580/09 00570/01 00057/02 00110/02 00268/02 00295/02 00400/02
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        00627/09 00645/09 00368/10

LUN2    00300/05 00454/03 00006/04 00046/05 00405/06 00449/07 00502/07
        00531/07 00193/09 00427/09 00512/09 00411/10 00174/11 00507/11
        00515/11 00520/11

LUN3    00301/05 00154/01 00287/05 00034/06 00244/09 00456/09 00040/10
        00409/10 00137/11

LUNIT   00382/07 00221/07 00229/07

LUSAV   00644/11 00043/02

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LUTST   00626/09 00594/09

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MBLD3 00219/03 00212/03

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MBLD5 00232/03 00224/03

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MDEST 00338/04 00305/04 00322/04 00332/04

MEDTB 00431/11 00415/10

MER   00416/11 00092/11

MFBUF 00246/03 00235/03

MFPTR 00235/03 00135/03

MFTBL 00244/03 00136/03 00210/03 00213/03 00215/03 00216/03

MINBF 00075/07 00299/06 00142/08

MINIT 00206/05 00107/05 00117/05 00180/05 00214/05

MITRK 00175/06 00383/02 00172/06

MJFL1 00105/03 00089/03

MJFL2 00110/03 00117/03 00127/03

MJFL3 00120/03 00111/03

MJFL4 00124/03 00113/03

MLOCN 00414/05 00362/05 00382/05 00390/05 00396/05 00408/05 00457/05
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      00150/06 00281/06 00300/06 00354/06 00359/06 00475/06 00537/06
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      00482/07 00036/08 00146/08 00391/08 00395/08 00396/08 00398/08
      00399/08 00485/08 00489/08 00493/08 00044/09 00058/10 00067/10
      00104/10 00117/10 00140/10 00414/10 00186/11 00225/11 00261/11
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MMER1 00227/05 00223/05

MMERR 00141/05 00123/05

MMGT  00184/05 00206/02
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MMSPC   00230/05 00197/05

MORG    00340/04 00476/03 00480/03 00310/04 00315/04 00333/04 00348/04
        00353/04 00356/04

MORSC   00296/05 00250/05 00259/05 00284/05

MOVE    00304/04 00329/01 00353/02 00175/03 00185/03 00283/03 00309/04
        00311/04 00314/04 00336/04 00411/04 00128/05 00376/05 00276/09
        00572/11

MOVER   00315/04 00335/04

MPTR1   00238/03 00156/03

MPTR2   00239/03 00083/03 00124/03 00141/05

MPTR3   00240/03 00171/03

MPY24   00526/09 00431/09 00446/09 00532/09

MSEC    00311/10 00261/10 00283/10

MSECT   00068/01 00694/09

MSKT    00387/02 00371/02

MSORG   00186/03 00180/03

MSPTR   00378/06 00375/06

MTABL   00083/05 00070/05

MTEOF   00107/09 00213/02

MTLDR   00101/09 00118/09

MVAL2   00419/11 00277/11 00280/11 00284/11 00339/11 00360/11

MVALU   00424/11 00142/01 00416/02 00431/02 00433/02 00407/08 00424/08
        00036/09 00472/10 00475/10 00477/10 00503/10 00222/11 00292/11
        00311/11 00362/11

MVEN4   00474/03 00469/03

MVSET   00250/10 00406/09 00426/09 00193/10 00262/10 00170/11

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 NEWTS  00080/07 00285/06 00052/07 00056/07 00066/07 00142/07 00033/08
        00175/08 00360/09 00434/09 00448/09 00051/10 00182/10 00198/10
        00204/10 00206/10 00299/10 00302/10 00155/11 00168/11

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 NL1    00675/09 00670/09

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        00118/07 00172/07 00174/07 00176/07 00385/09 00389/09 00380/10
        00382/10 00384/10

 NMDUP  00200/06 00323/02 00327/02 00377/10

 NMFLG  00008/02 00333/01 00497/01

 NMIGN  00005/02 00501/01

 NOFLG  00429/11 00406/10 00018/11 00073/11 00076/11

 NOMOR  00057/06 00052/06

 NORTN  00001/11 00081/11

 NOSOR  00421/11 00016/11

 NOSUB  00215/05 00211/05

 NOTCO  00238/07 00270/07

 NSRCE  00156/03 00153/03

 NUENT  00167/05 00164/05

 NULCK  00666/09 00058/02 00106/02 00294/06 00224/07 00322/08 00435/08
        00116/09 00675/09 00676/09 00369/10

 NUSET  00051/07 00418/06 00544/06 00057/07 00355/07 00114/10 00181/10
        00190/10

 NUTYP  00389/02 00330/02 00355/02 00372/02

 NVAL2  00420/11 00281/11 00344/11 00353/11 00358/11

 NVALU  00425/11 00405/08 00412/08 00419/08 00425/08 00476/10 00515/10
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NXMOD 00184/05 00204/05

NXPRM 00145/05 00179/05

NXSET 00066/06 00355/01 00030/06 00074/06 00472/06 00467/07 00021/10
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NXSUB 00117/05 00148/05

NXTSC 00076/06 00051/06 00079/06 00081/06 00098/06 00102/06 00103/06
00104/06 00481/06 00533/07 00230/10

NXTTS 00050/01 00083/05 00283/06 00399/10 00167/11

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OFF1 00014/02 00375/01

OLDSC 00542/09 00167/09 00324/09

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OPONF 00275/04 00242/01 00485/02 00495/02 00076/03 00103/03 00192/03
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ORIGB 00354/02 00349/02

OVFLG 00535/09 00418/09 00423/09 00455/09 00480/09 00036/10 00061/10
00075/10 00166/10 00225/10

PAUSE 00211/01 00182/02

PBAT2 00127/02 00120/02

PBATC 00131/02 00188/02

PBUFF 00283/05 00266/05

PCHEK 00188/07 00205/06 00478/06 00194/07 00203/07 00455/07 00474/07
00503/07

PCODE 00294/05 00263/05 00281/05

PDEST 00226/05 00126/05 00130/05

PDISC 00295/05 00014/05 00262/05 00264/05 00290/05

PDSC 00252/05 00252/05

PDUMP 00583/02 00185/02 00026/03

PGEJ 00469/02 00066/02 00398/02 00401/02 00402/02 00477/02 00457/07

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        00318/03 00325/03 00329/03 00334/03 00419/03 00526/03 00219/06
        00279/06 00508/06 00448/07 00110/08 00179/09 00253/09 00687/09
        00696/09 00361/10 00466/10 00499/10 00242/11

PMASK   00457/04 00433/04

PMCNT   00459/04 00312/03 00401/04 00428/04 00429/04 00119/06 00190/06
        00169/09 00243/10 00067/11

PMISS   00222/06 00207/01 00103/02 00123/02 00308/02 00318/02 00079/03
        00311/03 00338/03 00449/03 00471/03 00221/04 00158/05 00201/06
        00343/06 00367/06 00385/06 00387/06 00471/06 00251/07 00435/07
        00473/07 00074/08 00104/08 00383/08 00387/08 00630/09 00683/09
        00692/09 00347/10 00363/10 00020/11 00114/11 00212/11 00218/11
        00233/11 00562/11

PMLOC   00460/04 00354/01 00360/01 00434/02 00547/02 00569/02 00570/02
        00608/02 00002/03 00013/03 00085/03 00177/03 00182/03 00264/03
        00265/03 00266/03 00275/03 00326/03 00327/03 00426/03 00453/03
        00456/03 00501/03 00509/03 00514/03 00515/03 00516/03 00520/03
        00523/03 00074/04 00167/04 00169/04 00224/04 00230/04 00237/04
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        00006/08 00007/08 00018/08 00019/08 00022/08 00106/08 00107/08
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        00278/11 00503/11 00560/11 00586/11

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        00203/09 00211/09 00271/09 00218/10 00563/11

PMS     00227/06 00463/03 00010/05 00125/06

PMTBL   00458/04 00169/01 00170/01 00196/01 00402/04 00451/04 00199/07
        00005/10 00042/10 00199/10 00621/11

PMTST   00542/02 00545/02 00546/02 00552/02 00553/02 00558/02 00597/02
        00609/02 00003/03 00014/03

PNTR    00246/04 00168/04 00179/04 00181/04

PORIG   00129/05 00124/05 00140/05

PREND   00163/02 00346/01 00162/02 00166/02 00167/02

PRG02   00058/10 00158/10
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 PRG12  00073/04 00240/04
*PRG20  00047/04
 PRG2A  00067/10 00063/10
 PRG2B  00083/10 00077/10
 PRG30  00128/10 00066/10 00079/10
 PRG31  00136/10 00132/10
 PRG32  00140/10 00130/10 00135/10
 PRG33  00153/10 00146/10
 PRG36  00156/10 00124/10
 PRG37  00159/10 00083/10 00098/10 00136/10 00151/10 00168/10
 PRG50  00174/10 00060/10
 PRG55  00205/10 00211/10
 PRG60  00213/10 00203/10 00222/10
 PRG65  00218/10 00224/10
 PRG70  00225/10 00176/10 00220/10
 PRG71  00230/10 00185/10 00227/10
 PRG75  00234/10 00231/10
 PRINP  00168/02 00376/01 00101/11
 PRLST  00049/02 00347/01 00561/01 00059/02 00064/02 00070/02
 PROC#  00215/02 00194/01
 PROCS  00174/02 00191/01 00215/02
 PROG   00046/04 00184/02
 PROGX  00248/04 00217/04
 PRTEF  00374/06 00547/06
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PSEC 00310/10 00259/10 00286/10

PSECT 00293/05 00276/05 00286/05

PTEMP 00204/07 00201/07

PTOTL 00309/10 00046/10 00143/10 00174/10 00287/10 00298/10

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00285/05

PTSEC 00308/10 00353/09 00433/09 00447/09 00039/10 00087/10 00103/10
00191/10 00197/10 00207/10 00215/10 00217/10 00291/10 00294/10
00173/11

PURGE 00033/10 00358/01 00369/03 00023/10 00229/10 00233/10 00240/10
00163/11

RBINF 00129/09 00140/01 00319/06 00008/07 00243/07 00244/07 00329/07
00334/07 00391/07 00042/09

RBUF 00293/10 00251/10

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00516/09 00562/09 00292/10 00527/11

RDSYS 00036/05 00257/01 00308/01 00461/01 00151/02 00588/02 00067/05
00304/09 00461/09 00529/11

RDTBF 00282/10 00414/09 00278/10 00295/10

READ1 00455/05 00387/05 00458/05 00474/06 00478/07 00052/10

RENAM 00307/02 00202/02

REP 00436/11 00497/10

REQC 00448/02 00412/02 00442/02

REREQ 00238/06 00231/06

RESET 00520/09 00057/06 00484/06 00487/07 00330/09 00364/09 00460/09
00474/09 00524/09 00234/10

RESTR 00370/11 00345/11 00356/11

RETRY 00279/05 00501/04

REWIN 00287/02 00200/02

RN1 00374/02 00357/02

RN2 00328/02 00320/02

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RN3     00340/02 00385/02

RN4     00382/02 00338/02

RNFLG   00549/09 00192/09 00210/09 00217/09 00249/09 00251/09

RNLUN   00159/02 00568/01 00577/01

RNRET   00456/10 00084/11

RNS     00373/01 00214/01 00460/01 00562/01 00096/02 00129/02 00175/02
        00275/02 00281/02 00380/02 00403/02 00454/02 00496/02 00032/03
        00104/03 00351/03 00356/03 00365/03 00370/03 00435/03 00149/05
        00205/05 00218/05 00194/06 00234/06 00295/06 00440/06 00488/06
        00071/07 00490/07 00495/07 00532/07 00065/08 00436/08 00091/09
        00117/09 00127/09 00290/09 00476/09 00024/10 00370/10 00166/11
        00616/11

RNSB    00376/01 00023/02

RNSH    00428/01 00424/01

RNSI    00393/01 00413/01

RNSJ    00435/01 00158/01

RNSK    00415/01 00383/01 00386/01 00417/01

RNSL    00412/01 00405/01

RNSY    00231/06 00361/03 00494/07

RNTIM   00166/02 00278/01 00279/01 00282/01 00283/01

RONBF   00044/01 00526/02

RONLC   00526/02 00483/03 00067/04

RPACK   00020/10 00205/02

RPRC0   00445/06 00417/06

RPRC2   00346/06 00340/06

RPRC3   00354/06 00360/06

RPRC4   00361/06 00325/06

RPRC5   00371/06 00364/06

RPRC7   00404/06 00421/06

RPRC8   00418/06 00448/06

RPRCJ   00380/06 00315/06
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RPRJB   00424/06 00382/06

RPTSC   00114/08 00046/06 00476/07 00504/07 00005/08 00121/08

RRLSC   00422/03 00416/03

RSECT   00559/09 00420/07 00470/08 00488/08 00537/08 00064/09 00865/09
        00397/11

RST1    00395/11 00402/11

RST2    00399/11 00387/11

RT.LF   00122/09 00486/08

RTRK    00067/01 00234/02

RUN     00495/03 00187/02

RUN2    00462/03 00310/02 00389/08 00349/10 00235/11

RUN3    00499/03 00505/03

RUN3A   00508/03 00500/03

RUN4    00529/03 00511/03 00518/03

RWLUN   00282/05 00343/02 00376/02 00047/05 00288/05 00440/05 00406/06
        00496/09 00513/09 00290/10 00131/11 00333/11 00347/11 00489/11
        00508/11 00516/11 00521/11

SADMP   00641/11 00585/02

SAVDD   00538/09 00181/09 00247/09 00320/09 00329/09

SAVEA   00677/09 00056/02 00105/02 00360/02 00367/02 00293/06 00222/07
        00259/07 00269/07 00319/08 00434/08 00114/09 00667/09 00366/10

SAVEB   00169/10 00160/10 00167/10

SAVL    00260/06 00001/02 00253/06

SAVLN   00539/09 00357/09 00365/09

SAVML   00085/07 00282/06 00068/07

SAVPM   00106/06 00359/01 00452/03 00053/06 00058/06 00067/06 00535/07

SAVSC   00537/09 00044/06 00073/06 00097/06 00003/08 00297/09 00521/09

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SBDTR   00636/11 00309/09 00464/09
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SC2     00552/09 00168/09 00394/09 00397/09

SCALL   00430/03 00409/03

SCAN1   00414/04 00445/04

SCAN2   00419/04 00427/04

SCAN5   00446/04 00431/04

SCANR   00395/04 00164/01 00453/04 00435/10 00062/11 00502/11

SCHNL   00393/03 00330/03 00342/03 00379/03 00385/03 00069/06 00084/06
        00093/06 00096/06

SCMSG   00133/08 00117/08 00118/08

SCNMV   00412/04 00408/04

SCTST   00529/07 00485/07 00521/07 00540/07

SDATE   00640/11 00544/11 00546/11 00548/11 00555/11 00556/11 00557/11
        00558/11 00559/11 00631/11

SDATL   00631/11 00570/11

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SECTR   00036/01 00384/02 00173/06 00399/06 00290/08 00529/09 00393/11

SETNX   00065/05 00081/05 00143/07 00192/10

SETSC   00096/06 00090/06

SEXIT   00449/04 00416/04 00418/04 00423/04

SIGN    00388/02 00359/02 00366/02

SKNTR   00267/08 00283/08 00297/08 00535/08 00536/08 00554/08

SKPPR   00372/03 00290/03

SLIST   00001/08 00225/08

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SLST3   00040/08 00061/08
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SLST7 00062/08 00057/08 00071/08

SLST8 00069/08 00041/08

SLSTE 00072/08 00617/02 00173/05 00031/08 00404/08 00410/08 00423/08
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SLUNL 00043/02 00033/02 00543/11

SLUP 00437/11 00464/10 00005/11

SNXTS 00635/11 00073/05 00471/09

SOSA 00682/09 00208/02 00209/02

SPDMP 00642/11 00582/02

SPORG 00176/03 00173/03

SPR,1 00517/06 00503/06

SPRC1 00522/06 00534/06

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SPRC5 00564/06 00531/06

SPRCX 00557/06 00551/06 00552/06 00554/06

SPROC 00498/06 00307/06

SSFLG 00072/01 00489/01 00238/02 00403/03 00070/06

SSIMP 00235/06 00124/02 00472/03 00222/06

SSLST 00180/05 00106/05

SSPTR 00637/11 00311/09 00466/09

SSRCH 00403/03 00211/02

SSSET 00432/03 00411/03 00428/03

SSTBL 00075/01 00207/05

STBIT 00423/03 00414/03

STBUF 00094/08 00053/08

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        00158/08 00162/08 00168/08 00173/08 00174/08 00184/08 00191/08
        00192/08 00235/08 00237/08 00341/08 00357/08 00445/08 00453/08
        00553/08 00088/09

STIME   00638/11 00267/01 00270/01 00276/01 00280/01 00529/01 00531/01
        00547/01 00551/01

STKTS   00093/08 00284/08 00285/08 00286/08 00289/08 00293/08 00299/08

STLEN   00268/08 00137/01 00183/01 00002/02 00486/02 00489/02 00396/04
        00240/07 00254/07 00321/07 00327/07 00381/07 00394/07 00402/07
        00051/08 00503/08 00507/08 00047/09 00439/10 00077/11

STLUN   00030/02 00350/01 00495/01 00041/02

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STOR2   00205/06 00199/06

STOR3   00208/06 00197/06

STOR4   00214/06 00210/06

STOR5   00263/06 00217/06 00221/06

STOR6   00280/06 00267/06 00270/06 00273/06 00276/06

STOR7   00291/06 00287/06

STORD   00214/07 00324/06 00524/06 00012/07 00225/07 00239/07 00241/07
        00255/07 00262/07 00268/07 00290/07 00292/07 00108/11

STORE   00186/06 00191/02

STORP   00469/06 00192/06

STORR   00322/06 00353/06 00356/06

STORX   00003/07 00305/06

STRAB   00063/07 00290/06

STRAK   00279/08 00065/07 00281/08 00300/08 00415/08 00361/09 00102/10
        00205/10 00216/10 00154/11

STRDB   00230/07 00528/06 00573/06 00577/06 00216/07 00235/07 00263/07

STRDX   00254/07 00248/07

STRK1   00285/08 00298/08
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STRP1 00475/06 00480/06

STRP2 00481/06 00477/06

STRP3 00485/06 00142/06

STRR2 00341/06 00030/07

STRX 00010/07 00032/07

STRX1 00034/07 00013/07 00040/07

STRX2 00041/07 00036/07

SUM? 00086/11 00445/10 00083/11 00094/11

SUP 00417/11 00088/11

SUPFL 00411/11 00354/10 00436/10 00193/11 00199/11

SVBAD 00540/09 00310/09 00463/09

SVCUD 00414/11 00387/10 00390/10 00050/11 00256/11

SVFLN 00415/11 00224/11 00253/11

SVSPR 00541/09 00312/09 00465/09

SWAP 00065/01 00373/01 00025/02

SWPSC 00393/09 00403/09 00412/09 00415/09

SYNTS 00051/01 00052/01

SYSB 00045/05 00258/01 00309/01 00335/01 00462/01 00533/01 00589/02
00023/03 00052/05 00066/05 00069/05 00072/05 00530/11 00598/11

SYSBF 00035/01 00151/01 00225/03 00175/09 00429/09 00438/09 00468/09
00509/11

SYSDR 00033/01 00459/03 00445/07

SYSSC 00047/01 00322/03 00516/04 00074/05 00454/07 00391/10

SYSTS 00052/01 00050/04 00082/05 00403/10 00172/11

SYSTY 00031/01 00180/01 00382/01 00422/01 00458/01 00011/02 00360/03
00248/06 00433/06 00451/06 00511/06 00569/06 00025/11

TBG 00026/01 00342/01 00557/01

TBOMB 00002/05 00513/04 00016/05 00019/05

TBREQ 00627/11 00604/11

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TBSET   00502/02 00102/02 00508/02 00509/02 00520/02

TEMP    00419/05 00195/01 00201/01 00032/02 00039/02 00140/02 00144/02
        00421/02 00427/02 00464/03 00477/03 00479/03 00508/03 00540/03
        00321/04 00328/04 00352/04 00357/04 00329/06 00337/06 00019/07
        00025/07 00286/07 00288/07 00234/08 00242/08 00243/08 00246/08
        00247/08 00250/08 00251/08 00346/08 00350/08 00016/09 00020/09
        00584/09 00595/09 00069/10 00086/10 00088/10 00089/10 00090/10
        00101/10 00480/10 00491/10 00100/11 00106/11 00541/11 00549/11

TEMP1   00403/11 00311/02 00321/02 00351/02 00361/02 00449/02 00460/02
        00004/05 00116/06 00224/06 00255/06 00429/06 00435/06 00177/07
        00226/11 00260/11 00319/11 00370/11

TEMP2   00404/11 00313/02 00325/02 00335/02 00339/02 00341/02 00374/02
        00382/02 00450/02 00005/05 00117/06 00225/06 00256/06 00430/06
        00436/06 00178/07 00229/11 00262/11 00321/11 00376/11

TEMP3   00405/11 00451/02 00323/11 00372/11

TEMP4   00406/11 00452/02 00059/11 00231/11 00270/11 00317/11 00374/11

TEMP5   00408/11 00453/02

TEND    00362/08 00339/08

TERMS   00360/07 00330/07 00340/07 00388/07 00399/07 00522/08 00466/11
        00473/11

TOF     00395/02 00201/02

TRACK   00151/02 00454/01 00190/02

TRAK#   00071/01 00242/10

TRFLG   00488/04 00144/01 00465/01 00505/04 00008/05 00087/09 00086/10

TRIP#   00219/05 00108/05 00133/05 00134/05 00136/05 00137/05 00153/05
        00154/05 00159/05 00162/05 00175/05 00184/05 00185/05 00187/05
        00188/05 00190/05 00191/05 00208/05

TSAVE   00156/02 00193/01 00197/01 00199/01

TSEOF   00362/11 00305/11 00307/11

TSONE   00054/01 00289/05

TYCHK   00146/03 00092/03 00154/03 00155/03 00158/03 00207/03

TYEQ4   00073/01 00249/01 00251/01

TYPE    00126/02 00189/02

TYPES   00101/08 00189/06 00504/06 00432/07 00112/08 00172/09
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UBB60 00131/08 00115/08

UBLNK 00396/03 00294/03 00266/09

UDIRT 00034/01 00035/01 00048/05

UDISC 00262/03 00197/02

UDNTS 00049/01 00050/01 00358/09

ULPAR 00421/05 00380/05 00200/09

UMFWA 00061/01 00109/05

UMLWA 00020/01 00169/05 00253/10

UNSUP 00418/11 00090/11

UP 00485/02 00179/02 00180/02 00181/02 00214/02 00528/02

UP.1 00490/02 00154/02

UPAST 00397/03 00523/01 00287/03 00536/11

UPCOM 00395/03 00289/03

UPDVC 00302/08 00277/07 00307/08 00337/08 00353/08

UPT 00269/08 00170/08 00206/08

USDIR 00160/02 00150/01 00389/03 00038/06 00063/06 00473/06 00440/07
00537/07 00205/09 00246/09 00343/09 00050/10 00141/11

USERD 00027/06 00307/02 00317/02 00078/03 00110/03 00448/03 00033/06
00048/06 00049/06 00135/06 00141/06 00193/06 00386/08 00346/10
00374/10 00232/11

USRD1 00031/06 00055/06

USRD2 00051/06 00040/06

USRDX 00047/06 00045/06 00064/06

VALUE 00247/04 00178/04 00190/04 00198/04 00206/04

WDISC 00254/05 00378/02 00234/03 00037/05 00167/06 00054/07 00441/09
00501/09 00300/10 00133/11 00491/11 00518/11 00523/11

WMOVE 00347/04 00262/01 00303/01 00519/01 00545/01 00349/04 00350/04
00359/04 00137/07 00144/08 00231/09 00056/10 00119/10 00351/10
00001/11 00533/11 00614/11

WRBUF 00264/04 00258/04

WRLEN 00272/04 00259/04 00265/04

```
WRSYS   00037/05 00334/01 00532/01 00022/03 00079/05 00472/09 00513/11
        00597/11

WRTSF   00297/10 00416/09 00279/10 00303/10

WS1     00165/06 00174/06

WSECT   00159/06 00151/06 00170/06 00104/07 00149/07 00152/07 00202/07
        00187/11

WTEMP   00202/07 00207/07

XBATC   00229/02 00221/01 00019/02 00127/02

XBLBL   00630/11 00613/11

XCHAR   00498/02 00487/02

XCLEX   00228/02 00162/01 00536/01 00536/03 00002/04

XCLOK   00628/11 00575/11 00584/11 00590/11

XCUSC   00237/02 00398/09

XCXMX   00232/02 00477/01

XD27    00461/02 00409/02

XD28    00462/02 00411/02

XDLBL   00242/02 00517/01

XDUMP   00233/02 00479/01 00016/02 00030/03

XEAEB   00463/02 00422/02 00440/02

XEFMP   00239/02 00485/01

XEJOB   00158/02 00224/01 00370/01 00466/01 00552/11 00595/11

XJBIN   00230/02 00468/01 00278/02 00062/04

XJFIL   00231/02 00471/01 00096/03 00108/03 00228/03

XJFSC   00236/02 00315/02 00100/03 00250/11

XMFLG   00240/02 00487/01

XNFLA   00235/02 00483/01 00527/03

XNMBU   00459/02 00347/02

XOPTN   00273/04 00276/04

XRTRK   00234/02 00481/01
```

```
XSFLG   00238/02 00492/01 00433/03
XSTOR   00068/07 00373/06 00377/06 00422/06 00556/06 00042/07
XSTOV   00162/07 00109/07
XSTR3   00112/07 00101/07
XSTR5   00142/07 00133/07
XSTR6   00147/07 00160/07
XSTR7   00152/07 00146/07
XSWAP   00025/02 00021/02
XSYLB   00243/02 00260/01 00518/01 00532/11 00612/11
XTMP1   00460/02 00415/02 00423/02
XTRAK   00242/10 00486/06 00236/10
XXLBL   00629/11 00531/11
XXMOD   00241/02 00254/01
*Z      00648/11
```

```
0001                    ASMB,L,X,C,N,R,B     DISC TRACKS STATUS MODULE (SEX01
**  NO ERRORS*
```

```
0001                    ASMB,L,X,C,N,R,B    DISC TRACKS STATUS MODULE (SEX01
0002  00000                     NAM SEX01,1,0
0003                            ENT SEX01
0004                            EXT $RQER,$ADDR
0005                            EXT $IRT
0006*     SEX01 ROUTINE CHECKS DISC WORK TRACK STATUS OF N CONSE CUTIVE
0007*   WORK TRACKS STARTING FROM SPECIFIED TRACK #, IF INITIAL TRACK
0008*   AND N CONSECUTIVE TRACKS ARE OKAY, THEN INITIAL TRACK # IS
0009*   RETURNED, IF N CONSECTIVE TRACKS FROM INITIAL TRACK ARE NOT OKAY
0010*   THEN A SEARCH IN MADE FOR N CONSECTIVE TRACKS STARTING FROM THE
0011*   FIRST GOOD TRACK AFTER THE LAST BAD TRACK AND THE SEARCH IS
0012*   REPEATED, IF TRACKS CANNOT BE FOUND, THEN USER START TRACK IS
0013*   SET TO ZERO.
0014*
0015*   CALLING SEQUENCE:
0016*
0017*         JSB EXEC
0018*         DEF *+5          RETURN ADDRESS
0019*         DEF RCODE        RCODE = 16
0020*         DEF NTRAK        NTRAK #% OF CONSECUTIVE TRACKS
0021*         DEF TRACK        TRACK #STARTING TRACK #
0022*         DEF STRAK        STRAK #RESULTING START TRACK OR 0 IF NONE
0023*         ---
0024*
0025  00000 060224  $EX01 LDA RQCNT     CHECK FOR CORRECT # OF PARAMETER
0026  00001 040047        ADA N4
0027  00002 002002        SZA
0028  00003 026060R       JMP RQER       NOT CORRECT # OF PARAMETERS
0029  00004 060231        LDA RQP4       CHECK ADDRESS OF STRAK LOCATION
0030  00005 016002X       JSB $ADDR     CALL ADDRESS CHECK ROUTINE
0031  00006 160226        LDA RQP1,I
0032  00007 002020        SSA
0033  00010 026036R       JMP EX005
0034  00011 060160        LDA SYNTS      CHECK START TRACK# FOR WORK AREA
0035  00012 040074        ADA .377
0036  00013 001727        ALF,ALF
0037  00014 010074        AND .377
0038  00015 070001        STA B
0039  00016 007004        CMB,INB
0040  00017 144230        ADB RQP3,I
0041  00020 006021        SSB,RSS        TRACK IN WORK AREA
0042  00021 026024R       JMP *+3             YES
0043  00022 006400  EX002 CLB             NO:  SET STRAK = 0
0044  00023 026050R       JMP EX040+1
0045  00024 006400        CLB
0046  00025 060154        LDA DISCO      CHECK IF END TRACK IN WORD AREA
0047  00026 010074        AND .377
0048  00027 003000        CMA
0049  00030 140227        ADA RQP2,I
0050  00031 140230        ADA RQP3,I
0051  00032 002003        SZA,RSS
0052  00033 026036R       JMP EX005
0053  00034 002021        SSA,RSS
0054  00035 026050R       JMP EX040+1         BEYOND LAST WORK TRACK
0055*
0056  00036 164230  EX005 LDB RQP3,I     STARTING TRACK #
```

```
0057  00037 144227          ADB RQP2,I     # OF CONSECUTIVE TRACKS
0058  00040 007004          CMB,INB
0059  00041 060154          LDA DISCO      LOWER 8 BITS = # OF TRACKS
0060  00042 010074          AND .377
0061  00043 002004          INA
0062  00044 040001          ADA B          MAX = (START TRK + # CNSEC)
0063  00045 002020          SSA            OK IF POS
0064  00046 026022R         JMP EX002      NOT ENOUGH ROOM
0065  00047 164230  EX040    LDB RQP3,I     ORIGINAL START TRACK
0066  00050 174231          STB RQP4,I           STORE STRAK AND RETURN
0067  00051 060245          LDA EXMOD
0068  00052 050052          CPA ..-1
0069  00053 003004          CMA,INA
0070  00054 070245          STA EXMOD
0071  00055 060225          LDA RQRTN    SET UP TRANSFER ADDR FOR SIRT
0072  00056 070137          STA XIRT
0073  00057 026003X         JMP $IRT
0074  00060 060245  RQER    LDA EXMOD
0075  00061 050052          CPA ..-1
0076  00062 003004          CMA,INA
0077  00063 070245          STA EXMOD
0078  00064 026001X         JMP $RQER      TRANSFER TO REQUEST ERROR ROUTIN
0079  00000           A     EQU 0
0080  00001           B     EQU 1
0081  00053           ..    EQU 53B
0082  00047           N4    EQU ..-4
0083  00074           .377  EQU ..+17
0084  00100           .     EQU 100B
0085  00126           RONBF EQU .+26B
0086  00137           XIRT  EQU RONBF+9
0087  00154           DISCO EQU .+44
0088  00160           SYNTS EQU .+48
0089  00224           RQCNT EQU .+84
0090  00225           RQRTN EQU .+85
0091  00226           RQP1  EQU .+86
0092  00227           RQP2  EQU .+87
0093  00230           RQP3  EQU .+88
0094  00231           RQP4  EQU .+89
0095  00245           EXMOD EQU .+101
0096                  END
** NO ERRORS*
```

```
$ADDR   00004   00030
$EX01   00025   00003
$IRT    00005   00073
$RQER   00004   00078
.       00084   00085   00087   00088   00089   00090   00091
        00092   00093   00094   00095
..      00081   00068   00075   00082   00083
.377    00083   00035   00037   00047   00060
@A      00079
B       00080   00038   00062
DISCO   00067   00046   00059
EX002   00043   00064
EX005   00056   00033   00052
EX040   00065   00044   00054
EXMOD   00095   00067   00070   00074   00077
N4      00082   00026
RONBF   00085   00086
RQCNT   00089   00025
RQER    00074   00028
RQP1    00091   00031
RQP2    00092   00049   00057
RQP3    00093   00040   00050   00056   00065
RQP4    00094   00029   00066
RQRTN   00090   00071
SYNTS   00088   00034
XIRT    00086   00072
```

```
0001                ASMB,L,C,X,N,R,B     DISC WORK LIMITS MODULE (SEX02)
**  NO ERRORS*
```

```
0001                    ASMB,L,C,X,N,R,B     DISC WORK LIMITS MODULE (SEX02)
0002  00000                     NAM $EX02,1,0
0003                            ENT $EX02
0004                            EXT $RQER,$ADDR
0005                            EXT $IRT
0006*     $EX02 ROUTINE PROVIDES THE USER WITH DISC WORK AREA TRACK
0007*   ADDRESS LIMITS AND THE # OF SECTORS PER DISC TRACK.
0008*
0009*     CALLING SEQUENCE:
0010*
0011*          JSB EXEC
0012*          DEF *+5(OR 6)
0013*          DEF RCODE       RCODE = 17
0014*          DEF FTRAK       FTRAK = ADDR OF WORD TO STORE 1ST WORK TRK
0015*          DEF LTRAK       LTRAK = ADDR OF WORD TO STORE LAST WORK TRK
0016*          DEF SIZE        SIZE = # SECTOR/TRACK WORD ADDR.
0017*          DEF DISC(OPTIONAL)  DISC = 0 FOR SYSTEM DISC, NON=0 FOR US
0018*                              DEFAULT IS SYSTEM.
0019*
0020  00000 060224  $EX02 LDA RQCNT      CHECK PARAMETER COUNT
0021  00001 050057        CPA ..+4       4 PARAMETERS?
0022  00002 026010R       JMP CHK        YES, OK.
0023  00003 052060        CPA ..+5      5 PARAMETERS?
0024  00004 002001        RSS           YES, OK
0025  00005 026065R       JMP RQER        TOO FEW OR TOO MANY PARAMETERS.
0026  00006 060232        LDA RQP5       CHECK ADDR OF 5TH PARAM
0027  00007 016002X       JSB $ADDR
0028  00010 060227  CHK   LDA RQP2
0029  00011 016002X       JSB $ADDR           PARAMETERS
0030  00012 060230        LDA RQP3
0031  00013 016002X       JSB $ADDR
0032  00014 060231        LDA RQP4
0033  00015 016002X       JSB $ADDR
0034  00016 064224        LDB RQCNT
0035  00017 054057        CPB ..+4       DEFAULT AS SYSTEM DISC?
0036  00020 026024R       JMP SYS        YES.
0037  00021 160232        LDA RQP5,I      NO, CHECK 5TH PARAM
0038  00022 002002        SZA           0 MEANS SYSTEM DISC
0039  00023 026057R       JMP USER
0040  00024 060160  SYS   LDA SYNTS     GET START OF WORK AREA TRACK
0041  00025 040074        ADA .377
0042  00026 001727        ALF,ALF
0043  00027 010074        AND .377
0044  00030 170227        STA RQP2,I
0045  00031 060102        LDA JBINC
0046  00032 002003        SZA,RSS
0047  00033 026043R       JMP EX010
0048  00034 010074        AND .377
0049  00035 070001        STA B
0050  00036 020102        XOR JBINC
0051  00037 001727        ALF,ALF
0052  00040 010074        AND .377
0053  00041 040052        ADA N1
0054  00042 026045R       JMP EX020
0055  00043 060154  EX010 LDA DISCO      STORE END OF WORK AREA TRACK #
0056  00044 010074        AND .377
```

```
0057  00045 170230  EX020 STA RQP3,I
0058  00046 060116        LDA SECTR     STORE # OF SECTORS PER TRACK
0059  00047 170231        STA RQP4,I
0060  00050 060245        LDA EXMOD
0061  00051 050051        CPA ..-2
0062  00052 003004        CMA,INA
0063  00053 070245        STA EXMOD
0064  00054 060225        LDA RQRTN     SET UP TRANSFER ADDR FOR $IRT
0065  00055 070137        STA XIRT
0066  00056 026003X       JMP $IRT
0067  00057 060157  USER  LDA UDNTS     GET USER DISC NEXT TR/SECTR
0068  00060 040074        ADA .377
0069  00061 001727        ALF,ALF
0070  00062 010074        AND .377
0071  00063 170227        STA RQP2,I
0072  00064 026043R       JMP EX010
0073  00065 002400  RQER  CLA            FREE MODULE AREA
0074  00066 070245        STA EXMOD
0075  00067 026001X       JMP $RQER
0076*
0077  00000          A     EQU 0
0078  00001          B     EQU 1
0079  00053          ..    EQU 53B
0080  00052          N1    EQU ..-1
0081  00074          .377  EQU ..+17
0082  00100          .     EQU 100B
0083  00102          JBINC EQU .+2
0084  00116          SECTR EQU .+14
0085  00126          RONBF EQU .+26B
0086  00137          XIRT  EQU RONBF+9
0087  00154          DISCO EQU .+44
0088  00157          UDNTS EQU .+47
0089  00160          SYNTS EQU .+48
0090  00224          RQCNT EQU .+84
0091  00225          RQRTN EQU .+85
0092  00227          RQP2  EQU .+87
0093  00230          RQP3  EQU .+88
0094  00231          RQP4  EQU .+89
0095  00232          RQP5  EQU .+90
0096  00245          EXMOD EQU .+101
0097                       END
** NO ERRORS*
```

$ADDR	00004	00027	00029	00031	00033		
$EX02	00020	00003					
$IRT	00005	00066					
$RQER	00004	00075					
.	00082	00083	00084	00085	00087	00088	00089
	00090	00091	00092	00093	00094	00095	00096
..	00079	00021	00023	00035	00061	00080	00081
.377	00081	00041	00043	00048	00052	00056	00068
	00070						
@A	00077						
B	00078	00049					
CHK	00028	00022					
DISCO	00087	00055					
EX010	00055	00047	00072				
EX020	00057	00054					
EXMOD	00096	00060	00063	00074			
JBINC	00083	00045	00050				
N1	00080	00053					
RONBF	00085	00086					
RQCNT	00090	00020	00034				
RQER	00073	00025					
RQP2	00092	00028	00044	00071			
RQP3	00093	00030	00057				
RQP4	00094	00032	00059				
RQP5	00095	00026	00037				
RQRTN	00091	00064					
SECTR	00084	00058					
SYNTS	00089	00040					
SYS	00040	00036					

UDNTS	00088	00067
USER	00067	00039
XIRT	00086	00065

```
0001                ASMB,L,X,C,N,R,B      PROGRAM COMPLETION MODULE (SEX
** NO ERRORS*
```

```
0001                    ASMB,L,X,C,N,R,B      PROGRAM COMPLETION MODULE (SEX
0002  00000                    NAM $EX03,1,0
0003                           ENT $EX03
0004                           EXT $IDL1,$MOVE,$ABRT,$TYPE
0005                           EXT $CLER
0006*       $EX03 ROUTINE IS THE EXECUTING PROGRAM COMPLETION REQUEST
0007*     PROCESSOR.
0008*       IF PROGRAM IS 'RUNNING' (EXECUTION CLOCK -CLEX- IS POSITIVE),
0009*     THEN IT IS TURNED OFF (SET BIT 15 OF CLEX). A CHECK IS MADE TO
0010*     SEE IF POST MORTEM DUMP IS REQUESTED. AND DUMP MODULE CALLED IN.
0011*       THE EXECUTING PROGRAM ID SEGMENT -EXPG- IS CLEARED AND INPUT
0012*     IS REQUESTED FROM THE BATCH INPUT DEVICE.
0013*
0014*     CALLING SEQUENCE:
0015*
0016*           JSB EXEC
0017*           DEF *+2          RETURN ADDRESS
0018*           DEF RCODE        RCODE = 6
0019*           ---
0020*
0021  00000 060106  $EX03 LDA CLEX      CHECK IF EXECUTION CLOCK ON
0022  00001 032047R       IOR SIGN            YES, SO TURN OF EXEC CLOCK
0023  00002 070106        STA CLEX
0024*
0025  00003 060113        LDA DUMPS      CHECK IF POST MORTEM DUMP REQUES
0026  00004 002011        SLA,RSS
0027  00005 026016R       JMP EXPGC      NO, SO GO CLEAR EXPG
0028  00006 060245        LDA EXMOD
0029  00007 050050        CPA ..-3
0030  00010 003004        CMA,INA
0031  00011 070245        STA EXMOD           POST MORTEM DUMP MODULE
0032  00012 002400        CLA            SET EX MOD AREA AVAILABLE FOR
0033  00013 070332        STA CHARC
0034  00014 002404        CLA,INA        SET BIT 0 FOR PDUMP
0035  00015 026003X       JMP $ABRT
0036  00016 060323  EXPGC LDA EFMP
0037  00017 002002        SZA            EFMP ACTIVE?
0038  00020 114000        JSB A,I         -YES, LET IT CLEAN UP
0039  00021 060334       LDA  DMFLG      DATA MANAGEMENT ACTIVE?
0040  00022 002002       SZA
0041  00023 114000       JSB  A,I        YES-SO TRANSFER TO PROCESSOR
0042  00024 016005X       JSB $CLER
0043  00025 070273        STA $IDCD
0044  00026 066050R       LDB N11
0045  00027 016002X       JSB $MOVE
0046  00030 000141        DEF EXPG
0047  00031 060245        LDA EXMOD
0048  00032 050050        CPA ..-3
0049  00033 003004        CMA,INA
0050  00034 070245        STA EXMOD
0051  00035 006400        CLB
0052  00036 060262        LDA SWAP
0053  00037 074262        STB SWAP
0054  00040 074113        STB DUMPS      CLEAR PROGRAM DUMP FLAG
0055  00041 002021        SSA,RSS
0056  00042 026001X       JMP $IDL1           :EJOB STATEMENT
```

```
0057   00043 002404          CLA,INA
0058   00044 070111          STA BATCH
0059   00045 007400          CCB
0060   00046 026004X         JMP STYPE
0061*
0062   00047 100000  SIGN     OCT 100000
0063   00050 177765  N11      DEC -11
0064*
0065   00000         A        EQU 0
0066   00001         B        EQU 1
0067   00053         ..       EQU 53B
0068   00072         M77      EQU ..+15
0069   00100         .        EQU 100B
0070   00106         CLEX     EQU .+6
0071   00111         BATCH    EQU .+9
0072   00113         DUMPS    EQU .+11
0073   00141         EXPG     EQU .+33
0074   00245         EXMOD    EQU .+101
0075   00262         SWAP     EQU .+114
0076   00273         $IDCD    EQU .+123
0077   00323         EFMP     EQU .+147
0078   00332         CHARC    EQU .+154
0079   00334         DMFLG    EQU .+156      DATA MANAGEMENT FLAG
0080                         END
** NO ERRORS*
```

$ABRT	00004	00035					
$CLER	00005	00042					
$EX03	00021	00003					
$IDCD	00076	00043					
$IDL1	00004	00056					
$MOVE	00004	00045					
$TYPE	00004	00060					
.	00069	00070	00071	00072	00073	00074	00075
	00076	00077	00078	00079			
..	00067	00029	00048	00068			
A	00065	00038	00041				
*B	00066						
BATCH	00071	00058					
CHARC	00078	00033					
CLEX	00070	00021	00023				
DMFLG	00079	00039					
DUMPS	00072	00025	00054				
EFMP	00077	00036					
EXMOD	00074	00028	00031	00047	00050		
EXPG	00073	00046					
EXPGC	00036	00027					
*M77	00068						
N11	00063	00044					
SIGN	00062	00022					
SWAP	00075	00052	00053				

```
0001                    ASMB,L,X,C,N,R,B     PROGRAM SUSPENSION MODULE (SEX04
** NO ERRORS*
```

```
0001                    ASMB,L,X,C,N,R,B    PROGRAM SUSPENSION MODULE (SEX04
0002  00000                     NAM $EX04,1,0
0003                            ENT $EX04
0004                            EXT $TYPE,$SYIO,$WAIT
0005                            EXT $ETEQ,$MOVE,$ABRT,$IDL1
0006                            EXT CNDEC,CNOCT
0007                            EXT $IRT
0008*
0009*     $EX04 ROUTINE PROCESSES REQUEST FOR PROGRAM SUSPENSION.
0010*   THIS ROUTINE SAVES POINT OF CONTINUATION ADDRESS, OUTPUTS
0011*   -XXXXX SUSP- MESSAGE ON SYSTEM TELETYPE, SETS $IDL1 TO ACCEPT
0012*   -GO- INPUT ONLY, AND THEN REQUESTS INPUT FROM SYSTEM TELETYPE.
0013*
0014*     CALLING SEQUENCE:
0015*
0016*         JSB EXEC
0017*         DEF *+2         RETURN POINT
0018*         DEF RCODE       RCODE = 7
0019*         ---
0020*
0021  00000 054062  $EX04 CPB ..+7        CALL FROM DISCM?
0022  00001 026051R       JMP EX04        YES
0023  00002 056103R       CPB .18         CODE FROM EX18
0024  00003 026207R       JMP EX18X
0025  00004 054046        CPB ..-5        ENTRY FROM $EX05
0026  00005 026135R       JMP EX05X        -YES
0027*
0028  00006 054057        CPB ..+4        USER DISC I/O ERROR?
0029  00007 026025R       JMP IOERR        -YES
0030  00010 076076R       STB COD17
0031  00011 004010        SLB             GEN. CODE ERROR?
0032  00012 016267R       JSB GNERR        -YES
0033  00013 062076R       LDA COD17
0034  00014 001110        ARS,SLA
0035  00015 026032R       JMP UDERR        -YES
0036*
0037  00016 064245  EXIT  LDB EXMOD
0038  00017 054047        CPB ..-4
0039  00020 007004        CMB,INB
0040  00021 074245        STB EXMOD
0041  00022 064225        LDB RQRTN   SET RETURN ADDR FOR $IRT
0042  00023 074137        STB XIRT
0043  00024 026012X       JMP $IRT
0044*
0045  00025 060275  IOERR LDA $MDBF+1
0046  00026 072127R       STA IOMSG+5     SET PE/NR CODE
0047  00027 062122R       LDA IOMSG
0048  00030 066104R       LDB N20
0049  00031 016354R       JSB ERMSG       PRINT I/O ERR MSG
0050*
0051  00032 060262  UDERR LDA SWAP
0052  00033 002002        SZA
0053  00034 026016R       JMP EXIT
0054  00035 016343R       JSB UDSUS
0055  00036 062353R       LDA ERSUS
0056  00037 016011X       JSB CNOCT
```

```
0057  00040 072121R        STA UDMSG+5
0058  00041 160001         LDA B,I
0059  00042 072117R        STA UDMSG+3
0060  00043 006004         INB
0061  00044 160001         LDA B,I
0062  00045 072120R        STA UDMSG+4
0063  00046 062114R        LDA UDMSG
0064  00047 064041         LDB ..-10
0065  00050 016354R        JSB ERMSG      PRINT 'UD  NNNNNN' (SUSP, PNT)
0066*
0067  00051 060225  EX04    LDA RQRTN      SAVE POINT OF SUSPENSION
0068  00052 070272          STA $GOPT           CONTINUATION ADDRESS
0069  00053 060141          LDA EXPG       SETUP -XXXXX SUSP- MESSAGE
0070  00054 072107R         STA BUF+1
0071  00055 060142          LDA EXPG+1
0072  00056 072110R         STA BUF+2
0073  00057 060143          LDA EXPG+2
0074  00060 010075          AND .1774
0075  00061 032077R         IOR .40
0076  00062 072111R         STA BUF+3
0077  00063 062106R         LDA BUF
0078  00064 064041         LDB ..-10
0079  00065 016354R         JSB ERMSG
0080  00066 062105R EXGO    LDA GOCD       SETUP TO ACCEPT ;GO CODE ONLY
0081  00067 070273          STA $IDCD
0082  00070 060245          LDA EXMOD
0083  00071 050047          CPA ..-4
0084  00072 003004          CMA,INA
0085  00073 070245          STA EXMOD
0086  00074 007400          CCB
0087  00075 026001X         JMP $TYPE
0088*
0089  00076 000000  COD17   NOP
0090  00077 000040  .40     OCT 40
0091  00100 040000  B40K    OCT 40000
0092  00101 037777  MASK7   OCT 37777
0093  00102 000031  DISC    OCT 31
0094  00103 000022  .18     DEC 18
0095  00104 177754  N20     DEC -20
0096  00105 043517  GOCD    ASC 1,GO
0097*
0098  00106 000107R BUF     DEF *+1
0099  00107 020040          ASC 3,
      00110 020040
      00111 020040
0100  00112 051525          ASC 2,SUSP
      00113 051520
0101  00114 000115R UDMSG   DEF *+1
0102  00115 052504          ASC 5,UD
      00116 020040
      00117 020040
      00120 020040
      00121 020040
0103  00122 000123R IOMSG   DEF *+1
0104  00123 044457          ASC 10,I/O ERR    USER DISC
      00124 047440
```

```
      00125 042522
      00126 051040
      00127 020040
      00130 020125
      00131 051505
      00132 051040
      00133 042111
      00134 051503
0105*
0106  00135 060227  EX05X LDA RQP2
0107  00136 064050        LDB ..-3
0108  00137 016005X       JSB $MOVE      MOVE SEG. NAME TO MSG BUFFR
0109  00140 000200R       DEF SEGMS
0110  00141 062202R       LDA SEGMS+2
0111  00142 010075        AND .1774
0112  00143 032077R       IOR .40
0113  00144 072202R       STA SEGMS+2
0114  00145 062177R       LDA SEGMS-1
0115  00146 066175R       LDB N14
0116  00147 016354R       JSB ERMSG      PRINT 'XXXXX MISSING' MESSAGE
0117  00150 070141        STA EXPG
0118  00151 064245        LDB EXMOD
0119  00152 054047        CPB ..-4
0120  00153 007004        CMB,INB
0121  00154 074245        STB EXMOD      RELEASE MODULE OVERLAY AREA
0122*
0123  00155 060106        LDA CLEX
0124  00156 032174R       IOR SIGN
0125  00157 070106        STA CLEX       TURN OFF EXECUTING PROG. CLOCK
0126  00160 062174R       LDA SIGN
0127  00161 064113        LDB DUMPS
0128  00162 006020        SSB            ABORT DUMP REQUESTED?
0129  00163 026006X       JMP $ABRT       -YES
0130  00164 002400        CLA
0131  00165 070113        STA DUMPS      CLEAR DUMP FLAG
0132  00166 062176R       LDA JO         ASCII 'JO'
0133  00167 064111        LDB BATCH
0134  00170 054054        CPB ..+1       BATCH = SYS. TTY?
0135  00171 002400        CLA             -YES, DON'T LOOK FOR 'JO'
0136  00172 070273        STA $IDCD
0137  00173 026007X       JMP $IDL1      GO INPUT FROM BATCH DEVICE
0138*
0139  00174 100000  SIGN  OCT 100000
0140  00175 177762  N14   DEC -14
0141  00176 045117  JO    ASC 1,JO
0142  00177 000200R       DEF *+1
0143  00200 020040  SEGMS ASC 7,      MISSING
      00201 020040
      00202 020040
      00203 046511
      00204 051523
      00205 044516
      00206 043440
0144*
0145  00207 060274  EX18X LDA $MDBF     SET UP EQP TABLE
0146  00210 016004X       JSB SETEQ
```

```
0147  00211 060314         LDA VADR      EQUIPMENT MALFUNCTION OR NOT READ
0148  00212 070272         STA $GOPT     SAVE SUSPENSION ADDRESS
0149  00213 160206         LDA EQT4,I
0150  00214 001727         ALF,ALF
0151  00215 010072         AND M77
0152  00216 052102R        CPA DISC
0153  00217 026263R        JMP X18D
0154  00220 160206         LDA EQT4,I
0155  00221 001266         RAL,CLE,ELA
0156  00222 001323         RAR,RAR
0157  00223 012101R        AND MASK7
0158  00224 032100R        IOR B40K
0159  00225 170206         STA EQT4,I
0160  00226 012077R        AND .40
0161  00227 002042         SEZ,SZA        CLUGE MESSG SKIP FOR ASMB,XREF
0162  00230 026245R        JMP X18Q
0163  00231 002404         CLA,INA
0164  00232 064117         LDB EQTAB
0165  00233 054203  ILOOP  CPB EQT1
0166  00234 026240R        JMP IO,2
0167  00235 002004         INA
0168  00236 044066         ADB .17
0169  00237 026233R        JMP ILOOP
0170  00240 016010X IO,2   JSB CNDEC
0171  00241 072261R        STA NREDY+9
0172  00242 062250R        LDA NREDY
0173  00243 066104R X18M   LDB N20
0174  00244 016354R        JSB ERMSG
0175  00245 060274  X18Q   LDA $MDBF
0176  00246 016004X        JSB SETEQ
0177  00247 026066R        JMP EXGO
0178  00250 000251R NREDY  DEF *+1
0179  00251 044457         ASC 10,I/O ERR NR EQT#
      00252 047440
      00253 042522
      00254 051040
      00255 047122
      00256 020105
      00257 050524
      00260 021440
      00261 020040
      00262 020040
0180*
0181  00263 052255R X18D   LDA NREDY+5
0182  00264 072127R        STA IOMSG+5
0183  00265 062122R        LDA IOMSG
0184  00266 026243R        JMP X18M
0185*
0186  00267 000000  GNERR  NOP
0187  00270 060274         LDA $MDBF
0188  00271 016010X        JSB CNDEC      =NO, CONVERT TO DECIMAL
0189  00272 072335R        STA SGASC+1
0190  00273 006004         INB
0191  00274 160001         LDA B,I
0192  00275 072334R        STA SGASC
0193  00276 060275         LDA $MDBF+1
```

```
0194  00277 016010X        JSB CNDEC
0195  00300 072322R        STA DGASC+1
0196  00301 006004         INB
0197  00302 160001         LDA 8,I
0198  00303 072321R        STA DGASC
0199  00304 062311R        LDA  DEFGN
0200  00305 066310R        LDB N50
0201  00306 016354R        JSB ERMSG
0202  00307 126267R        JMP GNERR,I
0203  00310 177716  N50     DEC -50
0204  00311 000312R DEFGN   DEF *+1
0205  00312 042111          ASC 7,DISC GEN CODE
      00313 051503
      00314 020107
      00315 042516
      00316 020103
      00317 047504
      00320 042440
0206  00321 000000  DGASC   BSS 2
0207  00323 020116          ASC 9, NOT SYS GEN CODE
      00324 047524
      00325 020123
      00326 054523
      00327 020107
      00330 042516
      00331 020103
      00332 047504
      00333 042440
0208  00334 000000  SGASC   BSS 2
0209  00336 020105          ASC 5, ERR POSS
      00337 051122
      00340 020120
      00341 047523
      00342 051440
0210*
0211  00343 000000  UDSUS   NOP
0212  00344 060224          LDA RQCNT
0213  00345 002004          INA
0214  00346 003000          CMA
0215  00347 040225          ADA RQRTN
0216  00350 070225          STA RQRTN
0217  00351 072353R         STA ERSUS
0218  00352 126343R         JMP UDSUS,I
0219  00353 000000  ERSUS   NOP
0220*
0221  00354 000000  ERMSG   NOP
0222  00355 072363R         STA MSGAD
0223  00356 076364R         STB  MSGLN
0224  00357 034261          ISZ OPFLG
0225  00360 016002X         JSB $SYIO
0226  00361 000002          DEC 2
0227  00362 000001          DEC 1
0228  00363 000000  MSGAD   NOP
0229  00364 000000  MSGLN   NOP
0230  00365 000367R         DEF *+2
0231  00366 026003X         JMP $WAIT
```

```
0232  00367 002400          CLA
0233  00370 070261          STA OPFLG
0234  00371 126354R         JMP ERMSG,I
0235*
0236  00000           A      EQU 0
0237  00001           B      EQU 1
0238  00053           ..     EQU 53B
0239  00066           .17    EQU ..+11
0240  00072           M77    EQU ..+15
0241  00075           .1774  EQU ..+18
0242  00100           .      EQU 100B
0243  00106           CLEX   EQU .+6
0244  00111           BATCH  EQU .+9
0245  00113           DUMPS  EQU .+11
0246  00117           EQTAB  EQU .+15
0247  00126           RONBF  EQU .+26B
0248  00137           XIRT   EQU RONBF+9
0249  00141           EXPG   EQU .+33
0250  00203           EQT1   EQU .+67
0251  00206           EQT4   EQU .+70
0252  00224           RQCNT  EQU .+84
0253  00225           RQRTN  EQU .+85
0254  00227           RQP2   EQU .+87
0255  00245           EXMOD  EQU .+101
0256  00261           OPFLG  EQU .+113
0257  00262           SWAP   EQU .+114
0258  00272           $GOPT  EQU .+122
0259  00273           $IDCD  EQU .+123
0260  00274           $MDBF  EQU .+124
0261  00314           VADR   EQU .+140
0262                         END
**  NO ERRORS*
```

```
$ABRT   00005    00129

$EX04   00021    00003

$GOPT   00258    00068    00148

$IDCD   00259    00081    00136

$IDL1   00005    00137

$IRT    00007    00043

$MDBF   00260    00045    00145    00175    00187    00193

$MOVE   00005    00108

$SYIO   00004    00225

$TYPE   00004    00087

$WAIT   00004    00231

.       00242    00243    00244    00245    00246    00247    00249
        00250    00251    00252    00253    00254    00255    00256
        00257    00258    00259    00260    00261

..      00238    00021    00025    00028    00038    00064    00078
        00083    00107    00119    00134    00239    00240    00241

.17     00239    00168

.1774   00241    00074    00111

.18     00094    00023

.40     00090    00075    00112    00160

@A      00236

B       00237    00058    00061    00191    00197

B40K    00091    00158

BATCH   00244    00133

BUF     00098    00070    00072    00076    00077

CLEX    00243    00123    00125

CNDEC   00006    00170    00188    00194

CNOCT   00006    00056

COD17   00089    00030    00033
```

DEFGN	00204	00199					
DGASC	00206	00195	00198				
DISC	00093	00152					
DUMPS	00245	00127	00131				
EQT1	00250	00165					
EQT4	00251	00149	00154	00159			
EQTAB	00246	00164					
ERMSG	00221 00234	00049	00065	00079	00116	00174	00201
ERSUS	00219	00055	00217				
EX04	00067	00022					
EX05X	00106	00026					
EX18X	00145	00024					
EXGO	00080	00177					
EXIT	00037	00053					
EXMOD	00255	00037	00040	00082	00085	00118	00121
EXPG	00249	00069	00071	00073	00117		
GNERR	00186	00032	00202				
GOCD	00096	00080					
ILOOP	00165	00169					
IO,2	00170	00166					
IOERR	00045	00029					
IOMSG	00103	00046	00047	00182	00183		
JO	00141	00132					
M77	00240	00151					
MASK7	00092	00157					
MSGAD	00228	00222					
MSGLN	00229	00223					
N14	00140	00115					

N20	00095	00048	00173		
N50	00203	00200			
NREDY	00178	00171	00172	00181	
OPFLG	00256	00224	00233		
RONBF	00247	00248			
RQCNT	00252	00212			
RQP2	00254	00106			
RQRTN	00253	00041	00067	00215	00216
SEGMS	00143	00109	00110	00113	00114
SETEQ	00005	00146	00176		
SGASC	00208	00189	00192		
SIGN	00139	00124	00126		
SWAP	00257	00051			
UDERR	00051	00035			
UDMSG	00181	00057	00059	00062	00063
UDSUS	00211	00054	00218		
VADR	00261	00147			
X18D	00181	00153			
X18M	00173	00184			
X18Q	00175	00162			
XIRT	00248	00042			

```
0001                    ASMB,L,X,C,N,R,B      PROGRAM SEGMENT LOAD (SEX05)
**  NO ERRORS*
```

```
0001                    ASMB,L,X,C,N,R,B     PROGRAM SEGMENT LOAD ($EX05)
0002  00000                    NAM $EX05,1,0
0003                           ENT $EX05
0004                           EXT $RQER,$LDEX
0005                           EXT $MOVE,$SRCH
0006                           EXT DEF04,$MDLD
0007*
0008*     $EX05 ROUTINE PROCESSES PROGRAM SEGMENT LOAD REQUEST,
0009*   THIS ROUTINE SEARCHES BOTH THE SYSTEM AND USER DIRECTORY FOR
0010*   THE DESIRED PROGRAM SEGMENT. IF THE NAME IS FOUND, AND THE
0011*   DIRECTORY TYPE IS 5 (SEGMENT), THE LAST EIGHT WORDS FO THE
0012*   DIRECTORY ENTRY ARE STORED INTO THE LAST EIGHT WORDS OF EXPG
0013*   AND CONTROL TRANSFERRED TO PRIMARY ENTRY
0014*
0015*    CALLING SEQUENCE
0016*
0017*         JSB EXEC
0018*         DEF  *+3        RETURN ADDRESS
0019*         DEF RCODE       RCODE # 8
0020*         DEF SNAME       SNAME # ASCII PROGRAM SEGMENT NAME
0021*         ---
0022*
0023  00000 060051  $EX05 LDA N2          CHECK PARAMETER COUNT
0024  00001 040224        ADA RQCNT
0025  00002 003025        CMA,SSA,INA,RSS
0026  00003 026052R       JMP RQER              NOT CORRECT # OF PARAMETERS
0027  00004 060326        LDA LSTCH
0028  00005 064227        LDB RQP2
0029  00006 016004X       JSB $SRCH
0030  00007 026024R       JMP EX30        SEGMENT FOUND
0031  00010 050326        CPA LSTCH       SET TO SEARCH OTHER DRCTRY
0032  00011 002004        INA
0033  00012 070326        STA LSTCH       SET USER/SYSTEM FLAG
0034  00013 064227        LDB RQP2        SET PROGRAM SEGMENT NAME WORDS
0035  00014 016004X       JSB $SRCH
0036  00015 026024R       JMP EX30
0037*
0038  00016 016054R       JSB XCLR        CLEAR EXEC MODULE
0039*
0040  00017 062005X       LDA DEF04
0041  00020 070305        STA TEMP
0042  00021 060057        LDA ..+4
0043  00022 064046        LDB ..-5
0044  00023 026006X       JMP $MDLD
0045*
0046  00024 060001  EX30  LDA B
0047  00025 164226        LDB RQP1,I
0048  00026 054063        CPB .8
0049  00027 026034R       JMP EX35
0050  00030 066062R       LDB N11
0051  00031 016003X       JSB $MOVE
0052  00032 000141        DEF EXPG
0053  00033 026044R       JMP EX40
0054  00034 040056  EX35  ADA .3
0055  00035 064044        LDB N7
0056  00036 016003X       JSB $MOVE
```

```
0057   00037 000144          DEF EXPG+3
0058   00040 064225          LDB RQRTN     IF 1ST SEG LOAD (IE. SGRTN=0
0059   00041 060136          LDA SGRTN     THEN SET SGRTN TO RQRTN FOR
0060   00042 002003          SZA,RSS       SEGMENT RETURN.
0061   00043 074136          STB SGRTN
0062   00044 002400  EX40    CLA
0063   00045 064046          LDB ..-5
0064   00046 016003X         JSB $MOVE
0065   00047 000126          DEF RONBF
0066*
0067   00050 016054R         JSB XCLR
0068   00051 026002X         JMP $LDEX      GO TO LOAD AND EXECUTE
0069*
0070   00052 016054R RQER    JSB XCLR
0071   00053 026001X         JMP $RQER
0072*
0073   00054 000000  XCLR    NOP
0074   00055 060245          LDA EXMOD
0075   00056 050046          CPA ..-5
0076   00057 003004          CMA,INA
0077   00060 070245          STA EXMOD
0078   00061 126054R         JMP XCLR,I
0079*
0080   00062 177765  N11     DEC -11
0081   00000         A       EQU 0
0082   00001         B       EQU 1
0083   00053         ..      EQU 53B
0084   00044         N7      EQU ..-7
0085   00051         N2      EQU ..-2
0086   00056         .3      EQU ..+3
0087   00053         .8      EQU ..+8
0088*
0089   00100         .       EQU 100B
0090   00126         RONBF   EQU .+22
0091   00136         SGRTN   EQU RONBF+8
0092   00141         EXPG    EQU .+33
0093   00224         RQCNT   EQU .+84
0094   00225         RQRTN   EQU .+85
0095   00226         RQP1    EQU .+86
0096   00227         RQP2    EQU .+87
0097   00245         EXMOD   EQU .+101
0098   00305         TEMP0   EQU .+205B
0099   00305         TEMP    EQU TEMP0
0100   00326         LSTCH   EQU .+150
0101*
0102                         END
**  NO ERRORS*
```

$EX05	00023	00003					
$LDEX	00004	00068					
$MDLD	00006	00044					
$MOVE	00005	00051	00056	00064			
$RQER	00004	00071					
$SRCH	00005	00029	00035				
.	00089	00090	00092	00093	00094	00095	00096
	00097	00098	00100				
..	00083	00042	00043	00063	00075	00084	00085
	00086	00087					
.3	00086	00054					
.8	00087	00048					
#A	00081						
B	00082	00046					
DEF04	00006	00040					
EX30	00046	00030	00036				
EX35	00054	00049					
EX40	00062	00053					
EXMOD	00097	00074	00077				
EXPG	00092	00052	00057				
LSTCH	00100	00027	00031	00033			
N11	00080	00050					
N2	00085	00023					
N7	00084	00055					
RONBF	00090	00065	00091				
RQCNT	00093	00024					
RQER	00070	00026					
RQP1	00095	00047					
RQP2	00096	00028	00034				

RQRTN	00094	00058			
SGRTN	00091	00059	00061		
TEMP	00099	00041			
TEMP0	00098	00099			
XCLR	00073	00038	00067	00070	00078

```
0001                    ASMB,L,X,C,N,R,B      FILE NAME SEARCH ROUTINE (SEX06
** NO ERRORS*
```

```
0001                    ASMB,L,X,C,N,R,B     FILE NAME SEARCH ROUTINE ($EX06
0002  00000                    NAM $EX06,1,0
0003                           ENT $EX06
0004                           EXT $RQER
0005                           EXT $SRCH,$ADDR
0006                           EXT $IRT,$CIC3
0007*
0008*     $EX06 ROUTINE IS THE FILE NAME SEARCH PROCESSOR ROUTINE.
0009*   THIS ROUTINE SEARCHES THE USER DIRECTORY FILE FOR A USER
0010*   SPECIFIED FILE. IF THE FILE IS FOUND, THE LENGTH OF THE FILE IS
0011*   STORED INTO THE USER SPECIFIED WORD. IF FILE CANNOT BE FOUND,
0012*   THEN USER SPECIFIED FILE LENGTH WORD IS SET TO ZERO.
0013*
0014*     CALLING SEQUENCE:
0015*
0016*          JSB EXEC
0017*          DEF *+4 (OR 5)
0018*          DEF RCODE       RCODE = 18
0019*          DEF FNAME       FNAME = ASCII FILE NAME (6 CHARACTERS)
0020*          DEF NSECT       NSECT = FILE LENGTH
0021*          DEF WAITF          BIT 0= 0/1: WAIT/NO WAIT
0022*                             BIT 1 =0/1: USER/SYSTEM DIRECTORY
0023*          ---
0024*
0025  00000 060224  $EX06 LDA RQCNT
0026  00001 050056        CPA ..+3
0027  00002 026010R       JMP EX01
0028  00003 050057        CPA ..+4
0029  00004 002001        RSS
0030  00005 026071R       JMP RQER       CAN ONLY TAKE 3 OR 4 PARAM
0031  00006 060231        LDA RQP4      CHECK WAIT FLAG ADDR
0032  00007 016003X       JSB $ADDR
0033  00010 060230  EX01  LDA RQP3       CHECK USER NSECT ADDR
0034  00011 016003X       JSB $ADDR
0035  00012 064224        LDB RQCNT
0036  00013 054057        CPB ..+4       4 PARAM?
0037  00014 002001        RSS
0038  00015 026031R       JMP EX02       NO= MEANS WITH WAIT & USER DIREC
0039  00016 164231        LDB RQP4,I
0040  00017 006011        SLB,RSS       BIT 0=1 (NO WAIT)?
0041  00020 026027R       JMP EX03       =NO.
0042  00021 002400       CLA
0043  00022 070327        STA FLFLG       CLEAR FILE VALIDITY FLAG
0044  00023 060054        LDA ..+1       =YES. SET BIT 15 & RQRTN IN FILR
0045  00024 001300        RAR
0046  00025 030225        IOR RQRTN
0047  00026 070164        STA FILRW
0048*
0049  00027 005310  EX03  RBR,SLB        BIT  1 SET? (SYS. DIRECTORY?)
0050  00030 002400        CLA           =YES. SET A=0
0051  00031 064227  EX02  LDB RQP2      SET UP TO SEARCH DIRECTORY
0052  00032 016002X       JSB $SRCH     GO SEARCH DIRECTORY
0053  00033 026066R       JMP EX10       =FOUND
0054  00034 170230  EX05  STA RQP3,I     STORE 3 INTO NSECT
0055  00035 044052        ADB N1
0056*
```

```
0057  00036 060164         LDA FILRW
0058  00037 002003         SZA,RSS          W/O WAIT?
0059  00040 026061R        JMP EX09           =NO
0060  00041 060133         LDA MDFLG         =YES, MDFLG BIT 15 SET?
0061  00042 002021         SSA,RSS
0062  00043 026051R        JMP EX07               =NO
0063  00044 060164         LDA FILRW
0064  00045 002004         INA              GET COMPLETION SUBROUTINE ADDR
0065  00046 072101R        STA SUB
0066  00047 002400         CLA              SET A=0 FOR NORMAL COMPLETION
0067  00050 116101R        JSB SUB,I         EXECUTE USER COMPL. SUBROUTINE
0068*
0069  00051 002400  EX07   CLA
0070  00052 070164         STA FILRW       CLEAR SEARCH W/O WAIT FLAG
0071  00053 016073R        JSB FREEM         FREE EXEC MOD AREA
0072  00054 060225        LDA RQRTN
0073  00055 002021         SSA,RSS            BIT 15 OF RQRTN SET?
0074*                                     (EXEC CALL HELD OFF?)
0075  00056 026005X        JMP $CIC3         =NO, RETURN TO SUSP,POINT
0076  00057 001665         ELA,CLE,ERA       =YES, CLEAR BIT 15 & RETURN
0077  00060 002001         RSS
0078*
0079  00061 060225  EX09   LDA RQRTN     SET UP RETURN ADDR FOR $IRT
0080  00062 070137         STA XIRT
0081  00063 016073R        JSB FREEM
0082  00064 160001         LDA B,I       SET TRACK/SECTOR IN A REGISTRR
0083  00065 026004X        JMP $IRT
0084*
0085  00066 044057  EX10   ADB .4          STORE # SECTORS IN FILE
0086  00067 160001         LDA B,I              INTO NSECT
0087  00070 026034R        JMP EX05
0088  00071 016073R RQER   JSB FREEM
0089  00072 026001X        JMP $RQER
0090*
0091  00073 000000  FREEM  NOP
0092  00074 060245         LDA EXMOD
0093  00075 050045         CPA ..=6
0094  00076 003004         CMA,INA
0095  00077 070245         STA EXMOD
0096  00100 126073R        JMP FREEM,I
0097*
0098  00101 000000  SUB    NOP
0099  00000          A      EQU 0
0100  00001          B      EQU 1
0101  00053          ..     EQU 53B
0102  00050          N3     EQU ..=3
0103  00052          N1     EQU ..=1
0104  00057          .4     EQU ..+4
0105  00100          .      EQU 100B
0106  00126          RONBF  EQU .+26B
0107  00133          MDFLG  EQU RONBF+5
0108  00137          XIRT   EQU RONBF+9
0109  00164          FILRW  EQU .+52
0110  00224          RQCNT  EQU .+84
0111  00225          RQRTN  EQU .+85
0112  00227          RQP2   EQU .+87
```

```
0113  00230          RQP3   EQU .+88
0114  00231          RQP4   EQU .+89
0115  00242          XSUSP  EQU .+98
0116  00245          EXMOD  EQU .+101
0117  00327          FLFLG  EQU .+151
0118                        END
**  NO ERRORS*
```

```
 $ADDR  00005    00032    00034

 $CIC3  00006    00075

 $EX06  00025    00003

 $IRT   00006    00083

 $RQER  00004    00089

 $SRCH  00005    00052

 .      00105    00106    00109    00110    00111    00112    00113
        00114    00115    00116    00117

 ..     00101    00026    00028    00036    00044    00093    00102
        00103    00104

 .4     00104    00085

*A      00099

 B      00100    00082    00086

 EX01   00033    00027

 EX02   00051    00038

 EX03   00049    00041

 EX05   00054    00087

 EX07   00069    00062

 EX09   00079    00059

 EX10   00085    00053

 EXMOD  00116    00092    00095

 FILRW  00109    00047    00057    00063    00070

 FLFLG  00117    00043

 FREEM  00091    00071    00081    00088    00096

 MDFLG  00107    00060

 N1     00103    00055

*N3     00102

 RONBF  00106    00107    00108

 RQCNT  00110    00025    00035
```

RQER	00088	00030		
RQP2	00112	00051		
RQP3	00113	00033	00054	
RQP4	00114	00031	00039	
RQRTN	00111	00046	00072	00079
SUB	00098	00065	00067	
XIRT	00108	00080		
*XSUSP	00115			

```
0001                ASMB,L,C,X,N,R,B      TIME REQUEST PROCESSOR (SEX07)
**  NO ERRORS*
```

```
0001                    ASMB,L,C,X,N,R,B     TIME REQUEST PROCESSOR (SEX07)
0002  00000                 NAM $EX07,1,0
0003                        ENT $EX07
0004                        EXT $RQER,$ADDR
0005                        EXT $IRT
0006*
0007*     $EX07 IS THE TIME PROCESSOR ROUTINE MODULE
0008*
0009*     CALLING SEQUENCE
0010*
0011*        JSB EXEC
0012*        DEF *+3
0013*         DEF RCODE       RCODE # 11
0014*         DEF ARRAY       ADDRESS OF 5 WORD ARRAY
0015*        ---
0016*
0017  00000 060051  $EX07 LDA N2
0018  00001 040224        ADA RQCNT
0019  00002 002002        SZA
0020  00003 026063R       JMP RQER
0021  00004 060227        LDA RQP2
0022  00005 072162R       STA ADDR       SAVE USER BUFFER ADDR
0023  00006 016002X       JSB $ADDR
0024  00007 006400        CLB
0025  00010 062163R       LDA .600
0026  00011 040105        ADA CLOCK+1    COMPUTE TENTHS OF SEC AND SECS
0027  00012 002002        SZA
0028  00013 026020R       JMP EX10
0029  00014 172162R       STA ADDR,I          STORE 0 INTO TENTHS OF SEC
0030  00015 036162R       ISZ ADDR
0031  00016 172162R       STA ADDR,I          STORE 0 INTO SECS
0032  00017 026033R       JMP EX20
0033  00020 016070R EX10  JSB ..DIV      FORM TENTHS OF SEC AND SEC
0034  00021 000065        DEF .10
0035  00022 070305        STA TEMP       SAVE SECONDS
0036  00023 074000        STB A
0037  00024 001723        ALF,RAR
0038  00025 040001        ADA B
0039  00026 040001        ADA B
0040  00027 172162R       STA ADDR,I     STORE 100'S OF SEC
0041  00030 036162R       ISZ ADDR
0042  00031 060305        LDA TEMP
0043  00032 172162R       STA ADDR,I          STORE SECONDS
0044  00033 036162R EX20  ISZ ADDR       INCREMENT TO MINUTES ADDRESS
0045  00034 006400        CLB
0046  00035 060104        LDA CLOCK      COMPUTE MINUTES AND HOURS
0047  00036 002002        SZA
0048  00037 026044R       JMP EX30
0049  00040 172162R       STA ADDR,I          STORE 0 INTO MINUTES
0050  00041 036162R       ISZ ADDR
0051  00042 172162R       STA ADDR,I          STORE 0 INTO MINUTES
0052  00043 026051R       JMP EX40
0053  00044 016070R EX30  JSB ..DIV      FORM MINUTES AND HOURS
0054  00045 000164R       DEF .60
0055  00046 176162R       STB ADDR,I          STORE MINUTES
0056  00047 036162R       ISZ ADDR
```

```
0057  00050 172162R        STA ADDR,I          STORE HOURS
0058  00051 036162R EX40    ISZ ADDR
0059  00052 002400          CLA
0060  00053 172162R        STA ADDR,I          STORE 0 INTO DAYS
0061  00054 060245          LDA EXMOD
0062  00055 050044          CPA ..=7
0063  00056 003004          CMA,INA
0064  00057 070245          STA EXMOD      FREE MODULE AREA
0065  00060 060225          LDA RQRTN    SET UP RETURN ADDR FOR $IRT
0066  00061 070137          STA XIRT
0067  00062 026003X         JMP $IRT
0068*
0069*
0070  00063 060245  RQER    LDA EXMOD
0071  00064 050044          CPA ..=7
0072  00065 003004          CMA,INA
0073  00066 070245          STA EXMOD
0074  00067 026001X         JMP $RQER
0075  00070 000000  ..DIV   NOP
0076  00071 076153R         STB TEMPP      SAVE HI DIVIDEND
0077  00072 166070R         LDB ..DIV,I    GET ADDRESS OF DIVISOR
0078  00073 164001          LDB 1,I        GET DIVISOR
0079  00074 036070R         ISZ ..DIV      BUMP RETURN
0080  00075 006003          SZB,RSS       ZERO DIVISOR
0081  00076 026151R         JMP OVFLO          YES
0082  00077 006120          CLE,SSB        SET B TO ABS AND E TO SIGN
0083  00100 007204          CMB,CME,INB
0084  00101 076154R         STB PLUSD      STORE POSITIVE DIVISOR
0085  00102 007004          CMB,INB
0086  00103 076155R         STB MIND       STORE NEGATIVE DIVISOR
0087  00104 066156R         LDB M16
0088  00105 076157R         STB COUNT      INITIALIZE COUNTER
0089  00106 064051          LDB N2
0090  00107 076160R         STB SIGNN
0091  00110 076161R         STB RSIGN      INITIALIZE SIGNS
0092  00111 066153R         LDB TEMPP
0093  00112 006021          SSB,RSS        TEST DIVIDEND SIGN
0094  00113 026121R         JMP DIV1           POSITIVE
0095  00114 036161R         ISZ RSIGN      SET REMAINDER SIGN NEGATIVE
0096  00115 007200          CMB,CME        COMPLEMENT THE DOUBLE LENGTH
0097  00116 002002          SZA                DIVIDEND AND E BIT
0098  00117 003005          CMA,INA,RSS
0099  00120 006004          INB
0100  00121 002040  DIV1    SEZ           TEST QUOTIENT SIGN
0101  00122 036160R         ISZ SIGNN      IF NEG SET SIGN TO SAY NEG QUOT
0102  00123 046155R         ADB MIND       OVERFLOW?
0103  00124 006021          SSB,RSS
0104  00125 026151R         JMP OVFLO
0105  00126 046154R         ADB PLUSD
0106  00127 000066  LOOP    CLE,ELA        SHIFT
0107  00130 005600          ELB
0108  00131 046155R         ADB MIND       TEST
0109  00132 006021          SSB,RSS
0110  00133 002005          INA,RSS        DIVIDE OK
0111  00134 046154R         ADB PLUSD      NO DIVIDE
0112  00135 036157R         ISZ COUNT      ANLY MORE?
```

```
0113  00136 026127R        JMP LOOP        YES
0114  00137 003006         CMA,INA,SZA     SET QUOTIENT TO NEGATIVE
0115  00140 002020         SSA               AND MAKE SURE
0116  00141 002001         RSS                  THERE IS NO OVERFLOW
0117  00142 026151R        JMP OVFLO       OVERFLOW
0118  00143 103101         CLO
0119  00144 036160R        ISZ SIGNN       IF POSITIVE
0120  00145 003004         CMA,INA         TWO S COMPLEMENT
0121  00146 036161R        ISZ RSIGN       TWST FOR CORRECT QUOTIENT
0122  00147 126070R        JMP ..DIV,I
0123  00150 007005         CMB,INB,RSS
0124  00151 102101  OVFLO   STF 1           SET OVERFLOW BIT
0125  00152 126070R        JMP ..DIV,I     RETURN
0126  00153 000000  TEMPP   BSS 1
0127  00154 000000  PLUSD   BSS 1
0128  00155 000000  MIND    BSS 1
0129  00156 177760  M16     DEC -16
0130  00157 000000  COUNT   BSS 1
0131  00160 000000  SIGNN   BSS 1
0132  00161 000000  RSIGN   BSS 1
0133  00162 000000  ADDR    NOP
0134  00163 001130  .600    DEC 600
0135  00164 000074  .60     DEC 60
0136*
0137  00000         A       EQU 0
0138  00001         B       EQU 1
0139  00053         ..      EQU 53B
0140  00051         N2      EQU ..-2
0141  00065         .10     EQU ..+10
0142  00100         .       EQU 100B
0143  00104         CLOCK   EQU .+4
0144  00126         RONBF   EQU .+26B
0145  00137         XIRT    EQU RONBF+9
0146  00224         RQCNT   EQU .+84
0147  00225         RQRTN   EQU .+85
0148  00227         RQP2    EQU .+87
0149  00245         EXMOD   EQU .+101
0150  00305         TEMP0   EQU .+205B
0151  00305         TEMP    EQU TEMP0
0152                        END
** NO ERRORS*
```

$ADDR	00004	00023					
$EX07	00017	00003					
$IRT	00005	00067					
$RQER	00004	00074					
.	00142	00143	00144	00146	00147	00148	00149
	00150						
..	00139	00062	00071	00140	00141		
..DIV	00075	00033	00053	00077	00079	00122	00125
.10	00141	00034					
.60	00135	00054					
.600	00134	00025					
A	00137	00036					
ADDR	00133	00022	00029	00030	00031	00040	00041
	00043	00044	00049	00050	00051	00055	00056
	00057	00058	00060				
B	00138	00038	00039				
CLOCK	00143	00026	00046				
COUNT	00130	00088	00112				
DIV1	00100	00094					
EX10	00033	00028					
EX20	00044	00032					
EX30	00053	00048					
EX40	00058	00052					
EXMOD	00149	00061	00064	00070	00073		
LOOP	00106	00113					
M16	00129	00087					
MIND	00128	00086	00102	00106			
N2	00140	00017	00089				
OVFLO	00124	00081	00104	00117			

PLUSD	00127	00084	00105	00111
RONBF	00144	00145		
RQCNT	00145	00018		
RQER	00070	00020		
RQP2	00148	00021		
RQRTN	00147	00065		
RSIGN	00132	00091	00095	00121
SIGNN	00131	00090	00101	00119
TEMP	00151	00035	00042	
TEMP0	00150	00151		
TEMPP	00126	00076	00092	
XIRT	00145	00066		

```
0001                    ASMB,L,X,C,N,R,B    SPECIAL RT DISC ALLOCATION REQUE
**  NO ERRORS*
```

```
0001                    ASMB,L,X,C,N,R,B    SPECIAL RT DISC ALLOCATION REQUE
0002  00000                 NAM $EX08,1,0
0003                        ENT $EX08
0004                        EXT $ADDR,$SYIO,$IDL1,$RQER,$ABRT
0005                        EXT $WAIT,$TYPE,$CLER
0006                        EXT $IRT
0007*
0008*     CALLING SEQUENCE:
0009*
0010*        JSB EXEC
0011*        DEF *+6
0012*        DEF RCODE        RCODE # 4
0013*        DEF #TRAK        DESIRED # OF CONTIGUOUS TRACKS
0014*        DEF TRACK        ADDR TO STORE STARTING TRACK #
0015*        DEF DISC         ADDR TO CONTAIN L.U. # #2
0016*        DEF #SECT        ADDR TO CONTAIN # SECTORS/TRACK
0017*        ---
0018*
0019  00000 060224  $EX08 LDA RQCNT      CHECK PARAMETER COUNT
0020  00001 040046        ADA N5
0021  00002 002002        SZA
0022  00003 026132R       JMP RQER       ILLEGAL PARAMETER COUNT
0023  00004 060230        LDA RQP3
0024  00005 016001X       JSB $ADDR      CHECK TRACK STORE ADDR
0025  00006 060231        LDA RQP4
0026  00007 016001X       JSB $ADDR      CHECK DISC STORE ADDRESS
0027  00010 060232        LDA RQP5
0028  00011 016001X       JSB $ADDR      CHECK # SECT STORE ADDRESS
0029  00012 060267        LDA RTRK       CHECK IF PREVIOUS TRACK REQUEST
0030  00013 002002        SZA
0031  00014 026022R       JMP EX10      YES=GO PROCESS REQUEST
0032  00015 060160        LDA SYNTB      NO=GO FORM INITIAL TRACK # OF
0033  00016 040074        ADA M377
0034  00017 001727        ALF,ALF
0035  00020 010074        AND M377
0036  00021 070267        STA RTRK
0037  00022 160227  EX10  LDA RQP2,I     GET USER # TRACKS REQUESTED
0038  00023 001665        ELA,CLE,ERA
0039  00024 040267        ADA RTRK       ADD CURRENT TRACK #
0040  00025 070001        STA B
0041  00026 060102        LDA JBINC
0042  00027 001727        ALF,ALF
0043  00030 010074        AND M377
0044  00031 002003        SZA,RSS
0045  00032 060154        LDA DISCO
0046  00033 010076        AND M3777
0047  00034 007004        CMB,INB
0048  00035 040001        ADA B
0049  00036 002021        SSA,RSS
0050  00037 026117R       JMP EX100      DESIRED # TRACK ARE AVAILABLE
0051  00040 034261        ISZ OPFLG
0052  00041 016002X       JSB $SYIO      PRINT # TRACK UNAVAILABLE
0053  00042 000002        DEC 2
0054  00043 000001        DEC 1
0055  00044 000141R       DEF AWORK
0056  00045 177754        DEC -20
```

```
0057  00046 000050R        DEF *+2
0058  00047 026006X        JMP $WAIT
0059  00050 002400         CLA
0060  00051 070261         STA OPFLG
0061  00052 160227         LDA RQP2,I     CHECK IF RETURN TO USER OR ABORT
0062  00053 002021         SSA,RSS
0063  00054 026066R        JMP EX50
0064  00055 003400         CCA
0065  00056 170230  EX40   STA RQP3,I     SET TRACK TO -1 TO INDICATE NOT
0066  00057 060245         LDA EXMOD
0067  00060 050043         CPA ..=8
0068  00061 003004         CMA,INA
0069  00062 070245         STA EXMOD
0070  00063 060225         LDA RQRTN     SET UP RETURN ADDR FOR $IRT
0071  00064 070137         STA XIRT       SET UP RETURN ADDR FOR $IRT
0072  00065 026011X        JMP $IRT
0073  00066 060113  EX50   LDA DUMPS      CHECK IF ABORT FLAG SET
0074  00067 064245         LDB EXMOD
0075  00070 054043         CPB ..=8
0076  00071 007004         CMB,INB
0077  00072 074245         STB EXMOD
0078  00073 002020         SSA
0079  00074 026115R        JMP EX60       YES
0080  00075 062140R        LDA JO         NO-SO LOOK FOR NEXT JOB CARD
0081  00076 064111         LDB BATCH
0082  00077 054054         CPB ..+1
0083  00100 002400         CLA
0084  00101 070273         STA $IDCD
0085  00102 016010X        JSB $CLER
0086  00103 006400         CLB
0087  00104 060262         LDA SWAP
0088  00105 074262         STB SWAP
0089  00106 074113         STB DUMPS      CLEAR PROGRAM DUMP FLAG
0090  00107 002021         SSA,RSS
0091  00110 026003X        JMP $IDL1
0092  00111 002404         CLA,INA
0093  00112 070111         STA BATCH
0094  00113 007400         CCB
0095  00114 026007X        JMP $TYPE
0096  00115 062137R EX60   LDA SIGN       SET BIT 15 FOR ADUMP
0097  00116 026005X        JMP $ABRT      TRANSFER TO ABORT PROCESSOR
0098*
0099  00117 060267  EX100  LDA RTRK
0100  00120 170230         STA RQP3,I     STORE STARTING TRACK NUMBER
0101  00121 164227         LDB RQP2,I
0102  00122 005665         ELB,CLE,ERB
0103  00123 040001         ADA B
0104  00124 070267         STA RTRK
0105  00125 060055         LDA .2
0106  00126 170231         STA RQP4,I     SET L.U. #
0107  00127 060116         LDA SECTR
0108  00130 170232         STA RQP5,I     STORE # SECTORS/TRACK
0109  00131 026057R        JMP EX40+1     RETURN
0110  00132 060245  RQER   LDA EXMOD
0111  00133 050043         CPA ..=8
0112  00134 003004         CMA,INA
```

```
0113   00135 070245          STA EXMOD
0114   00136 026004X         JMP $RQER
0115   00137 100000  SIGN     OCT 100000
0116   00140 045117  JO       ASC 1,JO
0117   00141 021440  AWORK    ASC 10,# TRACKS UNAVAILABLE
       00142 052122
       00143 040503
       00144 045523
       00145 020125
       00146 047101
       00147 053101
       00150 044514
       00151 040502
       00152 046105
0118   00000           A       EQU 0
0119   00001           B       EQU 1
0120   00100           .       EQU 100B
0121   00053           ..      EQU 53B
0122   00046           N5      EQU ..-5
0123   00055           .2      EQU ..+2
0124   00074           M377    EQU ..+17
0125   00076           M3777   EQU ..+19
0126   00102           JBINC   EQU .+2
0127   00111           BATCH   EQU .+9
0128   00113           DUMPS   EQU .+11
0129   00116           SECTR   EQU .+14
0130   00126           RONBF   EQU .+26B
0131   00137           XIRT    EQU RONBF+9
0132   00154           DISCO   EQU .+44
0133   00160           SYNTS   EQU .+48
0134   00224           RQCNT   EQU .+84
0135   00225           RQRTN   EQU .+85
0136   00227           RQP2    EQU .+87
0137   00230           RQP3    EQU .+88
0138   00231           RQP4    EQU .+89
0139   00232           RQP5    EQU .+90
0140   00245           EXMOD   EQU .+101
0141   00261           OPFLG   EQU .+113
0142   00262           SWAP    EQU .+114
0143   00267           RTRK    EQU .+119
0144   00273           $IDCD   EQU .+123
0145                           END
**  NO ERRORS*
```

```
$ABRT   00004/02 00097/02

$ADDR   00004/02 00024/02 00026/02 00028/02

$CLER   00005/02 00085/02

$EX08   00019/02 00003/02

$IDCD   00144/02 00084/02

$IDL1   00004/02 00091/02

$IRT    00006/02 00072/02

$RQER   00004/02 00114/02

$SYIO   00004/02 00052/02

$TYPE   00005/02 00095/02

$WAIT   00005/02 00058/02

.       00120/02 00126/02 00127/02 00128/02 00129/02 00130/02 00132/02
        00133/02 00134/02 00135/02 00136/02 00137/02 00138/02 00139/02
        00140/02 00141/02 00142/02 00143/02 00144/02

..      00121/02 00067/02 00075/02 00082/02 00111/02 00122/02 00123/02
        00124/02 00125/02

.2      00123/02 00105/02

*A      00118/02

AWORK   00117/02 00055/02

B       00119/02 00040/02 00048/02 00103/02

BATCH   00127/02 00081/02 00093/02

DISCO   00132/02 00045/02

DUMPS   00128/02 00073/02 00089/02

EX10    00037/02 00031/02

EX100   00099/02 00050/02

EX40    00065/02 00109/02

EX50    00073/02 00063/02

EX60    00096/02 00079/02

EXMOD   00140/02 00066/02 00069/02 00074/02 00077/02 00110/02 00113/02
```

```
JBINC   00126/02 00041/02

JO      00116/02 00080/02

M377    00124/02 00033/02 00035/02 00043/02

M3777   00125/02 00046/02

N5      00122/02 00020/02

OPFLG   00141/02 00051/02 00060/02

RONBF   00130/02 00131/02

RQCNT   00134/02 00019/02

RQER    00110/02 00022/02

RQP2    00136/02 00037/02 00061/02 00101/02

RQP3    00137/02 00023/02 00066/02 00100/02

RQP4    00138/02 00025/02 00106/02

RQP5    00139/02 00027/02 00108/02

RQRTN   00135/02 00070/02

RTRK    00143/02 00029/02 00036/02 00039/02 00099/02 00104/02

SECTR   00129/02 00107/02

SIGN    00115/02 00096/02

SWAP    00142/02 00087/02 00088/02

SYNTS   00133/02 00032/02

XIRT    00131/02 00071/02
```

```
0001                    ASMB,L,X,C,N,R,B    *EQ PROCESSOR
**  NO ERRORS*
```

```
0001                    ASMB,L,X,C,N,R,B   ;EQ PROCESSOR
0002   00000                    NAM $EX09,1,0
0003                           ENT $EX09
0004                           EXT $SYIO,CNDEC,CNOCT
0005                           EXT $CIC3,SAVES,$RTRN
0006   00000 064123   $EX09    LDB JBUF
0007   00001 004066            CLE,ELB
0008   00002 076366R           STB BUFAD       SET BUFFER CHAR ADDRESSS
0009   00003 060275            LDA $MDBF+1
0010   00004 072365R           STA EXITA
0011   00005 002400            CLA
0012   00006 072371R           STA CURNT
0013   00007 016312R           JSB GET
0014   00010 016312R           JSB GET         L
0015   00011 001727            ALF,ALF
0016   00012 072370R           STA SAVE        SAVE 1ST CHAR.
0017   00013 016312R           JSB GET         U
0018   00014 032370R           IOR SAVE
0019   00015 052311R           CPA TR          ;TRACK REQUEST?
0020   00016 026216R           JMP TRACK        =YES
0021   00017 016312R EX00  JSB GET           SCAN FOR , OR BLANK
0022   00020 052373R           CPA COMMA
0023   00021 026025R           JMP EX01       FOUND THE COMMA
0024   00022 052213R           CPA BLANK      THEN IS IT BLANK
0025   00023 026052R           JMP EX10        ALL EQT VALUES
0026   00024 026017R           JMP EX00       NEITHER; SO GET NEXT CHAR
0027   00025 016312R EX01      JSB GET
0028   00026 016351R           JSB CHKDG       CHECK FOR VALID DIGIT
0029   00027 072371R           STA CURNT
0030   00030 016312R           JSB GET
0031   00031 052213R           CPA BLANK
0032   00032 026045R           JMP EX05
0033   00033 052373R           CPA COMMA
0034   00034 026155R           JMP ERMES
0035   00035 016351R           JSB CHKDG       CHECK FOR VALID DIGIT
0036   00036 072370R           STA SAVE
0037   00037 062371R           LDA CURNT
0038   00040 001723            ALF,RAR         MULTIPLY BY 10
0039   00041 042371R           ADA CURNT
0040   00042 042371R           ADA CURNT
0041   00043 042370R           ADA SAVE
0042   00044 072371R           STA CURNT
0043   00045 062371R EX05      LDA CURNT       IF PARAMETER IS ZERO,
0044   00046 002003            SZA,RSS           LIST ALL EQ ENTRIES
0045   00047 026052R           JMP EX10
0046   00050 007400            CCB             OTHERWISE, LIST ONE
0047   00051 026056R           JMP EX20
0048   00052 002404  EX10      CLA,INA         SET CURRENT EQT# TO 1
0049   00053 072371R           STA CURNT
0050   00054 064120            LDB EQT#
0051   00055 007004            CMB,INB
0052   00056 076372R EX20      STB LOOP         CHECK EQT# VALIDIDT
0053   00057 062371R           LDA CURNT       CHECK IF LEGAL EQT#
0054   00060 003004            CMA,INA
0055   00061 040120            ADA EQT#
0056   00062 002020            SSA
```

```
0057   00063 026155R          JMP ERMES           NO
0058   00064 062371R          LDA CURNT
0059   00065 016002X          JSB CNDEC       CONVERT TO ASCII
0060   00066 072164R          STA EQOUT+2     AND STORE INTO FORMAT
0061   00067 062371R          LDA CURNT       COMPUTE EQT ADDRESS
0062   00070 040052           ADA N1
0063   00071 070001           STA B
0064   00072 001700           ALF
0065   00073 040001           ADA B
0066   00074 040117           ADA EQTAB
0067   00075 040055           ADA .2
0068   00076 072367R          STA EQTAD
0069   00077 160000           LDA A,I
0070   00100 010072           AND .77
0071   00101 016003X          JSB CNOCT
0072   00102 072167R          STA EQOUT+5     I10 CHANNEL #
0073   00103 162367R          LDA EQTAD,I
0074   00104 001727           ALF,ALF
0075   00105 001222           RAL,RAL
0076   00106 010071           AND .37
0077   00107 016002X          JSB CNDEC
0078   00110 072176R          STA EQOUT+12    UNIT#
0079   00111 066374R          LDB ASC0
0080   00112 162367R          LDA EQTAD,I
0081   00113 002020           SSA
0082   00114 066375R          LDB ASCD
0083   00115 076173R          STB EQOUT+9     DMA OR NO DMA
0084   00116 066374R          LDB ASC0
0085   00117 162367R          LDA EQTAD,I
0086   00120 001222           RAL,RAL
0087   00121 000010           SLA
0088   00122 066376R          LDB ASCR
0089   00123 076174R          STB EQOUT+10    RESIDENT NON-RESIDENCE
0090   00124 036367R          ISZ EQTAD
0091   00125 162367R          LDA EQTAD,I
0092   00126 001222           RAL,RAL
0093   00127 010056           AND .3
0094   00130 016003X          JSB CNOCT
0095   00131 010074           AND .377
0096   00132 001727           ALF,ALF
0097   00133 032215R          IOR LWS
0098   00134 072200R          STA EQOUT+14      STATUS
0099   00135 162367R          LDA EQTAD,I
0100   00136 001727           ALF,ALF
0101   00137 010074           AND .377
0102   00140 016003X          JSB CNOCT
0103   00141 072172R          STA EQOUT+8     DVRXX
0104   00142 062161R          LDA EQOUT-1
0105   00143 066212R          LDB D15
0106   00144 016325R          JSB MESSG       GO PRINT EQT MESSAGE
0107   00145 036371R          ISZ CURNT
0108   00146 036372R          ISZ LOOP
0109   00147 026057R          JMP EX20+1
0110   00150 060245  EXIT      LDA EXMOD
0111   00151 050042           CPA ..-9
0112   00152 003004           CMA,INA
```

```
0113  00153 070245         STA EXMOD
0114  00154 126365R        JMP EXITA,I
0115*
0116  00155 062201R ERMES  LDA ERR-1
0117  00156 064061         LDB ..+6
0118  00157 016325R XTMSG  JSB MESSG      PRINT 'INPUT ERROR'
0119  00160 026150R        JMP EXIT
0120*
0121  00161 000162R        DEF *+1
0122  00162 042521  EQOUT  ASC 2,EQT
      00163 052040
0123  00164 000000         NOP            EQOUT+2 = EQT#
0124  00165 020103         ASC 2, CH
      00166 044040
0125  00167 000000         NOP            EQOUT+5 = CH#
0126  00170 020104         ASC 2, DVR
      00171 053122
0127  00172 000000         NOP            EQOUT+8 = DVRXX
0128  00173 000000         NOP            EQOUT+9 = D OR 0
0129  00174 000000         NOP            EQOUT+10= R OR 0
0130  00175 020125         ASC 1, U
0131  00176 000000         NOP          EQOUT+12 = UNIT
0132  00177 020123         ASC 1, S
0133  00200 000000         NOP             EQOUT+14 = STATUS
0134  00201 000202R        DEF *+1
0135  00202 044516  ERR    ASC 6,INPUT ERROR
      00203 050125
      00204 052040
      00205 042522
      00206 051117
      00207 051040
0136  00210 000006X DFRTN  DEF $RTRN
0137  00211 000014  D12    DEC 12
0138  00212 000017  D16    DEC 15
0139  00213 000040  BLANK  OCT 40
0140  00214 020000  UPBLK  OCT 020000
0141  00215 000040  LWS    OCT 40
0142*
0143  00216 060274  TRACK  LDA $MDBF
0144  00217 072307R        STA BADMS+3    SAVE BAD TRACK COUNT.
0145  00220 060157         LDA NXTTS      GET USER NEXT TRACK/SECTOR
0146  00221 040074         ADA .377
0147  00222 001727         ALF,ALF
0148  00223 010074         AND .377
0149  00224 072303R        STA TRMSG+12   SAVE NEXT AVAIL. TRACK#
0150  00225 060154         LDA DISCO      GET END-OF-DISC TRACK#
0151  00226 010074         AND .377
0152  00227 003000         CMA
0153  00230 042303R        ADA TRMSG+12
0154  00231 002021         SSA,RSS        NEXT TRK/SCTR   END OF DISC?
0155  00232 026264R        JMP TRAC2       -YES, GO SET UP TO PRINT 'NONE'
0156  00233 062303R        LDA TRMSG+12
0157  00234 016002X        JSB CNDEC      CONVERT TRACK# TO ASCII
0158  00235 006004         INB
0159  00236 164001         LDB B,I
0160  00237 072303R TRAC1  STA TRMSG+12
```

```
0161   00240 076302R          STB TRMSG+11
0162   00241 062267R          LDA TRMSG
0163   00242 066211R          LDB D12
0164   00243 016325R          JSB MESSG      PRINT TRACK MESSAGE
0165   00244 062307R          LDA BADMS+3    GET BAD TRACK COUNT
0166   00245 066210R          LDB DFRTN
0167   00246 002001           RSS
0168   00247 164001           LDB B,I        RESOLVE INDIRECT ADDRESSING
0169   00250 005275           RBL,CLE,SLB,ERB
0170   00251 026247R          JMP *-2
0171   00252 007004           CMB,INB
0172   00253 046365R          ADB EXITA
0173   00254 002002           SZA            ANY BAD TRACKS?
0174   00255 006021           SSB,RSS        WAS CALL FROM JOBPR?
0175   00256 026150R          JMP EXIT        -NO, SKIP BAD TRACK MESSAGE
0176   00257 016002X          JSB CNDEC      CONVERT BAD TRACKS TO ASCII
0177   00260 072307R          STA BADMS+3
0178   00261 062304R          LDA BADMS
0179   00262 064056           LDB .3
0180   00263 026157R          JMP XTMSG      GO PRINT BAD TRACK MSG & EXIT
0181*
0182   00264 066310R TRAC2    LDB NO
0183   00265 062270R          LDA NE
0184   00266 026237R          JMP TRAC1      SET TO PRINT NEXT TRK = 'NONE'
0185*
0186   00267 000270R TRMSG    DEF *+1
0187   00270 047105  NE       ASC 12,NEXT AVAIL TRACK #
       00271 054124
       00272 020101
       00273 053101
       00274 044514
       00275 020124
       00276 051101
       00277 041513
       00300 020075
       00301 020040
       00302 020040
       00303 020040
0188   00304 000305R BADMS    DEF *+1
0189   00305 041101           ASC 3,BAD#
       00306 042075
       00307 020040
0190   00310 047117  NO       ASC 1,NO
0191   00311 052122  TR       ASC 1,TR
0192*
0193   00312 000000  GET      NOP
0194   00313 066366R          LDB BUFAD
0195   00314 004065           CLE,ERB
0196   00315 160001           LDA B,I
0197   00316 002041           SEZ,RSS
0198   00317 001727           ALF,ALF
0199   00320 010074           AND .377
0200   00321 005600           ELB
0201   00322 006004           INB
0202   00323 076366R          STB BUFAD
0203   00324 126312R          JMP GET,I
```

```
0204*
0205   00325 000000  MESSG NOP
0206   00326 072334R       STA MSGAD     SET MESSAGE ADDRESS
0207   00327 076335R       STB MSGLN     SET MESSAGE LENGTH
0208   00330 034261        ISZ OPFLG     LOCK OUT OPERATOR ATTENTION
0209   00331 016001X       JSB $SYIO
0210   00332 000002        DEC 2         FUNCTION = WRITE
0211   00333 000001        DEC 1         LOGICAL UNIT# 1 = SYSTEM TTY
0212   00334 000000  MSGAD NOP
0213   00335 000000  MSGLN NOP
0214   00336 000345R       DEF MSGXT     COMPLETION RETURN ADDRESS
0215   00337 060322        LDA SXSUS
0216   00340 003000        CMA
0217   00341 040254        ADA UMFWA
0218   00342 002021        SSA,RSS       RETURN POINT IN USER AREA
0219   00343 026004X       JMP $CIC3      =NO, RETURN TO CIC
0220   00344 026006X       JMP $RTRN      =YES, RETURN TO USR
0221*
0222   00345 002400  MSGXT CLA
0223   00346 070261        STA OPFLG     ENABLE OPERATOR ATTENTION
0224   00347 016005X       JSB $AVES     SAVE REGS, AND SUSP, POINT
0225   00350 126325R       JMP MESSG,I
0226*
0227* ROUTINE TO CHECK FOR VALID DIGIT
0228*
0229*     ON ENTRY: "A"= ASCII DIGIT
0230*
0231   00351 000000  CHKDG NOP
0232   00352 066363R       LDB NB60
0233   00353 044000        ADB A
0234   00354 006020        SSB
0235   00355 026155R       JMP ERMES     <60 IS ERROR
0236   00356 046364R       ADB NB12
0237   00357 006021        SSB,RSS
0238   00360 026155R       JMP ERMES     >72IS ERROR
0239   00361 010070        AND M17
0240   00362 126351R       JMP CHKDG,I
0241*
0242   00363 177720  NB60  OCT -60
0243   00364 177766  NB12   OCT -12
0244*
0245   00365 000000  EXITA NOP
0246   00366 000000  BUFAD NOP
0247   00367 000000  EQTAD NOP
0248   00370 000000  SAVE  NOP
0249   00371 000000  CURNT NOP
0250   00372 000000  LOOP  NOP
0251   00373 000054  COMMA OCT 54
0252   00374 020060  ASC0  ASC 1, 0
0253   00375 020104  ASCD  ASC 1, D
0254   00376 020122  ASCR  ASC 1, R
0255   00000         A     EQU 0
0256   00001         B     EQU 1
0257   00053         ..    EQU 53B
0258   00052         N1    EQU ..-1
0259   00055         .2    EQU ..+2
```

```
0260   00056          .3     EQU ..+3
0261   00062          .7     EQU ..+7
0262   00070          M17    EQU ..+13
0263   00071          .37    EQU ..+14
0264   00072          .77    EQU ..+15
0265   00074          .377   EQU ..+17
0266   00100          .      EQU 100B
0267   00117          EQTAB  EQU .+15
0268   00120          EQT#   EQU .+16
0269   00123          JBUF   EQU .+19
0270   00154          DISCO  EQU .+44
0271   00157          NXTTS  EQU .+47
0272   00245          EXMOD  EQU .+101
0273   00254          UMFWA  EQU .+108
0274   00261          OPFLG  EQU .+113
0275   00274          $MDBF  EQU .+124
0276   00322          SXSUS  EQU .+146
0277                         END
** NO ERRORS*
```

$CIC3	00005	00219					
$EX09	00006	00003					
$MDBF	00275	00009	00143				
$RTRN	00005	00136	00220				
$SYIO	00004	00209					
.	00266	00267	00268	00269	00270	00271	00272
	00273	00274	00275	00276			
..	00257	00111	00117	00258	00259	00260	00261
	00262	00263	00264	00265			
.2	00259	00067					
.3	00260	00093	00179				
.37	00263	00076					
.377	00265	00095	00101	00146	00148	00151	00199
.7	00261						
.77	00264	00070					
A	00255	00069	00233				
ASC0	00252	00079	00084				
ASCD	00253	00082					
ASCR	00254	00088					
B	00256	00063	00065	00159	00168	00196	
BADMS	00188	00144	00165	00177	00178		
BLANK	00139	00024	00031				
BUFAD	00246	00008	00194	00202			
CHKDG	00231	00028	00035	00240			
CNDEC	00004	00059	00077	00157	00176		
CNOCT	00004	00071	00094	00102			
COMMA	00251	00022	00033				
CURNT	00249	00012	00029	00037	00039	00040	00042
	00043	00049	00053	00058	00061	00107	

```
D12     00137   00163

D15     00138   00105

DFRTN   00136   00166

DISCO   00270   00150

EQOUT   00122   00060   00072   00078   00083   00089   00098
        00103   00104

EQT#    00268   00050   00055

EQTAB   00267   00066

EQTAD   00247   00068   00073   00080   00085   00090   00091
        00099

ERMES   00116   00034   00057   00235   00238

ERR     00135   00116

EX00    00021   00026

EX01    00027   00023

EX05    00043   00032

EX10    00048   00025   00045

EX20    00052   00047   00109

EXIT    00110   00119   00175

EXITA   00245   00010   00114   00172

EXMOD   00272   00110   00113

GET     00193   00013   00014   00017   00021   00027   00030
        00203

JBUF    00269   00006

LOOP    00250   00052   00108

LWS     00141   00097

M17     00262   00239

MESSG   00205   00106   00118   00164   00225

MSGAD   00212   00206

MSGLN   00213   00207

MSGXT   00222   00214
```

N1	00258	00062					
NB12	00243	00236					
NB60	00242	00232					
NE	00187	00183					
NO	00190	00182					
NXTTS	00271	00145					
OPFLG	00274	00208	00223				
SAVE	00248	00016	00018	00036	00041		
SAVE$	00005	00224					
SXSUS	00276	00215					
TR	00191	00019					
TRAC1	00160	00184					
TRAC2	00182	00155					
TRACK	00143	00020					
TRMSG	00186	00149	00153	00156	00160	00161	00162
UMFWA	00273	00217					
*UPBLK	00140						
XTMSG	00118	00180					

```
0001                    ASMB,L,X,C,N,R,B    LOAD AND EXEC PROG ($EX10)
**  NO ERRORS*
```

```
0001                    ASMB,L,X,C,N,R,B    LOAD AND EXEC PROG ($EX10)
0002  00000                     NAM $EX10,1,0
0003                            ENT $EX10
0004                            EXT $WAIT,$MOVE,$IDL1,$TYPE
0005                            EXT $SYIO,$OPER,$DISC,ERR05
0006                            EXT $BLOP
0007                            EXT $IRT
0008  00000 036006X $EX10  ISZ $OPER
0009  00001 060141         LDA EXPG
0010  00002 002003         SZA,RSS         REQ. TO LOAD JOBPR?
0011  00003 026157R         JMP JLOD        -YES
0012  00004 060135         LDA AEPF
0013  00005 002003         SZA,RSS       IF AEPF NON-ZERO, SET EXPG+9 TO I
0014  00006 026012R         JMP EX20
0015  00007 070152         STA EXPG+9
0016  00010 002400         CLA
0017  00011 070135         STA AEPF      CLEAR AEPF
0018  00012 060224  EX20   LDA RQCNT
0019  00013 040050         ADA ..-3
0020  00014 003021         CMA,SSA,RSS   ANY PARAMETERS TO PASS?
0021  00015 026031R         JMP NOPAR      -NO
0022*
0023  00016 072154R         STA PARCT     SET PARAMETER COUNT
0024  00017 066153R         LDB DEFR
0025  00020 062314R         LDA DFRON
0026  00021 072155R         STA CHR12
0027  00022 160001         LDA B,I
0028  00023 160000         LDA A,I
0029  00024 172155R         STA CHR12,I
0030  00025 036155R         ISZ CHR12
0031  00026 006004         INB
0032  00027 036154R         ISZ PARCT
0033  00030 026022R         JMP *-6
0034*
0035  00031 060254  NOPAR   LDA UMFWA
0036  00032 003004         CMA,INA         GET NEG OF UMFWA
0037  00033 040146         ADA EXPG+5      ADD TO CORE ADDRESS FOR REQ FILE
0038  00034 002020         SSA             NOT BELOW START OF USER AREA IF+
0039  00035 026226R         JMP ERRTX      ABORT JOB:  PROGRAM CAN NOT RUN
0040  00036 060147         LDA EXPG+6
0041  00037 003004         CMA,INA         GET NEG OF REQUEST LWA
0042  00040 002004         INA
0043  00041 040100         ADA UMLWA       ADD LWA OF USER
0044  00042 002020         SSA             OK IF +
0045  00043 026226R         JMP ERRTX      ABORT JOB:  PROGRAM CAN NOT RUN
0046  00044 060255         LDA UBFWA
0047  00045 003004         CMA,INA         GET NEG OF USER BASE AREA FWA
0048  00046 040150         ADA EXPG+7      ADD FWA OF LINKS
0049  00047 002020         SSA             OK IF +
0050  00050 026226R         JMP ERRTX      ABORT JOB:  PROGRAM CAN NOT RUN
0051  00051 060151         LDA EXPG+8
0052  00052 003004         CMA,INA         GET NEG OF USER BASE AREA LWA
0053  00053 002004         INA
0054  00054 040256         ADA UBLWA       ADD LWA OF LINKS
0055  00055 002020         SSA             OK IF +
0056  00056 026226R         JMP ERRTX      ABORT JOB:  PROGRAM CAN NOT RUN
```

```
0057*                OK: NO REQUEST OF FWA OR LWA OUTSIDE
0058*                BOUNDS OF CURRENT SYSTEM FWA'S OR LWA'S
0059  00057 060146          LDA EXPG+5
0060  00060 070167          STA DBUFR+1    STORE BUFFER ADDRESS
0061  00061 060144          LDA EXPG+3
0062  00062 070166          STA DBUFR      STORE TRACK#/SECTOR#
0063  00063 060146          LDA EXPG+5
0064  00064 003004          CMA,INA
0065  00065 040147          ADA EXPG+6
0066  00066 070170          STA DBUFR+2    STORE # OF WORDS
0067  00067 002400          CLA
0068  00070 070262          STA SWAP       CLEAR JOB PROCESSOR IN FLAG
0069  00071 064326          LDB LSTCH      REQUEST TO USER DISC IF SET
0070  00072 006002          SZB            SKIP IF SYSTEM DISC REQUEST
0071  00073 034162          ISZ CRFLG
0072  00074 016275R         JSB DISCX
0073*     FORM PARAMETERS TO READ IN BASE PAGE
0074  00075 060174          LDA TSONE      START T/S FOR BASE PAGE READ
0075  00076 070166          STA DBUFR
0076  00077 060150          LDA EXPG+7
0077  00100 003004          CMA,INA
0078  00101 040151          ADA EXPG+8
0079  00102 002003          SZA,RSS
0080  00103 026113R         JMP EX50       NO BASE PAGE TO READ IN
0081  00104 070170          STA DBUFR+2    # OF WORDS
0082  00105 060150          LDA EXPG+7
0083  00106 070167          STA DBUFR+1    CORE ADDRESS
0084  00107 064326          LDB LSTCH      SET IF TO USER DISC
0085  00110 006002          SZB
0086  00111 034162          ISZ CRFLG
0087  00112 016275R         JSB DISCX
0088*
0089  00113 060106  EX50    LDA CLEX
0090  00114 002020          SSA            PROGRAM EXECUTING?
0091  00115 026131R         JMP EX60        =NO, DON'T CHECK I/O
0092  00116 060120          LDA EQT#
0093  00117 003004          CMA,INA
0094  00120 072156R         STA EQCNT
0095  00121 064117          LDB EQTAB
0096  00122 044056          ADB ..+3
0097  00123 160001  LOOP    LDA B,I        GET STATUS WORD
0098  00124 002020          SSA
0099  00125 026144R         JMP DBUSY       =YES, WAIT FOR COMPLETION
0100  00126 044066          ADB .17
0101  00127 036156R         ISZ EQCNT
0102  00130 026123R         JMP LOOP       GO CHECK NEXT DEVICE
0103*
0104  00131 002400  EX60    CLA
0105  00132 072006X         STA $OPER
0106  00133 070260          STA OPATN
0107  00134 060245          LDA EXMOD
0108  00135 050041          CPA ..-10
0109  00136 003004          CMA,INA
0110  00137 070245          STA EXMOD
0111  00140 060152          LDA EXPG+9      SET UP TRANSFER ADDR FOR $IRT
0112  00141 070137          STA XIRT
```

```
0113  00142 066314R        LDB DFRON
0114  00143 026012X        JMP $IRT     RESTORE INTERRUPT SYS,MEM PROT
0115*
0116  00144 074206  DBUSY  STB EQT4
0117  00145 044052         ADB ..-1
0118  00146 160001         LDA B,I
0119  00147 010072         AND M77        GET I/O CHNL#
0120  00150 066152R        LDB XRTN5      GET $EX05
0121  00151 026011X        JMP $BLOP      GO WAIT FOR I/O TO COMPLETE
0122*
0123  00152 000113R XRTN5  DEF EX50
0124  00153 000230  DEFR   DEF RQP3
0125  00154 000000  PARCT  NOP
0126  00155 000000  CHR12  NOP
0127  00156 000000  EQCNT  NOP
0128*
0129  00157 002404  JLOD   CLA,INA
0130  00160 070262         STA SWAP
0131  00161 062222R        LDA DFJOB
0132  00162 064050         LDB N3
0133  00163 016002X        JSB $MOVE      MOVE "JOBPR" TO EXPG BFR
0134  00164 000141         DEF EXPG
0135  00165 060263         LDA JOBPM      SETUP TO READ IN JOB PROCESSOR
0136  00166 070166         STA DBUFR
0137  00167 060254         LDA UMFWA
0138  00170 070167         STA DBUFR+1    SET CORE ADDRESS
0139  00171 060264         LDA JOBPM+1
0140  00172 070170         STA DBUFR+2    SET NUMBER OF WORDS
0141  00173 016275R        JSB DISCX      READ MAIN OF JOBPR
0142  00174 060174         LDA TSONE      START T/S FOR LINKS
0143  00175 070166         STA DBUFR
0144  00176 060255         LDA UBFWA
0145  00177 070167         STA DBUFR+1    SET CORE ADDRESS
0146  00200 060265         LDA JOBPB      SETUP TO READ IN JOB PROCESSOR
0147  00201 070170         STA DBUFR+2    SET NUMBER OF WORDS
0148  00202 016275R        JSB DISCX      READ LINKS OF JOBPR
0149  00203 060245         LDA EXMOD
0150  00204 050041         CPA ..-10
0151  00205 003004         CMA,INA
0152  00206 070245         STA EXMOD
0153  00207 060254         LDA UMFWA       SET UP TRANSFER ADDR FOR $IRT
0154  00210 070137         STA XIRT
0155  00211 002400         CLA
0156  00212 070273         STA $IDCD
0157  00213 070261         STA OPFLG
0158  00214 070260         STA OPATN
0159  00215 072006X        STA $OPER
0160  00216 070327         STA FLFLG
0161  00217 064332         LDB CHARC
0162  00220 070332         STA CHARC      CLEAR CHARACTER COUNT
0163  00221 026012X        JMP $IRT  RESTORE INTERRUPT SYS, MEM PROT
0164*                                & TRANSFER.
0165*
0166  00222 000223R DFJOB  DEF **+1
0167  00223 045117         ASC 3,JOBPR
      00224 041120
```

```
      00225 051040
0168*
0169  00226 034261  ERRTX ISZ OPFLG
0170  00227 016005X       JSB $SYIO
0171  00230 000002        DEC 2
0172  00231 000001        DEC 1
0173  00232 000316R       DEF MESER
0174  00233 177746        DEC -26
0175  00234 000236R       DEF *+2
0176  00235 026001X       JMP $WAIT
0177  00236 002400        CLA
0178  00237 070261        STA OPFLG
0179  00240 060106        LDA CLEX      CHECK IF PROGRAM EXECUTING
0180  00241 002020        SSA
0181  00242 026245R       JMP ER15
0182  00243 032334R       IOR SIGN
0183  00244 070106        STA CLEX
0184  00245 002400  ER15  CLA
0185  00246 066335R       LDB N11
0186  00247 016002X       JSB $MOVE
0187  00250 000141        DEF EXPG
0188  00251 062333R       LDA JO        SET SYSTEM TO LOOK FOR :JO/ :EJ
0189  00252 070273        STA $IDCD
0190  00253 060245        LDA EXMOD
0191  00254 050041        CPA ..-10
0192  00255 003004        CMA,INA
0193  00256 070245        STA EXMOD     FREE EX MOD AREA
0194  00257 006400        CLB
0195  00260 060262        LDA SWAP
0196  00261 074262        STB SWAP
0197  00262 074113        STB DUMPS     CLEAR PROGRAM DUMP FLAG
0198  00263 002021        SSA,RSS
0199  00264 026271R       JMP ER20
0200  00265 002400  ER16  CLA
0201  00266 070273        STA $IDCD
0202  00267 007400        CCB
0203  00270 026004X       JMP $TYPE
0204  00271 060112  ER20  LDA SYSTY
0205  00272 050111        CPA BATCH
0206  00273 026265R       JMP ER16
0207  00274 026003X       JMP $IDL1
0208*
0209  00275 000000  DISCX NOP
0210  00276 060166        LDA DBUFR     GET START TRK/SCTR
0211  00277 001727        ALF,ALF       ROTATE TRK# TO LO 8 BITS
0212  00300 010074        AND M377        AND ISOLATE
0213  00301 070001        STA B
0214  00302 060154        LDA DISCO     GET DISC SIZE
0215  00303 010074        AND M377        AND ISOLATE
0216  00304 003000        CMA
0217  00305 044000        ADB A
0218  00306 006021        SSB,RSS       IS TRACK# > DISC SIZE?
0219  00307 026010X       JMP ERR05      =YES
0220  00310 062315R       LDA DBFR      GET PARAM. BFR ADDRS.
0221  00311 006404        CLB,INB       B = 1 FOR READ
0222  00312 016007X       JSB $DISC
```

```
0223  00313 126275R        JMP DISCX,I
0224*
0225  00314 000126  DFRON DEF RONBF
0226  00315 000166  DBFR  DEF DBUFR
0227  00316 044514  MESER ASC 13,ILLEGAL PROGRAM RUN LIMITS
      00317 046105
      00320 043501
      00321 046040
      00322 050122
      00323 047507
      00324 051101
      00325 046440
      00326 051125
      00327 047040
      00330 046111
      00331 046511
      00332 052123
0228  00333 045117  JO    ASC 1,JO
0229  00334 100000  SIGN  OCT 100000
0230  00335 177765  N11   DEC -11
0231*
0232  00000         A     EQU 0
0233  00001         B     EQU 1
0234*
0235  00053         ..    EQU 53B
0236  00050         N3    EQU ..-3
0237  00066         .17   EQU ..+11
0238  00072         M77   EQU ..+15
0239  00074         M377  EQU ..+17
0240*
0241  00100         .     EQU 100B
0242  00100         UMLWA EQU .+0
0243  00106         CLEX  EQU .+6
0244  00111         BATCH EQU .+9
0245  00112         SYSTY EQU .+10
0246  00113         DUMPS EQU .+11
0247  00117         EQTAB EQU .+15
0248  00120         EQT#  EQU .+16
0249  00126         RONBF EQU .+22
0250  00135         AEPF  EQU RONBF+7
0251  00137         XIRT  EQU RONBF+9
0252  00141         EXPG  EQU .+33
0253  00154         DISCO EQU .+44
0254  00162         CRFLG EQU .+50
0255  00166         DBUFR EQU .+54
0256  00174         TSONE EQU .+60
0257  00206         EQT4  EQU .+70
0258  00224         RQCNT EQU .+84
0259  00230         RQP3  EQU .+88
0260  00245         EXMOD EQU .+101
0261  00254         UMFWA EQU .+108
0262  00255         UBFWA EQU .+109
0263  00256         UBLWA EQU .+110
0264  00260         OPATN EQU .+112
0265  00261         OPFLG EQU .+113
0266  00262         SWAP  EQU .+114     JOB PROCESSOR NOT IN/IN FLAG
```

```
0267   00263          JOBPM EQU .+115
0268   00265          JOBPB EQU .+117
0269   00273          $IDCD EQU .+123
0270   00326          LSTCH EQU .+150
0271   00327          FLFLG EQU .+151
0272   00332          CHARC EQU .+154
0273                         END
**  NO ERRORS*
```

```
$BLOP   00006   00121

$DISC   00005   00222

$EX10   00008   00003

$IDCD   00269   00156   00189   00201

$IDL1   00004   00207

$IRT    00007   00114   00163

$MOVE   00004   00133   00186

$OPER   00005   00008   00105   00159

$SYIO   00005   00170

$TYPE   00004   00203

$WAIT   00004   00176

.       00241   00242   00243   00244   00245   00246   00247
        00248   00249   00252   00253   00254   00255   00256
        00257   00258   00259   00260   00261   00262   00263
        00264   00265   00266   00267   00268   00269   00270
        00271   00272

..      00235   00019   00096   00108   00117   00150   00191
        00236   00237   00238   00239

.17     00237   00100

A       00232   00028   00217

AEPF    00250   00012   00017

B       00233   00027   00097   00118   00213

BATCH   00244   00205

CHARC   00272   00161   00162

CHR12   00126   00026   00029   00030

CLEX    00243   00089   00179   00183

CRFLG   00254   00071   00086

DBFR    00226   00220

DBUFR   00255   00060   00062   00066   00075   00081   00083
        00136   00138   00140   00143   00145   00147   00210
        00226
```

DBUSY	00116	00099					
DEFR	00124	00024					
DFJOB	00166	00131					
DFRON	00225	00025	00113				
DISCO	00253	00214					
DISCX	00209	00072	00087	00141	00148	00223	
DUMPS	00246	00197					
EQCNT	00127	00094	00101				
EQT#	00248	00092					
EQT4	00257	00116					
EQTAB	00247	00095					
ER15	00184	00181					
ER16	00200	00206					
ER20	00204	00199					
ERR05	00005	00219					
ERRTX	00169	00039	00045	00050	00056		
EX20	00018	00014					
EX50	00089	00080	00123				
EX60	00104	00091					
EXMOD	00260	00107	00110	00149	00152	00190	00193
EXPG	00252	00009	00015	00037	00040	00048	00051
	00059	00061	00063	00065	00076	00078	00082
	00111	00134	00187				
FLFLG	00271	00160					
JLOD	00129	00011					
JO	00228	00188					
JOBPB	00268	00146					
JOBPM	00267	00135	00139				
LOOP	00097	00102					

LSTCH	00270	00069	00084		
M377	00239	00212	00215		
M77	00238	00119			
MESER	00227	00173			
N11	00230	00185			
N3	00236	00132			
NOPAR	00035	00021			
OPATN	00264	00106	00158		
OPFLG	00265	00157	00169	00178	
PARCT	00125	00023	00032		
RONBF	00249	00226	00250	00251	
RQCNT	00258	00018			
RQP3	00259	00124			
SIGN	00229	00182			
SWAP	00266	00068	00130	00195	00196
SYSTY	00245	00204			
TSONE	00256	00074	00142		
UBFWA	00262	00046	00144		
UBLWA	00263	00054			
UMFWA	00261	00035	00137	00153	
UMLWA	00242	00043			
XIRT	00251	00112	00154		
XRTN5	00123	00120			

```
0001                    ASMB,L,X,C,N,R,B      FILE NAME SEARCH ROUTINE (SEX11
** NO ERRORS*
```

```
0001                    ASMB,L,X,C,N,R,B     FILE NAME SEARCH ROUTINE (SEX11
0002  00000                     NAM SEX11,1,0
0003                            ENT SEX11
0004                            EXT $MOVE,$SRCH
0005*      SEX11 FINDS USER SPECIFIED FILE NAME. IF FILE NAME IN RONBF,
0006*    THE ADDRESS IN RONBF IS RETURNED. IF FILE NAME NOT IN RONBF, A
0007*    SEARCH IS MADE OF THE USER DIRECTORY. IF NOT FOUND, (B) IS SET
0008*    TO 0 AND RETURN TO POINT OF CALL. IF FOUND, THE DIRECTORY ENTRY
0009*    IS PLACED IN FIRST 5 WORDS OF RONBF AFTER FIRST 5 WORDS HAS BEEN
0010*    MOVED DOWN BY 5 WORDS.
0011*
0012  00000 060275  SEX11 LDA $MDBF+1
0013  00001 072021R       STA EXITA      SAVE RETURN POINT
0014  00002 064274        LDB $MDBF      GET FILE NAME BFR ADDRS
0015  00003 016002X       JSB $SRCH      LOOK FOR FILE-NAME IN USER DRCTR
0016  00004 026014R       JMP FOUND       -FOUND
0017*
0018  00005 006401        CLB,RSS         -NO, SET B=0 TO INDICATE
0019  00006 066017R RETNX LDB DEFRN      SET POINTER TO FILE ENTRY
0020  00007 060245        LDA EXMOD
0021  00010 052022R       CPA N11
0022  00011 003004        CMA,INA
0023  00012 070245        STA EXMOD
0024  00013 126021R       JMP EXITA,I
0025*
0026  00014 060001  FOUND LDA B
0027  00015 064046        LDB ..-5
0028  00016 016001X       JSB $MOVE      MOVE FILE-NAME TO 1ST RONBF ENTR
0029  00017 000126  DEFRN DEF RONBF
0030  00020 026006R       JMP RETNX
0031  00021 000000  EXITA NOP
0032  00022 177765  N11   DEC -11
0033*
0034  00000         A     EQU 0
0035  00001         B     EQU 1
0036  00053         ..    EQU 53B
0037*
0038  00100         .     EQU 100B
0039  00126         RONBF EQU .+22
0040  00245         EXMOD EQU .+101
0041  00274         $MDBF EQU .+124
0042                      END
**  NO ERRORS*
```

$EX11	00012	00003		
$MDBF	00041	00012	00014	
$MOVE	00004	00028		
$SRCH	00004	00015		
.	00038	00039	00040	00041
..	00036	00027		
@A	00034			
B	00035	00026		
DEFRN	00029	00019		
EXITA	00031	00013	00024	
EXMOD	00040	00020	00023	
FOUND	00026	00016		
N11	00032	00021		
RETNX	00019	00030		
RONBF	00039	00029		

```
0001                    ASMB,L,X,C,N,R,B     SYSTEM STARTUP (8EX12)
**  NO ERRORS*
```

```
0001                    ASMB,L,X,C,N,R,B    SYSTEM STARTUP (SEX12)
0002  00000                   NAM $EX12,1,0
0003                          ENT $EX12
0004                          EXT $TYPE,$DISC,$SYIO
0005                          EXT $MOVE,$WAIT,$OPER
0006                          EXT $STRT
0007                          EXT $BUF,$B1,$B2,$B3,$B31,$B64,$B65,$B66,$B127
0008*     $EX12 IS THE SYSTEM STARTUP ROUTINE.
0009*
0010  00000 036006X $EX12 ISZ $OPER
0011  00001 060116        LDA SECTR
0012  00002 003004        CMA,INA
0013  00003 070313        STA MSECT
0014  00004 060254        LDA UMFWA
0015  00005 102605        OTA 5B
0016  00006 003400        CCA
0017  00007 140121        ADA LUTAB,I   GET EQT# OF SYST. TTY
0018  00010 070001        STA B         *
0019  00011 001700        ALF           * MULTIPLY X 17
0020  00012 040001        ADA B         *
0021  00013 040117        ADA EQTAB
0022  00014 040056        ADA *+3
0023  00015 070333        STA CHARC+1   SAVE TTY EQT4 ADDRS FOR DISCM
0024  00016 040052        ADA *-1
0025  00017 160000        LDA A,I       GET I/O CHNL# OF TTY
0026  00020 010072        AND M77
0027  00021 032223R       IOR STC
0028  00022 072007X       STA $STRT     SAVE TTY STC,C FOR DISCM SCLER

0030  00023 062237R       LDA ASTRT     RESOLVE ADDRESS OF $STRT
0031  00024 002001        RSS             IN DISCM
0032  00025 160000        LDA 0,I
0033  00026 001275        RAL,CLE,SLA,ERA
0034  00027 026025R       JMP *-2
0035  00030 002004        INA           INCREMENT ADDR TO $STRT+1
0036  00031 064047        LDB .4        SET COUNTER TO CLEAR
0037  00032 076225R       STB EXXX        4 LOCATIONS
0038  00033 006400        CLB           CLEAR THE 4 LOCATIONS FOLLOWING
0039  00034 174000        STB 0,I         $STRT IN DISCM
0040  00035 002004        INA
0041  00036 036225R       ISZ EXXX
0042  00037 026034R       JMP *+3

0044  00040 062224R       LDA HLT2
0045  00041 070002        STA 2B
0046  00042 002004        INA
0047  00043 070003        STA 3B
0048*
0049* RESOLVE ADDRESS OF $BUF
0050*
0051  00044 062067R       LDA $B
0052  00045 002001        RSS
0053  00046 160000        LDA 0,I
0054  00047 001275        RAL,CLE,SLA,ERA
0055  00050 026046R       JMP *-2
0056  00051 072067R       STA $B        $B NOW CONTAINS ADDRESS OF $BUF
```

```
0057   00052 060115          LDA SYSBF      READ SYSTEM BUFFER SECTOR
0058   00053 072226R         STA PARAM
0059   00054 062067R         LDA $B         CORE ADDRESS
0060   00055 072227R         STA PARAM+1
0061   00056 062242R         LDA .128       # WORDS
0062   00057 072230R         STA PARAM+2
0063   00060 016167R         JSB DISCX      READ DISC
0064   00061 062020X         LDA $B127      * "SB" IF VALID SYS BUFF SECTOR
0065   00062 052232R         CPA $B
0066   00063 026132R         JMP EX10       YES
0067*                  FORM NEW SYSTEM BUFFER SECTOR
0068   00064 002400          CLA            CLEAR 129 WORDS
0069   00065 066245R         LDB N129
0070   00066 016004X         JSB $MOVE
0071   00067 000010X $B      DEF $BUF
0072   00070 060160          LDA SYNTS      BUILD NEW SYSTEM BUFFER SECTOR
0073   00071 072015X         STA $B64       NEXT AVAIL T/S ON SYS DISC
0074   00072 060115          LDA SYSBF      T/S OF SYS BUF SECTOR
0075   00073 016174R         JSB $SRDS      INTERROGATE SYS DISC FOR BAD TK
0076   00074 072016X         STA $B65
0077   00075 076017X         STB $B66
0078   00076 062232R         LDA $B
0079   00077 072020X         STA $B127      INDICATE GOOD SYS BUF SECTOR
0080   00100 060176          LDA GNCOD
0081   00101 072012X         STA $B2        SET SYSTEM GEN. CODE
0082   00102 062234R         LDA DO
0083   00103 072011X         STA $B1        SET DOS-M LABEL IDENT
0084   00104 002400          CLA
0085   00105 072010X         STA $BUF       SET FOR UNLABELED
0086   00106 062235R         LDA AST
0087   00107 072013X         STA $B3        SET ASTERISK AS 1ST LABEL CHAR
0088   00110 062236R         LDA N31        *
0089   00111 072174R         STA $SRDS      *
0090   00112 003400          CCA            * GENERATE
0091   00113 066067R         LDB $B         *
0092   00114 120001          XOR B,I        * CHECKSUM
0093   00115 006004          INB            *
0094   00116 036174R         ISZ $SRDS      *
0095   00117 026114R         JMP *-3        *
0096   00120 072014X         STA $B31       SET CHECKSUM
0097   00121 060115          LDA SYSBF      T/S OF YSS BUF SECTOR
0098   00122 072226R         STA PARAM
0099   00123 062067R         LDA $B         CORE ADDRESS
0100   00124 072227R         STA PARAM+1
0101   00125 062243R         LDA .129       # OF WORDS
0102   00126 072230R         STA PARAM+2
0103   00127 062231R         LDA PARAX      ADDRESS OF PARAMETERS
0104   00130 064051          LDB .2         DISC WRITE
0105   00131 016002X         JSB $DISC
0106   00132 060200  EX10    LDA DISCL      = ZERO IIF USER NOT ON SYSTEM
0107   00133 002002          SZA
0108   00134 026137R         JMP EX30       USER IS ON LSYSTEM DISC
0109   00135 062015X         LDA $B64
0110   00136 026141R         JMP EX35
0111   00137 062015X EX30    LDA $B64
0112   00140 070157          STA UDNTS
```

```
0113  00141 070160  EX35   STA SYNTS
0114  00142 066244R        LDB N22
0115  00143 060103         LDA TBG
0116  00144 002003         SZA,RSS
0117  00145 076153R        STB MESLN
0118  00146 034261         ISZ OPFLG
0119  00147 016003X        JSB $SYIO
0120  00150 000002         DEC 2
0121  00151 000001         DEC 1
0122  00152 000247R        DEF MES2
0123  00153 177746  MESLN  DEC -26
0124  00154 000156R        DEF *+2
0125  00155 026005X        JMP $WAIT
0126  00156 002400         CLA              FREE MODULE AREA
0127  00157 070245         STA EXMOD
0128  00160 072006X        STA $OPER
0129  00161 070260         STA OPATN
0130  00162 070261         STA OPFLG
0131  00163 062233R        LDA DATE
0132  00164 070273         STA $IDCD
0133  00165 007400         CCB
0134  00166 026001X        JMP $TYPE        GO TO REQUEST INPUT
0135*
0136  00167 000000  DISCX  NOP
0137  00170 062231R        LDA PARAX
0138  00171 006404         CLB,INB
0139  00172 016002X        JSB $DISC
0140  00173 126167R        JMP DISCX,I
0141*
0142*      ON ENTRY:  A = START SEARCH T/S
0143*
0144  00174 000000  $SRDS  NOP
0145  00175 072226R        STA PARAM        START T/S FOR BAD TK SEARCH
0146  00176 001727         ALF,ALF
0147  00177 042241R        ADA DM200
0148  00200 072225R        STA EXXX         # OF TRACKS TO SEARCH
0149  00201 062226R SRDS1  LDA PARAM
0150  00202 042240R        ADA B400
0151  00203 072226R        STA PARAM        CURRENT T/S TO SEARCH
0152  00204 062067R        LDA $B           READ INTO $BUF
0153  00205 072227R        STA PARAM+1
0154  00206 060052         LDA .1           # OF WORDS
0155  00207 072230R        STA PARAM+2
0156  00210 016167R        JSB DISCX
0157  00211 036225R        ISZ EXXX         LOOP TILL EXXX = 0
0158  00212 026201R        JMP SRDS1
0159  00213 002400         CLA
0160  00214 072010X        STA $BUF
0161  00215 066246R        LDB D203
0162  00216 060327         LDA TRAK#
0163  00217 003004         CMA,INA
0164  00220 344000         ADB A            B = NEST SPARE TRACK
0165  00221 060327         LDA TRAK#        A = # BAD TRACKS
0166  00222 126174R        JMP $SRDS,I      RETURN
0167*
0168*
```

```
0169   00223 103700  STC    STC 0,C
0170   00224 102002  HLT2   HLT 2
0171*
0172   00225 000000  EXXX   NOP
0173   00226 000000  PARAM  BSS 3
0174   00231 000226R PARAX  DEF PARAM
0175   00232 051502  SB     ASC 1,SB
0176   00233 042101  DATE   ASC 1,DA
0177   00234 042117  DO     ASC 1,DO
0178   00235 025040  AST    ASC 1,*
0179   00236 177741  N31    DEC -31
0180   00237 000007X ASTRT  DEF $STRT
0181   00240 000400  B400   OCT 400
0182   00241 177470  DM200  DEC -200
0183   00242 000200  .128   DEC 128
0184   00243 000201  .129   DEC 129
0185   00244 177752  N22    DEC -22
0186   00245 177577  N129   DEC -129
0187   00246 000313  D203   DEC 203
0188   00247 044516  MES2   ASC 13,INPUT :DATE,XXXXXXXXXX,H,M
       00250 050125
       00251 052040
       00252 035104
       00253 040524
       00254 042454
       00255 054130
       00256 054130
       00257 054130
       00260 054130
       00261 054130
       00262 026110
       00263 026115
0189*
0190   00000         A      EQU 0
0191   00001         B      EQU 1
0192   00053         ..     EQU 53B
0193   00052         .1     EQU ..-1
0194   00051         .2     EQU ..-2
0195   00047         .4     EQU ..-4
0196   00072         M77    EQU ..+15
0197   00100         .      EQU 100B
0198   00103         TBG    EQU .+3
0199   00115         SYSBF  EQU .+13
0200   00116         SECTR  EQU .+14
0201   00117         EQTAB  EQU .+15
0202   00121         LUTAB  EQU .+17
0203   00157         UDNTS  EQU .+47
0204   00160         SYNTS  EQU .+48
0205   00176         GNCOD  EQU .+62
0206   00200         DISCL  EQU .+64
0207   00245         EXMOD  EQU .+101
0208   00254         UMFWA  EQU .+108
0209   00260         OPATN  EQU .+112
0210   00261         OPFLG  EQU .+113
0211   00273         $IDCD  EQU .+123
0212   00313         MSECT  EQU .+139
```

```
0213  00327          TRAK# EQU .+151  # OF BAD TRACKS FOUND
0214  00332          CHARC EQU .+154
0215                 END
** NO ERRORS*
```

$B 00071/02 00051/02 00056/02 00059/02 00091/02 00099/02 00152/02

$B1 00007/02 00083/02

$B127 00007/02 00064/02 00079/02

$B2 00007/02 00081/02

$B3 00007/02 00087/02

$B31 00007/02 00096/02

$B64 00007/02 00073/02 00109/02 00111/02

$B65 00007/02 00076/02

$B66 00007/02 00077/02

$BUF 00007/02 00071/02 00085/02 00160/02

$DISC 00004/02 00105/02 00139/02

$EX12 00010/02 00003/02

$IDCD 00211/02 00132/02

$MOVE 00005/02 00070/02

$OPER 00005/02 00010/02 00128/02

$$RDS 00144/02 00075/02 00089/02 00094/02 00166/02

$STRT 00006/02 00028/02 00180/02

$$YIO 00004/02 00119/02

$TYPE 00004/02 00134/02

$WAIT 00005/02 00125/02

. 00197/02 00198/02 00199/02 00200/02 00201/02 00202/02 00203/02
00204/02 00205/02 00206/02 00207/02 00208/02 00209/02 00210/02
00211/02 00212/02 00213/02 00214/02

.. 00192/02 00022/02 00024/02 00193/02 00194/02 00195/02 00196/02

.1 00193/02 00154/02

.128 00183/02 00061/02

.129 00184/02 00101/02

.2 00194/02 00104/02

.4 00195/02 00036/02

A 00190/02 00025/02 00164/02

AST 00178/02 00086/02

ASTRT 00180/02 00030/02

B 00191/02 00018/02 00020/02 00092/02

B400 00181/02 00150/02

CHARC 00214/02 00023/02

D203 00187/02 00161/02

DATE 00176/02 00131/02

DISCL 00206/02 00106/02

DISCX 00136/02 00063/02 00140/02 00156/02

DM200 00182/02 00147/02

DO 00177/02 00082/02

EQTAB 00201/02 00021/02

EX10 00106/02 00066/02

EX30 00111/02 00108/02

EX35 00113/02 00110/02

EXMOD 00207/02 00127/02

EXXX 00172/02 00037/02 00041/02 00148/02 00157/02

GNCOD 00205/02 00080/02

HLT2 00170/02 00044/02

LUTAB 00202/02 00017/02

M77 00196/02 00026/02

MES2 00188/02 00122/02

MESLN 00123/02 00117/02

MSECT 00212/02 00013/02

N129 00186/02 00069/02

N22 00185/02 00114/02

N31 00179/02 00088/02

```
OPATN   00209/02 00129/02

OPFLG   00210/02 00118/02 00130/02

PARAM   00173/02 00058/02 00060/02 00062/02 00098/02 00100/02 00102/02
        00145/02 00149/02 00151/02 00153/02 00155/02 00174/02

PARAX   00174/02 00103/02 00137/02

SB      00175/02 00065/02 00078/02

SECTR   00200/02 00011/02

SRDS1   00149/02 00158/02

STC     00169/02 00027/02

SYNTS   00204/02 00072/02 00113/02

SYSBF   00199/02 00057/02 00074/02 00097/02

TBG     00198/02 00115/02

TRAK#   00213/02 00162/02 00165/02

UDNTS   00203/02 00112/02

UMFWA   00208/02 00014/02
```

```
0001                    ASMB,L,X,C,N,R,B     ERROR MESSAGE OUTPUT (SEX13)
** NO ERRORS*
```

```
0001                    ASMB,L,X,C,N,R,B    ERROR MESSAGE OUTPUT (SEX13)
0002  00000                     NAM $EX13,1,0
0003                            ENT $EX13
0004                            EXT $IDL1,$SYIO,$JLOD,$ABRT
0005                            EXT $MOVE,CNDEC
0006                            EXT $WAIT,$ETEQ,CNOCT
0007                            EXT $CLER,$MDLD,DEF20
0008                            EXT $RTRN,SAVE$
0009                            EXT $BUF
0010                            EXT $IRT
0011                            SUP
0012*
0013*       $EX13 FORMATS AND OUTPUTS SYSTEM MESSAGES,
0014*          ON ENTRY: (B) CONTAINS ERROR CODE
0015*                                                              ERROR MNEM
0016*                             0 = OPERATION REJECTED             OR
0017*                             1 = MEMORY PROTECT ERROR           MP
0018*                             2 = REQUEST ERROR                  RQ
0019*                             3 = EXECUTION TIME EXCEEDED        TM
0020*                             4 = I/O ERROR                      IO
0021*                             5 = ILLEGAL LOGICAL UNIT           LU
0022*                             6 = LOGICAL UNIT UNASSIGNED        LN
0023*                             7 = ILLEGAL BUFFER ADDRESS         IB
0024*                             8 = CORE WRAP AROUND               CW
0025*                             9 = ILLEGAL TRACK ADDRESS          IT
0026*                            10 = FILE CANNOT BE FOUND           FI
0027*                            11 = DEVICE IS DOWN                 DD
0028*                            12 = PARITY ERROR                   PE
0029*                            13 = BATCH INPUT DETECTED ';' CARD  IE
0030*
0031*
0032  00000 060203  $EX13 LDA EQT1
0033  00001 072131R       STA SEQT        SAVE EQT1 ADDRESS
0034  00002 076017X       STB $BUF        SAVE ERROR CODE
0035  00003 056135R       CPB .12         DISC PARITY ERROR?
0036  00004 026045R       JMP LOD20        =YES, GIVE IT TO $EX20
0037  00005 002400        CLA
0038  00006 070126        STA RONBF
0039  00007 054057        CPB .4          I/O ERROR?
0040  00010 026140R       JMP IERR         =YES
0041  00011 060274        LDA $MDBF       GET USER ERROR ADDRESS
0042  00012 016011X       JSB CNOCT         AND CONVERT TO ASCII
0043  00013 072254R       STA MSG+5
0044  00014 160001        LDA B,I
0045  00015 072252R       STA MSG+3
0046  00016 006004        INB
0047  00017 160001        LDA B,I
0048  00020 072253R       STA MSG+4
0049  00021 062130R       LDA BLANK
0050  00022 072251R       STA MSG+2
0051  00023 016012X       JSB $CLER
0052  00024 066017X       LDB $BUF
0053  00025 046111R       ADB ETABL       GET ERROR CODE ADDRESS
0054  00026 160001        LDA B,I              SET A TO ASCII ERROR CODE
0055  00027 066130R       LDB BLANK            SET B TO BLANK
0056  00030 016320R       JSB $ERMG       GO TO FORMAT AND OUTPUT MESSAGE
```

```
0057  00031 066017X        LDB $BUF
0058  00032 054055         CPB .2              SELECTED
0059  00033 002701         CLA,CCE,RSS    RQ ERROR
0060  00034 002701         CLA,CCE,RSS    OTHER ERROR
0061  00035 050236         CPA NABRT      CHECK IF NO-ABORT OPTION
0062  00036 026052R        JMP ER10
0063  00037 016276R        JSB XCLR
0064  00040 072276R EXIT2  STA XCLR    SAVE A REG TEMPORARILY
0065  00041 060225         LDA RQRTN    SET UP RETURN ADDR FOR $IRT
0066  00042 070137         STA XIRT
0067  00043 062276R        LDA XCLR    RESTORE A REG
0068  00044 026020X        JMP $IRT
0069*
0070  00045 062014X LOD20  LDA DEF20
0071  00046 070305         STA TEMP
0072  00047 062136R        LDA .20
0073  00050 016276R        JSB XCLR
0074  00051 026013X        JMP $MDLD
0075*
0076  00052 060106  ER10   LDA CLEX       CHECK IF PROGRAM EXECUTING
0077  00053 001225         RAL,ERA        TURN OFF EXECUTION CLOCK
0078  00054 070106         STA CLEX
0079  00055 060113         LDA DUMPS      CHECK IF ABORT DUMP DESIRED
0080  00056 002020         SSA
0081  00057 026305R        JMP ABRT            YES
0082  00060 060323         LDA EFMP
0083  00061 002002         SZA            EFMP IN?
0084  00062 114000         JSB A,I         -YES, DO ITS ERROR ROUTINE
0085  00063 060334         LDA DMFLG      DATA MANAGEMENT ACTIVE?
0086  00064 002002         SZA
0087  00065 114000         JSB A,I        YES-SO TRANSFER
0088  00066 016276R        JSB XCLR       RELEASE EXEC OVERLAY AREA
0089  00067 002400         CLA
0090  00070 070113         STA DUMPS      CLEAR PROGRAM DUMP FLAG
0091  00071 066137R        LDB N11
0092  00072 016005X        JSB $MOVE
0093  00073 000141         DEF EXPG
0094  00074 066017X        LDB $BUF
0095  00075 056134R        CPB .13        BATCH INPUT ERROR?
0096  00076 026003X        JMP $JLOD       -YES, GO LOAD JOBPR
0097  00077 064262         LDB SWAP
0098  00100 070262         STA SWAP       CLEAR JOBPR 'IN' FLAG
0099  00101 002404         CLA,INA
0100  00102 006020         SSB            ;TYPE ENTERED UNDER OP. ATTN.?
0101  00103 070111         STA BATCH       -YES, SET SYST. TTY AS BATCH
0102  00104 050111         CPA BATCH      BATCH DEVICE = SYST. TTY?
0103  00105 002401         CLA,RSS         -YES, DON'T REQUIRE ;JOB INPUT
0104  00106 062116R        LDA JO          -NO, SET TO LOOK FOR ;JOB
0105  00107 070273         STA $IDCD
0106  00110 026001X        JMP $IDL1      GO TO SYST. BATCH INPUT ROUTINE
0107*
0108  00111 000112R ETABL  DEF *+1
0109  00112 047522         ASC 1,OR      0=OPERATION REJECTED
0110  00113 046520         ASC 1,MP     1=MEMORY PROTECT ERROR
0111  00114 051121         ASC 1,RQ     2=REQUEST ERROR
0112  00115 052115         ASC 1,TM     3=MAX. EXECUTION TIME EXCEEDED
```

```
0113   00116 045117  JO     ASC 1,JO       (4 = I/O ERROR)
0114   00117 046125         ASC 1,LU      5=ILLEGAL LOGIVAL UBOT
0115   00120 046116         ASC 1,LN     6=LOGICAL UNIT UNASSIGNED
0116   00121 044502         ASC 1,IB     7=ILLEGAL BUFFER ADDRESS
0117   00122 041527         ASC 1,CW     8=CORE WRAP AROUND
0118   00123 044524         ASC 1,IT     9=ILLEGAL TRACK ADDRESS
0119   00124 043111         ASC 1,FI    10=FILE CANNOT BE FOUND
0120   00125 040502  AB     ASC 1,AB       (11 UNASSIGNED)
0121   00126 051124         ASC 1,RT       (12 = DISC PARITY ERROR)
0122   00127 044505         ASC 1,IE       13=BATCH INPUT ERROR
0123   00130 020040  BLANK  ASC 1,
0124   00131 000000  SEQT   NOP
0125   00132 040000  MASK8  OCT 40000
0126   00133 000031  DISC   OCT 31
0127   00134 000015  .13    DEC 13
0128   00135 000014  .12    DEC 12
0129   00136 000024  .20    DEC 20
0130   00137 177765  N11    DEC -11
0131*
0132*
0133*      <IERR> IS ENTERED WHEN A DEVICE IS UNAVAILABLE FOR INITIATION
0134*    OF AN OPERATION OR WHEN AN ERROR IS DETECTED AT THE END OF AN
0135*    OPERATION, THE DIAGNOSTIC IS PRINTED ON THE SYSTEM TELETYPE IN
0136*    THE FOLLOWING FORMAT:
0137*
0138*           I/O ERR MN EQT NN
0139*
0140*            WHERE
0141*               NN IS THE EQT ENTRY # OF THE DEVICE
0142*               MN IS THE MNEMONIC DESCRIBING THE CONDITION:
0143*                    NR FOR DEVICE NOT READY
0144*                    ET FOR END OF TAPE OR TAPE SUPPLY LOW
0145*                    PE FOR TRANSMISSION PARITY ERROR
0146*
0147   00140 062273R IERR   LDA ERTBL+1
0148   00141 072246R        STA IOMSG+4
0149   00142 160206         LDA EQT4,I
0150   00143 001727         ALF,ALF
0151   00144 010072         AND M77         ISOLATE EQPMNT TYPE CODE
0152   00145 066264R        LDB DEFUD
0153   00146 052133R        CPA DISC        DEVICE = DISC?
0154   00147 026200R        JMP IER05        =YES, DON'T SET DOWN;
0155   00150 002002         SZA
0156   00151 050060         CPA ..+5        DEVICE = SYSTEM TTY?
0157   00152 026156R        JMP IER02        =YES, DON'T SET DOWN
0158   00153 160206         LDA EQT4,I     SET AV FIELD TO 1 TO MEAN
0159   00154 032132R        IOR MASK8
0160   00155 170206         STA EQT4,I
0161*
0162   00156 060275  IER02  LDA $MDBF+1
0163   00157 042272R        ADA ERTBL       INDEX TO I/O ERROR CODE
0164   00160 160000         LDA A,I
0165   00161 072246R        STA IOMSG+4       AND SET IN MESSAGE
0166   00162 001727         ALF,ALF
0167   00163 010262         AND SWAP
0168   00164 000010         SLA             'ET' ERROR WIHH JOBPR IN?
```

```
0169  00165 026222R        JMP IER10       -YES, SKIP MESSAGE
0170  00166 002704         CLA,CCE,INA     *
0171  00167 064117         LDB EQTAB       *
0172  00170 054203         CPB EQT1        * COMPUTE
0173  00171 026175R        JMP *+4         * EQUIPMENT
0174  00172 002004         INA             * TABLE#
0175  00173 044066         ADB .17         *
0176  00174 026170R        JMP *-4         *
0177  00175 016006X        JSB CNDEC
0178  00176 072262R        STA DEFEQ+4
0179  00177 066256R        LDB DEFEQ
0180  00200 060001  IER05 LDA B
0181  00201 064046         LDB ..-5
0182  00202 016005X        JSB $MOVE       MOVE APPROPRIATE MESSAGE
0183  00203 000247R        DEF MSG           TO OUTPUT BUFFER
0184  00204 034261         ISZ OPFLG
0185  00205 016002X        JSB $SYIO
0186  00206 000002         DEC 2
0187  00207 000001         DEC 1
0188  00210 000242R        DEF IOMSG
0189  00211 177754         DEC -20
0190  00212 000215R        DEF *+3
0191  00213 016340R        JSB WHERE       CHECK IF I/O W/O WAIT RETURN
0192  00214 026007X        JMP $WAIT
0193  00215 016016X        JSB SAVE$       SAVE REGS, AND SUSP, ADRS,
0194  00216 002400         CLA
0195  00217 070261         STA OPFLG
0196  00220 062131R        LDA SEQT
0197  00221 016010X        JSB SETEQ
0198  00222 016276R IER10 JSB XCLR
0199  00223 016340R        JSB WHERE       CHECK IF I/O W/O WAIT RETURN
0200  00224 160211         LDA EQT7,I      IF CALL CAUSING ERROR WAS FROM T
0201  00225 003000         CMA               SYSTEM, FORCE KEYBOARD MODE AN
0202  00226 040254         ADA UMFWA         RETURN TO INPUT CORRECT DIRECT
0203  00227 002021         SSA,RSS
0204  00230 026234R        JMP SYSRT         (SYSTEM RETURN)
0205  00231 160206         LDA EQT4,I
0206  00232 164220         LDB EQT14,I     SETTRANSMISSION LOG IN B
0207  00233 026040R        JMP EXIT2
0208*
0209  00234 002404  SYSRT CLA,INA
0210  00235 070111         STA BATCH
0211  00236 062241R        LDA GO           FORCE A ;GO
0212  00237 070273         STA $IDCD
0213  00240 026001X        JMP $IDL1
0214*
0215  00241 043517  GO     ASC 1,GO
0216  00242 044457  IOMSG ASC 4,I/O ERR
0217  00246 000000         NOP
0218  00247 020040  MSG    ASC 7,
0219  00256 000257R DEFEQ DEF *+1
0220  00257 020105         ASC 3, EQT#
0221  00262 000000         NOP
0222  00263 020040         ASC 1,
0223  00264 000265R DEFUD DEF *+1
0224  00265 020125         ASC 5, USER DISK
```

```
0225  00272 000272R ERTBL DEF *
0226  00273 047122         ASC 1,NR      =NOT READY=
0227  00274 042524         ASC 1,ET      =END OF TAPE=
0228  00275 050105         ASC 1,PE      =TRANSMISSION PARITY ERROR=
0229*
0230  00276 000000  XCLR   NOP
0231  00277 064245         LDB EXMOD
0232  00300 056304R        CPB N13
0233  00301 007004         CMB,INB
0234  00302 074245         STB EXMOD
0235  00303 126276R        JMP XCLR,I
0236*
0237  00304 177763  N13    DEC -13
0238*
0239*     ABRT PRINTS PROGRAM NAME AND ABORT MESSAGE
0240*
0241  00305 062125R ABRT   LDA AB         ASC =AB=
0242  00306 066126R        LDB AB+1      ASCII 'RT'
0243  00307 016320R        JSB $ERMG     CALL MESSAGE FRRMAT AND OUTPUT RO
0244  00310 016276R        JSB XCLR
0245  00311 002700         CLA,CCE
0246  00312 066017X        LDB $BUF
0247  00313 056134R        CPB ,13        BATCH INPUT ERROR?
0248  00314 002001         RSS
0249  00315 070332         STA CHARC       =NO, CLEAR BATCH CHAR. COUNT
0250  00316 001500         ERA            SET BIT 15 FOR ADUMP
0251  00317 026004X        JMP $ABRT
0252*
0253*
0254*     THIS ROUTINE FORMATS A DIAGNOSTIC MESSAGE OF FORM
0255*
0256*         AABB =PADDR=
0257*
0258*              WHERE AABB IS ASCII A AND  WGISTER CONTENTS
0259*
0260*     CALLING SEQUENCE:
0261*
0262*         LDA ASCII A CHARS
0263*         LDB ASCII B CHARS
0264*         JSB $ERMG
0265*
0266  00320 000000  $ERMG  NOP
0267  00321 072247R        STA MSG       STORE ASCII A AND
0268  00322 076250R        STB MSG+1                B INTO BUFFER
0269  00323 034261         ISZ OPFLG
0270  00324 016002X        JSB $SYIO
0271  00325 000002         DEC 2
0272  00326 000001         DEC 1
0273  00327 000247R        DEF MSG
0274  00330 177762         DEC -14
0275  00331 000333R        DEF *+2
0276  00332 026007X        JMP $WAIT
0277  00333 002400         CLA
0278  00334 070261         STA OPFLG
0279  00335 062131R        LDA $EQT
0280  00336 016010X        JSB $ETEQ
```

```
0281   00337 126320R        JMP $ERMG,I  RETURN TO CALL
0282*
0283   00340 000000  WHERE   NOP
0284   00341 052131R        LDA SEQT       GET SAVED EQT1 ADDRESS
0285   00342 040063         ADA ..+8       INCREMENT TO EQT9
0286   00343 160000         LDA A,I
0287   00344 001222         RAL,RAL
0288   00345 002021         SSA,RSS        I/O WITHOUT WAIT
0289   00346 126340R        JMP WHERE,I     -NO, TAKE NORMAL RETURN
0290   00347 060322         LDA SXSUS
0291   00350 003000         CMA
0292   00351 040254         ADA UMFWA
0293   00352 002021         SSA,RSS        RETURN ADDRESS IN SYSTEM AREA?
0294   00353 026007X        JMP $WAIT
0295   00354 026015X        JMP $RTRN       -NO, RETURN TO USER
0296*
0297   00000          A      EQU 0
0298   00001          B      EQU 1
0299   00053          ..     EQU 53B
0300   00055          .2     EQU ..+2
0301   00057          .4     EQU ..+4
0302   00066          .17    EQU ..+11
0303   00072          M77    EQU ..+15
0304   00100          .      EQU 100B
0305   00106          CLEX   EQU .+6
0306   00111          BATCH  EQU .+9
0307   00113          DUMPS  EQU .+11
0308   00117          EQTAB  EQU .+15
0309   00126          RONBF  EQU .+22
0310   00137          XIRT   EQU RONBF+9
0311   00141          EXPG   EQU .+33
0312   00203          EQT1   EQU .+67
0313   00206          EQT4   EQU .+70
0314   00211          EQT7   EQU .+73
0315   00220          EQT14  EQU .+80
0316   00225          RQRTN  EQU .+85
0317   00236          NABRT  EQU .+94
0318   00245          EXMOD  EQU .+101
0319   00254          UMFWA  EQU .+108
0320   00261          OPFLG  EQU .+113
0321   00262          SWAP   EQU .+114
0322   00273          SIDCD  EQU .+123
0323   00274          SMDBF  EQU .+124
0324   00334          DMFLG  EQU .+156      DATA MANAGEMENT FLAG
0325   00305          TEMP0  EQU .+205B
0326   00305          TEMP   EQU TEMP0
0327   00322          SXSUS  EQU .+146
0328   00323          EFMP   EQU .+147
0329   00332          CHARC  EQU .+154
0330                         END
**  NO ERRORS*
```

$ABRT 00004 00251

$BUF 00009 00034 00052 00057 00094 00246

$CLER 00007 00051

$ERMG 00266 00056 00243 00281

$EX13 00032 00003

$IDCD 00322 00106 00212

$IDL1 00004 00106 00213

$IRT 00010 00068

$JLOD 00004 00096

$MDBF 00323 00041 00162

$MDLD 00007 00074

$MOVE 00005 00092 00182

$RTRN 00008 00295

$SYIO 00004 00185 00270

$WAIT 00006 00192 00276 00294

. 00304 00305 00306 00307 00308 00309 00311
00312 00313 00314 00315 00316 00317 00318
00319 00320 00321 00322 00323 00324 00325
00327 00328 00329

.. 00299 00156 00181 00285 00300 00301 00302
00303

.12 00128 00035

.13 00127 00095 00247

.17 00302 00175

.2 00300 00058

.20 00129 00072

.4 00301 00039

A 00297 00084 00087 00164 00286

AB 00120 00241 00242

ABRT 00241 00081

B	00298	00044	00047	00054	00180
BATCH	00306	00101	00102	00210	
BLANK	00123	00049	00055		
CHARC	00329	00249			
CLEX	00305	00076	00078		
CNDEC	00005	00177			
CNOCT	00006	00042			
DEF20	00007	00070			
DEFEQ	00219	00178	00179		
DEFUD	00223	00152			
DISC	00126	00153			
DMFLG	00324	00085			
DUMPS	00307	00079	00090		
EFMP	00328	00082			
EQT1	00312	00032	00172		
EQT14	00315	00206			
EQT4	00313	00149	00158	00160	00205
EQT7	00314	00200			
EQTAB	00308	00171			
ER10	00076	00062			
ERTBL	00225	00147	00163		
ETABL	00108	00053			
EXIT2	00064	00207			
EXMOD	00318	00231	00234		
EXPG	00311	00093			
GO	00215	00211			
IER02	00162	00157			
IER05	00180	00154			

IER10	00198	00169					
IERR	00147	00040					
IOMSG	00216	00148	00165	00188			
JO	00113	00104					
LOD20	00070	00036					
M77	00303	00151					
MASK8	00125	00159					
MSG	00218	00043	00045	00048	00050	00183	00267
	00268	00273					
N11	00130	00091					
N13	00237	00232					
NABRT	00317	00061					
OPFLG	00320	00184	00195	00269	00278		
RONBF	00309	00038	00310				
RQRTN	00316	00065					
SAVE$	00008	00193					
SEQT	00124	00033	00196	00279	00284		
SETEQ	00006	00197	00280				
SWAP	00321	00097	00098	00167			
SXSUS	00327	00290					
SYSRT	00209	00204					
TEMP	00326	00071					
TEMP0	00325	00326					
UMFWA	00319	00202	00292				
WHERE	00283	00191	00199	00289			
XCLR	00230	00063	00064	00067	00073	00088	00198
	00235	00244					
XIRT	00310	00066					

```
0001                    ASMB,L,X,C,N,R,B    PROCESS :LU, :UP, :DN
**  NO ERRORS*
```

```
0001                    ASMB,L,X,C,N,R,B   PROCESS ;LU, ;UP, ;DN
0002  00000                    NAM $EX14,1,0
0003                           ENT $EX14
0004                           EXT $SYIO,$CIC3,SAVE$,CNDEC
0005                           EXT $RTRN
0006  00000 064123  $EX14 LDB JBUF
0007  00001 004066       CLE,ELB
0008  00002 076265R         STB BUFAD
0009  00003 060332          LDA CHARC       GET # WORDS IN JOB BUFFER
0010  00004 001200          RAL             GET # CHARS
0011  00005 044000          ADB A           GET LAST CHAR ADDR IN JOB BUFF
0012  00006 076240R         STB LASTC      SAVE -(LAST INPUT CHAR ADDR + 1)
0013  00007 060275          LDA $MDBF+1
0014  00010 072271R         STA EXITA
0015  00011 002400          CLA
0016  00012 072273R         STA SAVE       CLEAR PAPAMETER
0017  00013 072274R         STA SAVE+1
0018  00014 072275R         STA SAVE2
0019  00015 072276R         STA SAVE2+1
0020  00016 016221R         JSB GET        COLON
0021  00017 016221R         JSB GET        REQUEST CHAR 1
0022  00020 001727          ALF,ALF
0023  00021 072272R         STA RQ
0024  00022 016221R         JSB GET        REQUEST CHAR 2
0025  00023 032272R         IOR RQ
0026  00024 072272R         STA RQ         REQUEST CODE
0027  00025 016221R EX00 JSB GET          SCAN FOR , OR BLANK
0028  00026 052300R         CPA COMMA
0029  00027 026033R         JMP EX01      FOUND THE COMMA
0030  00030 052277R         CPA BLANK     THEN IS IT BLANK
0031  00031 026056R         JMP EX10       NO L.U. OR EQ PAPAMETER
0032  00032 026025R         JMP EX00      NEITHER; SO GET NEXT CHAR
0033  00033 016221R EX01   JSB GET
0034  00034 016443R         JSB CHKDG      CHECK FOR VALID DIGIT
0035  00035 072273R         STA SAVE
0036  00036 016221R         JSB GET        GET DIGIT 2
0037  00037 052277R         CPA BLANK
0038  00040 026056R         JMP EX10            NO DIGIT 2
0039  00041 052300R         CPA COMMA
0040  00042 026126R        JMP EX80
0041  00043 016443R         JSB CHKDG      CHECK FOR VALID DIGIT
0042  00044 072274R         STA SAVE+1
0043  00045 062273R         LDA SAVE
0044  00046 001723          ALF,RAR        MULTIPLY (SAVE) X 10
0045  00047 042273R         ADA SAVE
0046  00050 042273R         ADA SAVE
0047  00051 042274R         ADA SAVE+1
0048  00052 072273R         STA SAVE
0049  00053 016221R         JSB GET
0050  00054 052300R         CPA COMMA
0051  00055 026126R         JMP EX80
0052  00056 062272R EX10   LDA RQ
0053  00057 052301R         CPA UP
0054  00060 026311R         JMP EX100
0055  00061 052302R         CPA DN
0056  00062 026370R         JMP EX200
```

```
0057  00063 052412R         CPA WH
0058  00064 026405R         JMP EX250
0059*                      ;LU PROCESSOR
0060  00065 062273R         LDA SAVE
0061  00066 002002          SZA
0062  00067 026076R         JMP EX60
0063  00070 002004          INA
0064  00071 072267R         STA CURNT
0065  00072 064122          LDB LUT#
0066  00073 007004          CMB,INB
0067  00074 076270R         STB LOOP
0068  00075 026101R         JMP EX70        GO TO FORM LU OUTPUT
0069  00076 072267R EX60    STA CURNT
0070  00077 003400          CCA
0071  00100 072270R         STA LOOP
0072  00101 062267R EX70    LDA CURNT       CHECK IF LEGAL LOGICAL UNIT
0073  00102 003004          CMA,INA
0074  00103 040122          ADA LUT#
0075  00104 002020          SSA
0076  00105 026457R         JMP ERMES
0077  00106 062267R         LDA CURNT
0078  00107 016004X         JSB CNDEC       CONVERT TO ASCII AND
0079  00110 072305R         STA LUOUT+1       STORE INTO FORMAT
0080  00111 062267R         LDA CURNT
0081  00112 040052          ADA N1
0082  00113 040121          ADA LUTAB
0083  00114 160000          LDA A,I
0084  00115 016004X         JSB CNDEC       CONVERT EQT# TO ASCII
0085  00116 072310R         STA LUOUT+4
0086  00117 062303R         LDA LUOUT-1
0087  00120 064041          LDB ..-10
0088  00121 016241R         JSB MESSG
0089  00122 036267R         ISZ CURNT
0090  00123 036270R         ISZ LOOP
0091  00124 026101R         JMP EX70        GO TO FORMAT
0092  00125 026462R         JMP EX300
0093*
0094  00126 062272R EX80    LDA RQ
0095  00127 052304R         CPA LUOUT        IS REQUEST LU?
0096  00130 002001          RSS
0097  00131 026457R         JMP ERMES        NO, ERROR - CAN'T HAVE >1 PARAM
0098  00132 016221R         JSB GET          GET EQUIPMENT TAB ENTRY PARAM
0099  00133 052277R         CPA BLANK
0100  00134 026457R         JMP ERMES
0101  00135 052300R         CPA COMMA
0102  00136 026457R         JMP ERMES
0103  00137 016443R         JSB CHKDG       CHECK FOR VALID DIGIT
0104  00140 072275R         STA SAVE2
0105  00141 016221R         JSB GET          GET DIGIT 2
0106  00142 052277R         CPA BLANK
0107  00143 026156R         JMP EX81         NO DIGIT 2
0108  00144 052300R         CPA COMMA
0109  00145 026457R         JMP ERMES        CAN'T HAVE >2 PARAM
0110  00146 016443R         JSB CHKDG       CHECK FOR VALID DIGIT
0111  00147 072276R        STA SAVE2+1
0112  00150 062275R         LDA SAVE2
```

```
0113  00151 001723         ALF,RAR
0114  00152 042275R        ADA SAVE2
0115  00153 042275R        ADA SAVE2
0116  00154 042276R        ADA SAVE2+1
0117  00155 072275R        STA SAVE2
0118  00156 062273R EX81   LDA SAVE        TEST IF LUN IN RANGE
0119  00157 002003         SZA,RSS
0120  00160 026467R        JMP LUERR      LUN = 0 ERROR
0121  00161 003004         CMA,INA
0122  00162 040122         ADA LUT#
0123  00163 002020         SSA
0124  00164 026467R        JMP LUERR      LUN > LUT# ERROR
0125  00165 062275R        LDA SAVE2       CHECK IF PARAM 2 IS IN RANGE
0126  00166 003004         CMA,INA
0127  00167 040120         ADA EQT#
0128  00170 002020         SSA
0129  00171 026472R        JMP PILLG      EQT ENTRY > EQT# ERORR
0130  00172 060121         LDA LUTAB       TEST IF 2ND PARAM = EQT ENTRY I
0131  00173 040054         ADA ..+1        LUN 2 OR 3, I.E. CAN'T ASSIGN
0132  00174 164000         LDB A,I         DISC TO ANY LUN OTHER THAN 2 OR
0133  00175 056275R        CPB SAVE2
0134  00176 026472R        JMP PILLG
0135  00177 002004         INA
0136  00200 164000         LDB A,I
0137  00201 056275R        CPB SAVE2
0138  00202 026472R        JMP PILLG
0139  00203 066273R        LDB SAVE       TEST IF ASSIGNING LUN 1, 2 OR 3,
0140  00204 060047         LDA ..-4
0141  00205 040001         ADA B
0142  00206 002020         SSA            IF SO , ILLEGAL,
0143  00207 026467R        JMP LUERR
0144  00210 062275R        LDA SAVE2      TEST IF ASSIGNING ANY LUN TO NULL
0145  00211 002002         SZA            I.E. 2ND PARAM = 0,
0146  00212 026215R        JMP EX82
0147  00213 054111         CPB BATCH      IF SO, CAN'T SET BATCH DEV TO NUL
0148  00214 026467R        JMP LUERR
0149  00215 044121  EX82 ADB LUTAB
0150  00216 044052         ADB ..-1        SET POINTER TO LUTAB
0151  00217 170001         STA B,I         ASSIGN IT
0152  00220 026462R        JMP EX300
0153  00221 000000  GET    NOP
0154  00222 066265R        LDB BUFAD      BUFFER CHARACTER ADDRESS
0155  00223 056240R        CPB LASTC      GOT LAST CHAR ALREADY?
0156  00224 026236R        JMP GETBL       RETURN WITH REG A SET TO BLANK
0157  00225 004065         CLE,ERB
0158  00226 160001         LDA B,I
0159  00227 002041         SEZ,RSS
0160  00230 001727         ALF,ALF             SHIFT HIGH INTO LOW
0161  00231 010074         AND .377            MASK OFF
0162  00232 005600         ELB            INCR CHARACTER ADDRESS
0163  00233 006004         INB
0164  00234 076265R        STB BUFAD      SAVE BUFFER CHAR ADDRESS
0165  00235 126221R        JMP GET,I      RETURN WITH CHAR IN A
0166  00236 062277R GETBL  LDA BLANK
0167  00237 126221R        JMP GET,I
0168  00240 000000  LASTC  NOP
```

```
0169*
0170  00241 000000  MESSG NOP
0171  00242 072250R       STA MSGAD
0172  00243 076251R       STB MSGLN
0173  00244 034261        ISZ OPFLG
0174  00245 016001X       JSB $SYIO
0175  00246 000002        DEC 2
0176  00247 000001        DEC 1
0177  00250 000000  MSGAD NOP
0178  00251 000000  MSGLN NOP
0179  00252 000261R       DEF MSRTN
0180*
0181  00253 060322        LDA SXSUS
0182  00254 003000        CMA
0183  00255 040254        ADA UMFWA
0184  00256 002021        SSA,RSS
0185  00257 026002X       JMP $CIC3
0186  00260 026005X       JMP $RTRN
0187*
0188  00261 016003X MSRTN JSB SAVE$
0189  00262 002400        CLA
0190  00263 070261        STA OPFLG
0191  00264 126241R       JMP MESSG,I
0192*
0193  00265 000000  BUFAD NOP
0194  00266 000000  EQTAD NOP
0195  00267 000000  CURNT NOP
0196  00270 000000  LOOP  NOP
0197  00271 000000  EXITA NOP
0198  00272 000000  RQ    NOP
0199  00273 000000  SAVE  BSS 2
0200  00275 000000  SAVE2 BSS 2
0201  00277 000040  BLANK OCT 40
0202  00300 000054  COMMA OCT 54
0203  00301 052520  UP    ASC 1,UP
0204  00302 042116  DN    ASC 1,DN
0205  00303 000304R       DEF *+1
0206  00304 046125  LUOUT ASC 1,LU
0207  00305 000000        NOP             LUOUT+2 = LOGICAL UNIT #
0208  00306 020105        ASC 2, EQT
      00307 050524
0209  00310 000000        NOP             LUOUT+6 = EQT#
0210*                   UP PROCESSOR
0211  00311 016416R EX100 JSB EQCHK       COMPUTE
0212  00312 001222        RAL,RAL
0213  00313 010056        AND ,3                MASK OFF AV BITS AND CHECK
0214  00314 050054        CPA ,1                DEVICE DOWN
0215  00315 002001        RSS
0216  00316 026323R       JMP EX150       DEVICE ISN'T DOWN
0217  00317 162266R       LDA EQTAD,I     SET DEVICE UP
0218  00320 012401R       AND MASK1             037777
0219  00321 172266R       STA EQTAD,I
0220  00322 026462R       JMP EX300       DEVICE SET UP RETURN
0221*
0222  00323 060120  EX150 LDA EQT#        *
0223  00324 003004        CMA,INA         * SET UP
```

```
0224   00325 072270R          STA LOOP        *    TO REPORT
0225   00326 002404           CLA,INA         *    ALL DEVICES
0226   00327 072267R          STA CURNT       *    CURRENTLY DOWN
0227   00330 064117           LDB EQTAB       *
0228   00331 060001  EX160 LDA B
0229   00332 044066          ADB .17
0230   00333 076266R          STB EQTAD
0231   00334 040056          ADA .3
0232   00335 160000          LDA A,I
0233   00336 001222          RAL,RAL
0234   00337 010056          AND .3
0235   00340 050054          CPA .1          DEVICE DOWN?
0236   00341 026347R          JMP EX180       -YES, GO REPORT IT
0237   00342 066266R EX170 LDB EQTAD
0238   00343 036267R          ISZ CURNT
0239   00344 036270R          ISZ LOOP
0240   00345 026331R          JMP EX160       GO CHECK NEXT DEVICE
0241   00346 026462R          JMP EX300       ALL DEVICES CHECKED - EXIT
0242*
0243   00347 062267R EX180 LDA CURNT
0244   00350 016004X          JSB CNDEC
0245   00351 072364R          STA DNMSG+4     SET EQPMT# IN 'DOWN' MESSAGE
0246   00352 062357R          LDA DNMSG-1
0247   00353 066356R          LDB N15
0248   00354 016241R          JSB MESSG
0249   00355 026342R          JMP EX170
0250*
0251   00356 177761  N15    DEC -15
0252   00357 000360R          DEF *+1
0253   00360 042105  DNMSG ASC 8,DEVICE #XX DOWN
       00361 053111
       00362 041505
       00363 020043
       00364 054130
       00365 020104
       00366 047527
       00367 047040
0254*                      DN PROCESSOR
0255   00370 016416R EX200 JSB EQCHK
0256   00371 012403R          AND MASK4
0257   00372 052404R          CPA DISC
0258   00373 026457R          JMP ERMES       YES, SO DO NOT SET DOWN
0259   00374 162266R          LDA EQTAD,I
0260   00375 012401R          AND MASK1            37777
0261   00376 032402R          IOR MASK3            40000
0262   00377 172266R          STA EQTAD,I
0263   00400 026462R          JMP EX300
0264*
0265   00401 037777  MASK1 OCT 37777
0266   00402 040000  MASK3 OCT 40000
0267   00403 037400  MASK4 OCT 037400
0268   00404 014400  DISC   OCT 14400
0269*
0270   00405 062411R EX250 LDA *+4
0271   00406 064043          LDB -.-8
0272   00407 016241R          JSB MESSG
```

```
0273  00410 026462R        JMP EX300
0274*
0275  00411 000412R        DEF *+1
0276  00412 053510   WH     ASC 4,WHY NOT?
      00413 054440
      00414 047117
      00415 052077
0277*
0278  00416 000000  EQCHK  NOP
0279  00417 062273R        LDA SAVE       COMPUTE EQT ADDRESS
0280  00420 002003         SZA,RSS
0281  00421 026457R        JMP ERMES
0282  00422 002021         SSA,RSS
0283  00423 150121         CPA LUTAB,I
0284  00424 026457R        JMP ERMES
0285  00425 064120         LDB EQT#
0286  00426 007000         CMB
0287  00427 046273R        ADB SAVE
0288  00430 006021         SSB,RSS
0289  00431 026457R        JMP ERMES
0290  00432 040052         ADA N1
0291  00433 070001         STA B
0292  00434 001700         ALF
0293  00435 040001         ADA B
0294  00436 040117         ADA EQTAB
0295  00437 040056         ADA .3
0296  00440 072256R        STA EQTAD
0297  00441 160000         LDA A,I        GET DEVICE STATUS
0298  00442 126416R        JMP EQCHK,I
0299*
0300* ROUTINE TO CHECK FOR VALID DIGIT
0301*
0302*     ON ENTRY: "A" ASCII DIGIT
0303*     ON EXIT : "A" BINARY DIGIT
0304*
0305  00443 000000  CHKDG  NOP
0306  00444 066455R        LDB NB60
0307  00445 044000         ADB A
0308  00446 006020         SSB
0309  00447 026467R        JMP LUERR      <60 IS ERROR
0310  00450 046456R        ADB NB12
0311  00451 006021         SSB,RSS
0312  00452 026467R        JMP LUERR      >72 IS ERROR
0313  00453 010070         AND M17
0314  00454 126443R        JMP CHKDG,I
0315*
0316  00455 177720  NB60   OCT -60
0317  00456 177766  NB12   OCT -12
0318*
0319  00457 062514R ERMES  LDA ERR=1
0320  00460 066513R        LDB N11
0321  00461 016241R        JSB MESSG
0322  00462 060245  EX300  LDA EXMOD
0323  00463 052512R        CPA N14
0324  00464 003004         CMA,INA
0325  00465 070245         STA EXMOD
```

```
0326  00466 126271R        JMP EXITA,I
0327*
0328  00467 062475R LUERR  LDA PARER-1
0329  00470 040060         ADA ..+5
0330  00471 026460R        JMP ERMES+1
0331  00472 062475R PILLG  LDA PARER-1
0332  00473 066511R        LDB N17
0333  00474 026461R        JMP ERME8+2
0334  00475 000476R        DEF *+1
0335  00476 050101  PARER   ASC 9,PARAMETER ILLEGAL
      00477 051101
      00500 046505
      00501 052105
      00502 051040
      00503 044514
      00504 046105
      00505 043501
      00506 046040
0336  00507 046125         ASC 2,LUN
      00510 047040
0337  00511 177757  N17    DEC -17
0338*
0339  00512 177762  N14    DEC -14
0340  00513 177765  N11    DEC -11
0341  00514 000515R        DEF *+1
0342  00515 044516  ERR    ASC 6,INPUT ERROR
      00516 050125
      00517 052040
      00520 042522
      00521 051117
      00522 051040
0343  00000           A      EQU 0
0344  00001           B      EQU 1
0345  00053           ..     EQU 53B
0346  00052           N1     EQU ..-1
0347  00054           .1     EQU ..+1
0348  00056           .3     EQU ..+3
0349  00066           .17    EQU ..+11
0350  00070           M17    EQU ..+13
0351  00074           .377   EQU ..+17
0352  00100           .      EQU 100B
0353  00111           BATCH  EQU .+9
0354  00117           EQTAB  EQU .+15
0355  00120           EQT#   EQU .+16
0356  00121           LUTAB  EQU .+17
0357  00122           LUT#   EQU .+18
0358  00123           JBUF   EQU .+19
0359  00245           EXMOD  EQU .+101
0360  00254           UMFWA  EQU .+108
0361  00261           OPFLG  EQU .+113
0362  00274           $MDBF  EQU .+124
0363  00322           SXSUS  EQU .+146
0364  00332           CHARC  EQU .+232B
0365                         END
** NO ERRORS*
```

$CIC3	00004	00185					
$EX14	00006	00003					
$MDBF	00362	00013					
$RTRN	00005	00186					
$SYIO	00004	00174					
.	00352	00353	00354	00355	00356	00357	00358
	00359	00360	00361	00362	00363	00364	
..	00345	00087	00131	00140	00150	00271	00329
	00346	00347	00348	00349	00350	00351	
.1	00347	00214	00235				
.17	00349	00229					
.3	00348	00213	00231	00234	00295		
.377	00351	00161					
A	00343	00011	00083	00132	00136	00232	00297
	00307						
B	00344	00141	00151	00158	00228	00291	00293
BATCH	00353	00147					
BLANK	00201	00030	00037	00099	00106	00166	
BUFAD	00193	00008	00154	00164			
CHARC	00354	00009					
CHKDG	00305	00034	00041	00103	00110	00314	
CNDEC	00004	00078	00084	00244			
COMMA	00202	00028	00039	00050	00101	00108	
CURNT	00195	00064	00069	00072	00077	00080	00089
	00226	00238	00243				
DISC	00268	00257					
DN	00204	00055					
DNMSG	00253	00245	00246				
EQCHK	00278	00211	00255	00298			
EQT#	00355	00127	00222	00285			

EQTAB	00354	00227	00294				
EQTAD	00194	00217	00219	00230	00237	00259	00262
	00296						
ERMES	00319	00076	00097	00100	00102	00109	00268
	00281	00284	00289	00330	00333		
ERR	00342	00319					
EX00	00027	00032					
EX01	00033	00029					
EX10	00052	00031	00038				
EX100	00211	00054					
EX150	00222	00216					
EX160	00228	00240					
EX170	00237	00249					
EX180	00243	00236					
EX200	00255	00056					
EX250	00270	00058					
EX300	00322	00092	00152	00220	00241	00263	00273
EX60	00069	00062					
EX70	00072	00068	00091				
EX80	00094	00040	00051				
EX81	00118	00107					
EX82	00149	00146					
EXITA	00197	00014	00326				
EXMOD	00359	00322	00325				
GET	00153	00020	00021	00024	00027	00033	00036
	00049	00098	00105	00165	00167		
GETBL	00166	00156					
JBUF	00358	00006					
LASTC	00168	00012	00155				

LOOP	00196	00067	00071	00090	00224	00239	
LUERR	00328	00120	00124	00143	00148	00309	00312
LUOUT	00206	00079	00085	00086	00095		
LUT#	00357	00065	00074	00122			
LUTAB	00356	00082	00130	00149	00283		
M17	00350	00313					
MASK1	00265	00218	00260				
MASK3	00266	00261					
MASK4	00267	00256					
MESSG	00170	00088	00191	00248	00272	00321	
MSGAD	00177	00171					
MSGLN	00178	00172					
MSRTN	00188	00179					
N1	00346	00081	00290				
N11	00340	00320					
N14	00339	00323					
N15	00251	00247					
N17	00337	00332					
NB12	00317	00310					
NB60	00316	00306					
OPFLG	00361	00173	00190				
PARER	00335	00328	00331				
PILLG	00331	00129	00134	00138			
RQ	00198	00023	00025	00026	00052	00094	
SAVE	00199	00016	00017	00035	00042	00043	00045
	00046	00047	00048	00060	00118	00139	00279
	00287						
SAVES	00004	00188					
SAVE2	00200	00018	00019	00104	00111	00112	00114
	00115	00116	00117	00125	00133	00137	00144

SXSUS	00363	00181
UMFWA	00360	00183
UP	00203	00053
WH	00276	00057

```
0001                    ASMB,L,X,C,N,R,B     ABORT AND POST-MORTEM DUMP (SEX1
** NO ERRORS*
```

```
0001                    ASMB,L,X,C,N,R,B    ABORT AND POST-MORTEM DUMP (SEX1
0002  00000                     NAM $EX15,1,0
0003                            ENT $EX15
0004                            EXT $DISC,$SYIO,$IDL1,$JLOD
0005                            EXT $MOVE,$WAIT,CNOCT
0006                            EXT LUCHK,$LDVR
0007                            EXT $BUF
0008*
0009*      $EX15 IS ABORT AND POST MORTEM DUMP ROTTINE
0010*    DUMP PARAMETERS HAVE BEEN SOORED BY JOB PROCESSOR ON THE SYSTEM
0011*    BUFFER SECTOR ON THE DISC.
0012*                WORD 1 =-0, NO MAIN PROGRAM DUMP (100000)
0013*                       = -1, GET START ADDRESS FROM ID SEGMENT
0014*                       = N, RELATIVE MAIN START ADDRESS
0015*                WORD 2 =-1, GET MAIN END ADDRESS FROM ID SEGMENT
0016*                       = N, RELATIVE MAIN END ADDRESS
0017*                WORD 3 = 0, NO BASE PAGE AND EFFECTIVE CONTENTS DUMP
0018*                       =-1, BASE PAGE AND EFFECTIVE CONTENTS DUMP
0019*                WORD 4=0, NO SYSTEM AREA DUMP
0020*                      =-1, SYSTEM AREA DUMP
0021*    ON ENTRY, B = 0 FOR ABORT DUMP
0022*                = 1 FOR POST MORTEM DUMP
0023*
0024  00000 060113  $EX15 LDA DUMP8     DUMP REQUESTED?
0025  00001 002003        SZA,RSS
0026  00002 026176R       JMP EXIT        =NO
0027  00003 060061        LDA ..+6
0028  00004 016010X       JSB LUCHK
0029  00005 064060        LDB ..+5
0030  00006 044121        ADB LUTAB       B POINTS TO LU ENTRY ,LIST DEVI
0031  00007 160001        LDA B,I         A  HOLDS EQT ENTRY
0032  00010 002003        SZA,RSS          NULL? (=0?)
0033  00011 026176R       JMP EXIT        YES
0034  00012 016011X     JSB $LDVR     LOAD LIST DRIVER
0035  00013 016303R       JSB PAGE
0036  00014 064113        LDB DUMPS
0037  00015 062333R       LDA PBUFA
0038  00016 006020        SSB           PDUMP?
0039  00017 062332R       LDA ABUFA      NO, LOAD ADUMP INSTEAD
0040  00020 072024R       STA BUF
0041  00021 016002X       JSB $SYIO
0042  00022 000002        DEC 2           WRITE
0043  00023 000006        DEC 6           LUN
0044  00024 000024R BUF   DEF *
0045  00025 000003        DEC 3           BUF LEN
0046  00026 000030R       DEF *+2
0047  00027 026006X       JMP $WAIT
0048*
0049  00030 062314R       LDA AB
0050  00031 070273        STA $IDCD
0051  00032 060115        LDA SYS8F      LOOK AT SYSTEM BUFFER SEC-
0052  00033 072317R       STA PARAM      START T/S
0053*
0054* RESOLVE ADDRESS OF $BUF
0055*
0056  00034 062342R       LDA DEFBF
```

```
0057  00035 002001          RSS
0058  00036 160000          LDA 0,I
0059  00037 001275          RAL,CLE,SLA,ERA
0060  00040 026036R         JMP *-2
0061  00041 072342R         STA DEFBF       ADDRESS OF $BUF
0062  00042 042344R         ADA .35
0063  00043 072253R         STA DEPAR       ADDRESS OF $BUF+35
0064  00044 042345R         ADA .42
0065  00045 072343R         STA DEFAB       ADDRESS OF $BUF+77

0067  00046 062342R         LDA DEFBF
0068  00047 072320R         STA PARAM+1     CORE ADDRESS
0069  00050 062331R         LDA .128
0070  00051 072321R         STA PARAM+2     # OF WORDS
0071  00052 062322R         LDA PARAX
0072  00053 006404          CLB,INB
0073  00054 016001X         JSB $DISC       READ IN SYS BUFFER SECTOR
0074  00055 060113          LDA DUMPS       GET DUMP TYPE FLAG
0075  00056 066343R         LDB DEFAB       ADDRESS OF ABORT PARAMETERS
0076  00057 002021          SSA,RSS
0077  00060 044057          ADB ..+4
0078  00061 076323R         STB WORDP
0079  00062 002400          CLA
0080  00063 070113          STA DUMPS       CLEAR DUMP PARAMETER
0081  00064 060245          LDA EXMOD
0082  00065 052220R         CPA N15
0083  00066 003004          CMA,INA
0084  00067 070245          STA EXMOD
0085  00070 006004          INB
0086  00071 162323R         LDA WORDP,I     CHECK WORD 1 VALUE
0087  00072 002002          SZA                 0, SO CHECK WORD 2
0088  00073 026100R         JMP EX05       NOT ZERO, SO CHECK IF VALUE OR I
0089  00074 164001          LDB B,I       CHECK IF DUMP DESIRED
0090  00075 006003          SZB,RSS
0091  00076 026120R         JMP EX20           NO MAIN DUMP DESIRED
0092  00077 026102R         JMP EX10           MAIN DUMP DESIRED
0093  00100 052052  EX05    CPA N1         CHECK IF START ADDR FROM ID SEGM
0094  00101 002400          CLA
0095  00102 042254  EX10    ADA UMFWA
0096  00103 012346R         AND MASK1           MASK OFF LAST 3 BITS
0097  00104 072324R         STA START      SET MAIN DUMP START ADDRESS
0098  00105 036323R         ISZ WORDP           INCR TO WORD 2
0099  00106 162323R         LDA WORDP,I    CHECK WORD 2 VALUE FOR END ADDR
0100  00107 052052          CPA N1
0101  00110 026113R         JMP *+3
0102  00111 042254          ADA UMFWA           ADD USER AREA BASE VALUE
0103  00112 026114R         JMP *+2
0104  00113 060147          LDA EXPG+6
0105  00114 072327R         STA END
0106  00115 016303R         JSB PAGE
0107  00116 016221R         JSB FMOUT      GO TO FORMAT AND OUTPUT ROUTINE
0108  00117 002001          RSS
0109  00120 036323R EX20    ISZ WORDP
0110  00121 036323R         ISZ WORDP
0111  00122 162323R         LDA WORDP,I    CHECK IF BASE PAGE DUMP
0112  00123 002021          SSA,RSS
```

```
0113  00124 026164R        JMP EX70            NO BASE PAGE DUMP
0114  00125 060255         LDA UBFWA
0115  00126 012346R        AND MASK1
0116  00127 072324R        STA START
0117  00130 060151         LDA EXPG48
0118  00131 072327R        STA END
0119  00132 016303R        JSB PAGE
0120  00133 060047  EX40   LDA N4          SET LOOP COUNTER
0121  00134 072325R        STA LOOP
0122  00135 062253R        LDA DEPAR       SET STORAGE ADDRESS
0123  00136 072326R        STA STADD
0124  00137 062324R        LDA START       OCTAL CORE ADDRESS
0125  00140 016007X        JSB CNOCT
0126  00141 160001         LDA B,I
0127  00142 010074         AND .377
0128  00143 032316R        IOR UBLNK
0129  00144 170001         STA B,I
0130  00145 016263R        JSB STORE
0131  00146 162324R EX50   LDA START,I
0132  00147 016007X        JSB CNOCT
0133  00150 016263R        JSB STORE       CONVERT TO ASCII AND STORE
0134  00151 162324R        LDA START,I
0135  00152 001265         RAL,CLE,ERA
0136  00153 160000         LDA A,I         CONTENTS OF BASE PAGE ADDRESS
0137  00154 016007X        JSB CNOCT
0138  00155 016263R        JSB STORE       CONVERT AND WORE
0139  00156 036324R        ISZ START
0140  00157 036325R        ISZ LOOP        CHECK IF FULL LINE FORMATTED
0141  00160 026146R        JMP EX50            NO
0142  00161 016247R        JSB OUT
0143  00162 002021         SSA,RSS
0144  00163 026133R        JMP EX40        GO FORMAT NEXT LINE
0145  00164 036323R EX70   ISZ WORDP
0146  00165 162323R        LDA WORDP,I
0147  00166 002021         SSA,RSS
0148  00167 026176R        JMP EXIT        ALL DONE WITH DUMP
0149  00170 002400         CLA
0150  00171 072324R        STA START
0151  00172 060254         LDA UMFWA
0152  00173 072327R        STA END
0153  00174 016303R        JSB PAGE
0154  00175 016221R        JSB FMOUT
0155  00176 002400  EXIT   CLA             FREE MODULE AREA
0156  00177 070273         STA $IDCD
0157  00200 066330R        LDB N11
0158  00201 016005X        JSB $MOVE
0159  00202 000141         DEF EXPG
0160  00203 060245         LDA EXMOD
0161  00204 052220R        CPA N15
0162  00205 003004         CMA,INA
0163  00206 070245         STA EXMOD
0164  00207 006404         CLB,INB
0165  00210 060262         LDA SWAP
0166  00211 002020         SSA
0167  00212 074111         STB BATCH
0168  00213 064332         LDB CHARC     CHECK IF : INPUT DETECTED
```

```
0169   00214 006002          SZB
0170   00215 026004X         JMP $JLOD     TRANSFER DIRECTLY TO JOB PROCESSO
0171   00216 074262          STB SWAP
0172   00217 026003X         JMP $IDL1
0173*
0174   00220 177761  N15     DEC -15
0175*
0176   00221 000000  FMOUT   NOP           FORMAT AND OUTPUT ONE LINE
0177   00222 060043          LDA N8
0178   00223 072325R         STA LOOP
0179   00224 062263R         LDA DEPAR
0180   00225 072326R         STA STADD
0181   00226 062324R         LDA START
0182   00227 016007X         JSB CNOCT     FORMAT AND STORE CORE LOCATION
0183   00230 160001          LDA B,I
0184   00231 010074          AND .377
0185   00232 032316R         IOR UBLNK
0186   00233 170001          STA B,I
0187   00234 016263R         JSB STORE
0188   00235 162324R FM10    LDA START,I   FORMAT AND STORE ONE VALUE
0189   00236 016007X         JSB CNOCT
0190   00237 016263R         JSB STORE
0191   00240 036324R         ISZ START
0192   00241 036325R         ISZ LOOP
0193   00242 026235R         JMP FM10            GO TO FORMAT NEXT WORD
0194   00243 016247R         JSB OUT
0195   00244 002021          SSA,RSS
0196   00245 026222R         JMP FMOUT+1         NO
0197   00246 126221R         JMP FMOUT,I         YES
0198*
0199   00247 000000  OUT     NOP
0200   00250 016002X         JSB $SYIO
0201   00251 000002          DEC 2
0202   00252 000006          DEC 6
0203   00253 000000  DEPAR   NOP           ADDRESS OF $BUF+35
0204   00254 177670          DEC -72
0205   00255 000257R         DEF *+2
0206   00256 026006X         JMP $WAIT
0207   00257 062324R         LDA START
0208   00260 003004          CMA,INA
0209   00261 042327R         ADA END
0210   00262 126247R         JMP OUT,I
0211   00263 000000  STORE   NOP
0212   00264 062315R         LDA BLNK      STORE BLANK
0213   00265 172326R         STA STADD,I
0214   00266 036326R         ISZ STADD
0215   00267 160001          LDA B,I
0216   00270 172326R         STA STADD,I
0217   00271 036326R         ISZ STADD
0218   00272 006004          INB
0219   00273 160001          LDA B,I
0220   00274 172326R         STA STADD,I
0221   00275 036326R         ISZ STADD
0222   00276 006004          INB
0223   00277 160001          LDA B,I
0224   00300 172326R         STA STADD,I
```

```
0225  00301 036326R        ISZ STADD
0226  00302 126263R        JMP STORE,I   RETURN
0227*
0228  00303 000000  PAGE   NOP
0229  00304 016002X        JSB $SYIO
0230  00305 000003         DEC 3
0231  00306 001106         OCT 1106
0232  00307 177777         DEC -1
0233  00310 000000         DEC 0
0234  00311 000313R        DEF *+2
0235  00312 026006X        JMP $WAIT
0236  00313 126303R        JMP PAGE,I
0237  00314 040502  AB     ASC 1,AB
0238  00315 020040  BLNK   ASC 1,
0239  00316 020000  UBLNK  OCT 020000
0240  00317 000000  PARAM  BSS 3
0241  00322 000317R PARAX  DEF PARAM
0242  00323 000000  WORDP  NOP
0243  00324 000000  START  NOP
0244  00325 000000  LOOP   NOP
0245  00326 000000  STADD  NOP
0246  00327 000000  END    NOP
0247  00330 177765  N11    DEC -11
0248  00331 000200  .128 DEC 128
0249  00332 000334R ABUFA  DEF ABUF
0250  00333 000337R PBUFA  DEF PBUF
0251  00334 020101  ABUF   ASC 3, ADUMP
      00335 042125
      00336 046520
0252  00337 020120  PBUF ASC 3, PDUMP
      00340 042125
      00341 046520
0253*
0254  00342 000012X DEFBF  DEF $BUF
0255  00343 000000  DEFAB  NOP            ABORT DUMP PARAMETERS
0256  00344 000043  .35    DEC 35
0257  00345 000052  .42    DEC 42
0258*
0259  00346 177770  MASK1  OCT 177770
0260  00000         A      EQU 0
0261  00001         B      EQU 1
0262  00053         ..     EQU 53B
0263  00043         N8     EQU ..-8
0264  00047         N4     EQU ..-4
0265  00052         N1     EQU ..-1
0266  00074         .377   EQU ..+17
0267*
0268  00100         .      EQU 100B
0269  00111         BATCH  EQU .+9
0270  00113         DUMPS  EQU .+11
0271  00115         SYSBF  EQU .+13
0272  00121         LUTAB  EQU .+17
0273  00141         EXPG   EQU .+33
0274  00245         EXMOD  EQU .+101
0275  00254         UMFWA  EQU .+108
0276  00255         UBFWA  EQU .+109
```

```
0277  00262          SWAP  EQU .+114
0278  00273          SIDCD EQU .+123
0279  00332          CHARC EQU .+154
0280                       END
**  NO ERRORS*
```

$BUF 00007/02 00254/02

$DISC 00004/02 00073/02

$EX15 00024/02 00003/02

$IDCD 00278/02 00050/02 00156/02

$IDL1 00004/02 00172/02

$JLOD 00004/02 00170/02

$LDVR 00006/02 00034/02

$MOVE 00005/02 00158/02

$SYIO 00004/02 00041/02 00200/02 00229/02

$WAIT 00005/02 00047/02 00206/02 00235/02

. 00268/02 00269/02 00270/02 00271/02 00272/02 00273/02 00274/02
00275/02 00276/02 00277/02 00278/02 00279/02

.. 00262/02 00027/02 00029/02 00077/02 00263/02 00264/02 00265/02
00266/02

.128 00248/02 00069/02

.35 00256/02 00062/02

.377 00266/02 00127/02 00184/02

.42 00257/02 00064/02

A 00260/02 00136/02

AB 00237/02 00049/02

ABUF 00251/02 00249/02

ABUFA 00249/02 00039/02

B 00261/02 00031/02 00089/02 00126/02 00129/02 00183/02 00186/02
00215/02 00219/02 00223/02

BATCH 00269/02 00167/02

BLNK 00238/02 00212/02

BUF 00044/02 00040/02

CHARC 00279/02 00168/02

CNOCT 00005/02 00125/02 00132/02 00137/02 00182/02 00189/02

```
DEFAB   00255/02 00065/02 00075/02
DEFBF   00254/02 00056/02 00061/02 00067/02
DEPAR   00203/02 00063/02 00122/02 00179/02
DUMPS   00270/02 00024/02 00036/02 00074/02 00080/02
END     00246/02 00105/02 00118/02 00152/02 00209/02
EX05    00093/02 00088/02
EX10    00095/02 00092/02
EX20    00109/02 00091/02
EX40    00120/02 00144/02
EX50    00131/02 00141/02
EX70    00145/02 00113/02
EXIT    00155/02 00026/02 00033/02 00148/02
EXMOD   00274/02 00081/02 00084/02 00160/02 00163/02
EXPG    00273/02 00104/02 00117/02 00159/02
FM10    00188/02 00193/02
FMOUT   00176/02 00107/02 00154/02 00196/02 00197/02
LOOP    00244/02 00121/02 00140/02 00178/02 00192/02
LUCHK   00006/02 00028/02
LUTAB   00272/02 00030/02
MASK1   00259/02 00096/02 00115/02
N1      00265/02 00093/02 00100/02
N11     00247/02 00157/02
N15     00174/02 00082/02 00161/02
N4      00264/02 00120/02
N8      00263/02 00177/02
OUT     00199/02 00142/02 00194/02 00210/02
PAGE    00228/02 00035/02 00106/02 00119/02 00153/02 00236/02
PARAM   00240/02 00052/02 00068/02 00070/02 00241/02
```

```
PARAX   00241/02 00071/02

PBUF    00252/02 00250/02

PBUFA   00250/02 00037/02

STADD   00245/02 00123/02 00180/02 00213/02 00214/02 00216/02 00217/02
        00220/02 00221/02 00224/02 00225/02

START   00243/02 00097/02 00116/02 00124/02 00131/02 00134/02 00139/02
        00150/02 00181/02 00188/02 00191/02 00207/02

STORE   00211/02 00130/02 00133/02 00138/02 00187/02 00190/02 00226/02

SWAP    00277/02 00165/02 00171/02

SYSBF   00271/02 00051/02

UBFWA   00276/02 00114/02

UBLNK   00239/02 00128/02 00185/02

UMFWA   00275/02 00095/02 00102/02 00151/02

WORDP   00242/02 00078/02 00086/02 00098/02 00099/02 00109/02 00110/02
        00111/02 00145/02 00146/02
```

```
0001                ASMB,L,X,C,N,R,B     ;GO PARAMETER PROCESSOR (SEX16)
**  NO ERRORS*
```

```
0001                    ASMB,L,X,C,N,R,B    ;GO PARAMETER PROCESSOR ($EX16)
0002  00000                    NAM $EX16,1,0
0003                           ENT $EX16
0004                           EXT $TYPE,$IDL1
0005                           EXT $IRT
0006*
0007*      $EX16 IS THE ;GO PARAMETER PROCESSOR MODULE
0008*
0009  00000 062117R $EX16 LDA DFRON     SET STORE ADDRESS
0010  00001 072126R        STA STADD
0011  00002 060046        LDA N5
0012  00003 072127R        STA COUNT     SET STORE COUNT
0013  00004 060123        LDA JBUF      SET DATA CHARACTER ADDRESS
0014  00005 000066        CLE,ELA
0015  00006 072124R        STA BUFAD
0016  00007 060274        LDA $MDBF     SET NEG # CHARACTERS IN BUFFER
0017  00010 001200        RAL
0018  00011 003004        CMA,INA
0019  00012 072125R        STA BUFCT
0020  00013 016101R        JSB GET       GET ;
0021  00014 016101R        JSB GET           G
0022  00015 016101R        JSB GET           O
0023  00016 016101R        JSB GET           ,
0024  00017 002400  EX10   CLA             CLEAR CURRENT STORE VALUE
0025  00020 172126R        STA STADD,I
0026  00021 016101R EX15   JSB GET        GET 1 DATA CHARACTER
0027  00022 002002        SZA             SKIP=IF DONE
0028  00023 026032R        JMP EX20      NOT DONE
0029  00024 036126R EX16   ISZ STADD     STORE NECESSARY # OF ZERO
0030  00025 036127R        ISZ COUNT
0031  00026 002001        RSS
0032  00027 026054R        JMP EX50      DONE STORING ZEROS
0033  00030 172126R        STA STADD,I   STORE 0
0034  00031 026024R        JMP EX16      GO STORE NEXT ZERO
0035  00032 052120R EX20   CPA COMMA     CHECK IF COMMA
0036  00033 026051R        JMP EX30      YES=SO DONE WITH PARAMETER
0037  00034 052122R        CPA BLANK     CHECK IF BLANK
0038  00035 026021R        JMP EX15      YES=SO IGNORE CHARACTER
0039  00036 010074        AND M377
0040  00037 042121R        ADA N60B
0041  00040 072130R        STA TEMP
0042  00041 162126R        LDA STADD,I   MPY STORED VALUE BY 10
0043  00042 070001        STA B
0044  00043 001723        ALF,RAR
0045  00044 040001        ADA B
0046  00045 040001        ADA B
0047  00046 042130R        ADA TEMP      ADD CURRENT DIGIT
0048  00047 172126R        STA STADD,I       AND STORE
0049  00050 026021R        JMP EX15      GO GET NEXT DIGIT
0050  00051 036126R EX30   ISZ STADD     INCREMENT STORE ADDRESS
0051  00052 036127R        ISZ COUNT     INCR COUNT
0052  00053 026017R        JMP EX10      GO GET NEXT PARAMETER
0053  00054 060272  EX50   LDA $GOPT
0054  00055 072126R        STA STADD
0055  00056 006400        CLB
0056  00057 074272        STB $GOPT      CLEAR POINT OF SUSPENSION
```

```
0057  00060 074273          STB $IDCD      CLEAR :GO CODE SEARCH
0058  00061 064245          LDB EXMOD
0059  00062 056123R         CPB N16
0060  00063 007004          CMB,INB
0061  00064 074245          STB EXMOD      FREE MODULE AREA
0062  00065 007400          CCB
0063  00066 002003          SZA,RSS
0064  00067 026001X         JMP $TYPE
0065  00070 003000          CMA
0066  00071 040254          ADA UMFWA
0067  00072 002021          SSA,RSS
0068  00073 026002X         JMP $IDL1
0069  00074 062126R         LDA STADD      SET UP TRANSFER ADDR FOR $IRT
0070  00075 070137          STA XIRT
0071  00076 002400          CLA
0072  00077 066117R         LDB DFRON      SET B TO POINT TO POSSIBLE PARAM
0073  00100 026003X         JMP $IRT       SET INTERRUPT SYS,MEM PROT
0074*
0075  00101 000000  GET     NOP
0076  00102 062125R         LDA BUFCT      CHECK CHARACTER COUNTER
0077  00103 002003          SZA,RSS        SKIP=MORE DATA
0078  00104 126101R         JMP GET,I      NO MORE DATA
0079  00105 066124R         LDB BUFAD      GET BUFFER CHARACTER ADDRESS
0080  00106 004065          CLE,ERB        FORM WORD/HI=LOW ADDRESS
0081  00107 160001          LDA B,I        GET DATA WORD
0082  00110 002041          SEZ,RSS        CHECK HI OR LOW CHARACTER
0083  00111 001727          ALF,ALF        HI=80 SHIFT INTO LOW
0084  00112 010074          AND M377       MASK OFF ALL BUT LOW BITS
0085  00113 036124R         ISZ BUFAD      INCR BUFFER CHARACTER ADDRESS
0086  00114 036125R         ISZ BUFCT      INCR CHARACTER COUNT
0087  00115 126101R         JMP GET,I      RETURN
0088  00116 126101R         JMP GET,I      RETURN
0089  00117 000126  DFRON   DEF RONBF
0090  00120 000054  COMMA   OCT 54
0091  00121 177720  N60B    OCT -60
0092  00122 000040  BLANK   OCT 40
0093  00123 177760  N16     DEC -16
0094  00124 000000  BUFAD   NOP
0095  00125 000000  BUFCT   NOP
0096  00126 000000  STADD   NOP
0097  00127 000000  COUNT   NOP
0098  00130 000000  TEMP    NOP
0099  00000         A       EQU 0
0100  00001         B       EQU 1
0101  00053         ..      EQU 53B
0102  00046         N5      EQU ..-5
0103  00074         M377    EQU ..+17
0104  00100         .       EQU 100B
0105  00123         JBUF    EQU .+19
0106  00126         RONBF   EQU .+22
0107  00137         XIRT    EQU RONBF+9
0108  00245         EXMOD   EQU .+101
0109  00254         UMFWA   EQU .+108
0110  00272         $GOPT   EQU .+122
0111  00273         $IDCD   EQU .+123
0112  00274         $MDBF   EQU .+124
```

```
0113                            END
**  NO ERRORS*
```

$EX16	00009	00003					
$GOPT	00110	00053	00056				
$IDCD	00111	00057					
$IDL1	00004	00068					
$IRT	00005	00073					
$MDBF	00112	00016					
$TYPE	00004	00064					
.	00104	00105	00106	00108	00109	00110	00111
	00112						
..	00101	00102	00103				
*A	00099						
B	00100	00043	00045	00046	00081		
BLANK	00092	00037					
BUFAD	00094	00015	00079	00085			
BUFCT	00095	00019	00076	00086			
COMMA	00090	00035					
COUNT	00097	00012	00030	00051			
DFRON	00089	00009	00072				
EX10	00024	00052					
EX15	00026	00038	00049				
EX16	00029	00034					
EX20	00035	00028					
EX30	00050	00036					
EX50	00053	00032					
EXMOD	00108	00058	00061				
GET	00075	00020	00021	00022	00023	00026	00078
	00087	00088					
JBUF	00105	00013					
M377	00103	00039	00084				

N16	00093	00059					
N5	00102	00011					
N60B	00091	00040					
RONBF	00106	00089	00107				
STADD	00096	00010	00025	00029	00033	00042	00048
	00050	00054	00069				
TEMP	00098	00041	00047				
UMFWA	00109	00066					
XIRT	00107	00070					

```
0001                    ASMB,L,X,C,N,R,B     PROCESS :UD DIRECTIVE (SEX17)
** NO ERRORS*
```

```
0001                    ASMB,L,X,C,N,R,B    PROCESS ;UD DIRECTIVE (SEX17)
0002  00000                     NAM $EX17,1,0
0003                            ENT $EX17
0004                            EXT $MDLD,DEF04,DEF19
0005                            EXT LBLIO,ISLBL,MESSG
0006                            EXT $B1,$B2,$B3,$B4,$B5,$B64
0007                            EXT $IRT
0008                            SUP
0009  00000 026016R $EX17 JMP XNTRY      NORMAL ENTRY POINT
0010  00001 062121R       LDA SBCHN      DISC NR/PE ENTRY POINT
0011  00002 002020       SSA            IS THIS REQUEST A SEARCH
0012  00003 026126R       JMP NEQL       -YES, GO LOOK SOME MORE
0013*
0014  00004 062013R       LDA ASCNR
0015  00005 006002       SZB
0016  00006 062014R       LDA ASCPE
0017  00007 070275       STA $MDBF+1    SET NOT RDY/PARITY ERR
0018  00010 016354R       JSB RESET      RESTORE SUBCHNL
0019  00011 064057       LDB .+4
0020  00012 026072R       JMP LOD04+1
0021*
0022  00013 047122 ASCNR ASC 1,NR
0023  00014 050105 ASCPE ASC 1,PE
0024*
0025  00015 000001R DFERR DEF $EX17+1
0026*
0027  00016 060161 XNTRY LDA CUDSC
0028  00017 072365R       STA SAVSC      SAVE CURRENT USER SUBCHNL
0029  00020 060200       LDA DISCL
0030  00021 072366R       STA SVDCL
0031  00022 064224       LDB RQCNT
0032  00023 044047       ADB .-4
0033  00024 006024       SSB,INB        4 PARAMETERS?
0034  00025 026033R       JMP UDISC      -NO, MUST BE *UD*
0035  00026 160231       LDA RQP4,I
0036  00027 050054       CPA .+1
0037  00030 026172R       JMP JPSET
0038  00031 002024       SSA,INA
0039  00032 026225R       JMP LOD19      -YES, GO INIT. DISC
0040*
0041  00033 062015R UDISC LDA DFERR
0042  00034 070330       STA XFLG
0043  00035 060156       LDA LSTSC
0044  00036 003000       CMA
0045  00037 006021       SSB,RSS        3 PARAMETERS?
0046  00040 160230       LDA RQP3,I     -YES, GET SUBCHAN PARAM.
0047  00041 072121R       STA SBCHN
0048  00042 002020       SSA            SUBCHNL NEGATIVE?
0049  00043 026134R       JMP USRCH      -YES, GO SEARCH SYSTEM
0050  00044 070161       STA CUDSC
0051  00045 016322R       JSB LBLIN
0052  00046 016233R       JSB SYCHK      CHECK GEN. AND DOS CODES
0053  00047 062152R       LDA UDLBL
0054  00050 016005X       JSB ISLBL      IS IT LABELED?
0055  00051 026056R       JMP NOLBL      -NO
0056*
```

```
0057  00052 064227          LDB RQP2
0058  00053 016305R         JSB COMPR      LABEL = REQ LABEL?
0059  00054 026146R         JMP LSTLB
0060  00055 026177R         JMP SETXT
0061*
0062  00056 160227  NOLBL   LDA RQP2,I
0063  00057 002003          SZA,RSS        LABEL PARAM PRESENT?
0064  00060 026064R         JMP LSTNL       =NO, GO PRINT *UNLBL*
0065  00061 010075          AND M1774
0066  00062 052133R         CPA UPAST      REQ FOR UNLABELED DISC?
0067  00063 026177R         JMP SETXT
0068*
0069  00064 062151R LSTNL   LDA ULMSG
0070  00065 064046          LDB .-5
0071  00066 016006X MSRST   JSB MESSG      OUTPUT *UNLBL*
0072*
0073  00067 016354R         JSB RESET      RESTORE SUBCHNL
0074*
0075  00070 064055          LDB .+2
0076*
0077  00071 046261R LOD04   ADB GNFLG
0078  00072 002400          CLA
0079  00073 072261R         STA GNFLG
0080  00074 070330          STA XFLG
0081  00075 016162R         JSB XCLR
0082  00076 062002X         LDA DEF04
0083  00077 070305          STA TEMP
0084  00100 060057          LDA .+4
0085  00101 026001X         JMP $MDLD      LOAD SEX04
0086*
0087  00102 062121R NXSRC   LDA SBCHN
0088  00103 003000          CMA            SET NEXT SUBCHNL TO CHECK
0089  00104 070161          STA CUDSC
0090  00105 016322R         JSB LBLIN
0091  00106 062152R         LDA UDLBL
0092  00107 016005X         JSB ISLBL      IS DISC LABELED?
0093  00110 026122R         JMP NOLAB       =NO
0094  00111 064227          LDB RQP2
0095  00112 016305R         JSB COMPR      REQ LABEL = DISC LABEL?
0096  00113 026126R         JMP NEQL        =NO
0097*
0098  00114 060262  LSTUD   LDA SWAP
0099  00115 002002          SZA
0100  00116 016335R         JSB RPTSC
0101  00117 016233R         JSB SYCHK
0102  00120 026177R         JMP SETXT
0103*
0104  00121 000000  SBCHN   NOP
0105*
0106  00122 160227  NOLAB   LDA RQP2,I
0107  00123 010075          AND M1774
0108  00124 052133R         CPA UPAST      UNLABELED DISC REQUESTED?
0109  00125 026114R         JMP LSTUD
0110*
0111  00126 036121R NEQL    ISZ SBCHN      MORE SUBCHNLS?
0112  00127 026102R         JMP NXSRC       =YES, GO CHECK NEXT ONE
```

```
0113  00130 062267R        LDA NDMSG       =NO
0114  00131 064064         LDB .+9
0115  00132 026066R        JMP MSRST       GO RESET SUBCHNL
0116  00133 025000  UPAST  OCT 025000
0117*
0118  00134 160227  USRCH  LDA RQP2,I      LABEL PARAM?
0119  00135 002002         SZA
0120  00136 026102R        JMP NXSRC
0121  00137 072121R        STA SBCHN
0122  00140 016335R        JSB RPTSC
0123  00141 016322R        JSB LBLIN
0124  00142 016233R        JSB SYCHK
0125  00143 062152R        LDA UDLBL
0126  00144 016005X        JSB ISLBL       IS DISC LABELED?
0127  00145 026064R        JMP LSTNL        =NO
0128*
0129  00146 062153R LSTLB  LDA LBMSG
0130  00147 064041         LDB .-10
0131  00150 026066R        JMP MSRST       OUTPUT *LBL * XXXXXX*
0132*
0133  00151 000154R ULMSG  DEF *+3
0134  00152 000157R UDLBL  DEF *+5
0135  00153 000155R LBMSG  DEF *+2
0136  00154 052516         ASC 3,UNLBL=
0137  00157 000000         BSS 3
0138*
0139  00162 000000  XCLR   NOP
0140  00163 060245         LDA EXMOD
0141  00164 052170R        CPA N17
0142  00165 003004         CMA,INA
0143  00166 070245         STA EXMOD
0144  00167 126162R        JMP XCLR,I
0145  00170 177757  N17    DEC -17
0146*
0147  00171 000067R DFRST  DEF MSRST+1
0148*
0149  00172 160230  JPSET  LDA RQP3,I
0150  00173 070161         STA CUDSC
0151  00174 062171R        LDA DFRST
0152  00175 070330         STA XFLG
0153  00176 016322R        JSB LBLIN
0154*
0155  00177 006400  SETXT  CLB
0156  00200 076367R        STB STFLG       SET FLAG TO INDICATE CHANGE
0157  00201 066304R        LDB XSYS
0158  00202 016305R        JSB COMPR       LABEL = SYSTEM?
0159  00203 026211R        JMP NOTSY        =NO
0160  00204 006404         CLB,INB          =YES
0161  00205 062014X        LDA $B64
0162  00206 070200         STA DISCL
0163  00207 062334R        LDA .128
0164  00210 016004X        JSB LBLIO       GET USER AREA LABEL SECTOR
0165  00211 066014X NOTSY  LDB $B64
0166  00212 074157         STB UDNTS
0167*
0168  00213 016162R        JSB XCLR
```

```
0169  00214 006400         CLB
0170  00215 074330         STB XFLG
0171  00216 062261R        LDA GNFLG
0172  00217 002002         SZA
0173  00220 026071R        JMP LOD04
0174  00221 060225         LDA RQRTN  SET UP RETURN ADDR FOR $IRT
0175  00222 070137         STA XIRT
0176  00223 062367R        LDA STFLG     GET CHANGE/NOCHANGE FLAG
0177  00224 026015X        JMP $IRT      RESTORE INTERRUPT SYS,MEM PROT
0178*
0179*
0180  00225 016162R LOD19  JSB XCLR
0181  00226 062003X        LDA DEF19
0182  00227 070305         STA TEMP
0183  00230 062232R        LDA ,19
0184  00231 026001X        JMP $MDLD     LOAD SEX19 TO PROCESS $IN
0185  00232 000023  ,19    DEC 19
0186*
0187*
0188  00233 000000  SYCHK  NOP
0189  00234 060176         LDA SYSCD
0190  00235 052010X        CPA $B2       SYSGEN CODE = DISC GEN CODE?
0191  00236 026243R        JMP SYDOS      =YES
0192  00237 070274         STA $MDBF
0193  00240 062010X        LDA $B2
0194  00241 070275         STA $MDBF+1
0195  00242 036261R        ISZ GNFLG
0196  00243 062007X SYDOS  LDA $B1
0197  00244 052262R        CPA ASCDO     DOS PROPRIETARY CODE?
0198  00245 126233R        JMP SYCHK,I    =YES
0199  00246 066266R        LDB QBLNK
0200  00247 052263R        CPA ASCTS
0201  00250 066264R        LDB ASCB
0202  00251 056266R        CPB QBLNK
0203  00252 062265R        LDA QMRKS
0204  00253 072271R        STA PRMSG+1
0205  00254 076272R        STB PRMSG+2
0206  00255 062270R        LDA PRMSG
0207  00256 064043         LDB .-8
0208  00257 016006X        JSB MESSG     OUTPUT PROPRIETARY CODE WARNING
0209  00260 126233R        JMP SYCHK,I
0210*
0211  00261 000000  GNFLG  NOP
0212  00262 042117  ASCDO  ASC 1,DO
0213  00263 052123  ASCTS  ASC 1,TS
0214  00264 041040  ASCB   ASC 1,B
0215  00265 037477  QMRKS  ASC 1,??
0216  00266 037440  QBLNK  ASC 1,?
0217  00267 000273R NDMSG  DEF *+4
0218  00270 000271R PRMSG  DEF *+1
0219  00271 000000         BSS 2
0220  00273 042111         ASC 9,DISC NOT ON SYSTEM
0221  00304 000301R XSYS   DEF *-3
0222*
0223  00305 000000  COMPR  NOP
0224  00306 160001         LDA B,I
```

```
0225  00307 052011X        CPA $B3        1ST WORD = ?
0226  00310 006005         INB,RSS         =YES, CHECK NEXT
0227  00311 126305R        JMP COMPR,I     =NO, EXIT
0228  00312 160001         LDA B,I
0229  00313 052012X        CPA $B4        2ND WORD = ?
0230  00314 006005         INB,RSS         =YES, CHECK NEXT
0231  00315 126305R        JMP COMPR,I     =NO, EXIT
0232  00316 160001         LDA B,I
0233  00317 052013X        CPA $B5        3RD WORD = ?
0234  00320 036305R        ISZ COMPR       =YES, INCR, TO INDICATE MATCH
0235  00321 126305R        JMP COMPR,I
0236*
0237  00322 000000  LBLIN  NOP
0238  00323 006400         CLB
0239  00324 060161         LDA CUDSC
0240  00325 050155         CPA SYSSC
0241  00326 064115         LDB SYSBF
0242  00327 074200         STB DISCL
0243  00330 052334R        LDA .128
0244  00331 006404         CLB,INB
0245  00332 016004X        JSB LBLIO
0246  00333 126322R        JMP LBLIN,I
0247*
0248  00334 000200  .128   DEC 128
0249*
0250  00335 000000  RPTSC  NOP
0251  00336 060161         LDA CUDSC
0252  00337 032346R        IOR B60
0253  00340 001727         ALF,ALF
0254  00341 072354R        STA SCASC
0255  00342 062347R        LDA SCMSG
0256  00343 064042         LDB .-9
0257  00344 016006X        JSB MESSG      OUTPUT *SUBCHAN = N*
0258  00345 126335R        JMP RPTSC,I
0259*
0260  00346 000060  B60     OCT 60
0261  00347 000350R SCMSG   DEF *+1
0262  00350 051525          ASC 4,SUBCHAN*
0263*
0264  00354 000000  RESET   NOP
0265  00355 062365R         LDA SAVSC
0266  00356 070161          STA CUDSC      REDTORE ORIGINAL SUBCHNL
0267  00357 062366R         LDA SVDCL
0268  00360 070200          STA DISCL      RESTORE LABEL TRK/SCTR
0269  00361 060074          LDA M377
0270  00362 070163          STA LSTSK
0271  00363 072367R         STA STFLG      SET FLAG TO INDICATE NO CHANGE
0272  00364 126354R         JMP RESET,I
0273*
0274  00354           SCASC EQU RESET
0275  00365 000000  SAVSC   NOP
0276  00366 000000  SVDCL   NOP
0277  00367 000000  STFLG   NOP
0278*
0279  00000           A     EQU 0
0280  00001           B     EQU 1
```

```
0281   00053          .      EQU 53B
0282   00074          M377   EQU .+17
0283   00075          M1774  EQU .+18
0284   00100          *      EQU 100B
0285   00115          SYSBF  EQU *+13
0286   00126          RONBF  EQU *+22
0287   00137          XIRT   EQU RONBF+9
0288   00155          SYSSC  EQU *+45
0289   00156          LSTSC  EQU *+46
0290   00157          UDNTS  EQU *+47
0291   00161          CUDSC  EQU *+49
0292   00163          LSTSK  EQU *+51
0293   00176          SYSCD  EQU *+62
0294   00200          DISCL  EQU *+64
0295   00224          RQCNT  EQU *+84
0296   00225          RQRTN  EQU *+85
0297   00227          RQP2   EQU *+87
0298   00230          RQP3   EQU *+88
0299   00231          RQP4   EQU *+89
0300   00245          EXMOD  EQU *+101
0301   00262          SWAP   EQU *+114
0302   00274          $MDBF  EQU *+124
0303   00305          TEMP0  EQU *+205B
0304   00305          TEMP   EQU TEMP0
0305   00330          XFLG   EQU *+152
0306                         END
** NO ERRORS*
```

```
$B1     00006   00196

$B2     00006   00190   00193

$B3     00006   00225

$B4     00006   00229

$B5     00006   00233

$B64    00006   00161   00165

$EX17   00009   00003   00025

$IRT    00007   00177

$MDBF   00302   00017   00192   00194

$MDLD   00004   00085   00184

.       00281   00019   00032   00036   00070   00075   00084
        00114   00130   00207   00256   00282   00283

.128    00248   00163   00243

.19     00185   00183

*       00284   00285   00286   00288   00289   00290   00291
        00292   00293   00294   00295   00296   00297   00298
        00299   00300   00301   00302   00303   00305

*A      00279

ASCB    00214   00201

ASCDO   00212   00197

ASCNR   00022   00014

ASCPE   00023   00016

ASCTS   00213   00200

B       00260   00224   00228   00232

B60     00260   00252

COMPR   00223   00058   00095   00158   00227   00231   00234
        00235

CUDSC   00291   00027   00050   00089   00150   00239   00251
        00266

DEF04   00004   00082
```

DEF19	00004	00181				
DFERR	00025	00041				
DFRST	00147	00151				
DISCL	00294	00029	00162	00242	00268	
EXMOD	00300	00140	00143			
GNFLG	00211	00077	00079	00171	00195	
ISLBL	00005	00054	00092	00126		
JPSET	00149	00037				
LBLIN	00237	00051	00090	00123	00153	00246
LBLIO	00005	00164	00245			
LBMSG	00135	00129				
LOD04	00077	00020	00173			
LOD19	00180	00039				
LSTLB	00129	00059				
LSTNL	00059	00064	00127			
LSTSC	00289	00043				
LSTSK	00292	00270				
LSTUD	00098	00109				
M1774	00283	00065	00107			
M377	00282	00269				
MESSG	00005	00071	00208	00257		
MSRST	00071	00115	00131	00147		
N17	00145	00141				
NDMSG	00217	00113				
NEQL	00111	00012	00096			
NOLAB	00106	00093				
NOLBL	00062	00055				
NOTSY	00165	00159				

NXSRC	00087	00112	00120			
PRMSG	00218	00204	00205	00206		
QBLNK	00216	00199	00202			
QMRKS	00215	00203				
RESET	00264	00018	00073	00272	00274	
RONBF	00286	00287				
RPTSC	00250	00100	00122	00258		
RQCNT	00295	00031				
RQP2	00297	00057	00062	00094	00106	00118
RQP3	00298	00046	00149			
RQP4	00299	00035				
RQRTN	00296	00174				
SAVSC	00275	00028	00265			
SBCHN	00104	00010	00047	00087	00111	00121
SCASC	00274	00254				
SCMSG	00261	00255				
SETXT	00155	00060	00067	00102		
STFLG	00277	00156	00176	00271		
SVDCL	00276	00030	00267			
SWAP	00301	00098				
SYCHK	00188	00052	00101	00124	00198	00209
SYDOS	00196	00191				
SYSBF	00285	00241				
SYSCD	00293	00189				
SYSSC	00288	00240				
TEMP	00304	00083	00182			
TEMP0	00303	00304				
UDISC	00041	00034				

UDLBL	00134	00053	00091	00125	
UDNTS	00290	00166			
ULMSG	00133	00069			
UPAST	00116	00066	00108		
USRCH	00118	00049			
XCLR	00139	00081	00144	00168	00180
XFLG	00305	00042	00080	00152	00170
XIRT	00287	00175			
XNTRY	00027	00009			
XSYS	00221	00157			

```
0001                    ASMB,L,X,C,N,R,B     I/O CONTROL PROCESSOR MODULE (sE
**  NO ERRORS*
```

```
0001                    ASMB,L,X,C,N,R,B    I/O CONTROL PROCESSOR MODULE (SE
0002  00000                    NAM $EX18,1,0
0003                           ENT $EX18
0004                           EXT ERR01,ERR03,ERR04,ERR05
0005                           EXT LUCHK,$DMA,$MBSY,SETEQ
0006                           EXT DEF04
0007                           EXT $WAIT,DRIVR,ERRTN,$LDVR,IO.40
0008                           EXT $MDLD,$BLOP
0009                           EXT $IRT
0010*
0011***** INPUT/OUTPUT CONTROL PROCESSOR MODULE($EX18)
0012*
0013*     THE INPUT/OUTPUT CONTROL MODULE IS RESPONSIBLE FOR CONTROLLING
0014*   ALL INPUT/OUTPUT DEVICES.  IN ADDITION, IT ALLOCATES THE USE OF
0015*   THE TWO DMA CHANNELS.
0016*     ALL I/O DRIVERS ARE INITIATED BY <IOC>. THE CONTINUATION OR
0017*   COMPLETION SECTION OF DRIVER IS CALLED BY <$CIC> WHICH TURNS
0018*   CONTROL TO <$IOCM> UPON RETURN FROM DRIVER WITH A PROCESSING
0019*   COMPLETED INDICATION.
0020*     MULTIPLE DEVICES CAN BE DRIVEN BY THE SAME DRIVER SINCE THE
0021*   EQT ENTRY AREA IS USED FOR VARIABLE PARAMETER STORAGE.
0022*     THE LOCATION, EITHER CORE RESIDENT OR DISC RESIDENT, OF A
0023*   DRIVER IS DETERMINED AT THE TIME THE SYSTEM IS GENERATED.
0024*
0025***** EQUIPMENT TABLE, DEVICE REFERENCE TABLE, INTERRUPT TABLE *****
0026*
0027*     THE THREE TABLES CONTROL THE VARIOUS I/O DEVICES ON THE SYSTEM
0028*
0029*     I. EQUIPMENT TABLE - THE EQUIPMENT TABLE IS COMPOSED OF A 17
0030*                          WORD ARRAY FOR EACH DEVICE.
0031*
0032*          WORD      CONTENTS
0033*
0034*            1       DRIVER *INITIATION SECTION ADDRESS*
0035*            2       DRIVER *CONTINUATION SECTION ADDRESS*
0036*            3       D/R/UNIT#/CHANNEL#
0037*            4       A/TYPE/STATUS
0038*            5       RESERVED FOR SYSTEM USE
0039*            6       RESERVED FOR SYSTEM USE
0040*            7       REQUEST NORMAL RETURN
0041*            8       REQUEST CODE
0042*            9       REQUEST CONTROL WORD
0043*           10       REQUEST CONTROL WORD+1
0044*           11       REQUEST CONTROL WORD+2
0045*           12       REQUEST CONTROL WORD+3
0046*           13       REQUEST CONTROL WORD+4
0047*           14       TEMPORARY FOR DRIVER
0048*           15       UPPER MEMORY ADDRESS OF MAIN PROGRAM AREA
0049*           16       UPPER MEMORY ADDRESS OF BASE PAGE LINKAGE AREA
0050*           17       STARTING TRACK/SECTOR OF DRIVER ON DISC
0051*
0052*         NOTE:  WORDS 15,16, AND 17 ARE ZERO IF DRIVER IS CORE
0053*                RESIDENT.
0054*
0055*                D = 1 IF A DMA CHANNEL IS REQUIRED
0056*                R = 1 IF DRIVER IS RESIDENT
```

```
0057*              UNIT#= OPTIONAL FOR DEVICES REQUIRING SUB CHAN DESIGN,
0058*              CHNL#= I/O SELECT CODE (LOWER # IF MULTIBOARD)
0059*                 A = 0, UNIT AVAILABLE
0060*                   = 1, UNIT DISABLED
0061*                   = 2, UNIT CURRENTLY IN OPERATION
0062*                   = 3, UNIT WAITING FOR DMA
0063*              TYPE = CODE IDENTIFYING TYPE OF I/O DEVICE
0064*            STATUS= UNIT STATUS AT END OF OPERATION
0065*
0066*    II. DEVICE REFERENCE TABLE (LOGICAL UNIT TABLE) - THE DEVICE
0067*                    REFERENCE TABLE PROVIDES FOR LOGICAL ADDRESSING
0068*                    OF PHYSICAL UNITS DEFINED IN THE EQUIPMENT TABLE
0069*                    THIS TABLE CONSISTS OF 1-WORD ENTRIES CORRESP-
0070*                    ONDING TO THE RANGE OF USER-SPECIFIED LOGICAL
0071*                    UNITS. THE WORD CORRESPONDING TO A LOGICAL UNIT
0072*                    IS THE RELATIVE POSITION OF THE EQT ENTRY
0073*                    DEFINING THE ASSIGNED PHYSICAL UNIT.
0074*
0075*                    CERTAIN LO ICAL UNIT #S ARE PERMANENTLY ASSIGNED
0076*
0077*                          #     ASSIGNMENT
0078*
0079*                          1     SYSTEM TELETYPE
0080*                          2     SYSTEM DISC
0081*                          3     RESERVED FOR SYSTEM USE
0082*                          4     STANDARD PUNCH UNIT
0083*                          5     STANDARD INPUT UNIT
0084*                          6     STANDARD OUTPUT UNIT
0085*
0086*                          7           RESERVED
0087*                          8           FOR
0088*                          9           SYSTEM
0089*
0090*                         10           ASSIGNED
0091*                          .
0092*                          .           BY
0093*                          .
0094*                         63           USER
0095*
0096*   III. INTERRUPT TABLE - TABLE CORRESPONDING TO I/O INTERRUPT
0097*                          CHANNELS AND EQUIPMENT ASSIGNMENTS
```

```
0099***** INPUT/OUTPUT REQUEST PROCESSING *****
0100*
0101*     I/O REQUESTS INCLUDE COMMANDS FOR:
0102*               1. READING
0103*               2. WRITE
0104*               3. CONTROL
0105*               4. STATUS
0106*              FROM/TO/OF AN IO DEVICE
0107*
0108*     THE FORMAT IS IN THE GENERAL SYSTEM REQUEST FORMAT
0109*
0110*     I/O REQUESTS ARE DIRECTED TO <IOC> AT -$IORQ- BY THE EXECUTIVE
0111*  REQUEST PROCESSOR <EXEC>. USER REQUESTS CONTAIN POSITIVE REQUEST
0112*  CODES AND SYSTEM REQUESTS CONTAIN NEGATIVE REQUEST CODES.
0113*
0114*  *     A. STATUS REQUEST - THE *STATUS* REQUEST PROVIDES USER AND
0115*               SYSTEM PROGRAMS WITH DEVICE CONDITIONS. THIS REQUEST
0116*               SHOULD BE USED PRIOR TO MAKING A READ/WRITE/CONTROL
0117*               REQUEST. THE SYSTEM STORES THE DEVICE STATUS IN THE
0118*               SPECIFIED LOCATION AND RETURNS.
0119*
0120*
0121*
0122*               (P)       JSB  EXEC      CALL TO EXEC
0123*               (P+1)     DEF  *+4 OR *+5  DEFINE EXIT POINT
0124*               (P+2)     DEF  RCODE     DEFINE REQUEST CODE
0125*               (P+3)     DEF  CONWD     DEFINE CONTROL WORD
0126*               (P+4)     DEF  STATS     DEFINE STATUS ADDRESS
0127*               (P+5)     DEF  TLOG      DEFINE TRANSMISSION LOG
0128*               (P+6)     ---
0129*
0130*                  RCODE  DEC  13 OR -13
0131*                  CONWD  DEC  LOGICAL UNIT #
0132*                  STATS  NOP  STORE DEVICE STATUS ADDRESS
0133*                  TLOG   NOP  STORE TRANSMISSION LOG OF LAST TRANSFE
0134*
0135*
0136*     B.  READ/WRITE REQUEST - THERE ARE 3 TYPES OF READ/WRITE REQUES
0137*         1. READ/WRITE ON DEVICE OTHER THAN DISC  (RCODE=1 OR 2)
0138*
0139*               (P)       JSB  EXEC      CALL TO EXEC
0140*               (P+1)     DEF  *+5       DEFINE EXIT POINT
0141*               (P+2)     DEF  RCODE     DEFINE REQUEST CODE
0142*               (P+3)     DEF  CONWD     DEFINE CONTROL WORD
0143*               (P+4)     DEF  BUFFR     DEFINE BUFFER ADDRESS
0144*               (P+5)     DEF  BUFFL     DEFINE BUFFER LENGTH
0145*               (P+6)     ---
0146*
0147*         2. READ/WRITE ON WORK AREA OF DISC   (RCODE = 1 OR 2)
0148*
0149*               (P)       JSB  EXEC      CALL TO EXEC
0150*               (P+1)     DEF  *+7       DEFINE EXIT POINT
0151*               (P+2)     DEF  RCODE     DEFINE REQUEST CODE
0152*               (P+3)     DEF  CONWD     DEFINE CONTROL WORD
0153*               (P+4)     DEF  BUFFR     DEFINE BUFFER ADDRESS
0154*               (P+5)     DEF  BUFFL     DEFINE BUFFER LENGTH
```

```
0155*              (P+6)      DEF  DTRK       DEFINE DISC TRACK ADDRESS
0156*              (P+7)      DEF  DSECT      DEFINE DISC SECTOR ADDRESS
0157*              (P+9)      ---
0158*
0159*
0160*
0161*         3. READ/WRITE ON USER AREA OF DISC (RCODE = 14 OR 15)
0162*
0163*              (P)        JSB  EXEC       CALL TO EXEC
0164*              (P+1)       DEF *+7(OR 8)       DEFINE EXIT POINT
0165*              (P+2)      DEF  RCODE      DEFINE REQUEST CODE
0166*              (P+3)      DEF  CONWD      DEFINE CONTROL WORD
0167*              (P+4)      DEF  BUFFR      DEFINE BUFFER ADDRESS
0168*              (P+5)      DEF  BUFFL      DEFINE BUFFER LENGTH
0169*              (P+6)      DEF  FNAME      DEFINE FILE NAME
0170*              (P+7)      DEF  RSECT      DEFINE RELATIVE SECTOR
0171*              (P+8)       DEF OVFLO(OPTIONAL PARAMETER)
0172*              (P+9)       ---
0173*
0174*         WHERE
0175*
0176*            CONWD FORMAT IS AS FOLLOWS:
0177*
0178*               BITS       CONTENTS
0179*
0180*                 0-5      LOGICAL UNIT #
0181*                  6       MODE SPECIFICATION
0182*                               0=ASCII
0183*                               1=BINARY
0184*                  7        VARIABLE LENGTH INPUT CONTROL (PPT DEVICES)
0185*                               0=LENGTH DETERMINED BY BUFFER LENGTH
0186*                               1=LENGTH DETERMINED BY FIRST NON-ZERO
0187*                                 CHARACTER READ
0188*                  8        KEYBOARD INPUT PRINT SPECIFICATION
0189*                               0=DO NOT PRINT CHARACTERS AS RECEIVED
0190*                               1=PRINT CHARACTERS AS RECEIVED.
0191*                  9       AVAILABLE
0192*                 10        ABSOLUTE BINARY SPECIFICATION
0193*                              0=RELOCATABLE BIN IF BIT 6 & 7=1
0194*                              1= ABSOLUTE BINARY RECORD FORMAT IF
0195*                                 BIT 6 & 7 = 1
0196*               11-12       AVAILABLE
0197*                 13         WAIT OR CONTINUE OPTION
0198*                               0=WAIT TILL I/O OPERATION COMPLETE
0199*                               1=CONTINUE AFTER INITIATING I/O OPER.
0200*               14-15       MUST BE ZERO
0201*
0202*             RCODE IS 1,2,14,15 FOR USER CALLS
0203*                      -1,-2        FOR SYSTEM CALLS
0204*
0205*            BUFFR IS ADDRESS OF BUFFER
0206*            BUFFL IS BUFFER LENGTH
0207*                    +N FOR WORD COUNT
0208*                    -N FOR CHARACTER COUNT
0209*            FNAME IS ADDRESS OF ASCII FILE NAME
0210*            RSECT IS RELATIVE SECTOR WITHIN A FILE (0 THRU N-1)
```

```
0211*            OVFLO  IS THE NUMBER OF WORDS(+) OR CHARACTERS(-)
0212*                   REMAINING IN THE FILE.
0213*
0214*     C. CONTROL REQUEST (RCODE = 3 OR -3)
0215*
0216*                (P)       JSB  EXEC
0217*                (P+1)     DEF *+3 OR *+4 DEFINE EXIT ADDRESS
0218*                (P+2)     DEF  RCODE     DEFINE REQUEST CODE
0219*                (P+3)     DEF  CONWD     DEFINE CONTROL WORD
0220*                (P+4)     DEF  PARAM     DEFINE PARAM ADD
0221*                (P+5)     ---
0222*
0223*            CONWD FORMAT IS AS FOLLOWS:
0224*
0225*                 BITS     CONTENTS
0226*
0227*                 0-5      LOGICAL UNIT #
0228*                6-12      FUNCTION CODE
0229*                              00= CLEAR DEVICE
0230*                               01=WRITE END OF FILE        * FOR
0231*                               02=BACKSPACE 1 RECORD       * MAG
0232*                               03=FORWARD SPACE 1 RECORD   * TAPE
0233*                               04=REWIND                   * UNITS
0234*                               05=REWIND STANDBY           * ONLY
0235*
0236*                               06=SET EOT STATUS FOR PPT INPUT
0237*                               07= -UNUSED-
0238*                               10=GENERATE LEADER FOR PAPER TAPE
0239*                               11=LIST OUTPUT LINE SPACING
0240*                               12   *  CURRENTLY
0241*                                .   *  NOT
0242*                              177   *  ASSIGNED
0243*               13-15      MUST BE 0
0244*
0245*
0246  00000 006003  $EX18 SZB,RSS        INITIAL CALL IF NON-ZERO
0247  00001 026544R       JMP IO,45
0248  00002 160227        LDA RQP2,I     CHECK L. U. LEGALITY
0249  00003 064161        LDB CUDSC      CURRENT USER DISC SUBCHANNEL
0250  00004 076136R       STB SAVSC
0251  00005 050050        CPA ..-3       IF = -3 SET POS FOR LUCHK
0252  00006 003004        CMA,INA
0253  00007 070235        STA REQLU      SAVE POSITIVE CONWD
0254  00010 016005X       JSB LUCHK
0255  00011 060235        LDA REQLU           CHECK IF LUN SET TO NULL
0256  00012 010072        AND M77       GET LUN ONLY
0257  00013 040121        ADA LUTAB
0258  00014 040052        ADA ..-1            SET POINTER TO LUTAB
0259  00015 160000        LDA A,I             A = EQT ENTRY
0260  00016 002003        SZA,RSS     NULL? (=0)
0261  00017 026127R       JMP LUNUL
0262  00020 016112R       JSB CLR     CLEAR REQUEST?
0263  00021 002001        RSS
0264  00022 026033R       JMP E18,1
0265  00023 060206        LDA EQT4    YES,
0266  00024 050333        CPA TYEQT   SYSTEM TTY?
```

```
0267  00025 026001X        JMP ERR01  YES, CAN'T CLEAR IT
0268  00026 160206         LDA EQT4,I  GET EQUIP.TYPE
0269  00027 001727         ALF,ALF
0270  00030 010072         AND M77
0271  00031 052137R        CPA B31    CAN'T CLEAR DISC
0272  00032 026001X        JMP ERR01
0273  00033 160206  E18.1  LDA EQT4,I
0274  00034 001222         RAL,RAL
0275  00035 000010         SLA   DEVICE DOWN?
0276  00036 026467R        JMP LOD04      =YES
0277  00037 160205  E18.2  LDA EQT3,I
0278  00040 010072         AND M77
0279  00041 372162R        STA RQCHN
0280  00042 016140R        JSB ISCHN     COMPARE TO OTHER EQUIPMENTS
0281  00043 026055R        JMP IO.ZZ     CHAN COMPARES
0282  00044 362162R        LDA RQCHN     CHECK NEXT CHAN
0283  00045 002004         INA
0284  00046 016140R        JSB ISCHN     COMPARE TO OTHER EQUIPMENTS
0285  00047 026055R        JMP IO.ZZ     CHAN COMPARES
0286  00050 060061         LDA .6        CHECK CHAN 6
0287  00051 016140R        JSB ISCHN     COMPARE TO OTHER EQUIPMENTS
0288  00052 026055R        JMP IO.ZZ     CHAN COMPARES
0289  00053 060062         LDA .7        CHECK CHAN 7
0290  00054 016140R        JSB ISCHN     COMPARE TO OTHER EQUIPMENTS
0291  00055 006005  IO.ZZ  INB,RSS
0292  00056 064006         LDB EQT4      NOT ASSIGNED - CHECK THIS EQT
0293  00057 160001         LDA B,I      CHECK AVAILABLE BITS
0294  00060 002021         SSA,RSS
0295  00061 026163R        JMP IO.0Z    YES.
0296*
0297  00062 016112R        JSB CLR      IS IT CLEAR DEVICE REQUEST?
0298  00063 026163R        JMP IO.0Z     YES - DON'T WAIT.
0299*
0300  00064 060061         LDA .6        6 = DEVICE BUSY CODE.
0301  00065 016510R        JSB CHK0
0302  00066 060140  IO.B   LDA SVEQT
0303  00067 002002          SZA
0304  00070 016010X        JSB SETEQ     SET EQT ENTRIES FOR $BLOP
0305  00071 062162R        LDA RQCHN
0306  00072 056074R        LDB IO.A
0307  00073 026020X        JMP $BLOP
0308  00074 000002R IO.A DEF $EX18+2    RETURN WHEN DEVICE AVAILABLE
0309*
0310  00075 016663R IO.OK  JSB RTRNX     FREE EXEC MOD AREA
0311  00076 062136R        LDA SAVSC     RESTORE CURRENT USER SUBCHANNEL
0312  00077 070161         STA CUDSC
0313  00100 160213         LDA EQT9,I    CHECK IF I/O WITHOUT WAIT
0314  00101 001222         RAL,RAL
0315  00102 002021         SSA,RSS
0316  00103 026012X        JMP $WAIT
0317*
0318  00104 060053         LDA ..     OPERATION INITIATED.
0319  00105 072520R RETRN  STA ECODE    SAVE A REG TEMPORARILY.
0320  00106 060225         LDA RQRTN    SET UP RETURN ADDR FOR $IRT
0321  00107 070137         STA XIRT
0322  00110 062520R        LDA ECODE
```

```
0323  00111 026021X        JMP $IRT      RESTORE A REG & RETURN.
0324*
0325*
0326  00112 000000  CLR    NOP
0327  00113 160226         LDA RQP1,I     *  IF CLEAR DEVICE REQUEST,
0328  00114 002020         SSA            *
0329  00115 003004         CMA,INA        *  I.E. REQ CODE = 3 &
0330  00116 050056         CPA .3         *
0331  00117 002001         RSS            *  CONTROL FUNCTION = 0,
0332  00120 026125R        JMP CLR1       *
0333  00121 160227         LDA RQP2,I     *  THEN RETURN TO P+1, OR ELSE
0334  00122 012673R        AND MSKCL      *
0335  00123 002003         SZA,RSS        *  RETURN TO P+2
0336  00124 126112R        JMP CLR,I      *
0337  00125 036112R CLR1   ISZ CLR        *
0338  00126 126112R        JMP CLR,I      *
0339*
0340  00127 060070  LUNUL  LDA .15     CODE FOR NULL LUN
0341  00130 016510R        JSB CHK0    PRIV. MODE?
0342  00131 016663R        JSB RTRNX   NO. FREE EXEC MOD AREA
0343  00132 006400         CLB         SET TRANSMISSION LOG TO 0
0344  00133 062135R        LDA EOT       SET STATUS TO EOT
0345  00134 026106R        JMP RETRN
0346  00135 000200  EOT    OCT 200
0347  00136 000000  SAVSC  NOP
0348  00137 000031  B31    OCT 31
0349*
0350  00140 000000  ISCHN  NOP
0351  00141 040201         ADA INTAB
0352  00142 040045         ADA N6
0353  00143 050243         CPA EXLOC      END OF INTERRUPT TABLE?
0354  00144 026157R        JMP ISXT1       -YES, QUIT
0355  00145 072663R        STA RTRNX
0356  00146 164000         LDB A,I
0357  00147 074140         STB SVEQT      SAVE EQT1 ADDRESS
0358  00150 006003         SZB,RSS
0359  00151 026157R        JMP ISXT1
0360  00152 044055         ADB .2
0361  00153 160001         LDA B,I
0362  00154 010072         AND M77
0363  00155 052162R        CPA RQCHN
0364  00156 002001         RSS
0365  00157 036140R ISXT1  ISZ ISCHN
0366  00160 060203         LDA EQT1
0367  00161 126140R        JMP ISCHN,I
0368  00162 000000  RQCHN  NOP
0369  00163 062162R IO,0Z  LDA RQCHN
0370  00164 016140R        JSB ISCHN
0371  00165 172663R        STA RTRNX,I
0372  00166 062162R        LDA RQCHN
0373  00167 002004         INA
0374  00170 016140R        JSB ISCHN
0375  00171 172663R        STA RTRNX,I
0376  00172 160205         LDA EQT3,I    CHECK IF DRIVER CORE RESIDENT
0377  00173 001226         RAL,ELA
0378  00174 064315         LDB IODMD    CHECK IF IO DRIVER MOD AREA IN US
```

```
0379  00175 007061          CMB,SEZ,SSB,RSS
0380  00176 026445R          JMP IO,D
0381  00177 060235  IO,38 LDA REQLU      GET POSITIVE CONWD
0382  00200 010072          AND M77       LUN 3 =,S REQUEST TO USER DISC
0383  00201 050056          CPA ,3
0384  00202 034162          ISZ CRFLG     SET FLAG TO INDICATE USER DISC
0385  00203 160226          LDA RQP1,I    CHECK IF SYSTEM REQUEST
0386  00204 002021          SSA,RSS
0387  00205 026216R          JMP IO,5          NOT SYSTEM REQUEST
0388  00206 016527R          JSB ISDSC     CHECK IF DISC REQUEST
0389  00207 060316          LDA RCODE      =YES,
0390  00210 010063          AND .10B      USER FILE READ/WRITE?
0391  00211 002003          SZA,RSS        =YES,
0392  00212 026357R          JMP IO,10      =NO,
0393  00213 016663R IO,39 JSB RTRNX
0394  00214 026016X          JMP IO,40
0395*
0396  00215 000016  ,14    DEC 14
0397*
0398*   USER REQUEST PROCESSING
0399*
0400  00216 060316  IO,5   LDA RCODE     CHECK IF CONTROL REQUEST CODE
0401  00217 050056          CPA ,3
0402  00220 026534R          JMP IO,30         YES, SO GO TO PROCESS
0403*
0404*      PROCESS READ OR WRITE REQUEST PARAMETERS
0405*
0406  00221 064230          LDB RQP3      CHECK IF LEGAL BUFFER ADDRESS
0407  00222 007000          CMB
0408  00223 044254          ADB UMFWA
0409  00224 006021          SSB,RSS
0410  00225 026002X          JMP ERR03          BUF IN SYSTEM AREA
0411  00226 016640R          JSB NWDSX
0412  00227 044230          ADB RQP3
0413  00230 007044          CMB,SEZ,INB
0414  00231 026003X          JMP ERR04     CORE WRAP AROUND ERROR
0415  00232 044100          ADB UMLWA
0416  00233 006020          SSB
0417  00234 026003X          JMP ERR04     CORE WRAP AROUND
0418  00235 016527R          JSB ISDSC     CHECK IF DISC REQUEST
0419  00236 060316          LDA RCODE    CHECK IF USER FILE READ OR WRITE
0420  00237 010063          AND .10B
0421  00240 002002          SZA
0422  00241 026213R          JMP IO,39     USER FILE READ/WRITE
0423*
0424  00242 160227          LDA RQP2,I     CHECK IF DECREMENT TRACK REQUES
0425  00243 001700          ALF
0426  00244 002011          SLA,RSS           TEST BIT 12
0427  00245 026301R          JMP IO,8     NO, SO GO DO OTHER CHECKING
0428*      CHECK IF TRACK RUNS INTO USER AREA
0429  00246 060154          LDA DISCO    CHECK IF STARTING TRACK LEGAL
0430  00247 010076          AND M3777
0431  00250 003000          CMA
0432  00251 140232          ADA RQP5,I
0433  00252 002021          SSA,RSS           YES
0434  00253 026004X          JMP ERR05         NO
```

```
0435  00254 160232         LDA RQP5,I
0436  00255 072662R        STA TRKKS     REQ STARTING TRACK #
0437  00256 060313         LDA MSECT      COMPUTE # OF SECTORS REQUIRED
0438  00257 140233         ADA RQP6,I      AFTER CURRENT TRACK WRITTEN TO
0439  00260 042660R        ADA CNSEC      END
0440  00261 002002  IO,6    SZA
0441  00262 002020         SSA           CHECK IF MORE TRACKS NEEDED
0442  00263 026271R        JMP IO,6B      DONE-TRKKS IS SMALLEST TRK# REQU
0443  00264 007400         CCB
0444  00265 046662R        ADB TRKKS
0445  00266 076662R        STB TRKKS      DECREMENT REQ TRK# BY 1
0446  00267 040313         ADA MSECT
0447  00270 026261R        JMP IO,6      SEE IF MORE REQUIRED
0448  00271 060157  IO,6B LDA UDNTS     CHECK IF REQ NOW OVERLAPS USER
0449  00272 001727         ALF,ALF        AREA
0450  00273 010074         AND M377
0451  00274 003000         CMA
0452  00275 042662R        ADA TRKKS
0453  00276 002020         SSA                NO
0454  00277 026004X        JMP ERR05          YES
0455  00300 026357R        JMP IO,10
0456*
0457*    PROCESS DISC WORK FILE AREA READ/WRITE REQ
0458*
0459  00301 060154  IO,8    LDA DISCO      LAST TRACK
0460  00302 010076         AND M3777
0461  00303 070307         STA TEMP2
0462  00304 020154         XOR DISCO      ISOLATE SYSTEM DISC CHNL#
0463  00305 001722         ALF,RAL          AND ROTATE TO LO 8 BITS
0464  00306 006400         CLB
0465  00307 052162R        CPA RQCHN      REQUEST ON SYSTEM CHNL?
0466  00310 002401         CLA,RSS         -YES
0467  00311 026333R        JMP IO,9        -NO, SKIP JBIN + NXTTS CHECK
0468  00312 064161         LDB CUDSC      GET CURRENT USER SUBCHNL
0469  00313 050162         CPA CRFLG      REQUEST ON USER DISC?
0470  00314 064155         LDB SYSSC       -NO, GET SYSTEM SUBCHNL
0471  00315 054155         CPB SYSSC      REQUEST ON SYSTEM SUBCHNL?
0472  00316 060102         LDA JBINC      GET LAST JBIN TRACK #
0473  00317 001727         ALF,ALF
0474  00320 010074         AND M377
0475  00321 040052         ADA N1
0476  00322 002021         SSA,RSS        IS THERE A JBIN?
0477  00323 070307         STA TEMP2       -YES
0478  00324 060157         LDA UDNTS      GET NEXT AVAIL. USER TRK/SCTR
0479  00325 054155         CPB SYSSC      REQUEST ON SYSTEM SUBCHNL?
0480  00326 060160         LDA SYNTS       -YES, GET SYSTEM NEXT TRK/SCTR
0481  00327 040074         ADA M377
0482  00330 001727         ALF,ALF
0483  00331 010074         AND M377
0484  00332 070001         STA B
0485  00333 160232  IO,9    LDA RQP5,I     CHECK TRACK LIMITS
0486  00334 010074         AND M377
0487  00335 170232         STA RQP5,I
0488  00336 003000         CMA
0489  00337 040001         ADA B
0490  00340 002021         SSA,RSS
```

```
0491  00341 026004X        JMP ERR05          NOT IN WORK AREA
0492  00342 062660R        LDA CNSEC     # SECTORS REQUIRED
0493  00343 140233         ADA RQP6,I     ADD STARTING ADDRESS
0494  00344 040052         ADA N1
0495  00345 006401         CLB,RSS
0496  00346 006004         INB
0497  00347 040313         ADA MSECT
0498  00350 002021         SSA,RSS
0499  00351 026346R        JMP *-3
0500  00352 144232         ADB RQP5,I
0501  00353 007004         CMB,INB
0502  00354 044307         ADB TEMP2
0503  00355 006020         SSB
0504  00356 026004X        JMP ERR05          EXCEEDS LAST DISC TRACK
0505  00357 160233  IO.10  LDA RQP6,I     CHECK FOR SECTOR # > 23
0506  00360 170217         STA EQT13,I    SET SECTOR# IN EQT13
0507  00361 040313         ADA MSECT
0508  00362 002021         SSA,RSS
0509  00363 026004X        JMP ERR05      YES:  REPORT "IT" ERROR
0510  00364 160232         LDA RQP5,I     NO:  START TRACK NUMBER
0511  00365 001727         ALF,ALF
0512  00366 130233         IOR RQP6,I          START SECTOR #
0513  00367 164232         LDB RQP5,I     GET TRACK# FOR EQT12
0514  00370 070171  IO.11  STA UBUFR
0515  00371 060230         LDA RQP3       CORE ADDRESS
0516  00372 070172         STA UBUFR+1
0517  00373 160231         LDA RQP4,I     WORD COUNT
0518  00374 070173         STA UBUFR+2
0519  00375 060224         LDA RQCNT
0520  00376 012672R        AND MSK6       CAN ONLY TAKE 6 OR 7 PARAMS
0521  00377 050061         CPA .6
0522  00400 002001         RSS
0523  00401 026001X        JMP ERR01
0524  00402 062636R        LDA UBFR       GET UBUFR ADDRESS
0525  00403 170214  IO.14  STA EQT10,I    SET I/O BFR ADDRESS IN EQT10
0526  00404 174216         STB EQT12,I    SET TRACK# IN EQT12
0527  00405 160226  IO.16  LDA RQP1,I
0528  00406 170212         STA EQT8,I     SET REQUEST CODE IN EQT8
0529  00407 060225         LDA RQRTN
0530  00410 170211         STA EQT7,I     SET RETURN ADDRESS IN EQT7
0531  00411 160231         LDA RQP4,I
0532  00412 064316         LDB RCODE
0533  00413 054056         CPB .3
0534  00414 060231         LDA RQP4
0535  00415 170215         STA EQT11,I   SET BFR LENGTH IN EQT11,
0536  00416 064177         LDB JFLSC      GET JFILE SUBCHNL
0537  00417 160227         LDA RQP2,I     GET CONWA
0538  00420 050050         CPA ..-3       REQUEST FOR IFILE READ?
0539  00421 074161         STB CUDSC       -YES, SET JFLSC AS CUDSC
0540  00422 002020         SSA
0541  00423 003004         CMA,INA
0542  00424 170213         STA EQT9,I     SET POSITIVE CONWD IN EQT9
0543  00425 016013X IO.15  JSB DRIVR     CALL DRIVER INITIATION PROCESSOR
0544  00426 026075R        JMP IO.OK        OPERATION INITIATED
0545  00427 066136R        LDB SAVSC      RESTORE CURRENT USER SUBCHANNEL
0546  00430 074161         STB CUDSC
```

```
0547  00431 016510R        JSB CHK0     PRIVILEGED MODE?
0548  00432 050060         CPA .5       NO.  CHECK IF WAITING FOR DMA
0549  00433 026522R        JMP IO.18
0550  00434 050055         CPA .2        CHECK IF CONTROL OPERATION REJECT
0551  00435 026460R        JMP IO.E
0552  00436 050056         CPA .3         CHECK IF READ/WRITE ILLEGAL
0553  00437 026473R        JMP LOD05      =YES
0554  00440 050061         CPA .6         DOES DRIVER REQUIRE A WAIT?
0555  00441 026066R        JMP IO.B
0556  00442 050057         CPA .4         CHECK IF NO ACTION RETURN
0557  00443 026460R        JMP IO.E
0558  00444 026014X        JMP ERRTN
0559*
0560  00445 016112R IO.D    JSB CLR      CLEAR REQUEST?
0561  00446 002001         RSS          YES.
0562  00447 026454R        JMP IO.D1    NO.
0563  00450 060315         LDA IODMD    IS THE DRIVER BUSY THE SAME
0564  00451 003004         CMA,INA       ONE FOR CLEAR REQUEST?
0565  00452 050203         CPA EQT1
0566  00453 026177R        JMP IO.38     YES. = DON'T WAIT.
0567  00454 060062 IO.D1   LDA .7       7 = DRIVER AREA BUSY CODE.
0568  00455 016510R        JSB CHK0
0569  00456 016007X        JSB $MBSY      BIT 0 NOT SET. WAIT.
0570  00457 026177R        JMP IO.38
0571*
0572  00460 064133 IO.E     LDB MDFLG      BIT 15 OF MDFLG SET?
0573  00461 006020         SSB
0574  00462 026514R        JMP CHK15       YES= SET RETURN CODE
0575  00463 016663R        JSB RTRNX      RELEASE EXEC MODULE
0576  00464 006400         CLB
0577  00465 160206         LDA EQT4,I
0578  00466 026105R        JMP RETRN
0579*
0580*
0581  00467 016112R LOD04  JSB CLR        CLEAR REQUEST?
0582  00470 026503R        JMP LOD06      YES. GO UP THE DEVICE
0583  00471 060056         LDA .3         CODE 3 = DEVICE DOWN.
0584  00472 016510R        JSB CHK0
0585  00473 060203 LOD05   LDA EQT1
0586  00474 070274         STA $MDBF
0587  00475 062011X        LDA DEF04
0588  00476 070305         STA TEMP
0589  00477 016663R        JSB RTRNX
0590  00500 066521R        LDB .18
0591  00501 060057         LDA .4
0592  00502 026017X        JMP $MDLD      LOAD IN EX04
0593*
0594  00503 160206 LOD06   LDA EQT4,I
0595  00504 012507R        AND UPBIT      CLEAR DOWN BIT
0596  00505 170206         STA EQT4,I
0597  00506 026037R        JMP E18,2      CONTINUE TO CLEAR DEVICE
0598  00507 137777 UPBIT   OCT 137777
0599*
0600*
0601* SUBROUTINE TO CHECK IF BIT 0 OF MDFLG = 1, IF SO,
0602* RETURN TO USER, OTHERWISE RETURN TO L+1.
```

```
0603* ON ENTRY, A-REG MAY CONTAIN ERROR CODE 1 THRU 7.
0604*
0605  00510 000000  CHK0   NOP
0606  00511 064133         LDB MDFLG     BIT 0 OF MDFLG=1?
0607  00512 006011         SLB,RSS
0608  00513 126510R        JMP CHK0,I  NO, RETURN
0609  00514 072520R CHK15  STA ECODE     SAVE A-REG (ERROR CODE)
0610  00515 016663R        JSB RTRNX   YES, FREE MOD, AREA
0611  00516 062520R        LDA ECODE   SET A TO ERROR CODE
0612  00517 026105R        JMP RETRN   RETURN TO USER.
0613  00520 000000  ECODE  NOP
0614*
0615  00521 000022  .18    DEC 18
0616*
0617  00522 062524R IO,18   LDA *+2
0618  00523 026006X         JMP $DMA      GO WAIT FOR DMA CHANNEL TO BE FRE
0619  00524 000425R         DEF IO,15
0620*
0621  00525 037400  ETYPE  OCT 37400
0622  00526 014400  DISC   OCT 14400
0623*
0624  00527 000000  ISDSC  NOP
0625  00530 160206         LDA EQT4,I
0626  00531 012525R        AND ETYPE
0627  00532 052526R        CPA DISC
0628  00533 126527R        JMP ISDSC,I
0629  00534 016015X IO,30  JSB $LDVR      CALL TO LOAD IN I/O DRIVER
0630  00535 060230         LDA RQP3      GET REQ BFR ADDRESS
0631  00536 064316         LDB RCODE
0632  00537 054056         CPB ,3        CONTROL REQUEST
0633  00540 160230         LDA RQP3,I     -YES, GET CONTROL PARAMETE
0634  00541 006400         CLB
0635  00542 174217         STB EQT13,I
0636  00543 026403R        JMP IO,14
0637*     VERIFY THAT FULL REQUEST IS WITHIN FILE LIMITS
0638*
0639  00544 160233  IO,45  LDA RQP6,I    STARTING RELATIVE SECTOR #
0640  00545 002020         SSA          NEGATIVE?
0641  00546 026004X        JMP ERR05      YES,  ERROR
0642  00547 170217         STA EQT13,I   SET REL, SCTR# IN EQT13
0643  00550 003004         CMA,INA
0644  00551 040132         ADA RONBF+4   #SCTRS IN FILE
0645  00552 070307         STA TEMP2    TOTAL SECTOR - STARTING SECTOR
0646  00553 002003         SZA,RSS    STARTING REL SEC,TOO BIG?
0647  00554 026004X        JMP ERR05   YES, ERROR,
0648  00555 016640R        JSB NWDSX
0649  00556 160227          LDA RQP2,I
0650  00557 001710          ALF,SLA
0651  00560 026014X         JMP ERRTN
0652  00561 060161         LDA CUDSC
0653  00562 072136R        STA SAVSC
0654  00563 062660R        LDA CNSEC    # SECTORS REQUIRED
0655  00564 003004         CMA,INA
0656  00565 040307         ADA TEMP2
0657  00566 002020         SSA          SKIP IF WITHIN FILE LIMITS
0658  00567 026616R        JMP LMTER      OVERFLOW OCCURS.
```

```
0659*
0660*  IF 7 PARAMETERS, THEN CLEAR RQP7,I,  TO INDICATE
0661*     NO OVERFLOW.
0662*
0663  00570 060224         LDA RQCNT
0664  00571 050061         CPA .6       6 PARAM?
0665  00572 026575R        JMP *+3      YES. GO ON.
0666  00573 002400         CLA           NO. CLEAR RQP7
0667  00574 170234         STA RQP7,I
0668*
0669  00575 060131  IO,46 LDA RONBF+3  FORM START TRK/SCTR
0670  00576 010075         AND M1774
0671  00577 070001         STA B
0672  00600 005727         BLF,BLF
0673  00601 020131         XOR RONBF+3
0674  00602 140233         ADA RQP6,I
0675  00603 040313  IO,50 ADA MSECT
0676  00604 002020         SSA
0677  00605 026610R        JMP IO,60
0678  00606 005004         INB
0679  00607 026603R        JMP IO,50
0680  00610 040116  IO,60 ADA SECTR
0681  00611 005727         BLF,BLF
0682  00612 030001         IOR B
0683  00613 064232         LDB RQP5
0684  00614 034162         ISZ CRFLG     SET FOR USER DISC REQUESTS
0685  00615 026370R        JMP IO,11
0686*
0687*** IF OVERFLOW OCCURS, AND THERE ARE 7 PARAM, THEN
0688*       SET THE 7TH PARAM EQUAL TO THE NUMBER OF
0689*       WORDS(+) OR CHARACTERS(-) (AS DEFINED BY
0690*       BUFFER LENGTH) REMAINING IN THE FILE.  IF THE
0691*       7TH PARAM IS OMITTED, THEN GO TO NORMAL
0692*       ERROR HANDLING PART.
0693*
0694  00616 060224  LMTER LDA RQCNT
0695  00617 050062         CPA .7        7 PARAM?
0696  00620 002001         RSS
0697  00621 026004X        JMP ERR05    NO, NORMAL  ERROR HANDLING.
0698  00622 060307         LDA TEMP2    MAX # SECTORS CAN BE READ/WRITTEN
0699  00623 001727         ALF,ALF      CONVERT TO # WORDS (*128)
0700  00624 001300         RAR
0701  00625 164231         LDB RQP4,I    WANT LENGTH IN # WORDS?
0702  00626 006021         SSB,RSS
0703  00627 026632R        JMP *+3       YES
0704  00630 001200         RAL           NO, CHANGE TO # CHARACTERS
0705  00631 003004         CMA,INA
0706  00632 170234         STA RQP7,I   STORE INTO LAST PARAMETER.
0707  00633 016663R        JSB RTRNX    FREE MOD. AREA
0708  00634 062521R        LDA .18      A=18: IT ERR CODE FOR PRIV.MODE RE
0709  00635 026105R        JMP RETRN    RETURN TO USER
0710*
0711  00636 000171  UBFR DEF UBUFR
0712  00637 000000  NWDS  NOP
0713*
0714  00640 000000  NWDSX NOP
```

```
0715  00641 164231          LDB RQP4,I     CHECK WORD COUNT
0716  00642 006121          CLE,SSB,RSS
0717  00643 026646R         JMP *+3
0718  00644 005100          BRS
0719  00645 007004          CMB,INB
0720  00646 076637R         STB NWDS
0721  00647 072661R         STA NWTEM      SAVE A REGISTER
0722  00650 062637R         LDA NWDS       CONVERT # OF WORDS
0723  00651 040073          ADA M177
0724  00652 001727          ALF,ALF
0725  00653 001200          RAL
0726  00654 010074          AND M377
0727  00655 072660R         STA CNSEC      # OF SECTORS REQUIRED
0728  00656 062661R         LDA NWTEM      RESTORE A
0729  00657 126640R         JMP NWDSX,I
0730  00660 000000  CNSEC    NOP            # OF SECTORS REQUIRED
0731  00661 300000  NWTEM    NOP       SAVE A REG
0732  00662 000000  TRKKS    NOP            REQUIRED TRACK ADDRESS
0733*
0734  00663 000000  RTRNX    NOP             FREE EX MODULE AREA
0735  00664 060245          LDA EXMOD
0736  00665 052671R         CPA N18
0737  00666 003004          CMA,INA         SET THIS MOD IN AND AVAILABLE
0738  00667 070245          STA EXMOD
0739  00670 126663R         JMP RTRNX,I
0740*
0741  00671 177756  N18      DEC -18
0742  00672 177776  MSK6     OCT 177776
0743  00673 017700  MSKCL    OCT 17700      MASK OFF CONTROL FUNCTION
```

```
0745  00000          A       EQU 0
0746  00001          B       EQU 1
0747  00053          ..      EQU 53B
0748  00045          N6      EQU ..-6
0749  00052          N1      EQU ..-1
0750  00055          .2      EQU ..+2
0751  00056          .3      EQU ..+3
0752  00057          .4      EQU ..+4
0753  00060          .5      EQU ..+5
0754  00061          .6      EQU ..+6
0755  00062          .7      EQU ..+7
0756  00063          .10B    EQU ..+8
0757  00070          .15     EQU ..+13
0758  00072          M77     EQU ..+15
0759  00073          M177    EQU ..+16
```

```
0760  00074          M377   EQU ..+17
0761  00075          M1774  EQU ..+18
0762  00076          M3777  EQU ..+19
0763  00100          .      EQU 100B       STARTING ADDR OF SYSTEM COMMUN.
0764  00100          UMLWA  EQU .+0        LWA OF USEABLE MEMORY
0765  00102          JBINC  EQU .+2        CURRENT TR/SEC OF JBIN AREA
0766  00116          SECTR  EQU .+14
0767  00121          LUTAB  EQU .+17
0768  00126          RONBF  EQU .+22
0769  00137          XIRT   EQU RONBF+9
0770  00140          SVEQT  EQU RONBF+10
0771  00154          DISCO  EQU .+44       IO CHNL #/ LAST TRACK ON DISC
0772  00155          SYSSC  EQU .+45
0773  00157          UDNTS  EQU .+47
0774  00160          SYNTS  EQU .+48
0775  00161          CUDSC  EQU .+49       CURRENT USER DISC SUBCHANNEL
0776  00162          CRFLG  EQU .+50       CURRENT REQUEST SUBCHANNEL
0777  00171          UBUFR  EQU .+57       USER DISC TRIPLET PARAM BUFFER
0778  00177          JFLSC  EQU .+63       JFILE SUBCHANNEL
0779  00201          INTAB  EQU .+65       START ADDRESS OF INTERRUPT TABLE
0780  00203          EQT1   EQU .+67       ADDRESSES
0781  00205          EQT3   EQU .+69       OF
0782  00206          EQT4   EQU .+70
0783  00211          EQT7   EQU .+73       EQUIPMENT
0784  00212          EQT8   EQU .+74
0785  00213          EQT9   EQU .+75       TABLE
0786  00214          EQT10  EQU .+76
0787  00215          EQT11  EQU .+77
0788  00216          EQT12  EQU .+78       ENTRY
0789  00217          EQT13  EQU .+79
0790  00224          RQCNT  EQU .+84       # OF REQUEST PARAMETERS
0791  00225          RQRTN  EQU .+85       REQUEST RETURN ADDRESS
0792  00226          RQP1   EQU .+86       ADDRESSES
0793  00227          RQP2   EQU .+87
0794  00230          RQP3   EQU .+88       OF
0795  00231          RQP4   EQU .+89
0796  00232          RQP5   EQU .+90       REQUEST
0797  00233          RQP6   EQU .+91
0798  00234          RQP7   EQU .+92
0799  00235          REQLU  EQU .+93
0800  00243          EXLOC  EQU .+99
0801  00245          EXMOD  EQU .+101      CURRENT EX MODULE NUMBER
0802  00254          UMFWA  EQU .+108      FWA OF USER MAIN AREA
0803*
0804  00274          $MDBF  EQU .+124
0805  00305          TEMP0  EQU .+205B
0806  00305          TEMP   EQU TEMP0
0807  00307          TEMP2  EQU .+135
0808  00313          MSECT  EQU .+139      NEG OF SECTORS/CYC VALUE =-24
0809  00314          VADR   EQU .+140
0810  00315          IODMD  EQU .+141      RES I/O DRIVER MODULE FLAG
0811  00316          RCODE  EQU .+142
0812  00133          MDFLG  EQU .+33B
0813  00333          TYEQT  EQU .+155
0814                        END
** NO ERRORS*
```

```
$BLOP   00008/02 00307/02

$DMA    00005/02 00618/02

$EX18   00246/02 00003/02 00308/02

$IRT    00009/02 00323/02

$LDVR   00007/02 00629/02

$MBSY   00005/02 00569/02

$MDBF   00804/02 00586/02

$MDLD   00008/02 00592/02

$WAIT   00007/02 00316/02

.       00763/02 00764/02 00765/02 00766/02 00767/02 00768/02 00771/02
        00772/02 00773/02 00774/02 00775/02 00776/02 00777/02 00778/02
        00779/02 00780/02 00781/02 00782/02 00783/02 00784/02 00785/02
        00786/02 00787/02 00788/02 00789/02 00790/02 00791/02 00792/02
        00793/02 00794/02 00795/02 00796/02 00797/02 00798/02 00799/02
        00800/02 00801/02 00802/02 00804/02 00805/02 00807/02 00808/02
        00809/02 00810/02 00811/02 00812/02 00813/02

..      00747/02 00251/02 00258/02 00318/02 00538/02 00748/02 00749/02
        00750/02 00751/02 00752/02 00753/02 00754/02 00755/02 00756/02
        00757/02 00758/02 00759/02 00760/02 00761/02 00762/02

.10B    00756/02 00390/02 00420/02

.14     00396/02

.15     00757/02 00340/02

.18     00615/02 00590/02 00708/02

.2      00750/02 00360/02 00550/02

.3      00751/02 00330/02 00383/02 00401/02 00533/02 00552/02 00583/02
        00632/02

.4      00752/02 00556/02 00591/02

.5      00753/02 00548/02

.6      00754/02 00286/02 00300/02 00521/02 00554/02 00664/02

.7      00755/02 00289/02 00567/02 00695/02

A       00745/02 00259/02 00356/02

B       00746/02 00293/02 00361/02 00484/02 00489/02 00671/02 00682/02
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B31 00348/02 00271/02

CHK0 00605/02 00301/02 00341/02 00547/02 00568/02 00584/02 00608/02

CHK15 00609/02 00574/02

CLR 00326/02 00262/02 00297/02 00336/02 00337/02 00338/02 00560/02
00581/02

CLR1 00337/02 00332/02

CNSEC 00730/02 00439/02 00492/02 00654/02 00727/02

CRFLG 00776/02 00384/02 00469/02 00684/02

CUDSC 00775/02 00249/02 00312/02 00468/02 00539/02 00546/02 00652/02

DEF04 00006/02 00587/02

DISC 00622/02 00627/02

DISCO 00771/02 00429/02 00459/02 00462/02

DRIVR 00007/02 00543/02

E18.1 00273/02 00264/02

E18.2 00277/02 00597/02

ECODE 00613/02 00319/02 00322/02 00609/02 00611/02

EOT 00346/02 00344/02

EQT1 00780/02 00366/02 00565/02 00585/02

EQT10 00786/02 00525/02

EQT11 00787/02 00535/02

EQT12 00788/02 00526/02

EQT13 00789/02 00506/02 00635/02 00642/02

EQT3 00781/02 00277/02 00376/02

EQT4 00782/02 00265/02 00268/02 00273/02 00292/02 00577/02 00594/02
00596/02 00625/02

EQT7 00783/02 00530/02

EQT8 00784/02 00528/02

EQT9 00785/02 00313/02 00542/02

ERR01 00004/02 00267/02 00272/02 00523/02

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 ERR03  00004/02 00410/02

 ERR04  00004/02 00414/02 00417/02

 ERR05  00004/02 00434/02 00454/02 00491/02 00504/02 00509/02 00641/02
        00647/02 00697/02

 ERRTN  00007/02 00558/02 00651/02

 ETYPE  00621/02 00626/02

 EXLOC  00800/02 00353/02

 EXMOD  00801/02 00735/02 00738/02

 INTAB  00779/02 00351/02

 IO.0Z  00369/02 00295/02 00298/02

 IO.10  00505/02 00392/02 00455/02

 IO.11  00514/02 00685/02

 IO.14  00525/02 00636/02

 IO.15  00543/02 00619/02

*IO.16  00527/02

 IO.18  00617/02 00549/02

 IO.30  00629/02 00402/02

 IO.38  00381/02 00566/02 00570/02

 IO.39  00393/02 00422/02

 IO.40  00007/02 00394/02

 IO.45  00639/02 00247/02

*IO.46  00669/02

 IO.5   00400/02 00387/02

 IO.50  00675/02 00679/02

 IO.6   00440/02 00447/02

 IO.60  00680/02 00677/02

 IO.68  00448/02 00442/02

 IO.8   00459/02 00427/02

 IO.9   00485/02 00467/02
```

IO.A 00308/02 00306/02

IO.B 00302/02 00555/02

IO.D 00560/02 00380/02

IO.D1 00557/02 00562/02

IO.E 00572/02 00551/02 00557/02

IO.OK 00310/02 00544/02

IO.ZZ 00291/02 00281/02 00285/02 00288/02

IODMD 00810/02 00378/02 00563/02

ISCHN 00350/02 00280/02 00284/02 00287/02 00290/02 00365/02 00367/02
00370/02 00374/02

ISDSC 00624/02 00388/02 00418/02 00628/02

ISXT1 00365/02 00354/02 00359/02

JBINC 00765/02 00472/02

JFLSC 00778/02 00536/02

LMTER 00694/02 00658/02

LOD04 00581/02 00276/02

LOD05 00585/02 00553/02

LOD06 00594/02 00582/02

LUCHK 00005/02 00254/02

LUNUL 00340/02 00261/02

LUTAB 00767/02 00257/02

M177 00759/02 00723/02

M1774 00761/02 00670/02

M377 00760/02 00450/02 00474/02 00481/02 00483/02 00486/02 00726/02

M3777 00762/02 00430/02 00460/02

M77 00758/02 00256/02 00270/02 00278/02 00362/02 00382/02

MDFLG 00812/02 00572/02 00606/02

MSECT 00808/02 00437/02 00446/02 00497/02 00507/02 00675/02

MSK6 00742/02 00520/02

MSKCL 00743/02 00334/02

N1 00749/02 00475/02 00494/02

N18 00741/02 00736/02

N6 00748/02 00352/02

NWDS 00712/02 00720/02 00722/02

NWDSX 00714/02 00411/02 00648/02 00729/02

NWTEM 00731/02 00721/02 00728/02

RCODE 00811/02 00389/02 00400/02 00419/02 00532/02 00631/02

REQLU 00799/02 00253/02 00255/02 00381/02

RETRN 00319/02 00345/02 00578/02 00612/02 00709/02

RONBF 00768/02 00644/02 00669/02 00673/02 00769/02 00770/02

RQCHN 00368/02 00279/02 00282/02 00305/02 00363/02 00369/02 00372/02
00465/02

RQCNT 00790/02 00519/02 00663/02 00694/02

RQP1 00792/02 00327/02 00385/02 00527/02

RQP2 00793/02 00248/02 00333/02 00424/02 00537/02 00649/02

RQP3 00794/02 00406/02 00412/02 00515/02 00630/02 00633/02

RQP4 00795/02 00517/02 00531/02 00534/02 00701/02 00715/02

RQP5 00796/02 00432/02 00435/02 00485/02 00487/02 00500/02 00510/02
00513/02 00683/02

RQP6 00797/02 00438/02 00493/02 00505/02 00512/02 00639/02 00674/02

RQP7 00798/02 00667/02 00706/02

RQRTN 00791/02 00320/02 00529/02

RTRNX 00734/02 00310/02 00342/02 00355/02 00371/02 00375/02 00393/02
00575/02 00589/02 00610/02 00707/02 00739/02

SAVSC 00347/02 00250/02 00311/02 00545/02 00653/02

SECTR 00766/02 00680/02

SETEQ 00005/02 00304/02

SVEQT 00770/02 00302/02 00357/02

```
 SYNTS  00774/02 00480/02
 SYSSC  00772/02 00470/02 00471/02 00479/02
 TEMP   00806/02 00588/02
 TEMP0  00805/02 00806/02
 TEMP2  00807/02 00461/02 00477/02 00502/02 00645/02 00656/02 00698/02
 TRKKS  00732/02 00436/02 00444/02 00445/02 00452/02
 TYEQT  00813/02 00266/02
 UBFR   00711/02 00524/02
 UBUFR  00777/02 00514/02 00516/02 00518/02 00711/02
 UDNTS  00773/02 00448/02 00478/02
 UMFWA  00802/02 00408/02
 UMLWA  00764/02 00415/02
 UPBIT  00598/02 00595/02
*VADR   00809/02
 XIRT   00769/02 00321/02
```

```
0001                    ASMB,L,X,C,N,R,B    PROCESS :IN DIRECTIVE (SEX19)
**  NO ERRORS*
```

```
0001                    ASMB,L,X,C,N,R,B    PROCESS !IN DIRECTIVE ($EX19)
0002  00000                    NAM $EX19,1,0
0003                           ENT $EX19
0004                           EXT $SYIO,$WAIT,$DISC
0005                           EXT LBLIO,ISLBL,LBLMV,CHSUM,MESSG
0006                           EXT $B1,$B2,$B3,$B4,$B5,$B31,$B64,$B65
0007                           EXT $B66,$B95,$B128,$BUF
0008                           EXT $IRT
0009*
0010  00000 060200  $EX19 LDA DISCL
0011  00001 072367R       STA SVDCL      SAVE LABEL TRK/SCTR
0012*
0013* RESOLVE ADDRESS OF $BUF
0014*
0015  00002 062124R       LDA DFLBL
0016  00003 002001        RSS
0017  00004 160000        LDA 0,I
0018  00005 001275        RAL,CLE,SLA,ERA
0019  00006 026004R       JMP *-2
0020  00007 072124R       STA DFLBL      ADDRESS OF $BUF+3
0021  00010 042126R       ADA .92
0022  00011 072125R       STA XSYLB      ADDRESS OF $BUF+95

0024  00012 064161        LDB CUDSC
0025  00013 002400        CLA
0026  00014 072370R       STA NEWDR
0027  00015 072371R       STA TRCNT
0028  00016 054155        CPB SYSSC
0029  00017 062367R       LDA SVDCL
0030  00020 070200        STA DISCL
0031  00021 062225R       LDA .128
0032  00022 006404        CLB,INB
0033  00023 016004X       JSB LBLIO      GET LABEL SECTOR
0034  00024 062136R       LDA INLBL
0035  00025 016005X       JSB ISLBL      IS IT ALREADY LABELED
0036  00026 002301        CCE,RSS         =NO, GO LABEL IT
0037  00027 026166R       JMP OKGO        =YES, GO ASK *OK TO PURGE*
0038*
0039  00030 066131R OKPRG LDB ASCLB
0040  00031 160227        LDA RQP2,I
0041  00032 010075        AND M1774
0042  00033 052127R       CPA UPAST      LABEL PARAM = UNLBL?
0043  00034 006500        CLB,CLE         =YES, CLEAR LABEL CODE
0044  00035 076024X       STB $BUF       SET LABEL/UNLBL CODE
0045  00036 062133R       LDA ASCSY
0046  00037 052013X       CPA $B3
0047  00040 066014X       LDB $B4
0048  00041 056134R       CPB ASCSY+1
0049  00042 062015X       LDA $B5
0050  00043 052135R       CPA ASCSY+2
0051  00044 026230R       JMP $YLBL
0052*
0053  00045 062132R NOTSY LDA ASCDO
0054  00046 052011X       CPA $B1        DOS DISC?
0055  00047 002001        RSS             =YES
0056  00050 026317R       JMP NWLBL       =NO
```

```
0057  00051 060176          LDA SYSCD
0058  00052 072012X         STA $B2         SET SYSTEM GENERATION CODE
0059  00053 060227          LDA RQP2
0060  00054 066124R         LDB DFLBL
0061  00055 016006X         JSB LBLMV       SET REQUEST LABEL
0062  00056 016007X         JSB CHSUM       COMPUTE CHECKSUM
0063  00057 072016X         STA $B31          AND SET
0064  00060 060200          LDA DISCL
0065  00061 042130R         ADA .400
0066  00062 066024X         LDB $BUF
0067  00063 006002          SZB
0068  00064 062017X         LDA $B64
0069  00065 072017X         STA $B64
0070  00066 070157          STA UDNTS
0071  00067 064161          LDB CUDSC
0072  00070 054155          CPB SYSSC
0073  00071 070160          STA SYNTS
0074  00072 062225R         LDA .128
0075  00073 066024X         LDB $BUF
0076  00074 006003          SZB,RSS         UNLABLING?
0077  00075 002004          INA
0078  00076 076023X         STB $B128
0079  00077 064055          LDB .+2
0080  00100 016004X         JSB LBLIO       OUTPUT LABEL
0081  00101 060161          LDA CUDSC
0082  00102 050175          CPA GUDSC       NEW S/C = DEFAULT S/C?
0083  00103 006405          CLB,INB,RSS      =YES
0084  00104 026357R         JMP EXIT
0085  00105 060155          LDA SYSSC
0086  00106 070161          STA CUDSC
0087  00107 060115          LDA SYSBF
0088  00110 070200          STA DISCL
0089  00111 062225R         LDA .128
0090  00112 016004X         JSB LBLIO       GET SYS BFR SECTOR
0091  00113 060227          LDA RQP2
0092  00114 066125R         LDB XSYLB
0093  00115 016006X         JSB LBLMV       MOVE LABEL TO SAVE AREA
0094  00116 062225R         LDA .128
0095  00117 064055          LDB .+2
0096  00120 016004X         JSB LBLIO       OUTPUT SYS BFR SECTOR
0097  00121 060175          LDA GUDSC
0098  00122 070161          STA CUDSC       RESTORE NEW USER SUBCHNL
0099  00123 026355R         JMP EXIT1
0100*
0101  00124 000013X DFLBL   DEF $B3         ADDRESS OF $BUF+3
0102  00125 000000  XSYLB   NOP            ADDRESS OF $BUF+95
0103  00126 000134  .92     DEC 92
0104  00127 025000  UPAST   OCT 025000
0105  00130 000400  .400    OCT 400
0106  00131 046102  ASCLB   ASC 1,LB
0107  00132 042117  ASCDO   ASC 1,DO
0108  00133 051531  ASCSY   ASC 3,SYSTEM
      00134 051524
      00135 042515
0109  00136 000145R INLBL   DEF *+7
0110  00137 000140R INMSG   DEF *+1
```

```
0111   00140 000000          BSS 2
0112   00142 046101          ASC 3,LABEL
       00143 041105
       00144 046040
0113   00145 000000          BSS 3
0114   00150 000151R OKMSG   DEF *+1
0115   00151 047513          ASC 6,OK TO PURGE?
       00152 020124
       00153 047440
       00154 050125
       00155 051107
       00156 042477
0116   00157 052123  ASCTS    ASC 1,TS
0117   00160 041040  ASCB     ASC 1,B
0118   00161 051440  ASCS     ASC 1,S
0119   00162 037477  QMRKS    ASC 1,??
0120   00163 037440  QBLNK    ASC 1,?
0121   00164 177760  N16      DEC -16
0122   00165 177764  N12      DEC -12
0123*
0124   00166 062011X OKGO     LDA $B1          *
0125   00167 072140R          STA INMSG+1      * SET
0126   00170 066163R          LDB QBLNK        *  *DOS*
0127   00171 052132R          CPA ASCDO        *   OR
0128   00172 066161R          LDB ASCS         *  *TSB*
0129   00173 052157R          CPA ASCTS        *   IN
0130   00174 066160R          LDB ASCB         *  MESSAGE
0131   00175 056163R          CPB QBLNK        *
0132   00176 062162R          LDA QMRKS        *
0133   00177 076141R          STB INMSG+2      *
0134   00200 062137R          LDA INMSG
0135   00201 066164R          LDB N16
0136   00202 016010X          JSB MESSG        OUTPUT 1ST MESSAGE
0137   00203 062150R OKRPT    LDA OKMSG
0138   00204 066165R          LDB N12
0139   00205 016010X          JSB MESSG        OUTPUT *OK TO PURGE*
0140   00206 016001X          JSB $SYIO
0141   00207 000001          DEC 1
0142   00210 000401          OCT 401
0143   00211 000372R          DEF REPLY
0144   00212 177776          DEC -2
0145   00213 000215R          DEF *+2
0146   00214 026002X          JMP $WAIT
0147   00215 062372R          LDA REPLY        GET RESPONSE
0148   00216 052223R          CPA ASCYE        ANSWER YES?
0149   00217 026030R          JMP OKPRG         -YES, GO LABEL
0150   00220 052224R          CPA ASCNO        ANSWER NO?
0151   00221 026355R          JMP EXIT1         -YES
0152   00222 026203R          JMP OKRPT         -NO, GO REPEAT MESSAGE
0153*
0154   00223 054505  ASCYE    ASC 1,YE
0155   00224 047117  ASCNO    ASC 1,NO
0156   00225 000200  .128     DEC 128
0157   00226 000000  OLDDR    NOP
0158   00227 000000  SYTRK    NOP
0159*
```

```
0160   00230 006445  SYLBL CLB,SEZ,INB,RSS
0161   00231 026045R        JMP NOTSY
0162   00232 062367R        LDA SVDCL
0163   00233 072226R        STA OLDDR
0164   00234 070200         STA DISCL
0165   00235 001727         ALF,ALF
0166   00236 072227R        STA SYTRK
0167   00237 072371R        STA TRCNT
0168   00240 062225R        LDA .128
0169   00241 016004X        JSB LBLIO
0170   00242 062017X        LDA $B64
0171   00243 072313R        STA SVUTS      SAVE USER NEXT TRK/SCTR
0172   00244 062020X        LDA $B65
0173   00245 072314R        STA SVBAD      SAVE BAD TRACK COUNT
0174   00246 062021X        LDA $B66
0175   00247 072315R        STA SVSPR      SAVE NEXT AVAIL, SPARE TRK
0176   00250 060313         LDA MSECT
0177   00251 002004         INA
0178   00252 072316R        STA CNTR       SET DRCTRY SECTOR COUNTER
0179   00253 036226R SLOOP  ISZ OLDDR
0180   00254 036370R        ISZ NEWDR
0181   00255 062226R        LDA OLDDR
0182   00256 070200         STA DISCL
0183   00257 062225R        LDA .128
0184   00260 006404         CLB,INB
0185   00261 016004X        JSB LBLIO      READ DRCTRY SECTOR
0186   00262 062370R        LDA NEWDR
0187   00263 070200         STA DISCL
0188   00264 062225R        LDA .128
0189   00265 064055         LDB .+2
0190   00266 016004X        JSB LBLIO      WRITE DRCTRY SECTOR IN TRK 0
0191   00267 066371R        LDB TRCNT
0192   00270 046227R        ADB SYTRK
0193   00271 076371R        STB TRCNT      INCR, SYST, SCTR COUNTER
0194   00272 036316R        ISZ CNTR
0195   00273 026253R        JMP SLOOP
0196*
0197   00274 070200         STA DISCL
0198   00275 062225R        LDA .128
0199   00276 006404         CLB,INB
0200   00277 016004X        JSB LBLIO      READ TRK 0, SCTR 0
0201   00300 066367R        LDB SVDCL
0202   00301 072013X        STA $B3
0203   00302 072367R        STA SVDCL
0204   00303 007004         CMB,INB
0205   00304 046313R        ADB SVUTS      SUBTRACT SYST. SIZE FROM USER
0206   00305 076017X        STB $B64         NEXT TRK/SCTR AND SET
0207   00306 062314R        LDA SVBAD
0208   00307 072020X        STA $B65
0209   00310 062315R        LDA SVSPR
0210   00311 072021X        STA $B66
0211   00312 026030R        JMP OKPRG
0212*
0213   00313 000000  SVUTS NOP
0214   00314 000000  SVBAD NOP
0215   00315 000000  SVSPR NOP
```

```
0216  00316 000000  CNTR  NOP
0217*
0218  00317 072011X NWLBL STA $B1
0219  00320 002400        CLA
0220  00321 070327        STA #BDTR      CLEAR BAD TRACK COUNT
0221  00322 062353R       LDA N203
0222  00323 072316R       STA CNTR       SET TO READ ALL TRACKS
0223  00324 062316R NXTRK LDA CNTR
0224  00325 003000        CMA
0225  00326 001727        ALF,ALF
0226  00327 070166        STA PARAM      SET TRK/SCTR
0227  00330 062351R       LDA DEFBF
0228  00331 070167        STA PARAM+1    SET ADDRS OF 1-WORD BFR
0229  00332 003400        CCA
0230  00333 070170        STA PARAM+2    SET WORD COUNT=1
0231  00334 062350R       LDA XPARM
0232  00335 006404        CLB,INB
0233  00336 016003X       JSB $DISC      READ 1ST WORD OF TRACK
0234  00337 036316R       ISZ CNTR       INCREMENT TRACK COUNTER
0235  00340 026324R       JMP NXTRK      GO READ NEXT TRACK
0236  00341 064327        LDB #BDTR      GET BAD TRK COUNT (SET BY DVR31)
0237  00342 076020X       STB $B65       SET BAD TRK COUNT IN LBL SCTR
0238  00343 046353R       ADB N203
0239  00344 007000        CMB
0240  00345 076021X       STB $B66       SET NEXT AVAIL. SPARE TRK
0241  00346 070327        STA #BDTR      CLEAR BAD TRACK COUNT
0242  00347 026045R       JMP NOTSY
0243*
0244  00350 000166  XPARM DEF PARAM
0245  00351 000352R DEFBF DEF *+1
0246  00352 000000        NOP
0247  00353 177465  N203  DEC -203
0248  00354 177755  N19   DEC -19
0249*
0250  00355 062367R EXIT1 LDA SVDCL      RESTORE
0251  00356 070200        STA DISCL        DISC LABEL
0252  00357 060225  EXIT  LDA RQRTN      SET UP TRANSFER ADDRESS
0253  00360 070137        STA XIRT
0254  00361 062371R       LDA TRCNT
0255  00362 064245        LDB EXMOD
0256  00363 056354R       CPB N19
0257  00364 007004        CMB,INB
0258  00365 074245        STB EXMOD
0259  00366 026025X       JMP $IRT
0260*
0261  00367 000000  SVDCL NOP
0262  00370 000000  NEWDR NOP
0263  00371 000000  TRCNT NOP
0264  00372 000000  SAVGO NOP
0265  00372         REPLY EQU SAVGO
0266*
0267  00000         A     EQU 0
0268  00001         B     EQU 1
0269  00053         .     EQU 53B
0270  00075         M1774 EQU .+18
0271  00100         @     EQU 100B
```

```
0272  00115          SYSBF EQU *+13
0273  00126          RONBF EQU *+22
0274  00137          XIRT  EQU RONBF+9
0275  00155          SYSSC EQU *+45
0276  00157          UDNTS EQU *+47
0277  00160          SYNTS EQU *+48
0278  00161          CUDSC EQU *+49
0279  00166          PARAM EQU *+54
0280  00175          GUDSC EQU *+61
0281  00176          SYSCD EQU *+62
0282  00200          DISCL EQU *+64
0283  00225          RQRTN EQU *+85
0284  00227          RQP2  EQU *+87
0285  00245          EXMOD EQU *+101
0286  00313          MSECT EQU *+139
0287  00327          #BDTR EQU *+151
0288                       END
** NO ERRORS*
```

```
 #BDTR  00287/02 00220/02 00236/02 00241/02

 $B1    00006/02 00054/02 00124/02 00218/02

 $B128  00007/02 00078/02

 $B2    00006/02 00058/02

 $B3    00006/02 00046/02 00101/02 00202/02

 $B31   00006/02 00063/02

 $B4    00006/02 00047/02

 $B5    00006/02 00049/02

 $B64   00006/02 00068/02 00069/02 00170/02 00206/02

 $B65   00006/02 00172/02 00208/02 00237/02

 $B66   00007/02 00174/02 00210/02 00240/02

*$B95   00007/02

 $BUF   00007/02 00044/02 00066/02 00075/02

 $DISC  00004/02 00233/02

 $EX19  00010/02 00003/02

 $IRT   00008/02 00259/02

 $SYIO  00004/02 00140/02

 $WAIT  00004/02 00146/02

 .      00269/02 00079/02 00095/02 00189/02 00270/02

 .128   00156/02 00031/02 00074/02 00089/02 00094/02 00168/02 00183/02
        00188/02 00198/02

 .400   00105/02 00065/02

 .92    00103/02 00021/02

 *      00271/02 00272/02 00273/02 00275/02 00276/02 00277/02 00278/02
        00279/02 00280/02 00281/02 00282/02 00283/02 00284/02 00285/02
        00286/02 00287/02

*A      00267/02

 ASCB   00117/02 00130/02

 ASCDO  00107/02 00053/02 00127/02
```

ASCLB 00106/02 00039/02

ASCNO 00155/02 00150/02

ASCS 00118/02 00128/02

ASCSY 00108/02 00045/02 00048/02 00050/02

ASCTS 00116/02 00129/02

ASCYE 00154/02 00148/02

*B 00268/02

CHSUM 00005/02 00062/02

CNTR 00216/02 00178/02 00194/02 00222/02 00223/02 00234/02

CUDSC 00278/02 00024/02 00071/02 00081/02 00086/02 00098/02

DEFBF 00245/02 00227/02

DFLBL 00101/02 00015/02 00020/02 00060/02

DISCL 00282/02 00010/02 00030/02 00064/02 00088/02 00164/02 00182/02
00187/02 00197/02 00251/02

EXIT 00252/02 00084/02

EXIT1 00250/02 00099/02 00151/02

EXMOD 00285/02 00255/02 00258/02

GUDSC 00280/02 00082/02 00097/02

INLBL 00109/02 00034/02

INMSG 00110/02 00125/02 00133/02 00134/02

ISLBL 00005/02 00035/02

LBLIO 00005/02 00033/02 00080/02 00090/02 00096/02 00169/02 00185/02
00190/02 00200/02

LBLMV 00005/02 00061/02 00093/02

M1774 00270/02 00041/02

MESSG 00005/02 00136/02 00139/02

MSECT 00285/02 00176/02

N12 00122/02 00138/02

N16 00121/02 00135/02

```
N19     00248/02 00256/02

N203    00247/02 00221/02 00238/02

NEWDR   00262/02 00026/02 00180/02 00186/02

NOTSY   00053/02 00161/02 00242/02

NWLBL   00218/02 00056/02

NXTRK   00223/02 00235/02

OKGO    00124/02 00037/02

OKMSG   00114/02 00137/02

OKPRG   00039/02 00149/02 00211/02

OKRPT   00137/02 00152/02

OLDDR   00157/02 00163/02 00179/02 00181/02

PARAM   00279/02 00226/02 00228/02 00230/02 00244/02

QBLNK   00120/02 00126/02 00131/02

QMRKS   00119/02 00132/02

REPLY   00265/02 00143/02 00147/02

RONBF   00273/02 00274/02

RQP2    00284/02 00040/02 00059/02 00091/02

RQRTN   00283/02 00252/02

SAVGO   00264/02 00265/02

SLOOP   00179/02 00195/02

SVBAD   00214/02 00173/02 00207/02

SVDCL   00261/02 00011/02 00029/02 00162/02 00201/02 00203/02 00250/02

SVSPR   00215/02 00175/02 00209/02

SVUTS   00213/02 00171/02 00205/02

SYLBL   00160/02 00051/02

SYNTS   00277/02 00073/02

SYSBF   00272/02 00087/02

SYSCD   00281/02 00057/02
```

```
SYSSC   00275/02 00028/02 00072/02 00085/02

SYTRK   00158/02 00166/02 00192/02

TRCNT   00263/02 00027/02 00167/02 00191/02 00193/02 00254/02

UDNTS   00276/02 00070/02

UPAST   00104/02 00042/02

XIRT    00274/02 00253/02

XPARM   00244/02 00231/02

XSYLB   00102/02 00022/02 00092/02
```

```
0001                ASMB,L,X,C,N,R,B     DISC PARITY PROCESSOR
** NO ERRORS*
```

```
0001                    ASMB,L,X,C,N,R,B    DISC PARITY PROCESSOR
0002  00000                   NAM $EX20,1,0
0003                          ENT $EX20
0004                          EXT $DISC,$SYIO,$WAIT,$ABRT
0005                          EXT $BUF,$B3,$B4,$B5,$B64,$B65,$B66
0006                          SUP
0007*
0008*
0009  00000 060127  $EX20 LDA RONBF+1   GET BAD TRACK#
0010  00001 072171R       STA BTRAK
0011  00002 072173R       STA ISSTR
0012  00003 001727        ALF,ALF
0013  00004 016411R       JSB CNDEC     CONVERT TO ASCII FOR MESSG
0014  00005 072216R       STA PELOC+7
0015  00006 060001        LDA B
0016  00007 010074        AND B377
0017  00010 032200R       IOR UPEQL
0018  00011 072215R       STA PELOC+6
0019  00012 060126        LDA RONBF     GET BAD TRACK SUBCHNL
0020  00013 070161        STA CUDSC       AND SET AS CURRENT
0021  00014 016411R       JSB CNDEC     CONVERT TO ASCII FOR MESSG
0022  00015 032200R       IOR UPEQL
0023  00016 072211R       STA PELOC+2
0024  00017 060130        LDA RONBF+2   GET BAD SECTOR#
0025  00020 016411R       JSB CNDEC     CONVERT TO ASCII FOR MESSG
0026  00021 001727        ALF,ALF
0027  00022 072224R       STA PELOC+13
0028  00023 010074        AND B377
0029  00024 072172R       STA SCNTR
0030  00025 060001        LDA B
0031  00026 001727        ALF,ALF
0032  00027 010075        AND B1774
0033  00030 032172R       IOR SCNTR
0034  00031 072223R       STA PELOC+12
0035*
0036* RESOLVE ADDRESS OF $BUF
0037*
0038  00032 062347R       LDA DEFBF
0039  00033 002001        RSS
0040  00034 160000        LDA 0,I
0041  00035 001275        RAL,CLE,SLA,ERA
0042  00036 026034R       JMP *+2
0043  00037 072347R       STA DEFBF     ADDRESS OF $BUF

0045  00040 062225R       LDA PEMSG
0046  00041 064061        LDB ..+6
0047  00042 016350R       JSB ERRDG     PRINT PARITY ERROR MESSG
0048  00043 062207R       LDA PELOC
0049  00044 066175R       LDB DM25
0050  00045 016350R       JSB ERRDG     PRINT PARITY TRK#, SCTR#, SUBCHN
0051  00046 062201R       LDA ASCN
0052  00047 072240R       STA ONOFF+4
0053  00050 062234R       LDA ONOFF
0054  00051 066174R       LDB DM38
0055  00052 016350R       JSB ERRDG     PRINT TURN ON ETC.
0056  00053 102011        HLT 11B       WAIT FOR OPERATOR
```

```
0057*
0058  00054 070200         STA DISCL
0059  00055 006404         CLB,INB
0060  00056 016366R        JSB SBFIO      READ USER LABEL SECTOR
0061  00057 062203R        LDA ASCSY      *
0062  00060 052006X        CPA $B3        *
0063  00061 066007X        LDB $B4        * IS IT
0064  00062 056204R        CPB ASCSY+1    *   A
0065  00063 062010X        LDA $B5        * SYSTEM DISC?
0066  00064 052205R        CPA ASCSY+2    *
0067  00065 006405         CLB,INB,RSS     =YES
0068  00066 026072R        JMP NOTSY       =NO
0069  00067 062011X        LDA $B64
0070  00070 070200         STA DISCL
0071  00071 016366R        JSB SBFIO      READ SYST. BFR SECTOR
0072  00072 064161  NOTSY LDB CUDSC
0073  00073 062011X        LDA $B64
0074  00074 070157         STA UDNTS
0075  00075 054155         CPB SYSSC      CURRENT SYS, SUBCHNL?
0076  00076 070160         STA SYNTS       =YES, UPDATE SYST. NEXT TRK/SCT
0077  00077 060154         LDA DISCO      GET LAST USER AVAIL. TRK#
0078  00100 010074         AND B377
0079  00101 066013X        LDB $B66
0080  00102 054000         CPB A          NEXT SPARE TRK = LAST USER TRK?
0081  00103 026260R        JMP NOSPR       =YES, NO MORE AVAIL.
0082  00104 076366R        STB SBFIO
0083  00105 044052         ADB .-1
0084  00106 076013X        STB $B66       SET NEW NEXT AVAIL. SPARE TRK
0085  00107 066366R        LDB SBFIO
0086  00110 005727         BLF,BLF        ROTATE TRK# TO HI 8 BITS
0087  00111 076223R        STB CBFR
0088  00112 036012X        ISZ $B65       INCREMENT BAD TRACK COUNTER
0089  00113 060200         LDA DISCL
0090  00114 064055         LDB .+2
0091  00115 016366R        JSB SBFIO
0092  00116 064313         LDB MSECT
0093  00117 076172R        STB SCNTR      INITIALIZE SECTOR COUNTER
0094*
0095  00120 062171R STAGN LDA BTRAK
0096  00121 006404         CLB,INB
0097  00122 016366R        JSB SBFIO      READ SECTOR OF BAD TRACK
0098  00123 062223R        LDA CBFR
0099  00124 016366R        JSB SBFIO      WRITE SECTOR TO ALTERNATE TRK
0100  00125 064116         LDB SECTR
0101  00126 056176R        CPB D115       ISS DISC?
0102  00127 026141R        JMP NOFLG       =YES, DON'T FLAG DEFECTIVE YET
0103  00130 056167R        CPB D230    IS ISS WITH 2 SUBCHAN/DRIVE
0104  00131 026141R        JMP NOFLG      YES=DON T FLAG DEFECTIVE
0105  00132 062171R        LDA BTRAK
0106  00133 070166         STA PARAM
0107  00134 062206R        LDA DFCBF
0108  00135 070167         STA PARAM+1
0109  00136 002404         CLA,INA
0110  00137 066177R        LDB CONWD
0111  00140 016400R        JSB DSCIO      FLAG SECTOR DEFECTIVE
0112  00141 036223R NOFLG ISZ CBFR       INCR. ALT. TRK/SCTR
```

```
0113  00142 036171R        ISZ BTRAK      INCR. BAD TRK/SCTR
0114  00143 036172R        ISZ SCNTR      INCR. SECTOR COUNTER
0115  00144 026120R        JMP STAGN      GO DO NEXT SECTOR
0116*
0117  00145 056176R        CPB D115       ISS DISC?
0118  00146 026277R        JMP ISS         -YES, GO FLAG IT NOW
0119  00147 056167R        CPB D230     IS ISS WITH 2 SUBCHAN/DRIVE
0120  00150 026277R        JMP ISS       YES
0121*
0122  00151 062202R TRNOF   LDA ASCFF
0123  00152 072240R         STA ONOFF+4
0124  00153 062234R         LDA ONOFF
0125  00154 066174R         LDB DM38
0126  00155 016350R         JSB ERRDG      PRINT TURN OFF ETC.
0127  00156 102077          HLT 77B        WAIT FOR OPERATOR
0128*
0129  00157 064245  EXIT    LDB EXMOD
0130  00160 056170R         CPB N20
0131  00161 007304          CMB,CCE,INB
0132  00162 074245          STB EXMOD
0133  00163 070330          STA XFLG
0134  00164 070327          STA #BDTR
0135  00165 001500          ERA            SET BIT 15 FOR ADUMP
0136  00166 026004X         JMP $ABRT
0137*
0138  00167 000346  D230    DEC 230
0139  00170 177754  N20     DEC -20
0140  00171 000000  BTRAK   NOP
0141  00172 000000  SCNTR   NOP
0142  00173 000000  ISSTR   NOP
0143*
0144  00174 177732  DM38    DEC -38
0145  00175 177747  DM25    DEC -25
0146  00176 000163  D115    DEC 115
0147  00177 010403  CONWD   OCT 010403
0148  00200 036400  UPEQL   OCT 036400
0149*
0150  00201 047040  ASCN    ASC 1,N
0151  00202 043106  ASCFF   ASC 1,FF
0152  00203 051531  ASCSY   ASC 3,SYSTEM
0153  00206 000223R DFCBF   DEF CBFR
0154*
0155  00207 000210R PELOC   DEF *+1
0156  00210 051503          ASC 11,SC  ,  TRK    ,  SCTR*
0157  00223 000000  CBFR    NOP
0158  00224 000000          NOP
0159  00225 000226R PEMSG   DEF *+1
0160  00226 050101          ASC 6,PARITY ERROR
0161*
0162  00234 000235R ONOFF   DEF *+1
0163  00235 052125          ASC 19,TURN O   DISC PROTECT OVERRIDE SWITCH
0164*
0165  00260 062264R NOSPR   LDA SPMSG
0166  00261 064064          LDB ..+9
0167  00262 016350R         JSB ERRDG
0168  00263 026157R         JMP EXIT
```

```
0169*
0170  00264 000265R SPMSG DEF *+1
0171  00265 051520        ASC 9,SPARE TRK OVERFLOW
0172  00276 177751  N23   DEC -23
0173*
0174  00277 060046  ISS   LDA .-5
0175  00300 064116        LDB SECTR
0176  00301 056167R       CPB D230
0177  00302 060041        LDA .-10
0178  00303 072411R       STA HCNTR      SET HEAD COUNTER = -5
0179  00304 062173R       LDA ISSTR
0180  00305 006404        CLB,INB
0181  00306 016366R       JSB SBFIO
0182  00307 062276R LOOPH LDA N23
0183  00310 072172R       STA SCNTR      SET SECTOR COUNTER = -23
0184  00311 066347R       LDB DEFBF
0185  00312 076366R       STB ISSBF      INITIALIZE ADDRESS BUFFER
0186  00313 062223R       LDA CBFR       GET ALTERNATE TRACK#
0187  00314 010075        AND B1774      ISOLATE
0188  00315 032375R       IOR .128
0189  00316 001727        ALF,ALF        SHIFT TO LO 8 BITS
0190  00317 066172R LOOPS LDB SCNTR
0191  00320 046343R       ADB .23        GET CURRENT SECTOR#
0192  00321 172366R       STA ISSBF,I    SET FLAG-BIT/TRACK# IN ADRS BFR
0193  00322 036366R       ISZ ISSBF
0194  00323 176366R       STB ISSBF,I    SET HEAD/SECTOR IN ADRS BFR
0195  00324 036366R       ISZ ISSBF
0196  00325 036172R       ISZ SCNTR      INCREMENT SECTOR COUNTER
0197  00326 026317R       JMP LOOPS      GO SET NEXT SECTOR IN ADRS BFR
0198  00327 062173R       LDA ISSTR
0199  00330 070166        STA PARAM      SET BAD TRK ADDRS IN PARAM BFR
0200  00331 042343R       ADA .23
0201  00332 072173R       STA ISSTR      UPDATE BAD TRK ADDRS
0202  00333 062347R       LDA DEFBF
0203  00334 070167        STA PARAM+1    SET ADDRS BFR ADDRS IN PAR. BFR
0204  00335 062344R       LDA D46
0205  00336 066346R       LDB ISSCN      GET ISS WRITE ADDRESS COMMAND
0206  00337 016400R       JSB DSCIO      FLAG 1 PHYSICAL TRACK DEFECTIVE
0207  00340 036411R       ISZ HCNTR      INCREMENT HEAD# COUNTER
0208  00341 026307R       JMP LOOPH      GO PROCESS NEXT HEAD
0209  00342 026151R       JMP TRNOF      FINISHED - GO EXIT
0210*
0211  00343 000027  .23   DEC 23
0212  00344 000056  D46   DEC 46
0213  00345 000400  B400  OCT 400
0214  00346 070003  ISSCN OCT 070003
0215  00347 000005X DEFBF DEF $BUF
0216*
0217  00350 000000  ERRDG NOP
0218  00351 072357R       STA MSGAD
0219  00352 076360R       STB MSGLN
0220  00353 034261        ISZ OPFLG
0221  00354 016002X       JSB $SYIO
0222  00355 000002        DEC 2
0223  00356 000001        DEC 1
0224  00357 000000  MSGAD NOP
```

```
0225  00360 000000  MSGLN NOP
0226  00361 000363R       DEF *+2
0227  00362 026003X       JMP $WAIT
0228  00363 002700        CLA,CCE
0229  00364 070261        STA OPFLG
0230  00365 126350R       JMP ERRDG,I
0231*
0232  00366 000000  SBFIO NOP
0233  00367 070166        STA PARAM
0234  00370 062347R       LDA DEFBF
0235  00371 070167        STA PARAM+1
0236  00372 062375R       LDA .128
0237  00373 016400R       JSB DSCIO
0238  00374 126366R       JMP SBFIO,I
0239*
0240  00375 000200  .128   DEC 128
0241  00376 000407R XRTRN DEF RETRN
0242  00377 000166  XPARM DEF PARAM
0243*
0244  00400 000000  DSCIO NOP
0245  00401 070170        STA PARAM+2
0246  00402 062376R       LDA XRTRN
0247  00403 070330        STA XFLG      SET FLAG TO ALLOW PARITY RETURN
0248  00404 062377R       LDA XPARM
0249  00405 034162        ISZ CRFLG
0250  00406 016001X       JSB $DISC
0251  00407 064055  RETRN LDB .+2
0252  00410 126400R       JMP DSCIO,I
0253*
0254  00411 000000  CNDEC NOP
0255  00412 066443R       LDB A00
0256  00413 076440R       STB ASCI
0257  00414 076441R       STB ASCI+1
0258  00415 076442R       STB ASCI+2
0259  00416 066437R       LDB CNMBR
0260  00417 076400R       STB CNMLC
0261  00420 016444R CNORG JSB DVUKN     DIVIDE BY 10
0262  00421 146400R       ADB CNMLC,I
0263  00422 176400R       STB CNMLC,I
0264  00423 002003        SZA,RSS
0265  00424 026434R       JMP CNOUT
0266  00425 016444R       JSB DVUKN     DIVIDE BY 10
0267  00426 005727        BLF,BLF
0268  00427 146400R       ADB CNMLC,I
0269  00430 176400R       STB CNMLC,I
0270  00431 036400R       ISZ CNMLC
0271  00432 002002        SZA
0272  00433 026420R       JMP CNORG
0273  00434 062440R CNOUT LDA CNMBR+1
0274  00435 066441R       LDB CNMBR+2
0275  00436 126411R       JMP CNDEC,I
0276*
0277  00437 000440R CNMBR DEF *+1
0278  00440 000000  ASCI  BSS 3
0279  00400         CNMLC EQU DSCIO
0280  00443 030060  A00   ASC 1,00
```

```
0281*
0282  00444 000000  DVUKN NOP
0283  00445 006400        CLB             CLEAR LOOP COUNTER
0284  00446 076350R       STB DVTMP
0285  00447 070001  DVU00 STA B           FLAG ALLOWS BIT15 OF # TO BE SET
0286  00450 040041  DVU01 ADA ..-10       DIVIDE BY SUCCESSIVE SUBTRACTION
0287  00451 036350R       ISZ DVTMP
0288  00452 002021        SSA,RSS         DONE IF A IS NEG AND B IS POS
0289  00453 026447R       JMP DVU00       CLEAR B TO ALLOW EXIT
0290  00454 006020        SSB             EXIT IF POS
0291  00455 026450R       JMP DVU01       ORIGINAL # TO CONVERT WAS NEG
0292  00456 064041        LDB ..-10
0293  00457 007004        CMB,INB
0294  00460 044000        ADB A           REMAINDER TO B
0295  00461 062350R       LDA DVTMP
0296  00462 040052        ADA ..-1        QUOTIENT TO A
0297  00463 126444R       JMP DVUKN,I
0298*
0299  00350         DVTMP EQU ERRDG
0300  00411         HCNTR EQU CNDEC
0301  00366         ISSBF EQU SBFIO
0302*
0303  00000         A     EQU 0
0304  00001         B     EQU 1
0305*
0306*
0307  00053         .     EQU 53B
0308  00053         ..    EQU .
0309  00074         B377  EQU .+17
0310  00075         B1774 EQU .+18
0311*
0312  00100         *     EQU 100B
0313  00116         SECTR EQU *+14
0314  00126         RONBF EQU *+22
0315  00154         DISCO EQU *+44
0316  00155         SYSSC EQU *+45
0317  00157         UDNTS EQU *+47
0318  00160         SYNTS EQU *+48
0319  00161         CUDSC EQU *+49
0320  00162         CRFLG EQU *+50
0321  00166         PARAM EQU *+54
0322  00200         DISCL EQU *+64
0323  00245         EXMOD EQU *+101
0324  00261         OPFLG EQU *+113
0325  00313         MSECT EQU *+139
0326  00327         #BDTR EQU *+151
0327  00330         XFLG  EQU *+152
0328*
0329*
0330                      END
**  NO ERRORS*
```

```
#BDTR   00326   00134

$ABRT   00004   00136

$B3     00005   00062

$B4     00005   00063

$B5     00005   00065

$B64    00005   00069   00073

$B66    00005   00088

$B66    00005   00079   00084

$BUF    00005   00215

$DISC   00004   00250

$EX20   00009   00003

$SYIO   00004   00221

$WAIT   00004   00227

.       00307   00083   00090   00174   00177   00251   00308
        00309   00310

..      00308   00046   00166   00286   00292   00296

.128    00240   00188   00236

.23     00211   00191   00200

@       00312   00313   00314   00315   00316   00317   00318
        00319   00320   00321   00322   00323   00324   00325
        00326   00327

A       00303   00080   00294

A00     00280   00255

ASCFF   00151   00122

ASCI    00278   00256   00257   00258

ASCN    00150   00051

ASCSY   00152   00061   00064   00066

B       00304   00015   00030   00285

B1774   00310   00032   00187
```

B377	00309	00016	00028	00078			
*B400	00213						
BTRAK	00140	00010	00095	00105	00113		
CBFR	00157	00087	00098	00112	00153	00186	
CNDEC	00254	00013	00021	00025	00275	00300	
CNMBR	00277	00259	00273	00274			
CNMLC	00279	00260	00262	00263	00268	00269	00270
CNORG	00261	00272					
CNOUT	00273	00265					
CONWD	00147	00110					
CRFLG	00320	00249					
CUDSC	00319	00020	00072				
D115	00146	00101	00117				
D230	00138	00103	00119	00176			
D46	00212	00204					
DEFBF	00215	00038	00043	00184	00202	00234	
DFCBF	00153	00107					
DISCL	00322	00058	00070	00089			
DISCO	00315	00077					
DM25	00145	00049					
DM38	00144	00054	00125				
DSCIO	00244	00111	00206	00237	00252	00279	
DVTMP	00299	00284	00287	00295			
DVU00	00285	00289					
DVU01	00286	00291					
DVUKN	00282	00261	00266	00297			
ERRDG	00217 00299	00047	00050	00055	00126	00167	00230
EXIT	00129	00168					

EXMOD	00323	00129	00132				
HCNTR	00300	00178	00207				
ISS	00174	00118	00120				
ISSBF	00301	00185	00192	00193	00194	00195	
ISSCN	00214	00205					
ISSTR	00142	00011	00179	00198	00201		
LOOPH	00182	00208					
LOOPS	00190	00197					
MSECT	00325	00092					
MSGAD	00224	00216					
MSGLN	00225	00219					
N20	00139	00130					
N23	00172	00182					
NOFLG	00112	00102	00104				
NOSPR	00165	00081					
NOTSY	00072	00068					
ONOFF	00162	00052	00053	00123	00124		
OPFLG	00324	00220	00229				
PARAM	00321	00106	00108	00199	00203	00233	00235
	00242	00245					
PELOC	00155	00014	00018	00023	00027	00034	00048
PEMSG	00159	00045					
RETRN	00251	00241					
RONBF	00314	00009	00019	00024			
SBFIO	00232	00060	00071	00082	00085	00091	00097
	00099	00181	00236	00301			
SCNTR	00141	00029	00033	00093	00114	00183	00190
	00196						
SECTR	00313	00100	00175				

SPMSG	00170	00165	
STAGN	00095	00115	
SYNTS	00316	00076	
SYSSC	00316	00075	
TRNOF	00122	00209	
UDNTS	00317	00074	
UPEQL	00148	00017	00022
XFLG	00327	00133	00247
XPARM	00242	00248	
XRTRN	00241	00246	

```
0001                    ASMB,L,T,C,R,B  DOS-IIIB FILE CONTROL EXEC MOD-$EX21
$EX21  R 000000
$SRCH  X 000001
$IRT   X 000002
$DISC  X 000003
SYSCL  X 000004
$BUF   X 000005
NXLVL  R 000003
RLOCP  R 000030
ZEROP  R 000044
UENTR  R 000046
UPDTE  R 000051
ZRCHK  R 000053
RINDR  R 000056
NPARM  R 000067
INVLP  R 000075
CKNME  R 000077
SPAD   R 000102
CK1ST  R 000107
NMERR  R 000125
GETNX  R 000127
CKALF  R 000135
CKDNE  R 000163
GETCH  R 000201
PCREA  R 000213
RDDIR  R 000227
BMP2   R 000231
FDEND  R 000232
SPCHK  R 000256
NXTSC  R 000262
NOBIN  R 000306
ISOL8  R 000307
NITEM  R 000323
WRLBL  R 000364
SMESC  R 000366
DRFUL  R 000371
PPURG  R 000373
RSECT  R 000376
NEXIT  R 000403
EXIT   R 000404
SRCH1  R 000420
SRCH2  R 000422
SRCH3  R 000424
SRCH4  R 000425
PURGT  R 000440
BMPAD  R 000444
BMPDR  R 000446
ENDCH  R 000447
CLRTB  R 000465
STEND  R 000475
WRDIR  R 000476
PRNME  R 000506
SROLD  R 000513
CPNME  R 000516
SRNEW  R 000541
FINDO  R 000544
```

```
NXCHR  R 000547
CHGTP  R 000565
SVTYP  R 000570
DUPNM  R 000575
SFILE  R 000577
SEND   R 000607
CHKTP  R 000611
TPERR  R 000622
RDISC  R 000624
WDISC  R 000632
CONT1  R 000636
PBUF   R 000646
DSKAD  R 000647
BUFAD  R 000650
BUFLN  R 000651
CHKNM  R 000652
CEXIT  R 000666
CMPR   R 000670
NXENT  R 000677
GETDR  R 000711
DIFSC  R 000727
LBNME  R 000755
SYSLB  R 000756
SPACE  R 000761
RCDE1  R 000762
RCDE2  R 000763
0200   R 000764
N13    R 000765
MOD#   R 000766
040    R 000767
N32    R 000770
050    R 000771
054    R 000772
060    R 000773
072    R 000774
0140   R 000775
LBLAD  R 000776
CURAD  R 000777
UDFLG  R 001000
SECNT  R 001001
SCEND  R 001002
BFPTR  R 001003
UPNTR  R 001004
PPNTR  R 001005
PARMP  R 001006
PARML  R 001007
WORK   R 001010
WORK1  R 001011
WORK2  R 001012
WORK3  R 001013
FNAMX  R 001014
NNAMX  R 001015
FNMBF  R 001016
LCBUF  R 001024
COUNT  R 001024
RETAD  R 001025
```

```
REQCD  R 001026
RSTAT  R 001027
FNAME  R 001030
ONAME  R 001030
TYPE   R 001031
NNAME  R 001031
DSKLN  R 001032
NTYPE  R 001032
A         000000
B         000001
..        000053
N7        000044
N6        000045
N5        000046
N4        000047
N3        000050
N2        000051
N1        000052
.1        000054
.2        000055
.3        000056
.5        000060
.6        000061
.64       000067
M77       000072
M177      000073
M377      000074
M1774     000075
.         000100
JBINC     000102
RONBF     000126
XIRT      000137
DISC0     000154
SYSSC     000155
UDNTS     000157
SYNTS     000160
CUDSC     000161
CRFLG     000162
DISCL     000200
RQCNT     000224
RQRTN     000225
RQP2      000227
EXMOD     000245
MSECT     000313
**  NO ERRORS*
```

```
0001                    ASMB,L,T,C,R,B  DOS-IIIB FILE CONTROL EXEC MOD-$EX21
0002  00000                     NAM $EX21,1,0
0003                            ENT $EX21
0004                            EXT $SRCH,$IRT,$DISC
0005                            EXT SYSCL,$BUF
0006*****************************************************
0007*                                                   *
0008*     THIS MODULE PROVIDES THE DOS USER THE         *
0009*     CAPABILITY TO CREATE, PURGE, OR RENAME USER   *
0010*     DISC FILES UNDER PROGRAM CONTROL FROM EITHER  *
0011*     THE SYSTEM OR USER AREAS.                     *
0012*                                                   *
0013*         ON ENTRY "B" REGISTER CONTAINS            *
0014*         THE REQUEST CODE FOR FUNCTION             *
0015*         TO BE PERFORMED.                          *
0016*                                                   *
0017*****************************************************
0018  00000 000000  $EX21 NOP
0019*                                                   *
0020*     RESOLVE INDIRECT BUFFER ADDRESS               *
0021*                                                   *
0022  00001 063003R       LDA BFPTR     GET EXTERNAL BUFFER ADDRESS
0023  00002 002001        RSS
0024  00003 160000  NXLVL LDA A,I          RESOLVE IF IT
0025  00004 001275        RAL,CLE,SLA,ERA   IS INDIRECT
0026  00005 026003R       JMP NXLVL
0027  00006 073003R       STA BFPTR     SAVE RESOLVED BUFFER ADDRESS
0028  00007 042764R       ADA 0200      SET UP END OF BUFFER
0029  00010 073002R       STA SCEND         CHECK CONSTANT.
0030  00011 077026R       STB REQCD     SAVE REQUEST CODE
0031  00012 063005R       LDA PPNTR     INITIALIZE POINTER TO START
0032  00013 073007R       STA PARML       OF LOCAL PARAMETER BUFFER
0033  00014 066004X       LDB SYSCL     IF CALL IS FROM
0034  00015 006002        SZB             SYSTEM AREA
0035  00016 026030R       JMP RLOCP     GO TO MOVE PARAMETERS TO LOCAL
0036*                                      BUFFER, RESOLVE INDIRECTS
0037*                                        AND CHECK FOR VALID FILE NAME
0038  00017 063004R       LDA UPNTR
0039  00020 073006R       STA PARMP     SET UP POINTER TO USER PARAMS
0040  00021 060225        LDA RQRTN     GET RETURN ADDRESS FROM USER ARE
0041  00022 073025R       STA RETAD     SAVE IN LOCAL BUFFER
0042  00023 064224        LDB RQCNT     GET # OF PARAMS FROM USER AREA
0043  00024 044051        ADB N2
0044  00025 077024R       STB COUNT     SAVE UPDATED PARAMETER COUNT
0045  00026 006004        INB
0046  00027 026046R       JMP UENTR     GO TO USER CALL ENTRY POINT
0047*****************************************************
0048*     THIS SUBROUTINE MOVES CALLERS PARAMETERS      *
0049*     TO A LOCAL BUFFER (LCBUF).                    *
0050*                                                   *
0051*     ON ENTRY "B" REGISTER SHOULD CONTAIN          *
0052*     POINTER TO EXTERNAL PARAMETER BUFFER.         *
0053*****************************************************
0054  00030 160001  RLOCP LDA B,I
0055  00031 073025R       STA RETAD     SAVE RETURN ADDRESS
0056  00032 044054        ADB .1          PASSED AND SAVE
```

```
0057  00033 077006R        STB PARMP         POINTER TO PARAMETER LIST.
0058  00034 007004         CMB,INB         CALCULATE THE NUMBER
0059  00035 040001         ADA B             OF PARAMETERS PASSED
0060  00036 064000         LDB A
0061  00037 002003         SZA,RSS
0062  00040 026044R        JMP ZEROP       JUMP IF NO PARAMETERS PASSED
0063  00041 040044         ADA N7          IF COUNT IS EQUAL TO OR GREATER
0064  00042 002021         SSA,RSS           THAN 6
0065  00043 026075R        JMP INVLP           GO SET ERROR CODE.
0066  00044 037007R ZEROP  ISZ PARML       UPDATE POINTER
0067*                                          TO NEXT PARAMETER
0068  00045 077024R        STB COUNT       SAVE COUNT IN LOCAL BUFFER
0069  00046 006003  UENTR  SZB,RSS
0070  00047 026067R        JMP NPARM       JUMP IF NO PARAMETERS PASSED
0071  00050 007004         CMB,INB         MAKE NUMBER OF PARAMS NEGATIVE
0072  00051 163006R UPDTE  LDA PARMP,I     GET POINTER TO PARAMETER
0073  00052 026056R        JMP RINDR       GO TO RESOLVE INDIRECT ADDRESS
0074*                                          IF ANY.
0075  00053 002003  ZRCHK  SZA,RSS         IF ADDRESS IS ZERO
0076  00054 026075R        JMP INVLP                           GO SET ERROR C
0077  00055 160000         LDA A,I         GET NEXT LEVEL OF INDIRECTION
0078  00056 001275  RINDR  RAL,CLE,SLA,ERA
0079  00057 026053R        JMP ZRCHK       ADDRESS WAS INDIRECT
0080*                                          GO TO CHECK FOR ZERO
0081  00060 002003         SZA,RSS         ADDRESS WAS NOT INDIRECT
0082  00061 026075R        JMP INVLP                           GO SET ERROR C
0083  00062 173007R        STA PARML,I     STORE RESOLVED ADDRESS
0084  00063 037007R        ISZ PARML       INCREMENT POINTERS TO
0085  00064 037006R        ISZ PARMP         PARAMETER LISTS
0086  00065 006006         INB,SZB         INCREMENT PARAMETER COUNTER
0087  00066 026051R        JMP UPDTE       GO TO GET NEXT POINTER
0088  00067 063026R NPARM  LDA REQCD       GET REQUEST CODE AND CONTINUE
0089  00070 067024R        LDB COUNT       GET NUMBER OF PARAMETERS PASSED
0090  00071 052763R        CPA RCDE2       IF REQ IS TO PURG AND
0091  00072 006002         SZB               A FILE NAME WAS SPECIFIED
0092  00073 026077R        JMP CKNME           GO CHECK FOR VALID FILE NAME
0093  00074 026440R        JMP PURGT       OTHERWISE GO PURG ALL TEMP FILES
0094  00075 060047  INVLP  LDA N4          SET RETURN CODE
0095  00076 026404R        JMP EXIT        GO TO RETURN TO CALLER
0096*****************************************************
0097*     THIS ROUTINE CHECKS A FILE NAME                *
0098*     FOR VALIDITY I.E.:                             *
0099*                                                    *
0100*        1) FIRST CHARACTER OF FILE NAME SHOULD      *
0101*           BE ALPHABETIC (A-Z) OR ANY SPECIAL       *
0102*           CHARACTER EXCLUDING A SPACE,COMMA AND    *
0103*           LEFT PARENTHESIS.                        *
0104*        2) ONLY THE FIRST FIVE CHARACTERS OF A      *
0105*           GIVEN NAME WILL ANALYZED.                *
0106*                                                    *
0107*        3) THE LAST FOUR CHARACTERS OF A FILE       *
0108*           NAME MAY BE ALPHANUMERIC OR ANY          *
0109*           SPECIAL CHARACTER EXCLUDING SPACES       *
0110*           AND COMMAS.                              *
0111*                                                    *
0112*                                                    *
```

```
0113*******************************************************
0114  00077 062761R CKNME LDA SPACE     GET WORD OF SPACES
0115  00100 067014R       LDB FNAMX     GET ADDRESS OF NAME BUFFER
0116  00101 044060        ADB .5
0117  00102 170001  SPAD  STA B,I       PAD
0118  00103 057014R       CPB FNAMX       NAME BUFFER
0119  00104 026107R       JMP CK1ST         WITH
0120  00105 044052        ADB N1              SPACES (6 WORDS)
0121  00106 026102R       JMP SPAD
0122  00107 077011R CK1ST STB WORK1     SAVE ADDRESS OF NAME BUFFER
0123  00110 064046        LDB N5        SET FILE NAME
0124  00111 077012R       STB WORK2       LENGTH.
0125  00112 016201R       JSB GETCH     GO CHECK 1ST CHAR IN NAME
0126  00113 052767R       CPA 040       IF 1ST CHAR IS EQUAL TO SPACE
0127  00114 026125R       JMP NMERR       GO SET ERROR RETURN CODE
0128  00115 064000        LDB A
0129  00116 046774R       ADB 072       IF 1ST CHAR IS
0130  00117 006021        SSB,RSS         GREATER THAN 9 (ASCII)
0131  00120 026135R       JMP CKALF         GO CHECK FOR VALID ALPHA
0132  00121 064000        LDB A
0133  00122 046773R       ADB 060       IF 1ST CHAR IS
0134  00123 006020        SSB             LESS THAN ZERO (ASCII)
0135  00124 026135R       JMP CKALF         GO CHECK FOR ALPHA CHAR
0136  00125 060050  NMERR LDA N3        SET ERROR RETURN CODE "INVALID
0137  00126 025404R       JMP EXIT        FILE NAME" AND RETURN.
0138  00127 067012R GETNX LDB WORK2     GET CHARACTER COUNT
0139  00130 004010        SLB           SET INDICATOR IF ODD
0140  00131 037030R       ISZ FNAME     INCR POINTER IF COUNT IS ODD
0141  00132 016201R       JSB GETCH     GO GET NEXT CHAR IN FILE NAME
0142  00133 052767R       CPA 040       IF IT IS EQUAL TO A SPACE
0143  00134 026163R       JMP CKDNE       TERMINATE CHECK--NAME OK
0144  00135 064000  CKALF LDB A
0145  00136 046770R       ADB N32       IF IT IS
0146  00137 006020        SSB             LESS THAN OCTAL 40 (SPACE)
0147  00140 026125R       JMP NMERR         GO SET ERROR RETURN CODE
0148  00141 064000        LDB A
0149  00142 042775R       ADA 0140      IF IT IS GREATER
0150  00143 002021        SSA,RSS         THAN OCTAL 137
0151  00144 026125R       JMP NMERR         GO SET ERROR RETURN CODE
0152  00145 063012R       LDA WORK2
0153  00146 000065        CLE,ERA       SET ODD/EVEN INDICATOR
0154  00147 163011R       LDA WORK1,I   GET ADDRESS OF NAME BUFFER
0155  00150 002040        SEZ           IF ODD INDICATOR IS SET
0156  00151 001727        ALF,ALF       EXCHANGE POSITION OF CHAR
0157  00152 010075        AND M1774     INSERT
0158  00153 030001        IOR B           CHARACTER
0159  00154 002040        SEZ
0160  00155 001727        ALF,ALF       RESTORE ORIGINAL POSITION
0161  00156 173011R       STA WORK1,I   STORE CHARACTER INTO NAME BUFF
0162  00157 002041        SEZ,RSS       INCR FILE NAME BUFFER POINTER
0163  00160 037011R       ISZ WORK1       IF ODD INDICATOR IS SET
0164  00161 037012R       ISZ WORK2     GO CHECK NEXT CHARACTER
0165  00162 026127R       JMP GETNX     GO BACK AND ANALYZE NEXT CHARACT
0166  00163 063026R CKDNE LDA REQCD     GET REQUEST CODE
0167  00164 052762R       CPA RCDE1
0168  00165 026213R       JMP PCREA     GO INITIATE CREATE REQUEST
```

```
0169   00166 052763R        CPA RCDE2
0170   00167 026373R        JMP PPURG      GO INITIATE PURG REQUEST
0171   00170 067015R        LDB NNAMX      ASSUME A RENAME REQUEST
0172   00171 160001         LDA B,I        IF FIRST WORD OF SECOND HALF
0173   00172 052761R        CPA SPACE        OF NAME BUFFER IS EQUAL TO
0174   00173 002001         RSS                SPACES-ASSUME IT IS 1ST PASS
0175   00174 026506R        JMP PRNME      GO INITIATE RENAME FUNCTION
0176   00175 063031R        LDA NNAME      GET ADDRESS TO NEW NAME
0177   00176 073030R        STA FNAME      STORE IN WORK BUFFER
0178   00177 077031R        STB NNAME      SAVE ADDRESS OF FILE NAME
0179*                                         IN LOCAL BUFFER.
0180   00200 026107R        JMP CK1ST      GO CHECK NEW NAME FOR VALIDITY
0181   00201 000000  GETCH   NOP
0182   00202 163030R        LDA FNAME,I      GET POINTER TO NEXT 2 BYTES
0183   00203 004010         SLB            IF CHAR COUNT IS ODD EXCHANGE
0184   00204 001727         ALF,ALF          BYTE POSITIONS
0185   00205 010074         AND M377           AND STRIP OFF UPPER HALF
0186   00206 052771R        CPA 050        IF EQUAL TO A OCTAL 50 --(
0187   00207 026125R        JMP NMERR      GO TO SET RETURN CODE
0188   00210 052772R        CPA 054        IF EQUAL TO A OCTAL 54 --,
0189   00211 026125R        JMP NMERR      GO TO SET RETURN CODE
0190   00212 126201R        JMP GETCH,I      THEN CONTINUE PROCESSING
```

```
0192*****************************************************
0193*                                                   *
0194*     PROGRAMMATIC FILE CREATE ROUTINE-- THIS       *
0195*     ROUTINE ALLOWS THE CALLER TO CREATE A USER    *
0196*     DISC FILE UNDER PROGRAM CONTROL.              *
0197*                                                   *
0198*     1.0 CALLING SEQUENCES                         *
0199*                                                   *
0200*         1.1 CALL FROM USER AREA                   *
0201*                                                   *
0202*               JSB EXEC                            *
0203*               DEF *+6                             *
0204*               DEF PARAM1                          *
0205*               DEF PARAM2                          *
0206*               DEF PARAM3                          *
0207*               DEF PARAM4                          *
0208*               DEF PARAM5                          *
0209*                                                   *
0210*            WHERE:                                 *
0211*               PARAM1 DEC 32       REQUEST CODE    *
0212*               PARAM2 BSS 1        RETURN STATUS   *
0213*               PARAM3 ASC 3,XXXXX 5 CHAR FILE NAME*
0214*               PARAM4 OCT N        FILE TYPE       *
0215*                                                   *
0216*                           BIT 6=0 FOR PERMANENT   *
0217*                           BIT 6=1 FOR TEMPORARY   *
0218*                           BITS 5-0 = PROGRAM TYPE*
0219*                                                   *
0220*                           THE ONLY VALID PROGRAM  *
0221*                           TYPES ARE 6-14.         *
0222*                                                   *
0223*               PARAM5 OCT X  LENGTH IN SECTORS
0224*                                                   *
0225*         1.2 CALL FROM SYSTEM AREA                 *
0226*                                                   *
0227*               JSB $CREA                           *
0228*               PARAM1 ASC 3,XXXXX 5 CHAR FILE NAME*
0229*               PARAM2 OCT N SAME AS FOR CALL       *
0230*                            FROM USER AREA         *
0231*               PARAM3 OCT X FROM USER AREA         *
0232*                            FROM USER AREA         *
0233*                                                   *
0234*            WHERE:                                 *
0235*     2.0 ERROR CONDITIONS                          *
0236*                                                   *
0237*         2.1 THE FOLLOWING ERROR CODES WILL BE     *
0238*             RETURNED IN THE 2ND WORD OF THE       *
0239*             PARAMETER LIST (CALL FROM USER AREA)  *
0240*             OR IN THE "A" REGISTER (CALL FROM     *
0241*             SYSTEM AREA):                         *
0242*                                                   *
0243*                 -4 INVALID PARAMETER              *
0244*                 -3 INVALID FILE NAME              *
0245*                 -2 INVALID TYPE                   *
0246*                 -1 INSUFFICIENT DISC SPACE        *
0247*                    (DIRECTORY OR USER)            *
```

```
0248*                    0 NORMAL TERMINATION            *
0249*                   >0 DUPLICATE FILE NAME           *
0250*                      (CONTENTS ARE ADDRESS OF      *
0251*                       OLD DIRECTORY ENTRY)         *
0252*                                                    *
0253*****************************************************
0254  00213 163031R PCREA LDA TYPE,I     GET FILE TYPE
0255  00214 016611R       JSB CHKTP       GO CHECK FOR VALIDITY
0256  00215 016577R       JSB SFILE       GO SEARCH DIRECTORY FOR FILE
0257  00216 026404R       JMP EXIT       FILE NAME ALREADY EXISTS--EXIT
0258  00217 060313        LDA MSECT      GET NEGATIVE SECTOR COUNT
0259  00220 002004        INA             DECREMENT BY 1
0260  00221 073001R       STA SECNT         AND SAVE FOR FUTURE REFERENC
0261  00222 063002R       LDA SCEND      SET UP CONSTANT
0262  00223 040046        ADA N5          TO CHECK FOR
0263  00224 003004        CMA,INA           FULL
0264  00225 073013R       STA WORK3           SECTOR
0265  00226 016711R       JSB GETDR      GO SET UP STARTING DISC ADDRESS
0266*                                       FOR USER DIRECTORY.
0267  00227 016624R RDDIR JSB RDISC      GO READ A SECTOR FROM USER DIR'Y
0268  00230 026232R       JMP FDEND
0269  00231 016677R BMP2  JSB NXENT
0270  00232 057002R FDEND CPB SCEND      IF END OF SECTOR AND NOT
0271  00233 026227R       JMP RDDIR       MARKED GO GET NEXT SECTOR.
0272  00234 160001        LDA B,I
0273  00235 050052        CPA N1         IF END OF SECTOR
0274  00236 026227R       JMP RDDIR       GO READ NEXT SECTOR
0275  00237 002002        SZA            IF NOT END OF DIRECTORY
0276  00240 026231R       JMP BMP2        GO GET NEXT ENTRY
0277  00241 060001        LDA B
0278  00242 043013R       ADA WORK3      IF THERE IS SUFFICIENT
0279  00243 002020        SSA            SPACE ON CURRENT SECTOR
0280  00244 026256R       JMP SPCHK         GO CHECK FOR DISC SPACE
0281  00245 062647R       LDA DSKAD      GET CURRENT
0282  00246 010074        AND M377        SECTOR IF IT IS EQUAL
0283  00247 043001R       ADA SECNT         OR GREATER THAN
0284  00250 002021        SSA,RSS              MAXIMUM SECTOR COUNT
0285  00251 026371R       JMP DRFUL              GO SET RETURN CODE.
0286  00252 060052        LDA N1         CHANGE END OF DIRECTORY INDICATR
0287  00253 170001        STA B,I         TO END OF SECTOR AND
0288  00254 016632R       JSB WDISC         GO TO WRITE SECTOR BACK TO
0289  00255 036647R       ISZ DSKAD           DISC.
0290  00256 077013R SPCHK STB WORK3      SAVE DIRECTORY ENTRY ADDRESS
0291  00257 163032R       LDA DSKLN,I    SET UP COUNTER
0292  00260 003004        CMA,INA         TO UPDATE NEXT AVAILABLE
0293  00261 073011R       STA WORK1         SECTOR ON USER DISC
0294  00262 063010R NXTSC LDA WORK       GET "CURRENT" NEXT AVAIL TRK/SEC
0295  00263 010075        AND M1774      ISOLATE TRACK #
0296  00264 073012R       STA WORK2      SAVE TRACK #
0297  00265 023010R       XOR WORK       ISOLATE SECTOR #
0298  00266 064000        LDB A          SAVE SECTOR #
0299  00267 043001R       ADA SECNT      IF IT IS END OF SECTOR
0300  00270 002021        SSA,RSS
0301  00271 064074        LDB M377
0302  00272 006004        INB
0303  00273 047012R       ADB WORK2
```

```
0304   00274 077010R        STB WORK      SAVE CURRENT TRACK/SECTOR
0305   00275 064155        LDB SYSSC      IF USER AND SYSTEM
0306   00276 054161        CPB CUDSC        ARE ON DIFFERENT SUBCHANNELS
0307   00277 002001        RSS                THEN BYPASS THE JOB BINARY
0308   00300 026306R       JMP NOBIN            AREA CHECK.
0309   00301 060102        LDA JBINC      IF BINARY AREA
0310   00302 002003        SZA,RSS          IS NOT BEING USED
0311   00303 026306R       JMP NOBIN          GO GET LAST TRACK #
0312*                                           OF USER DISC.
0313   00304 001727        ALF,ALF
0314   00305 026307R       JMP ISOL8
0315   00306 060154  NOBIN  LDA DISC0      BINARY AREA NOT BEING USED
0316*                                       GET LAST TRACK OF USER DISC
0317   00307 010074  ISOL8  AND M377       ISOLATE TRACK #
0318   00310 003004        CMA,INA
0319   00311 073012R       STA WORK2
0320   00312 063010R       LDA WORK       GET CURRENT TRACK/SECTOR #
0321   00313 001727        ALF,ALF
0322   00314 010074        AND M377       ISOLATE TRACK #
0323   00315 043012R       ADA WORK2      SUBTRACT
0324   00316 002021        SSA,RSS        IF DIFFERANCE IS POSITIVE THERE
0325   00317 026371R       JMP DRFUL        IS NOT ENOUGH SPACE
0326*                                         GO SET RETURN CODE
0327   00320 037011R       ISZ WORK1      INCREMENT SECTOR COUNT
0328   00321 026262R       JMP NXTSC      FALL THROUGH IF COUNT ROLLS-OVER
0329   00322 064051        LDB N2
0330   00323 163030R NITEM  LDA FNAME,I    GET FILE NAME,
0331   00324 173013R        STA WORK3,I      TYPE AND
0332   00325 037030R        ISZ FNAME          STORE IN DIRECTORY
0333   00326 037013R        ISZ WORK3
0334   00327 006006        INB,SZB
0335   00330 026323R       JMP NITEM
0336   00331 163030R        LDA FNAME,I
0337   00332 010075        AND M1774
0338   00333 064000        LDB A
0339   00334 163031R        LDA TYPE,I
0340   00335 010074        AND M377
0341   00336 040001        ADA B
0342   00337 173013R        STA WORK3,I    STORE LAST CHARACTER OF NAME
0343   00340 037013R        ISZ WORK3        AND FILE TYPE.
0344   00341 062777R        LDA CURAD      GET DISK ADDRESS OF NEW FILE
0345   00342 173013R        STA WORK3,I    STORE IN DIRECTORY
0346   00343 037013R        ISZ WORK3                          TRACK/SECTOR O
0347   00344 163032R        LDA DSKLN,I    GET FILE LENGTH
0348   00345 173013R        STA WORK3,I    STORE IN DIRECTORY
0349   00346 037013R        ISZ WORK3      UPDATE POINTER TO NEXT ENTRY
0350   00347 002400        CLA
0351   00350 173013R        STA WORK3,I    SET NEW END OF DIRECTORY MARKER
0352   00351 016632R       JSB WDISC      WRITE SECTOR TO DISC
0353   00352 062776R        LDA LBLAD      GET DISC ADDR OF USER LABEL
0354   00353 040052        ADA N1         BACK-UP BY 1
0355   00354 072647R        STA DSKAD      STORE IN $DISC CALL SEQUENCE
0356   00355 016624R       JSB RDISC
0357   00356 063010R        LDA WORK       GET "NEW" NEXT AVAILABLE
0358   00357 044067        ADB .64          TRACK/SECTOR AND
0359   00360 170001        STA B,I            STORE IT IN USER LABEL.
```

```
0360  00361 064155         LDB SYSSC     IF USER AND SYSTEM DISC
0361  00362 054161         CPB CUDSC       ARE ON SAME SUBCHANNEL
0362  00363 026366R        JMP SMESC         GO STORE BASE PAGE VALUES.
0363  00364 016632R WRLBL  JSB WDISC     WRITE USER LABEL BACK TO DISC
0364  00365 026403R        JMP NEXIT     RETURN TO CALL--NORMAL TERM
0365  00366 070157  SMESC  STA UDNTS     STORE "NEW" NEXT AVAIL TRK/SEC
0366  00367 070160         STA SYNTS     "     "     "    "     "
0367  00370 026364R        JMP WRLBL     GO WRITE USER LABEL TO DISC
0368  00371 060052  DRFUL  LDA N1        SET RETURN CODE
0369  00372 026404R        JMP EXIT
```

```
0371*****************************************************
0372*                                                   *
0373*     PROGRAMMATIC FILE PURGE ROUTINE--THIS ROUTINE*
0374*     WILL PURGE (BUT NOT REPACK THE DISC) A        *
0375*     SPECIFIC FILE OR ALL TEMPORARY FILES,         *
0376*     DEPENDING ON THE PARAMETERS SPECIFIED.        *
0377*                                                   *
0378*     1.0 CALLING SEQUENCES                         *
0379*                                                   *
0380*         1.1 CALL FROM USER AREA                   *
0381*                                                   *
0382*               JSB EXEC                            *
0383*               DEF *+3(OR 4)                       *
0384*               DEF PARAM1                         *
0385*               DEF PARAM1                         *
0386*               DEF PARAM2                          *
0387*               DEF PARAM3 (OPTIONAL)               *
0388*                                                   *
0389*              WHERE:                               *
0390*                PARM1 DEC 33        REQUEST CODE   *
0391*                PARAM2 BSS 1        RETURN STATUS  *
0392*                PARAM3 ASC 3,XXXXX OPTIONAL 5 CHAR *
0393*                                    FILE NAME.     *
0394*         IF THE OPTIONAL FILE NAME IS OMITTED      *
0395*           THEN ALL TEMPORARY FILES ARE PURGED.    *
0396*                                                   *
0397*         1.2 CALL FROM SYSTEM AREA                 *
0001*                                                   *
0002*               JSB $PURG                           *
0003*               DEF *+1(2)                          *
0004*               DEF PARAM1 (OPTIONAL)               *
0005*                                                   *
0006*              WHERE:                               *
0007*                PARAM1  SAME AS CALL FROM USER AREA*
0008*                                                   *
0009*     2.0 ERROR CONDITIONS                          *
0010*                                                   *
0011*         2.1 THE FOLLOWING ERROR CODES WILL BE     *
0012*             RETURNED IN THE 2ND WORD OF THE       *
0013*             PARAMETER LIST (CALL FROM USER AREA)  *
0014*             OR IN THE "A" REGISTER (CALL FROM     *
0015*             SYSTEM AREA):                         *
0016*                                                   *
0017*                -4  INVALID PARAMETER              *
0018*                -3  IF FILE NAME IS NOT VALID      *
0019*                -2  N/A                            *
0020*                -1  UNDEFINED FILE NAME            *
0021*                 0  NORMAL TERMINATION             *
0022*                                                   *
0023*****************************************************
0024*****************************************************
0025*     PURGE A FILE BY NAME                          *
0026*****************************************************
0027  00373 016577R PPURG JSB $FILE     GO SEARCH USER DIRECTORY
0028  00374 026376R       JMP RSECT     FILE NAME WAS FOUND=CONTINUE
0029  00375 026404R       JMP EXIT      FILE NAME WAS NOT FOUND--EXIT
```

```
0030  00376 016420R RSECT JSB SRCH1     GO TO SEARCH SECTOR
0031  00377 160001        LDA B,I       GET 1ST 2 CHARS OF FILE NAME
0032  00400 010075        AND M1774       STRIP OFF 2ND CHAR AND
0033  00401 170001        STA B,I           STORE 1ST CHAR BACK IN BUFF
0034  00402 016632R       JSB WDISC           AND WRITE DIRECTORY BACK
0035*                                             TO DISC.
0036  00403 002400  NEXIT  CLA             SET NORMAL TERMINATION CODE
0037  00404 066004X EXIT  LDB SYSCL        IF CALL WAS FROM SYSTEM AREA
0038  00405 006003        SZB,RSS           DO NOT UPDATE "RSTAT".
0039  00406 173027R       STA RSTAT,I       SET RETURN CODE
0040  00407 067025R       LDB RETAD       GET CALLERS RETURN ADDRESS
0041  00410 074137        STB XIRT          AND STORE IN BASE PAGE.
0042  00411 006400        CLB
0043  00412 076004X       STB SYSCL       CLEAR SYSTEM AREA CALL INDICATOR
0044  00413 064245        LDB EXMOD       GET EXEC MODULE OVERLAY
0045*                                       AREA BUSY INDICATOR.
0046  00414 056766R       CPB MOD#        IF MODULE # IS NOT THE SAME
0047*                                       SKIP THE NEXT INST.
0048  00415 007004        CMB,INB           RELEASE EXEC MODULE
0049  00416 074245        STB EXMOD           OVERLAY AREA.
0050  00417 026002X       JMP $IRT        TRANSFER CONTROL TO SYSTEM
0051  00420 000000  SRCH1 NOP
0052  00421 016711R       JSB GETDR       GO SET UP STARTING DISC ADDRESS
0053*                                       FOR USER DIRECTORY.
0054  00422 016624R SRCH2 JSB RDISC       GO READ A SECTOR FROM USER DIR'Y
0055  00423 026425R       JMP SRCH4
0056  00424 016677R SRCH3 JSB NXENT       GO UPDATE POINTER TO NEXT ENTRY
0057  00425 057002R SRCH4 CPB SCEND       IF END OF SECTOR AND NOT
0058  00426 026422R       JMP SRCH2         MARKED GO GET NEXT SECTOR.
0059  00427 160001        LDA B,I
0060  00430 050052        CPA N1          IF END OF SECTOR IS DETECTED
0061  00431 026422R       JMP SRCH2         GO READ ANOTHER ONE.
0062  00432 002003        SZA,RSS         FILE NOT FOUND?
0063  00433 026371R       JMP DRFUL       GO AND SET RETURN CODE
0064  00434 063030R       LDA FNAME       GET ADDRESS OF FILE NAME REQ'D
0065  00435 016652R       JSB CHKNM       GO CHECK FILE NAMES FOR EQUALITY
0066  00436 026424R       JMP SRCH3       NO MATCH WAS FOUND - GO TRY NEXT
0067  00437 126420R       JMP SRCH1,I     RETURN TO MAIN-LINE- MATCH FOUND
0068*****************************************************
0069*      PURGE ALL TEMPORARY FILES                    *
0070*****************************************************
0071**********          START HERE TO PURGE ALL TEMPORARY FILES.
0072  00440 016711R PURGT JSB GETDR       GO SET UP STARTING DISC ADDRESS
0073*                                       FOR USER DIRECTORY.
0074  00441 002400        CLA
0075  00442 073010R       STA WORK        CLEAR WRITE INDICATOR
0076  00443 073011R       STA WORK1       CLEAR END OF DIRECTORY INDICATOR
0077  00444 016624R BMPAD JSB RDISC       GO READ A SECTOR FROM USER DIR'Y
0078  00445 026447R       JMP ENDCH       GO TO CHECK FOR END OF SECT,DIR
0079  00446 016677R BMPDR JSB NXENT       GO TO UPDATE POINTER TO
0080  00447 057002R ENDCH CPB SCEND       IF END OF SECTOR AND NOT
0081  00450 026476R       JMP WRDIR         MARKED GO GET NEXT SECTOR.
0082  00451 160001        LDA B,I           GET NEXT ENTRY
0083  00452 050052        CPA N1          IF END OF SECTOR GO TO CHECK IF
0084  00453 026476R       JMP WRDIR         SECTOR HAS TO BE WRITTEN BACK.
0085  00454 002003        SZA,RSS         IF END OF DIRECTORY
```

```
0086  00455 026475R        JMP STEND       GO TO SET END OF DIRECTOR IND.
0087  00456 044055          ADB .2
0088  00457 160001          LDA B,I         GET FILE TYPE
0089  00460 001727          ALF,ALF         IF TEMPORARY BIT
0090  00461 001275          RAL,CLE,SLA,ERA IS ON, CLEAR IT
0091  00462 026465R         JMP CLRTB          AND GO TO RESTORE TYPE.
0092  00463 044051          ADB N2
0093  00464 026446R         JMP BMPDR       GO GET NEXT ENTRY IN DIRECTORY
0094  00465 001727  CLRTB   ALF,ALF
0095  00466 170001          STA B,I         RESTORE FILE TYPE
0096  00467 044051          ADB N2
0097  00470 160001          LDA B,I         GET 1ST TWO CHAR OF FILE NAME,
0098  00471 010075          AND M1774         STRIP OFF 2ND CHAR
0099  00472 170001          STA B,I             AND STORE 1ST CHAR BACK.
0100  00473 037010R         ISZ WORK        SET WRITE INDICATOR
0101  00474 026446R         JMP BMPDR       GO TO GET NEXT ENTRY IN DIR
0102  00475 037011R STEND   ISZ WORK1       SET END OF DIRECTORY INDICATOR
0103  00476 063010R WRDIR   LDA WORK        IF WRITE INDICATOR
0104  00477 002002          SZA               IS ON
0105  00500 016632R         JSB WDISC           WRITE BACK UPDATED SECTOR
0106  00501 063011R         LDA WORK1
0107  00502 002002          SZA             IF THIS IS END OF DIRECTORY
0108  00503 026403R         JMP NEXIT         GO TO RETURN TO CALLER
0109  00504 073010R         STA WORK        CLEAR WRITE INDICATOR
0110  00505 026444R         JMP BMPAD       GO TO READ NEXT SECTOR
```

```
0112*****************************************************
0113*                                                   *
0114*     PROGRAMMATIC FILE RENAME ROUTINE--THIS        *
0115*     ROUTINE ALLOWS THE CALLER TO RENAME A         *
0116*     FILE AND/OR CHANGE FILE TYPE.                 *
0117*                                                   *
0118*     1.0 CALLING SEQUENCES                         *
0119*                                                   *
0120*         1.1 CALL FROM USER AREA                   *
0121*                                                   *
0122*               JSB EXEC                            *
0123*               DEF *+5(OR 6)                       *
0124*               DEF PARAM1                          *
0125*               DEF PARAM2                          *
0126*               DEF PARAM3                          *
0127*               DEF PARAM4                          *
0128*               DEF PARAM5 (OPTIONAL)               *
0129*                                                   *
0130*             WHERE:                                *
0131*               PARAM1 DEC 34       REQUEST CODE    *
0132*               PARAM2 BSS 1        RETURN STATUS   *
0133*               PARAM3 ASC 3,XXXXX OLD FILE NAME    *
0134*               PARAM4 ASC 3,XXXXX NEW FILE NAME    *
0135*               PARAM5 OCT M        NEW TYPE(OPTION)*
0136*                                                   *
0137*                           BIT 6=0 FOR PERMANENT   *
0138*                           BIT 6=1 FOR TEMPORARY   *
0139*                           BITS 5-0 = PROGRAM TYPE *
0140*                                                   *
0141*                           THE ONLY VALID PROGRAM  *
0142*                           TYPES ARE 6-14.         *
0143*                                                   *
0144*         1.2 CALL FROM SYSTEM AREA                 *
0145*                                                   *
0146*               JSB $RNME                           *
0147*               DEF *+3(OR 4)                       *
0148*               DEF PARAM1                          *
0149*               DEF PARAM2                          *
0150*               DEF PARAM3 (OPTIONAL)               *
0151*                                                   *
0152*             WHERE:                                *
0153*               PARAM1 ASC 3,XXXXX OLD FILE NAME    *
0154*               PARAM2 ASC 3,XXXXX NEW FILE NAME    *
0155*               PARAM3 OCT M SAME AS FOR CALL       *
0156*                            FROM USER AREA         *
0157*                                                   *
0158*     2.0 ERROR CONDITIONS                          *
0159*                                                   *
0160*         2.1 THE FOLLOWING ERROR CODES WILL BE     *
0161*             RETURNED IN THE 2ND WORD OF THE       *
0162*             PARAMETER LIST (CALL FROM USER AREA)  *
0163*             OR IN THE "A" REGISTER (CALL FROM     *
0164*             SYSTEM AREA):                         *
0165*                                                   *
0166*                 -4 INVALID PARAMETER              *
0167*                 -3 INVALID NEW OR OLD FILE NAME   *
```

```
0168*                  -2 INVALID NEW PROGRAM TYPE      *
0169*                  -1 UNDEFINED OLD FILE NAME       *
0170*                   0 NORMAL TERMINATION*           *
0171*                  >0 DUPLICATE NEW FILE NAME       *
0172*                     (CONTENTS ARE ADDRESS OF      *
0173*                     DUPLICATE FILE DIRECTORY ENTRY*
0174*                                                   *
0175*                  * IF OLD AND NEW FILE NAMES ARE  *
0176*                    THE SAME NO UPDATING WILL TAKE *
0177*                    PLACE AND TERMINATION WILL BE  *
0178*                    NORMAL.                        *
0179*                                                   *
0180*****************************************************
0181  00506 063024R PRNME LDA  COUNT     GET NUMBER OF PARAMS FOR CALL
0182  00507 050055        CPA  ,2        IF IT IS EQUAL TO 2 ASSUME TYPE
0183  00510 026513R       JMP  SROLD     WAS NOT SPECIFIED--SKIP TYPE CHK
0184  00511 163032R       LDA  NTYPE,I   GET NEW FILE TYPE
0185  00512 016611R       JSB  CHKTP     GO CHECK FILE TYPE
0186  00513 016577R SROLD JSB  SFILE     GO SEARCH USER DIR FOR OLD FILE
0187  00514 026516R       JMP  CPNME     OLD FILE NAME WAS FOUND-CONTINUE
0188  00515 026404R       JMP  EXIT      OLD FILE NAME WAS NOT FOUND-EXIT
0189  00516 077010R CPNME STB  WORK      SAVE POINTER CURRENT ENTRY IN DR
0190  00517 067031R       LDB  NNAME     GET ADDRESS OF NEW FILE NAME
0191  00520 063030R       LDA  FNAME     GET ADDRESS OF OLD FILE NAME
0192  00521 016652R       JSB  CHKNM     GO COMPARE NEW NAME TO OLD
0193  00522 026541R       JMP  SRNEW     RETURN HERE IF NOT EQUAL
0194  00523 063024R       LDA  COUNT
0195  00524 050055        CPA  ,2        IF FILE TYPE WAS NOT SPECIFIED
0196  00525 026403R       JMP  NEXIT     RETURN TO CALLER-DIR NOT UPDATED
0197  00526 067010R       LDB  WORK      GET ADDRESS OF OLD ENTRY,
0198  00527 060001        LDA  B
0199  00530 040055        ADA  ,2          UPDATE ADDRESS AND
0200  00531 160000        LDA  A,I           GET FILE TYPE
0201  00532 010074        AND  M377      STRIP UPPER HALF OF WORD
0202  00533 073013R       STA  WORK3
0203  00534 163032R       LDA  NTYPE,I   GET NEW FILE TYPE
0204  00535 010074        AND  M377      ISOLATE NEW FILE TYPE
0205  00536 053013R       CPA  WORK3     IF OLD AND NEW FILE ARE EQUAL
0206  00537 026403R       JMP  NEXIT     RETURN TO CALLER-DIR NOT UPDATED
0207  00540 026544R       JMP  FINDO
0208  00541 060001  SRNEW LDA  B         SET INDICATOR TO SEARCH USER DIR
0209  00542 016001X       JSB  $SRCH     SEARCH DIRECTORY FOR NEW NAME
0210  00543 026575R       JMP  DUPNM     NEW NAME ALREADY EXISTS
0211  00544 016420R FINDO JSB  SRCH1     FIND OLD FILE NAME ON DIRECTORY
0212  00545 077030R       STB  ONAME     SAVE ADDRESS OF DIRECTORY ENTRY
0213  00546 064051        LDB  N2        SET FILE NAME WORD COUNTER
0214  00547 163031R NXCHR LDA  NNAME,I   GET 2 CHARACTERS OF NEW NAME
0215  00550 173030R       STA  ONAME,I   STORE IN DIRECTORY
0216  00551 037031R       ISZ  NNAME     UPDATE POINTERS
0217  00552 037030R       ISZ  ONAME
0218  00553 006006        INB,SZB        UPDATE COUNTER
0219  00554 026547R       JMP  NXCHR     LOOP UNTIL 2 TIMES
0220  00555 163031R       LDA  NNAME,I   GET LAST CHAR OF NAME
0221  00556 010075        AND  M1774     STRIP LOWER HALF OF WORD
0222  00557 073010R       STA  WORK
0223  00560 063024R       LDA  COUNT     IF NEW TYPE PARAMETER
```

```
0224  00561 050056        CPA .3          WAS SPECIFIED
0225  00562 026565R       JMP CHGTP         GO TO ADD IT IN
0226  00563 163030R       LDA ONAME,I   GET OLD TYPE
0227  00564 026570R       JMP SVTYP
0228  00565 163030R CHGTP LDA ONAME,I   GET OLD FILE TYPE
0229  00566 016611R       JSB CHKTP     GO CHECK OLD FILE TYPE
0230  00567 163032R       LDA NTYPE,I   SET FILE TYPE
0231  00570 010074  SVTYP AND M377         AND STRIP UPPER HALF OF WORD
0232  00571 043010R       ADA WORK
0233  00572 173030R       STA ONAME,I   STORE IN DIRECTORY
0234  00573 016632R       JSB WDISC     GO TO WRITE DIRECTORY TO DISC
0235  00574 026403R       JMP NEXIT     RETURN TO CALLER
0236  00575 060001  DUPNM LDA B          SET RETURN INFO
0237  00576 026404R       JMP EXIT      RETURN TO CALLER
0238*****************************************************
0239*                                                   *
0240*     THIS SUBROUTINE WILL TAKE FIRST FILE NAME     *
0241*     FOUND IN LOCAL NAME BUFFER (FNAMX) AND CALL   *
0242*     $SRCH TO SEARCH FOR FILE NAME IN USER         *
0243*     DIRECTORY. FNAME IS ALSO INITIALIZED TO THE   *
0244*     ADDRESS OF FILE NAME FOR FUTURE REFERENCE.    *
0245*                                                   *
0246*         CONTROL IS RETURNED AS FOLLOWS:           *
0247*                                                   *
0248*        P+1 = FILE FOUND. "A" REG WILL CONTAIN     *
0249*              POINTER TO DIRECTORY ENTRY           *
0250*        P+2 = FILE NAME NOT FOUND.,"A" REG WILL    *
0251*              CONTAIN A NEGATIVE ONE.              *
0252*                                                   *
0253*****************************************************
0254  00577 000000  SFILE NOP
0255  00600 067014R       LDB FNAMX     GET ADDRESS OF FILE NAME IN
0256*                                       LOCAL BUFFER
0257  00601 077030R       STB FNAME     SAVE ADDRESS OF FILE IN PARAM
0258*                                       LIST FOR FUTURE REFERENCE.
0259  00602 060001        LDA B         SET INDICATOR TO SEARCH USER DIR
0260  00603 016001X       JSB $SRCH     GO TO SEARCH USER DIRECTORY
0261  00604 026607R       JMP SEND      FILE NAME WAS FOUND..RETURN P+1
0262  00605 064052        LDB N1        FILE NAME WAS NOT FOUND
0263  00606 036577R       ISZ SFILE       SET RETURN CODE AND RETURN P+2
0264  00607 060001  SEND  LDA B
0265  00610 126577R       JMP SFILE,I   RETURN TO CALLING ROUTINE
0266*****************************************************
0267*                                                   *
0268*     THIS SUBROUTINE CHECKS FILE TYPE FOR VALIDITY.*
0269*     ..VALID FILE TYPES ARE 6-14.                  *
0270*                                                   *
0271*     ON ENTRY "A" REGISTER SHOULD CONTAIN          *
0272*     FILE TYPE.                                    *
0273*         CONTROL IS RETURNED AS FOLLOWS:           *
0274*         P+1 = FILE TYPE VALID                     *
0275*         PROGRAM IS TERMINATED IF TYPE IS INVALID  *
0276*                                                   *
0277*****************************************************
0278  00611 000000  CHKTP NOP
0279  00612 010073        AND M177      STRIP TEMP/PERM BIT.
```

```
0280  00613 064000         LDB A
0281  00614 040045         ADA N6          IF IT IS LESS
0282  00615 002020         SSA               THAN 6 IT IS INVALID
0283  00616 026622R        JMP TPERR       GO SET RETURN CODE
0284  00617 046765R        ADB N13         IF IT IS EQUAL TO OR
0285  00620 006020         SSB               GREATER THAN 13 IT IS INVALID
0286  00621 126611R        JMP CHKTP,I       OK--RETURN
0287  00622 060051  TPERR LDA N2           SET RETURN CODE, INVALID TYPE
0288  00623 025404R        JMP EXIT        RETURN TO CALLER
0289*****************************************************
0290*                                                   *
0291*     SUBROUTINE TO READ OR WRITE A SECTOR          *
0292*     FROM DISC                                     *
0293*        ENTRY POINTS ARE:                          *
0294*        RDISC = READ                               *
0295*        WDISC = WRITE                              *
0296*****************************************************
0297  00624 000000  RDISC NOP
0298  00625 006404         CLB,INB         SET CODE TO READ FROM DISC
0299  00626 062647R        LDA DSKAD
0300  00627 002004         INA             INCREMENT DISC ADDRESS
0301  00630 072647R        STA DSKAD         TO GET NEXT SECTOR.
0302  00631 026636R        JMP CONT1
0303  00632 000000  WDISC NOP
0304  00633 066632R        LDB WDISC       SET CODE TO WRITE TO DISC
0305  00634 076624R        STB RDISC       STORE DISC ADDR TRACK/SECTOR
0306  00635 064055         LDB .2
0307  00636 063003R CONT1 LDA BFPTR       SET UP
0308  00637 072650R        STA BUFAD         BUFFER ADDRESS.
0309  00640 063000R        LDA UDFLG       GET USER DISC FLAG
0310  00641 070162         STA CRFLG       SET BASE PAGE FLAG
0311  00642 062646R        LDA PBUF        GET POINTER TO PARAMETERS
0312  00643 016003X        JSB $DISC
0313  00644 067003R        LDB BFPTR       GET ADDRESS OF 1ST ENTRY IN SECT
0314  00645 126624R        JMP RDISC,I     RETURN TO CALLER
0315  00646 000647R PBUF   DEF DSKAD       * DISC I/O PARAMETERS
0316  00647 000000  DSKAD BSS 1            * DISC ADDRESS TRACK/SECTOR
0317  00650 000000  BUFAD BSS 1            * BUFFER ADDRESS
0318  00651 000200  BUFLN DEC 128          * BUFFER LENGTH
0319*****************************************************
0320*                                                   *
0321*     THIS SUBROUTINE COMPARES TWO 5 CHAR (ASCII)   *
0322*     NAMES FOR EQUALITY.                           *
0323*                                                   *
0324*     THE "B" REGISTER SHOULD CONTAIN ADDRESS       *
0325*     OF FIRST NAME AND "A" REGISTER SHOULD         *
0326*     CONTAIN ADDRESS OF SECOND NAME.               *
0327*                                                   *
0328*       CONTROL IS RETURNED AT:                     *
0329*                                                   *
0330*         P+1  IF FILE NAMES ARE NOT EQUAL          *
0331*         P+2  IF FILE NAMES ARE EQUAL              *
0332*                                                   *
0333*****************************************************
0334  00652 000000  CHKNM NOP
0335  00653 077011R        STB WORK1       SAVE ADDRESS OF FIRST NAME
```

```
0336  00654 073012R        STA WORK2      SAVE ADDRESS OF SECOND NAME
0337  00655 016670R        JSB CMPR       GO TO COMPARE 1ST 2 BYTES OF NME
0338  00656 016670R        JSB CMPR       GO TO COMPARE 2ND 2 BYTES OF NME
0339  00657 160001         LDA B,I        GET LAST WORD OF NAME IN DIR.
0340  00660 010075         AND M1774      STRIP OFF LOWER BYTE
0341  00661 064000         LDB A          SAVE LAST CHARACTER OF FILE
0342*                                         NAME REQUESTED.
0343  00662 163012R        LDA WORK2,I    GET LAST WORD OF FILE NAME REQ'D
0344  00663 010075         AND M1774      STRIP OFF LOWER BYTE
0345  00664 050001         CPA B          IF FILE NAME IS EQUAL THEN
0346  00665 036652R        ISZ CHKNM      THEN SET RETURN TO P+2
0347  00666 067011R CEXIT  LDB WORK1      RESTORE POINTER TO CURRENT ENTRY
0348  00667 126652R        JMP CHKNM,I    RETURN TO MAIN PROGRAM
0349  00670 000000  CMPR   NOP
0350  00671 160001         LDA B,I        GET NEXT 2 BYTES OF FILE NAME
0351*                                         IN DIRECTORY.
0352  00672 153012R        CPA WORK2,I    IF THESE 2 BYTES ARE EQUAL
0353*                                         INCREMENT POINTERS TO CHECK
0354  00673 006005         INB,RSS          NEXT 2 BYTES IN NAME.
0355  00674 026666R        JMP CEXIT      EXIT HERE IF CURRENT 2 BYTES
0356*                                         WERE NOT EQUAL
0357  00675 037012R        ISZ WORK2
0358  00676 126670R        JMP CMPR,I     RETURN TO CALLING SUBROUTINE
0359*****************************************************
0360*     THIS SUBROUTINE CALCULATES THE SIZE OF THE    *
0361*     CURRENT DIRECTORY ENTRY AND UPDATES THE       *
0362*     ADDRESS PASSED IN "B" REGISTER TO POINT       *
0363*     TO THE NEXT DIRECTORY ENTRY.                  *
0364*                                                   *
0365*       THE "B" REGISTER SHOULD CONTAIN A POINTER   *
0366*       TO THE CURRENT DIRECTORY ENTRY WHEN THIS    *
0367*       SUBROUTINE IS CALLED.                       *
0368*                                                   *
0369*****************************************************
0370  00677 000000  NXENT NOP
0371  00700 044055         ADB .2         UPDATE POINTER,
0372  00701 160001         LDA B,I          GET FILE TYPE AND
0373  00702 010073         AND M177           STRIP OFF TEMP-PERM BIT.
0374  00703 040045         ADA N6
0375  00704 044056         ADB .3         UPDATE PTR TO NEXT ENTRY IF
0376*                                         CURRENT ENTRY IS 5 WORDS LONG.
0377  00705 002020         SSA            IF CURRENT ENTRY IS ELEVEN WORDS
0378  00706 044061         ADB .6           LONG UPDATE POINTER AGAIN.
0379  00707 160001         LDA B,I        GET NEXT ENTRY
0380  00710 126677R        JMP NXENT,I    RETURN TO MAIN PROGRAM
0381*****************************************************
0382*                                                   *
0383*     THIS SUBROUTINE DETERMINES WHICH USER         *
0384*     DIRECTORY TO USE (SYSTEM DISC OR USER DISC)   *
0385*     AND STORES THE ADDRESS OF THE APPROPRIATE     *
0386*     USER DISC LABEL IN "DSKAD" AND NEXT AVAILABLE *
0387*     TRACK/SECTOR IN "WORK".                       *
0388*                                                   *
0389*     ENTRY PARAMETERS: NONE                        *
0390*                                                   *
0391*     CONTROL IS RETURNED AT: P+1                   *
```

```
0392*                                                       *
0393*************************************************************
0394  00711 000000  GETDR NOP
0395  00712 064155        LDB SYSSC      IF USER DISC IS ON
0396  00713 054161        CPB CUDSC        SAME SUBCHANNEL AS SYSTEM DISC
0397  00714 002001        RSS                SKIP NEXT INSTRUCTION.
0398  00715 025727R       JMP DIFSC
0399  00716 002400        CLA
0400  00717 073000R       STA UDFLG      SET USER DISC FLAG
0401  00720 060157        LDA UDNTS      GET NEXT AVAILABLE TRACK/SECTOR
0402  00721 073010R       STA WORK       SAVE "CURRENT" NXT AVAIL TRK/SEC
0403  00722 072777R       STA CURAD      SAVE "CURRENT" NEXT AVAIL TRK/SC
0404  00723 064200        LDB DISCL      GET DISC ADDRESS OF USER LABEL
0405  00724 076647R       STB DSKAD        AND SET UP AS STARTING ADDR.
0406  00725 076776R       STB LBLAD      SAVE USER DISC LABEL DISC ADDR.
0407  00726 126711R       JMP GETDR,I        OF USER DIRECTORY-1 & RETURN
0408  00727 060052  DIFSC LDA N1         SET UP DISC ADDRESS OF
0409  00730 073000R       STA UDFLG      SET USER DISC FLAG
0410  00731 072647R       STA DSKAD        SYSTEM LABEL.
0411  00732 016624R       JSB RDISC      GET SYSTEM LABEL.
0412  00733 062647R       LDA DSKAD
0413  00734 072776R       STA LBLAD      SAVE USER DISC LABEL DISC ADDR.
0414  00735 060001        LDA B
0415  00736 044067        ADB .64
0416  00737 164001        LDB B,I        GET NEXT AVAILABLE TRACK/SECTOR
0417  00740 077010R       STB WORK
0418  00741 076777R       STB CURAD      SAVE "CURRENT" NEXT AVAIL TRK/SC
0419  00742 040056        ADA .3         SET UP OINTER TO LABEL NAME
0420  00743 066755R       LDB LBNME      GET POINTER TO "SYSTEM" CONSTANT
0421  00744 016652R       JSB CHKNM      GO CHECK NAMES FOR EQUALITY
0422  00745 126711R       JMP GETDR,I    RETURN HERE IF NOT EQUAL
0423*                                        FIRST FIVE CHARS WERE EQUAL
0424  00746 163012R       LDA WORK2,I    GET LAST 2 CHARS OF LABEL NAME
0425  00747 052760R       CPA SYSLB+2    IF THEY ARE EQUAL
0426  00750 002001        RSS              SKIP NEXT INST.
0427  00751 126711R       JMP GETDR,I    RETURN IF NOT EQUAL
0428  00752 063010R       LDA WORK
0429  00753 040052        ADA N1         SET UP DISC ADDR OF USER LABEL
0430  00754 026731R       JMP DIFSC+2    GO READ USER LABEL
0431*************************************************************
0432*                                                           *
0433*          CONSTANTS AND BUFFERS                            *
0434*                                                           *
0435*************************************************************
0436  00755 000756R LBNME DEF SYSLB
0437  00756 051531  SYSLB ASC 3,SYSTEM
      00757 051524
      00760 042515
0438  00761 020040  SPACE ASC 1,         SPACE CHARACTERS
0439  00762 000040  RCDE1 DEC 32         CREATE REQUEST CODE
0440  00763 000041  RCDE2 DEC 33         PURGE  REQUEST CODE
0441  00764 000200  0200  OCT 200
0442  00765 177763  N13   DEC -13
0443  00766 177753  MOD#  DEC -21        NEGATIVE MODULE #
0444  00767 000040  040   DEC 32         SPACE CHARACTER
0445  00770 177740  N32   DEC -32
```

```
0446  00771 000050  050    OCT 50
0447  00772 000054  054    OCT 54
0448  00773 177720  060    DEC -48
0449  00774 177706  072    DEC -58
0450  00775 177640  0140   DEC -96
0451  00776 000000  LBLAD  NOP          TEMPORARY STORAGE FOR USER
0452*                                      DISC LABEL ADDR. (TRACK/SECTOR
0453  00777 000000  CURAD  NOP          TEMPORARY STORAGE FOR CURRENT
0454*                                      USER DISC NEXT AVAILABLE
0455*                                        TRACK/SECTOR.
0456  01000 000000  UDFLG  NOP          USER DISC REQ FLAG
0457  01001 000000  SECNT  BSS 1        NEGATIVE SECTOR COUNT MINUS 1
0458  01002 000000  SCEND  BSS 1        SECTOR FULL CHECK CONSTANT
0459  01003 000005X BFPTR  DEF SBUF     POINTER TO EXTERNAL BUFFER
0460  01004 000227  UPNTR  DEF RQP2     POINTER TO 2ND PARAMETER
0461  01005 001027R PPNTR  DEF RSTAT
0462  01006 000000  PARMP  DEF 0        POINTER TO NEXT ENTRY IN EXT BUF
0463  01007 000000  PARML  DEF 0        POINTER TO NEXT ENTRY IN LOC BUF
0464  01010 000000  WORK   BSS 1        TEMPORARY WORK AREA
0465  01011 000000  WORK1  BSS 1        TEMPORARY WORK AREA
0466  01012 000000  WORK2  BSS 1        TEMPORARY WORK AREA
0467  01013 000000  WORK3  BSS 1        TEMPORARY WORK AREA
0468  01014 001016R FNAMX  DEF FNMBF    POINTER TO OLD FILE NAME BUFFER
0469  01015 001021R NNAMX  DEF FNMBF+3  POINTER TO NEW FILE NAME BUFFER
0470  01016 000000  FNMBF  BSS 6        FILE NAME(S) BUFFER
0471  01024 000000  LCBUF  BSS 11       LOCAL PARAMETER BUFFER
0472  01024         COUNT  EQU LCBUF    NUMBER OF PARAMETERS FOR CALL
0473  01025         RETAD  EQU LCBUF+1  USER RETURN ADDRESS
0474  01026         REQCD  EQU LCBUF+2  REQUEST CODE
0475  01027         RSTAT  EQU LCBUF+3  RETURN STATUS
0476  01030         FNAME  EQU LCBUF+4  FILE NAME OR
0477  01030         ONAME  EQU LCBUF+4    OLD FILE NAME (RENAME)
0478  01031         TYPE   EQU LCBUF+5  FILE TYPE OR
0479  01031         NNAME  EQU LCBUF+5    NEW FILE NAME (RENAME)
0480  01032         DSKLN  EQU LCBUF+6  FILE SIZE IN SECTORS (CREATE) OR
0481  01032         NTYPE  EQU LCBUF+6    NEW FILE TYPE (RENAME)
0482  00000         A      EQU 0
0483  00001         B      EQU 1
0484  00053         ..     EQU 53B
0485  00044         N7     EQU ..-7
0486  00045         N6     EQU ..-6
0487  00046         N5     EQU ..-5
0488  00047         N4     EQU ..-4
0489  00050         N3     EQU ..-3
0490  00051         N2     EQU ..-2
0491  00052         N1     EQU ..-1
0492  00054         .1     EQU ..+1
0493  00055         .2     EQU ..+2
0494  00056         .3     EQU ..+3
0495  00060         .5     EQU ..+5
0496  00061         .6     EQU ..+6
0497  00067         .64    EQU ..+12
0498  00072         M77    EQU ..+15
0499  00073         M177   EQU ..+16
0500  00074         M377   EQU ..+17
0501  00075         M1774  EQU ..+18
```

```
0502  00100          .      EQU 100B
0503  00102          JBINC  EQU .+2        CURRENT TRACK/SECTOR JBIN AREA
0504  00126          RONBF  EQU .+22
0505  00137          XIRT   EQU RONBF+9
0506  00154          DISC0  EQU .+44       I/O CHANNEL #/LAST TRACK ON DISC
0507  00155          SYSSC  EQU .+45       SYSTEM SUBCHANNEL
0508  00157          UDNTS  EQU .+47       NEXT USER DISC TRACK/SECTOR
0509  00160          SYNTS  EQU .+48       NEXT SYSTEM DISC TRACK/SECTOR
0510  00161          CUDSC  EQU .+49       CURRENT USER DISC SUBCHANNEL
0511  00162          CRFLG  EQU .+50       CURRENT DISC REQ FLAG
0512*                                         "0" FOR SYSTEM
0513*                                         NON-"0" FOR USER
0514  00200          DISCL  EQU .+64       TRACK/SECTOR OF SYSTEM BUFFER IF
0515*                                         USER ON SYSTEM DISC.
0516  00224          RQCNT  EQU .+84       NUMBER OF REQUEST PARAMETERS
0517  00225          RQRTN  EQU .+85       REQUEST RETURN ADDRESS
0518*                                         FROM USER AREA
0519  00227          RQP2   EQU .+87       ADDRESS OF PARAMETERS IN USER A
0520  00245          EXMOD  EQU .+101      EXEC MODULE # CURRENTLY IN EXEC
0521*                                         MODULE OVERLAY AREA.
0522  00313          MSECT  EQU .+139      NEGATIVE NUMBER OF SECTORS/TRACK
0523                        END
** NO ERRORS*
```

```
$BUF    00005/02 00459/03

$DISC   00004/02 00312/03

$EX21   00018/02 00003/02

$IRT    00004/02 00050/03

$SRCH   00004/02 00209/03 00260/03

.       00502/03 00503/03 00504/03 00506/03 00507/03 00508/03 00509/03
        00510/03 00511/03 00514/03 00516/03 00517/03 00519/03 00520/03
        00522/03

..      00484/03 00485/03 00486/03 00487/03 00488/03 00489/03 00490/03
        00491/03 00492/03 00493/03 00494/03 00495/03 00496/03 00497/03
        00498/03 00499/03 00500/03 00501/03

.1      00492/03 00056/02

.2      00493/03 00087/03 00182/03 00195/03 00199/03 00306/03 00371/03

.3      00494/03 00224/03 00375/03 00419/03

.5      00495/03 00116/02

.6      00496/03 00378/03

.64     00497/03 00358/02 00415/03

A       00482/03 00024/02 00060/02 00077/02 00128/02 00132/02 00144/02
        00148/02 00298/02 00338/02 00200/03 00280/03 00341/03

B       00483/03 00054/02 00059/02 00117/02 00158/02 00172/02 00272/02
        00277/02 00287/02 00341/02 00359/02 00031/03 00033/03 00059/03
        00082/03 00088/03 00095/03 00097/03 00099/03 00198/03 00208/03
        00236/03 00259/03 00264/03 00339/03 00345/03 00350/03 00372/03
        00379/03 00414/03 00416/03

BFPTR   00459/03 00022/02 00027/02 00307/03 00313/03

BMP2    00269/02 00276/02

BMPAD   00077/03 00110/03

BMPDR   00079/03 00093/03 00101/03

BUFAD   00317/03 00308/03

*BUFLN  00318/03

CEXIT   00347/03 00365/03

CHGTP   00228/03 00225/03
```

CHKNM 00334/03 00065/03 00192/03 00346/03 00348/03 00421/03

CHKTP 00278/03 00256/02 00185/03 00229/03 00286/03

CK1ST 00122/02 00119/02 00180/02

CKALF 00144/02 00131/02 00135/02

CKDNE 00166/02 00143/02

CKNME 00114/02 00092/02

CLRTB 00094/03 00091/03

CMPR 00349/03 00337/03 00338/03 00358/03

CONT1 00307/03 00302/03

COUNT 00472/03 00044/02 00068/02 00089/02 00181/03 00194/03 00223/03

CPNME 00189/03 00187/03

CRFLG 00511/03 00310/03

CUDSC 00510/03 00306/02 00361/02 00396/03

CURAD 00453/03 00344/02 00403/03 00418/03

DIFSC 00408/03 00398/03 00430/03

DISC0 00506/03 00315/02

DISCL 00514/03 00404/03

DRFUL 00368/02 00285/02 00325/02 00063/03

DSKAD 00316/03 00281/02 00289/02 00355/02 00299/03 00301/03 00315/03
00405/03 00410/03 00412/03

DSKLN 00480/03 00291/02 00347/02

DUPNM 00236/03 00210/03

ENDCH 00080/03 00078/03

EXIT 00037/03 00095/02 00137/02 00257/02 00369/02 00029/03 00188/03
00237/03 00288/03

EXMOD 00520/03 00044/03 00049/03

FDEND 00270/02 00268/02

FINDO 00211/03 00207/03

FNAME 00476/03 00140/02 00177/02 00182/02 00330/02 00332/02 00336/02
00064/03 00191/03 00257/03

```
 FNAMX   00468/03 00115/02 00118/02 00255/03

 FNMBF   00470/03 00468/03 00469/03

 GETCH   00181/02 00125/02 00141/02 00190/02

 GETDR   00394/03 00265/02 00052/03 00072/03 00407/03 00422/03 00427/03

 GETNX   00138/02 00165/02

 INVLP   00094/02 00066/02 00076/02 00082/02

 ISOL8   00317/02 00314/02

 JBINC   00503/03 00309/02

 LBLAD   00451/03 00353/02 00406/03 00413/03

 LBNME   00436/03 00420/03

 LCBUF   00471/03 00472/03 00473/03 00474/03 00475/03 00476/03 00477/03
         00478/03 00479/03 00480/03 00481/03

 M177    00499/03 00279/03 00373/03

 M1774   00501/03 00157/02 00295/02 00337/02 00032/03 00098/03 00221/03
         00340/03 00344/03

 M377    00500/03 00185/02 00282/02 00301/02 00317/02 00322/02 00340/02
         00201/03 00204/03 00231/03

*M77     00498/03

 MOD#    00443/03 00046/03

 MSECT   00522/03 00258/02

 N1      00491/03 00120/02 00273/02 00286/02 00354/02 00368/02 00060/03
         00083/03 00262/03 00408/03 00429/03

 N13     00442/03 00284/03

 N2      00490/03 00043/02 00329/02 00092/03 00096/03 00213/03 00287/03

 N3      00489/03 00136/02

 N32     00445/03 00145/02

 N4      00488/03 00094/02

 N5      00487/03 00123/02 00262/02

 N6      00486/03 00281/03 00374/03

 N7      00485/03 00063/02
```

```
NEXIT   00036/03 00364/02 00108/03 00196/03 00206/03 00235/03
NITEM   00330/02 00335/02
NMERR   00136/02 00127/02 00147/02 00151/02 00187/02 00189/02
NNAME   00479/03 00176/02 00178/02 00190/03 00214/03 00216/03 00220/03
NNAMX   00469/03 00171/02
NOBIN   00315/02 00308/02 00311/02
NPARM   00088/02 00070/02
NTYPE   00481/03 00184/03 00203/03 00230/03
NXCHR   00214/03 00219/03
NXENT   00370/03 00269/02 00056/03 00079/03 00380/03
NXLVL   00024/02 00026/02
NXTSC   00294/02 00328/02
0140    00450/03 00149/02
0200    00441/03 00028/02
040     00444/03 00126/02 00142/02
050     00446/03 00186/02
054     00447/03 00188/02
060     00448/03 00133/02
072     00449/03 00129/02
ONAME   00477/03 00212/03 00215/03 00217/03 00226/03 00228/03 00233/03
PARML   00463/03 00032/02 00066/02 00083/02 00084/02
PARMP   00462/03 00039/02 00057/02 00072/02 00085/02
PBUF    00315/03 00311/03
PCREA   00254/02 00168/02
PPNTR   00461/03 00031/02
PPURG   00027/03 00170/02
PRNME   00181/03 00175/02
PURGT   00072/03 00093/02
```

RCDE1 00439/03 00167/02

RCDE2 00440/03 00090/02 00169/02

RDDIR 00267/02 00271/02 00274/02

RDISC 00297/03 00267/02 00356/02 00054/03 00077/03 00305/03 00314/03
00411/03

REQCD 00474/03 00030/02 00088/02 00166/02

RETAD 00473/03 00041/02 00055/02 00040/03

RINDR 00078/02 00073/02

RLOCP 00054/02 00035/02

RONBF 00504/03 00505/03

RQCNT 00516/03 00042/02

RQP2 00519/03 00460/03

RQRTN 00517/03 00040/02

RSECT 00030/03 00028/03

RSTAT 00475/03 00039/03 00461/03

SCEND 00458/03 00029/02 00261/02 00270/02 00057/03 00080/03

SECNT 00457/03 00260/02 00283/02 00299/02

SEND 00264/03 00261/03

SFILE 00254/03 00256/02 00027/03 00186/03 00263/03 00265/03

SMESC 00365/02 00362/02

SPACE 00438/03 00114/02 00173/02

SPAD 00117/02 00121/02

SPCHK 00290/02 00280/02

SRCH1 00051/03 00030/03 00067/03 00211/03

SRCH2 00054/03 00058/03 00061/03

SRCH3 00056/03 00066/03

SRCH4 00057/03 00055/03

SRNEW 00208/03 00193/03

SROLD 00186/03 00183/03

STEND 00102/03 00086/03

SVTYP 00231/03 00227/03

SYNTS 00509/03 00366/02

SYSCL 00005/02 00033/02 00037/03 00043/03

SYSLB 00437/03 00425/03 00436/03

SYSSC 00507/03 00305/02 00360/02 00395/03

TPERR 00287/03 00283/03

TYPE 00478/03 00254/02 00339/02

UDFLG 00456/03 00309/03 00400/03 00409/03

UDNTS 00508/03 00365/02 00401/03

UENTR 00069/02 00046/02

UPDTE 00072/02 00087/02

UPNTR 00460/03 00038/02

WDISC 00303/03 00288/02 00352/02 00363/02 00034/03 00105/03 00234/03
00304/03

WORK 00464/03 00294/02 00297/02 00304/02 00320/02 00357/02 00075/03
00100/03 00103/03 00109/03 00189/03 00197/03 00222/03 00232/03
00402/03 00417/03 00428/03

WORK1 00465/03 00122/02 00154/02 00161/02 00163/02 00293/02 00327/02
00076/03 00102/03 00106/03 00335/03 00347/03

WORK2 00466/03 00124/02 00138/02 00152/02 00164/02 00296/02 00303/02
00319/02 00323/02 00336/03 00343/03 00352/03 00357/03 00424/03

WORK3 00467/03 00264/02 00278/02 00290/02 00331/02 00333/02 00342/02
00343/02 00345/02 00346/02 00348/02 00349/02 00351/02 00202/03
00205/03

WRDIR 00103/03 00081/03 00084/03

WRLBL 00363/02 00367/02

XIRT 00505/03 00041/03

ZEROP 00066/02 00062/02

ZRCHK 00075/02 00079/02

```
0001                    ASMB,R,L,C,X,B,N
** NO ERRORS*
```

```
0001                    ASMB,R,L,C,X,B,N
0003                          IFN
0004  00000                   NAM $EX22,1,0
0005                          XIF
0006                          IFZ
0007                          NAM $EX22,6,0
0008                          XIF
0009                          ENT $EX22
0010                          EXT $MDEF,$MEND,$BIDT,$BFDR,$MAVL,$MMFS,$SBUF
0011                          EXT $RQER,$MOVE,$IRT
0012                          EXT $ID#
0013*
0014*
0015  00000 076410R $EX22 STB CALPT     CALL POINTER
0016  00001 062006X       LDA $MMFS     CHECK IF USER OF SYSTEM CALL
0017  00002 002002        SZA
0018  00003 026011R       JMP EX10           SYSTEM CALL
0019  00004 062407R       LDA DFRQC          USER CALL SO MOVE RQCNT THR
0020  00005 064041        LDB N10       RQP8 INTO  $MBUF
0021  00006 016011X       JSB $MOVE
0022  00007 000373R       DEF $MBUF
0023  00010 026054R       JMP EX20
0024  00011 062406R EX10  LDA DEMFS          DEF $MMFS
0025  00012 072375R       STA $MBUF+2        REQUEST CODE ADDRESS
0026  00013 066410R       LDB CALPT
0027  00014 160001        LDA B,I
0028  00015 072374R       STA $MBUF+1        RETURN ADDRESS
0029  00016 007004        CMB,INB
0030  00017 040001        ADA B
0031  00020 040052        ADA N1
0032  00021 072373R       STA $MBUF          # PARAMETERS
0033  00022 062411R       LDA DMSTT
0034  00023 072376R       STA $MBUF+3   SET DUMMY STATUS ADDRESS FOR SYS
0035  00024 002400        CLA           CLEAR $MBUF
0036  00025 064046        LDB N5
0037  00026 016011X       JSB $MOVE
0038  00027 000377R       DEF $MBUF+4
0039  00030 066373R       LDB $MBUF     MOVE SYSTEM REQ PARAMETERS
0040  00031 006003        SZB,RSS       CHECK FOR NO PARAMETERS
0041  00032 026054R       JMP EX20
0042  00033 007004        CMB,INB
0043  00034 036410R       ISZ CALPT
0044  00035 062405R       LDA DFM4
0045  00036 072413R       STA TEMP
0046  00037 062410R EX15  LDA CALPT
0047  00040 160000        LDA A,I
0048  00041 002002        SZA
0049  00042 050054        CPA .1
0050  00043 102012        HLT 10        LOCATION 0 OR 1
0051  00044 001275        RAL,CLE,SLA,ERA
0052  00045 026040R       JMP EX15+1
0053  00046 172413R       STA TEMP,I
0054  00047 036413R       ISZ TEMP
0055  00050 036410R       ISZ CALPT
0056  00051 006004        INB
0057  00052 006002        SZB
```

```
0058  00053 026037R        JMP EX15
0059  00054 062005X EX20   LDA $MAVL      CHECK IF INITIAL ENTRY
0060  00055 002002         SZA
0061  00056 026154R        JMP EX50            NOT INITIAL ENTRY
0062*     SET UP AVAILABLE MEMORY LIST
0063  00057 072003X        STA $BIDT
0064  00060 064153         LDB EXPG+10
0065  00061 076005X        STB $MAVL      STORE FIRST WORD OF AVAIL MEMORY
0066  00062 002400         CLA
0067  00063 170001         STA B,I        NEXT LINK
0068  00064 006004         INB
0069  00065 170001         STA B,I        PREV LINK
0070  00066 006004         INB
0071  00067 062005X        LDA $MAVL
0072  00070 170001         STA B,I        STARTING ADD
0073  00071 006004         INB
0074  00072 003004         CMA,INA
0075  00073 040100         ADA UMLWA
0076  00074 170001         STA B,I        # WORDS
0077*       SET SUBSYSTEM TABLE LIST
0078  00075 002400         CLA            CLEAR MMBUF TO ZERO
0079  00076 066423R        LDB N350            -350
0080  00077 016011X        JSB $MOVE
0081  00100 000007X        DEF $$BUF
0082  00101 164335         LDB SSTBL,I    CHECK IF SUBSYSTEM ENTRIES
0083  00102 006002         SZB
0084  00103 026106R        JMP EX30            YES
0085  00104 076003X        STB $BIDT      NO UNIQUE BLOCK ID SPECIFIED
0086  00105 026151R        JMP EX40
0087  00106 060001  EX30   LDA B
0088  00107 003004         CMA,INA
0089  00110 072413R        STA TEMP
0090  00111 064335         LDB SSTBL
0091  00112 006004         INB
0092  00113 076414R        STB TEMP1      SET TO ADDRESS OF FIRST SSTBL EN
0093  00114 017226R EX35   JSB MMGET      GET 7 WORD ENTRY SPACE
0094  00115 076210R        STB ADSST
0095  00116 002400         CLA
0096  00117 170001         STA B,I        CLEAR NEXT LINK
0097  00120 006004         INB
0098  00121 170001         STA B,I        CLEAR PREV LINK
0099  00122 006004         INB
0100  00123 162414R        LDA TEMP1,I
0101  00124 170001         STA B,I        STORE BID CHAR 0,1
0102  00125 036414R        ISZ TEMP1
0103  00126 006004         INB
0104  00127 162414R        LDA TEMP1,I
0105  00130 170001         STA B,I        STORE BID CHAR 1,2
0106  00131 006004         INB
0107  00132 003400         CCA
0108  00133 170001         STA B,I        SET LOGICAL ADDRESS TO 177777
0109  00134 006004         INB
0110  00135 036414R        ISZ TEMP1
0111  00136 162414R        LDA TEMP1,I
0112  00137 170001         STA B,I        SET TO NUMBER OF WORDS
0113  00140 006004         INB
```

```
0114  00141 002400         CLA
0115  00142 170001         STA B,I        CLEAR LINK POINTER TO FIRST ENTR
0116  00143 062210R        LDA ADSST
0117  00144 066327R        LDB DFBID
0118  00145 017312R        JSB MMENT
0119  00146 036414R        ISZ TEMP1
0120  00147 036413R        ISZ TEMP       INCREMENT # ENTRIES
0121  00150 026114R        JMP EX35            GO PROCESS NEXT ENTRY
0122  00151 002400  EX40    CLA
0123  00152 072004X         STA $BFDR     CLEAR NON BID POINTER
0124  00153 072013X         STA $ID#      CLEAR ID COUNTER
0125*
0126*
0127*
0128  00154 162375R EX50    LDA $MBUF+2,I       REQUEST CODE
0129  00155 052415R         CPA .35
0130  00156 026211R         JMP MINIT           MEMORY MANAGEMENT INITIALIZ
0131  00157 052416R         CPA .36
0132  00160 026334R         JMP MSTAT           MM STATUS
0133  00161 052417R         CPA .37
0134  00162 026424R         JMP MALCM           MM ALLOCATE MAPPABLE BUFFER
0135  00163 052420R         CPA .38
0136  00164 026546R         JMP MALCN           MM ALLOCATE NON-MAPPABLE BU
0137  00165 052421R         CPA .41
0138  00166 026660R         JMP MRELM           MM RELEASE BUFFER
0139  00167 060245          LDA EXMOD
0140  00170 052422R         CPA N22
0141  00171 003004          CMA,INA
0142  00172 070245          STA EXMOD           SET EXMOD TO POSITIVE #
0143  00173 002400          CLA
0144  00174 072006X         STA $MMFS           FREE SYSTEM CALL FLAG
0145                        IFN
0146  00175 026010X         JMP $RQER     REQUEST ERROR
0147                        XIF
0148                        IFZ
0149                        HLT 5
0150                        XIF
0151*
0152*          RETURN PROCESSOR FOR MEMORY MANAGEMENT
0153*                REQUESTS.
0154  00176 060245  EX100   LDA EXMOD           IS DISC RESIDENT EXEC MODUL
0155  00177 052422R         CPA N22                  THEN SET TO ALLOW
0156  00200 003004          CMA,INA                  REENTRANT WITHOUT LOAD
0157  00201 070245          STA EXMOD                IN AGAIN
0158  00202 002400          CLA                 CLEAR SYSTEM REQUEST FLAG
0159  00203 072006X         STA $MMFS
0160                        IFZ
0161                        LDA $MBUF+3,I       LOAD STATUS INTO A REGISTER
0162                        JMP $MBUF+1,I  RETURN TO CALLER
0163                        XIF
0164*
0165                        IFN
0166  00204 062374P         LDA $MBUF+1    STORE RETURN ADDRESS
0167  00205 070137          STA XIRT
0168  00206 162376R         LDA $MBUF+3,I    LOAD A WITH STATUS
0169  00207 026012X         JMP $IRT      RETURN
```

```
0170                            XIF
0171   00210 000000   ADSST NOP
```

```
0173*
0174*     MINIT IS MEMORY MANAGEMENT INITIALIZATION REQUEST PROCESSOR
0175*
0176  00211 062003X MINIT LDA $BIDT     CHECK IF UNIQUE BLOCK ID'S EXIST
0177  00212 002003        SZA,RSS
0178  00213 026262R       JMP MIN50          NOT YES, SO CREATE ENTRY
0179  00214 062401R       LDA $MBUF+6
0180  00215 066327R       LDB DFBID
0181  00216 017256R       JSB MMNME     CHECK IF BLOCK ID ALREADY EXISTS
0182  00217 006003        SZB,RSS
0183  00220 026262R       JMP MIN50          NO SO CREATE ENTRY
0184  00221 076330R       STB CENTY     SAVE ADDRESS OF FOUND ENTRY
0185  00222 044057        ADB .4
0186  00223 160001        LDA B,I
0187  00224 050052        CPA N1
0188  00225 002001        RSS
0189  00226 026246R       JMP MIN07
0190  00227 006004        INB
0191  00230 160001        LDA B,I       # OF WORDS
0192  00231 072331R       STA NWD
0193  00232 066402R       LDB $MBUF+7   ADDR OF OPTIONAL PARAM LADR
0194  00233 006002        SZB
0195  00234 166402R       LDB $MBUF+7,I OPTIONAL PARAMETER LADR
0196  00235 017463R       JSB MMFRG     GO TO GET FREE AVAILABLE SPACE
0197  00236 026250R       JMP MIN10          NOT ENOUGH OF NOT AT REQ AD
0198  00237 066330R MIN05 LDB CENTY     AREA FOUND AT PROPER SPACE
0199  00240 044057        ADB .4
0200  00241 170001        STA B,I       STORE STARTING LOGICAL ADDRESS
0201  00242 172400R       STA $MBUF+5,I ACTUAL SADR
0202  00243 002400        CLA
0203  00244 172376R       STA $MBUF+3,I OK STATUS
0204  00245 026176R       JMP EX100          RETURN
0205  00246 060047  MIN07 LDA N4
0206  00247 026252R       JMP MIN15
0207  00250 002020  MIN10 SSA
0208  00251 026254R       JMP MIN20
0209  00252 172376R MIN15 STA $MBUF+3,I
0210  00253 026176R       JMP EX100          RETURN
0211  00254 050052  MIN20 CPA N1
0212  00255 026252R       JMP MIN15     NO MEMORY AVAILABLE
0213  00256 060051        LDA N2
0214  00257 172376R       STA $MBUF+3,I ANOTHER BUFFER ASSIGNED ERROR
0215  00260 176400R       STB $MBUF+5,I   SET SADR TO AVAIL AREA
0216  00261 026176R       JMP EX100
0217*     BLOCK ID NOT ENTERED
0218  00262 162377R MIN50 LDA $MBUF+4,I #WORDS
0219  00263 066402R       LDB $MBUF+7  ADDR OF OPTIONAL PARAM LADR
0220  00264 006002        SZB          CHECK IF ENTERED
0221  00265 166402R       LDB $MBUF+7,I     YES, SO GET COUNT
0222  00266 017463R       JSB MMFRG     REQUEST FREE SPACE AREA
0223  00267 026250R       JMP MIN10
0224  00270 072332R       STA CLADR     SAVE LOGICAL ADDRESS
0225  00271 017226R MIN55 JSB MMGET     GET AVAILABLE 7 WORD ENTRY
0226  00272 076330R       STB CENTY     7 WORD ADDRESS
0227  00273 006002        SZB
0228  00274 026300R       JMP MIN60
```

```
0229  00275 003400         CCA
0230  00276 172376R        STA $MBUF+3,I NO MEMORY AVAILABLE
0231  00277 026176R        JMP EX100     RETURN
0232  00300 066330R MIN60  LDB CENTY
0233  00301 044055         ADB .2
0234  00302 076333R        STB TADR      ADDR TO STORE NAME
0235  00303 066401R        LDB $MBUF+6
0236  00304 160001         LDA B,I
0237  00305 172333R        STA TADR,I    N,A
0238  00306 036333R        ISZ TADR
0239  00307 006004         INB
0240  00310 160001         LDA B,I
0241  00311 172333R        STA TADR,I    M,E
0242  00312 036333R        ISZ TADR
0243  00313 062332R        LDA CLADR     STARTING LOGICAL ADDRESS
0244  00314 172333R        STA TADR,I
0245  00315 172400R        STA $MBUF+5,I SET SADR
0246  00316 036333R        ISZ TADR
0247  00317 162377R        LDA $MBUF+4,I # WORDS
0248  00320 172333R        STA TADR,I
0249  00321 062330R        LDA CENTY
0250  00322 066327R        LDB DFBID
0251  00323 017312R        JSB MMENT     ENTER UNIQUE BLOCK ID IN LIST
0252  00324 002400         CLA
0253  00325 172376R        STA $MBUF+3,I
0254  00326 026176R        JMP EX100
0255  00327 000003X DFBID  DEF $BIDT
0256  00330 000000  CENTY  NOP
0257  00331 000000  NWD    NOP
0258  00332 000000  CLADR  NOP
0259  00333 000000  TADR   NOP
```

```
0261*
0262*     MSTAT IS MEMORY MANAGEMENT STATUS REQUEST PROCESSOR
0263*
0264   00334 062003X MSTAT LDA $BIDT     CHECK IF UNIQUE ID'S PRESENT
0265   00335 002003        SZA,RSS
0266   00336 026352R       JMP MS10           NO SO CUMULATIVE FREE SPACE
0267   00337 062377R       LDA $MBUF+4
0268   00340 002003        SZA,RSS   CHECK IF BID PRESENT
0269   00341 026352R       JMP MS10
0270   00342 066327R       LDB DFBID
0271   00343 017266R       JSB MMNME     SEARCH FOR FILE NAME IN BIDT LIS
0272   00344 006003        SZB,RSS
0273   00345 026367R       JMP MS25
0274   00346 044060        ADB .5
0275   00347 160001        LDA B,I
0276   00350 172376R MS05  STA $MBUF+3,I
0277   00351 026176R       JMP EX100     RETURN
0278   00352 002400  MS10  CLA
0279   00353 072371R       STA SUM
0280   00354 066005X       LDB $MAVL     COMPUTE TOTAL FREE SPACE AREA
0281   00355 160001  MS20  LDA B,I
0282   00356 072372R       STA NEXL      SAVE NEXT LINK
0283   00357 044056        ADB .3
0284   00360 160001        LDA B,I
0285   00361 042371R       ADA SUM       FORM CUMULATIVE FREE SPACE SUM
0286   00362 072371R       STA SUM
0287   00363 066372R       LDB NEXL      GET NEXT LINK
0288   00364 006002        SZB
0289   00365 026355R       JMP MS20      GO TO NEXT AREA
0290   00366 026350R       JMP MS05      DONE
0291   00367 060050  MS25  LDA N3
0292   00370 026350R       JMP MS05
0293   00371 000000  SUM   NOP
0294   00372 000000  NEXL  NOP
0295   00373 000000  $MBUF BSS 10        MEMORY MANAGEMENT PARAMETER BUF
0296   00405 000377R DFM4  DEF $MBUF+4
0297   00406 000006X DEMFS DEF $MMFS
0298   00407 000224  DFRQC DEF RQCNT
0299   00410 000000  CALPT NOP
0300   00411 000412R DMSTT DEF SST
0301   00412 000000  SST   NOP
0302   00413 000000  TEMP  NOP
0303   00414 000000  TEMP1 NOP
0304   00415 000043  .35   DEC 35
0305   00416 000044  .36   DEC 36
0306   00417 000045  .37   DEC 37
0307   00420 000046  .38   DEC 38
0308   00421 000051  .41   DEC 41
0309   00422 177752  N22   DEC -22
0310   00423 177242  N350  DEC -350
```

```
0312*
0313*     MALCM IS MEMORY MANAGEMENT MAPPABLE BUFFER ALLOCATION PROCESSOR
0314*
0315  00424 066403R MALCM LDB $MBUF+8  CHECKIF OPTIONAL BID PARAM PRESEN
0316  00425 006003        SZB,RSS
0317  00426 026461R       JMP MAM50          NO
0318  00427 062003X       LDA $BIDT           YES, SO CHECK IF IT IS PRES
0319  00430 002003        SZA,RSS             IN $BIDT LIST
0320  00431 026455R       JMP MAM10     NOT PRESENT ERROR RETURN -NO BID
0321  00432 062403R       LDA $MBUF+8  SEARCH $BIDT FOR REQUESTED NAME
0322  00433 066327R       LDB DFBID
0323  00434 017256R       JSB MMNME
0324  00435 006003        SZB,RSS
0325  00436 026455R       JMP MAM10    NOT PRESENT BID ERROR RETURN
0326  00437 044061        ADB ,6
0327  00440 076505R       STB BIDAD    ADDRESS OF BID IN $BIDT
0328*
0329*
0330  00441 162401R       LDA $MBUF+6,I   LOGICAL ADDRESS (MAY BE 0)
0331  00442 017000R       JSB MMSPC
0332  00443 100377R       DEF $MBUF+4,I
0333  00444 026453R       JMP MAM05
0334  00445 072506R       STA BIDLG    STARTING LOGICAL ADDRESS
0335  00446 016510R       JSB IFORM
0336  00447 062507R       LDA MMAD     ENTER ENTRY INTO BID LIST
0337  00450 066505R       LDB BIDAD
0338  00451 017312R       JSB MMENT
0339*
0340  00452 002400        CLA
0341  00453 172376R MAM05 STA $MBUF+3,I SET OK STATUS
0342  00454 026176R       JMP EX100        RETURN
0343*
0344  00455 060050  MAM10 LDA N3        SPECIFIED BID NOT PRESENT ERROR
0345  00456 026453R       JMP MAM05
0346*
0347  00457 003400  MAM20 CCA           NO MEMORY AVAILABLE ERROR
0348  00460 026453R       JMP MAM05
0349*
0350*
0351  00461 162377R MAM50 LDA $MBUF+4,I  # WORDS
0352  00462 166401R       LDB $MBUF+6,I   LOGICAL ADDRESS
0353  00463 017463R       JSB MMFRG
0354  00464 026473R       JMP MAM60    ERROR RETURN
0355  00465 072506R       STA BIDLG    SAVE STARTING ADDRESS
0356*
0357  00466 016510R       JSB IFORM     FORM ID
0358  00467 062507R       LDA MMAD     ENTER INTO UNNAMED LIST
0359  00470 066746R       LDB DFBFD
0360  00471 017312R       JSB MMENT
0361  00472 026452R       JMP MAM05-1  RETURN
0362*
0363  00473 002020  MAM60 SSA
0364  00474 026477R       JMP MAM70
0365  00475 172376R       STA $MBUF+3,I LARGEST AMOUNT AVAILABLE
0366  00476 026176R       JMP EX100      RETURN
0367  00477 050052  MAM70 CPA N1
```

```
0368   00500 026453R        JMP MAM05
0369   00501 060051         LDA N2
0370   00502 172376R        STA $MBUF+3,I
0371   00503 176400R        STB $MBUF+5,I AVAILABLE SPACE
0372   00504 026176R        JMP EX100     RETURN
0373   00505 000000  BIDAD  NOP
0374   00506 000000  BIDLG  NOP
0375   00507 000000  MMAD   NOP
0376*
0377   00510 000000  IFORM  NOP
0378   00511 017226R        JSB MMGET      GET DIRECTORY SPACE
0379   00512 006003         SZB,RSS
0380   00513 026457R        JMP MAM20         NO MEMORY AVAILABLE ERROR
0381   00514 076507R        STB MMAD
0382   00515 044055         ADB .2         FORM DIRECTORY ENTRY
0383   00516 062403R        LDA $MBUF+8
0384   00517 002002         SZA
0385   00520 026523R        JMP *+3
0386   00521 044055         ADB .2
0387   00522 026533R        JMP IF010
0388   00523 162403R        LDA $MBUF+8,I
0389   00524 170001         STA B,I          STORE NAME 0,1
0390   00525 062403R        LDA $MBUF+8
0391   00526 002004         INA
0392   00527 160000         LDA A,I
0393   00530 006004         INB
0394   00531 170001         STA B,I            STORE NAME 2,3
0395   00532 006004         INB
0396   00533 062506R IF010  LDA BIDLG
0397   00534 170001         STA B,I        LOGICAL ADDRESS
0398   00535 172400R        STA $MBUF+5,I     SET SADR
0399   00536 006004         INB
0400   00537 162377R        LDA $MBUF+4,I
0401   00540 170001         STA B,I          # WORDS
0402   00541 006004         INB
0403   00542 016141R        JSB ID#        GET ID NUMBER
0404   00543 170001         STA B,I
0405   00544 172402R        STA $MBUF+7,I
0406   00545 126510R        JMP IFORM,I
```

```
0408*
0409*      MALCN IS MEMORY MANAGEMENT NON-MAPPABLE BUFFER
0410*                ALLOCATION PROCESSOR
0411  00546 062402R MALCN LDA $MBUF+7   CHECK IF BID PRESENT
0412  00547 002003        SZA,RSS
0413  00550 026625R       JMP MAL50          NO-SO ALLOCATE UNNAMED BUF
0414  00551 066327R       LDB DFBID
0415  00552 017256R       JSB MMNME      SEARCH FOR BUFFER IN NAME FILE
0416  00553 006003        SZB,RSS
0417  00554 026621R       JMP MAL10          NOT PRESENT, SO ERROR
0418  00555 044061        ADB ,6         POINTER ADDRESS
0419  00556 076655R       STB PONTR
0420  00557 002400        CLA            DON'T CARE LOGICAL ADDRESS
0421  00560 017000R       JSB MMSPC     GO GET MEMORY SPACE FOR BUFFER
0422  00561 100377R       DEF $MBUF+4,I # WORDS
0423  00562 026617R       JMP MAL05
0424  00563 072656R       STA LOGAD      LOGICAL ADDRESS
0425  00564 172400R       STA $MBUF+5,I SET SADR
0426  00565 017226R       JSB MMGET
0427  00566 006003        SZB,RSS
0428  00567 026623R       JMP MAL15
0429  00570 076657R       STB ENTRY      ADDRESS OF 7 WORD ENTRY
0430  00571 044055        ADB ,2
0431  00572 162402R       LDA $MBUF+7,I
0432  00573 170001        STA B,I        STORE NAME CHAR 0,1
0433  00574 062402R       LDA $MBUF+7
0434  00575 002004        INA
0435  00576 160000        LDA A,I
0436  00577 006004        INB
0437  00600 170001        STA B,I        STORE NAME CHAR 2,3
0438  00601 006004        INB
0439  00602 062656R       LDA LOGAD
0440  00603 170001        STA B,I        LOGICAL ADDRESS
0441  00604 006004        INB
0442  00605 162377R       LDA $MBUF+4,I
0443  00606 170001        STA B,I        # WORDS
0444  00607 006004        INB
0445  00610 016141R       JSB ID#        GET ID #
0446  00611 172401R       STA $MBUF+6,I
0447  00612 170001        STA B,I        STORE P,I,M,T,C AND ID#
0448  00613 062657R       LDA ENTRY           7 WORD BUFFER ADDRESS
0449  00614 066655R       LDB PONTR           LIST HEAD
0450  00615 017312R       JSB MMENT      MAKE ENTRY IN LIST
0451  00616 002400        CLA
0452  00617 172376R MAL05 STA $MBUF+3,I SET STATUS TO SUCCESSFULL
0453  00620 026176R       JMP EX100      RETURN
0454*
0455  00621 060050  MAL10 LDA N3         BID SPECIFIED NOT PRESENT
0456  00622 026617R       JMP MAL05
0457  00623 003400  MAL15 CCA           NO MEM AVAIL
0458  00624 026617R       JMP MAL05
0459*
0460*                UNNAMED BUFFER ALLOCATION
0461  00625 162377R MAL50 LDA $MBUF+4,I # WORDS
0462  00626 006400        CLB            NO LOGICAL ADDRESS
0463  00627 017463R       JSB MMFRG      GET BLOCK OF FREE MEMORY
```

```
0464  00630 026617R        JMP MAL05     ERROR RETURN # WORDS AVAIL
0465  00631 072656R        STA LOGAD
0466  00632 017226R        JSB MMGET     GET ENTRY SPACE
0467  00633 006003          SZB,RSS
0468  00634 026623R        JMP MAL15    NO SPACE AVAIL
0469  00635 076657R        STB ENTRY
0470  00636 044057          ADB .4
0471  00637 062656R        LDA LOGAD     LOGICAL ADDRESS
0472  00640 170001          STA B,I
0473  00641 172400R        STA $MBUF+5,I  SET SADR
0474  00642 006004          INB
0475  00643 162377R        LDA $MBUF+4,I #WORDS
0476  00644 170001          STA B,I
0477  00645 016141R        JSB ID#
0478  00646 172401R        STA $MBUF+6,I ID#
0479  00647 006004          INB
0480  00650 170001          STA B,I
0481  00651 062657R        LDA ENTRY
0482  00652 066746R        LDB DFBFD
0483  00653 017312R        JSB MMENT     ENTER ENTRY IN LIST
0484  00654 026616R        JMP MAL05-1
0485*
0486  00655 000000  PONTR NOP
0487  00656 000000  LOGAD NOP
0488  00657 000000  ENTRY NOP
```

```
0490*
0491*     MRELM IS MEMORY MANAGEMENT RELEASE BUFFER PROCESSOR
0492*
0493  00660 166377R MRELM LDB $MBUF+4,I GET ID#
0494  00661 006002        SZB                0 = ILLEGAL
0495  00662 006020        SSB                - = ILLEGAL
0496  00663 026735R       JMP MR025      ILLEGAL ID#
0497  00664 007004        CMB,INB
0498  00665 046147R       ADB C1023          > 1023 ILLEGAL
0499  00666 006020        SSB
0500  00667 026735R       JMP MR025      ILLEGAL ID
0501*
0502  00670 062004X       LDA $BFDR     CHECK  IF ENTRIES IN UNNAMED LIST
0503  00671 002003        SZA,RSS           YES
0504  00672 026715R       JMP MR020         NO
0505  00673 162377R       LDA $MBUF+4,I SEARCH UNNAMED BUFFER LIST
0506  00674 066746R       LDB DFBFD
0507  00675 016752R       JSB IDSRH
0508  00676 006003        SZB,RSS
0509  00677 026715R       JMP MR020          ID NOT IN UNNAMED LIST
0510  00700 076747R       STB MRTMP
0511  00701 060001        LDA B
0512  00702 040060        ADA .5         RELEASE MEMORY BACK TO FREE LIST
0513  00703 160000        LDA A,I            # WORDS
0514  00704 044057        ADB .4
0515  00705 164001        LDB B,I        LOGICAL ADDRESS
0516  00706 017716R       JSR MMFRR
0517  00707 062747R       LDA MRTMP     REMOVE 7 WORD ENTRY
0518  00710 066746R       LDB DFBFD
0519  00711 017411R       JSB MMREM
0520  00712 002400        CLA
0521  00713 172376R MR015 STA $MBUF+3,I SET OK STATUS
0522  00714 026176R       JMP EX100      RETURN
0523*          CHECK NAMED BUFFER LIST FOR ID
0524  00715 066003X MR020 LDB $BIDT
0525  00716 006003        SZB,RSS
0526  00717 026735R       JMP MR025
0527  00720 076751R MR022 STB MRLST
0528  00721 044061        ADB .6         NAMED LIST HEAD
0529  00722 076750R       STB MRLAD
0530  00723 160001        LDA B,I       CHECK IF NULL LIST
0531  00724 002003        SZA,RSS
0532  00725 026732R       JMP MR024      YES
0533  00726 162377R       LDA $MBUF+4,I ID#
0534  00727 016752R       JSB IDSRH
0535  00730 006002        SZB
0536  00731 026740R       JMP MR030
0537  00732 166751R MR024 LDB MRLST,I    CHECK IF AT END OF NAMED LISTS
0538  00733 006002        SZB
0539  00734 026720R       JMP MR022     GO TRY NEXT NEMED LIST
0540  00735 003400  MR025 CCA
0541  00736 172376R       STA $MBUF+3,I SET ILLEGAL ID FLAG (=1)
0542  00737 026176R       JMP EX100
0543*
0544  00740 076747R MR030 STB MRTMP      SAVE ENTRY ADDRESS
0545  00741 060001        LDA B
```

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0546  00742 066750R        LDB MRLAD     SET LIST HEAD
0547  00743 017411R        JSB MMREM     RELEASE MEMORY BACK TO NAMED ARE
0548  00744 002400         CLA
0549  00745 026713R        JMP MR015     SET OK AND RETURN
0550*
0551  00746 000004X DFBFD DEF $BFDR
0552  00747 000000  MRTMP NOP
0553  00750 000000  MRLAD NOP
0554  00751 000000  MRLST NOP
0555*
0556*    IDSRH SEARCHES THROUGH A LIST FOR A SPECIFIED ID#
0557*
0558*              CALLING SEQUENCE,
0559*                   LDA <ID#>
0560*                   LDB <ADDR OF LIST HEAD>
0561*                   JSB IDSRH
0562*
0563*                   ON RETURN
0564*                       (B) IS ADDRESS OF ENTRY
0565*                    OR (B) IS 0 OF NOT FOUND IN LIST
0566*
0567  00752 000000  IDSRH NOP
0568  00753 072777R        STA SRHID    SAVE ID#
0569  00754 002001         RSS
0570  00755 164001         LDB B,I          CHECK ADDR FOR POSSIBLE IN DI
0571  00756 005275         RBL,CLE,SLB,ERB
0572  00757 026755R        JMP *-2
0573  00760 164001         LDB B,I
0574  00761 076776R SR010  STB SRADD     CURRENT LIST ADDRESS
0575  00762 044061         ADB .6
0576  00763 160001         LDA B,I       GET CONTENTS OF ID WORD
0577  00764 012775R        AND M1777          MASK OFF ALL BUT ID
0578  00765 052777R        CPA SRHID
0579  00766 026773R        JMP SR020     ID FOUND
0580  00767 166776R        LDB SRADD,I   CHECK IF MORE ENTRIES IN LIST
0581  00770 006002         SZB
0582  00771 026761R        JMP SR010     GO TRY NEXT ENTRY
0583  00772 126752R        JMP IDSRH,I
0584  00773 066776R SR020  LDB SRADD     SET B TO ENTRY ADDRESS
0585  00774 126752R        JMP IDSRH,I   RETURN
0586*
0587  00775 001777  M1777 OCT 1777
0588  00776 000000  SRADD NOP
0589  00777 000000  SRHID NOP
```

```
0591*          MMSPC SUBROUTINE SEARCHES A SPECIFIED BLOCK LIST FOR
0592*      A REQUESTED NUMBER OF WORDS, THE STARTING LOGICAL ADDRESS
0593*      IS AN OPTIONAL PARAMETER
0594*
0595*                CALLING SEQUENCE:
0596*
0597*                     LDA <DESIRED LOGICAL ADDRESS OR 0 IF DON'T CARE>
0598*                     LDB <LIST HEAD POINTER>
0599*                (P)  JSB NNSPC
0600*                (P+1) DEF <# OF WORDS>
0601*                (P+2)  ERROR RETURN
0602*                              (A)= # WORDS OF LARGEST AVAIL AREA
0603*                                 = -1, NO MEMORY AVAILABLE
0604*                                 = -2, ANOTHER BUFFER OCCUPIES AREA
0605*                                       REQUESTED IN THE BLOCK
0606*                                 = -4, ILLEGAL PARAMETER
0607*                (P+3)  NORMAL RETURN
0608*                              (A)= STARTING LOGICAL ADDRESS OF BLOCK
0609*
0610  01000 000000  MMSPC NOP
0611  01001 073211R       STA BLADR      REQUESTED LOGICAL ADDRESS OF 0
0612  01002 077212R       STB BLIST      LIST HEAD POINTER
0613  01003 163000R       LDA MMSPC,I    # OF WORDS
0614  01004 002001        RSS
0615  01005 160000        LDA A,I              RESOLVE POSSIBLE INDIRECTS
0616  01006 001275        RAL,CLE,SLA,ERA
0617  01007 027005R       JMP *-2
0618  01010 160000        LDA A,I
0619  01011 073213R       STA BWRDS      # OF WORDS
0620  01012 003004        CMA,INA
0621  01013 073221R       STA BWRDN      NEG OF # OF WORDS
0622  01014 037000R       ISZ MMSPC      INCR RETURN ADDRESS
0623  01015 002400        CLA
0624  01016 073214R       STA BLARG      START ADDR OF LARGEST BLOCK AVAI
0625  01017 073215R       STA BNUMB      # WORDS OF LARGEST AVAIL BLOCK
0626  01020 067212R MMS10 LDB BLIST      GET BEGINNING AND ENDING LIMITS
0627  01021 044052        ADB N1               OF BLOCK
0628  01022 160001        LDA B,I
0629  01023 073216R       STA BLWDS            # WORDS IN BLOCK
0630  01024 044052        ADB N1
0631  01025 160001        LDA B,I
0632  01026 073217R       STA BLSTT            STARTING ADDRESS
0633  01027 043216R       ADA BLWDS
0634  01030 073220R       STA BLEND            ENDING ADDRESS OF BLOCK
0635  01031 063211R       LDA BLADR
0636  01032 002003        SZA,RSS
0637  01033 027041R       JMP MMS15
0638  01034 063217R       LDA BLSTT
0639  01035 003004        CMA,INA
0640  01036 043211R       ADA BLADR
0641  01037 002020        SSA
0642  01040 027061R       JMP MMS25            TOO SMALL
0643*               PRELIMINARY CHECK TO SEE IF AREA LIES
0644*               WITHIN THE BLOCK
0645  01041 063211R MMS15 LDA BLADR    START ADDRESS?
0646  01042 002003        SZA,RSS              YES-SO SEE IT STILL FITS
```

```
0647  01043 063217R        LDA BLSTT          NO-SO SET TO 1ST WORD
0648  01044 043213R        ADA BWRDS      ENDING ADDRESS COMPUTED
0649  01045 003004         CMA,INA
0650  01046 043220R        ADA BLEND
0651  01047 002020         SSA            DOES BLOCK FIT ON AREA?
0652  01050 027061R        JMP MMS25          NO
0653*
0654  01051 167212R        LDB BLIST,I    CHECK IF NULL LIST
0655  01052 006002         SZB                YES, SO GIVE AREA
0656  01053 027063R        JMP MMS30          NO,SO GO CHECK FURTHER
0657  01054 063211R        LDA BLADR
0658  01055 002003         SZA,RSS
0659*
0660  01056 063217R        LDA BLSTT      SET A TO STARTING ADDRESS
0661  01057 037000R MMS20  ISZ MMSPC      INCREMEN TO NORMAL RETURN
0662  01060 127000R        JMP MMSPC,I    NORMAL RETURN
0663*
0664  01061 060047  MMS25  LDA N4        ILLEGAL PARAM
0665  01062 127000R        JMP MMSPC,I        RETURN
0666  01063 063217R MMS30  LDA BLSTT      SET TO FIRST LOCATION OF BLOCK
0001  01064 073222R        STA BCURS      CURRENT AVAIL ADDRESS
0002  01065 167212R        LDB BLIST,I
0003  01066 077223R MMS40  STB BCURE
0004  01067 044057         ADB .4
0005  01070 063222R        LDA BCURS      COMPUTE # OF WORDS AVAILABLE
0006  01071 003004         CMA,INA
0007  01072 140001         ADA B,I
0008  01073 073224R        STA BCURZ
0009  01074 043221R        ADA BWRDN      CHECK IF ENOUGH WORDS
0010  01075 002021         SSA,RSS            NO, SO GO TRY NEXT ENTRY
0011  01076 027175R        JMP MMS60          YES, BUT GO CHECK FURTHER
0012  01077 063215R MMS45  LDA BNUMB      CHECK IF THE AVAILABLE AREA IS
0013  01100 003004         CMA,INA            LARGER THAN PREVIOUS AVAIL
0014  01101 043224R        ADA BCURZ          LARGEST AREA
0015  01102 002020         SSA
0016  01103 027110R        JMP MMS50              NO
0017  01104 063222R        LDA BCURS          YES, SO UPDATE
0018  01105 073214R        STA BLARG
0019  01106 063224R        LDA BCURZ
0020  01107 073215R        STA BNUMB
0021  01110 067223R MMS50  LDB BCURE      UPDATE CURRENT AVAIL ADDRESS
0022  01111 044057         ADB .4
0023  01112 160001         LDA B,I
0024  01113 006004         INB
0025  01114 140001         ADA B,I
0026  01115 073222R        STA BCURS
0027  01116 167223R        LDB BCURE,I    CHECK FOR NEXT ENTRY
0028  01117 006002         SZB
0029  01120 027066R        JMP MMS40      GO TRY NEXT AVAILABLE AREA
0030*
0031  01121 063222R        LDA BCURS
0032  01122 003004         CMA,INA
0033  01123 043220R        ADA BLEND
0034  01124 073225R        STA TEM
0035  01125 003004         CMA,INA
0036  01126 043215R        ADA BNUMB
```

```
0037  01127 002021         SSA,RSS
0038  01130 027135R        JMP MMS51
0039  01131 063225R        LDA TEM
0040  01132 073215R        STA BNUMB
0041  01133 063222R        LDA BCURS
0042  01134 073214R        STA BLARG
0043  01135 063211R MMS51  LDA BLADR
0044  01136 002003         SZA,RSS
0045  01137 027145R        JMP MMS52
0046  01140 063222R        LDA BCURS
0047  01141 003004         CMA,INA
0048  01142 043211R        ADA BLADR
0049  01143 002020         SSA
0050  01144 027157R        JMP MMS55
0051  01145 063222R MMS52  LDA BCURS
0052  01146 043213R        ADA BWRDS          ADD # OF WORDS NEEDED
0053  01147 003004         CMA,INA
0054  01150 043220R        ADA BLEND     CHECK IF LARGER THAN ENDING ADDR
0055  01151 002020         SSA
0056  01152 027157R        JMP MMS55 YES, SO NOT ENOUGH ROOM
0057  01153 063211R        LDA BLADR     CHECK IF LOGICAL ADDRESS SPECIFIE
0058  01154 002003         SZA,RSS
0059  01155 063222R        LDA BCURS     NO, SO USE CURRENT ADDRESS
0060  01156 027057R        JMP MMS20     SUCCESSFUL RETURN
0061  01157 063215R MMS55  LDA BNUMB
0062  01160 067214R        LDB BLARG
0063  01161 002002         SZA
0064  01162 027165R        JMP MMS56
0065  01163 003400         CCA
0066  01164 127000R        JMP MMSPC,I   NO MEM ERR
0067*
0068  01165 043221R MMS56  ADA BWRDN
0069  01166 002020         SSA
0070  01167 027173R        JMP MMS57
0071  01170 060051         LDA N2     AVAIL AT ANOTHER ADD
0072  01171 067214R        LDB BLARG
0073  01172 127000R        JMP MMSPC,I
0074  01173 063215R MMS57  LDA BNUMB     # AVAIL
0075  01174 127000R        JMP MMSPC,I
0076  01175 063211R MMS60  LDA BLADR      CHECK IF STARTING ADDRESS REQUES
0077  01176 002002         SZA
0078  01177 027202R        JMP MMS70
0079  01200 063222R        LDA BCURS           NO, SO CURRENT AREA OKAY
0080  01201 027057R        JMP MMS20      RETURN
0081*
0082  01202 003004  MMS70  CMA,INA        CHECK IF AREA STILL LARGE ENOUGH
0083  01203 140001         ADA B,I
0084  01204 043221R        ADA BWRDN
0085  01205 002020         SSA
0086  01206 027077R        JMP MMS45      NO,SO GO TRY NEXT ENTRY
0087  01207 063211R        LDA BLADR           A=STARTING LOGICAL ADDRESS
0088  01210 027057R        JMP MMS20     NORMAL RETURN
0089*
0090*
0091  01211 000000  BLADR NOP
0092  01212 000000  BLIST NOP
```

```
0093  01213 000000  BWRDS NOP
0094  01214 000000  BLARG NOP
0095  01215 000000  BNUMB NOP
0096  01216 000000  BLWDS NOP
0097  01217 000000  BLSTT NOP
0098  01220 000000  BLEND NOP
0099  01221 000000  BWRDN NOP
0100  01222 000000  BCURS NOP
0101  01223 000000  BCURE NOP
0102  01224 000000  BCURZ NOP
0103  01225 000000  TEM   NOP
```

```
0105*
0106*          MMGET ROUTINE SEARCHES MMBUF FOR A UNUSED 6 WORD
0107*      DIRECTORY.
0108*                CALLING SEQUENCE:
0109*                JSB MMGET
0110*                     (B) ON RETURN POINTS TO 7 WORD ENTRY
0111*                         OR IS 0 IF NONE AVAILABLE
0112*
0113  01226 000000  MMGET NOP
0114  01227 066001X       LDB $MDEF      SET B TO BEGINNING OF BUFFER
0115  01230 044057  MMG10 ADB .4              INCREMENT TO 3RD WORD
0116  01231 160001        LDA B,I
0117  01232 050052        CPA N1         SEE IF UNASSIGNED LOG ADDR
0118  01233 027236R       JMP MMG15          FOR BID ENTRY
0119  01234 002003        SZA,RSS              IF NON ZERO, THEN UNAVAILAB
0120  01235 027244R       JMP MMG20            ZERO, SO AVAILABLE FOR USE
0121  01236 044056  MMG15 ADB .3
0122  01237 056002X       CPB $MEND      CHECK IF AT END OF MMBUF
0123  01240 002001        RSS                  END OF MMBUF
0124  01241 027230R       JMP MMG10            GO TO NEXT 6 WORD ENTRY
0125  01242 006400        CLB            SET TO NONE AVAILABLE
0126  01243 127226R       JMP MMGET,I          RETURN
0127  01244 044047  MMG20 ADB N4         SET TO AVAILABLE BUFFER ADDRESS
0128  01245 077255R       STB MMTEM
0129  01246 002400        CLA
0130  01247 077252R       STB **3
0131  01250 064044        LDB N7
0132  01251 016011X       JSB $MOVE      CLEAR 7 WORD ENTRY BUFFER
0133  01252 000000        NOP
0134  01253 067255R       LDB MMTEM
0135  01254 127226R       JMP MMGET,I          RETURN
0136  01255 000000  MMTEM NOP
```

```
0138*
0139*          MMNME ROUTINE SEARCHES A SPECIFIED LIST FOR
0140*      A SPECIFIED FILE NAME
0141*
0142*                  CALLING SEQUENCE:
0143*
0144*                      LDA <POINTER TO BUFFER NAME>
0145*                      LDB <LIST POINTER>
0146*                      JSB MMNME
0147*                      (B) ON RETURN,
0148*                           0  IF NAME NOT FOUND OR
0149*                           POINTS TO 7 WORD ENTRY IF
0150*                           FOUND
0151*
0152  01256 000000  MMNME NOP
0153  01257 073307R       STA FILE1     PNTR TO 1ST 2 CHAR OF BUFF NAME
0154  01260 002004        INA
0155  01261 073310R       STA FILE2     PNTR TO 2ND 2 CHAR OF BUFF NAME
0156  01262 002001        RSS
0157  01263 164001        LDB B,I
0158  01264 005275        RBL,CLE,SLB,ERB
0159  01265 027263R       JMP *-2
0160  01266 077311R MMN10 STB NEXT      SAVE LINK TO NEXT ENTRY
0161  01267 044055        ADB .2             INCR TO NAME
0162  01270 160001        LDA B,I
0163  01271 006004        INB
0164  01272 153307R       CPA FILE1,I   COMPARE CHARACTERS 1,2
0165  01273 002001        RSS
0166  01274 027303R       JMP MMN20          GO TRY NEXT ENTRY
0167  01275 160001        LDA B,I
0168  01276 153310R       CPA FILE2,I
0169  01277 002001        RSS           COMPARES, SET B AND RETURN
0170  01300 027303R       JMP MMN20          GO TRY NEXT ENTRY
0171  01301 044050        ADB N3        DECREMENT TO BEGINNING OF BUFFER
0172  01302 127256R       JMP MMNME,I   NAME FOUND-RETURN
0173  01303 167311R MMN20 LDB NEXT,I    GET NEXT LINK ENTRY
0174  01304 006002        SZB                IF ZERO, THEN DONE
0175  01305 027266R       JMP MMN10          GO TRY NEXT ENTRY
0176  01306 127256R       JMP MMNME,I   NOT FOUND RETURN
0177  01307 000000  FILE1 NOP
0178  01310 000000  FILE2 NOP
0179  01311 000000  NEXT  NOP
```

```
0181*
0182*          MMENT ROUTINE INSERTS AN ENTRY INTO A SPECIFIED LIST
0183*      ACCORDING TO INCREASING LOGICAL ADDRESS.
0184*
0185*                 CALLING SEQUENCE:
0186*
0187*                      LDA <ADDRESS OF 7 WORD BUFFER TO BE ENTERED>
0188*                      LDB <ADDRESS OF LIST HEAD>
0189*                 JSB MMENT
0190*
0191  01312 000000  MMENT NOP
0192  01313 073405R       STA NEW        SAVE
0193  01314 040057        ADA .4         INCR TO LOGICAL ADDRESS
0194  01315 160000        LDA A,I
0195  01316 002021        SSA,RSS
0196  01317 003004        CMA,INA
0197  01320 073407R       STA NAD        SAVE NEG LOGICAL ADDRESS VALUE
0198  01321 002001        RSS
0199  01322 164001        LDB B,I
0200  01323 005275        RBL,CLE,SLB,ERB
0201  01324 027322R       JMP *-2
0202  01325 077410R       STB LISTH
0203  01326 160001        LDA B,I        GET INITIAL LIST VALUE
0204  01327 073406R       STA LIST      SAVE LIST POINTER
0205  01330 002002        SZA                 SKIP, IF NULL LIST
0206  01331 027341R       JMP MME10           NOT A NULL LIST
0207  01332 063405R       LDA NEW
0208  01333 170001        STA B,I        STORE CURRENT AS TOP OF LIST
0209  01334 002400        CLA
0210  01335 173405R       STA NEW,I     SET END OF LIST
0211  01336 037405R       ISZ NEW
0212  01337 173405R       STA NEW,I     SET NO PREVIOUS ENTRY IN LIST
0213  01340 127312R       JMP MMENT,I    RETURN
0214*
0215  01341 067406R MME10 LDB LIST       CURRENT ENTRY
0216  01342 044057        ADB .4
0217  01343 160001        LDA B,I             GET CURRENT LIST LOGICAL VA
0218  01344 043407R       ADA NAD        COMPUTE CURRENT-NAD
0219  01345 002021        SSA,RSS
0220  01346 027354R       JMP MME20      +,0 SO MAKE ENTRY
0221  01347 167406R       LDB LIST,I
0222  01350 006003        SZB,RSS       CHECK IF END OF LIST
0223  01351 027375R       JMP MME30     GO ADD TO END OF LIST
0224  01352 077406R       STB LIST       SET NEW CURRENT ENTRY
0225  01353 027341R       JMP MME10      TRY NEXT ENTRY
0226*
0227  01354 067406R MME20 LDB LIST
0228  01355 177405R       STB NEW,I     SET NEXT LINK POINTER
0229  01356 006004        INB
0230  01357 164001        LDB B,I
0231  01360 006002        SZB
0232  01361 027365R       JMP MME22
0233  01362 063405R       LDA NEW       SET NEW TOP OF LIST
0234  01363 173410R       STA LISTH,I
0235  01364 027367R       JMP MME24
0236  01365 063405R MME22 LDA NEW
```

```
0237  01366 170001         STA B,I   PREV ENT NEXT LINK=NEW ENTRY ADDRESS
0238  01367 037405R MME24  ISZ NEW
0239  01370 177405R        STB NEW,I   PREV LINK IN NEW ENTRY
0240  01371 067406R        LDB LIST
0241  01372 006004         INB
0242  01373 170001         STA B,I     SUBS ENT PREV LINK=NEW ENTRY ADDR
0243  01374 127312R        JMP MMENT,I
0244*
0245  01375 002400  MME30  CLA
0246  01376 173405R        STA NEW,I    SET END OF LIST
0247  01377 067405R        LDB NEW
0248  01400 037405R        ISZ NEW
0249  01401 063406R        LDA LIST
0250  01402 173405R        STA NEW,I    SET PREVIOUS LISK POINTER
0251  01403 177406R        STB LIST,I   SET ANOTHER ENTRY LINK
0252  01404 127312R        JMP MMENT,I     RETURN
0253  01405 000000  NEW    NOP
0254  01406 000000  LIST   NOP
0255  01407 000000  NAD    NOP
0256  01410 000000  LISTH  NOP
```

```
0258*
0259*          MMREM ROUTINE REMOVES AN ENTRY FROM A LIST
0260*
0261*               CALLING SEQUENCE:
0262*
0263*               LDA <ADDR OF BUFFER TO BE REMOVED>
0264*               LDB <ADDR OF LIST HEAD>
0265*               JSB MMREM
0266*
0267  01411 000000  MMREM NOP
0268  01412 073712R       STA CURR      SAVE ADDR OF BUFFER TO BE REMOVE
0269  01413 002001        RSS
0270  01414 164001        LDB B,I
0271  01415 005275        RBL,CLE,SLB,ERB
0272  01416 027414R       JMP *=2
0273  01417 077711R       STB HEAD      SAVE LIST HEAD ADDRESS
0274*
0275  01420 164000        LDB A,I       GET NEXT LINK VALUE OF BUFFER
0276  01421 006002        SZB                 CHECK IF LAST ENTRY
0277  01422 027432R       JMP MMR10     NOT LAST ENTRY
0278  01423 002004        INA                INCR TO LINK TO PREVIOUS ENTR
0279  01424 160000        LDA A,I       GET ADDRESS OF PREVIOUS ENTRY
0280  01425 002003        SZA,RSS
0281  01426 063711R       LDA HEAD
0282  01427 006400        CLB           SET NEXT LINK VALUE OF PREVIOUS
0283  01430 174000        STB A,I       ENTRY TO BE END OF LIST
0284  01431 027454R       JMP MMR30
0285*
0286  01432 002004  MMR10 INA           INCR TO WORD 2 OF BUFFER
0287  01433 160000        LDA A,I       GET PREVIOUS LINK VALUE
0288  01434 002002        SZA                 0 IF FIRST ENTRY
0289  01435 027445R       JMP MMR20     NOT FIRST OR LAST ENTRY
0290  01436 163712R       LDA CURR,I
0291  01437 173711R       STA HEAD,I   STORE NEW LIST HEAD
0292  01440 167712R       LDB CURR,I  SET NEW FIRST ENTRY PREV LINK
0293  01441 006004        INB
0294  01442 002400        CLA
0295  01443 170001        STA B,I
0296  01444 027454R       JMP MMR30
0297*
0298  01445 067712R MMR20 LDB CURR
0299  01446 160001        LDA B,I       CURRENT NEXT LINK POINTER
0300  01447 006004        INB
0301  01450 164001        LDB B,I
0302  01451 170001        STA B,I    SET NEXT LINK POINTER IN PREV ENTRY
0303  01452 002004        INA
0304  01453 174000        STB A,I       SET PREVIOUS LINK POINTER
0305*
0306  01454 002400  MMR30 CLA          CLEAR RELEASED ENTRY SPACE
0307  01455 067712R       LDB CURR
0308  01456 077461R       STB *+3
0309  01457 064044        LDB N7
0310  01460 016011X       JSB $MOVE
0311  01461 000000        NOP
0312  01462 127411R       JMP MMREM,I   RETURN
```

```
0314*
0315*          MMFRG SUBROUTINE SEARCHES AVAILABLE MEMORY FREE SPACE
0316*      FOR A BLOCK OF MEMORY. THE DESIRED STARTING LOGICAL ADDRESS
0317*      IS AN OPTIONAL PARAMETER.
0318*
0319*                CALLING SEQUENCE:
0320*
0321*                          LDA <#WORDS>
0322*                          LDB <LOGICAL ADDRESS OR 0 IF DON'T CARE>
0323*                  (P)     JSB MMFRG
0324*                  (P+1)   ERROR RETURN:
0325*                                  (A)= + IS LARGEST AREA AVAILABLE
0326*                                       -1, NO MEMORY AVAIL
0327*                                       -2, AREA NOT AVAIL AT
0328*                                         REQUESTED ADDRESS SPACE
0329*                                  (B) IS SET IF A = -2
0330*                                       (B) IS STARTING LOGICAL ADDRESS
0331*                                       OF AVAILABLE AREA
0332*                  (P+2)   NORMAL RETURN
0333*                                  (A)= LOGICAL ADDRESS, THE AREA IS
0334*                                       REMOVED FROM FREE LIST AREA
0335  01463 000000  MMFRG NOP
0336  01464 073701R       STA NFREE     SAVE NUMBER OF WORDS
0337  01465 077702R       STB LFREE     SAVE LOGICAL ADDRESS
0338  01466 003004        CMA,INA
0339  01467 073703R       STA NCNT      NEGATIVE # OF WORDS
0340  01470 002400        CLA           CLEAR ERROR CONDITION FLAGS
0341  01471 073713R       STA ARETN
0342  01472 073714R       STA BRETN
0343  01473 073715R       STA MXRET
0344  01474 066005X       LDB $MAVL     SET
0345  01475 077704R       STB APNTR        BEGINNING OF SEARCH POINTER
0346  01476 044056  MMF10 ADB .3        INCR TO NUMBER OF WORDS ADDRESS
0347  01477 160001        LDA B,I
0348  01500 043703R       ADA NCNT      CHECK IF REQUEST FITS
0349  01501 002021        SSA,RSS
0350  01502 027517R       JMP MMF18     # WORDS OK; GO CHECK FURTHER
0351  01503 160001        LDA B,I       CHECK IF AREA LARGER THAN
0352  01504 003004        CMA,INA          PREVIOUS AREA
0353  01505 043715R       ADA MXRET
0354  01506 002021        SSA,RSS
0355  01507 027512R       JMP MMF15     NO
0356  01510 160001        LDA B,I
0357  01511 073715R       STA MXRET     YES, SO SET NEW VALUE
0358  01512 167704R MMF15 LDB APNTR,I   CHECK IF AT END OF AVAILABLE
0359  01513 006003        SZB,RSS           MEMORY LIST
0360  01514 027667R       JMP MMF40     NO SPACE ERROR RETURN
0361  01515 077704R       STB APNTR
0362  01516 027476R       JMP MMF10     GO TRY NEXT ENTRY
0363  01517 060051  MMF18 LDA N2        SET SPACE AVAIL
0364  01520 073713R       STA ARETN
0365  01521 067704R       LDB APNTR
0366  01522 044055        ADB .2
0367  01523 160001        LDA B,I
0368  01524 073714R       STA BRETN     SPACE AVAIL START ADDRESS
0369*
```

```
0370  01525 063702R MMF20 LDA LFREE     CHECK IF LOGICAL ADDRESS REQUEST
0371  01526 002003        SZA,RSS
0372  01527 027610R        JMP MMF30          NO, SO GO ALLOCATE MEMORY
0373  01530 003004        CMA,INA       CHECK LOGICAL STARTING ADDRESS
0374  01531 140001        ADA B,I
0375  01532 002002        SZA
0376  01533 002020        SSA
0377  01534 002001        RSS           STARTING ADDRESS MAY FIT IN AREA
0378  01535 027512R        JMP MMF15     GO TRY NEXT ENTRY
0379  01536 063702R        LDA LFREE
0380  01537 043701R        ADA NFREE
0381  01540 003004        CMA,INA
0382  01541 073705R        STA NTEMP          ENDING REQUIRED ADDRESS
0383  01542 160001        LDA B,I
0384  01543 073706R        STA LTEMP
0385  01544 006004        INB
0386  01545 140001        ADA B,I
0387  01546 073707R        STA OTEMP
0388  01547 043705R        ADA NTEMP
0389  01550 002020        SSA
0390  01551 027512R        JMP MMF15     GO TRY NEXT ENTRY
0391*    CREATE A DUMMY NEW ENTRY AT STARTING LOGICAL ADDR,
0392*                APNTR POINTS TO CURRENT ENTRY
0393*                LFREE POINTS TO DUMMY ENTRY
0394  01552 063702R        LDA LFREE
0395  01553 053704R        CPA APNTR
0396  01554 027610R        JMP MMF30
0397  01555 063706R        LDA LTEMP
0398  01556 003004        CMA,INA
0399  01557 043702R        ADA LFREE
0400  01560 170001        STA B,I       STORE NEW # OF WORDS IN CURNT EN
0401  01561 063704R        LDB APNTR
0402  01562 160001        LDA B,I       DUMMY NEXT LINK= PREV ENTRY NEXT
0403  01563 173702R        STA LFREE,I
0404  01564 063702R        LDA LFREE
0405  01565 170001        STA B,I       CUR ENTRY NEXT LINK=ADDR OF DUMM
0406  01566 063702R        LDB LFREE
0407  01567 006004        INB                DUMMY PREVIOUS LINK ADDR
0408  01570 063704R        LDA APNTR
0409  01571 170001        STA B,I        DUM PREV LINK = CURR ENT ADDRES
0410  01572 167702R        LDB LFREE,I
0411  01573 063702R        LDA LFREE
0412  01574 006004        INB
0413  01575 170001        STA B,I            SUBS ENTRY PREV LINK=DUMMY
0414  01576 063702R        LDB LFREE
0415  01577 044055        ADB .2
0416  01600 170001        STA B,I            STORE DUMMY STARTING LOGICA
0417  01601 006004        INB
0418  01602 063702R        LDA LFREE
0419  01603 003004        CMA,INA
0420  01604 043707R        ADA OTEMP
0421  01605 170001        STA B,I            STORE DUMMY # OF WORDS
0422  01606 063702R        LDA LFREE
0423  01607 073704R        STA APNTR          SET POINTER TO DUMMY
0424*
0425  01610 063702R MMF30 LDB LFREE          COMPUTE NEW ENTRY ADDRESS
```

```
0426  01611 006002         SZB
0427  01612 027617R        JMP MMF35
0428  01613 067704R        LDB APNTR
0429  01614 044055         ADB .2
0430  01615 164001         LDB B,I
0431  01616 077702R        STB LFREE
0432  01617 047701R MMF35  ADB NFREE
0433  01620 077710R        STB NEWE                NEW ENTRY ADDRESS
0434  01621 163704R        LDA APNTR,I
0435  01622 170001         STA B,I            STORE NEW NEXT LINK POINTER
0436  01623 067704R        LDB APNTR
0437  01624 006004         INB
0438  01625 164001         LDB B,I
0439  01626 063710R        LDA NEWE
0440  01627 006002         SZB           CHECK IF NEW TOLP OF LIST
0441  01630 027633R        JMP MMF37
0442  01631 072005X        STA $MAVL
0443  01632 002001         RSS
0444  01633 170001 MMF37   STA B,I  PREV NEXT LINK=NEW ENTRY ADDR
0445  01634 067704R        LDB APNTR
0446  01635 006004         INB
0447  01636 160001         LDA B,I
0448  01637 067710R        LDB NEWE
0449  01640 006004         INB
0450  01641 170001         STA B,I            NEW PREV LINK=CURREN PREV A
0451  01642 063710R        LDA NEWE
0452  01643 006004         INB
0453  01644 170001         STA B,I        NEW ENTRY STARTING ADDRESS
0454  01645 067704R        LDB APNTR
0455  01646 044055         ADB .2
0456  01647 003004         CMA,INA
0457  01650 140001         ADA B,I
0458  01651 006004         INB
0459  01652 140001         ADA B,I
0460  01653 067710R        LDB NEWE
0461  01654 044056         ADB .3
0462  01655 170001         STA B,I        NEW ENTRY # OF WORDS
0463  01656 167704R        LDB APNTR,I
0464  01657 006003         SZB,RSS
0465  01660 027664R        JMP MMF39
0466  01661 006004         INB
0467  01662 063710R        LDA NEWE
0468  01663 170001         STA B,I        SUBS PREV LINK=NEW ENTRY ADDRESS
0469  01664 037463R MMF39  ISZ MMFRG     INCR TO NORMAL RETURN
0470  01665 063702R        LDA LFREE      SET LOGICAL ADDRESS
0471  01666 127463R        JMP MMFRG,I    RETURN
0472*
0473  01667 063713R MMF40  LDA ARETN     CHECK IF SPACE AVAIL AT ANOTHER A
0474  01670 050051         CPA N2
0475  01671 027677R        JMP MMF50
0476  01672 063715R        LDA MXRET
0477  01673 002002         SZA
0478  01674 127463R        JMP MMFRG,I
0479  01675 003400         CCA
0480  01676 127463R        JMP MMFRG,I
0481  01677 067714R MMF50  LDB BRETN     SET B TO AVAIL START ADDRESS
```

```
0482  01700 127463R        JMP MMFRG,I   RETURN
0483*
0484  01701 000000  NFREE  NOP
0485  01702 000000  LFREE  NOP
0486  01703 000000  NCNT   NOP
0487  01704 000000  APNTR  NOP
0488  01705 000000  NTEMP  NOP
0489  01706 000000  LTEMP  NOP
0490  01707 000000  OTEMP  NOP
0491  01710 000000  NEWE   NOP
0492  01711 000000  HEAD   NOP
0493  01712 000000  CURR   NOP
0494  01713 000000  ARETN  NOP
0495  01714 000000  BRETN  NOP
0496  01715 000000  MXRET  NOP
```

```
0498*          MMFRR SUBROUTINE ADDS A MEMORY BLOCK TO THE AVAILABLE
0499*      MEMORY FREE SPACE LIST
0500*
0501*                CALLING SEQUENCE:
0502*
0503*                        LDA <# WORDS>
0504*                        LDB <LOGICAL ADDRESS>
0505*                        JSB MMFRR
0506*                        RETURN: NO ERROR INDICATORS PRESENT
0507*
0508  01716 000000  MMFRR NOP
0509  01717 072035R       STA NAVL      SAVE NUMBER OF WORDS TO FREE UP
0510  01720 076036R       STB LAVL      SAVE LOGICAL ADDRESS
0511  01721 007004        CMB,INB
0512  01722 076040R       STB NLAD      SAVE NEGATIVE STARTING ADDRESS
0513*
0514  01723 066005X       LDB $MAVL     INITIAL FREE SPACE LIST
0515  01724 076037R MMB10 STB AVLST
0516  01725 044055        ADB .2
0517  01726 160001        LDA B,I
0518  01727 042040R       ADA NLAD
0519  01730 002021        SSA,RSS
0520  01731 027754R       JMP MMB20     GO ADD ENTRY HERE
0521  01732 166037R       LDB AVLST,I
0522  01733 006002        SZB
0523  01734 027724R       JMP MMB10     GO TRY NEXT ENTRY
0524*     ADD ENTRY TO END OF LIST
0525  01735 062036R       LDA LAVL      ADD ENTRY TO END OF LIST
0526  01736 172037R       STA AVLST,I   PREV NEXT LINK=NEW ENTRY
0527  01737 002400        CLA
0528  01740 172036R       STA LAVL,I    NEW ENTRY NEXT LINK=0
0529  01741 066036R       LDB LAVL
0530  01742 006004        INB
0531  01743 062037R       LDA AVLST
0532  01744 170001        STA B,I       SET NEW ENTRY PREVIOUS LINK
0533  01745 006004        INB
0534  01746 062036R       LDA LAVL
0535  01747 170001        STA B,I       SET NEW ENTRY LOGICAL ADDRESS
0536  01750 006004        INB
0537  01751 062035R       LDA NAVL
0538  01752 170001        STA B,I       SET NEW ENTRY # OF WORDS
0539  01753 026002R       JMP MMB30     GO CHECK IF MERGE WITH PREVIOUS
0540*
0541  01754 366037R MMB20 LDB AVLST     CHECK IF NRW FIRST ENTRY
0542  01755 006004        INB
0543  01756 160001        LDA B,I            GET PREVIOUS ENTRY LINK
0544  01757 002002        SZA
0545  01760 026006R       JMP MMB40     GO ADD TO MIDDLE OF LIST
0546*               ADD A NEW FIRST ENTRY
0547  01761 066037R       LDB AVLST
0548  01762 006004        INB
0549  01763 062036R       LDA LAVL      MAKE ORIG FIRST ENTRY PREVIOUS
0550  01764 170001        STA B,I       LINK POINT TO NEW FIRST ENTRY
0551  01765 066036R       LDB LAVL
0552  01766 062005X       LDA $MAVL
0553  01767 170001        STA B,I       NEW ENTRY NEXT LINK=ORIG $MAVL
```

```
0554  01770 006004          INB
0555  01771 002400          CLA
0556  01772 170001          STA B,I         NEW ENTRY PREV LINK=0
0557  01773 006004          INB
0558  01774 062036R          LDA LAVL
0559  01775 072005X          STA $MAVL       STORE NEW HEAD OF LIST
0560  01776 170001          STA B,I         NEW ENTRY LOGICAL ADDRESS
0561  01777 006004          INB
0562  02000 062035R          LDA NAVL
0563  02001 170001          STA B,I         NEW ENTRY # OF WORDS
0564  02002 062036R MMB30   LDA LAVL        SET ADDRESS OF ADDED ENTRY
0565  02003 072037R          STA AVLST
0566  02004 016041R          JSB $MERG       GO CHECK WITH POSSIBLE MERGES
0567  02005 127716R          JMP MMFRR,I     RETURN
0568*             ADD ENTRY TO MIDDLE OF LIST
0569  02006 062037R MMB40   LDA AVLST
0570  02007 066036R          LDB LAVL
0571  02010 170001          STA B,I         NEW ENTRY NEXT LINK
0572  02011 006004          INB
0573  02012 002004          INA
0574  02013 160000          LDA A,I
0575  02014 170001          STA B,I         NEW ENTRY PREVIOUS LINK
0576  02015 006004          INB
0577  02016 062036R          LDA LAVL
0578  02017 170001          STA B,I         NEW ENTRY LOGICAL ADDRESS
0579  02020 006004          INB
0580  02021 062035R          LDA NAVL
0581  02022 170001          STA B,I         NEW ENTRY # OF WORDS
0582  02023 166036R          LDB LAVL,I
0583  02024 006004          INB
0584  02025 062036R          LDA LAVL        SET SUBSEQUENT PREVIOUS LINK TO
0585  02026 170001          STA B,I         POINT TO NEW ENTRY
0586  02027 066036R          LDB LAVL      PREV NEXT LINK=NEW ENTRY ADDRESS
0587  02030 006004          INB
0588  02031 164001          LDB B,I
0589  02032 062036R          LDA LAVL
0590  02033 170001          STA B,I
0591  02034 026002R          JMP MMB30       GO CHECK FOR POSSIBLE MERGES
0592*
0593  02035 000000  NAVL    NOP
0594  02036 000000  LAVL    NOP
0595  02037 000000  AVLST   NOP
0596  02040 000000  NLAD    NOP
0597*
0598*          $MERG CHECKS IF THE ADDED AVAILABLE MEMORY ENTRY
0599*      MERGES IF PREVIOUS OR SUBSEQUENT ENTRY TO FORM A LARGER
0600*      SINGLE CONTIGUOUS BLOCK OF MEMORY
0601*
0602*                CALLING SEQUENCE
0603*                     JSB $MERG
0604*                          WITH AVLST POINTING TO ADDED ENTRY
0605  02041 000000  $MERG   NOP
0606  02042 162037R          LDA AVLST,I     CHECK IF MERGE WITH PREVIOUS ONL
0607  02043 002003          SZA,RSS
0608  02044 026057R          JMP MER10            POSSIBLE MERGE WITH PREVIOU
0609  02045 066037R          LDB AVLST
```

```
0610  02046 044055          ADB ,2
0611  02047 160001          LDA B,I
0612  02050 006004          INB
0613  02051 140001          ADA B,I         ENDING LOGICAL ADDRESS
0614  02052 166037R         LDB AVLST,I
0615  02053 044055          ADB ,2
0616  02054 164001          LDB B,I
0617  02055 050001          CPA B
0618  02056 026117R         JMP MER20       COMPARES SO MERGE WITH SUBSEQ EN
0619  02057 066037R MER10   LDB AVLST
0620  02060 006004          INB
0621  02061 164001          LDB B,I         CHECK IF ADDED ENTRY PREVIOUS
0622  02062 076137R         STB PREL
0623  02063 006003          SZB,RSS              LINK ZERO
0624  02064 126041R         JMP $MERG,I     YES, SO ALREADY TOP OF LIST
0625*
0626  02065 044055          ADB ,2          COMPUTE ENDING ADDRESS OF
0627  02066 160001          LDA B,I              PREVIOUS ENTRY
0628  02067 006004          INB
0629  02070 140001          ADA B,I
0630  02071 066037R         LDB AVLST       COMPARE AGAINST NEW ENTRY
0631  02072 044055          ADB ,2               LOGICAL ADDRESS
0632  02073 164001          LDB B,I
0633  02074 050001          CPA B
0634  02075 002001          RSS
0635  02076 126041R         JMP $MERG,I     NO MERG
0636*
0637*           MERG NEW ENTRY WITH PREVIOUS ENTRY
0638  02077 066037R         LDB AVLST
0639  02100 044056          ADB ,3
0640  02101 160001          LDA B,I
0641  02102 066137R         LDB PREL
0642  02103 044056          ADB ,3
0643  02104 140001          ADA B,I
0644  02105 170001          STA B,I         NEW # OF WORDS
0645  02106 166037R         LDB AVLST,I
0646  02107 176137R         STB PREL,I    PREV NEXT LINK=ADDED NEXT LINK
0647  02110 006003          SZB,RSS
0648  02111 126041R         JMP $MERG,I
0649  02112 062137R         LDA PREL
0650  02113 006004          INB
0651  02114 170001          STA B,I         SUBS, PREV LINK = PREV LINK ADDR
0652  02115 072037R         STA AVLST
0653  02116 026042R         JMP $MERG+1     RETURN
0654*
0655*           MERG ADDED ENTRY WITH SUBSEQUENT ENTRY
0656*
0657  02117 162037R MER20   LDA AVLST,I
0658  02120 072140R         STA SUBS
0659  02121 040056          ADA ,3
0660  02122 160000          LDA A,I         SUBS, # OF WORDS
0661  02123 066037R         LDB AVLST
0662  02124 044056          ADB ,3
0663  02125 140001          ADA B,I         ADD CURRENT # OF WORDS
0664  02126 170001          STA B,I         STORE NEW CURRENT # OF WORDS
0665  02127 166140R         LDB SUBS,I
```

```
0666   02130 176037R        STB AVLST,I  NEW CURRENT NEXT LINK=SUBS NEXT
0667   02131 006003        SZB,RSS      CHECK IF LAST ENTRY
0668   02132 026042R        JMP $MERG+1
0669   02133 006004        INB
0670   02134 062037R        LDA AVLST
0671   02135 170001        STA B,I       SET SUB=SUB PREV LINK=NEW CURREN
0672   02136 026042R        JMP $MERG+1   RETURN
0673   02137 000000  PREL   NOP
0674   02140 000000  SUBS   NOP
```

```
0676*          ID# SUBROUTINE GETS THE NEXT ID NUMBER
0677*               CALLING SEQUENCE
0678*                    JSB ID#
0679*                    (A) ON RETURN IS THE ID#
0680*                         LARGE8 # = 32767
0681   02141 000000  ID#    NOP
0682   02142 036013X         ISZ $ID#       INCREMENT ID COUNTER
0683   02143 062013X         LDA $ID#       PLACE ID IN A REGISTER
0684   02144 052147R         CPA C1023      CHECK IF EXCEEDS 10 BITS
0685   02145 102000          HLT 0
0686   02146 126141R         JMP ID#,I      RETURN
0687   02147 001777  C1023 DEC 1023
```

```
0689  00000          A       EQU 0          A REGISTER
0690  00001          B       EQU 1          B REGISTER
0691  00053          ..      EQU 53B
0692  00041          N10     EQU ..-10      DEC -10
0693  00042          N9      EQU ..-9      DEC -9
0694  00043          N8      EQU ..-8      DEC -8
0695  00044          N7      EQU ..-7      DEC -7
0696  00045          N6      EQU ..-6       DEC -6
0697  00046          N5      EQU ..-5      DEC -5
0698  00047          N4      EQU ..-4      DEC -4
0699  00050          N3      EQU ..-3      DEC -3
0700  00051          N2      EQU ..-2      DEC -2
0701  00052          N1      EQU ..-1       DEC -1
0702  00054          .1      EQU ..+1       DEC 1
0703  00055          .2      EQU ..+2       DEC 2
0704  00056          .3      EQU ..+3       DEC 3
0705  00057          .4      EQU ..+4      DEC 4
0706  00060          .5      EQU ..+5       DEC 5
0707  00061          .6      EQU ..+6       DEC 6
0708  00062          .7      EQU ..+7       DEC 7
0709  00063          .8      EQU ..+8      DEC 8
0710  00064          .9      EQU ..+9      DEC 9
0711  00065          .10     EQU ..+10     DEC 10
0712  00100          .       EQU 100B
0713  00100          UMLWA   EQU .+0
0714  00126          RONBF   EQU .+22
0715  00137          XIRT    EQU RONBF+9
0716  00141          EXPG    EQU .+33
0717  00224          RQCNT   EQU .+84
0718  00245          EXMOD   EQU .+101
0719                         IFN
0720  00335          SSTBL   EQU .+157
0721                         XIF
0722                         IFZ
0723                 SSTBL   DEF *+1       **** TEMPORARY FOR CHECKOUT*****
0724                         DEC 2
0725                         ASC 2,AAAA
0726                         DEC 2000
0727                         ASC 2,BBBB
0728                         DEC 1000
0729                         ASC 2,CCCC
0730                         NOP
0731                         XIF
0732                         END
**  NO ERRORS*
```

DD SSTBL

```
$$BUF   00010/02 00081/02

$BFDR   00010/02 00123/02 00502/02 00551/02

$BIDT   00010/02 00063/02 00085/02 00176/02 00255/02 00264/02 00318/02
        00524/02

$EX22   00015/02 00009/02

$ID#    00012/02 00124/02 00682/03 00683/03

$IRT    00011/02 00169/02

$MAVL   00010/02 00059/02 00065/02 00071/02 00280/02 00344/03 00442/03
        00514/03 00552/03 00559/03

$MBUF   00295/02 00022/02 00025/02 00028/02 00032/02 00034/02 00038/02
        00039/02 00128/02 00161/02 00162/02 00166/02 00168/02 00179/02
        00193/02 00195/02 00201/02 00203/02 00209/02 00214/02 00215/02
        00218/02 00219/02 00221/02 00230/02 00235/02 00245/02 00247/02
        00253/02 00267/02 00276/02 00296/02 00315/02 00321/02 00330/02
        00332/02 00341/02 00351/02 00352/02 00365/02 00370/02 00371/02
        00383/02 00388/02 00390/02 00398/02 00400/02 00405/02 00411/02
        00422/02 00425/02 00431/02 00433/02 00442/02 00446/02 00452/02
        00461/02 00473/02 00475/02 00478/02 00493/02 00505/02 00521/02
        00533/02 00541/02

$MDEF   00010/02 00114/03

$MEND   00010/02 00122/03

$MERG   00605/03 00566/03 00624/03 00635/03 00648/03 00653/03 00668/03
        00672/03

$MMFS   00010/02 00016/02 00144/02 00159/02 00297/02

$MOVE   00011/02 00021/02 00037/02 00080/02 00132/03 00310/03

$RQER   00011/02 00146/02

**IFN   ******** 00003/02 00145/02 00165/02 00719/03

**IFZ   ******** 00006/02 00148/02 00160/02 00722/03

.       00712/03 00713/03 00714/03 00716/03 00717/03 00718/03 00720/03

..      00691/03 00692/03 00693/03 00694/03 00695/03 00696/03 00697/03
        00698/03 00699/03 00700/03 00701/03 00702/03 00703/03 00704/03
        00705/03 00706/03 00707/03 00708/03 00709/03 00710/03 00711/03

.1      00702/03 00049/02

.10     00711/03

.2      00703/03 00233/02 00382/02 00386/02 00430/02 00161/03 00366/03
```

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        00415/03 00429/03 00455/03 00516/03 00610/03 00615/03 00626/03
        00631/03

 .3     00704/03 00283/02 00121/03 00346/03 00461/03 00639/03 00642/03
        00659/03 00662/03

 .35    00304/02 00129/02

 .36    00305/02 00131/02

 .37    00306/02 00133/02

 .38    00307/02 00135/02

 .4     00705/03 00185/02 00199/02 00470/02 00514/02 00004/03 00022/03
        00115/03 00193/03 00216/03

 .41    00308/02 00137/02

 .5     00706/03 00274/02 00512/02

 .6     00707/03 00326/02 00418/02 00528/02 00575/02

*.7     00708/03

*.8     00709/03

*.9     00710/03

 A      00689/03 00047/02 00392/02 00435/02 00513/02 00615/02 00618/02
        00194/03 00275/03 00279/03 00283/03 00287/03 00304/03 00574/03
        00660/03

 ADSST  00171/02 00094/02 00116/02

 APNTR  00487/03 00345/03 00358/03 00361/03 00365/03 00395/03 00401/03
        00408/03 00423/03 00428/03 00434/03 00436/03 00445/03 00454/03
        00463/03

 ARETN  00494/03 00341/03 00364/03 00473/03

 AVLST  00595/03 00515/03 00521/03 00526/03 00531/03 00541/03 00547/03
        00565/03 00569/03 00606/03 00609/03 00614/03 00619/03 00630/03
        00638/03 00645/03 00652/03 00657/03 00661/03 00666/03 00670/03

 B      00690/03 00027/02 00030/02 00067/02 00069/02 00072/02 00076/02
        00087/02 00096/02 00098/02 00101/02 00105/02 00108/02 00112/02
        00115/02 00186/02 00191/02 00200/02 00236/02 00240/02 00275/02
        00281/02 00284/02 00389/02 00394/02 00397/02 00401/02 00404/02
        00432/02 00437/02 00440/02 00443/02 00447/02 00472/02 00476/02
        00480/02 00511/02 00515/02 00530/02 00545/02 00570/02 00573/02
        00576/02 00628/02 00631/02 00007/03 00023/03 00025/03 00083/03
        00116/03 00157/03 00162/03 00167/03 00199/03 00203/03 00208/03
        00217/03 00230/03 00237/03 00242/03 00270/03 00295/03 00299/03
        00301/03 00302/03 00347/03 00351/03 00356/03 00367/03 00374/03
        00383/03 00386/03 00400/03 00402/03 00405/03 00409/03 00413/03
```

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        00416/03 00421/03 00430/03 00435/03 00438/03 00444/03 00447/03
        00450/03 00453/03 00457/03 00459/03 00462/03 00468/03 00517/03
        00532/03 00535/03 00538/03 00543/03 00550/03 00553/03 00556/03
        00560/03 00563/03 00571/03 00575/03 00578/03 00581/03 00585/03
        00588/03 00590/03 00611/03 00613/03 00616/03 00617/03 00621/03
        00627/03 00629/03 00632/03 00633/03 00640/03 00643/03 00644/03
        00651/03 00663/03 00664/03 00671/03

BCURE   00101/03 00003/03 00021/03 00027/03

BCURS   00100/03 00001/03 00005/03 00017/03 00026/03 00031/03 00041/03
        00046/03 00051/03 00059/03 00079/03

BCURZ   00102/03 00008/03 00014/03 00019/03

BIDAD   00373/02 00327/02 00337/02

BIDLG   00374/02 00334/02 00355/02 00396/02

BLADR   00091/03 00611/02 00635/02 00640/02 00645/02 00657/02 00043/03
        00048/03 00057/03 00076/03 00087/03

BLARG   00094/03 00624/02 00018/03 00042/03 00062/03 00072/03

BLEND   00098/03 00634/02 00650/02 00033/03 00054/03

BLIST   00092/03 00612/02 00626/02 00654/02 00002/03

BLSTT   00097/03 00632/02 00638/02 00647/02 00660/02 00666/02

BLWDS   00096/03 00629/02 00633/02

BNUMB   00095/03 00625/02 00012/03 00020/03 00036/03 00040/03 00061/03
        00074/03

BRETN   00495/03 00342/03 00368/03 00481/03

BWRDN   00099/03 00621/02 00009/03 00068/03 00084/03

BWRDS   00093/03 00619/02 00648/02 00052/03

C1023   00687/03 00498/02 00684/03

CALPT   00299/02 00015/02 00026/02 00043/02 00046/02 00055/02

CENTY   00256/02 00184/02 00198/02 00226/02 00232/02 00249/02

CLADR   00258/02 00224/02 00243/02

CURR    00493/03 00268/03 00290/03 00292/03 00298/03 00307/03

DEMFS   00297/02 00024/02

DFBFD   00551/02 00359/02 00482/02 00506/02 00518/02

DFBID   00255/02 00117/02 00180/02 00250/02 00270/02 00322/02 00414/02
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DFM4    00296/02 00044/02

DFRQC   00298/02 00019/02

DMSTT   00300/02 00033/02

ENTRY   00488/02 00429/02 00448/02 00469/02 00481/02

EX10    00024/02 00018/02

EX100   00154/02 00204/02 00210/02 00216/02 00231/02 00254/02 00277/02
        00342/02 00366/02 00372/02 00453/02 00522/02 00542/02

EX15    00046/02 00052/02 00058/02

EX20    00059/02 00023/02 00041/02

EX30    00087/02 00084/02

EX35    00093/02 00121/02

EX40    00122/02 00086/02

EX50    00128/02 00061/02

EXMOD   00718/03 00139/02 00142/02 00154/02 00157/02

EXPG    00716/03 00064/02

FILE1   00177/03 00153/03 00164/03

FILE2   00178/03 00155/03 00168/03

HEAD    00492/03 00273/03 00281/03 00291/03

ID#     00681/03 00403/02 00445/02 00477/02 00686/03

IDSRH   00567/02 00507/02 00534/02 00583/02 00585/02

IF010   00396/02 00387/02

IFORM   00377/02 00335/02 00357/02 00406/02

LAVL    00594/03 00510/03 00525/03 00528/03 00529/03 00534/03 00549/03
        00551/03 00558/03 00564/03 00570/03 00577/03 00582/03 00584/03
        00586/03 00589/03

LFREE   00485/03 00337/03 00370/03 00379/03 00394/03 00399/03 00403/03
        00404/03 00406/03 00410/03 00411/03 00414/03 00418/03 00422/03
        00425/03 00431/03 00470/03

LIST    00254/03 00204/03 00215/03 00221/03 00224/03 00227/03 00240/03
        00249/03 00251/03

LISTH   00256/03 00202/03 00234/03
```

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 LOGAD  00487/02 00424/02 00439/02 00465/02 00471/02
 LTEMP  00489/03 00384/03 00397/03
 M1777  00587/02 00577/02
 MAL05  00452/02 00423/02 00456/02 00458/02 00464/02 00484/02
 MAL10  00455/02 00417/02
 MAL15  00457/02 00428/02 00468/02
 MAL50  00461/02 00413/02
 MALCM  00315/02 00134/02
 MALCN  00411/02 00136/02
 MAM05  00341/02 00333/02 00345/02 00348/02 00361/02 00368/02
 MAM10  00344/02 00320/02 00325/02
 MAM20  00347/02 00380/02
 MAM50  00351/02 00317/02
 MAM60  00363/02 00354/02
 MAM70  00367/02 00364/02
 MER10  00619/03 00608/03
 MER20  00657/03 00618/03
*MIN05  00198/02
 MIN07  00205/02 00189/02
 MIN10  00207/02 00197/02 00223/02
 MIN15  00209/02 00206/02 00212/02
 MIN20  00211/02 00208/02
 MIN50  00218/02 00178/02 00183/02
*MIN55  00225/02
 MIN60  00232/02 00228/02
 MINIT  00176/02 00130/02
 MMAD   00375/02 00336/02 00358/02 00381/02
 MMB10  00515/03 00523/03
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 MMB20  00541/03 00520/03

 MMB30  00564/03 00539/03 00591/03

 MMB40  00569/03 00545/03

 MME10  00215/03 00206/03 00225/03

 MME20  00227/03 00220/03

 MME22  00236/03 00232/03

 MME24  00238/03 00235/03

 MME30  00245/03 00223/03

 MMENT  00191/03 00118/02 00251/02 00338/02 00360/02 00450/02 00483/02
        00213/03 00243/03 00252/03

 MMF10  00346/03 00362/03

 MMF15  00358/03 00355/03 00378/03 00390/03

 MMF18  00363/03 00350/03

*MMF20  00370/03

 MMF30  00425/03 00372/03 00396/03

 MMF35  00432/03 00427/03

 MMF37  00444/03 00441/03

 MMF39  00469/03 00465/03

 MMF40  00473/03 00360/03

 MMF50  00481/03 00475/03

 MMFRG  00335/03 00196/02 00222/02 00353/02 00463/02 00469/03 00471/03
        00478/03 00480/03 00482/03

 MMFRR  00508/03 00516/02 00567/03

 MMG10  00115/03 00124/03

 MMG15  00121/03 00118/03

 MMG20  00127/03 00120/03

 MMGET  00113/03 00093/02 00225/02 00378/02 00426/02 00466/02 00126/03
        00135/03

 MMN10  00160/03 00175/03
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MMN20 00173/03 00166/03 00170/03

MMNME 00152/03 00181/02 00271/02 00323/02 00415/02 00172/03 00176/03

MMR10 00286/03 00277/03

MMR20 00298/03 00289/03

MMR30 00306/03 00284/03 00296/03

MMREM 00267/03 00519/02 00547/02 00312/03

*MMS10 00626/02

MMS15 00645/02 00637/02

MMS20 00661/02 00060/03 00080/03 00088/03

MMS25 00664/02 00642/02 00652/02

MMS30 00666/02 00656/02

MMS40 00003/03 00029/03

MMS45 00012/03 00086/03

MMS50 00021/03 00016/03

MMS51 00043/03 00038/03

MMS52 00051/03 00045/03

MMS55 00061/03 00050/03 00056/03

MMS56 00068/03 00064/03

MMS57 00074/03 00070/03

MMS60 00076/03 00011/03

MMS70 00082/03 00078/03

MMSPC 00610/02 00331/02 00421/02 00613/02 00622/02 00661/02 00662/02
00665/02 00066/03 00073/03 00075/03

MMTEM 00136/03 00128/03 00134/03

MR015 00521/02 00549/02

MR020 00524/02 00504/02 00509/02

MR022 00527/02 00539/02

MR024 00537/02 00532/02

MR025 00540/02 00496/02 00500/02 00526/02

MR030 00544/02 00536/02

MRELM 00493/02 00138/02

MRLAD 00553/02 00529/02 00546/02

MRLST 00554/02 00527/02 00537/02

MRTMP 00552/02 00510/02 00517/02 00544/02

MS05 00276/02 00290/02 00292/02

MS10 00278/02 00266/02 00269/02

MS20 00281/02 00289/02

MS25 00291/02 00273/02

MSTAT 00264/02 00132/02

MXRET 00496/03 00343/03 00353/03 00357/03 00476/03

N1 00701/03 00031/02 00187/02 00211/02 00367/02 00627/02 00630/02
00117/03

N10 00692/03 00020/02

N2 00700/03 00213/02 00369/02 00071/03 00363/03 00474/03

N22 00309/02 00140/02 00155/02

N3 00699/03 00291/02 00344/02 00455/02 00171/03

N350 00310/02 00079/02

N4 00698/03 00205/02 00664/02 00127/03

N5 00697/03 00036/02

*N6 00696/03

N7 00695/03 00131/03 00309/03

*N8 00694/03

*N9 00693/03

NAD 00255/03 00197/03 00218/03

NAVL 00593/03 00589/03 00537/03 00562/03 00560/03

NCNT 00486/03 00339/03 00348/03

NEW 00253/03 00192/03 00207/03 00210/03 00211/03 00212/03 00228/03
00233/03 00236/03 00238/03 00239/03 00246/03 00247/03 00248/03

```
        00250/03

NEWE    00491/03 00433/03 00439/03 00448/03 00451/03 00460/03 00467/03

NEXL    00294/02 00282/02 00287/02

NEXT    00179/03 00160/03 00173/03

NFREE   00484/03 00336/03 00380/03 00432/03

NLAD    00596/03 00512/03 00518/03

NTEMP   00488/03 00382/03 00388/03

NWD     00257/02 00192/02

OTEMP   00490/03 00387/03 00420/03

PONTR   00486/02 00419/02 00449/02

PREL    00673/03 00622/03 00641/03 00646/03 00649/03

RONBF   00714/03 00715/03

RQCNT   00717/03 00298/02

SR010   00574/02 00582/02

SR020   00584/02 00579/02

SRADD   00588/02 00574/02 00580/02 00584/02

SRHID   00589/02 00568/02 00578/02

SST     00301/02 00300/02

SSTBL   00720/03 00082/02 00090/02

SUBS    00674/03 00658/03 00665/03

SUM     00293/02 00279/02 00285/02 00286/02

TADR    00259/02 00234/02 00237/02 00238/02 00241/02 00242/02 00244/02
        00246/02 00248/02

TEM     00103/03 00034/03 00039/03

TEMP    00302/02 00045/02 00053/02 00054/02 00089/02 00120/02

TEMP1   00303/02 00092/02 00100/02 00102/02 00104/02 00110/02 00111/02
        00119/02

UMLWA   00713/03 00075/02

XIRT    00715/03 00167/02
```

```
0001                    ASMB,L,X,C,N,R,B     ASCII - CONVERT BIN TO ASCII OCT
** NO ERRORS*
```

```
0001                    ASMB,L,X,C,N,R,B    ASCII - CONVERT BIN TO ASCII OCT
0002  00000                    NAM ASCII,6,0
0003                           ENT CNDEC,CNOCT
0004*
0005*      CONVERTS BINARY TO ASCII OCTAL OR DECIMAL.
0006*
0007*      CALLING SEQUENCE:
0008*
0009*          LDA <VALUE>
0010*          JSB CNDEC OR CNOCT
0011*
0012*      ON RETURN,
0013*          (A) CONTAINS LEAST SIGNIFICANT 2 DIGITS
0014*          (B) POINTS TO ADDRESS OF MOST SIGNIFICANT
0015*              DIGITS
0016*
0017  00000 000000  CNDEC NOP            BINARY TO DECIMAL ASCII
0018  00001 066120R       LDB A00
0019  00002 076114R       STB ASCI
0020  00003 076115R       STB ASCI+1
0021  00004 076116R       STB ASCI+2
0022  00005 066113R       LDB CNMBR
0023  00006 076117R       STB CNMLC
0024  00007 016031R CNORG JSB DVUKN      DIVIDE BY 8 OR 10
0025  00010 146117R       ADB CNMLC,I
0026  00011 176117R       STB CNMLC,I
0027  00012 002003        SZA,RSS
0028  00013 026023R       JMP CNOUT
0029  00014 016031R       JSB DVUKN      DIVIDE BY 8 OR 10
0030  00015 005727        BLF,BLF
0031  00016 146117R       ADB CNMLC,I
0032  00017 176117R       STB CNMLC,I
0033  00020 036117R       ISZ CNMLC
0034  00021 002002        SZA
0035  00022 026007R       JMP CNORG
0036  00023 066116R CNOUT LDB CNMBR+3
0037  00024 062114R       LDA CNMBR+1
0038  00025 072116R       STA CNMBR+3
0039  00026 076114R       STB CNMBR+1
0040  00027 066113R       LDB CNMBR
0041  00030 126000R       JMP CNDEC,I
0042*
0043  00031 000000  DVUKN NOP
0044  00032 006400        CLB            CLEAR LOOP COUNTER = QUOTIENT
0045  00033 076121R       STB DVTMP
0046  00034 070001  DVU00 STA B          FLAG ALLOW BIT15 OF # TO BE SET
0047  00035 040041  DVU01 ADA CNDIV      DIVIDE BY SUCCESSIVE SUBTRACTION
0048  00036 036121R       ISZ DVTMP
0049  00037 002021        SSA,RSS        DONE IF A IS NEG AND B IS POS
0050  00040 026034R       JMP DVU00      CLEAR B TO ALLOW EXIT
0051  00041 006020        SSB            EXIT IF POS
0052  00042 026035R       JMP DVU01      ORIGINAL # TO CONVERT WAS NEG
0053  00043 064041        LDB CNDIV      DONE
0054  00044 007004        CMB,INB
0055  00045 044000        ADB A          REMAINDER TO B
0056  00046 062121R       LDA DVTMP
```

```
0057  00047 040052          ADA ..-1       QUOTIENT TO A
0058  00050 126031R         JMP DVUKN,I    EXIT
0059*
0060*
0061  00051 000000  CNOCT   NOP
0062  00052 006400          CLB
0063  00053 016077R         JSB ..RRL
0064  00054 177762          DEC -14
0065  00055 016067R         JSB OCT
0066  00056 072114R         STA CNMBR+1
0067  00057 002400          CLA
0068  00060 016067R         JSB OCT
0069  00061 072115R         STA CNMBR+2
0070  00062 002400          CLA
0071  00063 016067R         JSB OCT
0072  00064 072116R         STA CNMBR+3
0073  00065 066113R         LDB CNMBR
0074  00066 126051R         JMP CNOCT,I
0075*
0076  00067 000000  OCT     NOP
0077  00070 016077R         JSB ..RRL
0078  00071 177775          DEC -3
0079  00072 001722          ALF,RAL
0080  00073 016077R         JSB ..RRL
0081  00074 177775          DEC -3
0082  00075 032120R         IOR A00
0083  00076 126067R         JMP OCT,I
0084*
0085  00077 000000  ..RRL   NOP
0086  00100 072000R         STA CNDEC
0087  00101 162077R         LDA ..RRL,I
0088  00102 072121R         STA DVTMP
0089  00103 062000R         LDA CNDEC
0090  00104 036077R         ISZ ..RRL
0091  00105 000066  RLOOP   CLE,ELA
0092  00106 005600          ELB
0093  00107 001326          RAR,ELA
0094  00110 036121R         ISZ DVTMP
0095  00111 026105R         JMP RLOOP
0096  00112 126077R         JMP ..RRL,I
0097*
0098*
0099  00113 000114R CNMBR   DEF *+1
0100  00114 000000  ASCI    BSS 3
0101  00117 000000  CNMLC   NOP
0102  00120 030060  A00     ASC 1,00
0103*
0104  00121 000000  DVTMP   BSS 1
0105*
0106  00000         A       EQU 0
0107  00001         B       EQU 1
0108  00053         ..      EQU 53B
0109  00041         CNDIV   EQU ..-10
0110                        END
**  NO ERRORS*
```

```
..      00108/02 00057/02 00109/02

..RRL   00085/02 00063/02 00077/02 00080/02 00087/02 00090/02 00096/02

A       00106/02 00055/02

A00     00102/02 00018/02 00082/02

ASCI    00100/02 00019/02 00020/02 00021/02

B       00107/02 00046/02

CNDEC   00017/02 00003/02 00041/02 00086/02 00089/02

CNDIV   00109/02 00047/02 00053/02

CNMBR   00099/02 00022/02 00036/02 00037/02 00038/02 00039/02 00040/02
        00066/02 00069/02 00072/02 00073/02

CNMLC   00101/02 00023/02 00025/02 00026/02 00031/02 00032/02 00033/02

CNOCT   00061/02 00003/02 00074/02

CNORG   00024/02 00035/02

CNOUT   00036/02 00028/02

DVTMP   00104/02 00045/02 00048/02 00056/02 00088/02 00094/02

DVU00   00046/02 00050/02

DVU01   00047/02 00052/02

DVUKN   00043/02 00024/02 00029/02 00058/02

OCT     00076/02 00065/02 00068/02 00071/02 00083/02

RLOOP   00091/02 00095/02
```

```
0001                    ASMB,L,X,C,N,R,B     $ADDR--CHECKS ADDRESS LIMITS
** NO ERRORS*
```

```
0001                    ASMB,L,X,C,N,R,B     $ADDR--CHECKS ADDRESS LIMITS
0002  00000                     NAM $ADDR,6,0
0003                            ENT $ADDR
0004                            EXT $RQER
0005*
0006*       $ADDR ROUTINE CHECKS IF BUFFER ADDRESS IS
0007*     WITHIN USER PROGRAM AREA LIMITS
0008*
0009  00000 000000  $ADDR NOP
0010  00001 003000        CMA
0011  00002 070001        STA B
0012  00003 040254        ADA UMFWA
0013  00004 002021        SSA,RSS
0014  00005 026012R       JMP RQER
0015  00006 044100        ADB UMLWA
0016  00007 006020        SSB
0017  00010 026012R       JMP RQER
0018  00011 126000R       JMP $ADDR,I
0019  00012 002400  RQER  CLA
0020  00013 070245        STA EXMOD
0021  00014 026001X       JMP $RQER
0022  00000           A     EQU 0
0023  00001           B     EQU 1
0024  00100           .     EQU 100B
0025  00100           UMLWA EQU .+0
0026  00245           EXMOD EQU .+101
0027  00254           UMFWA EQU .+108
0028                    END
**  NO ERRORS*
```

$ADDR	00009	00003	00018	
$RQER	00004	00021		
.	00024	00025	00026	00027
@A	00022			
B	00023	00011		
EXMOD	00026	00020		
RQER	00019	00014	00017	
UMFWA	00027	00012		
UMLWA	00025	00015		

```
0001                    ASMB,L,X,C,N,R,B     $SRCH - SEARCH SYSTEM OR USER DI
** NO ERRORS*
```

```
0001                    ASMB,L,X,C,N,R,B    $SRCH - SEARCH SYSTEM OR USER DI
0002  00000                     NAM $SRCH,6,0
0003                            ENT $SRCH
0004                            EXT $DISC,$MOVE
0005                            EXT $BUF,$B3,$B4,$B5,$B64,$B125,$B127,$B128
0006*     $SRCH SEARCHES THE SYSTEM OR USER DIRECTORY FOR A SPECIFIED
0007*   FILE
0008*
0009*     CALLING SEQUENCE:
0010*         LDA <0 FOR SYSTEM, NON-0 FOR USER DIRECTORY>
0011*         LDB <ADDRESS OF FILE NAME>
0012*         JSB $SRCH
0013*
0014*     RETURN:
0015*         (P+1) IF FOUND, ADDRESS IN (B)
0016*         (P+2) IF FILE NOT FOUND, A=0
0017*
0018  00000 000000  $SRCH NOP
0019  00001 072425R       STA CRFLX     SAVE USER/SYSTEM REQ. FLAG
0020  00002 076431R       STB FNADR     SAVE FIL-NAME ADDRESS
0021  00003 076435R       STB SVFLG     SET SWAP FLAG NON-ZERO
0022*
0023* RESOLVE ADDRESS OF $BUF
0024*
0025  00004 062216R       LDA BUFX
0026  00005 002001        RSS
0027  00006 160000        LDA 0,I
0028  00007 001275        RAL,CLE,SLA,ERA
0029  00010 026006R       JMP *-2
0030  00011 072216R       STA BUFX      ADDRESS OF $BUF
0031  00012 042116R       ADA .128
0032  00013 072277R       STA $BFND     ADDRESS OF $BUF+128
0033  00014 040051        ADA N2
0034  00015 072165R       STA TBEND     ADDRESS OF $BUF+126

0036  00016 060161        LDA CUDSC
0037  00017 072434R       STA SAVSC     SAVE CURRENT USER SUBCHNL
0038  00020 062116R       LDA .128
0039  00021 072440R       STA WDCNT
0040  00022 002400        CLA
0041  00023 072432R       STA SRSC
0042*
0043  00024 066011X       LDB $B127     GET FILE TABLE VALIDITY CHAR
0044  00025 056077R       CPB TFLG      FILE TABLE
0045  00026 050327        CPA FLFLG       VALID?
0046  00027 026047R       JMP TBCLR      -NO
0047*
0048  00030 016373R       JSB BFSET     SET TEMPP = BUFX
0049  00031 016377R       JSB $CMPR     COMPARE TO FILE-NAME IN BUFFER
0050  00032 026166R       JMP FOUN1      =EQUAL= EXIT
0051  00033 002020        SSA           SYSTEM ENTRY?
0052  00034 006005  RENTR INB,RSS    =YES, BUMP BY 1
0053  00035 044056        ADB .3         -NO, BUMP BY 3
0054  00036 160001        LDA B,I
0055  00037 002002        SZA           ANY MORE ENTRIES?
0056  00040 026375R       JMP BFSET+2    =YES
```

```
0057*
0058  00041 072435R        STA SVFLG     SET FLAG TO RESTORE TABLE
0059  00042 060115        LDA SYSBF
0060  00043 040075        ADA .1774
0061  00044 016373R        JSB BFSET     SET TEMPP = BUFX
0062  00045 006500        CLB,CLE       SET TO WRITE TO SYSTEM DISC
0063  00046 016347R        JSB DSCIO     SAVE $BUF IN OVERLAY AREA
0064*
0065  00047 052425R TBCLR  CPA CRFLX     REQ. FOR SYSTEM DRCTRY?
0066  00050 003401         CCA,RSS       =YES
0067  00051 060161         LDA CUDSC     =NO
0068  00052 016244R        JSB SRCH      SEARCH DIRECTORY
0069  00053 062425R        LDA CRFLX
0070  00054 064331         LDB SSFLG
0071  00055 002002         SZA           REQUEST FOR SYST. DRCTRY?
0072  00056 056076R        CPB ASCNO     SYSTEM SEARCH ALLOWED?
0073  00057 026112R        JMP NOTFN
0074  00060 006020         SSB           SEARCH ALL SUBCHNLS?
0075  00061 026100R        JMP SSALL     =YES
0076  00062 004065  SSNXT  CLE,ERB       =NO, SEARCH SPECIFIED SUBCHNLS
0077  00063 006043         SEZ,SZB,RSS   ANY MORE TO CHECH?
0078  00064 026112R        JMP NOTFN     =NO
0079  00065 076433R        STB SRFLG     SAVE CURRENT SEARCH FLAG VALUE
0080  00066 062432R        LDA SRSC
0081  00067 002040         SEZ           SEARCH THIS SUBCHNL?
0082  00070 052434R        CPA SAVSC
0083  00071 002001         RSS           =NO, SKIP IT
0084  00072 016244R        JSB SRCH      SEARCH DRCTRY FOR FILE-NAME
0085  00073 036432R        ISZ SRSC      =NOT FOUND, INCR. TO NEXT SUBCH
0086  00074 066433R        LDB SRFLG     GET SEARCH FLAG
0087  00075 026062R        JMP SSNXT     GO CHECK IF MORE SUBCHNLS
0088*
0089  00076 047117  ASCNO  ASC 1,NO
0090  00077 022124  TFLG   ASC 1,ST
0091*
0092  00100 060156  SSALL  LDA LSTSC
0093  00101 003000         CMA
0094  00102 072432R        STA SRSC      SET SUBCHNL COUNTER
0095  00103 062432R SSAL1  LDA SRSC
0096  00104 003000         CMA
0097  00105 052434R        CPA SAVSC     IS THIS ORIGINAL SUBCHNL?
0098  00106 002001         RSS           =YES, ALREADY CHECKED IT
0099  00107 016244R        JSB SRCH      SEARCH DRCTRY FOR FILE-NAME
0100  00110 036432R        ISZ SRSC      =NOT FOUND, INCR. SUBCHNL CNTR
0101  00111 026103R        JMP SSAL1     GO CHECK NEXT SUBCHNL
0102*
0103  00112 036000R NOTFN  ISZ $SRCH     INCREMENT TO INDICATE NOT FOUND
0104  00113 016373R        JSB BFSET     SET TEMPP = BUFX
0105  00114 062434R        LDA SAVSC     RESTORE USER SUBCHNL
0106  00115 016300R        JSB SETSC       IF IT CHANGED
0107  00116 000200  .128   DEC 128
0108  00117 076430R SWAP   STB ENTLN     SET NEW ENTRY LENGTH
0109  00120 046116R        ADB .128
0110  00121 076440R        STB WDCNT     SET DISC INPUT WORD COUNT
0111  00122 006700         CLB,CCE       SET TO READ SYSTEM DISC
0112  00123 062430R        LDA ENTLN
```

```
0113  00124 056435R        CPB SVFLG      WAS TABLE SWAPPED TO DISC?
0114  00125 026131R        JMP RDTBL      YES=READ TABLE, FROM DISC
0115  00126 002003         SZA,RSS              WAS FILE FOUND?
0116  00127 126000R        JMP $SRCH,I                NO=RETURN P+2; A=0
0117  00130 026140R        JMP TLOOP+1                YES=PUT ENTRY IN TABLE
0118*
0119  00131 003004  RDTBL  CMA,INA
0120  00132 042216R        ADA BUFX       SET INPUT BUFFR ADDRESS
0121  00133 072437R        STA TEMPP        AND BUFFR POINTER
0122  00134 060115         LDA SYSBF
0123  00135 040075         ADA .1774
0124  00136 016347R        JSB DSCIO      READ IN SWAP TRK/SCTR
0125*
0126  00137 076437R TLOOP  STB TEMPP
0127  00140 016360R        JSB BUMP       BUMP TABLE POINTER
0128  00141 002020         SSA            SYSTEM ENTRY?
0129  00142 006005         INB,RSS         =YES, BUMP 1 MORE
0130  00143 044056         ADB .3
0131  00144 076427R        STB TEMP
0132  00145 007004         CMB,INB
0133  00146 046165R        ADB TBEND      PAST END OF TABLE
0134  00147 006020         SSB
0135  00150 026156R        JMP DONE1      YES (OVERFLOW)
0136  00151 066427R        LDB TEMP
0137  00152 002400         CLA
0138  00153 150001         CPA B,I
0139  00154 026160R        JMP DONE       YES (0 FOUND)
0140  00155 026137R        JMP TLOOP
0141*
0142  00156 002400  DONE1  CLA
0143  00157 172437R        STA TEMPP,I
0144  00160 066077R DONE   LDB TFLG
0145  00161 076011X        STB $B127      SET FILE TABLE VALIDITY CHAR
0146  00162 034327         ISZ FLFLG      SET FILE TABLE VALIDITY FLAG
0147  00163 066216R        LDB BUFX       GET DRCTRY ENTRY ADDRESS
0148  00164 126000R        JMP $SRCH,I
0149*
0150  00165 000000  TBEND  NOP            ADDRESS OF $BUF+126
0151*
0152  00166 002024  FOUN1  SSA,INA        SYSTEM DRCTRY ENTRY?
0153  00167 026207R        JMP FOUNS       =YES
0154  00170 062425R        LDA CRFLX
0155  00171 002003         SZA,RSS        REQ. FOR SYSTEM DRCTRY?
0156  00172 026035R        JMP RENTR+1     =YES= DIDN'T FIND IT THERE
0157  00173 160001         LDA B,I
0158  00174 070161         STA CUDSC      SET CURRENT USER SUBCHNL
0159  00175 006004         INB
0160  00176 160001         LDA B,I
0161  00177 070157         STA UDNTS      SET USER NEXT TRK/SCTR
0162  00200 006004         INB
0163  00201 160001         LDA B,I
0164  00202 070200         STA DISCL      SET USER LABEL TRK/SCTR
0165  00203 060074         LDA M377
0166  00204 070163         STA LSTSK
0167  00205 066437R        LDB TEMPP      GET FILE ENTRY ADDRESS
0168  00206 126000R        JMP $SRCH,I    EXIT
```

```
0169*
0170  00207 052425R FOUNS CPA CRFLX     REQ. FOR SYSTEM DRCTRY?
0171  00210 026205R       JMP *-3       -YES
0172  00211 026034R       JMP RENTR     -NO, GO LOOK SOME MORE
0173*
0174  00212 007004  FOUND CMB,INB
0175  00213 046437R       ADB TEMPP     COMPUTE ENTRY LENGTH
0176  00214 062437R       LDA TEMPP
0177  00215 016002X       JSB $MOVE     MOVE ENTRY TO START OF $BUF
0178  00216 000003X BUFX  DEF $BUF
0179  00217 016373R       JSB BFSET     SET TEMPP = BUFX
0180  00220 016360R       JSB BUMP      BUMP TABLE POINTER
0181  00221 062425R       LDA CRFLX
0182  00222 002003        SZA,RSS       REQ. FOR SYSTEM DRCTRY?
0183  00223 003401        CCA,RSS       -YES
0184  00224 060161        LDA CUDSC     -NO
0185  00225 170001        STA B,I       SET USER SUBCHNL (-1 = SYS.)
0186  00226 002020        SSA           REQ. FOR SYSTEM?
0187  00227 026236R       JMP SYSTM     -YES
0188  00230 006004        INB
0189  00231 060157        LDA UDNTS
0190  00232 170001        STA B,I       SET USER NEXT TRK/SCTR
0191  00233 006004        INB
0192  00234 060200        LDA DISCL
0193  00235 170001        STA B,I       SET USER LABEL TRK/SCTR
0194*
0195  00236 006004  SYSTM INB
0196  00237 002400        CLA
0197  00240 170001        STA B,I
0198  00241 007004        CMB,INB
0199  00242 046437R       ADB TEMPP
0200  00243 026117R       JMP SWAP      GO COMPLETE TABLE
0201*
0202*
0203  00244 000000  SRCH  NOP
0204  00245 016300R       JSB SETSC     SET SUBCHNL
0205  00246 126244R       JMP SRCH,I    -NOT READY - EXIT
0206  00247 016373R SER05 JSB BFSET     SET TEMPP = BUFX
0207  00250 062436R       LDA BUFPT     GET DRCTRY TRK/SCTR
0208  00251 066425R       LDB CRFLX
0209  00252 016347R       JSB DSCIO     READ DRCTRY SCTR
0210  00253 066437R SER20 LDB TEMPP
0211  00254 016377R       JSB $CMPR     ENTRY EQUAL?
0212  00255 026212R       JMP FOUND     -YES
0213  00256 076437R       STB TEMPP
0214  00257 007000        CMB
0215  00260 046277R       ADB $BFND
0216  00261 006320        CCE,SSB
0217  00262 026271R       JMP SER40           YES
0218  00263 162437R       LDA TEMPP,I   CHECK IF AT END OF DIRECTORY
0219  00264 002003        SZA,RSS
0220  00265 126244R       JMP SRCH,I
0221  00266 050052        CPA N1        CHECK IF AT LAST ENTRY IN SECTOR
0222  00267 002301        CCE,RSS             YES
0223  00270 026253R       JMP SER20           NO
0224  00271 036436R SER40 ISZ BUFPT     INCREMENT TO NEXT DIRECTORY SECT
```

```
0225  00272 062436R        LDA BUFPT
0226  00273 010074         AND M377
0227  00274 050116         CPA SECTR      END OF DIRECTORY?
0228  00275 126244R         JMP SRCH,I
0229  00276 026247R         JMP SER05      GO TO READ IN NEXT DIRECTORY SEC
0230*
0231  00277 000000  SBFND   NOP            ADDRESS OF SBUF+128
0232*
0233  00300 000000  SETSC   NOP
0234  00301 002020         SSA            REQ. FOR SYSTEM?
0235  00302 026334R         JMP SETSY      =YES
0236  00303 050161         CPA CUDSC      SAME SUBCHNL?
0237  00304 026332R         JMP STDIR      =YES
0238  00305 070161         STA CUDSC      SET CURRENT USER SUBCHNL
0239  00306 016373R         JSB BFSET      RESET BUFFER POINTER
0240  00307 074163         STB LSTSK
0241  00310 062342R         LDA SSSKP
0242  00311 070330         STA XFLG       SET XFLG FOR NOT READY RETURN
0243  00312 002700         CLA,CCE
0244  00313 070200         STA DISCL
0245  00314 016347R         JSB DSCIO      READ FROM USER DISC
0246  00315 066343R         LDB ASCSY      *
0247  00316 056004X         CPB $B3        *
0248  00317 062005X         LDA $B4        * IS IT
0249  00320 052344R         CPA ASCSY+1    *   A
0250  00321 066006X         LDB $B5        * SYSTEM DISC?
0251  00322 056345R         CPB ASCSY+2    *
0252  00323 006705         CLB,CCE,INB,RSS    =YES
0253  00324 026330R         JMP DCTY0      =NO
0254  00325 062007X         LDA $B64
0255  00326 070200         STA DISCL      SET SYST. BFR SECTOR
0256  00327 016347R         JSB DSCIO      READ USER LABEL SCTR
0257  00330 062007X DCTY0   LDA $B64
0258  00331 070157         STA UDNTS      SET USER NEXT TRK/SCTR
0259  00332 060200  STDIR   LDA DISCL
0260  00333 002005         INA,RSS
0261  00334 060114  SETSY   LDA SYSDR
0262  00335 072436R         STA BUFPT      SET DRCTRY START TRK/SCTR
0263  00336 036300R         ISZ SETSC      INCR. TO INDICATE SUBCHNL READY
0264  00337 006700  CLRXF   CLB,CCE
0265  00340 074330         STB XFLG       CLEAR NOT=READY RETURN FLAG
0266  00341 126300R         JMP SETSC,I
0267*
0268  00342 000337R SSSKP   DEF CLRXF
0269*
0270  00343 051531  ASCSY   ASC 3,SYSTEM
      00344 051524
      00345 042515
0271  00346 000436R PARAX   DEF PARAM
0272*
0273  00347 000000  DSCIO   NOP
0274  00350 072436R         STA BUFPT      SET DISC TRK/SCTR
0275  00351 074162         STB CRFLG
0276  00352 006445         CLB,SEZ,INB,RSS
0277  00353 006004         INB
0278  00354 062346R         LDA PARAX      ADDRESS OF DISC REQUEST PARAMETE
```

```
0279  00355 016001X        JSB $DISC      READ IN ONE SECTOR OF DIRECTORY
0280  00356 016373R        JSB BFSET      SET TEMPP = BUFX
0281  00357 126347R        JMP DSCIO,I
0282*
0283  00360 000000  BUMP    NOP
0284  00361 066437R         LDB TEMPP      GET POINTER TO CURRENT ENTRY
0285  00362 044055          ADB .2
0286  00363 160001          LDA B,I
0287  00364 010073          AND .177       GET FILE TYPE
0288  00365 040045          ADA N6
0289  00366 044056          ADB .3
0290  00367 002020          SSA            11 WORD ENTRY?
0291  00370 044061          ADB .6          =YES
0292  00371 160001          LDA B,I
0293  00372 126360R         JMP BUMP,I
0294*
0295  00373 000000  BFSET   NOP
0296  00374 066216R         LDB BUFX
0297  00375 076437R         STB TEMPP
0298  00376 126373R         JMP BFSET,I
0299*
0300  00377 000000  $CMPR   NOP            B CONTAINS REQ. FILE-NAME ADDRES
0301  00400 062431R         LDA FNADR      GET REQ. FILE-NAME ADDRESS
0302  00401 072426R         STA CMTMP      SET DRCTRY ENTRY ADDRESS
0303  00402 016416R         JSB CMBMP
0304  00403 016416R         JSB CMBMP
0305  00404 162426R         LDA CMTMP,I
0306  00405 010075          AND .1774
0307  00406 072426R         STA CMTMP
0308  00407 160001          LDA B,I
0309  00410 010075          AND .1774
0310  00411 052426R         CPA CMTMP
0311  00412 002001          RSS
0312  00413 036377R CMISZ   ISZ $CMPR      P+2 EXIT: NOT EQUAL
0313  00414 016360R         JSB BUMP       BUMP BUFFER POINTER
0314  00415 126377R         JMP $CMPR,I
0315*
0316  00416 000000  CMBMP   NOP
0317  00417 160001          LDA B,I
0318  00420 152426R         CPA CMTMP,I
0319  00421 006005          INB,RSS
0320  00422 026413R         JMP CMISZ
0321  00423 036426R         ISZ CMTMP
0322  00424 126416R         JMP CMBMP,I
0323*
0324  00000           A       EQU 0
0325  00001           B       EQU 1
0326  00053           ..      EQU 53B
0327  00045           N6      EQU ..-6
0328  00051           N2      EQU ..-2
0329  00052           N1      EQU ..-1
0330  00055           .2      EQU ..+2
0331  00056           .3      EQU ..+3
0332  00061           .6      EQU ..+6
0333  00073           .177    EQU ..+16
0334  00074           M377    EQU ..+17
```

```
0335  00075           .1774 EQU ..+18
0336*
0337  00100           .     EQU 100B
0338  00114           SYSDR EQU .+12
0339  00115           SYSBF EQU .+13
0340  00116           SECTR EQU .+14
0341  00156           LSTSC EQU .+46
0342  00157           UDNTS EQU .+47
0343  00161           CUDSC EQU .+49
0344  00162           CRFLG EQU .+50
0345  00163           LSTSK EQU .+51
0346  00200           DISCL EQU .+64
0347  00425 000000    CRFLX NOP
0348  00327           FLFLG EQU .+151
0349  00330           XFLG  EQU .+152
0350  00331           SSFLG EQU .+153
0351*
0352  00426 000000    RONBF BSS 11
0353  00426           CMTMP EQU RONBF
0354  00427           TEMP  EQU RONBF+1
0355  00430           ENTLN EQU RONBF+2
0356  00431           FNADR EQU RONBF+3
0357  00432           SRSC  EQU RONBF+4
0358  00433           SRFLG EQU RONBF+5
0359  00434           SAVSC EQU RONBF+6
0360  00435           SVFLG EQU RONBF+7
0361  00436           PARAM EQU RONBF+8
0362  00436           BUFPT EQU PARAM
0363  00437           TEMPP EQU PARAM+1
0364  00440           WDCNT EQU PARAM+2
0365*
0366                        END
**  NO ERRORS*
```

```
*$B125  00005

 $B127  00005    00043    00145

*$B128  00005

 $B3    00005    00247

 $B4    00005    00248

 $B5    00005    00250

 $B64   00005    00254    00257

 $BFND  00231    00032    00215

 $BUF   00005    00178

 $CMPR  00300    00049    00211    00312    00314

 $DISC  00004    00279

 $MOVE  00004    00177

 $SRCH  00018    00003    00103    00116    00148    00168

 .      00337    00338    00339    00340    00341    00342    00343
        00344    00345    00346    00348    00349    00350

 ..     00326    00327    00328    00329    00330    00331    00332
        00333    00334    00335

 .128   00107    00031    00038    00109

 .177   00333    00287

 .1774  00335    00060    00123    00306    00309

 .2     00330    00285

 .3     00331    00053    00130    00289

 .6     00332    00291

*A      00324

 ASCNO  00089    00072

 ASCSY  00270    00246    00249    00251

 B      00325    00054    00138    00157    00160    00163    00185
        00190    00193    00197    00286    00292    00308    00317

 BFSET  00295    00048    00056    00061    00104    00179    00206
        00239    00280    00298
```

BUFPT	00362	00207	00224	00225	00262	00274	
BUFX	00178	00025	00030	00120	00147	00296	
BUMP	00283	00127	00180	00293	00313		
CLRXF	00264	00268					
CMBMP	00316	00303	00304	00322			
CMISZ	00312	00320					
CMTMP	00353	00302	00305	00307	00310	00318	00321
CRFLG	00344	00275					
CRFLX	00347 00208	00019	00065	00069	00154	00170	00181
CUDSC	00343	00036	00067	00158	00184	00236	00238
DCTY0	00257	00253					
DISCL	00346	00164	00192	00244	00255	00259	
DONE	00144	00139					
DONE1	00142	00135					
DSCIO	00273	00063	00124	00209	00245	00256	00281
ENTLN	00355	00108	00112				
FLFLG	00348	00045	00146				
FNADR	00356	00020	00301				
FOUN1	00152	00050					
FOUND	00174	00212					
FOUNS	00170	00153					
LSTSC	00341	00092					
LSTSK	00345	00166	00240				
M377	00334	00165	00226				
N1	00329	00221					
N2	00328	00033					
N6	00327	00288					

NOTFN	00103	00073	00078				
PARAM	00361	00271	00362	00363	00364		
PARAX	00271	00278					
RDTBL	00119	00114					
RENTR	00052	00156	00172				
RONBF	00352	00353	00354	00355	00356	00357	00358
	00359	00360	00361				
SAVSC	00359	00037	00082	00097	00105		
SECTR	00340	00227					
SER05	00206	00229					
SER20	00210	00223					
SER40	00224	00217					
SETSC	00233	00106	00204	00263	00266		
SETSY	00261	00235					
SRCH	00203	00068	00084	00099	00205	00220	00228
SRFLG	00358	00079	00086				
SRSC	00357	00041	00080	00085	00094	00095	00100
SSAL1	00095	00101					
SSALL	00092	00075					
SSFLG	00350	00070					
SSNXT	00076	00087					
SSSKP	00268	00241					
STDIR	00259	00237					
SVFLG	00360	00021	00058	00113			
SWAP	00108	00200					
SYSBF	00339	00059	00122				
SYSDR	00338	00261					
SYSTM	00195	00187					
TBCLR	00065	00046					

TBEND	00150	00034	00133				
TEMP	00354	00131	00136				
TEMPP	00363	00121	00126	00143	00167	00175	00176
	00199	00210	00213	00218	00284	00297	
TFLG	00090	00044	00144				
TLOOP	00126	00117	00140				
UDNTS	00342	00161	00189	00258			
WDCNT	00364	00039	00110				
XFLG	00349	00242	00265				

```
0001                    ASMB,L,X,C,N,R,B     $LBL
**  NO ERRORS*
```

```
0001                    ASMB,L,X,C,N,R,B     $LBL
0002  00000                    NAM $LBL,6,0
0003                           ENT LBLIO,ISLBL,LBLMV,CHSUM,MESSG
0004                           EXT $SYIO,$DISC,$WAIT,$MOVE
0005                           EXT $BUF,$B31,$B3
0006*
0007*      SERVICE ROUTINES FOR LABEL CHECKING -
0008*
0009*        CALLED BY $EX17 AND $EX19
0010*
0011*
0012*
0013* CHSUM COMPUTES THE CHECKSUM OF THE LABEL IN $BUF.
0014*
0015*    ENTRY: REGISTER CONTENTS MEANINGLESS
0016*
0017*    EXIT:  COMPUTED CHECKSUM IN <A>
0018*
0019  00000 000000  CHSUM NOP
0020  00001 062015R        LDA N31
0021  00002 072022R        STA CNTR
0022  00003 062060R        LDA DEFBF      RESOLVE
0023  00004 016100R        JSB RBA          ADDRESS
0024  00005 072060R        STA DEFBF          OF $BUF
0025  00006 003400         CCA
0026  00007 066060R        LDB DEFBF
0027  00010 120001         XOR B,I
0028  00011 006004         INB
0029  00012 036022R        ISZ CNTR
0030  00013 026010R        JMP *-3
0031  00014 126000R        JMP CHSUM,I
0032*
0033  00015 177741  N31     DEC -31
0034*
0035* LBLMV MOVES A 3-WORD LABEL.
0036*
0037*    ENTRY: SOURCE ADDRESS IN <A>, DEST ADDRESS IN <B>
0038*
0039*    EXIT:  REGISTER CONTENTS MEANINGLESS
0040*
0041  00016 000000  LBLMV NOP
0042  00017 076022R        STB DSTAD
0043  00020 064050         LDB .-3
0044  00021 016004X        JSB $MOVE
0045  00022 000000  DSTAD NOP
0046  00023 126016R        JMP LBLMV,I
0047*
0048* ISLBL CHECKS TO SEE WHETHER THE CURRENT DISC
0049*    IS LABELED.
0050*    ADDITIONALLY, IT MOVES THE LABEL TO THE ADDRESS IN <A>
0051*
0052*      ENTRY: LABEL DEST. ADDRESS IN <A>
0053*      EXIT: REGISTER CONTENTS MEANINGLESS
0054*
0055  00024 000000  ISLBL NOP
0056  00025 064000         LDB A
```

```
0057  00026 062041R        LDA DFLBL
0058  00027 016100R        JSB RBA        RESOLVE ADDR OF $BUF+3
0059  00030 016016R        JSB LBLMV      MOVE LABEL TO APPROPRIATE MSG
0060  00031 062005X        LDA $BUF
0061  00032 052042R        CPA ASCLB      LABEL CODE PRESENT?
0062  00033 002001         RSS             =YES
0063  00034 126024R        JMP ISLBL,I     =NO, EXIT
0064  00035 016000R        JSB CHSUM
0065  00036 052006X        CPA $B31       CHECKSUM OK?
0066  00037 036024R        ISZ ISLBL
0067  00040 126024R        JMP ISLBL,I     =NO, EXIT
0068*
0069  00041 000007X DFLBL DEF $B3
0070  00042 046102  ASCLB ASC 1,LB
0071*
0072* LBLIO READS OR WRITES THE LABEL SECTOR ON THE
0073*   CURRENT USER DISC IN $BUF
0074*
0075*   ENTRY: WORD COUNT IN <A>
0076*          READ/WRITE IN <B> (1=READ, 2=WRITE)
0077*
0078  00043 000000  LBLIO NOP
0079  00044 070170        STA PARAM+2    SET WORD COUNT
0080  00045 076022R       STB RDWRT      SET IN/OUT WORD
0081  00046 064200        LDB DISCL
0082  00047 074166        STB PARAM
0083  00050 062060R       LDA DEFBF
0084  00051 016100R       JSB RBA        RESOLVE ADDR OF $BUF
0085  00052 070167        STA PARAM+1
0086  00053 062061R       LDA XPARM
0087  00054 066022R       LDB RDWRT
0088  00055 034162        ISZ CRFLG      SET REQ FLAG= USER DISC
0089  00056 016002X       JSB $DISC      GO READ/WRITE LABEL SECTOR
0090  00057 126043R       JMP LBLIO,I
0091*
0092  00060 000005X DEFBF DEF $BUF
0093  00061 000166  XPARM DEF PARAM
0094*
0095*
0096* MESSG OUTPUTS A DIAGNOSTIC MESSAGE
0097*   TO THE SYSTEM TELEPRINTER.
0098*
0099*   ENTRY: MESSAGE ADDRESS IN <A>
0100*          MESSAGE LENGTH IN <B> (NEG. CHARS.)
0101*
0102  00062 000000  MESSG NOP
0103  00063 072071R       STA MSGAD      SET MESSAGE ADDRESS
0104  00064 076072R       STB MSGLN      SET MESSAGE LENGTH
0105  00065 034261        ISZ OPFLG
0106  00066 016001X       JSB $SYIO      OUTPUT MESSAGE
0107  00067 000002        DEC 2
0108  00070 000001        OCT 1
0109  00071 000000  MSGAD NOP
0110  00072 000000  MSGLN NOP
0111  00073 000075R       DEF *+2
0112  00074 026003X       JMP $WAIT
```

```
0113  00075 002400          CLA
0114  00076 070261          STA OPFLG
0115  00077 126062R         JMP MESSG,I
0116*
0117  00022           RDWRT EQU DSTAD
0118  00022           CNTR  EQU DSTAD
0119*
0120*
0121* RBA RESOLVES THE ADDRESSES OF $BUF
0122*
0123*   ENTRY: DESIRED ADDRESS IN <A>
0124*
0125*   EXIT : 15-BIT ADDRESS IN <A>
0126*
0127  00100 000000  RBA     NOP
0128  00101 002001          RSS
0129  00102 160000          LDA 0,I
0130  00103 001275          RAL,CLE,SLA,ERA
0131  00104 026102R         JMP *-2
0132  00105 126100R         JMP RBA,I
```

```
0134*
0135  00000          A      EQU 0
0136  00001          B      EQU 1
0137  00053          .      EQU 53B
0138*
0139  00100          *      EQU 100B
0140  00155          SYSSC  EQU *+45
0141  00162          CRFLG  EQU *+50
0142  00166          PARAM  EQU *+54
0143  00200          DISCL  EQU *+64
0144  00261          OPFLG  EQU *+113
0145*
0146                        END
**  NO ERRORS*
```

$B3	00005	00069				
$B31	00005	00065				
$BUF	00005	00060	00092			
$DISC	00004	00089				
$MOVE	00004	00044				
$SYIO	00004	00106				
$WAIT	00004	00112				
.	00137	00043				
*	00139	00140	00141	00142	00143	00144
A	00135	00056				
ASCLB	00070	00061				
B	00136	00027				
CHSUM	00019	00003	00031	00064		
CNTR	00118	00021	00029			
CRFLG	00141	00088				
DEFBF	00092	00022	00024	00026	00083	
DFLBL	00069	00057				
DISCL	00143	00081				
DSTAD	00045	00042	00117	00118		
ISLBL	00055	00003	00063	00066	00067	
LBLIO	00078	00003	00090			
LBLMV	00041	00003	00046	00059		
MESSG	00102	00003	00115			
MSGAD	00109	00103				
MSGLN	00110	00104				
N31	00033	00020				
OPFLG	00144	00105	00114			
PARAM	00142	00079	00082	00085	00093	

RBA	00127	00023	00058	00084	00132
RDWRT	00117	00080	00087		
*SYSSC	00140				
XPARM	00093	00086			

```
0001                    ASMB,L,R,X,C,N,B
**  NO ERRORS*
```

```
0001                    ASMB,L,R,X,C,N,B
0003  00000                     NAM DUMRX,6,0
0004                            ENT $LIBR,$LIBX


0006*       CALLING SEQUENCES: ENTRY          TERMINATION
0007*
0008*
0009*       PRIVILEGED :       JSB $LIBR      JSB $LIBX
0010*                          NOP            DEF (PROGRAM ENTRY POINT)
0011*
0012*       RE-ENTRANT :       JSB $LIBR      JSB $LIBX
0013*                          DEF TDB        DEF TDB
0014*                                         DEC 0 OR 1
0015*
0016*       BASIC ASSUMPTION : PRIVILEGED ROUTINES MAY NOT
0017*
0018*                          CALL RE-ENTRANT ROUTINES


0020  00000 000000  $LIBR NOP
0021  00001 072054R        STA TEMPA      SAVE A
0022  00002 162000R        LDA $LIBR,I
0023  00003 036000R        ISZ $LIBR      SET RETURN ADDRESS
0024  00004 002002         SZA            NOP (PRIV) OR DEF TDB (RE-ENT)
0025  00005 026010R        JMP RENTR      RE-ENTRANT
0026  00006 036057R        ISZ PRIV       ADD ONE TO PRIVILEGED FLAG
0027  00007 026023R        JMP EXITR      EXIT
0028  00010 040055  RENTR ADA *,+2        A = DEF TDB+2 = RETURN ADDRESS
0029  00011 076055R        STB TEMPB      SAVE B
0030  00012 005500         ERB
0031  00013 076056R        STB TEMPE      SAVE E
0032  00014 066000R        LDB $LIBR
0033  00015 044050         ADB *,-3       B = WORD BEFORE "JSB $LIBR"
0034*                                      = RETURN ADDRESS
0035  00016 164001         LDB 1,I        LOAD RETURN ADDRESS
0036  00017 174000         STB 0,I        AND STORE IN TDB+2
0037  00020 066056R        LDB TEMPE
0038  00021 005600         ELB       RESTORE E
0039  00022 066055R        LDB TEMPB      RESTORE B
0040  00023 062054R EXITR LDA TEMPA      RESTORE A
0041  00024 126000R        JMP $LIBR,I    RETURN


0043  00025 000000  $LIBX NOP
0044  00026 072054R        STA TEMPA      SAVE A
0045  00027 076055R        STB TEMPB      SAVE B
0046  00030 005500         ERB
0047  00031 076056R        STB TEMPE      SAVE E
0048  00032 162025R        LDA $LIBX,I
0049  00033 066057R        LDB PRIV       IF PRIV = 0?
0050  00034 006003         SZB,RSS
0051  00035 026042R        JMP RENTX       THIS IS A RE-ENTRANT ROUTINE,
0052  00036 044052         ADB *,-1        ELSE PRIVILEGED
0053  00037 076057R        STB PRIV       SET PRIV = PRIV - 1
0054  00040 160000         LDA 0,I        A = RETURN ADDRESS
```

```
0055  00041 026046R        JMP EXITX      EXIT
0056  00042 040055  RENTX  ADA ..+2       A = DEF TDB+2
0057  00043 160000         LDA 0,I        A = ADDRESS IN TDB+2
0058  00044 036025R        ISZ $LIBX      $LIBX POINTS TO DEC 0 OR 1
0059  00045 142025R        ADA $LIBX,I    ADD 0 OR 1 TO RETURN ADDRESS
0060  00046 072025R EXITX  STA $LIBX
0061  00047 062054R        LDA TEMPA      RESTORE A
0062  00050 066056R        LDB TEMPE
0063  00051 005600         ELB       RESTORE E
0064  00052 066055R        LDB TEMPB      RESTORE B
0065  00053 126025R        JMP $LIBX,I    RETURN


0067  00054 000000  TEMPA  NOP
0068  00055 000000  TEMPB  NOP
0069  00056 000000  TEMPE  NOP
0070  00057 000000  PRIV   OCT 0     PRIV = 0 IF RE-ENTRANT, ELSE > 0
0071  00053          ..     EQU 53B
0072                        END
**  NO ERRORS*
```

$LIBR	00020	00004	00022	00023	00032	00041	
$LIBX	00043	00004	00048	00058	00059	00060	00065
..	00071	00028	00033	00052	00056		
EXITR	00040	00027					
EXITX	00060	00055					
PRIV	00070	00026	00049	00053			
RENTR	00028	00025					
RENTX	00056	00051					
TEMPA	00067	00021	00040	00044	00061		
TEMPB	00068	00029	00039	00045	00064		
TEMPE	00069	00031	00037	00047	00062		

```
0001                    ASMB,L,C,R,B    $PFAL - SUBROUTINE FOR POWER FAIL
** NO ERRORS*
```

```
0001                    ASMB,L,C,R,B   SPFAL - SUBROUTINE FOR POWER FAIL
0002  00000                       NAM SPFAL,6,0
0003                              ENT SPFAL
0004  00000 000000      SPFAL     NOP
0005  00001 102004                HLT 4
0006  00002 126000R               JMP SPFAL,I
0007                              END
**  NO ERRORS*
```

$PFAL 00004/02 00003/02 00006/02

```
0001                    ASMB,L,R,C,B     $SETP
**  NO ERRORS*
```

```
0001                    ASMB,L,R,C,B    $SETP
0002  00000                     NAM $SETP,6,0
0003                            ENT $SETP
0004*
0005*  THIS PART OF CODE IS PULLED OUT FROM THE DISC MONITOR SO THAT
0006*    THE MICROCODED COMMUNICATIONS LIBRARY ROUTINE #SETP MAY
0007*    REPLACE THIS.
0008*
0009*  IT SETS A COLUMN OF POINTERS TO THE ADDRESSES OF A SPECIFIC
0010*  COLUMN IN A RECTANGULAR ARRAY.
0011*
0012*  CALLING SEQUENCE:  LDA < STARTING POINTER >
0013*                     LDB < STARTING ADDRESS OF ARRAY TO BE SET
0014*                     JSB $SETP
0015*                     DEF COUNT    NUMBER OF POINTERS TO SET
0016*                     (RETURN)
0017*
0018*  RETURN:            A-REGISTER = 0
0019*                     B-REGISTER = B REGISTER + COUNT
0020*                     COUNT = UNCHANGED
0021*
0022*
0023  00000 000000  $SETP NOP
0024  00001 072017R       STA REGA       SAVE A REGISTER TEMPORARILY
0025  00002 162000R       LDA $SETP,I    GET COUNT ADDRESS
0026  00003 160000        LDA A,I        GET COUNT
0027  00004 003004        CMA,INA        MAKE IT A NEGATIVE COUNTER
0028  00005 072020R       STA CNT
0029  00006 062017R       LDA REGA       RESTORE A REGISTER
0030  00007 170001  SETP2 STA B,I
0031  00010 002004        INA            BUMP POINTERS
0032  00011 006004        INB
0033  00012 036020R       ISZ CNT       ALL POINTERS SET?
0034  00013 026007R       JMP SETP2      NO,
0035  00014 002400        CLA            YES, CLEAR A REG & RETURN,
0036  00015 036000R       ISZ $SETP
0037  00016 126000R       JMP $SETP,I
0038  00017 000000  REGA    NOP
0039  00020 000000  CNT     NOP
0040  00000           A EQU 0
0041  00001           B EQU 1
0042                    END
**  NO ERRORS*
```

$SETP	00023	00003	00025	00036	00037
A	00040	00026			
B	00041	00030			
CNT	00039	00028	00033		
REGA	00038	00024	00029		
SETP2	00030	00034			

```
0001                    ASMB,R,L,C,X,B,N
**  NO ERRORS*
```

```
0001                    ASMB,R,L,C,X,B,N
0002                          IFN
0003  00000                   NAM $$MGT,0,0
0004                          XIF
0005                          IFZ
0006                          NAM $MMGT,6,0
0007                          XIF
0008                          ENT $IMGT,$MMST,$ALCM,$ALCN,$DALC,$RALC,$RLSE
0009                          EXT $EX22
0010                          EXT $MDLD
0011*
0012                          ENT $MDEF,$MEND,$BIDT,$BFDR,$MMFS,$$BUF
0013                          ENT $ID#
0014*
0015*
0016*     THE FOLLOWING ARE SYSTEM ENTRY CALLS TO MEMORY MANAGEMENT.
0017*     THEY CONSIST OF
0018*          1. SETTING (B) TO REQUEST CODE #
0019*          2. SETTING $MMFS NON-ZERO
0020*          3. CALLING IN EXEC MODULE #22
0021*
0022*     INITIALIZE MEMORY MANAGEMENT
0023  00000 000000  $IMGT NOP
0024  00001 066000R       LDB $IMGT
0025  00002 062604R       LDA .35
0026  00003 026030R       JMP MMLD      RETURN
0027*
0028*     MEMORY MANAGEMENT STATUS
0029  00004 000000  $MMST NOP
0030  00005 066004R       LDB $MMST
0031  00006 062605R       LDA .36
0032  00007 026030R       JMP MMLD      RETURN
0033*
0034*     MEMORY MANAGEMENT ALLOCATE MAPPABLE BUFFERS
0035  00010 000000  $ALCM NOP
0036  00011 066010R       LDB $ALCM
0037  00012 062606R       LDA .37
0038  00013 026030R       JMP MMLD      RETURN
0039*
0040*     MEMORY MANAGEMENT ALLOCATE NON-MAPPABLE BUFFERS
0041  00014 000000  $ALCN NOP
0042  00015 066014R       LDB $ALCN
0043  00016 062607R       LDA .38
0044  00017 026030R       JMP MMLD      RETURN
0045*
0046*     MEMORY MANAGEMENT DEALLOCATE MAPPABLE BUFFERS
0047  00020 000000  $DALC NOP             ILLEGAL FOR DOS-IIIB
0048  00021 102000       HLT
0049*     MEMORY MANAGEMENT REALLOCATE MAPPABLE BUFFERS
0050  00022 000000  $RALC NOP             ILLEGAL FOR DOS-IIIB
0051  00023 102000       HLT
0052*
0053*     MEMORY MANAGEMENT RELEASE
0054  00024 000000  $RLSE NOP
0055  00025 066024R       LDB $RLSE
0056  00026 062610R       LDA .41
```

```
0057  00027 026030R        JMP MMLD      RETURN
0058*
0059*     THE FOLLOWING ROUTINE CALLS THE MEMORY MANAGEMENT
0060*     EXEC MODULE FOR THE PREVIOUS SYSTEM REQUEST
0061*
0062  00030 000000  MMLD    NOP
0063  00031 072600R         STA $MMFS      SET SYSTEM REQ MEM MGMT FLAG
0064  00032 062602R         LDA DEF22
0065  00033 070305          STA TEMP0      SET TRANSFER ADDRESS
0066  00034 062603R         LDA .22              MODULE #
0067                        IFN
0068  00035 026002X         JMP $MDLD      TRANSFER TO EXEC MODULE $EX22
0069                        XIF
0070                        IFZ
0071                        JMP $EX22     ***** TO BE JMP $MDLD *****
0072                        XIF
0073*
0074*     CONSTANTS, POINTERS, BUFFERS, ETC FOR MEMORY MANAGEMENT
0075*
0076*                           THIS TABLE CONSISTS OF SPACE FOR
0077*                           50-7 WORD ENTRIES, ENTRIES ARE:
0078*                                1. UNIQUE BLOCK ID
0079*                                2. BUFFER IDENTIFICATION
0080*
0081  00036 000000  $$BUF   BSS 350         MEMORY MANAGEMENT IDENTIFICATION
0082  00574 000036R $MDEF   DEF $$BUF       POINTER TO BEGINNING OF MM BUFFE
0083  00575 000574R $MEND   DEF $$BUF+350   POINTER TO END OF MM BUFFER
0084  00576 000000  $BIDT   NOP             UNIQUE BLOCK ID POINTER
0085  00577 000000  $BFDR   NOP             NON BID BUFFER POINTER
0086  00600 000000  $MMFS   NOP             MM CALLER FLAG:0=USER,NON ZERO=S
0087  00601 000000  $ID#    NOP
0088  00602 000001X DEF22   DEF $EX22
0089  00603 000026  .22     DEC 22
0090  00604 000043  .35     DEC 35
0091  00605 000044  .36     DEC 36
0092  00606 000045  .37     DEC 37
0093  00607 000046  .38     DEC 38
0094  00610 000051  .41     DEC 41
0095  00100         .       EQU 100B
0096  00305         TEMP0   EQU .+133
0097  00001         B       EQU 1
0098                        END
**  NO ERRORS*
```

$SBUF	00081	00012	00082	00083
$ALCM	00035	00008	00036	
$ALCN	00041	00008	00042	
$BFDR	00085	00012		
$BIDT	00084	00012		
$DALC	00047	00008		
$EX22	00009	00071	00088	
$ID#	00087	00013		
$IMGT	00023	00008	00024	
$MDEF	00082	00012		
$MDLD	00010	00068		
$MEND	00083	00012		

```
 $MMFS   00086    00012    00063
 $MMST   00029    00008    00030
 $RALC   00050    00008
 $RLSE   00054    00008    00055
 **IFN   *****    00002    00067
 **IFZ   *****    00005    00070
 .       00095    00096
 .22     00089    00066
 .35     00090    00025
 .36     00091    00031
 .37     00092    00037
 .38     00093    00043
 .41     00094    00056
#B       00097
 DEF22   00088    00064
 MMLD    00062    00026    00032    00038    00044    00057
```

TEMP0 00096 00065

```
0001                    ASMB,L,X,C,N,R,B
**  NO ERRORS*
```

```
0001                    ASMB,L,X,C,N,R,B
0002  00000                     NAM SCDMA,6,0
0003                            ENT $SDMA,$CDMA
0004*
0005***** $SDMA ROUTINE SETS BIT 15 OF DMA INTERRUPT
0006*         ENTRY IF EQT1 ADDRESS EQUALS DMA 6 OR 7
0007*         INTERRUPT TABLE VALUE
0008*         BIT 15 SET INDICATES TO SYSTEM THAT THE
0009*         DRIVER IS USING DMA AND IS EXPECTING A
0010*         INTERRUPT FROM THE DMA CHANNEL.
0011*
0012  00000 000000  $SDMA NOP
0013  00001 016016R       JSB FINDD       CHECK EQT1 VALUE = DMA 6 OR 7 VA
0014  00002 002001        RSS                 EQUAL
0015  00003 126000R       JMP $SDMA,I         NOT EQUAL, SO RETURN
0016  00004 032007R       IOR HIGH        SET BIT 15
0017  00005 170001        STA B,I         STORE IN INTAB OR INTAB+1
0018  00006 126000R       JMP $SDMA,I         RETURN
0019  00007 100000  HIGH  OCT 100000
0020*
0021***** $CDMA ROUTINE CLEARS BIT 15 OF DMA INTERRUPT
0022*         ENTRY IF EQT1 ADDRESS EQUALS INTAB OR
0023*         INTAB+1  (NATURALLY BIT 15 IS MASKED OFF)
0024*         BIT 15 CLEAR INDICATES TO SYSTEM THAT THE
0025*         DRIVER IS USING DMA BUT DOES NOT EXPECT AN
0026*         INTERRUPT FROM THE CHANNEL.
0027*
0028  00010 000000  $CDMA NOP
0029  00011 016016R       JSB FINDD       CHECK EQT1 VALUE = DMA 6 OR 7 VA
0030  00012 002001        RSS                 EQUAL
0031  00013 126010R       JMP $CDMA,I         NOT EQUAL, SO RETURN
0032  00014 170001        STA B,I         CLEAR BIT 15
0033  00015 126010R       JMP $CDMA,I         RETURN
0034*
0035***** FINDD ROUTINE CHECKS IF EQT1 VALUE EQUALS
0036*         EITHER DMA INTERRUPT TABLE VALUE FOR
0037*         CHANNEL 6 OR 7
0038*
0039  00016 000000  FINDD NOP
0040  00017 064201        LDB INTAB       GET INTERRUPT TABLE ADDRESS
0041  00020 160001        LDA B,I             GET DMA 6 VALUE
0042  00021 001265        RAL,CLE,ERA             MASK OFF BIT 15
0043  00022 050203        CPA EQT1        CHECK IF EQUAL TO EQT1
0044  00023 126016R       JMP FINDD,I         YES, SO RETURN
0045  00024 006004        INB
0046  00025 160001        LDA B,I             GET DMA 7 VALUE
0047  00026 001265        RAL,CLE,ERA             MASK OFF BIT 15
0048  00027 050203        CPA EQT1            CHECK IF EQUAL TO EQT1
0049  00030 126016R       JMP FINDD,I         YES SO RETURN
0050  00031 036016R       ISZ FINDD           NO SO INCR, RETURN ADDRESS
0051  00032 126016R       JMP FINDD,I             RETURN
0052  00000         A     EQU 0
0053  00001         B     EQU 1
0054  00100         .     EQU 100B
0055  00201         INTAB EQU .+65        FWA OF INTERRUPT TABLE
0056  00203         EQT1  EQU .+67        CURRENT EQT ENTRY ADDRESS
```

```
0057                            END
**  NO ERRORS*
```

$CDMA	00028	00003	00031	00033			
$SDMA	00012	00003	00015	00018			
.	00054	00055	00056				
.A	00052						
B	00053	00017	00032	00041	00046		
EQT1	00056	00043	00048				
FINDD	00039	00013	00029	00044	00049	00050	00051
HIGH	00019	00016					
INTAB	00055	00040					

```
0001                    ASMB,L,X,C,N,R,B DOS-IIIB TIMER CONTROL SUBR-$TIME
** NO ERRORS*
```

```
0001                ASMB,L,X,C,N,R,B DOS-IIIB TIMER CONTROL SUBR-$TIME
0002  00000                 NAM $TIME,6,0
0003                        ENT $TIME
0004*
0005*
0006*         $TIME-IS A CORE RESIDENT SUBROUTINE (TYPE 6) THAT
0007*      CAN BE USED BY "SYSTEM" ROUTINES IN EITHER THE SYSTEM
0008*      OR USER AREAS OF CORE.
0009*
0010*          THE FUNCTIONS PERFORMED BY $TIME ARE AS FOLLOWS:
0011*
0012*               (1) SET A TIMER -- SETS A INITIAL TIME VALUE
0013*                   INTO A BUFFER LOCATED IN THE USER AREA
0014*                   AND ADDS BUFFER TO A LINKED LIST OF ALL
0015*                   TIMERS CURRENTLY ACTIVE.
0016*
0017*               (2) RESET A TIMER -- SETS A "NEW" TIME VALUE
0018*                   INTO A ACTIVE TIMER.
0019*
0020*               (3) RELEASE A TIMER -- REMOVES A TIMER BUFFER
0021*                   FROM LINKED LIST OF BUFFERS. (DEACTIVATES
0022*                   TIMER)
0023*
0024*               (4) RELEASE ALL TIMERS -- REMOVES ALL TIMER
0025*                   BUFFERS FROM LINKED LIST. (DEACTIVATES
0026*                   ALL TIMERS)
0027*
0028*          PARAMETERS REQUIRED BY $TIME WHEN ENTERED ARE:
0029*
0030*               (1) TO INITIATE THE "SET" OR "RESET" FUNCTIONS:
0031*
0032*                    (A) "A" REGISTER SHOULD CONTAIN A NEGATIVE
0033*                        NUMBER REPRESENTING TIME IN MILLI-SECONDS.
0034*
0035*                    (B) "B" REGISTER SHOULD CONTAIN THE ADDRESS
0036*                        OF THE AREA TO BE USED AS THE TIMER
0037*                        BUFFER.
0038*
0039*               (2) TO INITIATE THE "RELEASE A TIMER" FUNCTION:
0040*
0041*                    (A) "A" REGISTER SHOULD CONTAIN ZERO.
0042*
0043*                    (B) "B" REGISTER SHOULD CONTAIN THE ADDRESS OF
0044*                        TIMER BUFFER TO BE DELETED.
0045*
0046*               (3) TO INITIATE "RELEASE ALL TIMERS" FUNCTION:
0047*
0048*                    (A) "A" REGISTER SHOULD CONTAIN ZERO.
0049*
0050*                    (B) "B" REGISTER SHOULD CONTAIN ZERO.
0051*
0052*          INFORMATION RETURNED TO CALLING ROUTINE BY $TIME IS:
0053*
0054*               (1) NORMAL TERMINATION -- "A" REGISTER WILL CONTAIN
0055*                   ZERO.
0056*
```

```
0057*               (2) ABNORMAL TERMINATION;
0058*
0059*                    (A) IF "B" REGISTER CONTAINS ZERO WHEN
0060*                       INITIATING A "SET" OR "RESET" FUNCTION
0061*                       "A" REGISTER WILL CONTAIN A "1".
0062*
0063*          NOTE: CONTROL IS RETURNED TO CALLER IN USER AREA
0064*          WITH "MEMORY PROTECT" OFF AND INTERRUPTS ENABLED.
0065*
0066*          CONTROL IS RETURNED TO CALLER IN SYSTEM AREA WITH
0067*          "MEMORY PROTECT" OFF AND INTERRUPTS DISABLED.
0068*
0069*          TIMER BUFFER FORMAT
0070*
0071*               WORD (1) -- 16 BIT IDENTIFIER.
0072*
0073*               WORD (2) -- TIMEOUT PROCESSOR ADDRESS.
0074*
0075*               WORD (3) -- CURRENT TIMER VALUE (FOR SYSTEM USE ONLY)
0076*
0077*               WORD (4) -- ADDRESS OF NEXT TIMER BUFFER IN LINK.
0078*                           LIST (FOR SYSTEM USE ONLY).
0079*
0080*          KNOWN ROUTINES THAT CALL $TIME.
0081*
0082*               (1) $CLCK (USES RELEASE FUNCTION).
0083*
0084*               (2) DATA-COM ROUTINES (USE SET,RESET AND RELEASE
0085*                   FUNCTIONS).
0086*
0087*
0088*
0089*
0090  00000 000000  $TIME NOP
0091  00001 103100        CLF 0          DISABLE INTERRUPTS
0092  00002 006020        SSB            IF "B" REG IS NEGATIVE
0093  00003 026010R       JMP RINDR        GO TO RESOLVE INDIRECT ADDRESS
0094  00004 026012R       JMP FNCHK      CONTINUE CHECKING PARAMETERS
0095  00005 006003  ZRCHK SZB,RSS        IF CURRENT ADDRESS
0096  00006 026016R       JMP TMER1        IS ZERO GO TO SET RETURN CODE.
0097  00007 164001        LDB B,I        GET NEXT LEVEL OF INDIRECT
0098  00010 005275  RINDR RBL,CLE,SLB,ERB SKIP NEXT INST IF NOT INDIRECT
0099*                                      AND STRIP BIT 15 IF INDIRECT
0100  00011 026005R       JMP ZRCHK      GO TO CHECK FOR ZERO ADDRESS
0101  00012 002003  FNCHK SZA,RSS        IF "A" REG IS ZERO
0102  00013 026067R       JMP RELBF        GO TO INITIATE "RELEASE" FUNC.
0103  00014 006002        SZB            IF "B" REG IS NOT ZERO
0104  00015 026020R       JMP SRTME        GO TO INITIATE "SET" OR "RESET
0105  00016 002404  TMER1 CLA,INA        SET RETURN CODE AND
0106  00017 026112R       JMP TMX2       GO TO EXIT ROUTINE.
0107*****************************************
0108*
0109*     SET AND RESET TIMER
0110*
0111*****************************************
0112  00020 076123R SRTME STB TMWRK
```

```
0113  00021 036123R        ISZ TMWRK
0114  00022 036123R        ISZ TMWRK
0115  00023 002020         SSA             IF PARAMETER PASSED IN "A" REGIS
0116  00024 026026R        JMP SETME         GO TO STORE TIME VALUE IN BUFF
0117  00025 003004         CMA,INA         MAKE 2'S COMPLEMENT
0118*                                  OF VALUE IN "A" REGISTER.
0119  00026 172123R SETME  STA TMWRK,I     STORE TIME VALUE IN TIMER BUFFER
0120  00027 016051R        JSB FINDL       GO TO SEARCH LIST
0121  00030 002002         SZA             IF BUFFER WAS FOUND IN LIST
0122  00031 026111R        JMP TMX1          RETURN TO CALLER-NORMAL TERM.
0123*                                        OTHERWISE ADD IT TO LIST.
0124  00032 060336         LDA TMBEG       FALL THROUGH
0125  00033 002002         SZA               IF TIME BUFFER
0126  00034 026037R        JMP MLENT           LINKED LIST IS EMPTY
0127  00035 074336         STB TMBEG       STORE FIRST ENTRY IN LINKED LIST
0128  00036 026043R        JMP ENDST         GO TO SET END OF LIST
0129  00037 062124R MLENT  LDA TMEND       GET ADDRESS OF LAST TIMER BUFFER
0130  00040 040056         ADA .3            AND MODIFY IT TO POINT TO
0131  00041 072123R        STA TMWRK           ITS LIST LINK LOCATION.
0132  00042 176123R        STB TMWRK,I     STORE ADDRESS OF NEXT TIMER BUFF
0133  00043 076124R ENDST  STB TMEND       UPDATE END OF LIST.
0134  00044 002400         CLA
0135  00045 044056         ADB .3
0136  00046 076123R        STB TMWRK
0137  00047 172123R        STA TMWRK,I     STORE END OF LIST MARKER IN LIST
0138  00050 026111R        JMP TMX1        RETURN TO CALLER-NORMAL TERM.
0139*****************************************
0140*     SEARCH LIST
0141*****************************************
0142  00051 000000  FINDL  NOP
0143  00052 060336         LDA TMBEG     IF LIST IS
0144  00053 002003         SZA,RSS         EMPTY
0145  00054 126051R        JMP FINDL,I       OR
0146  00055 054336         CPB TMBEG           IF CURRENT BUFFER IS EQUAL
0147  00056 126051R        JMP FINDL,I           ENTRY IN LIST RETURN TO M
0148  00057 040056  SRCHL  ADA .3         UPDATE CURRENT BUFFER ADDRESS
0149  00060 072123R        STA TMWRK       TO POINT TO LINK LOCATION.
0150  00061 156123R        CPB TMWRK,I   IF A MATCH IS FOUND
0151  00062 126051R        JMP FINDL,I     RETURN TO MAIN PROGRAM.
0152  00063 162123R        LDA TMWRK,I
0153  00064 002003         SZA,RSS       IF THIS IS END OF LIST
0154  00065 126051R        JMP FINDL,I     RETURN TO MAIN PROGRAM.
0155  00066 026057R        JMP SRCHL
0156*****************************************
0157*
0158*     RELEASE TIMER BUFFERS FUNCTION
0159*
0160*****************************************
0161  00067 006002  RELBF  SZB             IF PARAMETER PASSED IN "B" REGIS
0162  00070 026073R        JMP RELBS         GO TO FIND TIMER BUFFER TO BE
0163  00071 074336  EXREL  STB TMBEG       RELEASE ALL TIMER BUFFERS.
0164  00072 026111R        JMP TMX1        GO TO EXIT ROUTINE-NORMAL TERM.
0165  00073 016051R RELBS  JSB FINDL       GO TO SEARCH LINKED LIST.
0166  00074 002003         SZA,RSS         FALL THROUGH IF A BUFFER IS FOUN
0167  00075 026111R        JMP TMX1        NORMAL TERM. -RETURN TO CALLER
0168  00076 044056         ADB .3          MODIFY ADDRESS OF CURRENT BUFFER
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0169   00077 076123R        STB TMWRK
0170   00100 166123R        LDB TMWRK,I    GET ADDRESS OF SUCCEEDING TIMER
0171   00101 050336         CPA TMBEG      IF CURRENT BUFFER IS FIRST IN LI
0172   00102 026071R        JMP EXREL        GO TO UPDATE LIST AND EXIT.
0173   00103 072123R        STA TMWRK
0174   00104 176123R        STB TMWRK,I    REMOVE CURRENT BUFFER FROM LINKE
0175   00105 006002         SZB            IF TIMER BUFFER RELEASED WAS NOT
0176   00106 026111R        JMP TMX1       GO TO EXIT ROUTINE-NORMAL TERM.
0177   00107 040050         ADA N3
0178   00110 072124R        STA TMEND      UPDATE END OF LIST.
0179   00111 002400  TMX1   CLA            SET NORMAL TERM. RETURN CODE
0180   00112 064254  TMX2   LDB UMFWA      GET ADDRESS OF FIRST WORD
0181*                                       OF USER AREA.
0182   00113 007004         CMB,INB        DETERMINE IF
0183   00114 076123R        STB TMWRK
0184   00115 066000R        LDB $TIME        CALL WAS FROM
0185   00116 046123R        ADB TMWRK          USER OR SYSTEM AREA.
0186   00117 006020         SSB            IF CALL WAS FROM SYSTEM AREA
0187   00120 126000R        JMP $TIME,I    RETURN TO CALLER-SYSTEM AREA
0188   00121 102100         STF 0          ENABLE INTERRUPT SYSTEM
0189   00122 126000R        JMP $TIME,I    RETURN TO CALLER--USER AREA
0190   00123 000000  TMWRK  NOP
0191   00124 000000  TMEND  NOP
0192   00001         B      EQU 1
0193   00053         ..     EQU 53B
0194   00050         N3     EQU ..-3
0195   00056         .3     EQU ..+3
0196   00100         .      EQU 100B
0197   00254         UMFWA  EQU .+108      FIRST WORD OF USER MAIN AREA
0198   00336         TMBEG  EQU .+158
0199*                                       1= OFF
0200*                                       0= ON
0201                        END
** NO ERRORS*
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$TIME	00090	00003	00184	00187	00189		
.	00196	00197	00198				
..	00193	00194	00195				
.3	00195	00130	00135	00148	00168		
B	00192	00097					
ENDST	00133	00128					
EXREL	00163	00172					
FINDL	00142	00120	00145	00147	00151	00154	00165
FNCHK	00101	00094					
MLENT	00129	00126					
N3	00194	00177					
RELBF	00161	00102					
RELBS	00165	00162					
RINDR	00098	00093					
SETME	00119	00116					
SRCHL	00148	00155					
SRTME	00112	00104					
TMBEG	00198	00124	00127	00143	00146	00163	00171
TMEND	00191	00129	00133	00178			
TMER1	00105	00096					
TMWRK	00190	00112	00113	00114	00119	00131	00132
	00136	00137	00149	00150	00152	00169	00170
	00173	00174	00183	00185			
TMX1	00179	00122	00138	00164	00167	00176	
TMX2	00180	00106					
UMFWA	00197	00180					
ZRCHK	00095	00100					