```
   1              /LAB-8E CONVERT PROGRAM-CONVERTS LAB-8E MS DATA
   2              /AND SINGLE, DOUBLE, AND FLOATING TO SING,DOUB,AND
FLOATING.
   3              /
   4              /DEC-8E-ACVTA-A-LA
   5              /
   6              /COPYRIGHT 1972
   7              /DIGITAL EQUIPMENT CORPORATION
   8              /MAYNARD, MASSACHUSETTS 01754
   9              /
  10
```

```
  11                /FILE CON.14
  12                /CONVERT PROGRAM FOR LAB-8E PROGRAMS
  13                /RUNNING UNDER PS-8
  14                /LAB-8E CONVERT
  15                        SET1=   CLL CLA IAC
  16                        SET2=   CLL CLA IAC RAL
  17                        SET3=   CLL CLA IAC CML RAL
  18                        SET4=   CLL CLA IAC RTL
  19                        SET6=   CLL CLA IAC CML RTL
  20                        SETM2=  CLL CLA CMA RAL
  21                        SETM3=  CLL CLA CMA RTL
  22                FIELD   0
  23                *7200                           /TELETYPE DEVICE
HANDLES AND
  24                                                /INPUT FILE DEVICE
HANDLER.
  25                                                /7200 - 7577
  26                *6600                           /OUTPUT DEVICE
HANDLER.
  27                                                /6600 - 7177
  28                *5200
  29 005200  0000   BUFJOB, 0               /BUFFER FOR JOB LIST OF
AVERAGER.
  30
  31                *5600
  32 005600  0000   BUFOUT, 0               /BUFFER FOR OUTPUT.
  33
  34                *6200
  35 006200  0000   BUFIN,  0               /BUFFER FOR INPUT.
  36                FIELD   1
  37                *20
  38 010020  0000   OUTTYP, 0                       /TYPE =
1,2,3,4,5,6,7 FOR F4, F2
  39 010021  0000   INTYP,  0                       /SI, DO, DA, AV,
HI.
  40 010022  0000   SWITCH, 0
  41 010023  0000           0               /SWITCH VALUES,0 AFTER LAST
VALUE.
  42 010024  0000           0
  43 010025  0000           0
  44 010026  0000           0
  45 010027  0000           0
  46
  47 010030  0000   ENTRYI, 0                       /ENTRY POINT TO
INPUT DEVICE HANDLES
  48 010031  0000   ENTRYO, 0                       /ENTRY POINT TO
OUTPUT D.H.
  49 010032  0000   FILESZ, 0                       /FILE SIZE OF INPUT
```

```
FILE.
  50
  51 010033  0000  READNO, 0                    /NUMBER OF
CHARACTERS IN READ BUF.
  52 010034  0000  WRITNO, 0                    /NUMBER OF
CHARACTERS ON WRITE BUF.
  53 010035  0000  CONVTY, 0                    /CONVERT TYPE FOR
CONVERT ROUTINE
  54
  55 010036  0000  CONINP, 0                    /INPUT & OUTPUT FOR
CONVERT ROUTINE.
  56 010037  0000          0
  57 010040  0000          0
  58 010041  0000          0
  59 010042  0000          0
  60 010043  0000          0
  61
  62 010044  0000  BLKOSZ, 0                    /LOGICAL SIZE OF
THE OUTPUT BLOCK.
  63 010045  0000  BLKISZ, 0                    /LOGICAL SIZE OF
THE INPUT BLOCK.
  64 010046  0000  TEMP1,  0
  65 010047  0000  TEMP2,  0
  66 010050  0000  TEMP3,  0
  67 010051  0000  BLKIN,  0                    /INPUT BLOCK
NUMBER.
  68 010052  0000  BLKOUT, 0                    /OUTPUT BLOCK
NUMBER
  69
  70 010053  0000  FILOSZ, 0                    /-SIZE OF OUTPUT
FILE.
  71 010054  0000  AVHBKA, 0                    /ADDRESS OF NEXT
HEADER BLOCK.
  72 010055  0000  AVHBBA, 0                    /HEADER BLOCK
BUFFER ADDRESS
  73
  74 010056  0000  AVHBBC, 0                    /HEADER BLOCK
BUFFER COUNT.
  75
  76 010057  0000  AVTMP1, 0
  77 010060  0000  AVTMP2, 0
  78 010061  0000  AVTMP3, 0
  79 010062  0000  AVTMP4, 0
  80 010063  0000  AVBACT, 0                    /BLOCK ADDRESS OF #
OF DATA POINTS
  81                                            /FOR AVERAGE
  82 010064  0000  AVLACT, 0                    /LOCATION IN BUFFER
OF # OF DATA
  83                                            /POINTS FOR AVERAGE
```

```
  84
  85 010065  0000  FIOBUF, 0                    /OUTPUT BUFFER
POINTER.
  86 010066  0000  FIOBFS, 0                    /SAVED LAST LOC.
WRITTEN TO MS.
  87
  88 010067  0000  AVDQFG, 0                    /DAQUAN FLAG TO
CYCLE ON DATA
  89
  90 010070  0000  AVDALK, 0                    /FLAG TO DETERMINE
IF THERE IS A
  91                                            /LINKED DATA BLOCK.
  92
  93 010071  0000  AVDATY, 0                    /TYPE OF DATA GOING
OUT, 1,2, OR 3
  94                                            /FOR AVG, CONF.L.
OR TREND
  95 010072  0000  AVDTYV, 0                    /DATA TYPE
VARIABLE, - DATA TYPE
  96
  97 010073  0000  AVDQBS, 0                    /BLOCK SAME FOR
DAQUAN REREAD.
  98 010074  0000  AVDQLS, 0                    /LOCATION SAVE FOR
DAQUAN REREAD.
  99
 100 010075  0000  AVF2SP, 0                    /FORTRAN 2 SINGLE
PRECISION POSITION PT.
 101 010076  0000  SIDOFG, 0              /=0,FLAG OFF;=1,THEN A 12
BIT #
 102                                      /IS CONSIDERED POSITIVE
0-4095.
 103
 104 010077  0000  DARDS,  0              /END TELE INPUT CHAR.
 105 010100  0000  CRDGET, 0              /# OF NUMBERS TO READ
 106                                      /FOR SI AND DO ONLY.
 107 010101  0000         0
 108 010102  0000  CRDSKP, 0              /# OF NUMBERS TO SKIP,
 109                                      /FOR SI AND DO ONLY.
 110 010103  0000         0
 111 010104  0000  REDSF,  0              /DONE FLAG FOR REDSU
ROUTINE.
 112
 113               *2000
 114 012000  6201  START,  CDF     0
 115 012001  7300          CLA CLL
 116 012002  1377          TAD (4003       /SET JOB CONTROL WORD
 117 012003  3776          DCA I (7746
 118 012004  6211          CDF 10
 119 012005  4775          JMS CRLF
```

```
 120 012006  4774          JMS I (7700     /LOCK IN USR
 121 012007  0010          10
 122 012010  4773          JMS I   (200            /CALL COMMAND
DECODER
 123 012011  0005          5
 124 012012  0000          0
 125 012013  0000          0
 126 012014  1372
```

```
       TAD (7201
 127 012015  3224          DCA DHCT4
 128 012016  1771          TAD I (7617     /LOAD INPUT AND OUTPUT
DEVICE HANDLERS.
 129 012017  7450          SNA             /TEST FOR BAD COMMAND
 130 012020  5770          JMP COMERR
 131 012021  0367          AND (17
 132 012022  4773          JMS I (200
 133 012023  0001          1
 134 012024  7201  DHCT4,  7201            /ENTRY POINT TO INPUT
HANDLER
 135 012025  5766          JMP ERR         /HANDLER AT 7200 FIELD 0
 136 012026  1365          TAD (6601
 137 012027  3236          DCA DHCT5
 138 012030  1764          TAD I (7600     /LOAD OUTPUT HANDLER.
 139 012031  7450          SNA             /TEST FOR BAD COMMAND.
 140 012032  5770          JMP COMERR
 141 012033  0367          AND (17
 142 012034  4773          JMS I (200
 143 012035  0001          1
 144 012036  6601  DHCT5,  6601            /ENTRY POINT FOR OUTPUT
HANDLER.
 145 012037  5766          JMP ERR         /IS AT 6600 OF FIELD 0.
 146 012040  1363          TAD (7601
 147 012041  3245          DCA DHCT6
 148 012042  1764          TAD I (7600     /CREATE OUTPUT FILE.
 149 012043  4773          JMS I (200
 150 012044  0003          3
 151 012045  7601  DHCT6,  7601            /RETURN STARTING BLOCK FOR
OUTPUT.
 152 012046  0000  DHCT7,  0               /RETURN FILE SIZE
 153 012047  5766          JMP ERR
 154 012050  4773          JMS I (200      /UNLOCK USR.
 155 012051  0011          11
 156
 157 012052  7300
```

```
       CLL CLA
 158 012053  6032          KCC
 159 012054  1362          TAD (252
 160 012055  4761          JMS PRTCH       /PRINT VALUE
 161 012056  1360          TAD     (-2
 162 012057  3015          DCA     15
 163 012060  4757          JMS TTYIN1      /SET UP TTY READ.
 164 012061  1356          TAD     (-6             /DETERMINE OUTPUT
TYPE.
 165 012062  3010  CON3,   DCA     10
 166 012063  3014          DCA     14
 167 012064  1355          TAD     (COMLST-1       /SET LIST ADDRESS
 168 012065  3011          DCA     11
 169 012066  4754          JMS TTYINP      /READ FIRST CHAR.
 170 012067  7106          CLL RTL
 171 012070  7006          RTL
 172 012071  7006          RTL
 173 012072  3012          DCA 12
 174 012073  4754          JMS TTYINP      /2ND CHAR.
 175 012074  1012          TAD 12
 176 012075  3012          DCA 12
 177
```

```
 178 012076  1012  CON2,   TAD     12              /COMPARE INPUT TO
LIST.
 179 012077  7041          CIA
 180 012100  1411          TAD I   11
 181 012101  2014          ISZ     14              /SET TYPE.
 182 012102  7650          SNA CLA                 /SEARCH FOR
COMPARISON
 183 012103  5307          JMP     CON1
 184 012104  2010          ISZ     10
 185 012105  5276          JMP     CON2
 186 012106  5770          JMP COMERR
 187
 188 012107  2015  CON1,   ISZ     15              /TEST IF DONE.
 189 012110  5312          JMP     .+2
 190 012111  5320          JMP     CON4
 191 012112  1014          TAD     14              /DO TEST ON INPUT
TYPE
 192 012113  3020          DCA     OUTTYP
 193 012114  4754          JMS TTYINP      /READ <
 194                                      /INPUT IS IN THE FORM
XX<XX/X
 195 012115  7200          CLA
 196 012116  1353          TAD     (-11
 197 012117  5262          JMP     CON3
 198
 199 012120  1014  CON4,   TAD     14
 200 012121  3021          DCA     INTYP
 201 012122  1352          TAD (SWITCH
 202 012123  3046          DCA TEMP1
 203 012124  3446  CON5,   DCA I TEMP1
 204 012125  4754          JMS TTYINP      /READ /
 205 012126  1351          TAD (-15
 206 012127  7650          SNA CLA
 207 012130  5335          JMP CON6
 208 012131  4754          JMS TTYINP      /READ SWITCH.
 209 012132  3446          DCA I TEMP1     /STORE INPUT SWITCHES.
 210 012133  2046          ISZ TEMP1
 211 012134  5324          JMP CON5
 212 012135  4775  CON6,   JMS CRLF
 213 012136  1224          TAD     DHCT4
 214 012137  3030          DCA     ENTRYI
 215 012140  1236          TAD     DHCT5
 216 012141  3031          DCA     ENTRYO
 217 012142  1771          TAD I   (7617           /GET FILE LENGTH OF
INPUT FILE
 218 012143  7040          CMA
 219 012144  1350          TAD     (20
 220 012145  5747          JMP DHCT13
```

```
 221 012147  2200  PAGE
     012150  0020
     012151  7763
     012152  0022
     012153  7767
     012154  5627
     012155  2263
     012156  7772
     012157  5636
     012160  7776
     012161  5621
     012162  0252
     012163  7601
     012164  7600
     012165  6601
     012166  2322
     012167  0017
     012170  2317
     012171  7617
     012172  7201
     012173  0200
     012174  7700
     012175  2343
     012176  7746
     012177  4003
 222
 223 012200  0377  DHCT13, AND (7760
 224 012201  7112          CLL RTR
 225 012202  7012          RTR
 226 012203  7041          CIA
 227 012204  3032          DCA     FILESZ          /SAVE NEG. FILE
SIZE
 228
 229 012205  3033          DCA     READNO          /0 BUFFER IN COUNT
 230 012206  1776          TAD I   (7620
 231 012207  3051          DCA     BLKIN           /SET INPUT FILE
BLOCK.
 232 012210  3034          DCA     WRITNO          /0 BUFFER OUT COUNT
 233 012211  3076          DCA SIDOFG              /0 12 BIT # POS.
FLAG.
 234
 235
 236
```

```
 237 012212  7040  DHCT12, CMA                    /SET OUTPUT LOGICAL
FILE SIZE
 238 012213  1020          TAD     OUTTYP         /F4 USES 85,
FLOATING PER BLOCK.
 239 012214  7640          SZA CLA
 240 012215  7001          IAC
 241 012216  1375          TAD     (377           /255 DECIMAL
 242 012217  3044          DCA     BLKOSZ
 243 012220  7040          CMA                    /SET INPUT LOGICAL
FILE SIZE
 244 012221  1021          TAD     INTYP
 245 012222  7640          SZA CLA                /F4=1, F2=2, SI=3,
DO=4
 246 012223  7001          IAC                    /DA=5, AV=6, HI=7
 247 012224  1375          TAD     (377
 248 012225  3045          DCA     BLKISZ
 249 012226  7344          SETM2
 250 012227  1020          TAD     OUTTYP         /TEST FOR FORTRAN 2
SINGLE
 251 012230  7450          SNA                    /PRECISION OR
FLOATING POINT OUTPUT.
 252 012231  5235          JMP DHCT11
 253 012232  1374          TAD (-4
 254 012233  7640          SZA CLA
 255 012234  5237          JMP     DHCT10
 256 012235  1373  DHCT11, TAD     (374           /SET BLOCK SIZE=252
 257 012236  3044          DCA     BLKOSZ
 258 012237  1772  DHCT10, TAD     DHCT6          /SET OUTPUT BLOCK
ADDRESS
 259 012240  3052          DCA     BLKOUT
 260 012241  1771          TAD     DHCT7          /SAME OUTPUT FILE
SIZE
 261 012242  3053          DCA     FILOSZ
 262 012243  3100          DCA CRDGET             /0 # OF POINTS TO
READ
 263                                    /FOR SI AND DO ONLY.
 264 012244  3101          DCA CRDGET+1
 265 012245  5770          JMP SWITVA      /GET SWITCHES.
 266 012246  1252  DHCT14, TAD     JMPTYP         /CREATE JMP TO
INPUT ROUTINE
 267 012247  1021          TAD     INTYP
 268 012250  3251          DCA     .+1
 269 012251  0000          0                      /JUMP TO ROUTINE.
 270 012252  5652  JMPTYP, JMP I   .
 271 012253  3675  JMPLST, F4                     /=1
 272 012254  2537          F2                     /=2
 273 012255  3600          DO                     /=3
 274 012256  2327          SI                     /=4
```

```
 275 012257  2327          SI                      /=5, DA
 276 012260  2527          FS                      /=6
 277 012261  2400          HI                      /=7
 278 012262  2600          AV                      /=10
 279 012263  6600          CO                      /=11
 280 012264  0664  COMLST, 0664                    /F4
 281 012265  0662          0662                    /F2
 282 012266  0417          0417                    /DO
 283 012267  2311          2311                    /SI
 284 012270  0401          0401                    /DA
 285 012271  0623          0623                    /FS
 286 012272  1011          1011                    /HI
 287 012273  0126          0126                    /AV
 288 012274  0317          0317                    /CO
 289 012275  1034  FILDON, TAD     WRITNO          /TEST IF LAST BLOCK
WRITTEN
 290 012276  7650          SNA CLA
 291 012277  5302          JMP     FILD1
 292 012300  4767          JMS FILOUT      /WRITE THE LAST BLOCK
 293 012301  0001          1
 294 012302  1772  FILD1,  TAD     DHCT6           /GET SIZE OF FILE
 295 012303  7041          CIA
 296 012304  1052          TAD     BLKOUT
 297 012305  3313          DCA     FILD2
 298 012306  1766          TAD I   (7600           /CLOSE FILE
 299 012307  0365          AND     (17
 300 012310  4764          JMS I   (7700
 301 012311  0004          4
 302 012312  7601          7601
 303 012313  0000  FILD2,  0
 304 012314  5322          JMP     ERR
 305 012315  6211          CDF     10              /RESTART PROGRAM
 306 012316  5763          JMP     START
 307
```

```
 308
 309 012317  7001  COMERR, IAC                    /COMMAND ERROR.
 310 012320  7001  ERRRW,  IAC                    /READ OR WRITE
ERROR
 311 012321  7001  NOROOM, IAC                    /DEVICE FULL.
 312 012322  3326  ERR,    DCA     ERRM          /ERROR 0, CLOSE,
CREATE, HANDLER
 313 012323  4343          JMS CRLF
 314 012324  4764          JMS I   (7700
 315 012325  0007          7
 316 012326  0000  ERRM,   0
 317 012327  1362  SI,     TAD     (SICOD-1              /SETUP
CONVERT TYPE
 318 012330  4761          JMS     SETCON
 319 012331  3104          DCA REDSF             /0 COUNT DONE FLAG.
 320 012332  4760  SI1,    JMS     REDSU2        /READ INPUT
 321 012333  4757          JMS     CONVRT        /OUTPUT DATA
 322 012334  5332          JMP     SI1
 323 012335  0004  SICOD,  4
 324 012336  0003          3
 325 012337  0002          2
 326 012340  0001          1
 327 012341  0001          1
 328 012342  0015          15
 329
 330 012343  0000  CRLF,   0       /OUTPUT A CR. LF.
 331 012344  7200          CLA
 332 012345  1356          TAD (215
 333 012346  4755          JMS PRTCH
 334 012347  1354          TAD (212
 335 012350  4755          JMS PRTCH
 336 012351  5743          JMP I CRLF
 337
 338 012354  0212  PAGE
     012355  5621
     012356  0215
     012357  4400
     012360  3704
     012361  3746
     012362  2334
     012363  2000
     012364  7700
     012365  0017
     012366  7600
     012367  4000
     012370  7000
     012371  2046
     012372  2045
```

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     012373  0374
     012374  7774
     012375  0377
     012376  7620
     012377  7760
 339 012400  1377  HI,     TAD     (HICOD-1                /SETUP
CONVERT TYPE
 340 012401  4776          JMS     SETCON
 341 012402  4775          JMS     CREAD           /READ FIRST BLOCK
OF
 342 012403  7777          -1                      /HISTOGRAM
 343 012404  7402          HLT
 344 012405  2076          ISZ SIDOFG              /SET FLAG,12 BIT #
IS ALL POS 0-4095.
 345 012406  6201          CDF 0
 346 012407  1774          TAD I   (BUFIN+23               /GET - SIZE
OF 0TH HISTOGRAM
 347 012410  3101          DCA CRDGET+1            /SET # OF POINTS TO
TRANSFER.
 348 012411  1101          TAD CRDGET+1
 349 012412  7041          CIA
 350 012413  3036          DCA     CONINP
 351 012414  1773          TAD I   (BUFIN+57               /GET 0TH
HISTOGRAM-BIN WIDTH
 352 012415  7041          CIA
 353 012416  3037          DCA     CONINP+1
 354 012417  1772          TAD I   (BUFIN+25               /GET - SIZE
OF HISTOGRAM
 355 012420  1101          TAD CRDGET+1            /ADD TO POINTS TO
TRANS.
 356 012421  3101          DCA CRDGET+1
 357 012422  1772          TAD I (BUFIN+25
 358 012423  7041          CIA
 359 012424  3040          DCA     CONINP+2
 360 012425  6211          CDF 10
 361 012426  4302          JMS     HI6TST
 362 012427  6201          CDF 0
 363 012430  1771          TAD I   (BUFIN+21               /GET - BINW
WIDTH OF HISTOG.
 364 012431  7041          CIA
 365 012432  3036          DCA     CONINP
 366 012433  1770          TAD I   (BUFIN+30               /GET MIN
TIME
 367 012434  7041          CIA
 368 012435  3037          DCA     CONINP+1
 369 012436  1767          TAD I (BUFIN+56
 370 012437  7040          CMA
 371 012440  3040          DCA     CONINP+2        /OUTPUT A ORDER FOR
PST.
```

```
 372 012441  6211          CDF 10
 373 012442  4302          JMS     HI6TST
 374 012443  3076          DCA SIDOFG              /0 12 BIT POS FLAG.
 375 012444  7040          CMA                     /DONE WITH BLOCK 1
 376 012445  3033          DCA     READNO          /READ NEXT BLOCK
AND
 377 012446  4775          JMS CREAD
 378 012447  7777          -1
 379 012450  7402          HLT
 380 012451  1366          TAD (-41                /SKIP 132 WORDS.
 381 012452  3057          DCA AVTMP1
 382 012453  4775  HI3,    JMS     CREAD
 383 012454  7774          -4
 384 012455  7402          HLT
 385 012456  2057          ISZ AVTMP1
 386 012457  5253          JMP HI3
 387 012460  7240          CLA CMA                 /SET HIGH ORDER
COUNT.
 388 012461  3100          DCA CRDGET
 389 012462  3104          DCA REDSF               /0 COUNT DONE FLAG.
 390
 391 012463  4765  HI1,    JMS     REDSU2          /READ DATA FROM
 392                                               /THE HISTOGRAMS
 393 012464  1326          TAD     HSCAL           /TEST FOR SCALE
SWITCH
 394 012465  7650          SNA CLA
 395 012466  5300          JMP     HI2
 396 012467  1036          TAD     CONINP          /SCALE DATA
 397 012470  7110          CLL RAR
 398 012471  3036          DCA     CONINP
 399 012472  1037          TAD     CONINP+1
 400 012473  7110          CLL RAR
 401
```

```
 402 012474  3037          DCA     CONINP+1
 403 012475  1040          TAD     CONINP+2
 404 012476  7110          CLL RAR
 405 012477  3040          DCA     CONINP+2
 406 012500  4764  HI2,    JMS     CONVRT
 407 012501  5263          JMP     HI1
 408 012502  0000  HI6TST, 0
 409 012503  1020          TAD     OUTTYP          /TEST FOR FORTRAN 2
 410 012504  1363          TAD     (-6             /SINGLE PRECISION
OUTPUT
 411 012505  7640          SZA CLA
 412 012506  5311          JMP     HI6T1
 413 012507  4764  HI6T2,  JMS     CONVRT          /OUTPUT IN PACKED
 414                                                /FORTRAN 2 FORMAT.
 415 012510  5702          JMP I   HI6TST
 416
 417 012511  1037  HI6T1,  TAD     CONINP+1        /SAVE OTHER 2
VALUUES
 418 012512  3324          DCA     HI6TT1
 419 012513  1040          TAD     CONINP+2
 420 012514  3325          DCA     HI6TT2
 421 012515  4764          JMS     CONVRT          /OUTPUT EACH VALUE
 422                                                /BY ITSELF
 423 012516  1324          TAD     HI6TT1
 424 012517  3036          DCA     CONINP
 425 012520  4764          JMS     CONVRT
 426 012521  1325          TAD     HI6TT2
 427 012522  3036          DCA     CONINP
 428 012523  5307          JMP     HI6T2
 429 012524  0000  HI6TT1, 0
 430 012525  0000  HI6TT2, 0
 431 012526  0000  HSCAL,  0
 432
 433
 434 012527  1362  FS,     TAD (FSCOD-1    /SET CONVERT TYPE.
 435 012530  4776          JMS SETCON
 436 012531  3761          DCA UNPT1       /0 UNPACK ASCII SWITCH.
 437 012532  4760  FS1,    JMS UNPK32      /READ 1 WORD.
 438 012533  7777          -1
 439 012534  5757          JMP FILDON
 440 012535  4764          JMS CONVRT
 441 012536  5332          JMP     FS1
 442 012537  1356  F2,     TAD     (F2TAD-1        /TEST FOR COMMAND
 443 012540  4776          JMS     SETCON
 444 012541  3761          DCA UNPT1
 445 012542  4760  F2A,    JMS UNPK32
 446 012543  7775          -3              /READ 3 WORDS FOR FLOATING
INPUT.
```

```
 447 012544  5757          JMP FILDON      /FILE DONE RETURN.
 448 012545  4764          JMS     CONVRT          /CALL CONVERT
 449 012546  5342          JMP     F2A             /GET NEXT FLOATING
DATA
 450 012547  0013  F2TAD,  13
 451 012550  0000          0
 452 012551  0012          12
 453 012552  0011          11
 454 012553  0011          11
 455 012554  0000          0
 456
 457
```

```
 458 012556  2546  PAGE
     012557  2275
     012560  4200
     012561  4337
     012562  6721
     012563  7772
     012564  4400
     012565  3704
     012566  7737
     012567  6256
     012570  6230
     012571  6221
     012572  6225
     012573  6257
     012574  6223
     012575  4104
     012576  3746
     012577  6520
 459 012600  1377  AV,     TAD     (BUFJOB         /READ BLOCK 1 INTO
6200
 460 012601  3776          DCA     CRBUFP
 461 012602  4775          JMS     CREAD
 462 012603  7777          -1
 463 012604  7402          HLT
 464 012605  1051          TAD     BLKIN
 465 012606  7001          IAC
 466 012607  3054          DCA     AVHBKA          /SAVE NEXT HEADER
BLOCK
 467                                                 /ADDRESS
 468 012610  1374          TAD     (BUFJOB+2               /SET
POINTER TO BUFFER
 469 012611  3055          DCA     AVHBBA
 470 012612  1373          TAD     (-375
 471 012613  3056          DCA     AVHBBC
 472 012614  1372          TAD     (BUFIN          /RESET THE READ
BUFFER
 473 012615  3776          DCA     CRBUFP
 474 012616  2051  AV1,    ISZ     BLKIN
 475 012617  3033          DCA     READNO
 476 012620  6201          CDF 0
 477 012621  1771          TAD I   (BUFJOB+1               /CHECK IF
THERE IS
 478 012622  6211          CDF 10
 479 012623  7650          SNA CLA                 /ANOTHER HEADER
BLOCK
 480 012624  5231          JMP     AV2
 481 012625  4775          JMS     CREAD
 482 012626  7777          -1
```

```
 483 012627  7402          HLT
 484 012630  5216          JMP     AV1
 485 012631  3770  AV2,    DCA     AVF2CT          /0 STORE PACK
COUNTER
 486 012632  1367  AV21,   TAD (HICOD-1    /SET UP CONVERT TYPE.
 487 012633  4766          JMS SETCON
 488 012634  4765          JMS     AVRJLS          /READ 1ST JOB LIST
CHAR.
 489 012635  7450          SNA                     /TEST FOR END OF
JOB LIST.
 490 012636  5764          JMP     AV22
 491 012637  3046          DCA     TEMP1
 492 012640  1046          TAD     TEMP1           /SET 1ST OUTPUT
WORD 1 IF
 493 012641  7710          SPA CLA                 /LOW RESOLUTION
 494 012642  7001          IAC
 495 012643  4763          JMS     AVSTOU
 496 012644  1046          TAD     TEMP1           /SAVE CHANNEL #.
 497 012645  0362          AND     (3700
 498 012646  7112          CLL RTR
 499 012647  7012          RTR
 500 012650  7012          RTR
 501 012651  4763          JMS     AVSTOU
 502 012652  4765          JMS     AVRJLS          /READ 2ND JOB LIST
CHAR.
 503 012653  3057          DCA     AVTMP1
 504 012654  1057          TAD     AVTMP1          /DETERMINE DATA
TYPE
 505 012655  0361          AND     (7400
 506 012656  7106          CLL RTL
 507 012657  7006          RTL
 508 012660  7004          RAL
 509 012661  3071          DCA     AVDATY
 510 012662  1071          TAD     AVDATY          /SAVE DATA TYPE
 511 012663  4763          JMS     AVSTOU          /OUTPUT DATA
 512 012664  1057          TAD     AVTMP1          /GET SORT CODE
 513 012665  0360          AND     (377
 514 012666  4763          JMS     AVSTOU
 515 012667  4765          JMS     AVRJLS          /READ 3RD JOB LIST
CHAR.
 516 012670  7041          CIA                     /# OF POINTS, RECP
 517 012671  3057          DCA     AVTMP1          /AS POS. NUMBER.
 518 012672  1057          TAD     AVTMP1
 519 012673  4763          JMS     AVSTOU
 520
```

```
 521 012674  1034          TAD     WRITNO          /TEST IF BLOCK WAS
 522 012675  7650          SNA CLA                 /WRITTEN
 523 012676  7040          CMA
 524 012677  1052          TAD     BLKOUT
 525 012700  3063          DCA     AVBACT          /SAVE BLOCK OF # OF
POINTS
 526 012701  3046          DCA     TEMP1
 527 012702  1020          TAD     OUTTYP          /CALCULATE LOCATION
TO
 528 012703  1357          TAD     (-3             /WRITE INTO.
 529 012704  7540          SMA SZA
 530 012705  5312          JMP     AV31            /DETERMINE IF
SINGLE
 531 012706  7640          SZA CLA                 /DOUBLE OR FLOATING
OUTPUT
 532 012707  7001          IAC
 533 012710  7001          IAC
 534 012711  3046          DCA     TEMP1
 535 012712  7344  AV31,   SETM2           /TEST FOR F2 FLOATING
OUTPUT.
 536 012713  1020          TAD OUTTYP
 537 012714  7650          SNA CLA
 538 012715  7001          IAC             /ADJUST ADD DECREMENT.
 539 012716  1046          TAD TEMP1       /FOR 4 WORDS IF SO.
 540 012717  3046          DCA TEMP1
 541 012720  1046          TAD     TEMP1           /SUBTRACT FROM LAST
 542 012721  7041          CIA                     /LOCATION WRITTEN.
 543 012722  1066          TAD     FIOBFS
 544 012723  3064          DCA     AVLACT
 545 012724  1020          TAD     OUTTYP          /TEST IF FORTRAN 2.
 546 012725  1356          TAD     (-6             /SINGLE PRECISION
OUTPUT
 547 012726  7640          SZA CLA
 548 012727  5755          JMP     AV4
 549 012730  1770          TAD     AVF2CT          /CALCULATE POSITION
OF ADD
 550 012731  1354          TAD     (2              /INSIDE 3 VALUES
FOR
 551 012732  3075          DCA     AVF2SP          /THE # OF POINTS
 552 012733  1770          TAD     AVF2CT          /CHANGE BLOCK
ADDRESS
 553 012734  7640          SZA CLA                 /AND ADDRESS OF 4
WORDS
 554 012735  5342          JMP     AV32            /OF 3/2 PACKED
WORDS
 555 012736  1064          TAD     AVLACT          /AVBACT IS THE
BLOCK
 556 012737  1357          TAD     (-3             /ADDRESS
```

```
 557 012740  3064          DCA     AVLACT          /AVLACT IS THE ADD.
OF
 558 012741  5755          JMP     AV4             /THE 4 WORD PACKET
 559 012742  1034  AV32,   TAD     WRITNO          /AVF2SP IS THE
POSITION
 560 012743  7640          SZA CLA                 /OF THE WORD
DESIRED
 561 012744  5351          JMP     AV33            /WITHIN THE 3 WORD
 562 012745  1353          TAD     (BUFOUT         /CONVERTED PACKET.
 563 012746  3064          DCA     AVLACT
 564 012747  2063          ISZ     AVBACT
 565 012750  5755          JMP     AV4
 566
 567 012751  2064  AV33,   ISZ     AVLACT
 568 012752  5755          JMP     AV4
 569
 570 012753  5600  PAGE
     012754  0002
     012755  3000
     012756  7772
     012757  7775
     012760  0377
     012761  7400
     012762  3700
     012763  3451
     012764  3441
     012765  3515
     012766  3746
     012767  6520
     012770  3513
     012771  5201
     012772  6200
     012773  7403
     012774  5202
     012775  4104
     012776  4125
     012777  5200
 571 013000  1377  AV4,    TAD     (-4
 572 013001  3046          DCA     TEMP1
 573
 574 013002  4776  AV3,    JMS     AVRJLS          /READ UP TO THE
NEXT
 575 013003  7300          CLA CLL
 576 013004  2046          ISZ     TEMP1           /JOB LIST
 577 013005  5202          JMP     AV3
 578 013006  4775          JMS     CREAD           /READ # OF SWEEPS
 579 013007  7777          -1
 580 013010  7402          HLT
 581 013011  1036          TAD CONINP              /WRITE # OF SWEEPS.
```

```
 582 013012  4774          JMS AVSTOU
 583 013013  1033          TAD READNO              /TEST FOR LAST CHAR
IN INPUT BLOCK.
 584 013014  7650          SNA CLA
 585 013015  7040          CMA
 586 013016  1051          TAD     BLKIN           /SAVE THE BLOCK
 587 013017  3073          DCA     AVDQBS          /ADDRESS FOR DAQUAN
 588                                                 /REREAD.
 589                                                 /ADDRESS IS FIXED.
 590 013020  3067          DCA     AVDQFG          /SET DAQUAN CYCLE
FLAG
 591 013021  3070          DCA     AVDALK          /CLEAR DATA LINK
FLAG.
 592 013022  1057          TAD     AVTMP1
 593 013023  7041          CIA
 594 013024  3060          DCA     AVTMP2          /SET COUNT OF #
POINTS IN DATA BLOCK.
 595 013025  1060          TAD AVTMP2              /SAVE LENGTH OF 1ST
DATA BLOCK.
 596 013026  3062          DCA AVTMP4
 597
```

```
 598 013027  1071  AV7,    TAD     AVDATY          /GET DATA TYPE
 599 013030  7041          CIA
 600 013031  3072          DCA     AVDTYV
 601 013032  1020          TAD     OUTTYP          /TEST FOR OUTPUT
TYPE
 602 013033  1373          TAD     (-5
 603 013034  7650          SNA CLA
 604 013035  5772          JMP     AVDQA
 605 013036  4775          JMS     CREAD           /STANDARD OUTPUT
 606 013037  7776          -2                      /READ AVERAGE VALUE
 607 013040  7402          HLT
 608                                                 /NOTE IF OUTPUT IS
SINGLE
 609 013041  1371          TAD     (AVCOD1-1               /PRECISION
THE HIGH ORDER
 610 013042  4770          JMS     SETCON          /WILL BE TAKEN AS
DESIRED.
 611                                                 /SET CONVRT TYPE
 612 013043  1036          TAD     CONINP
 613 013044  4774          JMS     AVSTOU
 614 013045  2072          ISZ     AVDTYV          /TEST DATA TYPE
 615 013046  5250          JMP     .+2
 616 013047  5267          JMP     AV6
 617 013050  4775          JMS     CREAD           /READ CONFIDENCE
LIMITS
 618 013051  7776          -2                      /HAS SAME CONVERT
TYPE
 619 013052  7402          HLT
 620 013053  1036          TAD     CONINP
 621 013054  4774          JMS     AVSTOU
 622 013055  2072          ISZ     AVDTYV          /TEST DATA TYPE FOR
TREND
 623 013056  5260          JMP     .+2
 624 013057  5267          JMP     AV6
 625 013060  4775          JMS     CREAD
 626 013061  7777          -1
 627 013062  7402          HLT
 628 013063  1367          TAD     (HICOD-1                /SET
CONVERT TYPE FOR
 629 013064  4770          JMS     SETCON          /SINGLE INPUT
 630 013065  1036          TAD     CONINP
 631 013066  4774          JMS     AVSTOU
 632 013067  2060  AV6,    ISZ     AVTMP2
 633 013070  5227          JMP     AV7
 634 013071  4775          JMS     CREAD           /READ LINK WORD
 635 013072  7777          -1
 636 013073  7402          HLT
 637 013074  1036          TAD     CONINP          /TEST LINK BLOCK
```

```
 638 013075  7650          SNA CLA
 639 013076  5320          JMP     AV8             /NO MORE LINK
BLOCKS
 640 013077  1067          TAD     AVDQFG          /TEST FOR DAQUAN
CYCLE.
 641 013100  7640          SZA CLA
 642 013101  5306          JMP     AV12
 643 013102  1036          TAD     CONINP
 644 013103  7041          CIA                     /SAVE # OF POINTS
IN
 645 013104  1057          TAD     AVTMP1          /LINK DATA BLOCK
AND
 646 013105  3057          DCA     AVTMP1          /ADD TO TOTAL
COUNT.
 647
 648 013106  1036  AV12,   TAD     CONINP          /SET COUNT FOR THIS
 649 013107  3060          DCA     AVTMP2          /DATA BLOCK.
 650 013110  7001          IAC                     /SET DATA LINK FLAG
 651 013111  3070          DCA     AVDALK
 652 013112  1033          TAD     READNO          /SET TO READ NEXT
 653 013113  7650          SNA CLA                 /BLOCK
 654 013114  5227          JMP     AV7
 655 013115  3033          DCA     READNO
 656 013116  2051          ISZ     BLKIN
 657 013117  5227          JMP     AV7
 658
```

```
 659 013120  1020  AV8,    TAD     OUTTYP          /TEST FOR DAQUAN
 660 013121  1373          TAD     (-5
 661 013122  7640          SZA CLA
 662 013123  5766          JMP     AV10            /NOT DAQUAN OUTPUT.
 663 013124  2067          ISZ     AVDQFG          /TEST CYCLE FLAG,
IF
 664                                                 /NEW VALUE=TYPE
THEN
 665 013125  1067          TAD     AVDQFG          /DONE
 666 013126  7041          CIA
 667 013127  1071          TAD     AVDATY
 668 013130  7650          SNA CLA
 669 013131  5766          JMP     AV10
 670 013132  1073          TAD     AVDQBS          /REREAD BLOCK TO
GET
 671 013133  3051          DCA     BLKIN           /NEXT DATA FROM A
POINT
 672 013134  3033          DCA     READNO          /SET TO READ FROM
 673                                                 /BEGINNING OF BLOCK
 674 013135  7001          IAC                     /NEGATE FILE SIZE
LIMIT
 675 013136  3032          DCA     FILESZ
 676 013137  4775          JMS     CREAD           /THIS READS # OF
SWEEPS
 677 013140  7777          -1
 678 013141  7402          HLT
 679 013142  1062          TAD AVTMP4      /SET COUNT OF 1ST DATA
BLOCK.
 680 013143  3060          DCA AVTMP2
 681 013144  5227          JMP     AV7
 682
 683 013166  3235  PAGE
     013167  6520
     013170  3746
     013171  3541
     013172  3200
     013173  7773
     013174  3451
     013175  4104
     013176  3515
     013177  7774
 684 013200  7001  AVDQA,  IAC                     /SET CONVERT TYPE
 685 013201  3035          DCA     CONVTY
 686 013202  4777          JMS     CREAD           /READ AVG VALUE
 687 013203  7776          -2
 688 013204  7402          HLT
 689 013205  1067          TAD     AVDQFG          /TEST CYCLE FLAG
 690 013206  7650          SNA CLA                 /TO CONVERT.
```

```
 691 013207  4776          JMS     CONVRT
 692 013210  2072          ISZ     AVDTYV          /TEST FOR END OF
DATA POINT
 693 013211  5213          JMP     .+2
 694 013212  5775          JMP     AV6
 695 013213  4777          JMS     CREAD           /READ CONFIDENCE
LIM
 696 013214  7776          -2
 697 013215  7402          HLT
 698 013216  7040          CMA
 699 013217  1067          TAD     AVDQFG          /TEST TO WRITE CON.
LIM.
 700 013220  7650          SNA CLA
 701 013221  4776          JMS     CONVRT
 702 013222  2072          ISZ     AVDTYV          /TEST FOR END OF
DATA POINT
 703 013223  5225          JMP     .+2
 704 013224  5775          JMP     AV6
 705 013225  4777          JMS     CREAD           /READ TREND
 706 013226  7777          -1
 707 013227  7402          HLT
 708 013230  1374          TAD     (-2             /TEST TO WRITE
TREND
 709 013231  1067          TAD     AVDQFG
 710 013232  7650          SNA CLA
 711 013233  4776          JMS     CONVRT
 712 013234  5775          JMP     AV6
 713 013235  1070  AV10,   TAD     AVDALK          /TEST IF THERE WAS
 714 013236  7650          SNA CLA                 /A LINK BLOCK
 715 013237  5773          JMP     AV13
 716 013240  3060          DCA     AVTMP2
 717 013241  1063          TAD     AVBACT          /YES, TEST IF BLOCK
 718 013242  7041          CIA                     /WITH # OF POINTS
ADD
 719 013243  1052          TAD     BLKOUT          /IS STILL IN CORE
 720 013244  7650          SNA CLA
 721 013245  5260          JMP     AV14            /YES
 722 013246  1063          TAD     AVBACT          /NO READ BLOCK IN
 723 013247  3254          DCA     AV15
 724
```

```
 725 013250  6202          CIF     0
 726 013251  4431          JMS I   ENTRYO
 727 013252  0200          0200
 728 013253  6200          BUFIN
 729 013254  0000  AV15,    0
 730 013255  5772          JMP     ERRRW
 731 013256  1371          TAD     (400            /SET TO ADJUST LOC
FROM
 732 013257  3060          DCA AVTMP2              /BUFOUT TO BUFIN.
 733 013260  1064  AV14,    TAD AVLACT      /ADJUST ADD OF NUMBER TO BE
UPDATED
 734 013261  1060          TAD AVTMP2      /W.R.T. BUF. ADD.
 735 013262  3061          DCA AVTMP3
 736
 737                                        /THIS PART WILL STORE THE
ACTUAL NUMBER
 738                                        /OF DATA POINTS IN THE
OUTPUT FILE
 739                                        /SINCE THE BLOCK IN WHICH
IT GOES
 740                                        /PROBABLY HAS BEEN WRITTEN.
 741 013263  1020          TAD     OUTTYP          /TEST FOR SINGLE
FORTRAN 2
 742 013264  1370          TAD     (-6
 743 013265  7650          SNA CLA
 744 013266  5317          JMP     AV17
 745 013267  1057          TAD     AVTMP1
 746 013270  3036          DCA CONINP              /SET # OF POINTS IN
AVERAGE TO BE CONVERTED.
 747 013271  1020          TAD OUTTYP              /SET OUTPUT TYPE.
 748 013272  7041          CIA
 749 013273  3047          DCA TEMP2
 750 013274  2047          ISZ TEMP2       /TEST FOR SF4
 751 013275  5302          JMP AV26
 752 013276  4767          JMS SDSUB
 753 013277  4766          JMS DF4SUB      /CONVERT TO F4
 754 013300  1365          TAD (-3
 755 013301  5764          JMP AV25
 756 013302  2047  AV26,   ISZ TEMP2       /TEST FOR SF2
 757 013303  5310          JMP AV27
 758 013304  4767          JMS SDSUB       /CONVERT TO F2 FLOATING.
 759 013305  4766          JMS DF4SUB
 760 013306  4763          JMS F4F2SU
 761 013307  5762          JMP AV29
 762 013310  2047  AV27,   ISZ TEMP2       /TEST FOR SD
 763 013311  5315          JMP AV28
 764 013312  4767          JMS SDSUB
 765 013313  7344          SETM2
```

```
766 013314  5764          JMP AV25
767 013315  7040  AV28,   CMA
768 013316  5764          JMP AV25
769 013317  1361
```

```
AV17,  TAD     (-4              /GET 4 WORD PACKED
 770 013320  3046          DCA     TEMP1           /PACKET OF DATA
 771 013321  1360          TAD     (CONINP-1
 772 013322  3012          DCA     12
 773 013323  7040          CMA
 774 013324  1061          TAD AVTMP3
 775 013325  3013          DCA     13
 776
 777 013326  6201  AV18,   CDF 0
 778 013327  1413          TAD I 13
 779 013330  6211          CDF 10
 780 013331  3412          DCA I   12
 781 013332  2046          ISZ     TEMP1
 782 013333  5326          JMP     AV18
 783 013334  4757          JMS     UNPACK          /CONVERT TO 3 WORD
 784                                                 /6 BIT ASCII
 785 013335  1356          TAD     (CONINP         /GET POINTER TO
WORD
 786 013336  1075          TAD     AVF2SP          /WITHIN 3 WORD
PACKET
 787 013337  3046          DCA     TEMP1
 788 013340  1057          TAD     AVTMP1          /STORE # OF POINTS
IN AVERAGE
 789 013341  3446          DCA I   TEMP1
 790 013342  5755          JMP AV24
 791
 792 013355  3400  PAGE
     013356  0036
     013357  5400
     013360  0035
     013361  7774
     013362  3401
     013363  4600
     013364  3402
     013365  7775
     013366  5217
     013367  5200
     013370  7772
     013371  0400
     013372  2320
     013373  3433
     013374  7776
     013375  3067
     013376  4400
     013377  4104
 793 013400  4777  AV24,   JMS     PACK32          /REPACK IN 3/2
ASCII
 794 013401  1376  AV29,   TAD     (-4             /MOVE BACK TO
 795 013402  3046  AV25,   DCA     TEMP1           /BUFFER
```

```
 796 013403  1375          TAD     (CONINP-1
 797 013404  3012          DCA     12
 798 013405  7040          CMA
 799 013406  1061          TAD AVTMP3
 800 013407  3013          DCA     13
 801
 802 013410  1412  AV19,   TAD I   12
 803 013411  6201          CDF 0
 804 013412  3413          DCA I   13
 805 013413  6211          CDF 10
 806 013414  2046          ISZ     TEMP1
 807 013415  5210          JMP     AV19
 808
 809 013416  1063  AV16,   TAD     AVBACT          /TEST IF BUFFER IS
 810 013417  7041          CIA                     /STILL IN CORE
 811 013420  1052          TAD     BLKOUT
 812 013421  7650          SNA CLA
 813 013422  5233          JMP     AV13            /YES
 814 013423  1063          TAD     AVBACT          /WRITE DATA
BACKOUT.
 815 013424  3231          DCA     AV20
 816 013425  6202          CIF     0
 817 013426  4431          JMS I   ENTRYO
 818 013427  4200          4200
 819 013430  6200          BUFIN
 820
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```
 821 013431  0000  AV20,   0
 822 013432  5774          JMP     ERRRW
 823
 824 013433  1033  AV13,   TAD     READNO          /SET TO READ THE
 825 013434  7650          SNA CLA                 /NEXT BLOCK
 826 013435  5773          JMP     AV21
 827 013436  3033          DCA     READNO
 828 013437  2051          ISZ     BLKIN
 829 013440  5773          JMP     AV21
 830
 831 013441  7240  AV22,   CLA CMA         /OUTPUT -1 TO END FILE.
 832 013442  4251          JMS AVSTOU
 833 013443  1313          TAD     AVF2CT          /OUTPUT ANY PARTIAL
 834 013444  7650          SNA CLA                 /FORTRAN 2 SINGLE
 835 013445  5250          JMP     AV23            /PRECISION DATA
 836 013446  4263          JMS     AVF2SU
 837 013447  5241          JMP     AV22
 838
 839 013450  5772  AV23,   JMP     FILDON
 840
 841 013451  0000  AVSTOU, 0
 842 013452  3036          DCA     CONINP
 843 013453  1020          TAD     OUTTYP          /TEST FOR FORTRAN 2
 844 013454  1371          TAD     (-6             /SINGLE PRECISION
 845 013455  7640          SZA CLA
 846 013456  5261          JMP     AVSTU2
 847                                               /CALL FORTRAN 2
PARK
 848 013457  4263          JMS     AVF2SU          /ROUTINE
 849 013460  5651          JMP I   AVSTOU
 850
 851 013461  4770  AVSTU2, JMS     CONVRT          /OUTPUT VALUE
 852 013462  5651          JMP I   AVSTOU
 853
 854 013463  0000  AVF2SU, 0                       /ROUTINE TO HOLD
DATA
 855                                               /FOR PACKING
 856 013464  1313          TAD     AVF2CT          /TEST IF BUFFER
NEEDS
 857 013465  7640          SZA CLA                 /TO BE RESET
 858 013466  5273          JMP     AVF2S1
 859 013467  1367          TAD     (-3             /YES
 860 013470  3313          DCA     AVF2CT
 861 013471  1366          TAD     (AVF2BU
 862 013472  3314          DCA     AVF2BP
 863
 864 013473  1036  AVF2S1, TAD     CONINP          /STORE DATA
 865 013474  3714          DCA I   AVF2BP
```

```
 866 013475  2314          ISZ     AVF2BP
 867 013476  2313          ISZ     AVF2CT          /TEST FOR 3 CHAR.
 868 013477  5663          JMP I   AVF2SU
 869 013500  1310          TAD     AVF2BU          /STORE CHARACTERS
FOR
 870 013501  3036          DCA     CONINP          /CONVERT
 871 013502  1311          TAD     AVF2BU+1
 872 013503  3037          DCA     CONINP+1
 873 013504  1312          TAD     AVF2BU+2
 874 013505  3040          DCA     CONINP+2
 875 013506  4770          JMS     CONVRT
 876 013507  5663          JMP I AVF2SU
 877
 878 013510  0000  AVF2BU, 0
 879 013511  0000          0
 880 013512  0000          0
 881 013513  0000  AVF2CT, 0
 882 013514  0000  AVF2BP, 0
 883
```

```
 884 013515  0000  AVRJLS, 0
 885 013516  2056          ISZ     AVHBBC          /TEST IF HEADER BUF
EMPTY
 886 013517  5335          JMP     AVRJL2
 887 013520  1054          TAD     AVHBKA          /YES STORE BLOCK TO
READ.
 888 013521  3326          DCA     AVRJL1
 889 013522  6202          CIF     0               /READ BLOCK
 890 013523  4430          JMS I   ENTRYI
 891 013524  0200          0200
 892 013525  5200          BUFJOB
 893 013526  0000  AVRJL1, 0
 894 013527  5774          JMP     ERRRW
 895 013530  1365          TAD     (BUFJOB+2               /SET
POINTER AND COUNT
 896 013531  3055          DCA     AVHBBA
 897 013532  1364          TAD     (-375
 898 013533  3056          DCA     AVHBBC
 899 013534  2054          ISZ     AVHBKA          /SET TO NEXT BLOCK
ADD.
 900
 901 013535  6201  AVRJL2, CDF 0
 902 013536  1455          TAD I AVHBBA
 903 013537  6211          CDF 10
 904 013540  2055          ISZ AVHBBA
 905 013541  5715          JMP I   AVRJLS
 906
 907 013542  0010  AVCOD1, 10
 908 013543  0007          7
 909 013544  0006          6
 910 013545  0001          1
 911 013546  0001          1
 912 013547  0015          15
 913
 914
 915 013564  7403  PAGE
     013565  5202
     013566  3510
     013567  7775
     013570  4400
     013571  7772
     013572  2275
     013573  2632
     013574  2320
     013575  0035
     013576  7774
     013577  5032
 916 013600  1377  DO,     TAD     (DOCOD-1                /SET UP
```

```
CONVERT TYPE
 917 013601  4346          JMS     SETCON
 918 013602  1020          TAD     OUTTYP          /TEST FOR FORTRAN 2
 919 013603  1376          TAD     (-6             /SINGLE PRECISION
OUTPUT
 920 013604  7650          SNA CLA
 921 013605  5215          JMP     DO1
 922
 923 013606  4775  DO2,    JMS     CREAD           /READ A DOUBLE
PRECISION
 924 013607  7776          -2                      /VALUE.
 925 013610  5774          JMP     FILDON
 926 013611  4265          JMS DOCNO
 927 013612  5774          JMP FILDON
 928 013613  4773          JMS CONVRT
 929 013614  5206          JMP     DO2
 930
 931 013615  1372  DO1,    TAD     (-3             /MUST READ 3 VALUES
 932 013616  3252          DCA     DOV1
 933 013617  1371          TAD     (DOSTR
 934 013620  3253          DCA     DOV2
 935
 936 013621  4775  DO3,    JMS     CREAD
 937 013622  7776          -2
 938 013623  5243          JMP     DO4
 939 013624  4265          JMS DOCNO       /TEST FOR END OF DATA.
 940 013625  5243          JMP DO4
 941 013626  1037          TAD     CONINP+1
 942 013627  3653          DCA I   DOV2            /SAVE THE SINGLE
PRECISION
 943 013630  2253          ISZ     DOV2            /PART OF THE NUMBER
 944 013631  2252          ISZ     DOV1
 945 013632  5221          JMP     DO3
 946 013633  1254          TAD     DOSTR           /PUT IN CONVRT
 947 013634  3036          DCA     CONINP          /BUFFER
 948 013635  1255          TAD     DOSTR+1
 949 013636  3037          DCA     CONINP+1
 950 013637  1256          TAD     DOSTR+2
 951 013640  3040          DCA     CONINP+2
 952 013641  4773          JMS     CONVRT
 953 013642  5215          JMP     DO1
 954
```

```
 955 013643  1252  DO4,    TAD     DOV1            /TEST IF LAST READ
HAD
 956 013644  7041          CIA                     /ANYTHING IN IT.
 957 013645  1372          TAD     (-3
 958 013646  7650          SNA CLA
 959 013647  5774          JMP     FILDON          /NO
 960 013650  4773          JMS     CONVRT          /OUTPUT PARTIAL
VALUE
 961 013651  5774          JMP     FILDON
 962
 963 013652  0000  DOV1,   0
 964 013653  0000  DOV2,   0
 965 013654  0000  DOSTR,  0
 966 013655  0000          0
 967 013656  0000          0
 968
 969 013657  0010  DOCOD,  10
 970 013660  0007          7
 971 013661  0006          6
 972 013662  0005          5
 973 013663  0005          5
 974 013664  0015          15
 975
 976 013665  0000  DOCNO,  0       /SUB. TO TEST FOR END OF DATA
 977 013666  2101          ISZ CRDGET+1    /FO R SWITCH.
 978 013667  5273          JMP DOCNO1
 979 013670  2100          ISZ CRDGET
 980 013671  5273          JMP DOCNO1
 981 013672  5665          JMP I DOCNO
 982 013673  2265  DOCNO1, ISZ DOCNO
 983 013674  5665          JMP I DOCNO
 984
 985 013675  1370  F4,     TAD (F4COD-1    /SET CONVERT TYPE.
 986 013676  4346          JMS SETCON
 987 013677  4775  F4A,    JMS     CREAD
 988 013700  7775          -3
 989 013701  5774          JMP     FILDON          /FILE DONE RETURN
 990 013702  4773          JMS     CONVRT
 991 013703  5277          JMP     F4A
 992
 993 013704  0000  REDSU2, 0                       /READ 1 OR 3 WORDS
 994                                               /FROM INPUT FILE.
 995 013705  1104          TAD REDSF               /TEST IF COUNT FLAG
SET.
 996 013706  7640          SZA CLA
 997 013707  5774          JMP FILDON              /DONE IF SO.
 998 013710  1020          TAD     OUTTYP
 999 013711  1376          TAD     (-6
```

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1000 013712  7650          SNA CLA
1001 013713  1367          TAD     (-2             /SET 3 WORD FOR
FORTRAN
1002 013714  1366          TAD     (-1             /2 SINGLE
PRECISION.
1003 013715  3317          DCA     REDS1
1004 013716  4775          JMS     CREAD
1005 013717  0000  REDS1,  0
1006 013720  5340          JMP     REDS2
1007 013721  4265  REDS3,  JMS DOCNO       /TEST FOR END OF DATA BY
COUNT
1008 013722  5326          JMP REDS4               /TEST IF DONE.
1009 013723  2317          ISZ REDS1
1010 013724  5321          JMP REDS3
1011 013725  5704          JMP I   REDSU2
1012
1013 013726  2104  REDS4,  ISZ REDSF       /SET COUNT DONE FLAG.
1014 013727  1020          TAD OUTTYP      /TEST FOR FS OUTPUT.
1015 013730  1376          TAD (-6
1016 013731  7640          SZA CLA
1017 013732  5774          JMP FILDON      /DONE IF NOT.
1018 013733  7325          SET3            /TEST FOR PARTIAL DATA.
1019 013734  1317          TAD REDS1
1020 013735  7650          SNA CLA
1021 013736  5774          JMP FILDON      /NO MORE DATA TO OUTPUT.
1022 013737  5704          JMP I REDSU2    /PARTIAL FS DATA TO OUTPUT.
1023 013740  1317  REDS2,  TAD     REDS1           /TEST IF ANY CHAR.
GOTTEN ON READ.
1024 013741  7041          CIA
1025 013742  1010          TAD     10
1026 013743  7650          SNA CLA
1027 013744  5774          JMP     FILDON
1028 013745  5704          JMP I   REDSU2
1029
1030 013746  0000  SETCON, 0                       /SETUP CONVRT TYPE
1031 013747  1020          TAD     OUTTYP
1032 013750  3046          DCA     TEMP1
1033 013751  1446          TAD I   TEMP1
1034 013752  7450          SNA
1035 013753  5765          JMP     COMERR
1036 013754  3035          DCA     CONVTY
1037 013755  5746          JMP I   SETCON
1038
1039
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1040 013765  2317  PAGE
     013766  7777
     013767  7776
     013770  6526
     013771  3654
     013772  7775
     013773  4400
     013774  2275
     013775  4104
     013776  7772
     013777  3656
1041 014000  0000  FILOUT, 0                        /ROUTINE TO STORE
IN THE
1042                                                /OUTPUT BUFFER AND
WRITE
1043                                                /THE DATA.
1044 014001  1600          TAD I   FILOUT
1045 014002  7510          SPA             /TEST FOR FILE CLOSE.
1046 014003  5207          JMP FIL9
1047 014004  7240          CLA CMA
1048 014005  3010          DCA 10
1049 014006  5236          JMP FIL8
1050 014007  3010  FIL9,   DCA 10
1051 014010  1377          TAD     (CONINP-1
1052 014011  3011          DCA     11
1053 014012  1053  FIL2,   TAD FILOSZ
1054 014013  7650          SNA CLA
1055 014014  5776          JMP     NOROOM          /FILE IS FULL.
1056 014015  1034          TAD     WRITNO          /TEST IF OUTPUT
BUFFER NEEDS
1057 014016  7640          SZA CLA                 /TO BE RESET.
1058 014017  5225          JMP     FIL1
1059
1060 014020  1375          TAD     (BUFOUT         /SET BUFFER START.
1061 014021  3065          DCA     FIOBUF
1062 014022  1044          TAD     BLKOSZ          /SET BUFFER SIZE
1063 014023  7041          CIA
1064 014024  3034          DCA     WRITNO
1065 014025  1411  FIL1,   TAD I   11              /STORE DATA IN
OUTPUT BUFFER.
1066 014026  6201          CDF 0
1067 014027  3465          DCA I   FIOBUF
1068 014030  6211          CDF 10
1069 014031  1065          TAD     FIOBUF          /SAVE LAST LOCATION
1070 014032  3066          DCA     FIOBFS          /WRITTEN FOR AV
ROUTINE
1071 014033  2065          ISZ     FIOBUF
1072 014034  2034          ISZ     WRITNO          /TEST IF BUFFER
```

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FULL
1073 014035  5274          JMP     FIL3
1074 014036  7344  FIL8,   SETM2
1075 014037  1020          TAD     OUTTYP          /TEST FOR FORTRAN 2
1076 014040  7450          SNA                     /SINGLE OR
FLOATING.
1077 014041  5245          JMP FIL7
1078 014042  1374          TAD (-4
1079 014043  7640          SZA CLA
1080 014044  5260          JMP     FIL4
1081 014045  1373  FIL7,   TAD     (AVF2EN-1       /MOVE BLOCK
1082 014046  3012          DCA     12              /ENDING TO BLOCK
1083 014047  1374          TAD     (-4
1084 014050  3013          DCA     13
1085
1086 014051  1412  FIL5,   TAD I   12
1087 014052  6201          CDF 0
1088 014053  3465          DCA I   FIOBUF
1089 014054  6211          CDF 10
1090 014055  2065          ISZ     FIOBUF
1091 014056  2013          ISZ     13
1092 014057  5251          JMP     FIL5
1093
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1094 014060  1052  FIL4,   TAD     BLKOUT          /SET ADD OF BLOCK
TO WRITE TO.
1095 014061  3266          DCA     FILADD
1096 014062  6202          CIF     0               /WRITE DATA.
1097 014063  4431          JMS I   ENTRYO
1098 014064  4200          4200
1099 014065  5600          BUFOUT                  /BUFFER AT BUFOUT
OF FIELD 0.
1100 014066  0000  FILADD, 0
1101 014067  5772          JMP     ERRRW
1102 014070  2053          ISZ     FILOSZ          /TEST FOR FILE FULL
1103 014071  7200          CLA
1104 014072  2052          ISZ     BLKOUT          /SET NEXT BLOCK TO
WRITE
1105
1106 014073  7200          CLA
1107 014074  2010  FIL3,   ISZ     10              /TEST IF DONE
1108 014075  5212          JMP     FIL2
1109 014076  2200          ISZ     FILOUT
1110 014077  5600          JMP I   FILOUT
1111 014100  6300  AVF2EN, 6300            /F2 FLOATING OUTPUT IS
63A6, 2A2, CR. LF.
1112 014101  0300          0300            /F2 SINGLE OUTPUT IS
189A2,2A2,CR.LF.
1113 014102  4300          4300            /2A2 PART IS DUMMY OUTPUT.
1114 014103  5215          5215
1115
1116 014104  0000  CREAD,  0                       /READS FROM THE
INPUT FILE
1117 014105  1704          TAD I   CREAD
1118 014106  3010          DCA     10
1119 014107  1377          TAD     (CONINP-1
1120 014110  3011          DCA     11
1121 014111  2304          ISZ     CREAD
1122 014112  1032  CR5,    TAD     FILESZ          /TEST IF FILE DONE
1123 014113  7650          SNA CLA
1124 014114  5704          JMP I   CREAD
1125 014115  1033          TAD     READNO          /TEST IF ANY
CHARACTERS IN BUFFER
1126 014116  7640          SZA CLA
1127 014117  5335          JMP     CR1
1128 014120  1051  CR3,    TAD     BLKIN
1129 014121  3326          DCA     CRBLK           /STORE BLOCK TO
READ.
1130 014122  6202          CIF     0               /READ THE NEXT
BLOCK
1131 014123  4430          JMS I   ENTRYI
1132 014124  0200          0200                    /READ 2 RECORDS
```

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INTO FIELD 0
1133
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1134 014125  6200  CRBUFP, BUFIN                  /AT BUFIN
1135 014126  0000  CRBLK,  0
1136 014127  5772          JMP     ERRRW
1137 014130  1045          TAD     BLKISZ        /SET BLOCK SIZE
1138 014131  7041          CIA
1139 014132  3033          DCA     READNO
1140 014133  1371          TAD     (BUFIN        /SET BUFFER
POINTER.
1141 014134  3354          DCA     CRBUF
1142
1143 014135  6201  CR1,    CDF 0
1144 014136  1754          TAD I CRBUF           /GET VALUE
1145 014137  6211          CDF 10
1146 014140  3411          DCA I   11
1147 014141  2354          ISZ     CRBUF
1148 014142  2033  CR2,    ISZ     READNO        /TEST IF BUFFER
EMPTY
1149 014143  5350          JMP     CR4
1150 014144  2051          ISZ     BLKIN         /YES, INCREMENT
BLOCK ADD.
1151 014145  7200          CLA
1152 014146  2032          ISZ     FILESZ        /TEST FOR LAST
BLOCK
1153 014147  7200          CLA
1154
1155 014150  2010  CR4,    ISZ     10            /TEST IF ALL WORDS
GOTTON
1156 014151  5312          JMP     CR5
1157 014152  2304          ISZ     CREAD         /YES NORMAL EXIT
1158 014153  5704          JMP I   CREAD
1159
1160 014154  0000  CRBUF,  0
1161
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1162 014171  6200  PAGE
     014172  2320
     014173  4077
     014174  7774
     014175  5600
     014176  2321
     014177  0035
1163
1164 014200  0000  UNPK32, 0              /UNPACKS 3/2 ASCII FROM
FORTRAN
1165                                      /2 AND STORES DATA AS ASCII
1166                                      /THEN CHANGES IT INTO
PACKED 6 ASCII
1167 014201  1600          TAD I UNPK32
1168 014202  3336          DCA UNPCT      /SAVE # OF WORDS WANTED.
1169 014203  1377          TAD (UNPBF2    /SET STORAGE BUF. FOR
RETURN WORDS.
1170 014204  3335          DCA UNPT3
1171 014205  7040          CMA
1172 014206  3341          DCA UNPT4      /SET 6 BIT ASCII PACK FLAG.
1173
1174 014207  1337  UNP7,   TAD UNPT1      /TEST TO READ MORE DATA.
1175 014210  7640          SZA CLA
1176 014211  5255          JMP UNP2
1177 014212  4776          JMS CREAD      /READ 4 WORDS OF 3/2 PACKED
DATA.
1178 014213  7774          -4
1179 014214  5330          JMP UNP6       /END OF INPUT FILE.
1180 014215  1375          TAD (CONINP
1181 014216  3340          DCA UNPT2
1182 014217  1374          TAD (UNPBUF-1
1183 014220  3011          DCA 11
1184 014221  7344          SETM2
1185 014222  3012          DCA 12
1186
1187 014223  1740  UNP1,   TAD I UNPT2    /UNPACK INPUT INTO ASCII.
1188 014224  0373          AND (377
1189 014225  3411          DCA I 11
1190 014226  1740          TAD I UNPT2
1191 014227  0372          AND (7400
1192 014230  7112          CLL RTR
1193 014231  7012          RTR
1194 014232  3046          DCA TEMP1      /SAVE TOP 4 BITS.
1195 014233  2340          ISZ UNPT2      /GET 2ND WORD.
1196 014234  1740          TAD I UNPT2
1197 014235  0373          AND (377
1198 014236  3411          DCA I 11       /STORE NEXT 8 BIT ASCII.
1199 014237  1740          TAD I UNPT2
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1200 014240  0372          AND (7400
1201 014241  7106          CLL RTL
1202 014242  7006          RTL
1203 014243  7004          RAL
1204 014244  1046          TAD TEMP1
1205 014245  3411          DCA I 11        /STORE NEXT 8 BIT ASCII.
1206 014246  2340          ISZ UNPT2       /POINT TO NEXT INPUT WORD.
1207
1208 014247  2012          ISZ 12          /TEST TO DO 2ND 2 WORDS.
1209 014250  5223          JMP UNP1
1210 014251  1371          TAD (-6
1211 014252  3337          DCA UNPT1
1212 014253  1370          TAD (UNPBUF
1213 014254  3340          DCA UNPT2       /SET COUNTERS TO USE 8 BIT
ASCII.
1214
1215 014255  1740  UNP2,   TAD I UNPT2     /TEST FOR CR. LF. ^Z
1216 014256  1367          TAD (-215
1217 014257  7450          SNA
1218 014260  5307          JMP UNP4
1219 014261  1366          TAD (215-212
1220 014262  7450          SNA
1221 014263  5307          JMP UNP4
1222 014264  1365          TAD (212-232
1223 014265  7650          SNA CLA
1224 014266  5330          JMP UNP6        /END OF FILE.
1225
1226
1227 014267  1740          TAD I UNPT2     /COMBINE 2 8 BIT ASCII
1228 014270  0364          AND (77         /INTO 1 WORD 6 BIT PACKED.
1229 014271  2341          ISZ UNPT4
1230 014272  5300          JMP UNP8
1231 014273  7106          CLL RTL
1232 014274  7006          RTL
1233 014275  7006          RTL
1234 014276  3735          DCA I UNPT3
1235 014277  5307          JMP UNP4
1236
1237 014300  1735  UNP8,   TAD I UNPT3
1238 014301  3735          DCA I UNPT3
1239 014302  2335          ISZ UNPT3
1240 014303  7040          CMA
1241 014304  3341          DCA UNPT4
1242
1243 014305  2336          ISZ UNPCT       /TEST REQUIRED COUNT
1244 014306  7200          CLA
1245
1246 014307  2340  UNP4,   ISZ UNPT2
1247 014310  2337          ISZ UNPT1       /TEST TO READ MORE DATA.
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1248 014311  7200          CLA
1249
1250 014312  1336          TAD UNPCT       /TEST IF DONE
1251 014313  7640          SZA CLA
1252 014314  5207          JMP UNP7
1253
1254 014315  1600          TAD I UNPK32    /MORE OUTPUT DATA TO CONINP
BUF.
1255 014316  3336          DCA UNPCT
1256 014317  1363          TAD (UNPBF2-1
1257 014320  3011          DCA 11
1258 014321  1362          TAD (CONINP-1
1259 014322  3012          DCA 12
1260 014323  1411  UNP5,   TAD I 11
1261 014324  3412          DCA I 12
1262 014325  2336          ISZ UNPCT
1263 014326  5323          JMP UNP5
1264
1265 014327  2200          ISZ UNPK32
1266 014330  2200  UNP6,   ISZ UNPK32      /END OF FILE EXIT.
1267 014331  5600          JMP I UNPK32
1268
1269 014332  0000  UNPBF2, 0
1270 014333  0000          0
1271 014334  0000          0
1272 014335  0000  UNPT3,  0
1273 014336  0000  UNPCT,  0
1274 014337  0000  UNPT1,  0
1275 014340  0000  UNPT2,  0
1276 014341  0000  UNPT4,  0
1277 014342  0000  UNPBUF, 0
1278 014343  0000          0
1279 014344  0000          0
1280 014345  0000          0
1281 014346  0000          0
1282 014347  0000          0
1283
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1284 014362  0035  PAGE
     014363  4331
     014364  0077
     014365  7760
     014366  0003
     014367  7563
     014370  4342
     014371  7772
     014372  7400
     014373  0377
     014374  4341
     014375  0036
     014376  4104
     014377  4332
1285 014400  0000  CONVRT, 0
1286 014401  1035          TAD     CONVTY          /JUMP TO CONVERT
ROUTINE
1287 014402  1205          TAD     CONJPL
1288 014403  3204          DCA     .+1
1289 014404  0000          0
1290 014405  5605  CONJPL, JMP I   .
1291 014406  4425          SS                      /CONVTY=1
1292 014407  4430          SD                      /=2
1293 014410  4434          SF2                     /=3
1294 014411  4442          SF4                     /=4
1295 014412  4447          DS                      /=5
1296 014413  4431          DD                      /=6
1297 014414  4435          DF2                     /=7
1298 014415  4443          DF4                     /=10
1299 014416  4451          F2S                     /=11
1300 014417  4455          F2D                     /=12
1301 014420  4460          F2F4                    /=13
1302 014421  4436          F4F2                    /=14
1303 014422  4462          SF2S                    /=15
1304 014423  4466          F4S                     /=16
1305 014424  4470          F4D                     /=17
1306 014425  4777  SS,     JMS     FILOUT          /SINGLE INPUT IS
PUT IN CONINP
1307 014426  7777          -1                      /DOUBLE INPUT IS
PUT IN CONINP
1308 014427  5600          JMP I   CONVRT
1309 014430  4776  SD,     JMS     SDSUB           /AND CONINP+1.
1310                                                 /FLOATING IS INPUT
IN FIRST
1311                                                 /3 LOCATIONS.
1312 014431  4777  DD,     JMS     FILOUT
1313 014432  7776          -2
1314 014433  5600          JMP I   CONVRT
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1315 014434  4776  SF2,    JMS     SDSUB
1316 014435  4775  DF2,    JMS     DF4SUB
1317 014436  4774  F4F2,   JMS     F4F2SU
1318 014437  4777          JMS     FILOUT
1319 014440  7774          -4
1320 014441  5600          JMP I   CONVRT
1321 014442  4776  SF4,    JMS     SDSUB
1322 014443  4775  DF4,    JMS     DF4SUB
1323 014444  4777  F3OUT,  JMS     FILOUT
1324 014445  7775          -3
1325 014446  5600          JMP I   CONVRT
1326 014447  4773  DS,     JMS     DSSUB
1327 014450  5225          JMP     SS
1328 014451  4772  F2S,    JMS     F2F4SU
1329 014452  4771          JMS     F4DSU
1330 014453  4773          JMS     DSSUB
1331 014454  5225          JMP     SS
1332
1333 014455  4772  F2D,    JMS     F2F4SU
1334 014456  4771          JMS     F4DSU
1335 014457  5231          JMP     DD
1336
1337 014460  4772  F2F4,   JMS     F2F4SU
1338 014461  5244          JMP     F3OUT
1339
1340 014462  4770  SF2S,   JMS     PACK32          /PACK INTO PS-8 3/2
1341 014463  4777          JMS     FILOUT
1342 014464  7774          -4
1343 014465  5600          JMP I   CONVRT
1344
1345 014466  4771  F4S,    JMS F4DSU
1346 014467  5247          JMP DS
1347 014470  4771  F4D,    JMS F4DSU
1348 014471  5231          JMP DD
1349
```

```
1350 014472  0000  F4COM,  0               /SUBROUTINE TO NEGATE
MANTISSA OF F4 #.
1351 014473  7300          CLA CLL
1352 014474  1040          TAD CONINP+2
1353 014475  7041          CIA
1354 014476  3040          DCA CONINP+2
1355 014477  1037          TAD CONINP+1
1356 014500  7040          CMA
1357 014501  3037          DCA CONINP+1
1358 014502  7430          SZL
1359 014503  2037          ISZ CONINP+1
1360 014504  5672          JMP I F4COM
1361
```

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1362 014570  5032  PAGE
     014571  5000
     014572  5275
     014573  5213
     014574  4600
     014575  5217
     014576  5200
     014577  4000
1363 014600  0000  F4F2SU, 0                        /CONVERT F4 TO F2
AND
1364                                                /STORE IN PS-8
PACKED ASCII
1365 014601  3046          DCA TEMP1
1366 014602  1037          TAD     CONINP+1
1367 014603  7700          SMA CLA         /TEST FOR NEG VALUE.
1368 014604  5210          JMP F42U8
1369 014605  4777          JMS F4COM
1370 014606  1376          TAD     (4000
1371 014607  3046          DCA     TEMP1           /SAVE SIGN
1372 014610  1036  F42U8,  TAD     CONINP          /TEST EXPONENT FOR
OVERFLOW
1373 014611  7510          SPA
1374 014612  5220          JMP     F42U1           /NEGATIVE
1375 014613  0375          AND     (7600
1376 014614  7650          SNA CLA
1377 014615  5226          JMP     F42U5
1378 014616  1374          TAD     (177            /SET TO MAX VALUE
1379 014617  5227          JMP     F42U2
1380
1381 014620  1373  F42U1,  TAD     (200
1382 014621  7710          SPA CLA
1383 014622  5230          JMP     F42U3           /SET TO MAX NEG
VALUE.
1384 014623  1036          TAD     CONINP          /GET NEGATIVE
VALUE.
1385 014624  0374          AND     (177
1386 014625  5230          JMP     F42U3
1387
1388 014626  1036  F42U5,  TAD     CONINP
1389 014627  1373  F42U2,  TAD     (200            /ADD 200 FOR
FORTRAN 2
1390 014630  3047  F42U3,  DCA     TEMP2           /SAVE EXPONENT
1391
1392 014631  3036          DCA     CONINP          /CLEAR EXPONENT
1393
1394 014632  1037          TAD     CONINP+1        /USE FOR 0 MANTISSA
1395 014633  7640          SZA CLA
1396 014634  5240          JMP     F42U6
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1397 014635  1040          TAD     CONINP+2
1398 014636  7650          SNA CLA
1399 014637  5262          JMP     F42U7           /SET EXPONENT=0
1400 014640  1372  F42U6,  TAD     (-4
1401 014641  3050          DCA     TEMP3
1402
1403 014642  1040  F42U4,  TAD     CONINP+2        /ROTATE BITS 4
PLACES
1404 014643  7104          CLL RAL
1405 014644  3040          DCA     CONINP+2
1406 014645  1037          TAD     CONINP+1
1407 014646  7004          RAL
1408 014647  3037          DCA     CONINP+1
1409 014650  1036          TAD     CONINP
1410 014651  7004          RAL
1411 014652  3036          DCA     CONINP
1412 014653  2050          ISZ     TEMP3
1413 014654  5242          JMP     F42U4
1414 014655  1047          TAD     TEMP2           /STORE SIGN, AND
EXPONENT.
1415 014656  7106          CLL RTL
1416 014657  7004          RAL
1417 014660  1046          TAD     TEMP1
1418 014661  1036          TAD     CONINP
1419 014662  3036  F42U7,  DCA     CONINP
1420 014663  4771          JMS     PACK32
1421 014664  5600          JMP I   F4F2SU
1422
```

```
1423 014665  0000  F42SB1, 0
1424                                          /CONVERT A WORD OF
PACKED
1425 014666  1046          TAD     TEMP1      /6 BIT ASCII TO 2
WORDS
1426 014667  0370          AND     (77        /OF ASCII
1427 014670  4301          JMS     F42SB2
1428 014671  3047          DCA     TEMP2
1429 014672  1046          TAD     TEMP1
1430 014673  7012          RTR
1431 014674  7012          RTR
1432 014675  7012          RTR
1433 014676  0370          AND     (77
1434 014677  4301          JMS     F42SB2
1435                                          /RETURN WITH LEFT 6
BIT VALUE
1436 014700  5665          JMP I   F42SB1     /IN AC.
1437
1438 014701  0000  F42SB2, 0                  /CONVERT STRIPPED
ASCII TO
1439 014702  1367          TAD     (-40       /ASCII
1440 014703  7510          SPA
1441 014704  1366          TAD     (100
1442 014705  1365          TAD     (240
1443 014706  5701          JMP I   F42SB2
1444
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1445 014765  0240  PAGE
     014766  0100
     014767  7740
     014770  0077
     014771  5032
     014772  7774
     014773  0200
     014774  0177
     014775  7600
     014776  4000
     014777  4472
1446 015000  0000  F4DSU,  0                        /SUBROUTINE TO
CONVERT FORTRAN
1447 015001  7300          CLA CLL                  /4 TO DOUBLE
PRECISION
1448 015002  3046          DCA TEMP1
1449 015003  1037          TAD     CONINP+1         /TEST FOR NEGATIVE
NUMBER.
1450 015004  7700          SMA CLA
1451 015005  5207          JMP     F4DSU1
1452 015006  2046          ISZ TEMP1
1453
1454 015007  1036  F4DSU1, TAD     CONINP           /ROTATE BITS TO
FIXED POINT.
1455 015010  1377          TAD     (-27
1456 015011  3036          DCA     CONINP
1457
1458 015012  1046  F4DSU2, TAD TEMP1       /CARRY SIGN FOR NEG #S.
1459 015013  7010          RAR
1460 015014  7200          CLA
1461 015015  1037          TAD CONINP+1
1462 015016  7010          RAR
1463 015017  3037          DCA     CONINP+1
1464 015020  1040          TAD     CONINP+2
1465 015021  7010          RAR
1466 015022  3040          DCA     CONINP+2
1467 015023  2036          ISZ     CONINP
1468 015024  5212          JMP     F4DSU2
1469
1470 015025  1037          TAD     CONINP+1         /STORE IN DOUBLE
PRECISION WORDS
1471 015026  3036          DCA     CONINP
1472 015027  1040          TAD     CONINP+2
1473 015030  3037          DCA     CONINP+1
1474
1475 015031  5600          JMP I   F4DSU
1476
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1477 015032  0000  PACK32, 0
1478 015033  1036          TAD     CONINP          /CONVERT F2
FLOATING TO
1479 015034  3046          DCA     TEMP1           /PS-8 ASCII FORMAT.
1480 015035  4776          JMS     F42SB1
1481 015036  3036          DCA     CONINP          /MUST TAKE 3 WORDS
OF PACKED
1482 015037  1037          TAD     CONINP+1        /6 BIT ASCII AND
1483 015040  3046          DCA     TEMP1           /CONVERT TO 4 WORDS
OF
1484 015041  1047          TAD     TEMP2           /PS-8 3/2 PACKING.
1485 015042  3037          DCA     CONINP+1
1486 015043  4776          JMS F42SB1
1487 015044  7106          CLL RTL
1488 015045  7006          RTL
1489
1490 015046  3046          DCA     TEMP1
1491 015047  1046          TAD     TEMP1
1492 015050  0375          AND     (7400
1493 015051  1036          TAD     CONINP
1494 015052  3036          DCA     CONINP
1495 015053  1046          TAD     TEMP1
1496 015054  7106          CLL RTL
1497 015055  7006          RTL
1498 015056  0375          AND     (7400
1499 015057  1037          TAD     CONINP+1
1500 015060  3037          DCA     CONINP+1        /OUTPUT WORDS 1 & 2
DONE.
1501 015061  1040          TAD     CONINP+2        /DO 2ND 2 WORDS
1502 015062  3046          DCA     TEMP1
1503 015063  1047          TAD     TEMP2
1504 015064  3040          DCA     CONINP+2
1505 015065  4776          JMS     F42SB1
1506 015066  3041          DCA     CONINP+3
1507 015067  1047          TAD     TEMP2
1508 015070  7106          CLL RTL
1509 015071  7006          RTL
1510 015072  0375          AND     (7400
1511 015073  1040          TAD     CONINP+2
1512 015074  3040          DCA     CONINP+2
1513 015075  1047          TAD     TEMP2
1514 015076  7112          CLL RTR
1515 015077  7012          RTR
1516 015100  7010          RAR
1517 015101  0375          AND     (7400
1518 015102  1041          TAD     CONINP+3
1519 015103  3041          DCA     CONINP+3
1520
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1521 015104  5632          JMP I   PACK32          /EXIT
1522
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1523 015175  7400  PAGE
     015176  4665
     015177  7751
1524 015200  0000  SDSUB,  0                       /CONVERT SINGLE TO
DOUBLE
1525 015201  1036          TAD     CONINP
1526 015202  3037          DCA     CONINP+1
1527 015203  1076          TAD SIDOFG      /TEST IF 12 BIT WORD IS POS
0-4095.
1528 015204  7640          SZA CLA
1529 015205  5211          JMP SDSU1
1530 015206  1036          TAD CONINP      /TEST FOR NEG.
1531 015207  7710          SPA CLA
1532 015210  7040          CMA
1533 015211  3036  SDSU1,  DCA     CONINP
1534 015212  5600          JMP I   SDSUB
1535
1536 015213  0000  DSSUB,  0                       /CONVERT DOUBLE TO
SINGLE
1537 015214  1037          TAD     CONINP+1
1538 015215  3036          DCA     CONINP
1539 015216  5613          JMP I   DSSUB
1540
1541 015217  0000  DF4SUB, 0                       /CONVERT DOUBLE TO
F4.
1542
1543 015220  3047          DCA     TEMP2
1544 015221  1036          TAD     CONINP          /TO RIGHT.
1545 015222  7500          SMA                     /TEST FOR NEGATIVE.
1546 015223  5235          JMP     DF4S1
1547 015224  7040          CMA                     /SET POSITIVE
1548 015225  3036          DCA     CONINP
1549 015226  2047          ISZ TEMP2       /SET NEG # FLAG.
1550 015227  7100          CLL
1551 015230  1037          TAD     CONINP+1
1552 015231  7041          CIA
1553 015232  3037          DCA CONINP+1
1554 015233  7430          SZL
1555 015234  2036          ISZ     CONINP
1556 015235  7300  DF4S1,  CLL CLA
1557 015236  1037          TAD CONINP+1    /CHECK FOR 0 VALUE,AND
1558 015237  7440          SZA                     /MOVE MANTISSA
DOWN.
1559 015240  5246          JMP     DF4S2
1560 015241  1036          TAD     CONINP
1561 015242  7640          SZA CLA
1562 015243  5246          JMP     DF4S2
1563 015244  3040          DCA     CONINP+2
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1564 015245  5617          JMP I   DF4SUB
1565 015246  3040  DF4S2,  DCA     CONINP+2
1566 015247  1036          TAD     CONINP
1567 015250  3037          DCA     CONINP+1
1568 015251  1377          TAD     (27
1569 015252  3036          DCA     CONINP
1570 015253  1037  DF4S3,  TAD     CONINP+1        /SHIFT DECIMAL
POINT AND
1571 015254  0376          AND     (2000           /CHANGE EXPONENT
1572 015255  7640          SZA CLA
1573 015256  5271          JMP     DF4S4           /DONE WHEN BIT 1
SET
1574 015257  1040          TAD     CONINP+2
1575 015260  7104          CLL RAL
1576 015261  3040          DCA     CONINP+2
1577 015262  1037          TAD     CONINP+1
1578 015263  7004          RAL
1579 015264  3037          DCA     CONINP+1
1580 015265  7040          CMA                     /REDUCE EXPONENT
1581 015266  1036          TAD     CONINP
1582 015267  3036          DCA     CONINP
1583 015270  5253          JMP     DF4S3
1584
1585 015271  1047  DF4S4,  TAD     TEMP2           /SET SIGN
1586 015272  7640          SZA CLA         /TEST FOR NEG #.
1587 015273  4775          JMS F4COM
1588
1589 015274  5617          JMP I   DF4SUB
1590
```

```
1591 015275  0000  F2F4SU, 0                        /CONVERT F2 FORMAT
TO F4
1592                                                /FLOATING. F2 MUST
HAVE BEEN
1593 015276  1374          TAD     (-4             /WRITTEN IN A6
FORMAT. AND
1594 015277  3046          DCA     TEMP1           /UPACKED TO 3 WORDS
IN THE
1595                                                /CALLING ROUTINE.
1596 015300  3047          DCA     TEMP2
1597 015301  1036          TAD     CONINP          /SAVE SIGN OF
NUMBER
1598 015302  7710          SPA CLA
1599 015303  2047          ISZ TEMP2
1600 015304  1036          TAD     CONINP          /SAVE EXPONENT
1601 015305  0373          AND     (3770
1602 015306  3050          DCA     TEMP3
1603 015307  1036          TAD     CONINP          /KEEP ONLY MANTISSA
NOW
1604 015310  0372          AND     (7
1605 015311  3036          DCA     CONINP
1606
1607 015312  1036  F24SU1, TAD     CONINP          /SHIFT FROM 27 BIT
MANTISSA
1608 015313  7110          CLL RAR                 /TO 23 BIT MANTISSA
1609 015314  3036          DCA     CONINP
1610 015315  1037          TAD     CONINP+1
1611 015316  7010          RAR
1612 015317  3037          DCA     CONINP+1
1613 015320  1040          TAD     CONINP+2
1614 015321  7010          RAR
1615 015322  3040          DCA     CONINP+2
1616 015323  2046          ISZ     TEMP1
1617 015324  5312          JMP     F24SU1
1618 015325  1037          TAD     CONINP+1        /TEST FOR 0
1619 015326  7640          SZA CLA                 /MATISSA
1620 015327  5333          JMP     F24SU2
1621 015330  1040          TAD     CONINP+2
1622 015331  7650          SNA CLA
1623 015332  5342          JMP     F24SU3
1624
1625 015333  1047  F24SU2, TAD TEMP2       /SET VALUE NEG IF ENTERED
SO.
1626 015334  7640          SZA CLA
1627 015335  4775          JMS F4COM
1628 015336  1050          TAD     TEMP3           /RESTORE EXPONENT
1629 015337  7112          CLL RTR
1630 015340  7010          RAR
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1631 015341  1371          TAD     (-200           /SUBTRACT 200 AND
STORE
1632 015342  3036  F24SU3, DCA     CONINP
1633 015343  5675          JMP I   F2F4SU
1634
```

1635

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1636 015371  7600  PAGE
     015372  0007
     015373  3770
     015374  7774
     015375  4472
     015376  2000
     015377  0027
1637
1638 015400  0000  UNPACK, 0                        /UNPACK 4 WORDS TO
3
1639 015401  1036         TAD     CONINP           /UNPACK TO 3 WORD
FLOATING
1640 015402  0377         AND     (1400            /POINT
1641 015403  7106         CLL RTL
1642 015404  3046         DCA     TEMP1
1643 015405  1036         TAD     CONINP           /DATA IS INPUT IN
3/2 PS-8
1644 015406  0376         AND     (77              /ASCII PACKING
1645 015407  7106         CLL RTL
1646 015410  7006         RTL
1647 015411  7006         RTL
1648 015412  3036         DCA     CONINP
1649 015413  1037         TAD     CONINP+1
1650 015414  0376         AND     (77
1651 015415  1036         TAD     CONINP
1652 015416  3036         DCA     CONINP
1653 015417  1037         TAD     CONINP+1
1654 015420  0375         AND     (7400
1655 015421  7112         CLL RTR
1656 015422  1046         TAD     TEMP1
1657 015423  3037         DCA     CONINP+1
1658 015424  1040         TAD     CONINP+2
1659 015425  0376         AND     (77
1660 015426  1037         TAD     CONINP+1
1661 015427  3037         DCA     CONINP+1
1662 015430  1040         TAD     CONINP+2
1663 015431  0377         AND     (1400
1664 015432  7112         CLL RTR
1665 015433  7012         RTR
1666 015434  3040         DCA     CONINP+2
1667 015435  1041         TAD     CONINP+3
1668 015436  0375         AND     (7400
1669 015437  7106         CLL RTL
1670 015440  7006         RTL
1671 015441  7004         RAL
1672 015442  1040         TAD     CONINP+2
1673 015443  3040         DCA     CONINP+2
1674 015444  1041         TAD     CONINP+3
```

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1675 015445  0376          AND     (77
1676 015446  7106          CLL RTL
1677 015447  7006          RTL
1678 015450  7006          RTL
1679 015451  1040          TAD     CONINP+2
1680 015452  3040          DCA     CONINP+2
1681 015453  5600          JMP I   UNPACK
1682
1683 015575  7400  PAGE
     015576  0077
     015577  1400
1684
1685 015600  0000  TTYROU, 0       /TELETYPE INPUT SUB.
1686 015601  6031          KSF
1687 015602  5201          JMP .-1
1688 015603  6036          KRB
1689 015604  3220          DCA TTYROS
1690 015605  1220          TAD TTYROS
1691 015606  1377          TAD (-377
1692 015607  7450          SNA
1693 015610  5600          JMP I TTYROU    /RESTART INPUT ON RUBOUT.
1694 015611  1376          TAD (-203+377
1695 015612  7450          SNA
1696 015613  5245          JMP PSOUT       /^C RETURN TO PS8.
1697 015614  1375          TAD (203
1698 015615  4221          JMS PRTCH
1699 015616  1220          TAD TTYROS
1700 015617  5600          JMP I TTYROU
1701 015620  0000  TTYROS, 0
1702
1703 015621  0000
```

```
PRTCH, 0               /SUB TO PRINT CHAR.
1704 015622  6046          TLS
1705 015623  6041          TSF
1706 015624  5223          JMP .-1
1707 015625  7300          CLA CLL
1708 015626  5621          JMP I PRTCH
1709
1710 015627  0000  TTYINP, 0               /SUB TO GET TTY INPUT.
1711 015630  6201          CDF 0
1712 015631  1457          TAD I AVTMP1    /GET TTY INPUT.
1713 015632  2057          ISZ AVTMP1
1714 015633  6211          CDF 10
1715 015634  0374          AND (77
1716 015635  5627          JMP I TTYINP
1717
1718 015636  0000  TTYIN1, 0               /SUB TO SET UP READ OF TTY
INPUT.
1719 015637  1373          TAD (-215
1720 015640  3077          DCA DARDS
1721 015641  4250          JMS DARD        /READ TTY.
1722 015642  1372          TAD (BUFOUT
1723 015643  3057          DCA AVTMP1
1724 015644  5636          JMP I TTYIN1
1725 015645  7300  PSOUT,  CLA CLL
1726 015646  6203          CDF CIF 0
1727 015647  5771          JMP I (7600
1728
1729 015650  0000
```

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DARD,  0              /SUB TO ACCEPT DATA FROM TTY.
1730 015651  1372  DARD1,  TAD (BUFOUT     /SET BUF IN AND COUNT
1731 015652  3057          DCA AVTMP1
1732 015653  1370          TAD (-400
1733 015654  3060          DCA AVTMP2      /UP TO 255 CHAR ACCEPTED.
1734
1735 015655  4200  SWTC10, JMS TTYROU      /GET CHAR
1736 015656  7450          SNA             /TEST FOR RUBOUT
1737 015657  5276          JMP SWITC5
1738 015660  1077          TAD DARDS       /TEST FOR END
1739 015661  7450          SNA
1740 015662  5314          JMP DARD2
1741 015663  7041          CIA
1742 015664  1077          TAD DARDS
1743 015665  7041          CIA
1744 015666  6201          CDF 0
1745 015667  3457          DCA I AVTMP1    /STORE INPUT CHAR.
1746 015670  6211          CDF 10
1747 015671  2057          ISZ AVTMP1
1748 015672  2060          ISZ AVTMP2      /TEST FOR BUFFER FULL
1749 015673  5255          JMP SWTC10
1750 015674  1367          TAD (277        /FULL,PRINT ?
1751 015675  4221          JMS PRTCH
1752
1753 015676  7240  SWITC5, CLA CMA /RUBOUT MOVE BACK A CHAR
1754 015677  1057          TAD AVTMP1
1755 015700  3057          DCA AVTMP1
1756 015701  7040          CMA
1757 015702  1060          TAD AVTMP2
1758 015703  3060          DCA AVTMP2
1759 015704  1372          TAD (BUFOUT     /TEST FOR FRONT OF BLOCK.
1760 015705  7041          CIA
1761 015706  1057          TAD AVTMP1
1762 015707  7710          SPA CLA
1763 015710  5251          JMP DARD1
1764 015711  1366          TAD (334        /OUTPUT A BACK SLASH.
1765 015712  4221          JMS PRTCH
1766 015713  5255          JMP SWTC10
1767
1768 015714  1077  DARD2,  TAD DARDS       /OUTPUT TERMINATOR.
1769 015715  7041          CIA
1770 015716  6201          CDF 0
1771 015717  3457          DCA I AVTMP1
1772 015720  6211          CDF 10
1773 015721  5650          JMP I DARD
1774
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1775 015766  0334  PAGE
     015767  0277
     015770  7400
     015771  7600
     015772  5600
     015773  7563
     015774  0077
     015775  0203
     015776  0174
     015777  7401
1776
1777 016000  4777  SWITC,  JMS SWTCK       /CHECK FOR H SWITCH.
1778 016001  7770         -10
1779 016002  3776         DCA HSCAL
1780
1781 016003  4777         JMS SWTCK       /TEST FOR D SWITCH.
1782 016004  7774         -04
1783 016005  7650         SNA CLA
1784 016006  5220         JMP SWITC2      /NO D.
1785                                      /D SWITCH, DELETE BLOCK 1.
1786 016007  4775         JMS CREAD       /READ IN BLOCK 1
1787 016010  7777         -1
1788 016011  7402         HLT
1789 016012  7240         CLA CMA
1790 016013  3033         DCA READNO      /READ LAST WORD OF BLOCK
1791 016014  4775         JMS CREAD       /NEXT READ IS FROM BLOCK 2.
1792 016015  7777         -1
1793 016016  7402         HLT
1794 016017  5236         JMP SWITC1
1795
1796 016020  4777  SWITC2, JMS SWTCK       /CHECK FOR S SWITCH
1797 016021  7755         -23
1798 016022  7650         SNA CLA
1799 016023  5236         JMP SWITC1      /NO S.
1800 016024  1374         TAD (-100       /SKIP 1 BLOCK.
1801 016025  3057         DCA AVTMP1
1802
1803 016026  4775  SWITC3, JMS CREAD       /TRANSFER BLOCK 1 TO
OUTPUT.
1804 016027  7774         -4
1805 016030  7402         HLT
1806 016031  4773         JMS FILOUT      /4 WORDS AT A TIME.
1807 016032  7774         -4
1808 016033  2057         ISZ AVTMP1
1809 016034  5226         JMP SWITC3
1810 016035  5330         JMP SWITC4
1811
1812 016036  4777  SWITC1, JMS SWTCK       /TEST FOR T SWITCH.
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1813 016037  7754          -24
1814 016040  7650          SNA CLA
1815 016041  5330          JMP SWITC4
1816 016042  4772  SWTC11, JMS CRLF         /T SWITCH.
1817                                        /PUT TITLE IN BLOCK 1.
1818 016043  1371          TAD (TITLE-1
1819 016044  4770          JMS MESPRT      /PRINT MES.'TITLE'.
1820 016045  1367          TAD (-232       /SET INPUT TERMINATOR.
1821 016046  3077          DCA DARDS
1822 016047  4766          JMS DARD        /GET TTY INPUT.
1823 016050  1365          TAD (BUFOUT     /PACK IN PS-8 3-2 PACKING.
1824 016051  3046          DCA TEMP1
1825 016052  1364          TAD (BUFOUT-1
1826 016053  3010          DCA 10
1827 016054  3771          DCA CZCK1       /0 END OF INPUT FLAG.
1828
1829 016055  6201  SWTC12, CDF 0
1830 016056  1410          TAD I 10
1831 016057  4763          JMS CZCK
1832 016060  3446          DCA I TEMP1     /PACK 1 OF 3
1833 016061  2046          ISZ TEMP1
1834 016062  1410          TAD I 10
1835 016063  4763          JMS CZCK
1836 016064  3446          DCA I TEMP1     /PACK 2 OF 3.
1837 016065  7240          CLA CMA         /PACK 3 OF 3
1838 016066  1046          TAD TEMP1
1839 016067  3046          DCA TEMP1
1840 016070  1410          TAD I 10        /GET 3RD CHAR.
1841 016071  4763          JMS CZCK
1842 016072  3047          DCA TEMP2
1843 016073  1047          TAD TEMP2
1844 016074  7106          CLL RTL
1845 016075  7006          RTL
1846 016076  0362          AND (7400       /GET HIGH 4 BITS
1847 016077  1446          TAD I TEMP1
1848 016100  3446          DCA I TEMP1     /STORE IN WORD 1.
1849 016101  2046          ISZ TEMP1
1850 016102  1047          TAD TEMP2       /GET LOW 4 BITS.
1851 016103  7112          CLL RTR
1852 016104  7012          RTR
1853 016105  7010          RAR
1854 016106  0362          AND (7400
1855 016107  1446          TAD I TEMP1
1856 016110  3446          DCA I TEMP1     /STORE IN WORD 2.
1857 016111  2046          ISZ TEMP1
1858 016112  5255          JMP SWTC12
1859
1860 016113  6211  SWTC13, CDF 10
1861 016114  1052          TAD BLKOUT      /WRITE OUT THE TITLE.
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1862 016115  3322          DCA SWTC14
1863 016116  6202          CIF 0
1864 016117  4431          JMS I ENTRYO
1865 016120  4200          4200
1866 016121  5600          BUFOUT
1867 016122  0000  SWTC14, 0
1868 016123  5761          JMP ERRRW
1869 016124  2053          ISZ FILOSZ
1870 016125  7200          CLA
1871 016126  2052          ISZ BLKOUT
1872 016127  7200          CLA
1873
1874 016130  4777  SWITC4, JMS SWTCK       /TEST FOR R SWITCH.
1875 016131  7756          -22
1876 016132  7650          SNA CLA
1877 016133  5760          JMP DHCT14
1878 016134  5757          JMP SWTC30
1879
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1880 016157  6200  PAGE
     016160  2246
     016161  2320
     016162  7400
     016163  6260
     016164  5577
     016165  5600
     016166  5650
     016167  7546
     016170  6400
     016171  6271
     016172  2343
     016173  4000
     016174  7700
     016175  4104
     016176  2526
     016177  6244
1881 016200  1021  SWTC30, TAD INTYP       /TEST IF INPUT CORRECT
1882 016201  1377         TAD (-6         /GOOD FOR ONLY SI,DA AND
DO.
1883 016202  7700         SMA CLA
1884 016203  5776         JMP COMERR
1885 016204  1021         TAD INTYP
1886 016205  1375         TAD (-3
1887 016206  7710         SPA CLA
1888 016207  5776         JMP COMERR
1889 016210  4774  SWTC21, JMS CRLF
1890 016211  1373         TAD (MESS1-1    /PRINT MES. # TO SKIP.
1891 016212  4772         JMS MESPRT
1892 016213  4771         JMS NUMGET      /GET NUMBER +1
1893 016214  0102         CRDSKP          /HIGH ORDER VALUE ADD.
1894 016215  5210         JMP SWTC21
1895 016216  4774  SWTC20, JMS CRLF        /PRINT MES. # TO READ.
1896 016217  1370         TAD (MESS2-1
1897 016220  4772         JMS MESPRT
1898 016221  4771         JMS NUMGET      /GET NUMBER +1
1899 016222  0100         CRDGET          /HIGH ORDER TO STORE ADD.
1900 016223  5216         JMP SWTC20
1901 016224  1021         TAD INTYP       /READ 1 OR 2 WORDS.
1902 016225  1375         TAD (-3         /1 FOR SI ,2 FOR DO.
1903 016226  7650         SNA CLA
1904 016227  7001         IAC
1905 016230  7001         IAC
1906 016231  7041         CIA
1907 016232  3241         DCA SWTC15
1908 016233  2103  SWTC17, ISZ CRDSKP+1    /COUNT # TO SKIP.
1909 016234  5240         JMP SWTC16      /COUNT DOUBLE PRE.
1910 016235  2102         ISZ CRDSKP
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1911 016236  5240          JMP SWTC16
1912 016237  5767          JMP DHCT14      /DONE SKIPPING.
1913 016240  4766  SWTC16, JMS CREAD       /READ 1 OR 2 WORDS AT A
TIME.
1914 016241  0000  SWTC15, 0
1915 016242  5776          JMP COMERR
1916 016243  5233          JMP SWTC17
1917
1918 016244  0000  SWTCK,  0               /SUB TO TEST FOR SWITCH.
1919 016245  1365          TAD (SWITCH-1
1920 016246  3010          DCA 10
1921 016247  1410  SWTCK1, TAD I 10        /GET VALUE IN INPUT SWITCH
TABLE.
1922 016250  7450          SNA             /TEST FOR END.
1923 016251  5256          JMP SWTCK2      /0,NO MATCH.
1924 016252  1644          TAD I SWTCK     /GET VALUE TO SEARCH FOR.
1925 016253  7640          SZA CLA
1926 016254  5247          JMP SWTCK1
1927 016255  7001          IAC             /RETURN 1 IF FOUND.
1928 016256  2244  SWTCK2, ISZ SWTCK       /RETURN AC=0 IF NOT FOUND.
1929 016257  5644          JMP I SWTCK
1930
1931
1932 016260  0000  CZCK,   0               /SUB TO TEST FOR END OF
TITLE.
1933 016261  1271          TAD CZCK1       /TEST IF DONE.
1934 016262  7640          SZA CLA
1935 016263  5764          JMP SWTC13
1936 016264  1363          TAD (-232
1937 016265  7450          SNA
1938 016266  2271          ISZ CZCK1       /SET DONE FLAG ON CNTR.Z.
1939 016267  1362          TAD (232
1940 016270  5660          JMP I CZCK
1941 016271  0000  CZCK1,  0
1942
1943
1944 016272  0311  TITLE,  311             /ID=
1945 016273  0304          304
1946 016274  0275          275
1947 016275  0000          0
1948
1949 016276  0323  MESS1,  323             /SKIP #=
1950 016277  0313          313
1951 016300  0311          311
1952 016301  0320          320
1953 016302  0240          240
1954 016303  0243          243
1955 016304  0275          275
1956 016305  0000          0
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1957
1958 016306  0322  MESS2,  322             /READ #=
1959 016307  0305          305
1960 016310  0301          301
1961 016311  0304          304
1962 016312  0240          240
1963 016313  0243          243
1964 016314  0275          275
1965 016315  0000          0
1966
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1967 016362  0232  PAGE
     016363  7546
     016364  6113
     016365  0021
     016366  4104
     016367  2246
     016370  6305
     016371  6407
     016372  6400
     016373  6275
     016374  2343
     016375  7775
     016376  2317
     016377  7772
1968
1969 016400  0000  MESPRT, 0               /SUBROUTINE TO PRINT A
MESSAGE.
1970 016401  3010          DCA 10
1971 016402  1410  MESPT1, TAD I 10
1972 016403  7450          SNA             /TEST FOR END,0.
1973 016404  5600          JMP I MESPRT
1974 016405  4777          JMS PRTCH
1975 016406  5202          JMP MESPT1
1976
1977 016407  0000  NUMGET, 0               /SUB. TO GET INPUT NUMBER.
1978 016410  1607          TAD I NUMGET
1979 016411  3314          DCA NUMGT1      /HIGH ORDER ADD.
1980 016412  2207          ISZ NUMGET
1981 016413  3714          DCA I NUMGT1    /0 VALUE.
1982 016414  1314          TAD NUMGT1      /GET LOW ORDER ADD.
1983 016415  7001          IAC
1984 016416  3315          DCA NUMGT2
1985 016417  3715          DCA I NUMGT2    /0 VALUE.
1986 016420  1376          TAD (-215       /SET INPUT TERMINATOR.
1987 016421  3077          DCA DARDS
1988 016422  4775          JMS DARD        /READ TTY INPUT.
1989 016423  1374          TAD (BUFOUT
1990 016424  3316          DCA NUMGT3
1991
1992 016425  6201  NUMG2,  CDF 0
1993 016426  1716          TAD I NUMGT3    /READ 8 BIT ASCII.
1994 016427  6211          CDF 10
1995 016430  1376          TAD (-215       /TEST FOR END OF INPUT.
1996 016431  7650          SNA CLA
1997 016432  5303          JMP NUMG3
1998 016433  6201          CDF 0
1999 016434  1716          TAD I NUMGT3    /TEST FOR A NUMBER.
2000 016435  6211          CDF 10
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2001 016436  1373          TAD (-260
2002 016437  7710          SPA CLA
2003 016440  5607          JMP I NUMGET    /COMMAND ERROR.
2004 016441  6201          CDF 0
2005 016442  1716          TAD I NUMGT3
2006 016443  6211          CDF 10
2007 016444  1372          TAD (-272
2008 016445  7700          SMA CLA
2009 016446  5607          JMP I NUMGET    /ERROR.
2010 016447  1714          TAD I NUMGT1    /SACE VALUE SO FAR.
2011 016450  3317          DCA NUMGT4
2012 016451  1715          TAD I NUMGT2
2013 016452  3320          DCA NUMGT5
2014 016453  1371          TAD (-11        /MULTIPLY CURRENT VALUE BY
10.
2015 016454  3046          DCA TEMP1
2016 016455  7100  NUMG1,  CLL
2017 016456  1320          TAD NUMGT5
2018 016457  1715          TAD I NUMGT2
2019 016460  3715          DCA I NUMGT2
2020 016461  7430          SZL             /TEST FOR CARRY.
2021 016462  7001          IAC
2022 016463  1317          TAD NUMGT4
2023 016464  1714          TAD I NUMGT1
2024 016465  3714          DCA I NUMGT1
2025 016466  2046          ISZ TEMP1
2026 016467  5255          JMP NUMG1
2027 016470  6201          CDF 0           /ADD NEW DIGIT.
2028 016471  1716          TAD I NUMGT3
2029 016472  6211          CDF 10
2030 016473  1373          TAD (-260
2031 016474  7100          CLL
2032 016475  1715          TAD I NUMGT2
2033 016476  3715          DCA I NUMGT2    /STORE LOW ORDER.
2034 016477  7430          SZL
2035                                        /TEST FOR CARRY.
2036 016500  2714          ISZ I NUMGT1
2037 016501  2316          ISZ NUMGT3
2038 016502  5225          JMP NUMG2
2039 016503  7300  NUMG3,  CLL CLA         /MAKE NUMBER #+1
2040 016504  1715          TAD I NUMGT2
2041 016505  7040          CMA             /AND NEGATIVE.
2042 016506  3715          DCA I NUMGT2
2043 016507  1714          TAD I NUMGT1
2044 016510  7040          CMA
2045 016511  3714          DCA I NUMGT1
2046 016512  2207          ISZ NUMGET
2047 016513  5607          JMP I NUMGET
2048 016514  0000  NUMGT1, 0               /HIGH ORDER ADD
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2049 016515  0000  NUMGT2, 0              /LOW ORDER ADD.
2050 016516  0000  NUMGT3, 0
2051 016517  0000  NUMGT4, 0
2052 016520  0000  NUMGT5, 0
2053
2054 016521  0004  HICOD,  4
2055 016522  0003          3
2056 016523  0002          2
2057 016524  0001          1
2058 016525  0001          1
2059 016526  0015          15
2060 016527  0000  F4COD,  0
2061 016530  0014          14
2062 016531  0017          17
2063 016532  0016          16
2064 016533  0016          16
2065 016534  0000          0
2066
2067
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2068 016571  7767  PAGE
     016572  7506
     016573  7520
     016574  5600
     016575  5650
     016576  7563
     016577  5621
2069
2070 016600  1377  CO,     TAD (HICOD-1    /SET CONVERT TYPE.
2071 016601  4776          JMS SETCON
2072 016602  4775          JMS CREAD       /READ BLOCK 1.
2073 016603  7777          -1
2074 016604  7402          HLT
2075 016605  6201          CDF 0
2076 016606  1774          TAD I   (BUFIN+23       /GET AUTO FLAG.
2077 016607  3036          DCA CONINP
2078 016610  1773          TAD I (BUFIN+21 /GET RATE.
2079 016611  7041          CIA
2080 016612  3037          DCA CONINP+1
2081 016613  1772          TAD I (BUFIN+20 /GET # OF POINTS.
2082 016614  3040          DCA CONINP+2
2083 016615  1040          TAD CONINP+2
2084 016616  7041          CIA
2085 016617  3057          DCA AVTMP1      /SAVE # OF POINTS.
2086 016620  6211          CDF 10
2087 016621  4771          JMS HI6TST      /OUTPUT DATA.
2088 016622  7040          CMA
2089 016623  1057          TAD AVTMP1
2090 016624  3061          DCA AVTMP3
2091 016625  6201          CDF 0
2092 016626  1770          TAD I (BUFIN+74 /GET HIGH ORDER SWEEP.
2093 016627  3036          DCA CONINP
2094 016630  1767          TAD I (BUFIN+75 /LOW ORDER SWEEP.
2095 016631  3037          DCA CONINP+1
2096 016632  6211          CDF 10
2097 016633  1020          TAD OUTTYP      /TEST F2 SING. PRE.
2098 016634  1366          TAD (-6
2099 016635  7640          SZA CLA
2100 016636  5241          JMP CO1 /NO
2101 016637  4771          JMS HI6TST      /OUTPUT F2S FORMAT
2102 016640  5252          JMP CO2
2103 016641  1365  CO1,    TAD (DOCOD-1    /SET CONVERT TYPE DO IN.
2104 016642  4776          JMS SETCON
2105 016643  4764          JMS CONVRT      /OUTPUT SWEEP COUNT.
2106 016644  6201          CDF 0
2107 016645  1770          TAD I (BUFIN+74
2108 016646  6211          CDF 10
2109 016647  3037          DCA CONINP+1    /MOVE HIGH ORDER FOR SI
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OUTPUT.
2110 016650  4764          JMS CONVRT
2111 016651  4764          JMS CONVRT      /OUTPUT 2 DUMMY NUMBERS.
2112
2113 016652  7040  CO2,    CMA             /SET TO READ NEXT BLOCK.
2114 016653  3033          DCA READNO
2115 016654  4775          JMS CREAD
2116 016655  7777          -1
2117 016656  7402          HLT
2118 016657  4775  CO3,    JMS CREAD       /SKIP POINTS IN TEMP BUFFER
2119 016660  7777          -1
2120 016661  7402          HLT
2121 016662  2061          ISZ AVTMP3
2122 016663  5257          JMP CO3
2123 016664  1365          TAD (DOCOD-1    /SEND DO INPUT TO CONVRT.
2124 016665  4776          JMS SETCON
2125 016666  1020          TAD OUTTYP      /TEST FOR FS
2126 016667  1366          TAD (-6
2127 016670  7650          SNA CLA
2128 016671  5302          JMP CO4
2129 016672  4775  CO5,    JMS CREAD       /READ DATA AND CONVERT.
2130 016673  7776          -2
2131 016674  5763          JMP FILDON
2132 016675  4764          JMS CONVRT
2133 016676  2057          ISZ AVTMP1
2134 016677  5272          JMP CO5
2135 016700  5763          JMP FILDON      /FILE DONE ON COUNT.
2136 016701  3057  CO7,    DCA AVTMP1
2137 016702  4775  CO4,    JMS CREAD       /OUTPUT FS ,READ 3 DOUBLE
PRE.
2138 016703  7772          -6              /AT A TIME.
2139 016704  7200          CLA             /DON'T HALT IF END OF FILE
READ.
2140 016705  1037          TAD CONINP+1    /CHANGE DOUBLE TO SING.
PRE.
2141 016706  3036          DCA CONINP
2142 016707  1041          TAD CONINP+3
2143 016710  3037          DCA CONINP+1
2144 016711  1043          TAD CONINP+5
2145 016712  3040          DCA CONINP+2
2146 016713  4764          JMS CONVRT
2147 016714  7346          SETM3           /TEST IF ALL POINTS DONE.
2148 016715  1057          TAD AVTMP1
2149 016716  7510          SPA
2150 016717  5301          JMP CO7         /NO
2151 016720  7200          CLA
2152 016721  5763          JMP FILDON
2153
2154 016722  0004  FSCOD,  4
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2155 016723  0000          0
2156 016724  0002          2
2157 016725  0001          1
2158 016726  0001          1
2159 016727  0000          0
2160
2161
2162
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2163 016763  2275  PAGE
     016764  4400
     016765  3656
     016766  7772
     016767  6275
     016770  6274
     016771  2502
     016772  6220
     016773  6221
     016774  6223
     016775  4104
     016776  3746
     016777  6520
2164 017000  4777  SWITVA, JMS SWTCK       /TEST THE SWITCHES,1ST H.
2165 017001  7770          -10
2166 017002  7650          SNA CLA
2167 017003  5210          JMP SWTV1
2168 017004  1021          TAD INTYP       /GOOD ONLY WITH H INPUT.
2169 017005  1376          TAD (-7
2170 017006  7640          SZA CLA
2171 017007  5775          JMP COMERR
2172 017010  4777  SWTV1,  JMS SWTCK       /TEST D .
2173 017011  7774          -04
2174 017012  7650          SNA CLA
2175 017013  5221          JMP SWTV2
2176 017014  4777          JMS SWTCK       /S CAN'T BE ON.
2177 017015  7755          -23
2178 017016  7650          SNA CLA
2179 017017  5231          JMP SWTV3
2180 017020  5775          JMP COMERR
2181 017021  4777  SWTV2,  JMS SWTCK       /TEST FOR S
2182 017022  7755          -23
2183 017023  7650          SNA CLA
2184 017024  5774          JMP SWITC
2185 017025  4777          JMS SWTCK       /T CAN'T BE ON
2186 017026  7754          -24
2187 017027  7640          SZA CLA
2188 017030  5775          JMP COMERR
2189 017031  1021  SWTV3,  TAD INTYP       /INPUT CAN'T BE HI,CO,OR
AV.
2190 017032  1376          TAD (-7
2191 017033  7700          SMA CLA
2192 017034  5775          JMP COMERR
2193 017035  5774          JMP SWITC
2194
2195 017174  6000          $
     017175  2317
     017176  7771
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017177 6244

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AV      2600
AV1     2616
AV10    3235
AV12    3106
AV13    3433
AV14    3260
AV15    3254
AV16    3416 unreferenced
AV17    3317
AV18    3326
AV19    3410
AV2     2631
AV20    3431
AV21    2632
AV22    3441
AV23    3450
AV24    3400
AV25    3402
AV26    3302
AV27    3310
AV28    3315
AV29    3401
AV3     3002
AV31    2712
AV32    2742
AV33    2751
AV4     3000
AV6     3067
AV7     3027
AV8     3120
AVBACT  0063
AVCOD1  3542
AVDALK  0070
AVDATY  0071
AVDQA   3200
AVDQBS  0073
AVDQFG  0067
AVDQLS  0074 unreferenced
AVDTYV  0072
AVF2BP  3514
AVF2BU  3510
AVF2CT  3513
AVF2EN  4100
AVF2S1  3473
AVF2SP  0075
AVF2SU  3463
AVHBBA  0055
AVHBBC  0056
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AVHBKA  0054
AVLACT  0064
AVRJL1  3526
AVRJL2  3535
AVRJLS  3515
AVSTOU  3451
AVSTU2  3461
AVTMP1  0057
AVTMP2  0060
AVTMP3  0061
AVTMP4  0062
BLKIN   0051
BLKISZ  0045
BLKOSZ  0044
BLKOUT  0052
BUFIN   6200
BUFJOB  5200
BUFOUT  5600
CO      6600
CO1     6641
CO2     6652
CO3     6657
CO4     6702
CO5     6672
CO7     6701
COMERR  2317
COMLST  2264
CON1    2107
CON2    2076
CON3    2062
CON4    2120
CON5    2124
CON6    2135
CONINP  0036
CONJPL  4405
CONVRT  4400
CONVTY  0035
CR1     4135
CR2     4142 unreferenced
CR3     4120 unreferenced
CR4     4150
CR5     4112
CRBLK   4126
CRBUF   4154
CRBUFP  4125
CRDGET  0100
CRDSKP  0102
CREAD   4104
CRLF    2343
```

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CZCK    6260
CZCK1   6271
DARD    5650
DARD1   5651
DARD2   5714
DARDS   0077
DD      4431
DF2     4435
DF4     4443
DF4S1   5235
DF4S2   5246
DF4S3   5253
DF4S4   5271
DF4SUB  5217
DHCT10  2237
DHCT11  2235
DHCT12  2212 unreferenced
DHCT13  2200
DHCT14  2246
DHCT4   2024
DHCT5   2036
DHCT6   2045
DHCT7   2046
DO      3600
DO1     3615
DO2     3606
DO3     3621
DO4     3643
DOCNO   3665
DOCNO1  3673
DOCOD   3657
DOSTR   3654
DOV1    3652
DOV2    3653
DS      4447
DSSUB   5213
ENTRYI  0030
ENTRYO  0031
ERR     2322
ERRM    2326
ERRRW   2320
F2      2537
F24SU1  5312
F24SU2  5333
F24SU3  5342
F2A     2542
F2D     4455
F2F4    4460
F2F4SU  5275
```

```
F2S     4451
F2TAD   2547
F3OUT   4444
F4      3675
F42SB1  4665
F42SB2  4701
F42U1   4620
F42U2   4627
F42U3   4630
F42U4   4642
F42U5   4626
F42U6   4640
F42U7   4662
F42U8   4610
F4A     3677
F4COD   6527
F4COM   4472
F4D     4470
F4DSU   5000
F4DSU1  5007
F4DSU2  5012
F4F2    4436
F4F2SU  4600
F4S     4466
FIL1    4025
FIL2    4012
FIL3    4074
FIL4    4060
FIL5    4051
FIL7    4045
FIL8    4036
FIL9    4007
FILADD  4066
FILD1   2302
FILD2   2313
FILDON  2275
FILESZ  0032
FILOSZ  0053
FILOUT  4000
FIOBFS  0066
FIOBUF  0065
FS      2527
FS1     2532
FSCOD   6722
HI      2400
HI1     2463
HI2     2500
HI3     2453
HI6T1   2511
```

```
HI6T2   2507
HI6TST  2502
HI6TT1  2524
HI6TT2  2525
HICOD   6521
HSCAL   2526
INTYP   0021
JMPLST  2253 unreferenced
JMPTYP  2252
MESPRT  6400
MESPT1  6402
MESS1   6276
MESS2   6306
NOROOM  2321
NUMG1   6455
NUMG2   6425
NUMG3   6503
NUMGET  6407
NUMGT1  6514
NUMGT2  6515
NUMGT3  6516
NUMGT4  6517
NUMGT5  6520
OUTTYP  0020
PACK32  5032
PRTCH   5621
PSOUT   5645
READNO  0033
REDS1   3717
REDS2   3740
REDS3   3721
REDS4   3726
REDSF   0104
REDSU2  3704
SD      4430
SDSU1   5211
SDSUB   5200
SET1    7301 unreferenced
SET2    7305 unreferenced
SET3    7325
SET4    7307 unreferenced
SET6    7327 unreferenced
SETCON  3746
SETM2   7344
SETM3   7346
SF2     4434
SF2S    4462
SF4     4442
SI      2327
```

```
SI1     2332
SICOD   2335
SIDOFG  0076
SS      4425
START   2000
SWITC   6000
SWITC1  6036
SWITC2  6020
SWITC3  6026
SWITC4  6130
SWITC5  5676
SWITCH  0022
SWITVA  7000
SWTC10  5655
SWTC11  6042 unreferenced
SWTC12  6055
SWTC13  6113
SWTC14  6122
SWTC15  6241
SWTC16  6240
SWTC17  6233
SWTC20  6216
SWTC21  6210
SWTC30  6200
SWTCK   6244
SWTCK1  6247
SWTCK2  6256
SWTV1   7010
SWTV2   7021
SWTV3   7031
TEMP1   0046
TEMP2   0047
TEMP3   0050
TITLE   6272
TTYIN1  5636
TTYINP  5627
TTYROS  5620
TTYROU  5600
UNP1    4223
UNP2    4255
UNP4    4307
UNP5    4323
UNP6    4330
UNP7    4207
UNP8    4300
UNPACK  5400
UNPBF2  4332
UNPBUF  4342
UNPCT   4336
```

```
UNPK32  4200
UNPT1   4337
UNPT2   4340
UNPT3   4335
UNPT4   4341
WRITNO  0034
```