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*****                                        *****
*****  DARTMOUTH TIME--SHARING SYSTEM        *****
*****   DATANET-30 EXECUTIVE PROGRAM         *****
*****     AUTHOR--MICHAEL D. BUSCH           *****
*****                                        *****


PHASE FOUR--FORTY TELETYPES
        --NEW COMMUNICATIONS
        --LINE DISCIPLINE
UPDATED OCT. 5, 1965 - 4PM - [RMM]


***************  MEMORY MAP  ***************
--LOCATIONS--       -----------USE------------

    0    377        COMMON CONSTS + LINKAGES
  400    477        64-WD REGION SAVED ON DSU
  500    577        64-WORD DISK BUFFER
  600    777        ***** NOT USED *****
 1000   6777        CHANNEL TABLES
 7000   7777        TABLES
10000  13777        REAL-TIME CODING
14000  21777        SPARE-TIME CODING
22000  23777        DISK BUFFER
24000  37777        BUFFERS [LAST ONE MUST NOT
                    BE USED]
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         00000          ORG 0
00000   000000          IND 0                INTERRUPT LINK
00001   010000          IND INTER
00002   000000          OCT 0
00003   000000          OCT 0                CONTROLLER SELECTOR CONTROL WORDS
00004   000000          OCT 0
00005   000000          OCT 0


                                          COMMON BANK CONSTANTS
00006   000001  ONE     OCT 1
00007   777777  MONE    OCT 777777
00010   000002  TWO     OCT 2
00011   777776  MTWO    OCT 777776
00012   000003  THREE   OCT 3
00013   000004  FOUR    OCT 4
00014   000005  FIVE    OCT 5
00015   777773  MFIVE   OCT 777773
00016   000006  SIX     OCT 6
00017   000007  SEVEN   OCT 7
00020   777771  MSEVEN  OCT 777771
00021   000010  EIGHT   OCT 10
00022   000011  NINE    OCT 11
00023   000100  STAT2   OCT 100
00024   000200  STAT4   OCT 200
00025   000300  STAT6   OCT 300
00026   777600  OM200   OCT 777600
00027   777500  OM300   OCT 777500
00030   777502  OM276   OCT 777502
00031   777700  IMSK12  OCT 777700
00032   000077  M77     OCT 77
00033   007777  M7777   OCT 7777
00034   000060  SIXTY   OCT 60
00035   600000  IZONE   OCT 600000
00036   510100  CRAW2   OCT 510100
00037   000000  PREPOS  OCT 0                DISK ADDRESS FOR -SDSKR- GOES HERE
00040   013116  START   DEC TTABLE
00041   013770  STERM   DEC ETABLE
00042   252431  EDI     ALF EDI



                                          SPARE-TIME TASK LIST POINTERS
00043   013116  N       IND TTABLE           POINTS TO MOST RECENTLY INSERTED TASK IN LIST
00044   013116  C       IND TTABLE           POINTS TO TASK IN LIST CURRENTLY BEING DONE



                                          COMMON BANK FLAGS
00045   000000  DKFLG1  OCT 0                SPARE-TIME DISK PROTECT FLAG
00046   000000  DKFLG2  OCT 0                235 PRIORITY DISK FLAG
00047   000000  DUMFL   OCT 0                FLAG INDICATES THAT THE 235 IS IN THE PROCESS
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00050   000000   STOPF   OCT 0          OF DUMPING THE CURRENT PROBLEM                          00086
00051   777777   RFLAG   OCT 777777           FLAG TO SUPRESS COUNTING OF RUNNING TIME        00087
00052   000000   PARAF   OCT 0                FLAG ELIMINATES REDUNDANT DISK RELINQUISHES     00088
                                                FLAG INDICATES NUMBER OF DIGITS IN AN OCTAL   00089
00053   000000   KLISTF  OCT 0          PARAMETER                                               00090
00054   000000   BFLAG   OCT 0                DISK READ/WRITE AREA PROTECT                    00091
00055   000000   WSVCF   OCT 0                FLAG TO SUPRESS CIU CYCLES DURING BOOTSTRAP     00092
00056   000000   WTTYF   OCT 0                SPECIAL SERVICE FLAG (1=WARN, 2=DIAL, 3=MON)    00093
00057   000001   SPROB   OCT 1                FLAG SAYS WHICH TTY IS BEING SP SERVICED        00094
00060   000000   RTIME   OCT 0                POINTS TO TELETYPE CURRENTLY RUNNING IN 235     00095
00061   000000           OCT 0                REAL TIME FROM 235                              00096
00062   000000   MINDON  OCT 0                                                                00097
00063   777742   LSCUT   DEC -30              STORE FOR THE MINIMUM VALUE OF $DONE            00098
                                              LONG-SHORT CUTOFF FOR PROGRAM RUNS              00099
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                                        WHICH ALLOW THEM TO BE CALLED FROM                  00102
                                        ANY BANK                                            00103
                                                                                            00104
                                                                                            00105
00064   014000   STEXEC IND STEX1        TERMINAL EXIT TO SPARE-TIME EXECUTIVE LOOP          00106
00065   014001   STING  IND STING1       NO-GO EXIT TO SPARE-TIME EXECUTIVE LOOP            00107
00066   000000   BETA   IND 0            INSERT IN TASK LIST FROM SPARE TIME                00108
00067   014014          IND BETA1                                                           00109
00070   000000   BOOTA  IND 0            BOOTSTRAP ROUTINE--PART 1                          00110
00071   020340          IND BOOTA1                                                          00111
00072   000000   BOOTB  IND 0            BOOTSTRAP ROUTINE--PART 2                          00112
00073   020415          IND BOOTB1                                                          00113
00074   000000   BOOTC  IND 0            BOOTSTRAP ROUTINE--MACHINE INITIATED ENTRY         00114
00075   020466          IND BOOTC1                                                          00115
00076   000000   CATA   IND 0            CATALOG ROUTINE--PART 1                            00116
00077   016034          IND CATA1                                                           00117
00100   000000   CATB   IND 0            CATALOG ROUTINE--PART 2                            00118
00101   016265          IND CATB1                                                           00119
00102   000000   CATC   IND 0                                                               00120
00103   016250          IND CATC1                                                           00121
00104   000000   CDIV   IND 0            DIVIDE ROUTINE                                     00122
00105   015016          IND CDIV1                                                           00123
00106   000000   CIUR   IND 0            C.I.U. RECEIVE SUBROUTINE                          00124
00107   013000          IND CIUR1                                                           00125
00110   000000   CIUX   IND 0            C.I.U. TRANSMIT SUBROUTINE                         00126
00111   013003          IND CIUX1                                                           00127
00112   000000   CIUXS  IND 0            C.I.U. TRANSMIT SUBROUTINE (SAVE C-REG)            00128
00113   013006          IND CIUXS1                                                          00129
00114   000000   CMPLT  IND 0            COMPLETE PARTIAL INPUT BUFFER, WRITE DISK          00130
00115   014646          IND CMPLT1                                                          00131
00116   000000   CNTRL  IND 0            TEST FOR CONTROL TELETYPE                          00132
00117   014524          IND CNTRL1                                                          00133
00120   000000   CTRLA  IND 0            TEST FOR SPECIAL CONTROL TELETYPE                  00134
00121   014535          IND CTRLA1                                                          00135
00122   000000   CONV   IND 0            CONVERT BINARY TO ANY BASE (OCTAL/DECIMAL)         00136
00123   014753          IND CONV1                                                           00137
00124   000000   CTCMP  IND 0            SAME AS CMPLT, EXCEPT NO CHECK FOR WAIT            00138
00125   014704          IND CTCMP1                                                          00139
00126   000000   DIAL   IND 0            DIAL                                               00140
00127   017527          IND DIAL1                                                           00141
00130   000000   DIB    IND 0            INPUT BUFFER TO DISK ROUTINE                       00142
00131   015304          IND DIB1                                                            00143
00132   000000   DIBS   IND 0            INPUT BUFFER TO DISK ROUTINE (SUBROUTINE)          00144
00133   015311          IND DIBS1                                                           00145
00134   000000   DISC   IND 0            DISCONNECT DATA SET                                00146
00135   014241          IND DISC1                                                           00147
00136   000000   DOB    IND 0            DISK TO OUTPUT BUFFER ROUTINE                      00148
00137   015241          IND DOB1                                                            00149
00140   000000   DSKCH  IND 0            DISK AVAILABILITY CHECK                            00150
00141   015121          IND DSKCH1                                                          00151
00142   000000   DSKOP  IND 0            DISK OPERATION (ERROR CHECKED)                     00152
00143   015132          IND DSKOP1                                                          00153
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00144   000000   DUMP    IND 0          MEMORY DUMP (DEBUGGING OPTION)                00154
00145   020770           IND DUMP1                                                    00155
00146   000000   DUMPS   IND 0          MEMORY DUMP--CONTINUATION ENTRY POINT         00156
00147   020764           IND DUMPS1                                                   00157
00150   000000   EDIT    IND 0          EDIT ROUTINE                                  00158
00151   020176           IND EDIT1                                                    00159
00152   000000   ERROR   IND 0          TYPE OUT ERROR MESSAGE                        00160
00153   014735           IND ERROR1                                                   00161
00154   000000   GDBYE   IND 0          GOODBYE                                       00162
00155   014213           IND GDBYE1                                                   00163
00156   000000   HA      IND 0          HELLO SEQUENCE--PROCESS USER NUMBER           00164
00157   014052           IND HA1                                                      00165
00160   000000   HB      IND 0          HELLO SEQUENCE--PROCESS SYSTEM NAME           00166
00161   014117           IND HB1                                                      00167
00162   000000   HCHEK   IND 0          CHECK FOR -STOP- OR -HELLO-                   00168
00163   014457           IND HCHEK1                                                   00169
00164   000000   HELLO   IND 0          HELLO SEQUENCE--INITIALIZE                    00170
00165   014031           IND HELLO1                                                   00171
00166   000000   INPTA   IND 0          REAL-TIME INPUT ROUTINE--PART1                00172
00167   015674           IND INPTA1                                                   00173
00170   000000   INPTB   IND 0          REAL-TIME INPUT ROUTINE--PART 2               00174
00171   015705           IND INPTB1                                                   00175
00172   000000   INPTC   IND 0          REAL-TIME INPUT ROUTINE--PART 3               00176
00173   015726           IND INPTC1                                                   00177
00174   000000   INSERT  IND 0          INSERT TASK IN SPARE-TIME TASK LIST           00178
00175   013014           IND INS                                                      00179
00176   000000   IOUT    IND 0          INTERMEDIATE OUTPUT SETUP ROUTINE             00180
00177   015664           IND IOUT1                                                    00181
00200   000000   KEY     IND 0          KEYBOARD                                      00182
00201   020107           IND KEY1                                                     00183
00202   000000   KOM     IND 0          SAVE/OLD/UNSAVE/CATALOG COMMON POINT          00184
00203   016117           IND KOM1                                                     00185
00204   000000   LNGTH   IND 0          LENGTH INQUIRY                                00186
00205   020155           IND LNGTH1                                                   00187
00206   000000   LISTA   IND 0          LIST--PART 1                                  00188
00207   015412           IND LISTA1                                                   00189
00210   000000   LISTB   IND 0          LIST--PART 2                                  00190
00211   015511           IND LISTB1                                                   00191
00212   000000   LISTC   IND 0          LIST--PART 3                                  00192
00213   015564           IND LISTC1                                                   00193
00214   000000   MESSG   IND 0          ALPHABETIC MESSAGE OUTPUT SUBROUTINE          00194
00215   014577           IND MESSG1                                                   00195
00216   000000   MONIT   IND 0          MONITOR                                       00196
00217   017535           IND MONIT1                                                   00197
00220   000000   MORE    IND 0          RETURN FOR MORE 235 TIME                      00198
00221   015634           IND MORE1                                                    00199
00222   000000   NEWA    IND 0          NEW--PART 1                                   00200
00223   014173           IND NEWA1                                                    00201
00224   000000   NEWB    IND 0          NEW--PART 2                                   00202
00225   014203           IND NEWB1                                                    00203
00226   000000   NOTA    IND 0          NOTICE--PART 1                                00204
00227   020000           IND NOTA1                                                    00205
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00230   000000   NOTB    IND 0          NOTICE--PART 2                          00206
00231   020021           IND NOTB1                                              00207
00232   000000   NUMA    IND 0          NUMBER--PART 1                          00208
00233   017234           IND NUMA1                                              00209
00234   000000   NUMB    IND 0          NUMBER--PART 2                          00210
00235   017251           IND NUMB1                                              00211
00236   000000   OCT     IND 0          OCTAL INSERT ROUTINE (DEBUGGING OPTION) 00212
00237   021142           IND OCT1                                               00213
00240   000000   OCTAL   IND 0          OCTAL INSERT SETUP ROUTINE              00214
00241   021131           IND OCTAL1                                             00215
00242   000000   OFF     IND 0          OFF                                     00216
00243   017331           IND OFF1                                               00217
00244   000000   OLDA    IND 0          OLD--PART 1                             00218
00245   014164           IND OLDA1                                              00219
00246   000000   OLDB    IND 0          OLD--PART 2                             00220
00247   016000           IND OLDB1                                              00221
00250   000000   ON      IND 0          ON                                      00222
00251   017347           IND ON1                                                00223
00252   000000   OUTPT   IND 0          OUTPUT FROM DISK SETUP ROUTINE          00224
00253   015466           IND OUTPT1                                             00225
00254   000000   PICK    IND 0          PICK UP PARAMETERS FROM INPUT LINE      00226
00255   015054           IND PICK1                                              00227
00256   000000   RENA    IND 0          RENAME--PART 1                          00228
00257   017215           IND RENA1                                              00229
00260   000000   RENB    IND 0          RENAME--PART 2                          00230
00261   017224           IND RENB1                                              00231
00262   000000   RESET   IND 0          RESET FLAGS AND POINTERS, DELETE TASKS  00232
00263   014352           IND RESET1                                             00233
00264   000000   RRF     IND 0          READ RANDOM FILE                        00234
00265   021230           IND RRF1                                               00235
00266   000000   RUN     IND 0          RUN                                     00236
00267   015615           IND RUN1                                               00237
00270   000000   RUNCH   IND 0          CHECK IF RUNNING                        00238
00271   014423           IND RUNCH1                                             00239
00272   000000   SAVEA   IND 0          SAVE--PART 1                            00240
00273   016273           IND SAVEA1                                             00241
00274   000000   SAVEB   IND 0          SAVE--PART 2                            00242
00275   017100           IND SAVEB1                                             00243
00276   000000   SCRCH   IND 0          SCRATCH                                 00244
00277   017204           IND SCRCH1                                             00245
00300   000000   SDSKR   IND 0          DISK RELINQUISH SUBROUTINE              00246
00301   013045           IND SDSKR1                                             00247
00302   000000   SPINP   IND 0          SET SPECIAL INPUT FLAG SUBROUTINE       00248
00303   014573           IND SPINP1                                             00249
00304   000000   STAT    IND 0          STATUS REQUEST                          00250
00305   017262           IND STAT1                                              00251
00306   000000   STOP    IND 0          STOP                                    00252
00307   017170           IND STOP1                                              00253
00310   000000   SWAIT   IND 0          WAIT FOR C.I.U. TO COME READY           00254
00311   013034           IND SWAIT1                                             00255
00312   000000   SYSA    IND 0          ENTER NEW SYSTEM NAME--PART 1           00256
00313   014137           IND SYSA1                                              00257
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00314   000000   SYSB    IND 0             ENTER NEW SYSTEM NAME--PART 2
00315   014146           IND SYSB1
00316   000000   TAPE    IND 0             TAPE
00317   020101           IND TAPE1
00320   000000   TERM    IND 0             TERMINATE RUN AND OUTPUT MESSAGE
00321   014732           IND TERM1
00322   000000   TEST    IND 0             TEST
00323   016375           IND TEST1
00324   000000   TTY     IND 0             TELETYPE CONDITION INQUIRY
00325   017362           IND TTY1
00326   000000   TYPE    IND 0             TYPE -READY.-
00327   014720           IND TYPE1
00330   000000   UCHEK   IND 0             TEST FOR VALID USER NUMBER
00331   014075           IND UCHEK1
00332   000000   UNSAV   IND 0             UNSAVE
00333   016301           IND UNSAV1
00334   000000   USERS   IND 0             INTERROGATE NUMBER OF USERS
00335   020114           IND USERS1
00336   000000   WAIT    IND 0             CHECK FOR WAIT
00337   014545           IND WAIT1
00340   000000   WARN    IND 0             WARN
00341   017522           IND WARN1
00342   000000   WRF     IND 0             WRITE RANDOM FILE
00343   021274           IND WRF1

                                         --- COUNTERS ---

                                           THE FOLLOWING MEMORY LOCATIONS ARE USED
                                         TO KEEP TRACK OF CERTAIN SIGNIFICANT FACTS
                                         WITHIN THE DATANET 30. EACH LOCATION IS RESET
                                         ON EVERY HARDWARE LOAD, AND COUNTS THE
                                         SPECIFIED QUANTITY. THE NUMBER FOLLOWING EACH
                                         COUNTER DESCRIPTION IS THE SEQUENCE NUMBER OF
                                         THE CARD WHICH INCREMENTS THE GIVEN COUNTER.
                                           IT IS PLANNED THAT THESE COUNTERS WILL BE
                                         ONLY TEMPORARY. THEREFORE EVERY CARD WHICH
                                         REFERENCES THESE LOCATIONS IS TAGGED WITH
                                         THREE ASTERIKS IN COLUMNS 73-75 OF THE CARD
                                         THERE IS EXACTLY ONE INSTRUCTION WHICH
                                         REVERENCES EACH OF THESE COUNTERS.
                                         SEQUENCE NUMBERS FOLLOW EACH DESCRIPTION
                                         AND ARE NUMBERS OF THE REFERENCING CARDS
                                         AS OF 8/4/65.

00344   000000   #CHI    DEC 0             INPUT CHARACTERS [24130]
00345   000000           DEC 0             SECOND HALF OF DOUBLE LENGTH CHI COUNTER
00346   000000   #CHO    DEC 0             OUTPUT CHARACTERS [22880]
00347   000000           DEC 0             SUPPLEMENTARY SECOND HALF CRI COUNTER
00350   000000   #CRI    DEC 0             CARRAIGE RETURNS IN [25330]
00351   000000   #CRO    DEC 0             CARRAIGE RETURNS OUT [23630]
00352   000000   #COM    DEC 0             RECOGNIZED COMMAND LINES [25900]
00353   000000   #NCM    DEC 0             INCORRECT COMMAND LINES [25850]
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00354   000000   #DSK    DEC 0          DISK OPERATIONS PERFORMED [36820]            00310
00355   000000   #RUN    DEC 0          RUN COMMANDS GIVEN [39990]                   00311
00356   000000   #OLD    DEC 0          OLD COMMANDS GIVEN [41040]                   00312
00357   000000   #LST    DEC 0          LIST COMMANDS GIVEN [38660]                  00313
00360   000000   #CAT    DEC 0          CATALOG COMMANDS GIVEN [41360]               00314
00361   000000   #SAV    DEC 0          SAVE COMMANDS GIVEN [43440]                  00315
00362   000000   #UNS    DEC 0          UNSAVE COMMANDS GIVEN [43530]                00316
00363   000000   #TST    DEC 0          TEST COMMANDS GIVEN [44290]                  00317
00364   000000   #STP    DEC 0          STOP COMMANDS GIVEN [49700]                  00318
00365   000000   #INPT   DEC 0          CALLS FOR INPUT                              00319
00366   000000   #NEW    DEC 0          NEW COMMANDS                                 00320
00367   000000   #HEL    DEC 0          HELLO COUNT                                  00321
                                                                                     00322
                                  END COUNTERS LOCATIONS                             00323
                                                                                     00324
                                                                                     00325
                                                                                     00326
                                  64-WORD REGION SAVED ON DISK PERIODICALLY           00327
00400            LOC 400                                                             00328
00400   DLONG    BSS 1          DISK ASSIGNMENT POINTER, LONG PROGRAMS               00329
00401            BSS 1          SPARE - NOT USED AT PRESENT [8/3/65]                 00330
00402   DATE     BSS 1          CURRENT CODED DATE                                   00331
00403   IMAGE    BSS 5          ALPHAMERIC DATE FOR HEADING LINES                    00332
00410   TTYMIN   BSS 1          MIN CYCLES LEFT FOR SPARE-TIME AFTER TTY SVC         00333
00411   CIUMIN   BSS 1          MIN CYCLES LEFT FOR SPARE-TIME AFTER CIU SVC         00334
00412   NOTICE   BSS 35         NOTICE MESSAGE                                       00335
00455   DADD     BSS 6          POINTERS TO AVAILABLE DISK BLOCKS OF GIVEN SI        00336
                                  64-WORD BUFFER FOR RRF AND WRF                     00337
00500            LOC 500                                                             00338
00500   DBUF     BSS 64                                                              00339
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01000           LOC  1000                                                    00342
01000   $SW1    BSS  64      SCAN WORD 1                                     00343
01100   $WORD1  BSS  64      USER NUMBER, HIGH-ORDER END                     00344
01200   $SW2    BSS  64      SCAN WORD 2                                     00345
01300   $WORD2  BSS  64      USER NUMBER,LOW-ORDER END                       00346
01400   $SW3    BSS  64      SCAN WORD 3                                     00347
01500   $WORD3  BSS  64      PROBLEM NAME, HIGH-ORDER END                    00348
01600   $WORD4  BSS  64      PROBLEM NAME, LOW ORDER END                     00349
01700   $WORD5  BSS  64      STARTING DISK ADDRESS                           00350
02000   $WORD6  BSS  64      ENDING DISK ADDRESS                             00351
02100   $CNFL   BSS  64      FLAG INDICATES CONTINUE COMPUTING               00352
02200   $DONE   BSS  64      FLAG INDICATES A TELETYPE HAS BEEN SERVICED     00353
02300   $DPOS3  BSS  64      INPUT DISK POINTER                              00354
02400   $DPOS4  BSS  64      OUTPUT DISK POINTER                             00355
02500   $HFLAG  BSS  64      SPECIAL INPUT FLAG                              00356
02600   $IDLOC  BSS  64      INPUT BEGINNING-OF-LINE POINTER                 00357
02700   $IF     BSS  64      FLAG INDICATES INPUT DISK-BUFFER NOT READY      00358
03000   $IFLAG  BSS  64      FLAG INDICATES INPUT ROUTINE BACKED UP          00359
03100   $INCH   BSS  64      INPUT BUFFER CHARACTER POINTER                  00360
03200   $INLOC  BSS  64      INPUT BUFFER WORD POINTER                       00361
03300   $INSTD  BSS  64      INPUT DISK BUFFER ADDRESSES                     00362
03400   $IXFL   BSS  64      FLAG INDICATES BUFFER NEEDS SERVICING           00363
03500   $KFLAG  BSS  64      FLAG INDICATES 35ASR INPUTTING PAPER TAPE       00364
03600   $KOMFL  BSS  64      SAVE-OLD-UNSAVE-CATALOG FLAG                    00365
03700   $LCNT   BSS  64      COUNT OF IDLE LINE TIME                         00366
04000   $LHFL   BSS  64      FLAG INDICATES HEADING LINE NEEDED              00367
04100   $LINE1  BSS  64      LINE NUMBER, HIGH-ORDER END                     00368
04200   $LINE2  BSS  64      LINE NUMBER, LOW-ORDER END                      00369
04300   $LSTT   BSS  64      LINE STATUS                                     00370
04400   $MSGL   BSS  64      ERROR MESSAGE TABLE                             00371
04500   $OCH    BSS  64      OUTPUT BUFFER CHARACTER POINTER                 00372
04600   $ODC    BSS  64      OUTPUT ROUTINE DELAY COUNTER                    00373
04700   $OF     BSS  64      FLAG INDICATES OUTPUT BUFFER NOT READY          00374
05000   $OLOC   BSS  64      OUTPUT BUFFER WORD POINTER                      00375
05100   $OUT    BSS  64      FLAG INDICATES OUTPUT AFTER SWAP                00376
05200   $OUTFF  BSS  64      FLAG INDICATES D-30 IS OUTPUTTING               00377
05300   $PRIOR  BSS  64      PROBLEM PRIORITIES                              00378
05400   $QUEUE  BSS  64      FLAG INDICATES WHICH QUEUE A TELETYPE IS IN     00379
05500   $RTIME  BSS  64      RUNNING TIME INDICATOR                          00380
05600   $SAVSY  BSS  64      SAVED SYSTEM NAME FOR USE WITH EDIT SYSTEM      00381
05700   $SPACE  BSS  64      NUMBER OF SPACES TO BE SLEWED AFTER OUTPUT      00382
06000   $STAND  BSS  64      STANDARD AREA DISK ADDRESSES                    00383
06100   $STAT   BSS  64      PROBLEM STATUSES                                00384
06200   $SWLEN  BSS  64      SWAP LENGTH FOR RUNNING PROGRAMS                00385
06300   $SYSTM  BSS  64      SYSTEM IDENTIFIER                               00386
06400   $TFLAG  BSS  64      FLAG INDICATES TEST MODE                        00387
06500   $TYP    BSS  64      FLAG INDICATES PARTIAL INPUT BUFFERLOAD         00388
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        01000        ORG $SW1         SCAN WORD ONE INITIALIZED TO MARK-HOLD
01000  000000        OCT 0
01001  007777        OCT 7777
01002  007777        OCT 7777
01003  007777        OCT 7777
01004  007777        OCT 7777
01005  007777        OCT 7777
01006  007777        OCT 7777
01007  007777        OCT 7777
01010  007777        OCT 7777
01011  007777        OCT 7777
01012  007777        OCT 7777
01013  007777        OCT 7777
01014  007777        OCT 7777
01015  007777        OCT 7777
01016  007777        OCT 7777
01017  007777        OCT 7777
01020  007777        OCT 7777
01021  007777        OCT 7777
01022  007777        OCT 7777
01023  007777        OCT 7777
01024  007777        OCT 7777
01025  007777        OCT 7777
01026  007777        OCT 7777
01027  007777        OCT 7777
01030  007777        OCT 7777
01031  007777        OCT 7777
01032  007777        OCT 7777
01033  007777        OCT 7777
01034  007777        OCT 7777
01035  007777        OCT 7777
01036  007777        OCT 7777
01037  007777        OCT 7777
01040  007777        OCT 7777
01041  007777        OCT 7777
01042  007777        OCT 7777
01043  007777        OCT 7777
01044  007777        OCT 7777
01045  007777        OCT 7777
01046  007777        OCT 7777
01047  007777        OCT 7777
01050  007777        OCT 7777
01051  007777        OCT 7777
01052  007777        OCT 7777
01053  007777        OCT 7777
01054  007777        OCT 7777
        01100        ORG $WORD1
01100  212246        ALF ABO
        01200        ORG $SW2         SCAN WORD TWO INDICATES EIGHT-LEVEL CODE
01200  000000        OCT 0
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01201   307777          OCT 307777                                      00443
01202   307777          OCT 307777                                      00444
01203   307777          OCT 307777                                      00445
01204   307777          OCT 307777                                      00446
01205   307777          OCT 307777                                      00447
01206   307777          OCT 307777                                      00448
01207   307777          OCT 307777                                      00449
01210   307777          OCT 307777                                      00450
01211   307777          OCT 307777                                      00451
01212   307777          OCT 307777                                      00452
01213   307777          OCT 307777                                      00453
01214   307777          OCT 307777                                      00454
01215   307777          OCT 307777                                      00455
01216   307777          OCT 307777                                      00456
01217   307777          OCT 307777                                      00457
01220   307777          OCT 307777                                      00458
01221   307777          OCT 307777                                      00459
01222   307777          OCT 307777                                      00460
01223   307777          OCT 307777                                      00461
01224   307777          OCT 307777                                      00462
01225   307777          OCT 307777                                      00463
01226   307777          OCT 307777                                      00464
01227   307777          OCT 307777                                      00465
01230   307777          OCT 307777                                      00466
01231   307777          OCT 307777                                      00467
01232   307777          OCT 307777                                      00468
01233   307777          OCT 307777                                      00469
01234   307777          OCT 307777                                      00470
01235   307777          OCT 307777                                      00471
01236   307777          OCT 307777                                      00472
01237   307777          OCT 307777                                      00473
01240   307777          OCT 307777                                      00474
01241   307777          OCT 307777                                      00475
01242   307777          OCT 307777                                      00476
01243   307777          OCT 307777                                      00477
01244   307777          OCT 307777                                      00478
01245   307777          OCT 307777                                      00479
01246   307777          OCT 307777                                      00480
01247   307777          OCT 307777                                      00481
01250   347777          OCT 347777      THIS ENTRY TERMINATES HARDWARE SCAN 00482Q
01251   307777          OCT 307777                                      00483
01252   307777          OCT 307777                                      00484
01253   307777          OCT 307777                                      00485
01254   347777          OCT 347777      THIS ENTRY TERMINATES HARDWARE SCAN 00486
                                                                        00487
        01300           ORG $WORD2                                      00488
01300   516360          ALF RT                                          00489
        01500           ORG $WORD3                                      00490
01500   222163          ALF BAT                                         00491
        01600           ORG $WORD4                                      00492
01600   233060          ALF CH                                          00493
                                                                        00494
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              02300         ORG $DPOS3          ENDING DISK ADDRESS INITIALIZED AT $STAND
       02300  000000        OCT 0
       02301  057000        OCT 057000
       02302  060000        OCT 060000
       02303  061000        OCT 061000
       02304  117000        OCT 117000
       02305  120000        OCT 120000
       02306  121000        OCT 121000
       02307  157000        OCT 157000
       02310  160000        OCT 160000
       02311  161000        OCT 161000
       02312  217000        OCT 217000
       02313  220000        OCT 220000
       02314  221000        OCT 221000
       02315  257000        OCT 257000
       02316  260000        OCT 260000
       02317  261000        OCT 261000
       02320  317000        OCT 317000
       02321  320000        OCT 320000
       02322  321000        OCT 321000
       02323  357000        OCT 357000
       02324  360000        OCT 360000
       02325  361000        OCT 361000
       02326  417000        OCT 417000
       02327  420000        OCT 420000
       02330  421000        OCT 421000
       02331  457000        OCT 457000
       02332  460000        OCT 460000
       02333  461000        OCT 461000
       02334  517000        OCT 517000
       02335  520000        OCT 520000
       02336  521000        OCT 521000
       02337  557000        OCT 557000
       02340  560000        OCT 560000
       02341  561000        OCT 561000
       02342  617000        OCT 617000
       02343  620000        OCT 620000
       02344  621000        OCT 621000
       02345  657000        OCT 657000
       02346  660000        OCT 660000
       02347  661000        OCT 661000
       02350  717000        OCT 717000
       02351  720000        OCT 720000
       02352  721000        OCT 721000
       02353  757000        OCT 757000
       02354  760000        OCT 760000


              02600         ORG $IDLOC
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02600   000000          OCT 0                                           00547
02601   024000          OCT 24000                                       00548
02602   024200          OCT 24200                                       00549
02603   024400          OCT 24400                                       00550
02604   024600          OCT 24600                                       00551
02605   025000          OCT 25000                                       00552
02606   025200          OCT 25200                                       00553
02607   025400          OCT 25400                                       00554
02610   025600          OCT 25600                                       00555
02611   026000          OCT 26000                                       00556
02612   026200          OCT 26200                                       00557
02613   026400          OCT 26400                                       00558
02614   026600          OCT 26600                                       00559
02615   027000          OCT 27000                                       00560
02616   027200          OCT 27200                                       00561
02617   027400          OCT 27400                                       00562
02620   027600          OCT 27600                                       00563
02621   030000          OCT 30000                                       00564
02622   030200          OCT 30200                                       00565
02623   030400          OCT 30400                                       00566
02624   030600          OCT 30600                                       00567
02625   031000          OCT 31000                                       00568
02626   031200          OCT 31200                                       00569
02627   031400          OCT 31400                                       00570
02630   031600          OCT 31600                                       00571
02631   032000          OCT 32000                                       00572
02632   032200          OCT 32200                                       00573
02633   032400          OCT 32400                                       00574
02634   032600          OCT 32600                                       00575
02635   033000          OCT 33000                                       00576
02636   033200          OCT 33200                                       00577
02637   033400          OCT 33400                                       00578
02640   033600          OCT 33600                                       00579
02641   034000          OCT 34000                                       00580
02642   034200          OCT 34200                                       00581
02643   034400          OCT 34400                                       00582
02644   034600          OCT 34600                                       00583
02645   035000          OCT 35000                                       00584
02646   035200          OCT 35200                                       00585
02647   035400          OCT 35400                                       00586
02650   035600          OCT 35600                                       00587
02651   036000          OCT 36000                                       00588
02652   036200          OCT 36200                                       00589
02653   036400          OCT 36400                                       00590
02654   036600          OCT 36600                                       00591
                                                                        00592
                                                                        00593
        02700           ORG $1F         INPUT BUFFERS INITIALIZED AS READY 00594
02700   000000          OCT 0                                           00595
02701   777777          OCT 777777                                      00596
02702   777777          OCT 777777                                      00597
02703   777777          OCT 777777                                      00598
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02704   777777          OCT 777777                                          00599
02705   777777          OCT 777777                                          00600
02706   777777          OCT 777777                                          00601
02707   777777          OCT 777777                                          00602
02710   777777          OCT 777777                                          00603
02711   777777          OCT 777777                                          00604
02712   777777          OCT 777777                                          00605
02713   777777          OCT 777777                                          00606
02714   777777          OCT 777777                                          00607
02715   777777          OCT 777777                                          00608
02716   777777          OCT 777777                                          00609
02717   777777          OCT 777777                                          00610
02720   777777          OCT 777777                                          00611
02721   777777          OCT 777777                                          00612
02722   777777          OCT 777777                                          00613
02723   777777          OCT 777777                                          00614
02724   777777          OCT 777777                                          00615
02725   777777          OCT 777777                                          00616
02726   777777          OCT 777777                                          00617
02727   777777          OCT 777777                                          00618
02730   777777          OCT 777777                                          00619
02731   777777          OCT 777777                                          00620
02732   777777          OCT 777777                                          00621
02733   777777          OCT 777777                                          00622
02734   777777          OCT 777777                                          00623
02735   777777          OCT 777777                                          00624
02736   777777          OCT 777777                                          00625
02737   777777          OCT 777777                                          00626
02740   777777          OCT 777777                                          00627
02741   777777          OCT 777777                                          00628
02742   777777          OCT 777777                                          00629
02743   777777          OCT 777777                                          00630
02744   777777          OCT 777777                                          00631
02745   777777          OCT 777777                                          00632
02746   777777          OCT 777777                                          00633
02747   777777          OCT 777777                                          00634
02750   777777          OCT 777777                                          00635
02751   777777          OCT 777777                                          00636
02752   777777          OCT 777777                                          00637
02753   777777          OCT 777777                                          00638
02754   777777          OCT 777777                                          00639
                                                                            00640
                                                                            00641
         03100          ORG $INCH       INPUT CHARACTER POINTER INITIALIZED AT LEFT  00642
03100   000000          OCT 0                                               00643
03101   000002          OCT 2                                               00644
03102   000002          OCT 2                                               00645
03103   000002          OCT 2                                               00646
03104   000002          OCT 2                                               00647
03105   000002          OCT 2                                               00648
03106   000002          OCT 2                                               00649
03107   000002          OCT 2                                               00650
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03110   000002          OCT 2                                   00651
03111   000002          OCT 2                                   00652
03112   000002          OCT 2                                   00653
03113   000002          OCT 2                                   00654
03114   000002          OCT 2                                   00655
03115   000002          OCT 2                                   00656
03116   000002          OCT 2                                   00657
03117   000002          OCT 2                                   00658
03120   000002          OCT 2                                   00659
03121   000002          OCT 2                                   00660
03122   000002          OCT 2                                   00661
03123   000002          OCT 2                                   00662
03124   000002          OCT 2                                   00663
03125   000002          OCT 2                                   00664
03126   000002          OCT 2                                   00665
03127   000002          OCT 2                                   00666
03130   000002          OCT 2                                   00667
03131   000002          OCT 2                                   00668
03132   000002          OCT 2                                   00669
03133   000002          OCT 2                                   00670
03134   000002          OCT 2                                   00671
03135   000002          OCT 2                                   00672
03136   000002          OCT 2                                   00673
03137   000002          OCT 2                                   00674
03140   000002          OCT 2                                   00675
03141   000002          OCT 2                                   00676
03142   000002          OCT 2                                   00677
03143   000002          OCT 2                                   00678
03144   000002          OCT 2                                   00679
03145   000002          OCT 2                                   00680
03146   000002          OCT 2                                   00681
03147   000002          OCT 2                                   00682
03150   000002          OCT 2                                   00683
03151   000002          OCT 2                                   00684
03152   000002          OCT 2                                   00685
03153   000002          OCT 2                                   00686
03154   000002          OCT 2                                   00687
                                                                00688
                                                                00689
                                                                00690
        03200           ORG $INLOC                              00691
03200   000000          OCT 0                                   00692
03201   024000          OCT 24000                               00693
03202   024200          OCT 24200                               00694
03203   024400          OCT 24400                               00695
03204   024600          OCT 24600                               00696
03205   025000          OCT 25000                               00697
03206   025200          OCT 25200                               00698
03207   025400          OCT 25400                               00699
03210   025600          OCT 25600                               00700
03211   026000          OCT 26000                               00701
03212   026200          OCT 26200                               00702
```

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03213   026400          OCT 26400                                   00703
03214   026600          OCT 26600                                   00704
03215   027000          OCT 27000                                   00705
03216   027200          OCT 27200                                   00706
03217   027400          OCT 27400                                   00707
03220   027600          OCT 27600                                   00708
03221   030000          OCT 30000                                   00709
03222   030200          OCT 30200                                   00710
03223   030400          OCT 30400                                   00711
03224   030600          OCT 30600                                   00712
03225   031000          OCT 31000                                   00713
03226   031200          OCT 31200                                   00714
03227   031400          OCT 31400                                   00715
03230   031600          OCT 31600                                   00716
03231   032000          OCT 32000                                   00717
03232   032200          OCT 32200                                   00718
03233   032400          OCT 32400                                   00719
03234   032600          OCT 32600                                   00720
03235   033000          OCT 33000                                   00721
03236   033200          OCT 33200                                   00722
03237   033400          OCT 33400                                   00723
03240   033600          OCT 33600                                   00724
03241   034000          OCT 34000                                   00725
03242   034200          OCT 34200                                   00726
03243   034400          OCT 34400                                   00727
03244   034600          OCT 34600                                   00728
03245   035000          OCT 35000                                   00729
03246   035200          OCT 35200                                   00730
03247   035400          OCT 35400                                   00731
03250   035600          OCT 35600                                   00732
03251   036000          OCT 36000                                   00733
03252   036200          OCT 36200                                   00734
03253   036400          OCT 36400                                   00735
03254   036600          OCT 36600                                   00736
          03300         ORG $INSTD                                  00737
03300   000000          OCT 0                                       00738
03301   024000          OCT 24000                                   00739
03302   024200          OCT 24200                                   00740
03303   024400          OCT 24400                                   00741
03304   024600          OCT 24600                                   00742
03305   025000          OCT 25000                                   00743
03306   025200          OCT 25200                                   00744
03307   025400          OCT 25400                                   00745
03310   025600          OCT 25600                                   00746
03311   026000          OCT 26000                                   00747
03312   026200          OCT 26200                                   00748
03313   026400          OCT 26400                                   00749
03314   026600          OCT 26600                                   00750
03315   027000          OCT 27000                                   00751
03316   027200          OCT 27200                                   00752
03317   027400          OCT 27400                                   00753
03320   027600          OCT 27600                                   00754
```

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03321   030000          OCT 30000                                   00755
03322   030200          OCT 30200                                   00756
03323   030400          OCT 30400                                   00757
03324   030600          OCT 30600                                   00758
03325   031000          OCT 31000                                   00759
03326   031200          OCT 31200                                   00760
03327   031400          OCT 31400                                   00761
03330   031600          OCT 31600                                   00762
03331   032000          OCT 32000                                   00763
03332   032200          OCT 32200                                   00764
03333   032400          OCT 32400                                   00765
03334   032600          OCT 32600                                   00766
03335   033000          OCT 33000                                   00767
03336   033200          OCT 33200                                   00768
03337   033400          OCT 33400                                   00769
03340   033600          OCT 33600                                   00770
03341   034000          OCT 34000                                   00771
03342   034200          OCT 34200                                   00772
03343   034400          OCT 34400                                   00773
03344   034600          OCT 34600                                   00774
03345   035000          OCT 35000                                   00775
03346   035200          OCT 35200                                   00776
03347   035400          OCT 35400                                   00777
03350   035600          OCT 35600                                   00778
03351   036000          OCT 36000                                   00779
03352   036200          OCT 36200                                   00780
03353   036400          OCT 36400                                   00781
03354   036600          OCT 36600                                   00782
                                                                    00783
                                                                    00784
                                                                    00785
        04500           ORG $OCH    OUTPUT CHARACTER POINTER INITIALIZED LEFT  00786
04500   000000          OCT 0                                       00787
04501   000002          OCT 2                                       00788
04502   000002          OCT 2                                       00789
04503   000002          OCT 2                                       00790
04504   000002          OCT 2                                       00791
04505   000002          OCT 2                                       00792
04506   000002          OCT 2                                       00793
04507   000002          OCT 2                                       00794
04510   000002          OCT 2                                       00795
04511   000002          OCT 2                                       00796
04512   000002          OCT 2                                       00797
04513   000002          OCT 2                                       00798
04514   000002          OCT 2                                       00799
04515   000002          OCT 2                                       00800
04516   000002          OCT 2                                       00801
04517   000002          OCT 2                                       00802
04520   000002          OCT 2                                       00803
04521   000002          OCT 2                                       00804
04522   000002          OCT 2                                       00805
04523   000002          OCT 2                                       00806
```

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04524   000002          OCT 2                                                   00807
04525   000002          OCT 2                                                   00808
04526   000002          OCT 2                                                   00809
04527   000002          OCT 2                                                   00810
04530   000002          OCT 2                                                   00811
04531   000002          OCT 2                                                   00812
04532   000002          OCT 2                                                   00813
04533   000002          OCT 2                                                   00814
04534   000002          OCT 2                                                   00815
04535   000002          OCT 2                                                   00816
04536   000002          OCT 2                                                   00817
04537   000002          OCT 2                                                   00818
04540   000002          OCT 2                                                   00819
04541   000002          OCT 2                                                   00820
04542   000002          OCT 2                                                   00821
04543   000002          OCT 2                                                   00822
04544   000002          OCT 2                                                   00823
04545   000002          OCT 2                                                   00824
04546   000002          OCT 2                                                   00825
04547   000002          OCT 2                                                   00826
04550   000002          OCT 2                                                   00827
04551   000002          OCT 2                                                   00828
04552   000002          OCT 2                                                   00829
04553   000002          OCT 2                                                   00830
04554   000002          OCT 2                                                   00831
                                                                                00832
                                                                                00833
        04700           ORG $OF         OUTPUT BUFFERS INITIALIZED AS READY     00834
04700   000000          OCT 0                                                   00835
04701   777777          OCT 777777                                              00836
04702   777777          OCT 777777                                              00837
04703   777777          OCT 777777                                              00838
04704   777777          OCT 777777                                              00839
04705   777777          OCT 777777                                              00840
04706   777777          OCT 777777                                              00841
04707   777777          OCT 777777                                              00842
04710   777777          OCT 777777                                              00843
04711   777777          OCT 777777                                              00844
04712   777777          OCT 777777                                              00845
04713   777777          OCT 777777                                              00846
04714   777777          OCT 777777                                              00847
04715   777777          OCT 777777                                              00848
04716   777777          OCT 777777                                              00849
04717   777777          OCT 777777                                              00850
04720   777777          OCT 777777                                              00851
04721   777777          OCT 777777                                              00852
04722   777777          OCT 777777                                              00853
04723   777777          OCT 777777                                              00854
04724   777777          OCT 777777                                              00855
04725   777777          OCT 777777                                              00856
04726   777777          OCT 777777                                              00857
04727   777777          OCT 777777                                              00858
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04730   777777          OCT 777777                                      00859
04731   777777          OCT 777777                                      00860
04732   777777          OCT 777777                                      00861
04733   777777          OCT 777777                                      00862
04734   777777          OCT 777777                                      00863
04735   777777          OCT 777777                                      00864
04736   777777          OCT 777777                                      00865
04737   777777          OCT 777777                                      00866
04740   777777          OCT 777777                                      00867
04741   777777          OCT 777777                                      00868
04742   777777          OCT 777777                                      00869
04743   777777          OCT 777777                                      00870
04744   777777          OCT 777777                                      00871
04745   777777          OCT 777777                                      00872
04746   777777          OCT 777777                                      00873
04747   777777          OCT 777777                                      00874
04750   777777          OCT 777777                                      00875
04751   777777          OCT 777777                                      00876
04752   777777          OCT 777777                                      00877
04753   777777          OCT 777777                                      00878
04754   777777          OCT 777777                                      00879
                                                                        00880
                                                                        00881
                                                                        00882
                                                                        00883
                                                                        00884
        06000           ORG $STAND      STANDARD AREA DISK ADDRESSES    00885
06000   000000          OCT 0                                           00886
06001   057000          OCT 057000                                      00887
06002   060000          OCT 060000                                      00888
06003   061000          OCT 061000                                      00889
06004   117000          OCT 117000                                      00890
06005   120000          OCT 120000                                      00891
06006   121000          OCT 121000                                      00892
06007   157000          OCT 157000                                      00893
06010   160000          OCT 160000                                      00894
06011   161000          OCT 161000                                      00895
06012   217000          OCT 217000                                      00896
06013   220000          OCT 220000                                      00897
06014   221000          OCT 221000                                      00898
06015   257000          OCT 257000                                      00899
06016   260000          OCT 260000                                      00900
06017   261000          OCT 261000                                      00901
06020   317000          OCT 317000                                      00902
06021   320000          OCT 320000                                      00903
06022   321000          OCT 321000                                      00904
06023   357000          OCT 357000                                      00905
06024   360000          OCT 360000                                      00906
06025   361000          OCT 361000                                      00907
06026   417000          OCT 417000                                      00908
06027   420000          OCT 420000                                      00909
06030   421000          OCT 421000                                      00910
```

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06031   457000          OCT 457000          00911
06032   460000          OCT 460000          00912
06033   461000          OCT 461000          00913
06034   517000          OCT 517000          00914
06035   520000          OCT 520000          00915
06036   521000          OCT 521000          00916
06037   557000          OCT 557000          00917
06040   560000          OCT 560000          00918
06041   561000          OCT 561000          00919
06042   617000          OCT 617000          00920
06043   620000          OCT 620000          00921
06044   621000          OCT 621000          00922
06045   657000          OCT 657000          00923
06046   660000          OCT 660000          00924
06047   661000          OCT 661000          00925
06050   717000          OCT 717000          00926
06051   720000          OCT 720000          00927
06052   721000          OCT 721000          00928
06053   757000          OCT 757000          00929
06054   760000          OCT 760000          00930
                                            00931
                                            00932
                                            00933
                                            00934
                                            00935
```

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          07000          LOC 7000
                                    OUTPUT CHARACTER TRANSLATION TABLE


07000   007540   OTABLE OCT 7540
07001   007542          OCT 7542
07002   007544          OCT 7544
07003   007546          OCT 7546
07004   007550          OCT 7550
07005   007552          OCT 7552
07006   007554          OCT 7554
07007   007556          OCT 7556
07010   007560          OCT 7560
07011   007562          OCT 7562
07012   007516          OCT 7516
07013   007564          OCT 7564
07014   007520          OCT 7520
07015   007566          OCT 7566
07016   007572          OCT 7572
07017   007670          OCT 7670
07020   007526          OCT 7526
07021   007602          OCT 7602
07022   007604          OCT 7604
07023   007606          OCT 7606
07024   007610          OCT 7610
07025   007612          OCT 7612
07026   007614          OCT 7614
07027   007616          OCT 7616
07030   007620          OCT 7620
07031   007622          OCT 7622
07032   007416          OCT 7416
07033   007534          OCT 7534
07034   007504          OCT 7504
07035   007576          OCT 7576
07036   007570          OCT 7570
07037   400032          OCT -32
07040   007532          OCT 7532
07041   007624          OCT 7624
07042   007626          OCT 7626
07043   007630          OCT 7630
07044   007632          OCT 7632
07045   007634          OCT 7634
07046   007636          OCT 7636
07047   007640          OCT 7640
07050   007642          OCT 7642
07051   007644          OCT 7644
07052   400022          OCT -22
07053   007510          OCT 7510
07054   007524          OCT 7524
07055   400077          OCT -77
07056   007574          OCT 7574
07057   007674          OCT 7674
```

```
07060   007500          OCT 7500                00991
07061   007536          OCT 7536                00992
07062   007646          OCT 7646                00993
07063   007650          OCT 7650                00994
07064   007652          OCT 7652                00995
07065   007654          OCT 7654                00996
07066   007656          OCT 7656                00997
07067   007660          OCT 7660                00998
07070   007662          OCT 7662                00999
07071   007664          OCT 7664                01000
07072   007424          OCT 7424                01001
07073   007530          OCT 7530                01002
07074   007522          OCT 7522                01003
07075   007666          OCT 7666                01004
07076   007672          OCT 7672                01005
07077   400000          OCT -00                 01006
```

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                                                                        01009
                                                                        01010
07100   400000   ITABLE OCT -00                                        01011
07101   400000          OCT -00                                        01012
07102   400000          OCT -00                                        01013
07103   400000          OCT -00                                        01014
07104   400000          OCT -00                                        01015
07105   400004          OCT -4                                         01016
07106   400000          OCT -00                                        01017
07107   400000          OCT -00                                        01018
07110   400000          OCT -00                                        01019
07111   400000          OCT -00                                        01020
07112   400000          OCT -00                                        01021
07113   400000          OCT -00                                        01022
07114   400000          OCT -00                                        01023
07115   400003          OCT -3                                         01024
07116   400000          OCT -00                                        01025
07117   400000          OCT -00                                        01026
07120   400000          OCT -00                                        01027
07121   400000          OCT -00                                        01028
07122   400000          OCT -00                                        01029
07123   400000          OCT -00                                        01030
07124   400000          OCT -00                                        01031
07125   400000          OCT -00                                        01032
07126   400000          OCT -00                                        01033
07127   400000          OCT -00                                        01034
07130   400000          OCT -00                                        01035
07131   400000          OCT -00                                        01036
07132   400000          OCT -00                                        01037
07133   400002          OCT -2      ESCAPE KEY EQUAL TO ALT MODE       01038
07134   400000          OCT -00                                        01039
07135   400000          OCT -00                                        01040
07136   400000          OCT -00                                        01041
07137   400000          OCT -00                                        01042
07140   000060          OCT  60                                        01043
07141   000033          OCT  33                                        01044
07142   000034          OCT  34                                        01045
07143   000017          OCT  17                                        01046
07144   000053          OCT  53                                        01047
07145   000017          OCT  17                                        01048
07146   000017          OCT  17                                        01049
07147   000012          OCT  12                                        01050
07150   000014          OCT  14                                        01051
07151   000074          OCT  74                                        01052
07152   000054          OCT  54                                        01053
07153   000020          OCT  20                                        01054
07154   000073          OCT  73                                        01055
07155   000040          OCT  40                                        01056
07156   000033          OCT  33                                        01057
07157   000061          OCT  61                                        01058
07160   000000          OCT  00                                        01059
07161   000001          OCT  01                                        01060
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07162   000002          OCT  02                  01061
07163   000003          OCT  03                  01062
07164   000004          OCT  04                  01063
07165   000005          OCT  05                  01064
07166   000006          OCT  06                  01065
07167   000007          OCT  07                  01066
07170   000010          OCT  10                  01067
07171   000011          OCT  11                  01068
07172   000013          OCT  13                  01069
07173   000015          OCT  15                  01070
07174   000036          OCT  36                  01071
07175   000016          OCT  16                  01072
07176   000056          OCT  56                  01073
07177   000035          OCT  35                  01074
07200   000017          OCT  17                  01075
07201   000021          OCT  21                  01076
07202   000022          OCT  22                  01077
07203   000023          OCT  23                  01078
07204   000024          OCT  24                  01079
07205   000025          OCT  25                  01080
07206   000026          OCT  26                  01081
07207   000027          OCT  27                  01082
07210   000030          OCT  30                  01083
07211   000031          OCT  31                  01084
07212   000041          OCT  41                  01085
07213   000042          OCT  42                  01086
07214   000043          OCT  43                  01087
07215   000044          OCT  44                  01088
07216   000045          OCT  45                  01089
07217   000046          OCT  46                  01090
07220   000047          OCT  47                  01091
07221   000050          OCT  50                  01092
07222   000051          OCT  51                  01093
07223   000062          OCT  62                  01094
07224   000063          OCT  63                  01095
07225   000064          OCT  64                  01096
07226   000065          OCT  65                  01097
07227   000066          OCT  66                  01098
07230   000067          OCT  67                  01099
07231   000070          OCT  70                  01100
07232   000071          OCT  71                  01101
07233   000075          OCT  75                  01102
07234   000017          OCT  17                  01103
07235   000076          OCT  76                  01104
07236   000057          OCT  57                  01105
07237   400001          OCT -01                  01106
07240   400000          OCT -00                  01107
07241   400000          OCT -00                  01108
07242   400000          OCT -00                  01109
07243   400000          OCT -00                  01110
07244   400000          OCT -00                  01111
07245   400000          OCT -00                  01112
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07246   400000          OCT -00                 01113
07247   400000          OCT -00                 01114
07250   400000          OCT -00                 01115
07251   400000          OCT -00                 01116
07252   400000          OCT -00                 01117
07253   400000          OCT -00                 01118
07254   400000          OCT -00                 01119
07255   400000          OCT -00                 01120
07256   400000          OCT -00                 01121
07257   400000          OCT -00                 01122
07260   400000          OCT -00                 01123
07261   400000          OCT -00                 01124
07262   400000          OCT -00                 01125
07263   400000          OCT -00                 01126
07264   400000          OCT -00                 01127
07265   400000          OCT -00                 01128
07266   400000          OCT -00                 01129
07267   400000          OCT -00                 01130
07270   400000          OCT -00                 01131
07271   400000          OCT -00                 01132
07272   400000          OCT -00                 01133
07273   400000          OCT -00                 01134
07274   400000          OCT -00                 01135
07275   400002          OCT -02                 01136
07276   400002          OCT -02                 01137
07277   400000          OCT -00                 01138
                                                01139
                                                01140
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                07300   LPCW3   BSS 0                   DISK ADDRESSES OF CATALOG FILES   01143
        07300   061400          OCT 061400                                                01144
        07301   061440          OCT 061440                                                01145
        07302   061500          OCT 061500                                                01146
        07303   061540          OCT 061540                                                01147
        07304   061600          OCT 061600                                                01148
        07305   061640          OCT 061640                                                01149
        07306   121400          OCT 121400                                                01150
        07307   121440          OCT 121440                                                01151
        07310   121500          OCT 121500                                                01152
        07311   121540          OCT 121540                                                01153
        07312   121600          OCT 121600                                                01154
        07313   121640          OCT 121640                                                01155
        07314   161400          OCT 161400                                                01156
        07315   161440          OCT 161440                                                01157
        07316   161500          OCT 161500                                                01158
        07317   161540          OCT 161540                                                01159
        07320   161600          OCT 161600                                                01160
        07321   161640          OCT 161640                                                01161
        07322   221400          OCT 221400                                                01162
        07323   221440          OCT 221440                                                01163
        07324   221500          OCT 221500                                                01164
        07325   221540          OCT 221540                                                01165
        07326   221600          OCT 221600                                                01166
        07327   221640          OCT 221640                                                01167
        07330   261400          OCT 261400                                                01168
        07331   261440          OCT 261440                                                01169
        07332   261500          OCT 261500                                                01170
        07333   261540          OCT 261540                                                01171
        07334   261600          OCT 261600                                                01172
        07335   261640          OCT 261640                                                01173
        07336   321400          OCT 321400                                                01174
        07337   321440          OCT 321440                                                01175
        07340   321500          OCT 321500                                                01176
        07341   321540          OCT 321540                                                01177
        07342   321600          OCT 321600                                                01178
        07343   321640          OCT 321640                                                01179
        07344   361400          OCT 361400                                                01180
        07345   361440          OCT 361440                                                01181
        07346   361500          OCT 361500                                                01182
        07347   361540          OCT 361540                                                01183
        07350   361600          OCT 361600                                                01184
        07351   361640          OCT 361640                                                01185
        07352   421400          OCT 421400                                                01186
        07353   421440          OCT 421440                                                01187
        07354   421500          OCT 421500                                                01188
        07355   421540          OCT 421540                                                01189
        07356   421600          OCT 421600                                                01190
        07357   421640          OCT 421640                                                01191
        07360   461400          OCT 461400                                                01192
        07361   461440          OCT 461440                                                01193
        07362   461500          OCT 461500                                                01194
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07363	461540	OCT 461540	01195
07364	461600	OCT 461600	01196
07365	461640	OCT 461640	01197
07366	521400	OCT 521400	01198
07367	521440	OCT 521440	01199
07370	521500	OCT 521500	01200
07371	521540	OCT 521540	01201
07372	521600	OCT 521600	01202
07373	521640	OCT 521640	01203
07374	561400	OCT 561400	01204
07375	561440	OCT 561440	01205
07376	561500	OCT 561500	01206
07377	561540	OCT 561540	01207
07400	561600	OCT 561600	01208
07401	561640	OCT 561640	01209
07402	621400	OCT 621400	01210
07403	621440	OCT 621440	01211
07404	621500	OCT 621500	01212
07405	621540	OCT 621540	01213
07406	621600	OCT 621600	01214
07407	621640	OCT 621640	01215
07410	661400	OCT 661400	01216
07411	661440	OCT 661440	01217
07412	661500	OCT 661500	01218
07413	661540	OCT 661540	01219
07414	661600	OCT 661600	01220
07415	661640	OCT 661640	01221
07416	721400	OCT 721400	01222
07417	721440	OCT 721440	01223
07420	721500	OCT 721500	01224
07421	721540	OCT 721540	01225
07422	721600	OCT 721600	01226
07423	721640	OCT 721640	01227
07424	761400	OCT 761400	01228
07425	761440	OCT 761440	01229
07426	761500	OCT 761500	01230
07427	761540	OCT 761540	01231
07430	761600	OCT 761600	01232
07431	761640	OCT 761640	01233
07432	761000	OCT 761000	01234
07433	761040	OCT 761040	01235
07434	761100	OCT 761100	01236
07435	761140	OCT 761140	01237
07436	761200	OCT 761200	01238
07437	761240	OCT 761240	01239
07440	760400	OCT 760400	01240
07441	760440	OCT 760440	01241
07442	760500	OCT 760500	01242
07443	760540	OCT 760540	01243

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                                ICLST IS A TABLE OF ALL LEGAL SYSTEM COM-          01246
                                NANDS TO THE DATANET-30 EXECUTIVE.  THE            01247
                                ENTRIES CONSIST OF--                               01248
                                     1. ALPHABETIC IDENTIFIER (BCD SHIFTED         01249
                                        RIGHT ONE BIT)                             01250
                                     2. CORRESPONDING SUBROUTINE BRANCH (BRS)      01251
                                        TO BE INSERTED IN TASK LIST                01252
                                                                                   01253
                                                                                   01254
                                                                                   01255
07444   112323   ICLST1 OCT 112323          BOOTSTRAP                              01256
07445   112070          BRS BOOTA                                                  01257
07446   113412          OCT 113412          BYE                                    01258
07447   112154          BRS GDBYE                                                  01259
07450   115071          OCT 115071          CATALOG                                01260
07451   112076          BRS CATA                                                   01261
07452   121450          OCT 121450          DIAL                                   01262
07453   112126          BRS DIAL                                                   01263
07454   123222          OCT 123222          DUMP                                   01264
07455   112144          BRS DUMP                                                   01265
07456   125214          OCT 125214          EDIT                                   01266
07457   112150          BRS EDIT                                                   01267
07460   136323          OCT 136323          GOODBYE                                01268
07461   112154          BRS GDBYE                                                  01269
07462   141261          OCT 141261          HELLO                                  01270
07463   112164          BRS HELLO                                                  01271
07464   211274          OCT 211274          KEYBOARD                               01272
07465   112200          BRS KEY                                                    01273
07466   215262          OCT 215262          LENGTH                                 01274
07467   112204          BRS LNGTH                                                  01275
07470   215471          OCT 215471          LIST                                   01276
07471   112206          BRS LISTA                                                  01277
07472   222322          OCT 222322          MONITOR                                01278
07473   112216          BRS MONIT                                                  01279
07474   225273          OCT 225273          NEW                                    01280
07475   112222          BRS NEWA                                                   01281
07476   226331          OCT 226331          NOTICE                                 01282
07477   112226          BRS NOTA                                                   01283
07500   227222          OCT 227222          NUMBER                                 01284
07501   112232          BRS NUMA                                                   01285
07502   231171          OCT 231171          OCTAL                                  01286
07503   112240          BRS OCTAL                                                  01287
07504   231313          OCT 231313          OFF                                    01288
07505   112242          BRS OFF                                                    01289
07506   232152          OCT 232152          OLD                                    01290
07507   112244          BRS OLDA                                                   01291
07510   232277          OCT 232277          ON                                     01292
07511   112250          BRS ON                                                     01293
07512   245262          OCT 245262          RENAME                                 01294
07513   112256          BRS RENA                                                   01295
07514   246453          OCT 246453          RRF                                    01296
07515   112264          BRS RRF                                                    01297
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07516   247222          OCT 247222          RUN                         01298
07517   112266          BRS RUN                                         01299
07520   311072          OCT 311072          SAVE                        01300
07521   112272          BRS SAVEA                                       01301
07522   311164          OCT 311164          SCRATCH                     01302
07523   112276          BRS SCRCH                                       01303
07524   313150          OCT 313150          STATUS                      01304
07525   112304          BRS STAT                                        01305
07526   313163          OCT 313163          STOP                        01306
07527   112306          BRS STOP                                        01307
07530   313431          OCT 313431          SYSTEM                      01308
07531   112312          BRS SYSA                                        01309
07532   313777          OCT 313777          S                           01310
07533   112306          BRS STOP                                        01311
07534   315063          OCT 315063          TAPE                        01312
07535   112316          BRS TAPE                                        01313
07536   315271          OCT 315271          TEST                        01314
07537   112322          BRS TEST                                        01315
07540   317174          OCT 317174          TTY                         01316
07541   112324          BRS TTY                                         01317
07542   322271          OCT 322271          UNSAVE                      01318
07543   112332          BRS UNSAV                                       01319
07544   323112          OCT 323112          USERS                       01320
07545   112334          BRS USERS                                       01321
07546   331064          OCT 331064          WARN                        01322
07547   112340          BRS WARN                                        01323
07550   332453          OCT 332453          WRF                         01324
07551   112342          BRS WRF                                         01325
07552   377777          OCT 377777          [CAR. RET. ONLY]            01326
07553   000000          OCT 0                                           01327
07554   377777          OCT 377777          DUMMY ENTRY                 01328
07555   000000          HLT 0                                           01329
07556   377777          OCT 377777          DUMMY ENTRY                 01330
07557   000000          HLT 0                                           01331
07560   377777          OCT 377777          DUMMY ENTRY                 01332
07561   000000          HLT 0                                           01333
07562   377777          OCT 377777          DUMMY ENTRY                 01334
07563   000000          HLT 0                                           01335
07564   377777          OCT 377777          DUMMY ENTRY                 01336
07565   000000          HLT 0                                           01337
07566   377777          OCT 377777          DUMMY ENTRY                 01338
07567   000000          HLT 0                                           01339
07570   377777          OCT 377777          DUMMY ENTRY                 01340
07571   000000          HLT 0                                           01341
07572   377777          OCT 377777          DUMMY ENTRY                 01342
07573   000000          HLT 0                                           01343
07574   377777          OCT 377777          DUMMY ENTRY                 01344
07575   000000          HLT 0                                           01345
07576   377777          OCT 377777          DUMMY ENTRY                 01346
07577   000000          HLT 0                                           01347
07600   377777          OCT 377777          DUMMY ENTRY                 01348
07601   000000          HLT 0                                           01349
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07602   377777          OCT 377777          DUMMY ENTRY                 01350
07603   000000          HLT 0                                           01351
07604   377777          OCT 377777          DUMMY ENTRY                 01352
07605   000000          HLT 0                                           01353
07606   377777          OCT 377777          DUMMY ENTRY                 01354
07607   000000          HLT 0                                           01355
07610   377777          OCT 377777          DUMMY ENTRY                 01356
07611   000000          HLT 0                                           01357
07612   377777          OCT 377777          DUMMY ENTRY                 01358
07613   000000          HLT 0                                           01359
07614   377777          OCT 377777          DUMMY ENTRY                 01360
07615   000000          HLT 0                                           01361
07616   377777          OCT 377777          DUMMY ENTRY                 01362
07617   000000          HLT 0                                           01363
07620   377777          OCT 377777          DUMMY ENTRY                 01364
07621   000000          HLT 0                                           01365
07622   377777          OCT 377777          DUMMY ENTRY                 01366
07623   000000          HLT 0                                           01367
07624   377777          OCT 377777          DUMMY ENTRY                 01368
07625   000000          HLT 0                                           01369
07626   377777          OCT 377777          DUMMY ENTRY                 01370
07627   000000          HLT 0                                           01371
07630   377777          OCT 377777          DUMMY ENTRY                 01372
07631   000000          HLT 0                                           01373
07632   377777          OCT 377777          DUMMY ENTRY                 01374
07633   000000          HLT 0                                           01375
07634   377777          OCT 377777          DUMMY ENTRY                 01376
07635   000000          HLT 0                                           01377
07636   377777          OCT 377777          DUMMY ENTRY                 01378
07637   000000          HLT 0                                           01379
07640   377777          OCT 377777          DUMMY ENTRY                 01380
07641   000000          HLT 0                                           01381
07642   377777          OCT 377777          DUMMY ENTRY                 01382
07643   000000          HLT 0                                           01383
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          10000           LOC 10000



                                        HARDWARE INTERRUPT, WHICH OCCURS EVERY TELE-
                                        TYPE BIT-TIME [9 MS].  -INTER- IS AN EXECU-
                                        TIVE ROUTINE WHICH CALLS THE PROPER SERVICE
                                        ROUTINES FOR TELETYPE INPUT/OUTPUT AND C.I.U.
                                        FUNCTIONS.  OUT OF THE ELEVEN BIT-TIMES IN A
                                        CHARACTER-TIME, -INTER- DEVOTES EIGHT OF
                                        THEM TO SERVICING TELETYPE INPUT/OUTPUT
                                        [FOUR TELETYPES PER BIT-TIME], AND THE RE-
                                        MAINING THREE TO COMMUNICATION WITH THE 235
                                        VIA THE C.I.U.



10000  360145  INTER  STF SFF                 STORE SPECIAL FLIP-FLOPS
10001  230146         LDQ SCOUNT              LOAD Q-COUNTER FOR ANOTHER BIT-TIME [9 MS]
10002  300147         STC STC                 STORE A, B, AND C REGISTERS
10003  310150         STD SAB
10004  030001         SCN 1                   HWE SCAN--SERVICE ALL BIT-BUFFER UNITS
10005  412000         CMA 0                   TEST FOR REAL-TIME MALFUNCTION--
10006  422175         AMA INSERT+1                WAS INTERRUPT DURING REAL TIME...
10007  150011         BMI *+2                     IF NOT, CONTINUE NORMALLY
10010  024010         DIF 4                       BUT IF SO, HARDWARE LOAD
10011  400152         LDA SCT                 LOOK AT NUMBER OF TELETYPE TO BE SERVICED
10012  150156         BMI SCIU                IF IN COMPLEMENT FORM, C.I.U. CYCLE NEXT
10013  061002         TRA A,C                 OTHERWISE, PLACE TLTYP NUMBER IN C-REGISTER
10014  402014         LDA FIVE                SERVICE 5 TTY-S PER CYCLE
10015  500153         STA SGR
10016  402055 SLOOP  LDA WSVCF               SPECIAL SERVICE FLAG ON...
10017  134142         BNZ WSVC      X         IF SO, GO TO SPECIAL SERVICE RTN
10020  403214         LDA $LSTT
10021  104022         BRU *+1       X
10022  110023         INA *+1
10023  100031         BRU LS0
10024  100036         BRU LS1
10025  100042         BRU LS2
10026  100047         BRU LS3
10027  100055         BRU LS4
10030  100066         BRU LS5
                                        LINE DISCIPLINE

                                        DESCRIPTION OF BIT BUFFER OPTIONS

                                        BBU 931

                                        NES 5  0 - NO RING
                                               1 - RING
                                        NES 6  0 - CARRIER ON
                                               1 - CARRIER OFF
                                        EEF 3  SET DATA TERMINAL NOT READY
```

```
                                DEF 4  SET DATA TERMINAL READY

                                BBU 932

                                NES 9  0 - NO RING
                                       1 - RING
                                NES 6  0 - CARRIER OFF
                                       1 - CARRIER ON
                                DEF 3  SET DATA TERMINAL NOT READY
                                DEF 4  SET DATA TERMINAL READY

                                LINE STATUS ROUTINES

10031   022400   LS0   NES 9          NOBODY ON, COMPLETE IDLE
                                THE FOLLOWING INSTRUCTION WILL HAVE TO BE
                                CHANGED TO A BZE FOR THE 932 BBU
10032   130102         BNZ SEXIT      IF NOT RINGING, EXIT
10033   026010         DEF 4          SET DATA TERMINAL READY (ANSWER PHONE)
10034   343214         ADO $LSTT      SET LS1
10035   100102         BRU SEXIT
10036   022040   LS1   NES 6          NOBODY ON, DATA TERMINAL READY
                                THE FOLLOWING INSTRUCTION WILL HAVE TO BE
                                CHANGED TO A BZE FOR THE 932 BBU
10037   130071         BNZ SBUMP      CARRIER OFF, SO BUMP $LCNT
10040   343214         ADO $LSTT      SET LS2
10041   100102         BRU SEXIT
10042   022040   LS2   NES 6          SOMEBODY ON, DATA TERMINAL READY, CARRIER ON
                                THE FOLLOWING INSTRUCTION WILL HAVE TO BE
                                CHANGED TO A BNZ FOR THE 932 BBU
10043   120071         BZE SBUMP      CARRIER ON, SO BUMP $LCNT
10044   343214         ADO $LSTT      SET LS3
10045   323174         STZ $LCNT
10046   100102         BRU SEXIT
10047   022040   LS3   NES 6          SOMEBODY ON, DATA TERMINAL READY, CARRIER OFF
                                THE FOLLOWING INSTRUCTION WILL HAVE TO BE
                                CHANGED TO A BZE FOR THE 932 BBU
10050   130053         BNZ *+3
10051   353214         SBO $LSTT      SET LS2
10052   100102         BRU SEXIT
10053   400155         LDA CBDISC     CARRIER BREAK DISCONNECT TIME CONSTANT
10054   100072         BRU SBUMPS
10055   400070   LS4   LDA DELAY      DELAY 3 SECONDS BEFORE SENDING THE EOT
10056   343174         ADO $LCNT
10057   463174         AAZ $LCNT
10060   150102         BMI SEXIT
10061   400067         LDA GEOT       NOW SENT THE EOT
10062   503040         STA $SW1
10063   026100         DEF 7
10064   323214         STZ $LSTT
10065   100102         BRU SEXIT
10066   100110   LS5   BRU CIRC4X     THIS STATUS IS USED TO DISABLE SPECIFIC LINES
10067   007410   GEOT  OCT 7410       TTY EOT CODE
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10070  777742  DELAY  DEC -30
        10071  SBUMP  BSS 0
                                    KEEP TRACK OF LINE TIME HERE IF DESIRED
10071  400154         LDA SDISC        NORMAL DISCONNECT TIME CONSTANT
10072  343174  SBUMPS ADO $LCNT        BUMP IDLE TIME COUNTER
10073  463174         AAZ $LCNT
10074  150102         BMI SEXIT
10075  323174         STZ $LCNT
10076  014001         XCZ 1
10077  120102         BZE SEXIT
10100  111004         BRS SINS         INSERT -GDBYE- TASK
10101  112154         BRS GDBYE
10102  403050  SEXIT  LDA $SW2         XMIT CHARACTER FLAG ON IN SCAN WORD 2...
10103  151374         BMI CIRC1        IF SO, GO TO OUTPUT SERVICE ROUTINE
10104  223140  CIRC3  LDZ $IFLAG       DID INPUT ROUTINE HAVE BUFFER TROUBLES...
10105  134144         BNZ IMSG    X    IF SO, GO TRY AGAIN
10106  403060         LDA $SW3         RECEIVE CHARACTER FLAG ON IN SCAN WORD 3...
10107  154143         BMI CIRC2   X    IF SO, GO TO INPUT SERVICE ROUTINE
10110  010001  CIRC4X AIC 1            STEP TO NEXT TELETYPE
10111  014051         XCZ TELET+1      HAS THE LAST TELETYPE BEEN SERVICED...
10112  120123         BZE SVCALL       IF SO, WRAP AROUND AND C.I.U. CYCLE NEXT
10113  350153         SBO SGR          OTHERWISE, HAVE SIX BEEN SERVICED
10114  130016         BNZ SLOOP        IF NOT, GO SERVICE ANOTHER TELETYPE
10115  014037         XCZ 31
10116  120130         BZE SCMPL        C.I.U. CYCLE NEXT TIME
10117  014020         XCZ 16
10120  120130         BZE SCMPL        C.I.U.CYCLE NEXT TIME
10121  300152         STC SCT          OTHERWISE, SAVE NEXT TELETYPE TO BE SERVICED
10122  100132         BRU STTY
10123  011075  SVCALL PIC 61           ALL TELETYPES SERVICED, SO WRAP AROUND
10124  040020         SL1 S,Z          IF SWITCH 17 DOWN, DO NOT INTERRUPT 235
10125  150127         BMI *+2
10126  026400         DEF 9            API TO 235 EVERY CHARACTER TIME FOR BATCH
10127  011001         PIC 1            WRAP AROUND TO TELETYPE 1 [0 IS PAPER TAPE]
10130  062210  SCMPL  TRC C,A          INDICATE C.I.U. CYCLE NEXT BY COMPLEMENTING
10131  500152         STA SCT          TELETYPE NUMBER BEFORE SAVING IT
10132  062114  STTY   TRC Q,AB         UPDATE MINIMUM CYCLES COUNTER
10133  422410         AMA TTYMIN
10134  150136         BMI SREST
10135  712410         CBM TTYMIN
10136  210150  SREST  LDD SAB          RESTORE A, B, AND C REGISTERS
10137  200147         LDC STC
10140  260145         LDF SFF          RESTORE SPECIAL FLIP-FLOPS
10141  106000         BRU 0       X    RETURN TO SPARE-TIME
                                    REAL-TIME LOOP CONSTANTS
10142  012453  WSVC   IND WSVCX
10143  012000  CIRC2  IND CIRC2X
10144  012313  IMSG   IND IMSGX
10145  000000  SFF    OCT 0
10146  002330  SCOUNT DEC 1240         NUMBER OF MACHINE CYCLES BETWEEN SCANS
10147  000000  STC    OCT 0
10150  000000  SAB    OCT 0
```

```
10151   000000          OCT 0                                                   01542
10152   000000  SCT     OCT 0                                                   01543
          00050 TELET   EQU 40          SERVICE 40 TELETYPES AT PRESENT         01544Q
10153   000000  SGR     OCT 0           COUNT NUMBER OF TTYS SERVICED           01545
10154   764220  SDISC   DEC -6000       TEN MINUTE DISCONNECT [10THS OF A SECOND] 01546
10155   777634  CBDISC  DEC -100        TEN SECOND DISCONNECT [10THS OF A SECOND] 01547
```

```
COMMUNICATIONS BETWEEN THE DATANET-30 AND
THE 235 TAKE PLACE IN A BLOCK OF 235-CORE
CALLED THE MAILBOX.  TWO LOCATIONS OF THE
MAILBOX ARE RESERVED FOR MESSAGES.  THE REGU-
LAR MESSAGE LOCATION IS USED FOR MESSAGES
CONCERNING THE CURRENTLY-RUNNING PROBLEM.
THE SPECIAL MESSAGE LOCATION IS USED FOR
MESSAGES CONCERNING THE 235 PERIPHERALS AND
235 BACKGROUND PERIPHERAL TASKS.  THE REST OF
THE MAILBOX IS USED FOR OTHER PERTINENT
INFORMATION AS SHOWN IN THE LAYOUT BELOW.




********** LAYOUT OF MAILBOX **********

LOC  SYMB              CONTENTS


214  MBX0  D-30/235 MESSAGE (MINUS = D-30)

215  MBX1  SYSTEM IDENTIFIER

216  MBX2  DISK ADDRESSES
217  MBX3

220  MBX4  TEACH DISK ADDRESSES, SEL. LIST
220  MBX5    LINE NOS. OF USER NUMBER

222  MBX6  PROBLEM NAME
223  MBX7



224  MBX8  REAL TIME FROM 235
225  MBX9

226  MBX10 SPECIAL MESSAGE




-SCIU- SERVICES THE SPECIAL MAILBOX, HANDLING
COMMUNICATIONS CONCERNING THE 235 PERIPHERALS
AND PERIPHERAL TASKS.  IT ALSO PICKS UP THE
REAL-TIME FROM THE 235.
```

```
                                                                                01602
10156   330152   SCIU   CMM SCT              RECOMPLEMENT TELETYPE NUMBER        01603
10157   222054          LDZ BFLAG            SUPRESS CIU CYCLE...                01604
10160   131210          BNZ SPUNT            YES                                 01605
10161   222050          LDZ STOPF            COUNT RUNNING TIME...               01606
10162   130164          BNZ *+2              IF NOT, SKIP NEXT INSTRUCTION       01607
10163   351236          SBO SCLOCK           STEP RUNNING TIME CLOCK             01608
10164   011075          PIC 61               SELECT CIU                          01609
10165   112310          BRS SWAIT                                                01610
10166   027000          DEF 0                                                    01611
10167   251225          LDT SMRX8            SET CIU ADDRESS REGISTER TO LOC OF REAL-TIME 01612
10170   026001          DEF 1                PLACE CIU IN RECIEVE MODE           01613
10171   112106          BRS CIUR             PICK UP HIGH-ORDER END OF REAL-TIME 01614
10172   702060          STB RTIME                                                01615
10173   112106          BRS CIUR             PICK UP LOW-ORDER END OF REAL-TIME  01616
10174   632033          NMB M7777            MASK OFF HIGH-ORDER CHARACTER       01617
10175   641234          RMB SCOLN            REPLACE IT WITH A COLON             01618
10176   702061          STB RTIME+1                                              01619
10177   112106          BRS CIUR             READ SPECIAL MESSAGE FROM 235       01620
10200   020400          NIS 9                                                    01621
10201   130300          BNZ SREG             IF NEGATIVE, DO NOT SERVICE SPECIAL MAILBOX 01622
10202   761230          NBZ SMASK4           TEST FOR VALID MESSAGE              01623
10203   130300          BNZ SREG             IF NOT, IGNORE IT                   01624
10204   105244          BRU SBRNCH   X       GO THROUGH BRANCH TABLE TO ROUTINE CALLED 01625
10205   100300   SBR0   BRU SREG             IF NO 235 MESSAGE, EXIT             01626
10206   112300   SBR1   BRS SDSKR            235 WANTS THE DISK, SO RELINQUISH IT 01627
10207   100300          BRU SREG             IF THIS IS IMPOSSIBLE, EXIT         01628
10210   321235          STZ SPMESS           BUT IF A-OK, ACKNOWLEDGE            01629
10211   100267          BRU SPEND                                                01630
10212   322046   SBR2   STZ DKFLG2           235 IS DONE WITH THE DISK, SO TAKE IT BACK 01631
10213   321235          STZ SPMESS           ACKNOWLEDGE                         01632
10214   100267          BRU SPEND                                                01633
10215   402007   SBR3   LDA MONE            235 SAYS STOP COUNTING RUNNING TIME 01634
10216   502050          STA STOPF            SO STOP THE CLOCK                   01635
10217   321235          STZ SPMESS           ACKNOWLEDGE                         01636
10220   100267          BRU SPEND                                                01637
10221   322050   SBR4   STZ STOPF            235 SAYS START RUNNING TIME CLOCK AGAIN 01638
10222   321235          STZ SPMESS           ACKNOWLEDGE                         01639
10223   100267          BRU SPEND                                                01640
10224   011002   SBR6   PIC 2                235 SAYS PERFORM AN -OFF-           01641
10225   401233          LDA SOFF                                                 01642
10226   543050          RAM $SW2             SCAN ONLY TELETYPE 1                01643
10227   010001          AIC 1                                                    01644
10230   323304          STZ $STAT            ZERO OUT ALL STATUSES               01645
10231   014050          XCZ TELET                                                01646
10232   130227          BNZ *-3                                                  01647
10233   100206          BRU SBR1             RELINQUISH THE DISK TO THE 235      01648
10234   011002   SBR7   PIC 2                235 SAYS PERFORM AN -ON-            01649
10235   401232          LDA SON                                                  01650
10236   433050          NMA $SW2                                                 01651
10237   321235          STZ SPMESS                                               01652
10240   100267          BRU SPEND                                                01653
```

```
10241   011000   SBR10  PIC 0              235 SAYS SET BATCHMODE                    01654
10242   402016          LDA SIX                                                      01655
10243   503304          STA $STAT                                                    01656
10244   503254          STA $PRIOR                                                   01657
10245   401266          LDA SRATN                                                    01658
10246   503314          STA $SYSTM                                                   01659
10247   323110          STZ $DONE                                                    01660
10250   321235          STZ SPMESS                                                   01661
10251   100267          BRU SPEND                                                    01662
10252   011000   SBR11  PIC 0              235 SAYS RESET BATCHMODE                  01663
10253   323304          STZ $STAT                                                    01664
10254   321235          STZ SPMESS                                                   01665
10255   100267          BRU SPEND                                                    01666
10256   112106   SBR12  BRS CIUR           235 HAS A NEW ENDING DISK ADDRESS         01667
10257   202057          LDC SPROB          SO PUT IT AWAY                            01668
10260   703114          STR $DPOS3                                                   01669
10261   321235          STZ SPMESS         ACKNOWLEDGE                               01670
10262   100267          BRU SPEND                                                    01671
10263   202057   SBR13  LDC SPROB          235 SAYS EDIT THE PROGRAM BEFORE USING AGAIN 01672
10264   402006          LDA ONE                                                      01673
10265   503324          STA $TYP                                                     01674
10266   100267          BRU SPEND                                                    01675
10267   024001   SPEND  DIF 1              RESET CB1, CB2, PAR                       01676
10270   011075          PIC 61             SELECT CIU                                01677
10271   112310          BRS SWAIT                                                    01678
10272   027000          DEF 0                                                        01679
10273   251226          LDT SMBX10         SET CIU ADDRESS REGISTER TO MBX10         01680
10274   024400          DIF 9              SET CB2                                   01681
10275   601235          LDB SPMESS                                                   01682
10276   112110          BRS CIUX           SEND SPECIAL MESSAGE                      01683
10277   026400          DEF 9              SEND API INTERRUPT TO 235                 01684
                                                                                     01685
                                                                                     01686
                                                                                     01687
                                                                                     01688
                                                                                     01689
                                                                                     01690
                                -SREG- IS THE ROUTINE WHICH CONTROLS THE             01691
                                FOREGROUND OPERATION OF THE 235.  CONTROL            01692
                                IS ACCOMPLISHED BY MEANS OF DECISION TABLES.         01693
                                THE DATANET-30 CLOCKS ALL 235 FUNCTIONS,             01694
                                RELOADING THE 235 EXECUTIVE PROGRAM IF A             01695
                                FUNCTION GOES OVERTIME WITHOUT GIVING AN             01696
                                ANSWER TO THE D-30, OR IF AN ANSWER FROM THE         01697
                                235 IS UNDECIPHERABLE.  AT THE COMPLETION OF         01698
                                A GIVEN RUN, A SCHEDULING ROUTINE IS INVOKED         01699
                                WHICH SELECTS THE NEXT TELETYPE TO BE                01700
                                GRANTED ACCESS TO THE 235.                           01701
                                                                                     01702
                                                                                     01703
10300   222050   SREG   LDZ STOPF              IS -STOP COUNTING TIME- FLAG ON...    01704
10301   131210          BNZ SPUNT              IF SO, DO NOT SERVICE THE REGULAR MAILBOX 01705
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10302   112310          BRS SWAIT              WAIT FOR C.I.U.                                  01706
10303   027000          DEF 0                  CLEAR OUT ADDRESS REGISTER                       01707
10304   251223          LDT SMBX0              SET ADDRESS REGISTER TO MBX0 ADDRESS             01708
10305   026001          DEF 1                  SET C.I.U. INTO RECEIVE MODE                     01709
10306   112106          BRS CIUR               PICK UP 235 MESSAGE FROM MBX0                    01710
10307   202057          LDC SPROR              PLACE TELETYPE NUMBER IN C-REGISTER              01711
10310   020400          NIS 9                  IS 235 MESSAGE NEGATIVE (235 BIT 0)...           01712
10311   131137          BNZ EX235S             IF SO, BOOTSTRAP 235 EXECUTIVE (MINUS)           01713
10312   761227          NBZ SEXTR              EXTRANEOUS BITS IN 235 MESSAGE ...               01714
10313   131145          BNZ EX235M             IF SO, BOOTSTRAP 235 EXECUTIVE (MESSG)           01715
10314   402020          LDA MSEVEN             SET MINUS COUNTER                                01716
10315   501242          STA SMCTR                                                               01717
10316   403304          LDA $STAT              PLACE STATUS IN A-REGISTER (MESSAGE IS IN B)     01718
10317   223110          LDZ $DONE              IN THE MIDST OF A D-30/235 CONVERSATION...       01719
10320   134323          BNZ TSTAT   X          IS SO, GO TO BRANCH TABLES (A=STATUS, B=MSG)     01720
10321   602007          LDB MONE               BUT IF INITIAL MESSAGE OF SEQUENCE, FUDGE...     01721
10322   104323          BRU TSTAT   X          GO TO BRANCH TABLES (A=STATUS, B=-1)             01722
                                                                                                01723
                                                                                                01724
10323   110324  TSTAT   INA *+1                STATUS BRANCH TABLE                              01725
10324   101077          BRU SENDR              STATUS 0--NULL                                   01726
10325   104333          BRU TOLD    X          STATUS 1--OLD                                    01727
10326   104362          BRU TLIST   X          STATUS 2--LIST                                   01728
10327   104421          BRU TSAVE   X          STATUS 3--SAVE                                   01729
10330   104455          BRU TSTART  X          STATUS 4--INITIAL RUN                            01730
10331   104527          BRU TCNTNU  X          STATUS 5--CONTINUED RUN                          01731
10332   104626          BRU TBATCH  X          STATUS 6--BATCHMODE                              01732
                                                                                                01733
                                                                                                01734
                                                                                                01735
10333   210335  TOLD    INB *+2                OLD STATUS                                       01736
10334   100345          BRU SOLDA              INITIAL STATE                                    01737
10335   101026          BRU STMCH              MESSAGE 0                                        01738
10336   100752          BRU SERROR             MESSAGE 1                                        01739
10337   100352          BRU SOLDB              MESSAGE 2                                        01740
10340   100356          BRU SOLDC              MESSAGE 3                                        01741
10341   101145          BRU EX235M             MESSAGE 4                                        01742
10342   101145          BRU EX235M             MESSAGE 5                                        01743
10343   101145          BRU EX235M             MESSAGE 6                                        01744
10344   101145          BRU EX235M             MESSAGE 7                                        01745
                                                                                                01746
                                                                                                01747
10345   111012  SOLDA   BRS SDONE              SET $DONE = +1                                   01748
10346   403074          LDA $WORD5             SET STARTING AND ENDING DISK ADDRESSES OF        01749
10347   603100          LDB $WORD6             OLD PROGRAM                                      01750
10350   110670          BRS SRDWR              SEND -DSKRD- TO 235                              01751
10351   000004          DEC DSKRD                                                               01752
                                                                                                01753
10352   403300  SOLDB   LDA $STAND             SET STANDARD STARTING AND ENDING DISK ADXS        01754
10353   603114          LDB $DPOS3                                                              01755
10354   110670          BRS SRDWR              SEND -DSKWR- TO 235                              01756
10355   000005          DEC DSKWR                                                               01757
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                                                                                01758
 10356  111004  SOLDC  BRS SINS                                                 01759
 10357  112326         BRS TYPE          SET UP TYPEOUT OF -READY.-            01760
 10360  323324         STZ $TYP          NO CORRECTIONS                        01761
 10361  101076         BRU SENDRT        GO END RUN                            01762Q
                                                                                01763
                                                                                01764
                                                                                01765
                                                                                01766
 10362  210364  TLIST  INR *+2           LIST STATUS                           01767
 10363  100374         BRU SLISA         INITIAL STATE                         01768
 10364  101026         BRU STMCH         MESSAGE 0                             01769
 10365  100752         BRU SERROR        MESSAGE 1                             01770
 10366  100401         BRU SLISB         MESSAGE 2                             01771
 10367  101145         BRU EX235M        MESSAGE 3                             01772
 10370  101145         BRU EX235M        MESSAGE 4                             01773
 10371  101145         BRU EX235M        MESSAGE 5                             01774
 10372  101145         BRU EX235M        MESSAGE 6                             01775
 10373  101145         BRU EX235M        MESSAGE 7                             01776
                                                                                01777
 10374  111012  SLISA  BRS SDONE         SET $DONE=+1                          01778
 10375  503324         STA $TYP          FORCE AN EDIT                         01779
 10376  403204         LDA $LINE1        SET SELECTIVE LIST INFO               01780
 10377  603210         LDB $LINE2                                              01781
 10400  100707         BRU SEDIT         SEND -EDIT- TO 235                    01782
                                                                                01783
 10401  011075  SLISB  PIC 61            SELECT C.I.U.                         01784
 10402  112106         BRS CIUR          PICK UP EDITED LENGTH                 01785
 10403  202057         LDC SPROB                                               01786
 10404  623300         AMB $STAND        $DPOS3 = $STAND + [LENGTH]            01787
 10405  703114         STB $DPOS3        SET CALCULATED ENDING DISK ADDRESS    01788
 10406  011075         PIC 61            SELECT CIU                            01789
 10407  112106         BRS CIUR          PICK UP SELECTIVE LIST DISK ADDRESS   01790
 10410  060410         TRA B,A           PLACE IN A-REGISTER                   01791
 10411  112106         BRS CIUR          PICK UP SELECTIVE LIST WORD COUNT     01792
 10412  202057         LDC SPROB                                               01793
 10413  503204         STA $LINE1        DISK ADDRESS                          01794
 10414  703210         STB $LINE2        WORD COUNT                            01795
 10415  323324         STZ $TYP          NO CORRECTIONS                        01796
 10416  111004         BRS SINS                                                01797
 10417  112210         BRS LISTB         SET UP LISTB                          01798
 10420  101076         BRU SENDRT        GO END RUN                            01799Q
                                                                                01800
                                                                                01801
                                                                                01802
                                                                                01803
 10421  210423  TSAVE  INR *+2           SAVE STATUS                           01804
 10422  100433         BRU SSAVA         INITIAL STATE                         01805
 10423  101026         BRU STMCH         MESSAGE 0                             01806
 10424  100752         BRU SERROR        MESSAGE 1                             01807
 10425  100436         BRU SSAVB         MESSAGE 2                             01808
 10426  100452         BRU SSAVC         MESSAGE 3                             01809
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10427   101145          BRU EX235M          MESSAGE 4                                   01810
10430   101145          BRU EX235M          MESSAGE 5                                   01811
10431   101145          BRU EX235M          MESSAGE 6                                   01812
10432   101145          BRU EX235M          MESSAGE 7                                   01813
                                                                                        01814
                                                                                        01815
10433   111012  SSAVA   BRS SDONF           SET $DONE=+1                                01816
10434   062014          TRC 0,AB            NO SELECTIVE LIST EDITING ON SAVE           01817
10435   100707          BRU SEDIT           GO SEND 235 AN -EDIT-                       01818
                                                                                        01819
10436   011075  SSAVB   PIC 61              SELECT C.I.U.                               01820
10437   112106          BRS CIUR            PICK UP EDITED PROGRAM LENGTH               01821
10440   060410          TRA B,A             LENGTH IN BOTH A AND B                      01822
10441   202057          LDC SPROR                                                       01823
10442   423300          AMA $STAND          CALC ENDING DISK ADDRESS FOR STD AREA       01824
10443   503114          STA $DPOS3                                                      01825
10444   323324          STZ $TYP            NO CORRECTIONS                              01826
10445   623074          AMB $WORD5          CALC ENDING DISK ADDRESS FOR SAVE AREA      01827
10446   703100          STB $WORD6                                                      01828
10447   403074          LDA $WORD5                                                      01829
10450   110670          BRS SRDWR           GO SEND 235 A -DSKWR- ONTO SAVE AREA        01830
10451   000005          DEC DSKWR                                                       01831
                                                                                        01832
10452   111004  SSAVC   BRS SINS                                                       01833
10453   112274          BRS SAVEB           SET UP SAVEB                                01834
10454   101076          BRU SENDRT          GO END RUN                                  01835
                                                                                        01836
                                                                                        01837
                                                                                        01838
                                                                                        01839
10455   210457  TSTART  INB *+2             INITIAL RUN STATUS                          01840
10456   100467          BRU SSTAA           INITIAL STATE                               01841
10457   101026          BRU STMCH           MESSAGE 0                                   01842
10460   100752          BRU SERROR          MESSAGE 1                                   01843
10461   100474          BRU SSTAB           MESSAGE 2                                   01844
10462   101145          BRU EX235M          MESSAGE 3                                   01845
10463   101145          BRU EX235M          MESSAGE 4                                   01846
10464   101145          BRU EX235M          MESSAGE 5                                   01847
10465   101145          BRU EX235M          MESSAGE 6                                   01848
10466   101145          BRU EX235M          MESSAGE 7                                   01849
                                                                                        01850
                                                                                        01851
10467   403260  SSTAA   LDA $QUEUE          SET $DONE TO THE APPROPRIATE SETTING        01852
10470   405303          LDA TRDONE  X                                                   01853
10471   501243          STA SDONEX                                                      01854
10472   062014          TRC 0,AB            NO SELECTIVE LIST EDIT ON A RUN             01855
10473   100707          BRU SEDIT                                                       01856
                                                                                        01857
10474   112300  SSTAB   BRS SDSKR           RELINQUISH DISK TO 235 (NO PREPOSITIONING)  01858
10475   101210          BRU SPUNT                                                       01859
10476   011075          PIC 61              SELECT C.I.U.                               01860
10477   112106          BRS CIUR            GET EDITED LENGTH                           01861
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10500   202057          LDC SPROB                                                01862
10501   623300          AMB $STAND          CALC NEW ENDING DISK ADDRESS         01863
10502   703114          STB $DPOS3                                               01864
10503   323324          STZ $TYP            NO CORRECTIONS                       01865
10504   401215          LDA STARTM          -START- MESSAGE IN A                 01866
10505   223320          LDZ $TFLAG                                               01867
10506   120510          BZE *+2             IF TEACH, REPLACE -START- WITH -TEACH- 01868
10507   401220          LDA TEACH                                                01869
10510   603314          LDB $SYSTM          SYSTEM IDENTIFIER                    01870
10511   311270          STD MBX0            STORE IN MBX0, MBX1                  01871
10512   403300          LDA $STAND          CALC 6K AREA ADDRESS                 01872
10513   422027          AMA OM300                                                01873
10514   501272          STA MBX2                                                 01874
10515   403074          LDA $WORD5          LOAD DISK ADDRESSES (USED BY TEACH, NOT RUN) 01875
10516   603100          LDB $WORD6                                               01876
10517   311274          STD MBX4            TEACH DISK ADDRESSES TO MBX4, MBX5   01877
10520   403260          LDA $QUEUE          SET CLOCK APPROPRIATELY              01878
10521   405300          LDA TBTIME  X                                            01879
10522   111020          BRS STMST                                                01880
10523   100576          BRU SCNTD           IF CLOCK RUNS DOWN DURING RUN, SPECIAL CASE 01881
10524   402014          LDA FIVE            SET PROBLEM TO CONTINUED RUN STATUS  01882
10525   503304          STA $STAT                                                01883
10526   101031          BRU SXMIT           SEND OVER MAILBOX TO 235             01884
                                                                                 01885
                                                                                 01886
                                                                                 01887
                                                                                 01888
10527   210531  TCNTNU  INB *+2             CONTINUED RUN STATUS                 01889
10530   100541          BRU SCNTA           INITIAL STATE                        01890
10531   101026          BRU STMCH           MESSAGE 0                            01891
10532   100752          BRU SERROR          MESSAGE 1                            01892
10533   101145          BRU EX235M          MESSAGE 2                            01893
10534   101145          BRU EX235M          MESSAGE 3                            01894
10535   100576          BRU SCNTD           MESSAGE 4                            01895
10536   100563          BRU SCNTT           MESSAGE 5                            01896
10537   100600          BRU SCNTO           MESSAGE 6                            01897
10540   100603          BRU SCNTI           MESSAGE 7                            01898
                                                                                 01899
                                                                                 01900
10541   403300  SCNTA   LDA $STAND          DISK ADDRESS OF 6K AREA TO MBX2      01901
10542   422027          AMA OM300                                                01902
10543   501272          STA MBX2                                                 01903
10544   502037          STA PREPOS          PREPOSITION                          01904
10545   403310          LDA $SWLEN          SWAP LENGTH TO MBX3                  01905
10546   501273          STA MBX3                                                 01906
10547   112300          BRS SDSKR           RELINQUISH TO 235                    01907
10550   101210          BRU SPUNT                                                01908
10551   403260          LDA $QUEUE          SET $DONE AND CLOCK ACCORDING TO $QUEUE 01909
10552   605303          LDB TBDONE  X                                            01910
10553   701243          STB SDONEX                                               01911
10554   405300          LDA TBTIME  X                                            01912
10555   111020          BRS STMST                                                01913
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10556   100576          BRU SCNTD       IF CLOCK RUNS DOWN DURING RUN, SPECIAL CASE  01914
10557   401216          LDA CONT        -CNTNU- TO MBX0, SYSTEM TO MBX1              01915
10560   603314          LDB $SYSTM                                                   01916
10561   311270          STD MBX0                                                     01917
10562   101031          BRU SXMIT       SEND OVER MAILBOX TO 235                     01918
                                                                                     01919
10563   111004  SCNTT   BRS SINS        TERMINAL EXIT                                01920
10564   112252          BRS OUTPT       SET UP -OUTPT- TO START OUTPUTTING           01921
10565   403314          LDA $SYSTM      RESTORE SYSTEM NAME IF NECESSARY             01922
10566   572042          XAZ EDI                                                      01923
10567   130574          BNZ SCNTTE                                                   019240
10570   403270          LDA $SAVSY                                                   01925
10571   503314          STA $SYSTM                                                   01926
10572   402006          LDA ONE                                                      01927
10573   503324          STA $TYP                                                     01928
10574   323254  SCNTTE  STZ $PRIOR                                                   019290
10575   100605          BRU SCNTB                                                    01930
                                                                                     01931
                                                                                     01932
10576   110720  SCNTD   BRS SDUMP       SEND DUMP MESSAGE                            01933
10577   101031          BRU SXMIT       SEND OVER MAILBOX TO 235                     01934
                                                                                     01935
                                                                                     01936
10600   111004  SCNTO   BRS SINS        INTERMEDIATE OUTPUT CALL                     01937
10601   112176          BRS IOUT        SET UP INTERMEDIATE OUTPUT ROUTINE           01938
10602   100605          BRU SCNTB                                                    01939
                                                                                     01940
                                                                                     01941
10603   111004  SCNTI   BRS SINS        REAL-TIME INPUT CALL                         01942
10604   112166          BRS INPTA       SET UP REAL-TIME INPUT ROUTINE               01943
                                                                                     01944
                                                                                     01945
10605   011075  SCNTB   PIC 61          SELECT C.I.U.                                01946
10606   112106          BRS CIUR         PICK UP RUN TIME FROM 235                   01947
10607   202057          LDC SPROB                                                    01948
10610   703264          STB $RTIME      UPDATE $RTIME                                01949
10611   011075          PIC 61                                                       01950
10612   112106          BRS CIUR                                                     01951
10613   202057          LDC SPROB                                                    01952
10614   703244          STB $OUT                                                     01953
10615   403200          LDA $LHFL       OUTPUT HEADING EVEN IF NO OUTPUT             01954
10616   120620          BZE *+2                                                      01955
10617   503244          STA $OUT                                                     01956
10620   011075          PIC 61                                                       01957
10621   112106          BRS CIUR                                                     01958
10622   202057          LDC SPROB                                                    01959
10623   703310          STB $SWLEN      PICK UP SWAP LENGTH                          01960
10624   322047          STZ DUMFL                                                    01961
10625   101077          BRU SENDR                                                    01962
                                                                                     01963
                                                                                     01964
                                                                                     01965
```

```
10626   210630   TBATCH INR *+2           BATCHMODE STATUS
10627   100640          BRU SBATA         INITIAL STATE
10630   101026          BRU STMCH         MESSAGE 0
10631   101077          BRU SENDR         MESSAGE 1
10632   101100          BRU SENDR+1       MESSAGE 2
10633   101145          BRU EX235M        MESSAGE 3
10634   101145          BRU EX235M        MESSAGE 4
10635   101145          BRU EX235M        MESSAGE 5
10636   101145          BRU EX235M        MESSAGE 6
10637   101145          BRU EX235M        MESSAGE 7

10640   412006   SBATA  CMA ONE           SET $DONE TO -2
10641   501243          STA SDONEX
10642   401265          LDA SBATM         SET CLOCK TO MINIMUM GUARANTEED TIME
10643   111020          BRS STMST
10644   100650          BRU SBATB         WHEN CLOCK RUNS DOWN, RETURN HERE
10645   401221          LDA BATCH         SEND MESSAGE TO 235 TO START BATCH
10646   501270          STA MBX0
10647   101054          BRU SXMIT2        SEND OVER MAILBOX 0

10650   011001   SBATB  PIC 1             SCAN TO SEE IF QUEUE IS STILL EMPTY
10651   223304          LDZ $STAT         CHECK STATUS
10652   130657          BNZ *+5           QUEUE NOT EMPTY, SO KILL BATCH
10653   010001          AIC 1             OTHERWISE, TRY NEXT TELETYPE
10654   014051          XCZ TELET+1       TEST FOR END OF SCAN
10655   130651          BNZ SBATB+1       IF NOT, CONTINUE
10656   101210          BRU SPUNT         IF SO, QUEUE EMPTY, SO LET BATCH RUN
10657   112300          BRS SDSKR         RELINQUISH TO 235
10660   101210          BRU SPUNT         IF NO GOOD, TRY LATER
10661   402022          LDA NINE          SEND 235 COMMAND TO DUMP BATCH
10662   501270          STA MBX0
10663   401267          LDA STDTM         SET CLOCK TO STANDARD TIME INTERVAL
10664   111020          BRS STMST
10665   101143          BRU EX235C        IF RUNS DOWN, BOOTSTRAP
10666   101054          BRU SXMIT2        SEND OVER MAILBOX 0



                                MISC ROUTINES
10670   000000   SRDWR  IND 0
10671   010672          IND *+1
10672   311272          STD MBX2          PLACE DISK ADDRESSES IN MBX2, MBX3
10673   502037          STA PREPOS        PREPOSITION TO STARTING DISK ADDRESS
10674   063010          TRC A,A           TEST FOR ZERO OR NEGATIVE LENGTH
10675   461273          AAZ MBX3
10676   150765          BMI SXNOP         IF SO, -NO PROGRAM-
10677   112300          BRS SDSKR         RELINQUISH DISK TO 235
10700   101210          BRU SPUNT
```

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10701   404670          LDA SRDWR   X       PLACE MESSAGE IN MBX0                          02018
10702   501270          STA MBX0                                                           02019
10703   401267          LDA STDTM           SET CLOCK TO STANDARD INTERVAL                 02020
10704   111020          BRS STMST                                                          02021
10705   101143          BRU EX235C                                                         02022
10706   101031          BRU SXMIT           SEND OVER MAILBOX TO 235                       02023
                                                                                           02024
                                                                                           02025
10707   311274  SEDIT   STD MBX4            SELECTIVE LIST LINE NUMBER IN MBX4, MBX5       02026
10710   403300          LDA $STAND          STANDARD STARTING AND ENDING DISK ADDRESSES    02027
10711   603114          LDB $DPOS3                                                         02028
10712   223324          LDZ $TYP            HAVE CORRECTIONS BEEN MADE SINCE LAST EDIT..   02029
10713   120716          BZE *+3             IF NOT, THEN DO -DSKRD- IN PLACE OF -EDIT-     02030
10714   110670          BRS SRDWR           GO SEND -EDIT- TO 235                          02031
10715   000000          DEC EDITMS                                                         02032
10716   110670          BRS SRDWR           GO SEND -DSKRD- TO 235                         02033
10717   000004          DEC DSKRD                                                          02034
                                                                                           02035
                                                                                           02036
10720   000000  SDUMP   IND 0                                                              02037
10721   010722          IND *+1                                                            02038
10722   401217          LDA DUMPM                                                          02039
10723   603314          LDB $SYSTM          SYSTEM TO MBX1                                 02040
10724   311270          STD MBX0                                                           02041
10725   403300          LDA $STAND          CALC 6K AREA ADDRESS, PLACE IN MBX2            02042
10726   422027          AMA OM300                                                          02043
10727   502037          STA PREPOS          PREPOSITION                                    02044
10730   222046          LDZ DKFLG2                                                         02045
10731   140734          BPL *+3                                                            02046
10732   222047          LDZ DUMFL                                                          02047
10733   121210          BZE SPUNT                                                          02048
10734   112300          BRS SDSKR           RELINQUISH DISK TO 235                         02049
10735   101210          BRU SPUNT                                                          02050
10736   403044          LDA $WORD1          USER NUMBER TO MBX4, MBX5                      02051
10737   603054          LDB $WORD2                                                         02052
10740   311274          STD MBX4                                                           02053
10741   403064          LDA $WORD3          PROBLEM NAME TO MBX6, MBX7                     02054
10742   603070          LDB $WORD4                                                         02055
10743   311276          STD MBX6                                                           02056
10744   401267          LDA STDTM           SET CLOCK TO STANDARD TIME                     02057
10745   111020          BRS STMST                                                          02058
10746   101143          BRU EX235C                                                         02059
10747   402006          LDA ONE                                                            02060
10750   502047          STA DUMFL                                                          02061
10751   104720          BRU SDUMP   X       EXIT                                           02062
                                                                                           02063
                                                                                           02064
10752   011075  SERROR  PIC 61              SELECT C.I.U.                                  02065
10753   112106          BRS CIUR            PICK UP ERROR CODE FROM 235                    02066
10754   202057          LDC SPROR                                                          02067
10755   104756          BRU *+1     X       GO TO BRANCH TABLE                             02068
10756   210757          INB *+1                                                            02069
```

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10757   100762          BRU SXMAL           SYSTEM MALFUNCTION--TRY AGAIN          02070
10760   100765          BRU SXNOP           NO PROGRAM                             02071
10761   100773          BRU SXSYS           RETYPE SYSTEM NAME                     02072
                                                                                   02073
10762   600764  SXMAL   LDB *+2                                                    02074
10763   100776          BRU SXKOM                                                  02075
10764   011306          IND SMALF                                                  02076
                                                                                   02077
10765   403300  SXNOP   LDA $STAND          SET LENGTH = 0                         02078
10766   503114          STA $DPOS3                                                 02079
10767   323324          STZ $TYP                                                   02080
10770   600772          LDB *+2                                                    02081
10771   100776          BRU SXKOM                                                  02082
10772   011321          IND SNOPGM                                                 02083
                                                                                   02084
10773   600775  SXSYS   LDB *+2                                                    02085
10774   100776          BRU SXKOM                                                  02086
10775   011326          IND SSYSNM                                                 02087
                                                                                   02088
10776   703220  SXKOM   STB $MSGL           TERMINATE RUN AND OUTPUT MESSAGE       02089
10777   401002          LDA SXTERM                                                 02090
11000   112174          BRS INSERT                                                 02091
11001   101076          BRU SENDRT                                                 02092Q
                                                                                   02093
11002   112320  SXTERM  BRS TERM                                                   02094
                                                                                   02095
                                                                                   02096
11004   000000  SINS    IND 0                                                      02097
11005   011006          IND *+1                                                    02098
11006   405004          LDA SINS    X       PICK UP WORD FROM BRS+1                02099
11007   112174          BRS INSERT          GO INSERT INTO SPARE-TIME TASK LIST    02100
11010   341004          ADO SINS            PREPARE TO EXIT AT BRS+2               02101
11011   105004          BRU SINS    X       EXIT                                   02102
                                                                                   02103
                                                                                   02104
11012   000000  SDONE   IND 0                                                      02105
11013   011014          IND *+1                                                    02106
11014   402006          LDA ONE             SET $DONE=+1                           02107
11015   501243          STA SDONEX                                                 02108
11016   105012          BRU SDONE   X                                              02109
                                                                                   02110
                                                                                   02111
11020   000000  STMST   IND 0                                                      02112
11021   011022          IND *+1                                                    02113
11022   501236          STA SCLOCK          SET RUNNING-TIME CLOCK                 02114
11023   401020          LDA STMST           RETURN TO BRS+2 BUT LEAVE STMST=BRS+1  02115
11024   105025          BRU *+1     X                                              02116
11025   100001          INA 1                                                      02117
                                                                                   02118
                                                                                   02119
11026   221236  STMCH   LDZ SCLOCK          HAS CLOCK RUN OUT...                   02120
11027   141210          BPL SPUNT           IF NOT, EXIT                           02121
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11030   105020          BRU STMST   X       IF SO, RETURN TO LOC AFTER LAST -BRS STMST-  02122
                                                                                        02123
                                                                                        02124
11031   024001  SXMIT   DIF 1               RESET SPECIAL FLIP-FLOPS                    02125
11032   011075          PIC 61              SELECT C.I.U.                               02126
11033   027000          DEF 0               CLEAR OUT ADDRESS REGISTER                  02127
11034   251224          LDT SMBX1           LOAD ADDRESS REGISTER TO MBX1               02128
11035   601271          LDB MBX1            SEND OVER MBX1                              02129
11036   112110          BRS CIUX                                                        02130
11037   601272          LDB MBX2            SEND OVER MBX2                              02131
11040   112110          BRS CIUX                                                        02132
11041   601273          LDB MBX3            SEND OVER MBX3                              02133
11042   112110          BRS CIUX                                                        02134
11043   601274          LDB MBX4            SEND OVER MBX4                              02135
11044   112110          BRS CIUX                                                        02136
11045   601275          LDB MBX5            SEND OVER MBX5                              02137
11046   112110          BRS CIUX                                                        02138
11047   601276          LDB MBX6            SEND OVER MBX6                              02139
11050   112110          BRS CIUX                                                        02140
11051   601277          LDB MBX7            SEND OVER MBX7                              02141
11052   112110          BRS CIUX                                                        02142
11053   112310          BRS SWAIT           WAIT FOR C.I.U.                             02143
11054   024001  SXMIT2  DIF 1               BATCH ENTRANCE                              02144
11055   011075          PIC 61                                                          02145
11056   027000          DEF 0               CLEAR OUT ADDRESS REGISTER                  02146
11057   251223          LDT SMBX0           SET ADDRESS REGISTER TO MBX0                02147
11060   024400          DIF 9               SET CB2 (235 SIGN BIT)                      02148
11061   601270          LDB MBX0            SEND OVER MBX0 WITH SIGN BIT ON             02149
11062   112110          BRS CIUX                                                        02150
11063   026400          DEF 9               SEND API INTERRUPT TO 235                   02151
11064   401243          LDA SDONEX          SET $DONE...                                02152
11065   121210          BZE SPUNT           IF NOT, EXIT                                02153
11066   202057          LDC SPROR           TELETYPE NUMBER IN C-REGISTER               02154
11067   503110          STA $DONE           SET $DONE = SDONEX                          02155
11070   321243          STZ SDONEX          RESET SDONEX                                02156
11071   063004          TRC A,B             CHECK FOR A NEW MINIMUM VALUE OF $DONE      02157
11072   662062          ABZ MINDON                                                      02158
11073   151210          BMI SPUNT                                                       02159
11074   502062          STA MINDON                                                      02160
11075   101210          BRU SPUNT                                                       02161
                                                                                        02162
                                                                                        02163
                                                                                        02164
```

-SENDR- CLOSES OUT THE CURRENT PROBLEM, AND SELECTS THE NEXT TELETYPE TO BE GRANTED ACCESS TO THE 235. THE TELETYPE SELECTED IS THE ONE WITH THE GREATEST URGENCY WHICH HAS NOT YET BEEN RUN THIS TIME THRU THE QUEUE. THE PRIORITY NUMBERS ($PRIOR) VARY INVERSELY WITH THE URGENCY. SHORT EXPECTED RUNNING TIMES ARE GIVEN HIGH URGENCY. WITHIN A GIVEN URGENCY LEVEL, SUCCESSIVE RUNS ARE

```
                                        GROUPED BY SYSTEM TO MINIMIZE TIME WASTED          02174
                                        RELOADING SYSTEMS IN THE 235.                      02175
                                                                                           02176
                                        AS A GIVEN PROBLEM CONTINUES TO RUN, IT IS         02177
                                        ALLOWED PROGRESSIVELY LONGER RUNNING TIME          02178
                                        QUANTA IN THE 235, AND IS MADE ELIGIBLE            02179
                                        FOR SCHEDULING PROGRESSIVELY LESS OFTEN.           02180
                                        THE EFFECT IS TO ALLOW LONG PROBLEMS TO            02181
                                        RUN WITH FEWER SWAPS, WHILE SHORT PROBLEMS         02182
                                        RECEIVE RAPID RESPONSE FROM THE SYSTEM.            02183
                                                                                           02184
                                                                                           02185
11076   323254  SENDRT  STZ $PRIOR          TERMINAL EXIT                                  02186Q
11077   323304  SENDR   STZ $STAT           END RUN BY SETTING $STAT=0                     02187
11100   060012          TRA 0,AC            START SCAN AT 0                                02188
11101   512057          CAM SPROB           INITIALIZE SPROB TO -1                         02189
11102   402017          LDA SEVEN           INITIALIZE SPRI TO A LARGE NUMBER              02190
11103   501240          STA SPRI                                                           02191
11104   403304  SCAN    LDA $STAT           IS STATUS ZERO...                              02192
11105   121120          BZE STEPC           IF SO, THIS TELETYPE NOT ELIGIBLE              02193
11106   223110          LDZ $DONE           ALREADY SERVICED THIS TIME THRU THE QUEUE...   02194
11107   151120          BMI STEPC           IF SO, THIS TELETYPE NOT ELIGIBLE              02195
11110   413254          CMA $PRIOR          LOAD PRIORITY OF THIS TELETYPE AND             02196
11111   613314          CMB $SYSTM          SYSTEM NAME AS DOUBLE-LENGTH NUMBER            02197
11112   371240          AMD SPRI            COMPARE WITH PREVIOUS PRIORITY/SYSTEM SAVED    02198
11113   151120          BMI STEPC           IF LESS ELIGIBLE, TRY NEXT TELETYPE            02199
11114   403254          LDA $PRIOR          OTHERWISE, CREATE NEW DOUBLE-LENGTH NUMBER     02200
11115   603314          LDB $SYSTM                                                         02201
11116   311240          STD SPRI            SAVE IT...                                     02202
11117   302057          STC SPROB           AND SAVE TELETYPE NUMBER AS BEST BET SO FAR    02203
11120   010001  STEPC   AIC 1               STEP TO NEXT TELETYPE                          02204
11121   014051          XCZ TELET+1         END OF SCAN...                                 02205
11122   131104          BNZ SCAN            IF NOT, CONTINUE SCANNING                      02206
11123   222057          LDZ SPROB           HAS AN ELIGIBLE TELETYPE BEEN FOUND...         02207
11124   141134          BPL SENDX           IF SO, GO TO EXIT CODING                       02208
11125   011000          PIC 0                                                              02209
11126   343110          ADO $DONE           INCREMENT $DONE VECTOR                         02210
11127   010001          AIC 1                                                              02211
11130   014051          XCZ TELET+1                                                        02212
11131   131126          BNZ *-3                                                            02213
11132   342062          ADO MINDON          ALSO ADD ONE TO MINDON                         02214
11133   302057          STC SPROB           SELECT NON-EXISTENT TELETYPE                   02215
11134   202057  SENDX   LDC SPROB                                                          02216
11135   323110          STZ $DONE           ZERO $DONE FOR SELECTED TELETYPE               02217
11136   101210          BRU SPUNT           EXIT                                           02218
                                                                                           02219
                                                                                           02220
                                                                                           02221
                                        -EX235- IS A SETUP ROUTINE FOR RELOADING           02222
                                        THE 235 EXECUTIVE IN CASE OF SERIOUS MAL-          02223
                                        FUNCTIONING OF THE SYSTEM.  THREE CONDITIONS       02224
                                        CAN CAUSE THIS RELOADING TO OCCUR...               02225
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                                                1. 235 DOES NOT RESPOND TO A D-30          02226
                                                   COMMAND WITHIN 20 MS OR SO [MINUS]      02227
                                                2. 235 TAKES TOO LONG TO COMPLETE          02228
                                                   CERTAIN OPERATIONS [CLOCK]              02229
                                                3. D-30 DETECTS AN INVALID MESSAGE IN      02230
                                                   THE REGULAR MAILBOX [MSG]               02231
11137   341242   EX235S ADO SMCTR                STEP MINUS COUNTER                      02232
11140   151210          BMI SPUNT                                                       02233
11141   211370          LDD EXMI                                                        02234
11142   101147          BRU EXKOM                                                       02235
11143   211366   EX235C LDD EXCL                                                        02236
11144   101147          BRU EXKOM                                                       02237
11145   211372   EX235M LDD EXMS                                                        02238
11146   101147          BRU EXKOM                                                       02239
11147   323254   EXKOM  STZ $PRIOR                                                      02240Q
11150   501363          STA EXTY                                                        02241Q
11151   701364          STB EXTY+1                                                      02242
11152   060204          TRA C,B                 GET TELETYPE NUMBER                     02243
11153   042410          SR3 B,A                 CONVERT TELETYPE NUMBER TO OCTAL [BCD]  02244
11154   043010
11155   043010
11156   131160          BNZ *+2                 WITH ZERO SUPRESSION                    02245
11157   402034          LDA SIXTY                                                       02246
11160   045010          SL6 A,A                                                         02247
11161   632017          NMB SEVEN                                                       02248
11162   061404          TRA AB,B                                                        02249
11163   642035          RMB IZONE                                                       02250
11164   701351          STB EXNO                PLACE INTO LOG MESSAGE                  02251
11165   403044          LDA $WORD1                                                      02252
11166   501353          STA EXUS                                                        02253
11167   403054          LDA $WORD2                                                      02254
11170   501354          STA EXUS+1                                                      02255
11171   403064          LDA $WORD3                                                      02256
11172   501356          STA EXPR                                                        02257
11173   403070          LDA $WORD4                                                      02258
11174   501357          STA EXPR+1                                                      02259
11175   403314          LDA $SYSTM                                                      02260
11176   501361          STA EXSYS                                                       02261
11177   011001          PIC 1                                                           02262
11200   211336          LDD EXMES                                                       02263
11201   703220          STB $MSGL                                                       02264
11202   112174          BRS INSERT                                                      02265
11203   323250          STZ $OUTFF                                                      02266
11204   401231          LDA SBOOTC              SET UP TASK TO BOOTSTRAP                02267
11205   502050          STA STOPF               SUPRESS C.I.U. CYCLES DURING LOAD       02268
11206   112174          BRS INSERT              SET UP TASK IN LIST                     02269
11207   101210          BRU SPUNT                                                       02270
                                                                                        02271
                                                                                        02272
11210   062114   SPUNT  TRC Q,AB                COMMON EXIT POINT FOR C.I.U. ROUTINE    02273
11211   422411          AMA CIUMIN                                                      02274
11212   150136          BMI SREST               UPDATE MIN CYCLES COUNTER               02275
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11213   712411          CBM CIUMIN                                          02276
11214   100136          BRU SREST                                           02277
                                                                            02278
                                                                            02279
                                                                            02280
                                                                            02281
                                                                            02282
                                CONSTANTS AND WORKING STORAGE               02283
                                LIST OF MESSAGES FROM D-30 TO 235           02284
         00000  EDITMS EQU 0                                               02285
11215   000001  STARTM DEC 1                                               02286
11216   000002  CONT   DEC 2                                               02287
11217   000003  DUMPM  DEC 3                                               02288
         00004  DSKRD  EQU 4                                               02289
         00005  DSKWR  EQU 5                                               02290
11220   000006  TEACH  DEC 6                                               02291
11221   000007  BATCH  DEC 7                                               02292
11222   000010  TBATM  DEC 8                                               02293
         00213  SMBX   EQU 213      ADDRESS OF MBX0-1 IN 235 CORE          02294
11223   000213  SMBX0  IND SMBX                                            02295
11224   000214  SMBX1  IND SMBX+1                                          02296
11225   000223  SMBX8  IND SMBX+8                                          02297
11226   000225  SMBX10 IND SMBX+10                                         02298
11227   777770  SEXTR  OCT 777770                                          02299
11230   777760  SMASK4 OCT 777760                                          02300
11231   112074  SBOOTC BRS BOOTC    BOOTSTRAP SETUP CONSTANT               02301
11232   737777  SON    OCT 737777                                          02302
11233   040000  SOFF   OCT 040000                                          02303
11234   130000  SCOLN  OCT 130000   COLON IN HIGH-ORDER POSITION            02304
11235   000000  SPMESS OCT 0        SPECIAL MESSAGE                        02305
11236   000000  SCLOCK OCT 0        RUNNING-TIME CLOCK                     02306
11240   000000  SPRI   DDC 0        PRIORITY/SYSTEM SAVED FOR SENDR ROUTINE 02307
11241   000000
11242   000000  SMCTR  OCT 0        MINUS COUNTER                          02308
11243   000000  SDONEX OCT 0        SET $DONE AFTER XMIT INDICATOR         02309
11244   211245  SBRNCH INR *+1      SPECIAL MESSAGE BRANCH TABLE           02310
11245   100205         BRU SBR0     NO 235 MESSAGE                         02311
11246   100206         BRU SBR1     235 WANTS THE DISK                     02312
11247   100212         BRU SBR2     235 IS DONE WITH THE DISK              02313
11250   100215         BRU SBR3     235 SAYS STOP THE RUNNING TIME CLOCK   02314
11251   100221         BRU SBR4     235 SAYS START RUNNING TIME CLOCK AGAIN 02315
11252   100256         BRU SBR12    TEMPORARILY USED UNTIL EDIT IS MODIFIED 02316
11253   100224         BRU SBR6     235 SAYS STOP SCANNING ALL BUT TELETYPE 1 02317
11254   100234         BRU SBR7     235 SAYS SCAN ALL TTY-S                02318
11255   100241         BRU SBR10    235 SAYS SET BATCHMODE                 02319
11256   100252         BRU SBR11    235 SAYS RESET BATCHMODE               02320
11257   100256         BRU SBR12    NEW ENDING DISK ADDRESS                02321
11260   100263         BRU SBR13    235 SAYS EDIT NEXT TIME                02322
11261   100205         BRU SBR0     NOT USED **********                    02323
11262   100205         BRU SBR0     NOT USED **********                    02324
11263   100205         BRU SBR0     NOT USED **********                    02325
11264   100205         BRU SBR0     NOT USED **********                    02326
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11265   000454   SBATM  DEC 300          GUARANTEED BATCH TIME                                  02327
11266   222163   SBATN  ALF BAT          USED IN BOOTSTRAP MESSAGE DURING BATCH RUN             02328
11267   000310   STDTM  DEC 200          STANDARD TIME INTERVAL FOR DISK I/O AND EDIT           02329
11270   000000   MBX0   OCT 0            IMAGE OF MAILBOX IN D-30                               02330
11271   000000   MBX1   OCT 0                                                                   02331
11272   000000   MBX2   OCT 0                                                                   02332
11273   000000   MBX3   OCT 0                                                                   02333
11274   000000   MBX4   OCT 0                                                                   02334
11275   000000   MBX5   OCT 0                                                                   02335
11276   000000   MBX6   OCT 0                                                                   02336
11277   000000   MBX7   OCT 0                                                                   02337
                                                                                               02338
11300   111301   TBTIME INA *+1          ALLOWABLE RUN TIMES                                    02339
11301   000310          DEC 200          QUEUE 0                                                02340
11302   000454          DEC 300          QUEUE 1                                                02341
                                                                                               02342
11303   111304   TBDONE INA *+1          NUMBER OF TIMES THRU QUEUE 0                           02343
11304   777777          DEC -1           QUEUE 0                                                02344
11305   777774          DEC -4           QUEUE 1                                                02345
                                                                                               02346
11306   376270   SMALF  OCT 376270       SYSTEM MALFUNCTION--TRY AGAIN.                         02347
11307   626325          ALF STE                                                                 02348
11310   446044          ALF M M                                                                 02349
11311   214326          ALF ALF                                                                 02350
11312   644523          ALF UNC                                                                 02351
11313   633146          ALF TIO                                                                 02352
11314   454040          ALF N--                                                                 02353
11315   635170          ALF TRY                                                                 02354
11316   602127          ALF  AG                                                                 02355
11317   213145          ALF AIN                                                                 02356
11320   333755          OCT 333755                                                              02357
11321   374546   SNOPGM OCT 374546       NO PROGRAM.                                            02358
11322   604751          ALF  PR                                                                 02359
11323   462751          ALF OGR                                                                 02360
11324   214433          ALF AM.                                                                 02361
11325   375555          OCT 375555                                                              02362
11326   375125   SSYSNM OCT 375125       RETYPE SYSTEM NAME                                     02363
11327   637047          ALF TYP                                                                 02364
11330   256062          ALF E S                                                                 02365
11331   706263          ALF YST                                                                 02366
11332   254460          ALF EM                                                                  02367
11333   452144          ALF NAM                                                                 02368
11334   254040          ALF E--                                                                 02369
11335   555555   ----   OCT 555555                                                              02370
                                                                                               02371
11336   112152   EXMES  BRS ERROR                                                               02372
11337   011340          IND *+1                                                                 02373
11340   777777          OCT 777777                                                              02374
11341   377272          OCT 377272                                                              02375
11342   323232          OCT 323232                                                              02376
11343   224646          ALF BOO                                                                 02377
11344   636263          ALF TST                                                                 02378
```

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11345   512147          ALF RAP                                 02379
11346   606325          ALF  TF                                 02380
11347   432563          ALF LET                                 02381
11350   704725          ALF YPE                                 02382
11351   606060  EXNO    ALF                                     02383
11352   606060          ALF                                     02384
11353   606060  EXUS    ALF                                     02385
11354   606060          ALF                                     02386
11355   606060          ALF                                     02387
11356   606060  EXPR    ALF                                     02388
11357   606060          ALF                                     02389
11360   606014          OCT 606014                              02390
11361   606060  EXSYS   ALF                                     02391
11362   746060          OCT 746060                              02392
11363   606060  EXTY    ALF                                     02393
11364   606060          ALF                                     02394
11365   377255          OCT 377255                              02395
11366   234346  EXCL    ALF CLO                                 02396
11367   234233          ALF CK.                                 02397
11370   443145  EXMI    ALF MIN                                 02398
11371   646233          ALF US.                                 02399
11372   442562  EXMS    ALF MES                                 02400
11373   622733          ALF SG.                                 02401
```

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                                                                                02405
                                                                                02406
                        THE OUTPUT ROUTINE SUPPLIES THE NEXT CHARAC-            02407
                        TER TO BE OUTPUTTED BY THE TELETYPE SPECIFIED           02408
                        BY THE C-REGISTER.  OUTPUTTING IS BUFFERED.             02409
                        THE ROUTINE SETS UP SPARE-TIME TASKS TO RE-             02410
                        FILL THE BUFFERS FROM THE DISK AS REQUIRED.             02411
                                                                                02412
                                                                                02413
11374   431553  CIRC1   NMA OMASKS              RESET TRANSMIT CHARACTER FLAG   02414
11375   503050          STA $SW2                                                02415
11376   223250          LDZ $OUTFF              SHOULD THE TELETYPE BE OUTPUTTING..;  02416
11377   121522          BZE OP12                IF NOT, INITIATE END-OF-MESSAGE SEQUENCE  02417
11400   151472          BMI OP13                GO TO END OF MESSAGE DELAY RTN  02418
11401   403230          LDA $ODC                                                02419
11402   121412          BZE OP4                 GO TO CHARACTER LOOKUP RTN      02420
11403   141427          BPL OP2                 GO TO RTN TO SEND A LINE-FEED   02421
11404   403234          LDA $OF                 LOOK AT BUFFER READY FLAG       02422
11405   121470          BZE OP8+4               IF BOTH BUFFERS ARE BUSY, SEND RUBOUTS  02423
11406   323230          STZ $ODC                IF BUFFER HAS COME READY, RESET FLAGS  02424
11407   323234          STZ $OF                                                 02425
11410   401550          LDA ODOB                SET UP TASK TO READ ANOTHER BUFFERLOAD  02426
11411   112174          BRS INSERT                                              02427
11412   407240  OP4     LDA $OLOC   X           CHARACTER LOOKUP ROUTINE        02428
11413   353224          SBO $OCH                STEP CHARACTER POINTER          02429
11414   151434          BMI OP5                 IF RIGHTMOST CHARACTER, BRANCH  02430
11415   121432          BZE OP6                 IF CENTER CHARACTER, BRANCH     02431
11416   055010          CL6 A,A                 SHIFT CHARACTER INTO RIGHTMOST POSITION  02432
11417   432032  OP7     NMA M77                 MASK CHARACTER                  02433
11420   605551          LDB OLKUP   X           LOOK UP CHARACTER IN TRANSLATION MATRIX  02434
11421   703040  CIRC5   STB $SW1                PLACE TELETYPE CHARACTER IN SCAN-WORD ONE  02435
11422   151464          BMI OP8                 BRANCH OUT ON SPECILA CHARACTER  02436
11423   342346          ADO #CHO                BUMP UP CHARACTERS OUT COUNTER  ***02437
11424   131426          BNZ *+2                 AND CHECK FOR OVERFLOW          ***02438
11425   342347          ADO #CHO+1              AND IF SO, BUMP OVERFLOW        ***02439
11426   100104          BRU CIRC3               RETURN TO REAL-TIME LOOP        02440
11427   353230  OP2     SBO $ODC                STEP LINE-FEED COUNTER          02441
11430   601561          LDB LINF                SEND A LINE-FEED                02442
11431   101421          BRU CIRC5                                               02443
11432   047010  OP6     SR6 A,A                 SHIFT CHARACTER INTO RIGHTMOST POSITION  02444
11433   101417          BRU OP7                                                 02445
11434   602010  OP5     LDB TWO                 RESET CHARACTER POINTER         02446
11435   703224          STB $OCH                                                02447
11436   343240          ADO $OLOC               STEP WORD POINTER               02448
11437   223234          LDZ $OF                 IF $OF IS GREATER THAN ZERO, NO BUFFER CHECK  02449
11440   151442          BMI *+2                                                 02450
11441   131417          BNZ OP7                                                 02451
11442   603240          LDB $OLOC                                               02452
11443   762032          NBZ M77                 TEST FOR OVERFLOW INTO OTHER BUFFER  02453
11444   131417          BNZ OP7                 IF NOT, SEND CHARACTER IMMEDIATELY  02454
11445   762023          NBZ STAT2               IF SO, FLIP-FLOP $OLOC TO OTHER BUFFER  02455
11446   131451          BNZ *+3                                                 02456
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11447   622026          AMB  OM200                                          02457
11450   703240          STB  $OLOC                                          02458
11451   223234          LDZ  $OF        IS OTHER BUFFER AVAILABLE...        02459
11452   151456          BMI  OP9        IF SO BRANCH                        02460
11453   602007          LDB  MONE       SET FLAG--BOTH BUFFERS NOT READY    02461
11454   703230          STB  $ODC                                           02462
11455   101417          BRU  OP7        SEND OUT CHARACTER                  02463
11456   323234  OP9     STZ  $OF                                            02464
11457   501552          STA  OASAVE                                         02465
11460   401550          LDA  ODOB       SET UP TASK TO READ ANOTHER BUFFERLOAD 02466
11461   112174          BRS  INSERT                                         02467
11462   401552          LDA  OASAVE     RESTORE THE A-REGISTER              02468
11463   101417          BRU  OP7                                            02469
11464   771556  OP8     XBZ  OEOM       TEST SPECIAL CHARACTER              02470
11465   121531          BZE  OP10       IF AN END-OF-MESSAGE                02471
11466   771557          XBZ  OCR                                            02472
11467   121537          BZE  OP11       IF A CARRIAGE-RETURN                02473
11470   601555          LDB  ORUB       IF NEITHER, IGNORE AND SEND A FILL CHAR. 02474
11471   101421          BRU  CIRC5                                          02475
11472   223274  OP13    LDZ  $SPACE     SPACES TO SEND OUT...               02476
11473   121477          BZE  *+4        IF NOT, BRANCH                      02477
11474   353274          SBO  $SPACE                                         02478
11475   601561          LDB  LINF                                           02479
11476   101421          BRU  CIRC5                                          02480
11477   223230          LDZ  $ODC       IS END-OF-MESSAGE DELAY FINISHED... 02481
11500   121504          BZE  *+4        IF SO, BRANCH                       02482
11501   353230          SBO  $ODC       IF NOT, STEP COUNTER                02483
11502   601554          LDB  OFILCH     SEND OUT MARK-HOLD                  02484
11503   101421          BRU  CIRC5                                          02485
11504   403104          LDA  $CNFL      IS CONTINUE FLAG SET...             02486
11505   141510          BPL  *+3                                            02487
11506   405565          LDA  OTBCN   X  IF SO, LOOK UP CONTINUE TASK AND SET IT UP 02488
11507   112174          BRS  INSERT                                         02489
11510   402010          LDA  TWO        RESET CHARACTER POINTER             02490
11511   503224          STA  $OCH                                           02491
11512   513234          CAM  $OF        SET $OF NEGATIVE                    02492
11513   323250          STZ  $OUTFF     RETURN TO INPUT MODE                02493
11514   601554          LDB  OFILCH     SEND OUT MARK HOLD                  02494
11515   060210          TRA  C,A                                            02495
11516   421562          AMA  NOECHO     TEST IF THIS TELETYPE SHOULD BE ECHOPLEXED 02496
11517   141521          BPL  *+2        IF NOT SKIP NEXT INSTRUCTION        02497
11520   026040          DEF  6          SET ECHOPLEX (INPUT) MODE           02498
11521   101421          BRU  CIRC5                                          02499
11522   060210  OP12    TRA  C,A        CUT OFF OUTPUTTING (A LA STOP)      02500
11523   421562          AMA  NOECHO     TEST IF THIS IS A NON-ECHOPLEXED BB 02501
11524   151527          BMI  *+3        IF ECHOPLEXED, GO TO USUAL CUTOFF ROUTINE 02502
11525   601554          LDB  OFILCH     IF NON-ECHOPLEXED, SEND MARKS       02503
11526   101421          BRU  CIRC5      EXIT                                02504
11527   323104          STZ  $CNFL                                          02505
11530   323274          STZ  $SPACE                                         02506
11531   402006  OP10    LDA  ONE        SET END-OF-MESSAGE DELAY            02507
11532   503230          STA  $ODC                                           02508
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11533   402007          LDA MONE                                          02509
11534   503250          STA $OUTFF                                        02510
11535   601554          LDB OFILCH                                        02511
11536   101421          BRU CIRC5                                         02512
11537   602006  OP11    LDB ONE         GENERATE A LINE FEED AFTER A CARRIAGE RETURN 02513
11540   342351          ADO #CRO        BUMP UP OUTPUT CARRAIGE RETURN COUNTER  ***02514
11541   703230          STB $ODC                                          02515
11542   603214          LDB $LSTT                                         02516
11543   772010          XBZ TWO                                           02517
11544   131546          BNZ *+2                                           02518
11545   323174          STZ $LCNT                                         02519
11546   601560          LDB OCRS                                          02520
11547   101421          BRU CIRC5                                         02521
                                                                          02522
                    OUTPUT ROUTINE CONSTANTS                              02523
                                                                          02524
11550   112136  ODOB    BRS DOB                                           02525
11551   107000  OLKUP   INA OTABLE      TABLE LOOKUP CONSTANT             02526
11552   000000  OASAVE  OCT 0                                             02527
11553   377777  OMASKS  OCT 377777                                        02528
11554   007777  OFILCH  OCT 7777                                          02529
11555   007776  ORUB    OCT 7776                                          02530
11556   400077  OEOM    OCT -77         END OF MESSAGE                    02531
11557   400032  OCR     OCT -32         CARRIAGE RETURN                   02532
11560   007432  OCRS    OCT 7432                                          02533
11561   007424  LINF    OCT 7424                                          02534
11562   777732  NOECHO  DEC -38         TELETYPES 38,39,40 ARE NOT ECHOPLEXED 02535Q
11563   112170          BRS INPTB                                         02536
11564   112220          BRS MORE                                          02537
11565   111566  OTBCN   INA *+1         CONTINUE TASK TABLE               02538
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                                              THE INPUT ROUTINE PICKS UP THE LATEST
                                              CHARACTER FROM THE TELETYPE SPECIFIED BY THE
                                              C-REGISTER, AND ACCUMULATES THIS INPUT
                                              IN THE INPUT BUFFER.  BACKSPACE AND LINE-
                                              DELETE FUNCTIONS ARE IMPLEMENTED.  A CARRIAGE
                                              RETURN TERMINATES A LINE.  IF THE LINE
                                              IS A COMMAND TO THE DATANET-30, THE APPRO-
                                              PRIATE SPARE-TIME TASKS ARE SET UP AND THE
                                              LINE IS DELETED FROM THE BUFFER.  IF THE LINE
                                              IS A SOURCE STATEMENT [E.G., ALGOL, BASIC,
                                              ETC.], THE LINE REMAINS IN THE BUFFER AND
                                              WILL EVENTUALLY BE TRANSFERRED ONTO THE DISK
                                              IN SPARE-TIME.

                                              IF THE D-30 IS OUTPUTTING ON THE SPECIFIED
                                              TELETYPE, THE INPUT ROUTINE RESPONDS TO
                                              ONLY THE LETTER -S- OR A -BREAK- CHARACTER.
                                              UPON RECEIVING ONE OF THESE TWO, THE -STOP-
                                              FUNCTION IS INITIATED.





              12000          LOC 12000
      12000  430342  CIRC2X  NMA IMSKS             RESET RECEIVE CHARACTER FLAG
      12001  342344          ADO #CHI              BUMP UP INPUT CHARACTER COUNTER        ***
      12002  130004          BNZ *+2               CHECK ON OVERFLOW, THIS COUNTER        ***
      12003  342345          ADO #CHI+1            AND IF SO, BUMP SECOND                 ***
      12004  503060          STA $SW3
      12005  430343          NMA IMSK6             EXTRACT REDUNDANT BITS OF TELETYPE CHARACTER
      12006  043010          SR1 A,A
      12007  120022          BZE IBRK              IF -BREAK- THEN SET UP -STOP-
      12010  604351          LDB ILOOK     X       CONVERT CHARACTER FROM TELETYPE TO D-30 BCD
      12011  223250          LDZ $OUTFF            IS TELETYPE OUTPUTTING...
      12012  120025          BZE INORM             IF NOT, CONTINUE WITH NORMAL INPUT ROUTINE
      12013  770353          XBZ IO62              IF SO, TEST FOR THE LETTER -S-
      12014  120022          BZE IBRK
      12015  770354          XBZ IOM2              TEST FOR AN -ALT MODE-
      12016  130337          BNZ CIRC4             GET OUT IMMEDIATELY
      12017  323250          STZ $OUTFF
      12020  104021          BRU *+1       X
      12021  011531          IND OP10
      12022  400352  IBRK    LDA IST               IF -S- OR -BREAK- THEN SET UP -STOP- AND EXIT
      12023  112174          BRS INSERT
      12024  100337          BRU CIRC4
      12025  060400  INORM   TRA B,Z
      12026  150073          BMI ISPLCH            BRANCH IF SPECIAL CHARACTER [TAGGED MINUS]
      12027  353144          SBO $INCH             STEP CHARACTER POINTER
      12030  120047          BZE INCH2             MIDDLE CHARACTER--BRANCH
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12031  150054         BMI INCH3             RIGHTHAND CHARACTER--BRANCH
12032  413150         CMA $INLOC            LEFTHAND CHARACTER.
12033  423130         AMA $IDLOC            CHECK THAT LINE IS NOT TOO LONG.
12034  150036         BMI *+2               IF $INLOC IS POINTING TO THE FIRST BUFFER
12035  420452         AMA M128                AND $IDLOC TO THE 2ND, THEN ADD 128 TO $IN
12036  420355         AMA I27               IF IT IS TOO LONG, TYPE ERROR MESSAGE AND
12037  140044         BPL *+5                    DELETE THE LINE.
12040  210414         LDD ILERR
12041  703220         STB $MSGL
12042  112174         BRS INSERT
12043  100245         BRU IGNOR
12044  056404         CR6 B,B               LEFTHAND CHARACTER, SO LEFT-JUSTIFY
12045  707150         STB $INLOC   X        STORE IN LINE-BUFFER
12046  100337         BRU CIRC4             EXIT TO -INTER-
12047  044404  INCH2  SL6 B,B               MIDDLE CHARACTER, SO CENTER-JUSTIFY
12050  400344         LDA IMSKC             CLEAR A SPACE IN LINE-BUFFER
12051  537150         NAM $INLOC   X
12052  747150         RBM $INLOC   X        INSERT CHARACTER INTO BUFFER
12053  100337         BRU CIRC4             EXIT TO -INTER-
12054  402031  INCH3  LDA IMSK12            RIGHTHAND CHARACTER [ALREADY JUSTIFIED]
12055  537150         NAM $INLOC   X        CLEAR A SPACE IN LINE-BUFFER
12056  747150         RBM $INLOC   X        INSERT CHARACTER INTO BUFFER
12057  402010         LDA TWO               RESET CHARACTER POINTER
12060  503144         STA $INCH
12061  403150         LDA $INLOC
12062  422006         AMA ONE               STEP WORD POINTER
12063  562032         NAZ M77               TEST IF END-OF-BUFFER CONDITION
12064  130071         BNZ *+5               IF NOT, CONTINUE NORMALLY
12065  562023         NAZ STAT2             TEST IF UPPER OR LOWER BUFFER
12066  130070         BNZ *+2
12067  403154         LDA $INSTD            IF UPPER BUFFER FULL, SWITCH TO LOWER ONE
12070  333160         CMM $IXFL             SET FLAG TO HAVE OTHER BUFFER SERVICED
12071  503150         STA $INLOC
12072  100337         BRU CIRC4             EXIT TO -INTER-



                                      SPECIAL CHARACTERS ARE TAGGED AS FOLLOWS IN
                                      THE INPUT CHARACTER TRANSLATION TABLE--
                                           NON-INPUT CHARACTERS    -0 TAG
                                           BACKSPACE CHARACTER     -1 TAG
                                           LINE-DELETE CHARACTER   -2 TAG
                                           CARRIAGE-RETURN         -3 TAG
                                           WHO-ARE-YOU [WRU]       -4 TAG


12073  104074  ISPLCH BRU *+1      X        MULTI-WAY BRANCH ACCORDING TO TAG
12074  212075         INB *+1               TAG IS IN B-REGISTER
12075  100337         BRU CIRC4             NON-INPUTTABLE CHARACTERS
12076  100102         BRU IBKSP             BACKSPACE
12077  100124         BRU IDELET            LINE-DELETE
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12100   100136          BRU IRETRN          CARRIAGE-RETURN                          02645
12101   100132          BRU IWRU            WHO-ARE-YOU...                           02646
                                                                                     02647
                                                                                     02648
                                                                                     02649
12102   223144  IBKSP   LDZ $INCH          BACKSPACE BY DECREMENTING POINTERS       02650
12103   170105          BOD *+2                                                      02651
12104   130107          BNZ *+3                                                      02652
12105   343144          ADO $INCH           IF LAST CHARACTER WAS LEFT OR MIDDLE, SIMPLY 02653
12106   100337          BRU CIRC4           DECREMENT CHARACTER POINTER AND EXIT     02654
12107   403150          LDA $INLOC          IS THIS A VACUOUS LINE...                02655
12110   573130          XAZ $IDLOC                                                   02656
12111   120337          BZE CIRC4           IF SO, EXIT                              02657
12112   562032          NAZ M77             BACKSPACING OVER FIRST CHAR OF A BUFFER... 02658
12113   130121          BNZ IBKSPA          IF NOT, CONTINUE                         02659
12114   323160          STZ $IXFL           IF SO, RESET DISK TASK FLAG              02660
12115   562023          NAZ STAT2           WRAP AROUND TO UPPER BUFFER...           02661
12116   130121          BNZ IBKSPA          IF NOT, CONTINUE                         02662
12117   422024          AMA STAT4           IF SO, PERFORM WRAP AROUND               02663
12120   503150          STA $INLOC                                                   02664
12121   353150  IBKSPA  SBO $INLOC          DECREMENT THE WORD POINTER               02665
12122   323144          STZ $INCH           AND RESET CHARACTER POINTER              02666
12123   100337          BRU CIRC4           THEN EXIT                                02667
                                                                                     02668
                                                                                     02669
                                                                                     02670
12124   223164  IDELET  LDZ $KFLAG          TEST FOR PAPER TAPE INPUT...             02671
12125   130245          BNZ IGNOR           IF SO, DELETE LINE                       02672
12126   210400          LDD IMESS           OTHERWISE, SET UP MESSAGE                02673
12127   703220          STB $MSGL                                                    02674
12130   112174          BRS INSERT                                                   02675
12131   100245          BRU IGNOR           DELETE LINE                              02676
                                                                                     02677
                                                                                     02678
                                                                                     02679
12132   210430  IWRU    LDD IANS            SET UP REPLY TO WHO-ARE-YOU              02680
12133   703220          STB $MSGL                                                    02681
12134   112174          BRS INSERT                                                   02682
12135   100245          BRU IGNOR           RESET THINGS                             02683
                                                                                     02684
                                                                                     02685
                                                                                     02686
                        CARRIAGE-RETURN INDICATES END-OF-LINE.                       02687
                        A LINE MUST ALWAYS BE AN EVEN NUMBER OF WORDS                02688
                        LONG, SO TRAILING FILL-CHARACTERS ARE ADDED.                 02689
                        IF THE LINE STARTS WITH A NUMERIC CHARACTER,                 02690
                        IT IS TAKEN TO BE A SOURCE STATEMENT.  OTHER-                02691
                        WISE, THE LINE IS INTERPRETED AS A COMMAND                   02692
                        TO THE DATANET-30 EXECUTIVE.                                 02693
                                                                                     02694
                                                                                     02695
12136   403214  IRETRN  LDA $LSTT                                                    02696
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12137   572010          XAZ TWO                                                 02697
12140   130142          BNZ *+2                                                 02698
12141   323174          STZ $LCNT                                               02699
12142   403124          LDA $HFLAG      TEST SPECIAL INPUT FLAG                 02700
12143   342350          ADO #CRI        BUMP UP INPUT CARRAIGE RETURN COUNTER   ***02701
12144   562035          NAZ IZONE       -IN6- BIT INDICATES FILL WITH BLANKS    02702
12145   130253          BNZ IHFL                                                02703
12146   353144          SBO $INCH       OTHERWISE, FILL THE LINE OUT TO AN EVEN 02704
12147   150154          BMI IMIN        NUMBER OF WORDS, AND INSERT A CARRIAGE-RETURN02705
12150   120156          BZE IZER        AT THE END                              02706
12151   602007          LDB MONE                                                02707
12152   707150          STB $INLOC  X                                           02708
12153   100160          BRU IHERE                                               02709
12154   602032  IMIN    LDB M77                                                 02710
12155   100157          BRU *+2                                                 02711
12156   602033  IZER    LDB M7777                                               02712
12157   747150          RBM $INLOC  X                                           02713
12160   223150  IHERE   LDZ $INLOC                                              02714
12161   160165          BEV ITHERE                                              02715
12162   600350          LDB IFLCR                                               02716
12163   737150          NBM $INLOC  X                                           02717
12164   100170          BRU IDO                                                 02718
12165   343150  ITHERE  ADO $INLOC                                              02719
12166   600350          LDB IFLCR                                               02720
12167   707150          STB $INLOC  X                                           02721
12170   403124  IDO     LDA $HFLAG      CHECK SPECIAL INPUT FLAG                02722
12171   130277          BNZ IHINS       IF ON, GO INSERT TASK                   02723
12172   403150          LDA $INLOC                                              02724
12173   422006          AMA ONE         STEP POINTER BY ONE                     02725
12174   562032          NAZ M77         END OF BUFFER...                        02726
12175   130202          BNZ *+5         IF NOT, GET OUT                         02727
12176   333160          CMM $IXFL       IF END OF BUFFER, SET FLAG FOR DISK TASK02728
12177   562023          NAZ STAT2       WHICH BUFFER...                         02729
12200   130202          BNZ *+2         IF END OF LOWER, CONTINUE               02730
12201   403154          LDA $INSTD      IF END OF UPPER, WRAP AROUND            02731
12202   503150          STA $INLOC                                              02732
12203   607130          LDB $IDLOC  X   OTHERWISE, LOOK AT FIRST THREE CHARS OF LINE 02733
12204   042404          SR1 B,B         TEST WHETHER FIRST CHARACTER IS A TRUE DIGIT 02734
12205   660365          ABZ IDIGIT      IF NOT A DIGIT, TREAT LINE AS SYSTEM COMMAND 02735
12206   140304          BPL ISOURC      BUT IF A DIGIT, TREAT AS SOURCE STATEMENT02736
12207   300364          STC ISTC        SAVE TELETYPE NUMBER                    02737
12210   062404          TRC B,B         FORM TWO-S COMPLEMENT OF B-REGISTER     02738
12211   622006          AMB ONE                                                 02739
12212   011000          PIC 0           INITIALIZE INCREMENT POINTER            02740
12213   404367          LDA INCRE   X   START LOOKING IN MIDDLE OF TABLE        02741
12214   010001  ICOMP   AIC 1           STEP TO NEXT INCREMENT                  02742
12215   664366          ABZ ICLST   X   THREE WAY COMPARE WITH LIST ENTRY       02743
12216   120235          BZE ITASK       IF EQUAL, FOUND                         02744
12217   150224          BMI *+5                                                 02745
12220   063010          TRC A,A         SUBTRACT CURRENT INCREMENT              02746
12221   424367          AMA INCRE   X                                           02747
12222   063010          TRC A,A                                                 02748
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12223   100225          BRU *+2                                                  02749
12224   424367          AMA INCRE    X       ADD CURRENT INCREMENT               02750
12225   224367          LDZ INCRE    X       CHECK IF LAST INCREMENT HAS BEEN USED...  02751
12226   140214          BPL ICOMP            IF NOT, CONTINUE.  ELSE, ILLEGAL COMMAND.  02752
12227   200364          LDC ISTC             RESTORE C-REG TO TELETYPE NUMBER    02753
12230   342353          ADO #NCM             BUMP UP COUNTER OF ILLEGA COMMAND LINES  ***02754
12231   210406          LDD IERROR           SET UP -ILLEGAL COMMAND- MESSAGE    02755
12232   703220          STB $MSGL                                                02756
12233   112174          BRS INSERT                                               02757
12234   100245          BRU IGNOR                                                02758
12235   200364  ITASK   LDC ISTC              COMMAND PROBABLY FOUND IN TABLE     02759
12236   607130          LDB $IDLOC   X       CHECK FOR NEW - NEXT CONFUSION      02760
12237   770341          XBZ @NEXT@             IF COMMAND WAS NEX THEN GIVE      02761
12240   120230          BZE *-8                AN ILLEGAL COMMAND MESSAGE        02762
12241   422006          AMA ONE              COMMAND FOUND IN TABLE              02763
12242   342352          ADO #COM             BUMP UP COUNTER OF RECOGNIZED COMMANDS  ***02764
12243   404366          LDA ICLST    X       PICK UP -BRS XXXXXX- TO INSERT IN TASK LIST  02765
12244   112174          BRS INSERT                                               02766
12245   603130  IGNOR   LDB $IDLOC           RESET INPUT ROUTINE POINTERS        02767
12246   703150          STB $INLOC                                               02768
12247   402010          LDA TWO                                                  02769
12250   503144          STA $INCH                                                02770
12251   323160          STZ $IXFL            RESET BUFFER SERVICE FLAG           02771
12252   100337          BRU CIRC4            EXIT TO -INTER-                     02772
                                                                                 02773
                                                                                 02774
                                                                                 02775
                                     FILL ROUTINE FOR SPECIAL INPUT LINES FILLS  02776
                                     WITH TRAILING BLANKS INSTEAD OF FILL-CHARAC-  02777
                                     TERS.  THIS IS USED BY HELLO, OLD, NEW,     02778
                                     OCTAL, BOOTSTRAP, AND RENAME.               02779
                                                                                 02780
                                                                                 02781
12253   353144  IHEL    SBO $INCH                                                02782
12254   150261          BMI IHM                                                  02783
12255   120266          BZE IHZ                                                  02784
12256   600361          LDB IBLK3                                                02785
12257   707150          STB $INLOC   X                                           02786
12260   100272          BRU IHCOM                                                02787
12261   602032  IHM     LDB M77                                                  02788
12262   747150          RBM $INLOC   X                                           02789
12263   600357          LDB IBLK1                                                02790
12264   737150          NBM $INLOC   X                                           02791
12265   100272          BRU IHCOM                                                02792
12266   602033  IHZ     LDB M7777                                                02793
12267   747150          RBM $INLOC   X                                           02794
12270   600360          LDB IBLK2                                                02795
12271   737150          NBM $INLOC   X                                           02796
12272   343150  IHCOM   ADO $INLOC                                               02797
12273   600361          LDB IBLK3            FILL WITH TRAILING BLANKS           02798
12274   707150          STB $INLOC   X                                           02799
12275   343150          ADO $INLOC                                               02800
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12276   707150          STB $INLOC  X                                        02801
12277   432033  IHINS   NMA M7777                GET RID OF ANY HIGH-ORDER BITS  02802
12300   440362          RMA IBRS                 CONSTRUCT A BRS INSTRUCTION     02803
12301   112174          BRS INSERT               AND SET IT UP AS A SPARE-TIME TASK 02804
12302   323124          STZ $HFLAG               RESET SPECIAL INPUT FLAG        02805
12303   100245          BRU IGNOR                EXIT                            02806
                                                                                 02807
                                                                                 02808
                                                                                 02809
                                                                                 02810
12304   603150  ISOURC  LDB $INLOC               SOURCE STATEMENT.               02811
12305   703130          STB $IDLOC               ADVANCE BEGINNING-OF-LINE POINTER 02812
12306   402010          LDA TWO                  RESET CHARACTER POINTER         02813
12307   503144          STA $INCH                                                02814
12310   632032          NMB M77                  IS THERE ROOM FOR ANOTHER LINE IN THIS BUFFER02815
12311   620356          AMB IM37                 ASSUMING WORST-CASE LINE OF 81 CHARACTERS 02816
12312   150317          BMI *+5                  IF SO, NO SWEAT                 02817
12313   403134  IMSGX   LDA $IF                  IF NOT, MAKE SURE THE OTHER BUFFER IS READY 02818
12314   130317          BNZ *+3                  IF IT IS, STILL NO SWEAT        02819
12315   513140          CAM $IFLAG               BUT IF IT ISNT, SET FLAG TO HANG THINGS UP 02820
12316   100337          BRU CIRC4                EXIT WITHOUT GIVING A LINE-FEED 02821
12317   323140          STZ $IFLAG               RESET HANG-UP FLAG              02822
12320   223164          LDZ $KFLAG               TEST IF PAPER TAPE INPUT FROM 35ASR... 02823
12321   130326          BNZ *+5                  IF SO, DO NOT SEND LINE-FEED    02824
12322   210346          LDD IFEED                SET UP LINE-FEED                02825
12323   503040          STA $SW1                      LINE-FEED GOES IN SCAN-WORD 1 02826
12324   743050          RBM $SW2                      AND MARKS IN SCAN-WORD 2   02827
12325   026100          DEF 7                    RESET ECHOPLEX MODE (SET OUTPUT MODE) 02828
12326   402007          LDA MONE                 INDICATE PARTIAL BUFFERLOAD     02829
12327   503324          STA $TYP                                                 02830
12330   223160          LDZ $IXFL                TEST IF BUFFER NEEDS SERVICE    02831
12331   120337          BZE CIRC4                IF NOT, EXIT                    02832
12332   400363          LDA IDRD                 IF SO, SET UP DISK TASK         02833
12333   112174          BRS INSERT                                               02834
12334   323160          STZ $IXFL                RESET FLAGS                     02835
12335   323134          STZ $IF                                                  02836
12336   100337          BRU CIRC4                                                02837
                                                                                 02838
                                                                                 02839
12337   104340  CIRC4   BRU *+1     X            COMMON EXIT POINT FOR INPUT RTN 02840
12340   010110          IND CIRC4X                                               02841
                                                                                 02842
                                                                                 02843
                                  INPUT ROUTINE CONSTANTS AND WORKING STORAGE    02844
                                                                                 02845
                                                                                 02846
12341   452567  @NEXT@  ALF NEX                  USED TO CHECK FOR NEW NEXT CONFUSION 02847
12342   377777  IMSKS   OCT 377777                                              02848
12343   000377  IMSKB   OCT 377                                                 02849
12344   770000  IMSKC   OCT 770000                                              02850
12346   007424  IFEED   OCT 7424                                                02851
12347   007777          OCT 7777                                                 02852
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12350   777737   IFLCK  OCT 777737                                          02853
12351   107100   ILOOK  INA ITABLE                                         02854
12352   112306   IST    BRS STOP                                           02855
12353   000062   I062   OCT 62                                             02856
12354   400002   IOM2   OCT -2                                             02857
12355   000033   I27    OCT 33                                             02858
12356   777733   IM37   DEC -37                                            02859
12357   777760   IBLK1  OCT 777760                                         02860
12360   776060   IBLK2  OCT 776060                                         02861
12361   606060   IBLK3  OCT 606060                                         02862
12362   112000   IBRS   BRS 0          CONSTANT TO CONSTRUCT A BRS INSTRUCTION 02863
12363   112130   IDBD   BRS DIB                                           02864
12364   000000   ISTC   OCT 0                                              02865
12365   330000   IDIGIT OCT 330000     TEST FOR TRUE DIGIT (LESS THAN OCTAL 12) 02866
12366   107444   ICLST  INA ICLST1     LINKAGE TO TABLE OF COMMANDS         02867
12367   312370   INCRE  INC *+1        INCREMENT TABLE FOR BINARY SEARCH    02868
12370   000076         OCT 76         MIDDLE OF COMMAND TABLE              02869
12371   000040         OCT 40                                              02870
12372   000020         OCT 20                                              02871
12373   000010         OCT 10                                              02872
12374   000004         OCT 4                                               02873
12375   000002         OCT 2                                               02874
12376   777777         DEC -1         INCREMENT TABLE TERMINATOR           02875
12400   112152   IMESS  BRS ERROR                                          02876
12401   012402         IND *+1                                             02877
12402   602425         ALF  DE                                             02878
12403   432563         ALF LET                                             02879
12404   252437         OCT 252437                                          02880
12405   557777         OCT 557777                                          02881
12406   112152   IERROR BRS ERROR                                          02882
12407   012410         IND *+1                                             02883
12410   376630         OCT 376630     WHAT...                              02884
12411   216335         OCT 216335                                          02885
12412   375577         OCT 375577                                          02886
12414   112152   ILERR  BRS ERROR                                          02887
12415   012416         IND *+1                                             02888
12416   377243         OCT 377243                                          02889
12417   314525         ALF INE                                             02890
12420   606346         ALF  TO                                             02891
12421   466043         ALF O L                                             02892
12422   464527         ALF ONG                                             02893
12423   336060         ALF .                                               02894
12424   512563         ALF RET                                             02895
12425   704725         ALF YPE                                             02896
12426   333755         OCT 333755                                          02897
12430   112152   IANS   BRS ERROR                                          02898
12431   012432         IND *+1                                             02899
12432   372421         OCT 372421     DARTMOUTH TIME-SHARING               02900
12433   516344         ALF RTM                                             02901
12434   466463         ALF OUT                                             02902
12435   306063         ALF H T                                             02903
12436   314425         ALF IME                                             02904
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12437   406230          ALF -SH
12440   215131          ALF ARI
12441   452737          OCT 452737
12442   302145          ALF HAN
12443   466525          ALF OVE
12444   517360          ALF R,
12445   452566          ALF NEW
12446   603021          ALF  HA
12447   444762          ALF MPS
12450   303151          ALF HIR
12451   253755          OCT 253755
12452   777600  M128    OCT 777600
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HANOVER, NEW HAMPSHIRE

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02905
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02916
```

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                                           THIS ROUTINE PERFORMS SPECIAL REAL-TIME
                                           SERVICING OF TELETYPES ON A CHARACTER-BY-
                                           CHARACTER BASIS.  THIS SPECIAL SERVICE IS
                                           USED BY THE WARN, DIAL, AND MONITOR FUNCTIONS
                                           WHICH ARE INITIATED FROM THE CONTROL TTY.


12453   300624   WSVCX   STC WSAV                  SAVE C-REGISTER
12454   104455           BRU *+1       X
12455   112455           INA *
12456   100461           BRU WWARN
12457   100472           BRU WDIAL
12460   100515           BRU WMONI


12461   011001   WWARN   PIC 1
12462   110546           BRS WGETI                 GO GET INPUT CHARACTER FROM TTY 1
12463   104600           BRU WREST     X           NO NEW CHARACTER, SO EXIT
12464   100607           BRU WTERM                 ALT MODE CHARACTER, SO TERMINATE WARN
12465   010001           AIC 1                     STEP TELETYPE NUMBER
12466   110570           BRS WPUT                  SEND OUT CHARACTER
12467   014050           XCZ TELET                 END...
12470   130465           BNZ *-3                   NO, SO CONTINUE
12471   104600           BRU WREST     X           EXIT


12472   014001   WDIAL   XCZ 1                     TELETYPE 1
12473   120477           BZE *+4
12474   060204           TRA C,B
12475   772056           XBZ WTTYF                 OR OTHER TELETYPE IN CONNECTION
12476   130601           BNZ WRETRN                IF NEITHER, THEN RETURN
12477   011001           PIC 1
12500   110546           BRS WGETI                 PICK UP INPUT FROM TTY 1
12501   100506           BRU *+5                   IF NO NEW CHARACTER, THEN TRY OTHER TTY
12502   100607           BRU WTERM                 IF ALT MODE, TERMINATE DIAL
12503   202056           LDC WTTYF                 IF NEW CHARACTER, SELECT OTHER TELETYPE
12504   110570           BRS WPUT                  AND OUTPUT THE CHARACTER
12505   100604           BRU WNEXT                 AND EXIT
12506   202056           LDC WTTYF                 SELECT OTHER TELETYPE
12507   110546           BRS WGETI                 PICK UP INPUT CHARACTER
12510   100604           BRU WNEXT                 IF NONE, EXIT
12511   100607           BRU WTERM                 IF ALT MODE, TERMINATE DIAL
12512   011001           PIC 1                     SELECT TTY 1
12513   110570           BRS WPUT                  OUTPUT CHARACTER
12514   100604           BRU WNEXT


12515   014001   WMONI   XCZ 1                     TELETYPE 1
12516   120604           BZE WNEXT                 IF SO, PUNT NORMAL SERVICING
12517   060204           TRA C,B                   OTHERWISE, TEST FOR OTHER TELETYPE
```

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12520   772056          XBZ WTTYF                                                02971
12521   130601          BNZ WRETRN      IF NOT, NORMAL SERVICE                   02972
12522   011001          PIC 1                                                    02973
12523   603060          LDB $SW3        CHECK TTY 1 FOR ALT MODE                 02974
12524   140532          BPL *+6                                                  02975
12525   630616          NMB WMASKS                                               02976
12526   703060          STB $SW3                                                 02977
12527   630617          NMB WMASK9                                               02978
12530   650623          XMB WALTMD                                               02979
12531   120607          BZE WTERM                                                02980
12532   202056          LDC WTTYF       SELECT TTY TO BE MONITORED               02981
12533   603060          LDB $SW3        NEW INPUT CHARACTER...                   02982
12534   632011          NMB MTWO        D-30 SCAN LOGIC PUTS RANDOM THINGS IN BIT 1  02983
12535   150541          BMI *+4         IF SO, OUTPUT IT                         02984
12536   223050          LDZ $SW2        IF NOT, NEW OUTPUT CHARACTER...          02985
12537   140604          BPL WNEXT       IF NOT, EXIT                             02986
12540   603040          LDB $SW1        BUT IF SO, OUTPUT IT                     02987
12541   630620          NMB WMASK0                                               02988
12542   640622          RMB WHIGH                                                02989
12543   011001          PIC 1                                                    02990
12544   110570          BRS WPUT                                                 02991
12545   100601          BRU WRETRN                                               02992
                                                                                 02993
                                                                                 02994
12546   000000  WGETI   IND 0                                                    02995
12547   012550          IND *+1                                                  02996
12550   603060          LDB $SW3                                                 02997
12551   144546          BPL WGETI   X                                            02998
12552   340546          ADO WGETI                                                02999
12553   630616          NMB WMASKS                                               03000
12554   703060          STB $SW3                                                 03001
12555   630617          NMB WMASK9                                               03002
12556   770623          XBZ WALTMD                                               03003
12557   124546          BZE WGETI   X                                            03004
12560   340546          ADO WGETI                                                03005
12561   640622          RMB WHIGH                                                03006
12562   060210          TRA C,A         CHECK FOR ECHO                           03007
12563   464621          AAZ WECHO   X                                            03008
12564   140566          BPL *+2         IF NOECHO, SKIP ECHO INSTRUCTION         03009
12565   026040          DEF 6                                                    03010
12566   104546          BRU WGETI   X                                            03011
                                                                                 03012
                                                                                 03013
12570   000000  WPUT    IND 0                                                    03014
12571   012572          IND *+1                                                  03015
12572   402033          LDA M7777                                                03016
12573   503040          STA $SW1                                                 03017
12574   543050          RAM $SW2                                                 03018
12575   733050          NBM $SW2                                                 03019
12576   026100          DEF 7                                                    03020
12577   104570          BRU WPUT    X                                            03021
                                                                                 03022
```

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12600   010136   WREST   IND SREST                          03023
12601   200624   WRETRN  LDC WSAV                           03024
12602   104603           BRU *+1       X                   03025
12603   010020           IND SLOOP+2                       03026
12604   200624   WNEXT   LDC WSAV                           03027
12605   104606           BRU *+1       X                   03028
12606   010110           IND CIRC4X                        03029
12607   322055   WTERM   STZ WSVCF                          03030
12610   202056           LDC WTTYF                         03031
12611   026100           DEF 7                             03032
12612   011001           PIC 1                             03033
12613   026100           DEF 7                             03034
12614   322056           STZ WTTYF                         03035
12615   100601           BRU WRETRN                        03036
                                                           03037
                                                           03038
                                                           03039
12616   377777   WMASKS  OCT 377777                        03040
12617   000776   WMASK9  OCT 000776                        03041
12620   000777   WMASK0  OCT 000777                        03042
12621   011562   WECHO   IND NOECHO                        03043
12622   777000   WHIGH   OCT 777000                        03044
12623   000772   WALTMD  OCT 000772                        03045
12624   000000   WSAV    OCT 0                             03046
```

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          13000          LOC 13000

13000    112310  CIUR1   BRS SWAIT              CIU RECEIVE SUBROUTINE
13001    060044          TRA R,R
13002    106106          BRU CIUR     X
13003    112310  CIUX1   BRS SWAIT              CIU TRANSMIT SUBROUTINE
13004    060401          TRA B,T
13005    106110          BRU CIUX     X
13006    301115  CIUXS1  STC STEMP+1            SAVE C-REGISTER AND CIU TRANSMIT SUBROUTINE
13007    011075          PIC 61
13010    112310          BRS SWAIT
13011    060401          TRA B,T
13012    201115          LDC STEMP+1
13013    106112          BRU CIUXS    X


                                        -INS- INSERTS A SPARE-TIME TASK INTO THE
                                        TASK LIST.  IT IS CALLED WITH A SUITABLE
                                        SUBROUTINE BRANCH (BRS) IN THE A-REGISTER
                                        AND THE TELETYPE NUMBER IN THE C-REGISTER.

13014    602012  INS     LDB THREE              INITIALIZE COUNTER
13015    701033          STB INSA
13016    602043          LDB N                  POINTER TO LAST TASK SET UP IN LIST
13017    351033          SBO INSA               IF TWO ENTRIES ARE FULL, ASSUME
13020    126174          BZE INSERT   X         THAT THE ENTIRE TABLE IS FULL, AND CRUMP
13021    622010          AMB TWO                STEP POINTER TO NEXT ENTRY
13022    772041          XBZ STERM              TEST FOR END OF LIST.
13023    131025          BNZ *+2
13024    602040          LDB START              IF END, WRAP AROUND TO BEGINNING OF LIST.
13025    702043          STB N
13026    226043          LDZ N        X         IS THIS ENTRY IN LIST OCCUPIED...
13027    131017          BNZ INS+3              IF SO, CONTINUE SEARCHING
13030    060204          TRA C,B                PLACE TELETYPE NUMBER IN B-REGISTER
13031    316043          STD N        X         AND INSERT TASK IN LIST.
13032    106174          BRU INSERT   X         RETURN
13033    000000  INSA    OCT 0

                                        -SWAIT- WAITS FOR THE C.I.U. TO COME READY.

13034    501114  SWAIT1  STA STEMP              SAVE A REGISTER
13035    402034          LDA SIXTY              INITIALIZE COUNTDOWN FOR CIU READY
13036    022001          NES 1                  TEST IF CIU IS READY
13037    131043          BNZ *+4                IF SO, GET OUT
13040    422007          AMA MONE               IF NOT READY, DECREMENT COUNTER
13041    155112          BMI SRETRN   X         IF COUNTER RUNS OUT, TRY AGAIN LATER
13042    101036          BRU *-4                OTHERWISE, CHECK CIU AGAIN
13043    401114          LDA STEMP              RESTORE A REGISTER
```

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13044   106310          BRU SWAIT   X                                        03101
                                                                             03102
                                                                             03103
                                    -SDSKR- PERFORMS A DUMMY DISK OPERATION WHICH 03104
                                    IS NOT FOLLOWED BY A TEST-AND-BRANCH AND 03105
                                    DOES NOT SET LOCKOUT.  THIS PERMITS THE 235 03106
                                    TO GET ACCESS TO THE DISK.               03107
                                                                             03108
                                                                             03109
13045   311114  SDSKR1  STD STEMP       SAVE A AND B REGISTERS               03110
13046   222051          LDZ RFLAG       IF D-30 HAS NOT USED THE DISK SINCE LAST 03111
13047   121104          BZE SDSKR2-3        RELINQUISH, IGNORE RELINQUISH AND EXIT. 03112
13050   402006          LDA ONE                                              03113
13051   502046          STA DKFLG2      SET 235 DISK PROTECT ON              03114
13052   222045          LDZ DKFLG1      IS SPARE-TIME DISK PROTECT ON...     03115
13053   131107          BNZ SDSKR2      IF SO, EXIT 1                        03116
13054   020100          NIS 7           WAIT FOR CONTROLLER-SELECTOR         03117
13055   121054          BZE *-1                                              03118
13056   032000          CSR 0           IS CONTROLLER READY...               03119
13057   161107          BEV SDSKR2      IF NOT, EXIT 1                       03120
13060   212036          LDD CRAW2       PICK UP LAST-USED DISK ADDRESS       03121
13061   642006          RMB ONE         OR IN NEXT-SECTOR BIT                03122
13062   312004          STD 4                                                03123
13063   402024          LDA STAT4       SET UP SEEK COMMAND                  03124
13064   502003          STA 3                                                03125
13065   024100          SEL             SEEK                                 03126
13066   020100          NIS 7                                                03127
13067   121066          BZE *-1                                              03128
13070   402014          LDA FIVE        INITIALIZE COUNTDOWN                 03129
13071   032000          CSR 0           CONTROLLER READY                     03130
13072   171076          BOD *+4         IF SO, END COUNTDOWN AND CONTINUE    03131
13073   422007          AMA MONE        IF NOT, DECREMENT COUNTER            03132
13074   151107          BMI SDSKR2      IF COUNT RUNS OUT, EXIT 1            03133
13075   101071          BRU *-4         OTHERWISE, CHECK CONTROLLER AGAIN    03134
13076   401111          LDA CRAW1       SET UP READ-AFTER-WRITE COMMAND      03135
13077   502004          STA 4                                                03136
13100   402023          LDA STAT2                                            03137
13101   502003          STA 3                                                03138
13102   024100          SEL             READ-AFTER-WRITE CLEARS DUAL-ACCESS CONT. 03139
13103   322051          STZ RFLAG       RESET FLAG                           03140
13104   342300          ADO SDSKR                                            03141
13105   402007          LDA MONE                                             03142
13106   502046          STA DKFLG2                                           03143
13107   211114  SDSKR2  LDD STEMP       RESTORE A AND B REGISTERS            03144
13110   106300          BRU SDSKR   X   RETURN TO EXIT 2                     03145
13111   212040  CRAW1   OCT 212040      RAW NEXT-SECTOR, NO LOCKOUT, API SET 03146
13112   010136  SRETRN  IND SREST                                            03147
13114   000000  STEMP   DDC 0                                                03148
13115   000000
         13116  TTABLE  EQU *           LIST OF SPARE-TIME TASKS             03149
         13770  ETABLE  EQO 13770                                            03150
```

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               14000          LOC 14000

                                                 -STEXEC- IS THE SPARE-TIME EXECUTIVE LOOP.
                                                 IT SCANS THE SPARE-TIME TASK LIST AND TRANS-
                                                 FERS CONTROL TO THE APPROPRIATE SUBROUTINES.
                                                 CONTROL CAN BE RETURNED TO -STEXEC- THROUGH
                                                 TWO ENTRANCES.  -BRU STEXEC X- INDICATES TASK
                                                 HAS BEEN COMPLETED, AND THE ENTRY IS DELETED
                                                 FROM THE TASK LIST.  -BRU STING X- INDICATES
                                                 TASK COULD NOT BE COMPLETED, AND ENTRY IS
                                                 NOT DELETED--THE TASK WILL BE ATTEMPTED AGAIN
                                                 NEXT TIME AROUND THE LIST.

       14000   326044   STEX1   STZ C        X        DELETE COMPLETED ENTRY FROM TABLE
       14001   322045   STING1  STZ DKFLG1            RELEASE DISK PRIORITY HOLD
       14002   602044           LDB C
       14003   622010           AMB TWO               STEP POINTER
       14004   772041           XBZ STERM
       14005   130007           BNZ *+2
       14006   602040           LDB START             WRAP AROUND IF AT END
       14007   702044           STB C
       14010   226044           LDZ C        X        IS ENTRY ZERO...
       14011   150001           BMI STING1
       14012   136044           BNZ C        X        IF NOT, BRANCH TO NEXT TASK
       14013   100003           BRU STEX1+3           IF SO, SEARCH FURTHER


                                                 -BETA- ALLOWS A SPARE-TIME SUBROUTINE TO
                                                 INSERT A CALL FOR ANOTHER SUCH SUBROUTINE IN
                                                 THE SPARE-TIME TASK LIST.  THE ROUTINE IS
                                                 CALLED BY A -BRS BETA- FOLLOWED BY THE BRANCH
                                                 TO BE ENTERED IN THE LIST.  THE TELETYPE
                                                 NUMBER MUST BE IN THE C-REGISTER.

       14014   046100   BETA1   SR6 Q,Z               ENOUGH TIME LEFT BEFORE NEXT INTERRUPT...
       14015   130025           BNZ BETAOK            IF SO, CONTINUE NORMALLY.
       14016   216064           LDD STEXEC   X        REGISTER TRANSFER INSTRUCTIONS FROM Q-COUNTER
       14017   216064           LDD STEXEC   X        INHIBIT Q FROM COUNTING FOR ONE CYCLE.
       14020   216064           LDD STEXEC   X        BETTER NOT DO THIS TOO OFTEN, SO MUST WASTE
       14021   216064           LDD STEXEC   X        TIME.  EACH OF THESE WASTES 4 CYCLES.
       14022   216064           LDD STEXEC   X        CAN YOU THINK OF A BETTER WAY...
       14023   216064           LDD STEXEC   X        ...TO WASTE TIME...
       14024   100014           BRU BETA1             NOW GO CHECK AGAIN.
       14025   406066   BETAOK  LDA BETA     X        PICK UP BRS XXXXX TO BE PLACED IN LIST.
       14026   112174           BRS INSERT            INSERT TASK IN LIST.
       14027   342066           ADO BETA
       14030   106066           BRU BETA     X        RETURN.
```

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                                                 -HELLO- BEGINS THE INITIALIZATION SEQUENCE
                                                 WHICH INPUTS THE USER NUMBER, SYSTEM NAME,
                                                 PROBLEM SOURCE [NEW OR OLD], AND PROBLEM NAME
                                                 IN THAT ORDER.


14031  206164  HELLO1 LDC HELLO   X        INITIATE HELLO SEQUENCE
14032  342367         ADO #HEL             ADD ONE TOO HELLO COUNT
14033  112262         BRS RESET            INITIALIZE ALL POINTERS AND FLAGS
14034  323314         STZ $SYSTM           SET UP AN UNRECOGNIZABLE SYSTEM NAME
14035  403300         LDA $STAND
14036  503114         STA $DPOS3           SET PROGRAM LENGTH TO ZERO RECORDS
14037  210350         LDD NONE             SET UP DUMMY PROBLEM NAME
14040  503064         STA $WORD3
14041  503044         STA $WORD1
14042  703070         STB $WORD4
14043  703054         STB $WORD2
14044  112302         BRS SPINP            SET SPECIAL INPUT FLAG
14045  200156         INB HA               FILL WITH BLANKS AND SET UP -HA-
14046  323324         STZ $TYP             NO PROGRAM = NO CORRECTIONS
14047  112214         BRS MESSG            TYPE OUT MESSAGE
14050  000412         IND NOTICE
14051  106064         BRU STEXEC  X


14052  206156  HA1    LDC HA      X        HELLO SEQUENCE--PART 2
14053  223250         LDZ $OUTFF           MAKE SURE TELETYPE NOT OUTPUTTING
14054  136065         BNZ STING   X
14055  217150         LDD $INLOC  X        LOAD USER NUMBER
14056  112162         BRS HCHEK            TEST FOR HELLO OR STOP
14057  112330         BRS UCHEK            TEST FOR ILLEGAL USER NUMBER
14060  100066         BRU *+6              IF NOT, CONTINUE NORMALLY
14061  112214         BRS MESSG            IF USER NUMBER IS NOT OF THE FORM X99999
14062  014252         IND HERR             OR 999999 THEN TYPE ERROR MESSAGE
14063  112302         BRS SPINP            SET SPECIAL INPUT FLAG AGAIN
14064  200156         INB HA               FILL WITH BLANKS AND SET UP -HA-
14065  106064         BRU STEXEC  X
14066  503044         STA $WORD1           STORE USER NUMBER
14067  703054         STB $WORD2
14070  112214         BRS MESSG
14071  014265         IND HSYST
14072  112302         BRS SPINP            SET SPECIAL INPUT FLAG
14073  200160         INB HB               FILL WITH BLANKS AND SET UP -HB-
14074  106064         BRU STEXEC  X

14075  061400  UCHEK1 TRA AR,Z             CHECK FOR ILLEGAL USER NUMBER
14076  120111         BZE UCHEKA           MUST NOT BE 000000.
14077  560115         NAZ ZBP
14100  130103         BNZ *+3              MUST BE EITHER IN FORMAT X99999 OR 999999.
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14101   760116          NBZ BRR                                                 03255
14102   126330          BZF UCHEK   X       IF LEGAL, EXIT TO BRS+1             03256
14103   112120          BRS CTRLA                                               03257
14104   100111          BRU UCHEKA          IF NOT CONTROL TELETYPE, THEN EXIT AT BRS+2  03258
14105   570113          XAZ UTEA            IF CONTROL TELETYPE, THEN TEACH OR LIB  03259
14106   126330          BZF UCHEK   X       ARE ALSO LEGAL USER NUMBERS.        03260
14107   570114          XAZ ULIB                                                03261
14110   126330          BZF UCHEK   X                                           03262
14111   342330  UCHEKA  ADO UCHEK           PREPARE TO EXIT AT BRS+2            03263
14112   106330          BRU UCHEK   X       EXIT                                03264
14113   632521  UTEA    ALF TEA                                                 03265
14114   433122  ULIB    ALF LIB                                                 03266
14115   006060  ZBB     OCT 006060                                              03267
14116   606060  BBB     OCT 606060                                              03268
                                                                                03269
                                                                                03270
                                                                                03271
14117   206160  HB1     LDC HB      X       HELLO SEQUENCE--PART 3              03272
14120   223250          LDZ $OUTFF          PROCESS SYSTEM NAME                 03273
14121   136065          BNZ STING   X                                           03274
14122   217150          LDD $INLOC  X       PICK UP SYSTEM NAME FROM INPUT LINE 03275
14123   112162          BRS HCHEK           CHECK FOR -STOP- OR -HELLO-         03276
14124   572042          XAZ EDI                                                 03277
14125   120132          BZE HBE                                                 03278
14126   503314          STA $SYSTM          FIRST 3 LETTERS FORMS SYSTEM IDENTIFIER  03279
14127   112214          BRS MESSG           SET UP MESSAGE                      03280
14130   014300          IND HNWOLD          -NEW OR OLD-                        03281
14131   106064          BRU STEXEC  X       EXIT                                03282
14132   112214  HBE     BRS MESSG           DO NOT ALLOW EDI AS A SYSTEM NAME   03283
14133   011326          IND SSYSNM                                              03284
14134   112302          BRS SPINP                                               03285
14135   200314          INB SYSB                                                03286
14136   106064          BRU STEXEC  X                                           03287
                                                                                03288
                                                                                03289
14137   206312  SYSA1   LDC SYSA    X       ENTER NEW SYSTEM NAME               03290
14140   112270          BRS RUNCH           CHECK FOR RUNNING                   03291
14141   112214          BRS MESSG           SET UP MESSAGE                      03292
14142   014271          IND HENTSY          -ENTER SYSTEM NAME-                 03293
14143   112302          BRS SPINP           SET SPECIAL INPUT FLAG              03294
14144   200314          INB SYSB            FILL WITH BLANKS AND SET UP SYSB    03295
14145   106064          BRU STEXEC  X       EXIT                                03296
                                                                                03297
14146   206314  SYSB1   LDC SYSB    X       PROCESS NEW SYSTEM NAME             03298
14147   217150          LDD $INLOC  X       PICK UP SYSTEM NAME FROM INPUT LINE 03299
14150   112162          BRS HCHEK           CHECK FOR -STOP- OR -HELLO-         03300
14151   572042          XAZ EDI                                                 03301
14152   120157          BZE SYSE                                                03302
14153   503314          STA $SYSTM          FIRST THREE LETTERS FORM SYSTEM IDENTIFIER  03303
14154   112066          BRS BETA            SET UP TASK TO TYPE -READY-         03304
14155   112326          BRS TYPE                                                03305
14156   106064          BRU STEXEC  X       EXIT                                03306
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14157   400752   SYSE    LDA RTYSYS          DO NOT ALLOW EDI AS A SYSTEM IDENTIFIER      03307
14160   503220           STA $MSGL                                                        03308
14161   112066           BRS BETA                                                         03309
14162   112152           BRS ERROR                                                        03310
14163   106064           BRU STEXEC  X                                                    03311
                                                                                          03312
                                                                                          03313
                                                                                          03314
14164   206244   OLDA1   LDC OLDA     X          OLD ROUTINE--PART 1                      03315
14165   112270           BRS RUNCH               CHECK IF RUNNING                         03316
14166   112302           BRS SPINP               SET SPECIAL INPUT FLAG                   03317
14167   200246           INB OLDB                FILL WITH BLANKS AND SET UP OLDB         03318
14170   112214           BRS MESSG                                                        03319
14171   014305           IND HOPNAM              TYPE  OLD PROBLEM NAME--                 03320
14172   106064           BRU STEXEC  X                                                    03321
                                                                                          03322
14173   206222   NEWA1   LDC NEWA     X          NEW ROUTINE--PART 1                      03323
14174   112270           BRS RUNCH               CHECK IF RUNNING                         03324
14175   112302           BRS SPINP               SET SPECIAL INPUT FLAG                   03325
14176   200224           INB NEWB                FILL WITH BLANKS AND SET UP NEWB         03326
14177   112214           BRS MESSG                                                        03327
14200   014314           IND HNPNAM              TYPE  NEW PROBLEM NAME--                 03328
14201   342366           ADO #NEW                ADD ONE TO NEW COUNT                     03329
14202   106064           BRU STEXEC  X                                                    03330
                                                                                          03331
14203   206224   NEWB1   LDC NEWB     X          NEW ROUTINE--PART 2                      03332
14204   217150           LDD $INLOC  X           LOAD NEW PROBLEM NAME                    03333
14205   112162           BRS HCHEK               TEST FOR STOP OR HELLO                   03334
14206   503064           STA $WORD3                                                       03335
14207   703070           STB $WORD4                                                       03336
14210   112066           BRS BETA                SET UP -SCRATCH-                         03337
14211   112276           BRS SCRCH                                                        03338
14212   106064           BRU STEXEC  X           EXIT                                     03339
                                                                                          03340
14213   206154   GDBYE1  LDC GDBYE    X          GOODBYE ROUTINE                          03341
14214   112262           BRS RESET                                                        03342
14215   210350           LDD NONE                ERASE USER NUMBER AND PROBLEM NAME       03343
14216   503044           STA $WORD1                                                       03344
14217   703054           STB $WORD2                                                       03345
14220   503064           STA $WORD3                                                       03346
14221   703070           STB $WORD4                                                       03347
14222   323314           STZ $SYSTM              ERASE SYSTEM NAME                        03348
14223   112262           BRS RESET               RESET ALL POINTERS, ERASE ALL TASKS      03349
14224   400240           LDA GDSLEW              SET UP COUNTER FOR SLEWING PAPER         03350
14225   503274           STA $SPACE                                                       03351
14226   212060           LDD RTIME               SET OFF TIME IN OUTPUT MESSAGE           03352
14227   500345           STA BTIME                                                        03353
14230   700346           STB BTIME+1                                                      03354
14231   112214           BRS MESSG                                                        03355
14232   014341           IND BYEMSG                                                       03356
14233   014001           XCZ 1                                                            03357
14234   126064           BZE STEXEC  X                                                    03358
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14235   112066          BRS BETA                                                03359
14236   112134          BRS DISC                                                03360
14237   106064          BRU STEXEC  X                                           03361
14240   000016  GDSLEW  DEC 14              LENGTH OF SLEW AFTER SIGN OFF MESSAGE  03362
                                                                                03363
14241   206134  DISC1   LDC DISC    X       DISCONNECT DATASET                     03364
14242   323164          STZ $KFLAG                                              03365
14243   223250          LDZ $OUTFF          WAIT FOR GOODBYE MESSAGE            03366
14244   136065          BNZ STING   X                                           03367
14245   026004          DEF 3                                                   03368
14246   402013          LDA FOUR            SET LINE STATUS FOR A 3 SEC DELAY BEFORE 03369
14247   503214          STA $LSTT           SENDING THE EOT                     03370
14250   323174          STZ $LCNT                                               03371
14251   106064          BRU STEXEC  X                                           03372
                                                                                03373
                                                                                03374
                                                                                03375
                                                                                03376
                                                                                03377
                                MESSAGES                                        03378
                                                                                03379
14252   723143  HERR    OCT 723143          ILLEGAL USER NUMBER/RETYPE IT--     03380
14253   432527          ALF LEG                                                 03381
14254   214360          ALF AL                                                  03382
14255   646225          ALF USE                                                 03383
14256   516045          ALF R N                                                 03384
14257   644422          ALF UMB                                                 03385
14260   255137          OCT 255137                                              03386
14261   512563          ALF RET                                                 03387
14262   704725          ALF YPE                                                 03388
14263   603163          ALF  IT                                                 03389
14264   404055          OCT 404055                                              03390
14265   726270  HSYST   OCT 726270          SYSTEM--                           03391
14266   626325          ALF STE                                                 03392
14267   444040          ALF M--                                                 03393
14270   557777          OCT 557777                                              03394
14271   722545  HENTSY  OCT 722545          ENTER SYSTEM NAME--                03395
14272   632551          ALF TER                                                 03396
14273   606270          ALF  SY                                                 03397
14274   626325          ALF STE                                                 03398
14275   446045          ALF M N                                                 03399
14276   214425          ALF AME                                                 03400
14277   404055          OCT 404055                                              03401
14300   724525  HNWOLD  OCT 724525          NEW OR OLD--                       03402
14301   666046          ALF W O                                                 03403
14302   516046          ALF R O                                                 03404
14303   432440          ALF LD-                                                 03405
14304   405577          OCT 405577                                              03406
14305   724643  HOPNAM  OCT 724643          OLD PROBLEM NAME--                 03407
14306   246047          ALF D P                                                 03408
14307   514622          ALF ROR                                                 03409
14310   432544          ALF LEM                                                 03410
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14311   604521          ALF  NA                                          03411
14312   442540          ALF ME-                                          03412
14313   405577          OCT 405577                                       03413
14314   724525  HNPNAM  OCT 724525      NEW PROBLEM NAME--               03414
14315   666047          ALF W P                                          03415
14316   514622          ALF ROB                                          03416
14317   432544          ALF LEM                                          03417
14320   604521          ALF  NA                                          03418
14321   442540          ALF ME-                                          03419
14322   405577          OCT 405577                                       03420
14323   377270  NOHLLO  OCT 377270      YOU HAVE FORGOTTEN TO TYPE -HELLO-...  03421
14324   466460          ALF OU                                           03422
14325   302165          ALF HAV                                          03423
14326   256026          ALF E F                                          03424
14327   465127          ALF ORG                                          03425
14330   466363          ALF OTT                                          03426
14331   254560          ALF EN                                           03427
14332   634660          ALF TO                                           03428
14333   637047          ALF TYP                                          03429
14334   256034          OCT 256034                                       03430
14335   302543          ALF HEL                                          03431
14336   434634          OCT 434634                                       03432
14337   333333          ALF ...                                          03433
14340   375577          OCT 375577                                       03434
14341   377254  BYEMSG  OCT 377254                                       03435
14342   545460          OCT 545460                                       03436
14343   462626          ALF OFF                                          03437
14344   602163          ALF  AT                                          03438
14345   606060  BTIME   ALF                                              03439
14346   606060          ALF                                              03440
14347   333755          OCT 333755                                       03441
14350   544546  NONE    ALF *NO                                          03442
14351   452554          ALF NE*                                          03443
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                                                     -RESET- IS A SUBROUTINE WHICH RESETS ALL
                                                     PERTINENT POINTERS, FLAGS, ETC., AND DELETES
                                                     ALL TASKS IN THE LIST WHICH WERE CALLED BY
                                                     THE TELETYPE SPECIFIED BY THE C-REGISTER.

14352  323250  RESET1 STZ $OUTFF                         REINITIALIZE ALL FLAGS AND POINTERS FOR
14353  323230         STZ $ODC                           THE TELETYPE SPECIFIED BY THE C-REGISTER
14354  323254         STZ $PRIOR
14355  323124         STZ $HFLAG
14356  323140         STZ $IFLAG
14357  323304         STZ $STAT
14360  323104         STZ $CNFL
14361  323274         STZ $SPACE
14362  323110         STZ $DONE
14363  402007         LDA MONE
14364  503134         STA $IF
14365  503234         STA $OF
14366  503200         STA $LHFL
14367  402010         LDA TWO
14370  503224         STA $OCH
14371  403154         LDA $INSTD
14372  503150         STA $INLOC
14373  503130         STA $IDLOC
14374  403314         LDA $SYSTM                         IS $SYSTM EQUAL TO -EDI-
14375  572042         XAZ EDI
14376  130401         BNZ *+3
14377  403270         LDA $SAVSY                         YES, SO PUT BACK PREVIOUS SYSTEM NAME
14400  503314         STA $SYSTM
14401  602040         LDB START                          ERASE ALL OF TELETYPE-S REMAINING SPARE-TIME
14402  060210         TRA C,A                            TASKS
14403  574421         XAZ SX1       X
14404  130410         BNZ *+4
14405  224420         LDZ SX0       X
14406  150410         BMI *+2
14407  324420         STZ SX0       X
14410  622010         AMB TWO
14411  772041         XBZ STERM
14412  130403         BNZ *-7
14413  572053         XAZ KLISTF
14414  136262         BNZ RESET     X
14415  322053         STZ KLISTF
14416  324422         STZ KOMAPT    X
14417  106262         BRU RESET     X                    RETURN

14420  200000  SX0    INB 0
14421  200001  SX1    INB 1
```

```
14422   016624   KOMAPT IND KOMA                                                  03498
                                                                                  03499
                                                                                  03500
                                                                                  03501
                                                                                  03502
                                                                                  03503
                                                                                  03504
                                                                                  03505
14423   223250   RUNCH1 LDZ $OUTFF                                                03506
14424   136064          BNZ STEXEC  X     IF TELETYPE IS OUTPUTTING, DELETE TASK  03507
14425   403044          LDA $WORD1        PLACE USER NUMBER IN REGISTERS         03508
14426   603054          LDB $WORD2                                               03509
14427   112330          BRS UCHEK         CHECK FOR ILLEGAL USER NUMBER          03510
14430   100434          BRU *+4           IF LEGAL, CONTINUE NORMALLY            03511
14431   112214          BRS MESSG         OTHERWISE, ASK FOR HELLO SEQUENCE      03512
14432   014323          IND NOHLLO                                               03513
14433   106064          BRU STEXEC  X     AND EXIT                               035140
14434   223254          LDZ $PRIOR        CHECK IF RUNNING                       03515
14435   126270          BZE RUNCH   X     IF NOT, NORMAL EXIT                    03516
14436   603264          LDB $RTIME        OTHERWISE, SET UP MESSAGE WITH RUN TIME 03517
14437   112122          BRS CONV          CONVERT BINARY TO DECIMAL              03518
14440   000012          DEC 10                                                   03519
14441   700452          STB GTIME                                                03520
14442   112214          BRS MESSG         TYPE OUT MESSAGE                       03521
14443   014445          IND GMESS                                                03522
14444   106064          BRU STEXEC  X                                            03523
14445   375164   GMESS  OCT 375164        RUNNING TIME XXX0 SECONDS.             03524
14446   454531          ALF NNI                                                  03525
14447   452760          ALF NG                                                   03526
14450   633144          ALF TIM                                                  03527
14451   251360          OCT 251360                                               03528
14452   606060   GTIME  ALF                                                      03529
14453   606225          ALF  SE                                                  03530
14454   234645          ALF CON                                                  03531
14455   246233          ALF DS.                                                  03532
14456   375577          OCT 375577                                               03533
                                                                                  03534
                                                                                  03535
14457   570513   HCHEK1 XAZ HHEL          CHECK FOR HELLO                        03536
14460   130465          BNZ *+5                                                  03537
14461   770514          XBZ HLO                                                  03538
14462   120505          BZE HBHEL                                                03539
14463   770515          XBZ HLOF                                                 03540
14464   120505          BZE HBHEL                                                03541
14465   570516          XAZ HSTO          CHECK FOR STOP                         03542
14466   130473          BNZ *+5                                                  03543
14467   770517          XBZ HP                                                   03544
14470   120510          BZE HBSTO                                                03545
14471   770520          XBZ HPFF                                                 03546
14472   120510          BZE HBSTO                                                03547
14473   570523          XAZ HSFF          CHECK FOR S                            03548
14474   120510          BZE HBSTO                                                03549
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14475  570522          XAZ HS                                                03550
14476  120510          BZE HBSTO                                             03551
14477  570521          XAZ HSPACE          CHECK FOR ALL SPACES              03552
14500  130504          BNZ *+4                                               03553
14501  770521          XBZ HSPACE                                            03554
14502  130504          BNZ *+2                                               03555
14503  210350          LDD NONE                                              03556
14504  106162          BRU HCHEK    X      RETURN                            03557
14505  112066  HBHEL   BRS BETA           SET UP -HELLO-                    03558
14506  112164          BRS HELLO                                             03559
14507  106064          BRU STEXEC   X      EXIT                              03560
14510  112066  HBSTO   BRS BETA           SET UP -STOP-                     03561
14511  112306          BRS STOP                                              03562
14512  106064          BRU STEXEC   X      EXIT                              03563
14513  302543  HHEL    ALF HEL                                               03564
14514  434660  HLO     ALF LO                                                03565
14515  434637  HLOF    OCT 434637                                            03566
14516  626346  HSTO    ALF STO                                               03567
14517  476060  HP      ALF P                                                 03568
14520  477737  HPFF    OCT 477737                                            03569
14521  606060  HSPACE  ALF                                                   03570
14522  626060  HS      ALF S                                                 03571
14523  627777  HSFF    OCT 627777                                            03572
                                                                             03573
                                                                             03574
                                                                             03575
14524  500534  CNTRL1  STA CNTRLA          SAVE A-REGISTER                   03576
14525  060210          TRA C,A             PICK UP TELETYPE NUMBER           03577
14526  460533          AAZ CNTTY           TEST FOR A CONTROL TELETYPE       03578
14527  140531          BPL *+2             IF NOT CONTROL TELETYPE, EXIT TO BRS+1 03579
14530  342116          ADO CNTRL           IF CONTROL TELETYPE, EXIT TO BRS+2 03580
14531  400534          LDA CNTRLA          RESTORE A-REGISTER                03581
14532  106116          BRU CNTRL    X      EXIT                              03582
14533  777775  CNTTY   DEC -3             TTY-S BELOW THIS NUMBER ARE CONTROL TELETYPES03583
14534  000000  CNTRLA  OCT 0               TEMPORARY STORAGE FOR A-REGISTER  03584
14535  500534  CTRLA1  STA CNTRLA                                            03585
14536  060210          TRA C,A                                               03586
14537  460544          AAZ CTTTY                                             03587
14540  140542          BPL *+2                                               03588
14541  342120          ADO CTRLA                                             03589
14542  400534          LDA CNTRLA                                            03590
14543  106120          BRU CTRLA    X                                        03591
14544  777774  CTTTY   DEC -4                                               03592
                                                                             03593
                                                                             03594
                                                                             03595
14545  300566  WAIT1   STC WSTC           CHECK IF THERE MAY BE A WAIT      03596
14546  222050          LDZ STOPF           IF STOP COUNTING TIME, HE MAY HAVE TO WAIT 03597
14547  130562          BNZ *+11            SO OUTPUT WAIT MESSAGE, JUST IN CASE 03598
14550  011177          PIC 127             INITIALIZE                        03599
14551  010001          AIC 1                                                 03600
14552  223304          LDZ $STAT           SCAN THROUGH STATUS TABLE         03601
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14553   130562           BNZ  *+7                IF ANYONE IS RUNNING, TYPE --WAIT--          03602
14554   014050           XCZ  TELET                                                            03603
14555   130551           BNZ  *-4                                                              03604
14556   200566           LDC  WSTC                                                             03605
14557   112214           BRS  MESSG               OTHERWISE, LINE-FEED                         03606
14560   014567           IND  WSPACE                                                           03607
14561   106336           BRU  WAIT     X          RETURN                                       03608
14562   200566           LDC  WSTC                                                             03609
14563   112214           BRS  MESSG                                                            03610
14564   014570           IND  WWAIT                                                            03611
14565   106336           BRU  WAIT     X          RETURN                                       03612
14566   000000  WSTC     OCT  0                   TEMPORARY STORAGE                            03613
14567   375577  WSPACE   OCT  375577                                                          03614
14570   376621  WWAIT    OCT  376621              WAIT.                                        03615
14571   316333           OCT  316333                                                           03616
14572   557777           OCT  557777                                                           03617
                                                                                              03618
                                                                                              03619
                                                                                              03620
14573   406302  SPINP1   LDA  SPINP    X          SET SPECIAL INPUT FLAG                       03621
14574   503124           STA  $HFLAG                                                           03622
14575   342302           ADO  SPINP               EXIT AT BRS+2                                03623
14576   106302           BRU  SPINP    X                                                       03624
                                                                                              03625
                                                                                              03626
                                                                                              03627
                                  SET UP TELETYPE OUTPUT MESSAGE                              03628
                                                                                              03629
14577   223250  MESSG1   LDZ  $OUTFF                                                         03630
14600   136065           BNZ  STING    X          IF TELETYPE IS OUTPUTTING, TRY AGAIN LATER   03631
14601   406214           LDA  MESSG    X                                                       03632
14602   560642           NAZ  MINA                -INA- AT BRS+1 SAYS MOVE MSG TO BUFFER       03633
14603   120627           BZE  MNOMOV              BUT -IND- SAYS OUTPUT FROM WHERE MESSAGE IS  03634
14604   223134           LDZ  $IF                 IS BUFFER FREE...                            03635
14605   126065           BZE  STING    X          IF NOT, TRY LATER                            03636
14606   500643           STA  MPOINT                                                           03637
14607   403130           LDA  $IDLOC                                                           03638
14610   432031           NMA  IMSK12                                                           03639
14611   452023           XMA  STAT2                                                            03640
14612   503240           STA  $OLOC                                                            03641
14613   420642           AMA  MINA                                                             03642
14614   500644           STA  BPOINT                                                           03643
14615   060010           TRA  0,A                                                              03644
14616   604643  MLOOP    LDB  MPOINT   X                                                       03645
14617   704644           STB  BPOINT   X                                                       03646
14620   422006           AMA  ONE                                                              03647
14621   632032           NMB  M77                                                              03648
14622   772032           XBZ  M77                                                              03649
14623   120626           BZE  *+3                                                              03650
14624   770645           XBZ  M55                                                              03651
14625   130616           BNZ  MLOOP                                                            03652
14626   100630           BRU  *+2                                                              03653
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14627  503240  MNOMOV STA $OLOC          SET POINTER TO MESSAGE                03654
14630  402006          LDA ONE                                                 03655
14631  503234          STA $OF                                                 03656
14632  503250          STA $OUTFF                                              03657
14633  323230          STZ $ODC                                                03658
14634  402033          LDA M7777                                               03659
14635  543050          RAM $SW2                                                03660
14636  503040          STA $SW1                                                03661
14637  026100          DEF 7                                                   03662
14640  342214          ADO MESSG                                               03663
14641  106214          BRU MESSG   X                                           03664
14642  100000  MINA    INA 0                                                   03665
14643  000000  MPOINT  OCT 0                                                   03666
14644  000000  BPOINT  OCT 0                                                   03667
14645  000055  M55     OCT 55                                                  03668
                                                                               03669
                                                                               03670
                                   FILL BUFFER TO END AND TRANSFER TO DISK      03671
                                                                               03672
14646  300713  CMPLT1  STC CSTC                                                03673
14647  112140          BRS DSKCH           IF DISK NOT AVAILABLE, TRY AGAIN LATER 03674
14650  106065          BRU STING   X                                           03675
14651  112270          BRS RUNCH           CHECK IF RUNNING                    03676
14652  112336          BRS WAIT            CHECK IF WAIT                       03677
14653  323110  CMPCOM  STZ $DONE          RESET DONE FLAG                     03678
14654  323320          STZ $TFLAG          RESET TEST MODE                     03679
14655  323264          STZ $RTIME          RESET RUNNING TIME COUNTER          03680
14656  223324          LDZ $TYP            ANY CORRECTIONS IN INPUT BUFFER...  03681
14657  120700          BZE CMPEX           IF NOT, EXIT                        03682
14660  403130          LDA $IDLOC          FILL DISK BUFFER WITH FILL CHARACTERS 03683
14661  061004          TRA A,B                                                 03684
14662  632032          NMB M77                                                 03685
14663  060402          TRA B,C                                                 03686
14664  432031          NMA IMSK12                                              03687
14665  440715          RMA CINC                                                03688
14666  500714          STA CPOIN                                               03689
14667  210716          LDD CDFILL                                              03690
14670  314714          STD CPOIN   X                                           03691
14671  010002          AIC 2                                                   03692
14672  014100          XCZ 64                                                  03693
14673  130670          BNZ *-3                                                 03694
14674  200713          LDC CSTC                                                03695
14675  402023          LDA STAT2                                               03696
14676  553130          XAM $IDLOC                                              03697
14677  112132          BRS DIBS            TRANSFER REMAINING RECORD TO DISK   03698
14700  403154  CMPEX   LDA $INSTD                                             03699
14701  503150          STA $INLOC                                              03700
14702  503130          STA $IDLOC                                              03701
14703  106114          BRU CMPLT   X                                           03702
14704  300713  CTCMP1  STC CSTC                                                03703
14705  112140          BRS DSKCH           IF DISK NOT AVAILABLE, TRY AGAIN LATER 03704
14706  106065          BRU STING   X                                           03705
```

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14707   112270          BRS RUNCH               CHECK IF RUNNING                03706
14710   402124          LDA CTCMP                                               03707
14711   502114          STA CMPLT                                               03708
14712   100653          BRU CMPCOM                                              03709
14713   000000  CSTC    OCT 0                                                   03710
14714   000000  CPOIN   OCT 0                                                   03711
14715   300000  CINC    INC 0                                                   03712
14716   777777  CDFILL  OCT 777777                                              03713
14717   777777          OCT 777777                                              03714
                                                                                03715
                                                                                03716
                                                                                03717
14720   206326  TYPE1   LDC TYPE    X           TYPEOUT -READY.-                03718
14721   223304          LDZ $STAT                                               03719
14722   136065          BNZ STING   X                                           03720
14723   112214          BRS MESSG                                               03721
14724   014726          IND READY                                               03722
14725   106064          BRU STEXEC  X                                           03723
14726   375125  READY   OCT 375125                                             03724
14727   212470          OCT 212470                                              03725
14730   333772          OCT 333772                                              03726
14731   557777          OCT 557777                                              03727
                                                                                03728
                                                                                03729
                                                                                03730
14732   206320  TERM1   LDC TERM    X           TERMINATE RUN AND OUTPUT MESSAGE03731
14733   112262          BRS RESET                                               03732
14734   100736          BRU ERROR1+1                                            03733
14735   206152  ERROR1  LDC ERROR   X           TYPE ERROR MESSAGE              03734
14736   223250          LDZ $OUTFF              IS TELETYPE OUTPUTTING          03735
14737   136064          BNZ STEXEC  X           IF SO, IGNORE ERROR MESSAGE     03736
14740   403220          LDA $MSGL                                               03737
14741   500743          STA *+2                                                 03738
14742   112214          BRS MESSG                                               03739
14743   014743          IND *                                                   03740
14744   403220          LDA $MSGL                                               03741
14745   570752          XAZ RTYSYS                                              03742
14746   136064          BNZ STEXEC  X                                           03743
14747   112302          BRS SPINP                                               03744
14750   200314          INB SYSB                                                03745
14751   106064          BRU STEXEC  X                                           03746
14752   011326  RTYSYS  IND SSYSNM                                              03747
                                                                                03748
                                                                                03749
                                                                                03750
                        -CONV- CONVERTS FROM BINARY TO THE BASE                 03751
                        SPECIFIED BY BRS+1 (E.G. DECIMAL OR OCTAL               03752
                        INDICATED BY DEC 10 OR DEC 8)                           03753
                                                                                03754
14753   406122  CONV1   LDA CONV    X       PICK UP BASE                        03755
14754   500765          STA CONVA           STORE IN CALLING SEQ FOR CDIV ROUTINE03756
14755   342122          ADO CONV            PREPARE FOR EXIT AT BRS+2           03757
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14756  060400          TRA B,Z                 CHECK FOR ZERO ARGUMENT                          03758
14757  130762          BNZ *+3                                                                  03759
14760  211052          LDD CDZERO              ZERO ARGUMENT IS SPECIAL CASE                    03760
14761  106122          BRU CONV     X                                                           03761
14762  402014          LDA FIVE                SET DIGIT COUNTER FOR SIX DIGITS                 03762
14763  501040          STA CONVB                                                                03763
14764  112104          BRS CDIV                DIVIDE BY BASE                                   03764
14765  000012  CONVA    DEC 10                  BASE GOES HERE                                   03765
14766  061400          TRA AB,Z                TEST IF BOTH QUOTIENT AND REMAINDER ARE ZERO     03766
14767  130771          BNZ *+2                 IF SO, WE HAVE A LEADING ZERO                    03767
14770  402034          LDA SIXTY               SO SUPRESS IT                                    03768
14771  057010          CR6 A,A                 SHIFT DIGIT INTO HIGH-ORDER POSITION             03769
14772  311044          STD CSAVE               SAVE QUOTIENT AND DIGIT                          03770
14773  211042          LDD CACCUM              LOAD ACCUMULATOR                                 03771
14774  072404          SRD 6                   SHIFT TO MAKE ROOM FOR NEW DIGIT                 03772
14775  043010
14776  072404
14777  043010
15000  072404
15001  043010
15002  072404
15003  043010
15004  072404
15005  043010
15006  072404
15007  043010
15010  441044          RMA CSAVE               INSERT NEW DIGIT                                 03773
15011  351040          SBO CONVB               STEP DIGIT COUNTER                               03774
15012  156122          BMI CONV     X          IF DONE, EXIT                                    03775
15013  311042          STD CACCUM              OTHERWISE, RESTORE ACCUMULATOR                   03776
15014  601045          LDB CSAVE+1             LOAD LAST QUOTIENT                               03777
15015  100764          BRU CONVA-1                                                              03778
                                                                                                03779
                                                                                                03780
15016  406104  CDIV1   LDA CDIV     X          DIVIDE SUBROUTINE                                03781
15017  501046          STA CBASE               SET DIVISOR                                      03782
15020  342104          ADO CDIV                PREPARE EXIT AT BRS+2                            03783
15021  401047          LDA CDIVNO              INITIALIZE SHIFT COUNTER                         03784
15022  501050          STA CDIVCT                                                               03785
15023  060010          TRA 0,A                                                                  03786
15024  071010  CDIVLP  SLD 1                   SHIFT INTO A                                     03787
15025  040404
15026  063010          TRC A,A                 SUBTRACT DIVISOR                                 03788
15027  421046          AMA CBASE                                                                03789
15030  063010          TRC A,A                                                                  03790
15031  141034          BPL *+3                                                                  03791
15032  421046          AMA CBASE               IF OVERDRAW, RESTORE                             03792
15033  101035          BRU *+2                                                                  03793
15034  642006          RMR ONE                 IF NO OVERDRAW, GENERATE QUOTIENT BIT            03794
15035  351050          SBO CDIVCT              STEP COUNTER                                     03795
15036  141024          BPL CDIVLP              IF NOT DONE, CONTINUE                            03796
15037  106104          BRU CDIV     X          EXIT                                             03797
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                                                                                03798
15040   000000  CONVB   OCT 0                                                   03799
15042   000000  CACCUM  DDC 0                                                   03800
15043   000000
15044   000000  CSAVE   DDC 0                                                   03801
15045   000000
15046   000000  CBASE   OCT 0                                                   03802
15047   000021  CDIVNO  DEC 17                                                  03803
15050   000000  CDIVCT  OCT 0                                                   03804
15052   606060  CDZERO  ALF                                                     03805
15053   606000          ALF   0                                                 03806
                                                                                03807
                                                                                03808
15054   223250  PICK1   LDZ $OUTFF                                              03809
15055   136065          BNZ STING   X     IF TTY IS OUTPUTTING, WAIT            03810
15056   321114          STZ PICKA         CLEAR ACCUMULATOR                     03811
15057   403130          LDA $IDLOC                                              03812
15060   501115          STA PICKB         INITIALIZE POINTER AT BEGINNING OF LINE 03813
15061   322052          STZ PARAF                                               03814
15062   405115  PICKC   LDA PICKB   X     GET WORD                              03815
15063   602010          LDB TWO                                                 03816
15064   701116          STB PICKD         SET CHAR POINTER TO LEFT              03817
15065   055014  PICKE   CL6 A,AB         HIGH-ORDER CHAR TO LOW ORDER END      03818
15066   632032          NMB M77           MASK OFF IN B-REG                     03819
15067   772032          XBZ M77           TEST FOR FILL CHARACTER               03820
15070   121112          BZE PICKX         IF SO, EXIT                           03821
15071   771117          XBZ PICR          TEST FOR CARRIAGE RETURN              03822
15072   121112          BZE PICKX         IF SO, EXIT                           03823
15073   661120          ABZ PIDIG         TEST FOR DIGIT                        03824
15074   141106          BPL PICKF         IF NOT, IGNORE IT                     03825
15075   342052          ADO PARAF                                               03826
15076   601114          LDB PICKA         LOAD ACCUMULATOR                      03827
15077   040404          SL3 B,B                                                 03828
15100   040404
15101   040404
15102   701114          STB PICKA         RESTORE ACCUMULATOR                   03829
15103   061004          TRA A,B                                                 03830
15104   632017          NMB SEVEN         MASK OFF NEW CHARACTER                03831
15105   741114          RBM PICKA         PLACE INTO ACCUMULATOR                03832
15106   351116  PICKF   SBO PICKD         STEP CHAR POINTER                     03833
15107   141065          BPL PICKE         GO GET NEXT CHAR                      03834
15110   341115          ADO PICKB                                               03835
15111   101062          BRU PICKC         GO GET NEXT WORD                      03836
15112   401114  PICKX   LDA PICKA         EXIT WITH OCTAL IN A-REGISTER         03837
15113   106254          BRU PICK    X     EXIT                                  03838
15114   000000  PICKA   OCT 0             ACCUMULATOR                           03839
15115   000000  PICKB   OCT 0             WORD POINTER                          03840
15116   000000  PICKD   OCT 0             CHARACTER POINTER                     03841
15117   000037  PICR    OCT 37            CARRIAGE RETURN                       03842
15120   777770  PIDIG   DEC -8            TRUE DIGIT TEST                       03843
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                                       -DSKCH- TESTS ALL CONTINGINCY CONDITIONS
                                       TO ACERTAIN IF USE OF THE DISK IS PERMISSIBLE


15121   046100   DSKCH1 SR6 0,Z                 ENOUGH TIME BEFORE NEXT INTERRUPT...
15122   126140          BZE DSKCH    X          IF NOT, EXIT AT BRS+1
15123   222046          LDZ DKFLG2              DOES 235 HAVE PRIORITY...
15124   136140          BNZ DSKCH    X          IF SO, EXIT AT BRS+1
15125   402007          LDA MONE                OTHERWISE, SET SPARE-TIME DISK PROTECT FLAG
15126   502045          STA DKFLG1
15127   502051          STA RFLAG
15130   342140          ADO DSKCH               PREPARE FOR EXIT AT BRS+2
15131   106140          BRU DSKCH    X          EXIT



                                       -DSKOP- PERFORMS A SEEK/READ OR SEEK/WRITE
                                       DISK OPERATION WITH ERROR CHECKING, USING
                                       THE SIX CONTROL WORDS WHICH FOLLOW THE
                                       SUBROUTINE CALL.


15132   311226   DSKOP1 STD DSKAB               SAVE A AND B REGISTERS
15133   342354          ADO #DSK                ADD TO COUNTER OF DISK OPERATIONS       ***
15134   401225          LDA DSK5                INITIALIZE ERROR COUNTER
15135   501230          STA DSKERR
15136   111166   DSKOPE BRS DSKGET              PICK UP PARAMETERS FOR SEEK, PUT INTO 3-4-5
15137   702037          STB PREPOS              SAVE DISK ADDRESS FOR RELINQUISH RTN (SDSKR)
15140   024100          SEL                     SEEK
15141   342142          ADO DSKOP
15142   111166          BRS DSKGET              PICK UP READ/WRITE PARAMETERS, PUT IN 3-4-5
15143   024100          SEL                     PERFORM READ/WRITE OPERATION
15144   111202          BRS DSKWT               WAIT FOR CONTROLLER READY
15145   044404          SL6 B,R                 CHECK FOR ERRORS
15146   151152          BMI *+4
15147   342142          ADO DSKOP               IF NOT, PREPARE TO EXIT
15150   211226          LDD DSKAB               RESTORE A AND B REGISTERS
15151   106142          BRU DSKOP    X          RETURN TO CALLING PROGRAM
15152   341230          ADO DSKERR              IF ERRORS, STEP ERROR COUNTER
15153   151162          BMI DSKAGN              IF NOT TOO MANY TRIES, TRY AGAIN
15154   112214          BRS MESSG               OTHERWISE, TYPE ERROR MESSAGE
15155   015231          IND DSKMSG
15156   323304          STZ $STAT               CRUMP WHATEVER IN PROGRESS
15157   402007          LDA MONE
15160   503134          STA $IF
15161   106064          BRU STEXEC   X          EXIT
15162   401225   DSKAGN LDA DSK5                RESET POINTER TO BEGINNING OF PARAMETER LIST
15163   522142          AAM DSKOP
15164   101136          BRU DSKOPE              TRY AGAIN
15166   000000   DSKGET IND 0                   SUBROUTINE--PICK UP NEXT 3 PARAMETER WORDS
15167   015170          IND *+1                 AND PLACE IN WORDS 3, 4, AND 5 FOR DSU
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15170  111202          BRS DSKWT          FIRST, WAIT FOR DSU CONTROLLER READY          03898
15171  406142          LDA DSKOP    X     PICK UP FORST PARAMETER                       03899
15172  502003          STA 3              PLACE IN WORD 3                               03900
15173  342142          ADD DSKOP          STEP PARAMETER POINTER                        03901
15174  406142          LDA DSKOP    X     PICK UP SECOND PARAMETER WORD                 03902
15175  342142          ADD DSKOP                                                        03903
15176  606142          LDB DSKOP    X     AND THIRD PARAMETER WORD                      03904
15177  312004          STD 4              PLACE IN WORDS 4 AND 5 FOR DSU                03905
15200  105166          BRU DSKGET   X     RETURN                                        03906
15202  000000  DSKWT   IND 0              SUBROUTINE--WAIT FOR DISK READY               03907
15203  015204          IND *+1                                                          03908
15204  060010          TRA 0,A            INITIALIZE COUNTDOWN                          03909
15205  020100          NIS 7              WAIT FOR CONTROLLER-SELECTOR                  03910
15206  121205          RZE *-1                                                          03911
15207  032000          CSR 0              TEST STATUS OF DSU CONTROLLER                 03912
15210  175202          ROD DSKWT    X     IF READY, EXIT                                03913
15211  422013          AMA FOUR           ELSE, INCREMENT COUNTER                       03914
15212  131207          BNZ *-3            IF NOT COUNTED DOWN, TRY AGAIN                03915
15213  011001          PIC 1                                                            03916
15214  323250          STZ $OUTFF         PREPARE TO OUTPUT EMERGENCY MESSAGE ON TTY1   03917
15215  112214          BRS MESSG                                                        03918
15216  015236          IND DSKCLR                                                       03919
15217  402024          LDA STAT4          FORCE MASTER OVERRIDE ON DSU                  03920
15220  502003          STA 3                                                            03921
15221  212036          LDD CRAW2                                                        03922
15222  312004          STD 4                                                            03923
15223  024100          SEL                                                              03924
15224  106065          BRU STING    X     EXIT                                          03925
15225  777773  DSK5    DEC -5             ALL PURPOSE CONSTANT                          03926
15226  000000  DSKAB   DDC 0              TEMP STORAGE FOR A AND B REGISTERS            03927
15227  000000
15230  000000  DSKERR  OCT 0              DISK ERROR COUNTER                            03928
15231  377224  DSKMSG  OCT 377224                                                       03929
15232  316242          ALF ISK                                                          03930
15233  602551          ALF  ER                                                          03931
15234  514651          ALF ROR                                                          03932
15235  333755          OCT 333755                                                       03933
15236  373232  DSKCLR  OCT 373232                                                       03934
15237  322462          OCT 322462                                                       03935
15240  643755          OCT 643755                                                       03936
                                                                                        03937
                                                                                        03938
                                                                                        03939
                                                                                        03940
                                                                                        03941
15241  206136  DOB1    LDC DOB      X     DISK-TO-OUTPUT-BUFFER TRANSFER ROUTINE        03942
15242  112140          BRS DSKCH          TEST FOR DISK AVAILABLE AND READY             03943
15243  106065          BRU STING    X     IF NOT, TRY AGAIN LATER                       03944
15244  603120          LDB $DPOS4         SET UP POSITION                               03945
15245  701270          STB DOBA                                                         03946
15246  603240          LDB $OLOC          SET UP MEMORY ADDRESS                         03947
15247  632031          NMB IMSK12                                                       03948
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15250  223230          LDZ $DPC                CHECK WHETHER OR NOT TO FLIP-FLOP          03949
15251  151253          RMI *+2                                                            03950
15252  652023          XMB STAT2                                                          03951
15253  701273          STB DOBB                                                           03952
15254  632026          NMB OM200               CHECK FOR ILLEGAL BUFFER ADDRESS           03953
15255  773154          XBZ $INSTD                                                         03954
15256  121265          BZE *+7                                                            03955
15257  403154          LDA $INSTD              USE BUFFER ADDRESS AS READ IN              03956
15260  503240          STA $DLOC               LOCATION                                   03957
15261  501273          STA DOBB                                                           03958
15262  060210          TRA C,A                                                            03959
15263  311302          STD DOBSV               SAVE TTY NO. AND ADDRESS                   03960
15264  024004          DIF 3                   TURN ON BUZZER                             03961
15265  112142          BRS DSKOP               PERFORM DISK OPERATION                     03962
15266  000200          OCT 200                                                            03963
15267  510100          OCT 510100                                                         03964
15270  000000  DOBA    OCT 0                                                              03965
15271  000100          OCT 100                                                            03966
15272  210101          OCT 210101                                                         03967
15273  000000  DOBB    OCT 0                                                              03968
15274  402010          LDA TWO                 STEP DISK ADDRESS                          03969
15275  523120          AAM $DPOS4                                                         03970
15276  402007          LDA MONE                SET FLAG TO INDICATE THAT TRANSFER IS DONE 03971
15277  503234          STA $DF                                                            03972
15300  106064          BRU STEXEC  X           EXIT                                       03973
15301                  BSS 1                                                              03974
15302  DOBSV   BSS 2                          SAVED TTY NO. AND ADDRESS                  03975
                                                                                          03976
                                                                                          03977
                                                                                          03978
                                       INPUT-BUFFER-TO-DISK ROUTINE                       03979
15304  206130  DIB1    LDC DIB     X           SPARE-TIME TASK                            03980
15305  112140          BRS DSKCH               TEST FOR DISK AVAILABLE                    03981
15306  106065          BRU STING   X                                                      03982
15307  112132          BRS DIBS                GO TO DISK SUBROUTINE                      03983
15310  106064          BRU STEXEC  X                                                      03984
                                                                                          03985
15311  403114  DIBS1   LDA $DPOS3             TEST TOP OF 3K AREA...                     03986
15312  431354          NMA DMSK9               MASK OFF POSITION                          03987
15313  571356          XAZ D3K                 TEST SECTOR                                03988
15314  131322          BNZ DIBC                                                           03989
15315  402007          LDA MONE                                                           03990
15316  503134          STA $IF                                                            03991
15317  112214          BRS MESSG               IF END OF AREA, TYPE OUT ERROR MESSAGE     03992
15320  015403          IND DER3K                                                          03993
15321  106064          BRU STEXEC  X           ABORT DISK OPERATION                       03994
15322  603114  DIBC    LDB $DPOS3              SET UP DISK ADDRESS                        03995
15323  701333          STB DIBA                                                           03996
15324  603130          LDB $IDLOC              LOAD BUFFER ADDRESS                        03997
15325  632031          NMB IMSK12              FLIP-FLOP BUFFER                           03998
15326  652023          XMB STAT2                                                          03999
15327  701336          STB DIBB                                                           04000
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15330   112142          BRS DSKOP                                       04001
15331   000200          OCT 200                                         04002
15332   510100          OCT 510100                                      04003
15333   000000  DIBA    OCT 0                                           04004
15334   000300          OCT 300                                         04005
15335   710101          OCT 710101                                      04006
15336   000000  DIBB    OCT 0                                           04007
15337   402007          LDA MONE        SET FLAG FOR REAL-TIME          04008
15340   503134          STA $IF                                         04009
15341   403114          LDA $DPOS3                                      04010
15342   422010          AMA TWO         STEP DISK ADDRESS               04011
15343   503114          STA $DPOS3                                      04012
15344   431354          NMA DMSK9       CHECK FOR END OF 2K AREA        04013
15345   571355          XAZ D2K                                         04014
15346   131353          BNZ DEXIT       IF NOT EXIT                     04015
15347   223250          LDZ $OUTFF      STILL OUTPUTTING THE LINE-FEED...04016
15350   131347          BNZ *-1         IF SO, WAIT                     04017
15351   112214          BRS MESSG                                       04018
15352   015357          IND DER2K                                       04019
15353   106132  DEXIT   BRU DIBS    X   RETURN                         04020
15354   000777  DMSK9   OCT 777                                         04021
15355   000100  D2K     OCT 100                                         04022
15356   000140  D3K     OCT 140                                         04023
15357   374751  DER2K   OCT 374751      PROGRAM SIZE LIMIT--ONLY CORRECTIONS BEYOND 04024
15360   462751          ALF OGR         THIS POINT.                     04025
15361   214460          ALF AM                                          04026
15362   623171          ALF SIZ                                         04027
15363   256043          ALF E L                                         04028
15364   314431          ALF IMI                                         04029
15365   634040          ALF T--                                         04030
15366   464543          ALF ONL                                         04031
15367   706023          ALF Y C                                         04032
15370   465151          ALF ORR                                         04033
15371   252363          ALF ECT                                         04034
15372   314645          ALF ION                                         04035
15373   626022          ALF S B                                         04036
15374   257046          ALF EYO                                         04037
15375   452460          ALF ND                                          04038
15376   633031          ALF THI                                         04039
15377   626047          ALF S P                                         04040
15400   463145          ALF OIN                                         04041
15401   633337          OCT 633337                                      04042
15402   557777          OCT 557777                                      04043
15403   374751  DER3K   OCT 374751      PROGRAM TOO LONG.               04044
15404   462751          ALF OGR                                         04045
15405   214460          ALF AM                                          04046
15406   634646          ALF TOO                                         04047
15407   604346          ALF  LO                                         04048
15410   452733          ALF NG.                                         04049
15411   377255          OCT 377255                                      04050
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15412   206206   LISTA1 LDC LISTA    X        LIST ROUTINE--PART 1
15413   062010          TRC 0,A
15414   503204          STA $LINE1
15415   503210          STA $LINE2
15416   603150          LDB $INLOC
15417   405464          LDA LINB1    X        CHECK IF SELECTIVE LIST
15420   432032          NMA M77
15421   571463          XAZ LCR
15422   131426          BNZ *+4               IF SO, BRANCH
15423   403324          LDA $TYP              IF NOT, CHECK IF ANY CORRECTIONS
15424   121442          BZE LN0235            IF NOT, DO NOT HAVE TO USE THE 235 AT ALL
15425   101432          BRU LNOSL             BUT IF CORRECTIONS, MUST EDIT
15426   215465          LDD LINB2    X        RETRIEVE LINE NUMBER
15427   642032          RMB M77
15430   503204          STA $LINE1
15431   703210          STB $LINE2
15432   112114   LNOSL  BRS CMPLT             SERVICE RESIDUAL BUFFERLOAD
15433   342357          ADO #LST              BUMP UP NUMBER OF LISTS DONE          ***
15434   402010          LDA TWO               SET UP LIST STATUS
15435   503304          STA $STAT
15436   402006          LDA ONE
15437   503200          STA $LHFL
15440   503254          STA $PRIOR
15441   106064          BRU STEXEC   X
15442   513200   LN0235 CAM $LHFL             HEADING LINE
15443   112270          BRS RUNCH             CHECK IF RUNNING
15444   413300          CMA $STAND
15445   463114          AAZ $DPOS3
15446   141453          BPL *+5
15447   513114          CAM $DPOS3
15450   112214          BRS MESSG
15451   011321          IND SNOPGM
15452   106064          BRU STEXEC   X
15453   513204          CAM $LINE1
15454   323210          STZ $LINE2
15455   403154          LDA $INSTD
15456   503150          STA $INLOC
15457   503130          STA $IDLOC
15460   112066          BRS BETA
15461   112210          BRS LISTB             SET UP NEXT PHASE OF LIST
15462   106064          BRU STEXEC   X
15463   000037   LCR    OCT 37
15464   200001   LINB1  INB 1
15465   200002   LINB2  INB 2


15466   206252   OUTPT1 LDC OUTPT    X        OUTPUT ROUTINE
15467   223250          LDZ $OUTFF
```

```
15470   136065          BNZ STING   X       IF TELETYPE IS OUTPUTTING, TRY LATER        04105
15471   223244          LDZ $OUT                                                        04106
15472   121477          BZE NOOUT                                                       04107
15473   323210          STZ $LINE2          FUDGE                                       04108
15474   403300          LDA $STAND          SET UP DISK ADDRESS                         04109
15475   422030          AMA OM276                                                       04110
15476   101515          BRU LISKOM                                                      04111
                                                                                        04112
                                                                                        04113
                                                                                        04114
15477   403104  NOOUT   LDA $CNFL                                                       04115
15500   126064          BZE STEXEC  X                                                   04116
15501   405506          LDA NTBCN   X                                                   04117
15502   501504          STA *+2                                                         04118
15503   112066          BRS BETA                                                        04119
         15504          BSS 1                                                           04120
15505   106064          BRU STEXEC  X                                                   04121
15506   115506  NTBCN   INA *                                                           04122
15507   112220          BRS MORE                                                        04123
15510   112170          BRS INPTB                                                       04124
                                                                                        04125
                                                                                        04126
                                                                                        04127
15511   206210  LISTB1  LDC LISTB   X       LIST ROUTINE--PART 2                        04128
15512   223250          LDZ $OUTFF                                                      04129
15513   136065          BNZ STING   X       IF TELETYPE IS OUTPUTTING, TRY LATER        04130
15514   403204          LDA $LINE1                                                      04131
15515   503120  LISKOM  STA $DPOS4          INITIALIZE DISK POINTER AT BEGINNING OF AREA 04132
15516   112066          BRS BETA            SET UP THIRD PART OF LIST/OUTPUT TASK       04133
15517   112212          BRS LISTC                                                       04134
15520   223200          LDZ $LHFL           IS THERE A HEADING LINE TO BE TYPED...      04135
15521   126064          BZE STEXEC  X       IF NOT, EXIT                                04136
15522   323200          STZ $LHFL           RESET FLAG                                  04137
15523   403064          LDA $WORD3          SET UP PROBLEM NAME                         04138
15524   501550          STA LNAME                                                       04139
15525   403070          LDA $WORD4                                                      04140
15526   501551          STA LNAME+1                                                     04141
15527   212060          LDD RTIME           SET UP REAL-TIME                            04142
15530   501553          STA LTIME                                                       04143
15531   701554          STB LTIME+1                                                     04144
15532   402403          LDA IMAGE           SET UP DATE                                 04145
15533   501556          STA LIMAG                                                       04146
15534   402404          LDA IMAGE+1                                                     04147
15535   501557          STA LIMAG+1                                                     04148
15536   402405          LDA IMAGE+2                                                     04149
15537   501560          STA LIMAG+2                                                     04150
15540   402406          LDA IMAGE+3                                                     04151
15541   501561          STA LIMAG+3                                                     04152
15542   402407          LDA IMAGE+4                                                     04153
15543   501562          STA LIMAG+4                                                     04154
15544   112214          BRS MESSG           TYPE OUT HEADING LINE                       04155
15545   115547          INA LEAD                                                        04156
```

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15546   106064          BRU STEXEC  X                                    04157
15547   377272  LEAD    OCT 377272          HEADING LINE FOR OUTPUT      04158
15550   606060  LNAME   ALF                                              04159
15551   606060          ALF                                              04160
15552   606060          ALF                                              04161
15553   606060  LTIME   ALF                                              04162
15554   606060          ALF                                              04163
15555   606060          ALF                                              04164
15556   606060  LIMAG   ALF                                              04165
15557   606060          ALF                                              04166
15560   606060          ALF                                              04167
15561   606060          ALF                                              04168
15562   606060          ALF                                              04169
15563   377255          OCT 377255                                       04170
                                                                         04171
                                                                         04172
                                                                         04173
15564   206212  LISTC1  LDC LISTC   X       LIST ROUTINE--PART 3         04174
15565   223250          LDZ $OUTFF                                       04175
15566   136065          BNZ STING   X       IF TELETYPE IS OUTPUTTING, TRY LATER  04176
15567   223134          LDZ $IF             IS BUFFER FREE...            04177
15570   126065          BZE STING   X       IF NOT, TRY LATER            04178
15571   402007          LDA MONE                                         04179
15572   503230          STA $ODC            INITIALIZE AND PREPARE FOR OUTPUTTING  04180
15573   323234          STZ $OF                                          04181
15574   402033          LDA M7777                                        04182
15575   543050          RAM $SW2                                         04183
15576   503040          STA $SW1                                         04184
15577   026100          DEF 7               RESET ECHOPLEX               04185
15600   343250          ADO $OUTFF          SET D-30 OUTPUT FLAG         04186
15601   403154          LDA $INSTD                                       04187
15602   423210          AMA $LINE2                                       04188
15603   503240          STA $OLOC                                        04189
15604   403104          LDA $CNFL           IS CONTINUE FLAG ON...       04190
15605   121610          BZE *+3                                          04191
15606   513104          CAM $CNFL           IF SO, COMPLEMENT IT         04192
15607   101612          BRU *+3                                          04193
15610   402010          LDA TWO                                          04194
15611   503274          STA $SPACE          IF NOT, SLEW PAPER AT THE END OF OUTPUT  04195
15612   112066          BRS BETA                                         04196
15613   112136          BRS DOR             LOAD BUFFER WITH FIRST RECORD OF OUTPUT  04197
15614   106064          BRU STEXEC  X                                    04198
```

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                                                   -RUN- INITIATES THE SEQUENCE WHICH ALLOWS
                                                   A PROBLEM TO COMPILE AND RUN IN THE 235.

15615   206266   RUN1    LDC RUN      X
15616   112114           BRS CMPLT
15617   342355           ADO #RUN             BUMP UP COUNTER OF DAYS RUNS                ***
15620   323260           STZ $QUEUE           START ON 0-TH QUEUE
15621   402013           LDA FOUR             SET INITIAL RUN STATUS
15622   503304           STA $STAT
15623   062010           TRC 0,A
15624   503200           STA $LHFL
15625   403314           LDA $SYSTM
15626   572042           XAZ EDI              NO HEADING FOR EDIT
15627   131631           BNZ *+2
15630   333200           CMM $LHFL
15631   402012           LDA THREE
15632   503254           STA $PRIOR
15633   106064           BRU STEXEC   X


15634   011000   MORE1   PIC 0                GET BATCH $DONE VALUE
15635   603110           LDB $DONE
15636   206220           LDC MORE     X       NOW SET UP THE CONTINUATION OF THE RUN
15637   223250           LDZ $OUTFF           IF TELETYPE OUTPUTTING, WAIT
15640   136065           BNZ STING    X
15641   323104           STZ $CNFL            RESET CONTINUE FLAG
15642   323174           STZ $LCNT            IF RUNNING DONT ALLOW A DISCONNECT
15643   323260           STZ $QUEUE           ASSUME THIS IS A SHORT RUNNING PROGRAM
15644   403264           LDA $RTIME           NOW CHECK FOR LONG RUNNING I.E. IS
15645   462063           AAZ LSCUT            $RTIME GREATER THAN LONG SHORT CUT POINT
15646   151661           BMI *+11             NOT A LONG RUNNING PROGRAM SO NO DELAY
15647   343260           ADO $QUEUE
15650   343254           ADO $PRIOR           LET EVERY ONE ELSE IN AHEAD
15651   402062           LDA MINDON           SET $DONE TWO BACK OF MINDONE
15652   422011           AMA MTWO
15653   503110           STA $DONE
15654   773110           XBZ $DONE            UNLESS BATCH AND THIS CHANNEL ARE IN
15655   171660           BOD *+3              THE SAME RESIDUE CLASS MOD 2
15656   422007           AMA MONE             IN THIS CASE GET THIS CHANNEL INTO THE
15657   503110           STA $DONE            OTHER RESIDUE CLASS
15660   502062           STA MINDON           NOW SET MINDON TO THE NEW MINIMUM
15661   402014           LDA FIVE             SET CONTINUED RUN STATUS
15662   503304           STA $STAT
15663   106064           BRU STEXEC   X       EXIT



15664   206176   IOUT1   LDC IOUT     X       INTERMEDIATE OUTPUT SET-UP ROUTINE
15665   402006           LDA ONE
15666   503104           STA $CNFL
15667   402014           LDA FIVE             SET PRIORITY EQUAL TO 5
```

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15670   503254          STA $PRIOR                                          04253
15671   112066          BRS BETA                                            04254
15672   112252          BRS OUTPT       SET UP TYPEOUT TASK                 04255
15673   106064          BRU STEXEC  X   EXIT                                04256
                                                                            04257
                                                                            04258
15674   206166  INPTA1  LDC INPTA   X   REAL-TIME INPUT--PART 1              04259
15675   342365          ADD #INPT       ADD ONE TO CALL FOR INPUT COUNT     04260
15676   402010          LDA TWO         SET CONTINUE FLAG                   04261
15677   503104          STA $CNFL                                           04262
15700   402013          LDA FOUR        SET PRIORITY EQUAL TO 4             04263
15701   503254          STA $PRIOR                                          04264
15702   112066          BRS BETA        INITIATE OUTPUTTING OF OUTPUT BUFFER 04265
15703   112252          BRS OUTPT                                           04266
15704   106064          BRU STEXEC  X   EXIT                                04267
                                                                            04268
                                                                            04269
15705   206170  INPTB1  LDC INPTB   X   REAL-TIME INPUT--PART 2              04270
15706   323104          STZ $CNFL       RESET CONTINUE FLAG                 04271
15707   403154          LDA $INSTD      SET INPUT POINTERS TO LOWER BUFFER  04272
15710   503150          STA $INLOC                                          04273
15711   503130          STA $IDLOC                                          04274
15712   112302          BRS SPINP       SET SPECIAL INPUT FLAG              04275
15713   000172          IND INPTC       FILL WITH 77-S AND SET UP INPTC     04276
15714   402033          LDA M7777       SET UP TO OUTPUT QUESTION MARK      04277
15715   543050          RAM $SW2                                            04278
15716   211724          LDD IQMSP                                           04279
15717   533050          NAM $SW2                                            04280
15720   703040          STB $SW1                                            04281
15721   026100          DEF 7                                               04282
15722   106064          BRU STEXEC  X                                       04283
15724   377576  IQMSP   OCT 377576      QUESTION MARK (TTY CODE)            04284
15725   007500          OCT 007500      SPACE (TTY CODE)                    04285
                                                                            04286
                                                                            04287
15726   206172  INPTC1  LDC INPTC   X   REAL-TIME INPUT--PART 3              04288
15727   112140          BRS DSKCH       TEST FOR DISK AVAILABLE             04289
15730   106065          BRU STING   X   IF NOT, TRY LATER                   04290
15731   217130          LDD $IDLOC  X   PICK UP BEGINNING OF INPUT LINE     04291
15732   112162          BRS HCHEK       TEST FOR STOP OR HELLO              04292
15733   401755          LDA INLF        SET UP TO OUTPUT LINE-FEED          04293
15734   503040          STA $SW1                                            04294
15735   026100          DEF 7                                               04295
15736   403300          LDA $STAND      PREPARE TO WRITE A RECORD ONTO DSU  04296
15737   422030          AMA OM276       DISK ADDRESS IS FIRST RECORD OF OUTPUT AREA 04297
15740   501746          STA INPTX       WHICH IS AT THE BEGINNING OF THE OUTPUT AREA 04298
15741   403154          LDA $INSTD      WRITE OUT OF INPUT BUFFER           04299
15742   501751          STA INPTY                                           04300
15743   112142          BRS DSKOP       GO TO DISK SUBROUTINE               04301
15744   000200          OCT 200                                             04302
15745   510100          OCT 510100                                          04303
15746   000000  INPTX   OCT 0                                               04304
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15747   000300          OCT 300                                          04305
15750   710101          OCT 710101                                       04306
15751   000000  INPTY   OCT 0                                            04307
15752   112066          BRS BETA        SET UP TASK TO CONTINUE RUN      04308
15753   112220          BRS MORE                                         04309
15754   106064          BRU STEXEC  X   EXIT                             04310
15755   007424  INLF    OCT 7424        LINE-FEED (TTY CODE)             04311
```

```
           16000           LOC 16000            BEGIN CATALOG - DSU STORE - MODULE

    16000  206246   OLDB1  LDC OLDB      X      OLD ROUTINE--PART 2
    16001  112270          BRS RUNCH            CHECK FOR RUNNING
    16002  112336          BRS WAIT             CHECK FOR WAIT
    16003  342356          ADO #OLD             BUMP UP COUNTER OF OLD OPERATIONS      ***
    16004  217150          LDD $INLOC    X      LOAD OLD PROBLEM NAME
    16005  112162          BRS HCHEK            CHECK FOR STOP OR HELLO
    16006  503064          STA $WORD3           STORE PROBLEM NAME
    16007  703070          STB $WORD4
    16010  323170          STZ $KOMFL
    16011  403150          LDA $INLOC           CHECK FOR -***- AFTER PROBLEM NAME
    16012  422010          AMA TWO
    16013  560032          NAZ 0177             TEST FOR WRAPAROUND TO LOWER BUFFER
    16014  130016          BNZ *+2
    16015  403154          LDA $INSTD           IF SO, FUDGE
    16016  604031          LDB ONA2      X      PICK UP 3 CHARS AFTER PROBLEM NAME IN BUFFER
    16017  770033          XBZ OSTARS           COMPARE WITH ***
    16020  130023          BNZ *+3
    16021  402012          LDA THREE
    16022  503170          STA $KOMFL
    16023  323324          STZ $TYP             DELETE ANY NEW CORRECTIONS
    16024  323110          STZ $DONE
    16025  403154          LDA $INSTD
    16026  503150          STA $INLOC           RESET INPUT ROUTINE POINTERS
    16027  503130          STA $IDLOC
    16030  100310          BRU KOMMON
    16031  100000   ONA2   INA 0
    16032  000177   0177   OCT 177
    16033  545454   OSTARS ALF ***



    16034  206076   CATA1  LDC CATA      X      CATALOG PRINTOUT ROUTINE--PART 1
    16035  112270          BRS RUNCH            CHECK IF RUNNING
    16036  112124          BRS CTCMP
    16037  342360          ADO #CAT             BUMP UP COUNTER OF CATALOG PRINTOUTS   ***
    16040  403044          LDA $WORD1           SET UP ID NUMBER IN HEADING LINE
    16041  500100          STA DNUM
    16042  403054          LDA $WORD2
    16043  500101          STA DNUM+1
    16044  402403          LDA IMAGE            SET UP DATE
    16045  500103          STA DIMAG
    16046  402404          LDA IMAGE+1
    16047  500104          STA DIMAG+1
    16050  402405          LDA IMAGE+2
    16051  500105          STA DIMAG+2
    16052  402406          LDA IMAGE+3
    16053  500106          STA DIMAG+3
    16054  402407          LDA IMAGE+4
    16055  500107          STA DIMAG+4
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16056   212060          LDD RTIME              SET UP TIME
16057   500114          STA DTIME
16060   700115          STB DTIME+1
16061   112214          BRS MESSG
16062   116066          INA DHEAD
16063   112066          BRS BETA               SET UP CATALOG TASK PART 2
16064   112100          BRS CATB
16065   106064          BRU STEXEC   X
16066   377262  DHEAD   OCT 377262             SAVED PROGRAMS, USER NUMBER XXXXXX
16067   216525          ALF AVE
16070   246047          ALF D P
16071   514627          ALF ROG
16072   512144          ALF RAM
16073   627360          ALF S,
16074   646225          ALF USE
16075   516045          ALF R N
16076   644422          ALF UMB
16077   255160          ALF ER
16100   606060  DNUM    ALF
16101   606060          ALF
16102   606037          OCT 606037
16103   606060  DIMAG   ALF
16104   606060          ALF
16105   606060          ALF
16106   606060          ALF
16107   606060          ALF
16110   606060          ALF
16111   606060          ALF
16112   606331          ALF  TI
16113   442513          OCT 442513
16114   606060  DTIME   ALF
16115   606060          ALF
16116   377255          OCT 377255


                                    --- *** --- KOM --- *** ---

                                       KOM IS ENTERD ON ALL CATALOG TASKS.
                                    IT MAKES A DECISION ON JUST WHAT CATALOG
                                    TASK IS DESIRED BY USING $KOMFL

16117   206202  KOM1    LDC KOM      X         PICK UP CHANNEL NUMBER OF CALLING TERMINAL
16120   403170          LDA $KOMFL             NOW BRANCH TO CORRECT TASK
16121   105077          BRU KOMCN    X         KOMCN IS AN INA KOM1+4, TO GET TO FOLLOWING
16122   100132          BRU KOLD               0 IS NORMAL OLD PROGRAM LOOK UP
16123   100203          BRU KCAT               1 IS CATALOG PRINTOUT
16124   100313          BRU KSAV               2 IS ANY KIND OF A SAVE OPERATION
16125   100356          BRU KOLDL              3 IS A LIBRARY LOOKUP OF OLD PROGRAM
16126   100166          BRU KUNS               4 IS AN UNSAVE
16127   100127          BRU *
16130   100130          BRU *
16131   100131          BRU *                  SIX AND SEVEN ARE UNUSED......
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```
                                          --- KOLD ---

                                           KOLD LOOKS UP A PROGRAM , ACCORDING TO
                                         BOTH USER NUMBER SND PROBLEM NAME. IT TYPES
                                         OUT -PROGRAM NOT SAVED- IF IT CANNOT FIND IT,
                                         AND PLACES IT IN THE USERS SANDARD AREA IF IT
                                         CAN FIND IT. PIECES OF THIS ROUTINE ARE
                                         USED BY OTHER ROUTINES IN THIS SECTION

        16132  KOLD   BSS 0
16132  110646         BRS KINIT
16133  110450         BRS KEN
16134  100146         BRU KOLD2              PROGRAM FOUND
16135  403064  KOLD1  LDA $WORD3
16136  501143         STA HERROR+7
16137  403070         LDA $WORD4
16140  501144         STA HERROR+8
16141  223250         LDZ $OUTFF
16142  130141         BNZ *-1
16143  112214         BRS MESSG              OUTPUT -PROGRAM NOT SAVED ****** - MESSAGE
16144  117134         INA HERROR
16145  101013         BRU KOMX1
16146  402402  KOLD2  LDA DATE               PROGRAM SAVED, UPDATE CODED DATE
16147  505024         STA LIST7   X
16150  110632  KOLD3  BRS KWRT               AND REWRITE THE CATALOG
16151  405022         LDA LIST5   X          NOW SET UP TO GET PROGRAM INTO STANDARD AREA
16152  503074         STA $WORD5
16153  405023         LDA LIST6   X
16154  503100         STA $WORD6
16155  423300         AMA $STAND
16156  063010         TRC A,A
16157  423074         AMA $WORD5
16160  063010         TRC A,A
16161  503114         STA $DPOS3
16162  402006         LDA ONE
16163  503254         STA $PRIOR
16164  503304         STA $STAT
16165  101014         BRU KOMX2              AND EXIT, RESETTING $KOMFL, BUT NOT $STAT

                                               --- KUNS ---

                                           UNSAVE A CATALOG ENTRY , USES PARTS OF
                                         KOLD.

16166  110646  KUNS   BRS KINIT
16167  110450         BRS KEN
16170  100172         BRU *+2                FOUND IT
16171  100135         BRU KOLD1              NOT THERE - SO DO JUST LIKE IN SAVE
16172  401075         LDA KFLL               WIPE OUT ENTRY
16173  505016         STA LIST1   X
16174  505017         STA LIST2   X
```

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16175   505020          STA LIST3   X                                    04470
16176   505021          STA LIST4   X                                    04471
16177   402402          LDA DATE                AND INDICATE DATE UNSAVED 04472
16200   505024          STA LIST7   X           BUT LEAVE DISK ADDRESSES 04473
16201   110632          BRS KWRT                REWRITE CATALOG          04474
16202   101011          BRU KOMX                                         04475
                                                                         04476
                                                --- KCAT - CATALOG PRINTOUT --- 04477
                                                                         04478
                                            KCAT PRINTS OUT THE PROGRAMS IN A USERS 04479
                                        SAVED STORAGE. IT PRINTS OUT 40 PROGRAMS PER 04480
                                        BLOCK, UNTIL ALL PROGRAMS HAVE BEEN LISTED. 04481
                                        *** EXCEPTION ***.                04482
                                        IF A REQUEST FOR A CATALOG PRINTOUT WHICH HAS 04483
                                        MORE THAN 40 PROGRAMS IN IT OVERLAPS ANY 04484
                                        OTHER SUCH REQUEST (CATALOG WITH MORE THAN 40 04485
                                        PROGRAMS) THE OVERLAPPING -SECOND INITIATED- 04486
                                        CATALOG WILL RECEIVE ONLY THE FIRST 40 04487
                                        PROGRAMS, FOLLOWED BY TRAILING DOTS 04488
                                                                         04489
16203   110646  KCAT    BRS KINIT               GET THE GOOD OLD CATALOG 04490
16204   401076          LDA KEGHT               SET LINE COUNTER (CAN ONLY GENERATE 128 ) 04491
16205   501043          STA KCOUNT                                       04492
16206   402014          LDA FIVE                                         04493
16207   501053          STA KFLIP                                        04494
16210   403154          LDA $INSTD              GET BUFFER ADDRESS TO PUT THIS STUFF IN 04495
16211   500220          STA KCAT4                                        04496
16212   501056          STA KPOIN                                        04497
16213   110472  KCAT2   BRS KUN                                          04498
16214   100222          BRU KCAT1               PUT AWAY A PROGRAM NAME  04499
16215   401057          LDA KEOM                TERMINATE                04500
16216   505056          STA KPOIN   X                                    04501
16217   112214          BRS MESSG                                        04502
16220   000000  KCAT4   IND 0                                            04503
16221   101013          BRU KOMX1                                        04504
16222   405020  KCAT1   LDA LIST3   X                                    04505
16223   110260          BRS KPOINS                                       04506
16224   405021          LDA LIST4   X                                    04507
16225   110260          BRS KPOINS                                       04508
16226   110562          BRS KEND                AND STEP OVER PROGRAM JUST HANDLED 04509
16227   351053          SBO KFLIP                                        04510
16230   120234          BZE *+4                                          04511
16231   401045          LDA KSPC                                         04512
16232   110260          BRS KPOINS                                       04513
16233   100213          BRU KCAT2                                        04514
16234   401044          LDA KENL                                         04515
16235   110260          BRS KPOINS                                       04516
16236   402014          LDA FIVE                                         04517
16237   501053          STA KFLIP                                        04518
16240   351043          SBO KCOUNT                                       04519
16241   130213          BNZ KCAT2                                        04520
16242   400624          LDA KOMA                                         04521
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16243   503204          STA $LINE1                                          04522
16244   703210          STR $LINE2                                          04523
16245   112066          BRS BETA                                            04524
16246   112102          BRS CATC            AND PREPARE TO WAIT THE THING OUT 04525
16247   100215          BRU KCAT2+2         AND OUTPUT THIS BUFFER LOAD     04526
                                                                            04527
 16250  CATC1   BSS 0                                                      04528
16250   206102          LDC CATC     X                                      04529
16251   223250          LDZ $OUTFF          WAIT FOR TWO BUFFER LOADS TO GET OUTPUTTED 04530
16252   136065          BNZ STING    X                                      04531
16253   403204          LDA $LINE1                                          04532
16254   110434          BRS KFNIT                                           04533
16255   603210          LDB $LINE2                                          04534
16256   100204          BRU KCAT+1                                          04535
                                                                            04536
16260   000000  KPOINS  IND 0                                               04537
16261   016262          IND **+1                                            04538
16262   505056          STA KPOIN    X                                      04539
16263   341056          ADO KPOIN                                           04540
16264   104260          BRU KPOINS   X                                      04541
                                                                            04542
                                    CATALOG - PART 2                        04543
                                                                            04544
16265   206100  CATB1   LDC CATB     X                                      04545
16266   223250          LDZ $OUTFF                                          04546
16267   136065          BNZ STING    X      PUNT UNTIL HEADER IS OUT        04547
16270   402006          LDA ONE                                             04548
16271   503170          STA $KOMFL                                          04549
16272   100310          BRU KOMMON                                          04550
                                    --- SAVE - PART 1                      04551
16273   206272  SAVEA1  LDC SAVEA    X                                      04552
16274   112114          BRS CMPLT           FILL OUT AND WRITE OUT IF NECESSARY 04553
16275   342361          ADO #SAV            BUMP UP NUMBER OF SAVE OPERATIONS DONE ***04554
16276   402010          LDA TWO                                             04555
16277   503170          STA $KOMFL                                          04556
16300   100310          BRU KOMMON                                          04557
                                                                            04558
                                    UNSAVE - PART 1                         04559
16301   206332  UNSAV1  LDC UNSAV    X                                      04560
16302   223250          LDZ $OUTFF                                          04561
16303   136064          BNZ STEXEC   X      BUMP UP COUNTER OF UNSAVE OPERATIONS ***04562
16304   342362          ADO #UNS                                            04563
16305   402013          LDA FOUR                                            04564
16306   503170          STA $KOMFL                                          04565
16307   100310          BRU KOMMON                                          04566
                                                                            04567
16310   112066  KOMMON  BRS BETA                                            04568
16311   112202          BRS KOM                                             04569
16312   106064          BRU STEXEC   X                                      04570
                                                                            04571
                                        --- KSAV ---                        04572
                                    SAVE A PROGRAM SOMEWHERE - AND THIS ONE 04573
```

```
                                        CAN GET HAIRY.                                          04574
                                                                                                04575
 16313   110646   KSAV    BRS KINIT                                                             04576
 16314   110450           BRS KEN                                                               04577
 16315   100320           BRU KSAV2          IT IS, SO SEE IF IT STILL THE SAME LENGTH          04578
 16316   110522           BRS KHOLF                                                             04579
 16317   100333           BRU KSAV3          PUT IT, AND THEN GO PUT IT THERE                   04580
 16320   405025   KSAV2   LDA LIST8   X                                                         04581
 16321   431064           NMA KMSK1          PICK UP BITS INDICATING SIZE OF HOLE               04582
 16322   571054           XAZ KLNGF                                                             04583
 16323   120343           BZE KSAV4                                                             04584
 16324   401075           LDA KFLL           IT WASN T - SO UNSAVE, AND RESAVE                  04585
 16325   505016           STA LIST1   X                                                         04586
 16326   505017           STA LIST2   X                                                         04587
 16327   505021           STA LIST4   X                                                         04588
 16330   505020           STA LIST3   X                                                         04589
 16331   110632           BRS KWRT           AND REWRITE THIS CATALOG - OR LINK              04590
 16332   110522           BRS KHOLF          AND FIND OURSELVES A GOOD HOLE                  04591
 16333   403044   KSAV3   LDA $WORD1                                                           04592
 16334   505016           STA LIST1   X                                                         04593
 16335   403054           LDA $WORD2                                                            04594
 16336   505017           STA LIST2   X                                                         04595
 16337   403064           LDA $WORD3                                                            04596
 16340   505020           STA LIST3   X                                                         04597
 16341   403070           LDA $WORD4                                                            04598
 16342   505021           STA LIST4   X                                                         04599
 16343   402402   KSAV4   LDA DATE                                                              04600
 16344   505024           STA LIST7   X                                                         04601
 16345   405022           LDA LIST5   X                                                         04602
 16346   503074           STA $WORD5         GIVE OLD ROUTINE A STARTING ADDRESS ...         04603
 16347   701043           STB KCOUNT                                                            04604
 16350   402012           LDA THREE                                                             04605
 16351   503304           STA $STAT                                                             04606
 16352   402010           LDA TWO                                                               04607
 16353   503254           STA $PRIOR                                                            04608
 16354   302053           STC KLISTF         SET TO C-COUNTER SO RESET CAN RESET IT          04609
 16355   101014           BRU KOMX2                                                             04610
                                                                                                04611
                                           --- KOLDL ---                                       04612
                                                                                                04613
                                      FIND A LIBRARY PROGRAM                                    04614
                                                                                                04615
 16356   401037   KOLDL   LDA KLIBA                                                           04616
 16357   110434           BRS KFNIT                                                             04617
 16360   110506           BRS KPN                                                               04618
 16361   100367           BRU KOLDL2         SURPRISINGLY ENOUGH, THE PROGRAM IS THERE       04619
 16362   223250           LDZ $OUTFF                                                            04620
 16363   130362           BNZ *-1                                                               04621
 16364   112214           BRS MESSG          TELL GUY PROGRAM NOT IN LIBRARY                 04622
 16365   017157           IND LERROR                                                            04623
 16366   101013           BRU KOMX1                                                             04624
         16367    KOLDL2  BSS 0                                                                 04625
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16367   345024          ADO LIST7   X       DO LIBRARY CODED DATA UPDATE                04626
16370   345024          ADO LIST7   X                                                   04627
16371   140150          BPL KOLD3                                                       04628
16372   402402          LDA DATE                                                        04629
16373   505024          STA LIST7   X                                                   04630
16374   100150          BRU KOLD3                                                       04631
                                                                                        04632
                                        --- TEST1 ---                                   04633
                                                                                        04634
                                    LOOK UP A TEST PROGRAM FOR TEACH SYSTEM             04635
16375   206322  TEST1   LDC TEST    X                                                   04636
16376   401040          LDA KTEAA                                                       04637
16377   110434          BRS KFNIT           READ IN THE CATALOG                         04638
16400   112114          BRS CMPLT           FILL OUT THE BUFFER IF NECESSARY            04639
16401   342363          ADO #TST            BUMP UP COUNTER OF TEST OPERATIONS         ***04640
16402   060004          TRA 0,R             AND RESET B CORRECTLY                       04641
16403   110506          BRS KPN                                                         04642
16404   100416          BRU TFIND                                                       04643
16405   403064          LDA $WORD3                                                      04644
16406   501122          STA TNAM                                                        04645
16407   403070          LDA $WORD4                                                      04646
16410   501123          STA TNAM+1                                                      04647
16411   403250          LDA $OUTFF                                                      04648
16412   130411          BNZ *-1                                                         04649
16413   112214          BRS MESSG                                                       04650
16414   117111          INA TERROR                                                      04651
16415   106064          BRU STEXEC  X                                                   04652
16416   405022  TFIND   LDA LIST5   X                                                   04653
16417   503074          STA $WORD5                                                      04654
16420   405023          LDA LIST6   X                                                   04655
16421   503100          STA $WORD6                                                      04656
16422   323260          STZ $QUEUE                                                      04657
16423   402012          LDA THREE                                                       04658
16424   503254          STA $PRIOR          SET FIRST RUN PRIORITY                      04659
16425   402013          LDA FOUR                                                        04660
16426   503304          STA $STAT                                                       04661
16427   062010          TRC 0,A                                                         04662
16430   503200          STA $LHFL                                                       04663
16431   503320          STA $TFLAG                                                      04664
16432   106064          BRU STEXEC  X                                                   04665
                                                                                        04666
                                                                                        04667
                                        SUBROUTINE KFNIT ---                            04668
                                                                                        04669
                                    KFNIT PERFORMS ESSENTIALLY THE SAME                 04670
                                FUNCTION AS KINIT, EXCEPT THAT IT EXPECTS THE           04671
                                ADDRESS (ON THE DISK) OF THE DESIRED                    04672
                                CATALOG FILE TO BE IN THE A REGISTER ON                 04673
                                ENTRANCE TO THE ROUTINE.                                04674
                                                                                        04675
16434   000000  KFNIT   IND 0                                                           04676
16435   016436          IND *+1                                                         04677
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16436   501060          STA KOMB                                        04678
16437   222053          LDZ KLISTF          CHECK FOR PROTECTED CATALOG 04679
16440   136065          BNZ STING    X                                  04680
16441   112140          BRS USKCH                                       04681
16442   106065          BRU STING    X                                  04682
16443   401060          LDA KOMB                                        04683
16444   110614          BRS KRD             READ IN CATALOG IF NECESSARY04684
16445   321033          STZ KHOLE           SET HOLE FOUND FLAG OFF     04685
16446   104434          BRU KENIT    X                                  04686
                     --- SUBROUTINE KEN ---                            04687
                                                                        04688
                                                                        04689
                     KEN LOOKS UP AN ENTRY IN A GIVEN CATALOG,          04690
                  SEARCHING FOR A MATCH ON BOTH USER NUMBER AND         04691
                  PROBLEM NAME. IT RETURNS TO THE                       04692
                  LOCATION FOLLOWING THE BRS IF IT FINDS THE            04693
                  ENTRY (B REGISTER POINTS TO ENTRY) AND RETURN         04694
                  IS TO THE SECOND LOCATION FOLLOWING THE BRS           04695
                  IF THE PROGRAM IS NOT FOUND                           04696
                                                                        04697
16450   000000  KEN     IND 0                                           04698
16451   016452          IND *+1                                         04699
16452   403044          LDA $WORD1                                      04700
16453   575016          XAZ LIST1    X                                  04701
16454   130466          BNZ KNO                                         04702
16455   403054          LDA $WORD2                                      04703
16456   575017          XAZ LIST2    X                                  04704
16457   130466          BNZ KNO                                         04705
16460   403064          LDA $WORD3                                      04706
16461   575020          XAZ LIST3    X                                  04707
16462   130466          BNZ KNO                                         04708
16463   403070          LDA $WORD4                                      04709
16464   575021          XAZ LIST4    X                                  04710
16465   124450          BZE KEN      X      FOUND IT                    04711
16466   110562  KNO     BRS KEND            DIDN T FIND IT YET - BUMP TO NEXT ENTRY 04712
16467   100452          BRU KEN+2                                       04713
16470   340450          ADO KEN             DIDN T FIND IT AT ALL, CAUSE IT AIN T THERE 04714
16471   104450          BRU KEN      X                                  04715
                                                                        04716
                     --- SUBROUTINE KUN ---                            04717
                                                                        04718
                     KUN IS BASICALLY THE SAME AS KEN, BUT              04719
                  SEARCHES ON THE BASIS USER NUMBER ONLY,               04720
                  IGNORING PROBLEM NAME. IT MAY BE LEFT AND             04721
                  REENTERED AT ANY POINT IN THE SEARCH.                 04722
                                                                        04723
16472   000000  KUN     IND 0                                           04724
16473   016474          IND *+1                                         04725
16474   403044          LDA $WORD1                                      04726
16475   575016          XAZ LIST1    X                                  04727
16476   130502          BNZ KNO1                                        04728
16477   403054          LDA $WORD2                                      04729
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16500   575017          XAZ LIST2   X                                       04730
16501   124472          BZE KUN     X       MATCH FOUND ON USER NUMBER      04731
16502   110562  KNO1    BRS KEND                                            04732
16503   100474          BRU KUN+2           KEEP TRYING                     04733
16504   340472          ADO KUN             GIVE UP                         04734
16505   104472          BRU KUN     X                                       04735
                                                                            04736
                                --- SUBROUTINE KPN ---                      04737
                                                                            04738
                            LIKE KUN, BUT SEARCH IS ON PROBLEM NAME ONLY    04739
                                                                            04740
16506   000000  KPN     IND 0                                               04741
16507   016510          IND *+1                                             04742
16510   403064          LDA $WORD3                                          04743
16511   575020          XAZ LIST3   X                                       04744
16512   130516          BNZ KNO2                                            04745
16513   403070          LDA $WORD4                                          04746
16514   575021          XAZ LIST4   X                                       04747
16515   124506          BZE KPN     X                                       04748
16516   110562  KNO2    BRS KEND                                            04749
16517   100510          BRU KPN+2                                           04750
16520   340506          ADO KPN                                             04751
16521   104506          BRU KPN     X                                       04752
                                                                            04753
                                                                            04754
                                --- SUBROUTINE KHOLF ---                    04755
                                                                            04756
                                THIS ROUTINE LOOKS FOR A HOLE IN THE        04757
                            PRESENT CATALOG, OR CREATES ONE IF NONE EXIST   04758
                            IT ASSUMES THE B-REGISTER POINTS TO THE         04759
                            EOF ENTRY IN THE PRESENT CATALOG, WHICH IS      04760
                            ALREADY IN MEMORY. IT INTERROGATES KHOLE        04761
                            TO SEE IF A PROPER LENGTH HOLE HAS BEEN FOUND   04762
                            KLNGE TO DETERMINE WHAT SIZE HOLE IS NEEDED.    04763
                            IT EITHER CREATES OR UPDATES THE PROPER         04764
                            CATALOG, AND RETURNS WITH THE PROPER            04765
                            BEGINNING ADDRESS STORED, AND THE B REGISTER    04766
                            POINTING TO THE HOLE.                           04767
                                                                            04768
16522   000000  KHOLF   IND 0           FIND A SPOT FOR A PROGRAM, ON DISK AND IN CAT04769
16523   016524          IND *+1                                             04770
16524   401033          LDA KHOLE           CHECK TO SEE IF A PROPER LENGTH HOLE 04771
16525   120532          BZE *+5             EXISTS ALREADY, AND IF SO USE IT AND EXIT 04772
16526   401034          LDA KHOLE+1         IMMEDIATELY                     04773
16527   110614          BRS KRD             MAY HAVE TO READ IN APPROPRIATE LINK 04774
16530   601033          LDB KHOLE           SET B CORRECTLY                 04775
16531   104522          BRU KHOLF   X       AND WERE OUT OF HERE            04776
16532   110562          BRS KEND            IF HAVE NOT COMPLETED CATALOG, LOOK SOME MORE04777
16533   100524          BRU KHOLF+2                                         04778
16534   771052          XBZ KENDL                                           04779
16535   130553          BNZ KHOLF3                                          04780
16536   601054          LDB KLNGF                                           04781
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16537   402013          LDA FOUR                                                04782
16540   501054          STA KLNGF                                               04783
16541   110734          BRS KDSK                                                04784
16542   701054          STB KLNGF                                               04785
16543   601052          LDB KENDL       RESET B TO POINT TO END OF OLD CATALOG  04786
16544   505016          STA LIST1   X                                           04787
16545   401055          LDA KLNK                                                04788
16546   505017          STA LIST2   X                                           04789
16547   110632          BRS KWRT        AND GO WRITE OUT THIS CATALOG           04790
16550   405016          LDA LIST1   X                                           04791
16551   060004          TRA 0,B                                                 04792
16552   500624          STA KOMA                                                04793
16553   401074  KHOLF3  LDA KEOF        WRITE A NEW END OF FILE ON CATALOG      04794
16554   505026          STA LIST10  X                                           04795
16555   110734          BRS KDSK        AND GET A PEICE OF DISK FOR THE PROGRAM TOO 04796
16556   505022          STA LIST5   X                                           04797
16557   401054          LDA KLNGF                                               04798
16560   505025          STA LIST8   X   SET BITS INDICATING LENGTH OF HOLE      04799
16561   104522          BRU KHOLF   X   AND EXIT THIS THING                     04800
                                                                                04801
                      --- KEND SUBROUTINE ---                                   04802
                                                                                04803
                    KEND IS A SPECIALIZED ROUTINE TO BUMP                       04804
                  UP THE CATALOG POINTER DURING CATALOG                         04805
                  SEARCHES. IT CHECKS FOR THINGS LIKE END                       04806
                  OF CATALOG, END OF LINK, HOLES, ETC.                          04807
                  RETURN IS RIGHT AFTER THE BRS IF ALL IS OK,                   04808
                  OTHERWISE IT IS TO THE BRS LOCATION PLUS 2                    04809
                  KEND AUTOMATICALLY READS IN LINKED CATALOGS                   04810
                  WHENEVER NECESSARY                                            04811
                                                                                04812
16562   000000  KEND    IND 0                                                   04813
16563   016564          IND *+1                                                 04814
16564   405017          LDA LIST2   X                                           04815
16565   571074          XAZ KEOF        CHECK FOR 55S (END OF CATALOG)          04816
16566   120577          BZE KEND2       AND IF IT IS SO, GIVE ERROR EXIT        04817
16567   571075          XAZ KFLL        CHECK FOR A HOLE IN THE CATALOG         04818
16570   120601          BZE KEND4                                               04819
16571   621061  KEND5   AMB KEGT        BUMP UP THE POINTER KEPT IN B           04820
16572   771052          XBZ KENDL       AND CHECK FOR MAYBE THIS IS LINKED      04821
16573   134562          BNZ KEND    X   EVERYTHING IS FINE AND DANDY            04822
16574   405017          LDA LIST2   X   CHECK FOR LINKED CATALOG               04823
16575   571055          XAZ KLNK        CHECK FOR POINTER TO ANOTHER LINK       04824
16576   120611          BZE KEND3                                               04825
16577   340562  KEND2   ADO KEND        UNFORTUNATELY, IT IS ALL OVER           04826
16600   104562          BRU KEND    X   SO TELL CALLER SO                       04827
16601   405025  KEND4   LDA LIST8   X   CHECK FOR A CORRECT SIZE HOLE SO FAR    04828
16602   431064          NMA KMSK1       GET RID OF EXTRANEOUS BITS              04829
16603   571054          XAZ KLNGF                                               04830
16604   130571          BNZ KEND5       AND IF IT IS NOT, FORGET IT             04831
16605   701033          STB KHOLE       OTHERWISE, SAVE B IN KHOLE              04832
16606   400624          LDA KOMA        AND THE DISK ADDRES OF THE LINK IN KHOLE+1 04833
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16607   501034          STA KHOLE+1                                          04834
16610   100571          BRU KEND5           AND GET OUT                      04835
16611   405016  KEND3   LDA LIST1    X                                       04836
16612   110614          BRS KRD                                              04837
16613   104562          BRU KEND    X       AND GET OUT WITH POINTER TO NEXT LINK IN  04838
                                                                             04839
                        --- SUBROUTINE KRD ---                               04840
                                                                             04841
                    KRD ASSUMES ADISK ADDRES IN A, AND USES IT               04842
                TO READ IN A CATALOG, FIRST CHECKING TO                      04843
                SEE IF SAID CATALOG IS ALREADY IN. IT ALSO                   04844
                SET S B TO ZERO BEFORE EXITING                               04845
                                                                             04846
16614   000000  KRD     IND 0                                                04847
16615   016616          IND *+1                                              04848
16616   570624          XAZ KOMA            CHECK TO SEE IF WE ARE REREADING SOMETHING  04849
16617   120630          BZE KRD2            AND IF SI, DON T REALLY DO IT    04850
16620   500624          STA KOMA            ELSE WE ARE GETTING A FRESH START  04851
16621   112142          BRS DSKOP                                            04852
16622   000200          OCT 200             READ AND HOLD POWER              04853
16623   510100          OCT 510100                                           04854
16624   000000  KOMA    OCT 0                                                04855
16625   000100          OCT 100                                              04856
16626   210120          OCT 210120                                           04857
16627   022000          DEC LIST                                             04858
16630   060004  KRD2    TRA 0,B                                              04859
16631   104614          BRU KRD     X                                        04860
                                                                             04861
                        --- SUBROUTINE KWRT ---                              04862
                                                                             04863
                    KWRT IS INTERESTED IN REWRITING THE                      04864
                CATALOG JUST READ IN. IT THEREFORE GETS                      04865
                ITS DISK ADDRES FOR THE WRITE IT DOES FROM                   04866
                KOMA.                                                        04867
                                                                             04868
16632   000000  KWRT    IND 0                                                04869
16633   016634          IND *+1                                              04870
16634   400624          LDA KOMA            PICK UP DISK ADDRES TO WRITE FROM  04871
16635   500641          STA KOMC            AND GO TO IT                     04872
16636   112142          BRS DSKOP                                            04873
16637   000200          OCT 200             WRITE AND DROP POWER             04874
16640   510100          OCT 510100                                           04875
16641   000000  KOMC    OCT 0                                                04876
16642   000300          OCT 300                                              04877
16643   711120          OCT 711120                                           04878
16644   022000          DEC LIST                                             04879
16645   104632          BRU KWRT    X                                        04880
                                                                             04881
                        --- SUBROUTINE KINIT ---                             04882
                                                                             04883
                    KINIT IS USED IN CATALOG TASKS TO CALL                   04884
                CATALOGS FOR SEARCH OR MODIFICATION. IT                      04885
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                                          EXPECTS $WORD1 TO BE PROPERLY SET, AND
                                          $KOMFL TO BE SET. IT CALLS KRD INTERNALLY,
                                          AND SETS THE KHOLE FLAG TO 0. IT ALSO
                                          CHECKS KLISTF FOR PROTECTION, AND EXITS
                                          TO ANOTHER TASK IF THE DISK IS NOT READY
                                          IT SETS KOMA, AND KOMB TO THE CORRECT
                                          DISK ADDRES, AND EXITS TO THE USER

16646  000000  KINIT  IND 0                    FIND AND READ IN CATALOG
16647  016650         IND *+1
16650  222053         LDZ KLISTF               AND CHECK LIST AREA PROTECT FLAG
16651  136065         BNZ STING    X           IF IT IS, EXIT AND WAIT
16652  403044         LDA $WORD1               PICK UP PRESENT USER NUMBER - MSH
16653  571036         XAZ KTEA                 AND CHECK FOR TEACH
16654  130657         BNZ *+3                  [IF NON-ZERO, NOT A TEACH USER NUMBER]
16655  401040         LDA KTEAA                PICK UP ADDRESS OF TEACH CATALOG
16656  100700         BRU KINIT2               AND GO TO READ IN ROUTINE
16657  571035         XAZ KLIB                 CHECK FOR A LIBRARY USER NUMBER
16660  130663         BNZ *+3                  [IF NON-ZERO, NOT A LIBRARY USER NUMBER]
16661  401037         LDA KLIBA                PICK UP LIBRARY CATALOG ADDRESS
16662  100700         BRU KINIT2               AND READ IN
16663  431041         NMA KMSK3                LEAVE LAST [RIGHTMOST] CHARACTER
16664  041010         SL1 A,A
16665  501032         STA KTEMP                GET TEN TIMES THIRD CHARACTER IN USER NUMBER
16666  041010         SL1 A,A
16667  041010         SL1 A,A
16670  521032         AAM KTEMP
16671  403044         LDA $WORD1               GET MSH USER NUMBER BACK
16672  431042         NMA KMSK4                LEAVE MIDDLE CHARACTER
16673  047010         SR6 A,A                  RIGHT JUSTUFY
16674  421032         AMA KTEMP
16675  461050         AAZ KMHND
16676  140713         BPL KIDNO                AND EXIT IF OUTSIDE THE CORRECT RANGE
16677  405062         LDA KPT      X           AND NOW GET CATALOG ADDRESS
16700  501060  KINIT2 STA KOMB
16701  112140         BRS DSKCH                NOW SEE ABOUT DISK.
16702  106065         BRU STING    X           AND IF NOT READY, ALL THIS WAS IN VAIN
16703  401060         LDA KOMB
16704  110614         BRS KRD                  AND GO READ THE CATALOG IN
16705  321033         STZ KHOLE                SET EXISTENCE OF HOLE FLAG OFF
16706  413300         CMA $STAND               SET KLNGF CORECTLY
16707  423114         AMA $DPOS3
16710  110720         BRS KCOMP
16711  501054         STA KLNGF
16712  104646         BRU KINIT    X           AND EXIT FROM CALLER
16713  223250  KIDNO  LDZ $OUTFF
16714  130713         BNZ *-1
16715  112214         BRS MESSG
16716  017125         IND OERROR
16717  101013         BRU KOMX1

                                               --- KCOMP ---
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                                                  KCOMP C+LCULATES THE CORRECT KLNGF FROM
                                                AN ARGUMENT FOUND IN THE A REGISTER. IT
                                                RETURNS THE RPOPER LENGTH FLAG IN A ALSO.
                                                THE ARGUMENT SUPPLIED IN A SHOULD BE 2*X-1
                                                WHERE X IS THE NUMBER OF DISK RECORDS IN THE
                                                DISK BLOCK UNDER CONSIDERATION. KLNGF IS
                                                THIS NUMBER ROUNDED UPWARDS TO THE NEAREST
                                                POWER OF 2 [ALL NUMBERS ARE ROUNDED UP . I.E.
                                                0 BECOMES 1, 3 BECOMES 4 ETC] AND MULTIPLIED
                                                BY 2

16720  000000  KCOMP  IND 0
16721  016722         IND *+1
16722  321047         STZ KGMP               SET COUNTER INITIALLY AT ZERO
16723  341047         ADO KGMP               BUMP IT
16724  043010         SR1 A,A                AND SHIFT THE RECORD COUNT AGAIN
16725  130723         BNZ *-2
16726  351047         SBO KGMP               WE STARTED OFF TOO FAST
16727  401047         LDA KGMP
16730  462015         AAZ MFIVE
16731  154720         BMI KCOMP    X
16732  402014         LDA FIVE
16733  104720         BRU KCOMP    X         EXIT

                                             --- SUBROUTINE KDSK ---

                                                KDSK IS IN CHARGE OF ASSIGNING NEW
                                                DISK AREAS FOR ANY REQUIRED PURPOSE. IT
                                                RETURNS IN THE A REGISTER THE ADDRESS OF A
                                                DISK AREA OF THE LENGTH [IN RECORDS]
                                                SPECIFIED IN KLNGF. IT AUTOMATICALLY
                                                UPDATES THE DADDRS POINTERS, AND REWRITES
                                                THEM ON THE DISK. IT MAKES THE APPROPRIATE
                                                CHECKS FOR END-OF-POSITION AND SKIP BAND, AND
                                                IN THE EVENT OF ULTIMATE DISASTER [ THE DISK
                                                FILLING UP COMPLETELY] IT PUNTS THE ASSIGNED
                                                TASK ALTOGETHER BY GOING TO STEXEC.

16734  000000  KDSK   IND 0                  GET A DISK ADDRESS
16735  016736         IND *+1
16736  701051         STB KTEMP2             SAVE B - IT IS LIKELY TO BE VERY IMPORTANT
16737  601054         LDB KLNGF              THIS WILL BE USED TO INDEX TO CORECT ADDRESS
16740  405063         LDA RDSKP    X         THIS SHOULD BE PRESET TO AN OK ADDRESS
16741  501032         STA KTEMP              SO NOW LEAVE IT WITH ANOTHER ONE
16742  130751         BNZ *+7                DISK IF FULL, IF DLONG IS ZERO
16743  112214         BRS MESSG              DISK IS FULL, SO TELL USER, AND ALSO
16744  017146         IND DERROR             CONTROL TELETYPE
16745  011001         PIC 1
16746  112214         BRS MESSG
16747  017146         IND DERROR             -NO ROOM IN SAVED STORAGE -
16750  106064         BRU STEXEC   X
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16751   405065          LDA KDSKL   X       GET CORRECT INCREMENT FOR POINTER            04990
16752   421032          AMA KTEMP           .                                            04991
16753   505063          STA RDSKP   X       THIS MAY BE OK                               04992
16754   431041          NMA KMSK3           .                                            04993
16755   120770          BZE KDSK1           END OF 2K AREA, SO GET ANOTHER               04994
16756   401032  KDSK2   LDA KTEMP           EXIT - RETRUN KTEMP AS NEW DISK ADDRESS      04995
16757   112142          BRS DSKOP           REWRITE POINTERS ON THE DISK                 04996
16760   000200          OCT 200             .                                            04997
16761   510100          OCT 510100          .                                            04998
16762   000400          OCT 400             .                                            04999
16763   000300          OCT 300             .                                            05000
16764   710101          OCT 710101          .                                            05001
16765   000400          DEC DLONG           .                                            05002
16766   601051          LDB KTEMP2          RESTORE B REGISTER                           05003
16767   104734          BRU KDSK    X       .                                            05004
        16770   KDSK1   BSS 0               .                                            05005
16770   402400          LDA DLONG           STICK DLONG IN AS OK                         05006
16771   505063          STA RDSKP   X       .                                            05007
16772   120756          BZE KDSK2           DISK IS FULL, SO D N T EVEV TRY IT           05008
16773   421030          AMA KTWOK           BUMP WHAT WAS DLONG BY 2K(ADDRESSWISE)       05009
16774   502400          STA DLONG           AND PRESTORE IT - IT MAY BE OK               05010
16775   432025          NMA STAT6           .                                            05011
16776   572025          XAZ STAT6           .                                            05012
16777   130756          BNZ KDSK2           .                                            05013
17000   402400          LDA DLONG           .                                            05014
17001   421030          AMA KTWOK           THIS SHOULD GET US TO NEXT POSITION          05015
17002   502400          STA DLONG           NOW GOT A NEW POSITION, PRESTORE IT AND      05016
17003   431046          NMA KMSK2           CHECK FOR   THE SKIP BAND (STANDARD AREAS ETC05017
17004   571027          XAZ KBAND           .                                            05018
17005   130756          BNZ KDSK2           .                                            05019
17006   401031          LDA KSKIP           OTHER WISE JUMP THE BAND                     05020
17007   522400          AAM DLONG           .                                            05021
17010   100756          BRU KDSK2           FINALLY GOT THE WHOLE THING STRAIGHT         05022
                                                                                         05023
                                        POSSIBLE EXITS FROM KOMMON ROUTINES              05024
17011   112066  KOMX    BRS BETA            .                                            05025
17012   112326          BRS TYPE            .                                            05026
17013   323304  KOMX1   STZ $STAT           .                                            05027
17014   323170  KOMX2   STZ $KOMFL          .                                            05028
17015   106064          BRU STEXEC  X       .                                            05029
                                                                                         05030
17016   222000  LIST1   INB LIST            .                                            05031
17017   222001  LIST2   INB LIST+1          .                                            05032
17020   222002  LIST3   INB LIST+2          .                                            05033
17021   222003  LIST4   INB LIST+3          .                                            05034
17022   222004  LIST5   INB LIST+4          .                                            05035
17023   222005  LIST6   INB LIST+5          .                                            05036
17024   222006  LIST7   INB LIST+6          .                                            05037
17025   222007  LIST8   INB LIST+7          .                                            05038
17026   222011  LIST10  INB LIST+9          .                                            05039
17027   016400  KBAND   OCT 16400           .                                            05040
17030   000100  KTWOK   OCT 100             .                                            05041
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17031   003400   KSKIP  OCT 3400
         17032   KTEMP  BSS 1           STORAGE WHILE GETTING EQUIVALANCE CLASS
         17033   KHOLE  BSS 2           0 IF NO HOLE YET, B REGISTER IF HOLE FOUND
17035   433122   KLIB   ALF LIB         CHECK FOR LIBRARY USER NUMBER
17036   632521   KTEA   ALF TEA         MASK FOR CHECKING TEACH USER NUMBER
17037   760640   KLIBA  OCT 760640
17040   760600   KTEAA  OCT 760600
17041   000077   KMSK3  OCT 000077
17042   007700   KMSK4  OCT 007700
         17043   KCOUNT BSS 1
17044   777737   KENL   OCT 777737
17045   776060   KSPC   OCT 776060      INTERPROGRAM SPACER IN CATALOG PRINTOUR
17046   037777   KMSK2  OCT 037777
17047   000000   KGMP   DEC 0           STORAGE TEMPORARY IN KCOMP
17050   777634   KMHND  DEC -100        CHECK FOR LEGAL USER NUMBER
         17051   KTEMP2 BSS 1           B REGISTER STORAGE IN KDSK
17052   001770   KENDL  OCT 1770        USED TO CHECK FOR END OF CATALOG RUNOFF
17053   000000   KFLIP  DEC 0           SAVE AN UNUSED 1K AREA
17054   000000   KLNGF  DEC 0           SAVE LENFGHT OF PROGRAM
17055   373737   KLNK   OCT 373737      LINKED CATALOG INDICATOR. USED IN CHECK
         17056   KPOIN  BSS 1           POINTER FOR CATALOG PRINTOUT BUILD
17057   377255   KEOM   OCT 377255      TERMINATOR WORD FOR CATALOG PRINTOUT
17060   000000   KOMB   DEC 0           STORAGE FOR INITIAL DISK ADDRESS OF CATALOG
17061   000010   KEGT   DEC 8           BUMPER CHECKER ALL AROUND GOOD CONSTANT
17062   107300   KPT    INA LPCW3       POINTER FOR INDIRECT LOAD OF CATALOG ADDRESS
17063   200455   RDSKP  INB DADD        POINTER TO GET TO CORRECT DISK BLOCK
17064   000007   KMSK1  OCT 7           USED TO ISOLATE LAST THREE BITS IN KLNGF
17065   217066   KDSKL  INB *+1         PICK UP CORRECT POINTER INCREMENT
17066   000002          OCT 2           U RECORD POINTER
17067   000004          OCT 4           I RECORD POINTER
17070   000010          OCT 10          4 RECORD POINTER
17071   000020          OCT 20          8 RECORD POINTER
17072   000040          OCT 40          16 RECORD PINTER
17073   000100          OCT 100         32 RECORD POINTER
17074   555555   KEOF   OCT 555555
17075   777777   KFLL   OCT 777777
17076   000010   KEGHT  OCT 10
17077   116122   KOMCN  INA KOM1+3
17100   206274   SAVEB1 LDC SAVEB    X
17101   112140          BRS DSKCH
17102   106065          BRU STING    X
17103   601043          LDB KCOUNT
17104   403100          LDA $WORD6
17105   505023          STA LIST6    X
17106   110632          BRS KWRT
17107   322053          STZ KLISTF
17110   101011          BRU KOMX        RESET STATUSES, AND TYPE OUT READY
17111   373145   TERROR OCT 373145
17112   234651          ALF COR
17113   512523          ALF REC
17114   636047          ALF T P
17115   514622          ALF ROB
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17116   432544          ALF LEM                                  05094
17117   604521          ALF  NA                                  05095
17120   442540          ALF ME-                                  05096
17121   777740          OCT 777740                               05097
17122   606060  TNAM    ALF                                      05098
17123   606060          ALF                                      05099
17124   377255          OCT 377255                               05100
17125   373143  OERROR  OCT 373143                               05101
17126   432527          ALF LEG                                  05102
17127   214360          ALF AL                                   05103
17130   312460          ALF ID                                   05104
17131   456444          ALF NUM                                  05105
17132   222551          ALF BER                                  05106
17133   377255          OCT 377255                               05107
17134   374751  HERROR  OCT 374751                               05108
17135   462751          ALF OGR                                  05109
17136   214460          ALF AM                                   05110
17137   454663          ALF NOT                                  05111
17140   606221          ALF  SA                                  05112
17141   652524          ALF VED                                  05113
17142   774040          OCT 774040                               05114
17143   606060          ALF                                      05115
17144   606060          ALF                                      05116
17145   377255          OCT 377255                               05117
17146   374546  DERROR  OCT 374546                               05118
17147   605146          ALF  RO                                  05119
17150   464460          ALF OM                                   05120
17151   314560          ALF IN                                   05121
17152   622165          ALF SAV                                  05122
17153   256062          ALF E S                                  05123
17154   634651          ALF TOR                                  05124
17155   212725          ALF AGE                                  05125
17156   377255          OCT 377255                               05126
17157   374751  LERROR  OCT 374751      PROGRAM NOT IN LIBRARY.  05127
17160   462751          ALF OGR                                  05128
17161   214460          ALF AM                                   05129
17162   454663          ALF NOT                                  05130
17163   603145          ALF  IN                                  05131
17164   604331          ALF  LI                                  05132
17165   225121          ALF BRA                                  05133
17166   517033          ALF RY.                                  05134
17167   377255          OCT 377255                               05135
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17170   206306   STOP1  LDC STOP    X        REINITIALIZE                       05141
17171   342364          ADO #STP             BUMP UP COUNTER OF -STOPS-        ***05142
17172   112262          BRS RESET                                               05143
17173   112214          BRS MESSG                                               05144
17174   017176          IND STRED                                               05145
17175   106064          BRU STEXEC  X                                           05146
17176   373762   STRED  OCT 373762           STOP./READY.                       05147
17177   634647          ALF TOP                                                 05148
17200   333751          OCT 333751                                              05149
17201   252124          ALF EAD                                                 05150
17202   703337          OCT 703337                                              05151
17203   725577          OCT 725577                                              05152
                                                                                05153
                                                                                05154
                                                                                05155
                        -SCRATCH- CLEARS OUT STANDARD AREA (DESTROYS             05156
                        CURRENT PROBLEM) BUT LEAVES ALL IDENTIFI-               05157
                        CATION DATA INTACT.                                     05158
                                                                                05159
17204   206276   SCRCH1 LDC SCRCH    X        SCRATCH THE PRESENT TYPED PROGRAM  05160
17205   112270          BRS RUNCH            CHECK IF RUNNING                   05161
17206   112262          BRS RESET                                               05162
17207   403300          LDA $STAND                                              05163
17210   503114          STA $DPOS3           SET LENGTH TO ZERO RECORDS         05164
17211   323324          STZ $TYP                                                05165
17212   112214          BRS MESSG                                               05166
17213   014726          IND READY                                               05167
17214   106064          BRU STEXEC  X                                           05168
                                                                                05169
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17215   206256   RENA1  LDC RENA     X        RENAME ROUTINE--PART 1             05176
17216   112270          BRS RUNCH            CHECK IF RUNNING                   05177
17217   112302          BRS SPINP            SET SPECIAL INPUT FLAG             05178
17220   200260          INB RENB             FILL WITH BLANKS AND SET UP RENB   05179
17221   112214          BRS MESSG                                               05180
17222   014314          IND HNPNAM                                              05181
17223   106064          BRU STEXEC  X                                           05182
                                                                                05183
                                                                                05184
17224   206260   RENB1  LDC RENB     X        RENAME ROUTINE--PART 2             05185
17225   217150          LDD $INLOC  X        LOAD NEW PROBLEM NAME              05186
17226   112162          BRS HCHEK            TEST FOR STOP OR HELLO             05187
17227   503064          STA $WORD3           STORE                              05188
17230   703070          STB $WORD4                                              05189
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17231   112214          BRS MESSG              TYPE MESSAGE                    05190
17232   014726          IND READY                                              05191
17233   106064          BRU STEXEC  X                                          05192
                                                                               05193
                                                                               05194
                                                                               05195
17234   206232  NUMA1   LDC NUMA    X          RENUMBER--PART 1                05196
17235   112120          BRS CTRLA              CHECK FOR SPECIAL CONTROL TELETYPE 05197
17236   105544          BRU NOTS1   X          IF NOT, TYPE ILLEGAL COMMAND    05198
17237   112302          BRS SPINP              SET SPECIAL INPUT FLAG          05199
17240   200234          INB NUMB               FILL WITH BLANKS AND SET UP NUMB 05200
17241   112214          BRS MESSG                                              05201
17242   017244          IND HUSER                                              05202
17243   106064          BRU STEXEC  X                                          05203
17244   726462  HUSER   OCT 726462             USER NUMBER--                   05204
17245   255160          ALF ER                                                 05205
17246   456444          ALF NUM                                                05206
17247   222551          ALF BER                                                05207
17250   404055          OCT 404055                                             05208
                                                                               05209
                                                                               05210
17251   206234  NUMB1   LDC NUMB    X          RENUMBER--PART 2                05211
17252   217150          LDD $INLOC  X          LOAD NEW USER NUMBER            05212
17253   112162          BRS HCHEK              TEST FOR STOP OR HELLO          05213
17254   503044          STA $WORD1                                             05214
17255   703054          STB $WORD2                                             05215
17256   323124          STZ $HFLAG                                             05216
17257   112214          BRS MESSG                                              05217
17260   014726          IND READY                                              05218
17261   106064          BRU STEXEC  X                                          05219
                                                                               05220
                                                                               05221
                                                                               05222
17262   206304  STAT1   LDC STAT    X          REPORT STATUS OF TELETYPE       05223
17263   403044          LDA $WORD1                                             05224
17264   603054          LDB $WORD2                                             05225
17265   112330          BRS UCHEK              TEST FOR LEGAL USER NUMBER      05226
17266   101272          BRU *+4                IF LEGAL, CONTINUE              05227
17267   112214          BRS MESSG              OTHERWISE, TYPE MESSAGE         05228
17270   017307          IND STDISC                                             05229
17271   106064          BRU STEXEC  X                                          05230
17272   403304          LDA $STAT              PICK UP STATUS                  05231
17273   405300          LDA STAB    X          PICK UP APPROPRIATE MESSAGE ADDRESS 05232
17274   501276          STA *+2                                                05233
17275   112214          BRS MESSG                                              05234
17276   000000          IND ---                                                05235
17277   106064          BRU STEXEC  X                                          05236
17300   117301  STAB    INA *+1                                                05237
17301   017314          IND STIDL                                              05238
17302   017317          IND STOLD                                              05239
17303   017321          IND STLIS                                              05240
17304   017324          IND STSAV                                              05241
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17305   017327           IND STRUN                                          05242
17306   017327           IND STRUN                                          05243
17307   372431  STDISC   OCT 372431          DISCONNECTED                  05244
17310   622346           ALF SCO                                            05245
17311   454525           ALF NNE                                            05246
17312   236325           ALF CTE                                            05247
17313   243755           OCT 243755                                         05248
17314   373124  STIDL    OCT 373124          IDLE                          05249
17315   432537           OCT 432537                                         05250
17316   557777           OCT 557777                                         05251
17317   374643  STOLD    OCT 374643          OLD                           05252
17320   243755           OCT 243755                                         05253
17321   374331  STLIS    OCT 374331          LIST                          05254
17322   626337           OCT 626337                                         05255
17323   557777           OCT 557777                                         05256
17324   376221  STSAV    OCT 376221          SAVE                          05257
17325   652537           OCT 652537                                         05258
17326   557777           OCT 557777                                         05259
17327   375164  STRUN    OCT 375164                                         05260
17330   453755           OCT 453755                                         05261
                                                                            05262
                                                                            05263
                                                                            05264
17331   206242  OFF1     LDC OFF      X      STOP SCANNING ALL BUT CONTROL TELETYPE  05265
17332   112116           BRS CNTRL           CHECK FOR CONTROL TELETYPE    05266
17333   105544           BRU NOTS1    X      IF NOT, TYPE ILLEGAL COMMAND  05267
17334   112066           BRS BETA            SET UP TASK TO TYPE -READY.-  05268
17335   112326           BRS TYPE                                           05269
17336   011002           PIC 2                                              05270
17337   401346           LDA OFFBIT                                         05271
17340   543050           RAM $SW2                                           05272
17341   010001           AIC 1                                              05273
17342   323304           STZ $STAT                                          05274
17343   014050           XCZ TELET                                          05275
17344   131341           BNZ *-3                                            05276
17345   106064           BRU STEXEC   X                                     05277
17346   040000  OFFBIT   OCT 40000                                          05278
                                                                            05279
                                                                            05280
                                                                            05281
17347   206250  ON1      LDC ON       X      RESUME SCANNING ALL TELETYPES  05282
17350   112116           BRS CNTRL           CHECK FOR CONTROL TELETYPE    05283
17351   105544           BRU NOTS1    X      IF NOT, TYPE ILLEGAL COMMAND  05284
17352   112066           BRS BETA            SET UP TASK TO TYPE READY     05285
17353   112326           BRS TYPE                                           05286
17354   011002           PIC 2                                              05287
17355   401361           LDA ONMASK                                         05288
17356   533050           NAM $SW2                                           05289
17357   322050           STZ STOPF                                          05290
17360   106064           BRU STEXEC   X                                     05291
17361   737777  ONMASK   OCT 737777                                        05292
                                                                            05293
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17362   206324   TTY1   LDC TTY      X          TELETYPE CONDITION INQUIRY
17363   112116          BRS CNTRL
17364   101427          BRU TTYD
17365   112254          BRS PICK
17366   125544          BZE NOTS1    X
17367   461543          AAZ WSVCT
17370   145544          BPL NOTS1    X
17371   061002          TRA A,C                 PARAMETER TO C-REGISTER
17372   403044   TTYR   LDA $WORD1
17373   501470          STA TTYU
17374   403054          LDA $WORD2
17375   501471          STA TTYU+1
17376   403064          LDA $WORD3
17377   501475          STA TTYP
17400   403070          LDA $WORD4
17401   501476          STA TTYP+1
17402   403314          LDA $SYSTM
17403   501502          STA TTYY
17404   403304          LDA $STAT
17405   131411          BNZ *+4
17406   223250          LDZ $OUTFF
17407   121411          BZE *+2
17410   402010          LDA TWO
17411   223104          LDZ $CNFL
17412   121414          BZE *+2
17413   402013          LDA FOUR
17414   405445          LDA TTYI     X
17415   501506          STA TTYS
17416   206324          LDC TTY      X
17417   112116          BRS CNTRL
17420   101424          BRU *+4
17421   112214          BRS MESSG
17422   017465          IND TTYM
17423   106064          BRU STEXEC   X
17424   112214          BRS MESSG
17425   017454          IND TTYN
17426   106064          BRU STEXEC   X
17427   040210   TTYD   SL1 C,A
17430   041010          SL1 A,A
17431   041010          SL1 A,A
17432   431443          NMA T700
17433   131435          BNZ *+2
17434   441444          RMA T6000
17435   442035          RMA IZONE
17436   501463          STA TTYQ
17437   060210          TRA C,A
17440   432017          NMA SEVEN
17441   541463          RAM TTYQ
17442   101372          BRU TTYR
17443   000700   T700   OCT 700
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17444   006000   T6000  OCT 6000                                          05346
17445   117446   TTYI   INA *+1                                           05347
17446   312443          ALF IDL                                           05348
17447   464324          ALF OLD                                           05349
17450   436263          ALF LST                                           05350
17451   622165          ALF SAV                                           05351
17452   516445          ALF RUN                                           05352
17453   516445          ALF RUN                                           05353
17454   777272   TTYN   OCT 777272                                        05354
17455   632543          ALF TEL                                           05355
17456   256370          ALF ETY                                           05356
17457   472560          ALF PE                                            05357
17460   456444          ALF NUM                                           05358
17461   222551          ALF BER                                           05359
17462   404040          ALF ---                                           05360
17463   606060   TTYQ   ALF                                               05361
17464   333777          OCT 333777                                        05362
17465   777272   TTYM   OCT 777272                                        05363
17466   646225          ALF USE                                           05364
17467   514040          ALF R--                                           05365
17470   606060   TTYU   ALF                                               05366
17471   606060          ALF                                               05367
17472   606060          ALF                                               05368
17473   475146          ALF PRO                                           05369
17474   224040          ALF B--                                           05370
17475   606060   TTYP   ALF                                               05371
17476   606060          ALF                                               05372
17477   606060          ALF                                               05373
17500   627062          ALF SYS                                           05374
17501   634040          ALF T--                                           05375
17502   606060   TTYY   ALF                                               05376
17503   606060          ALF                                               05377
17504   626321          ALF STA                                           05378
17505   634040          ALF T--                                           05379
17506   606060   TTYS   ALF                                               05380
17507   377255          OCT 377255                                        05381
                                                                          05382
                                                                          05383
17510   000000   SPLCHK IND 0                 PICK UP TTY NUMBER AS PARAMETER 05384
17511   017512          IND *+1                                           05385
17512   014001          XCZ 1                TEST FOR TELETYPE 1          05386
17513   135544          BNZ NOTS1    X       IF NOT, ERROR                05387
17514   112254          BRS PICK             GET PARAMETER                05388
17515   043000          SR1 A,Z              TEST FOR VALID               05389
17516   125544          BZE NOTS1    X                                    05390
17517   461543          AAZ WSVCT                                         05391
17520   145544          BPL NOTS1    X                                    05392
17521   105510          BRU SPLCHK   X       RETURN                       05393
                                                                          05394
                                                                          05395
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                                                                          05397
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17522   206340   WARN1  LDC WARN     X          WARN SETUP RTN
17523   014001          XCZ 1                   ***** ONLY FROM TTY 1 *****
17524   135544          BNZ NOTS1    X
17525   302055          STC WSVCF               SET SPECIAL SERVICE FLAG TO WARN
17526   106064          BRU STEXEC   X          EXIT


17527   206126   DIAL1  LDC DIAL     X          DIAL SETUP RTN
17530   111510          BRS SPLCHK              FROM TTY 1 ONLY
17531   502056          STA WTTYF
17532   402010          LDA TWO
17533   502055          STA WSVCF               SET SPECIAL SERVICE FLAG TO DIAL
17534   106064          BRU STEXEC   X


17535   206216   MONIT1 LDC MONIT    X          MONITOR SETUP ROUTINE
17536   111510          BRS SPLCHK              ONLY FROM TELETYPE 1
17537   502056          STA WTTYF
17540   402012          LDA THREE
17541   502055          STA WSVCF               SET SPECIAL SERVICE FLAG TO MONITOR
17542   106064          BRU STEXEC   X
17543   777727   WSVCT  DEC -TELET-1


17544   020076   NOTS1  IND NOT1


00000                   TCD 0                   SWITCH MEMORY BANKS
                                       17700-17777 MUST BE LEFT FREE FOR BOOTSTRAP
                                       LOADER
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        20000            LOC 20000
20000   206226   NOTA1   LDC NOTA     X    SET UP NOTICE MESSAGE--PART 1
20001   014001           XCZ 1             ********** ONLY FROM TTY 1 **********
20002   130076           BNZ NOT1
20003   112262           BRS RESET
20004   112214           BRS MESSG         TYPE MESSAGE
20005   020011           IND NOTMSG
20006   112302           BRS SPINP         SET SPECIAL INPUT FLAG
20007   000230           IND NOTB          FILL WITH 77-S AND SET UP NOTB
20010   106064           BRU STEXEC   X    EIXT
20011   722545   NOTMSG  OCT 722545        ENTER NOTICE LINE
20012   632551           ALF TER
20013   604546           ALF  NO
20014   633123           ALF TIC
20015   256044           ALF E M
20016   256262           ALF ESS
20017   212725           ALF AGE
20020   133755           OCT 133755

20021   206230   NOTB1   LDC NOTB     X    SET UP NOTICE MESSAGE--PART 2
20022   112140           BRS DSKCH         WAIT FOR DISK
20023   106065           BRU STING    X
20024   400070           LDA NOTBF         SET UP INITIAL LINE-FEED
20025   502412           STA NOTICE
20026   403130           LDA $IDLOC        SET UP FOR MOVE 1
20027   440063           RMA NOTBA
20030   500064           STA NOTBB
20031   060010           TRA 0,A
20032   604064   NOTB2   LDB NOTBB    X    MOVE 1 LOOP
20033   704065           STB NOTBC    X
20034   422006           AMA ONE
20035   632032           NMB M77           TERMINATE ON A 37
20036   770066           XBZ NOTBD
20037   130032           BNZ NOTB2
20040   420065           AMA NOTBC         SET UP FOR MOVE 2
20041   500064           STA NOTBB
20042   060010           TRA 0,A
20043   604067   NOTB3   LDB NOTBE    X    MOVE 2 LOOP
20044   704064           STB NOTBB    X
20045   422006           AMA ONE
20046   632032           NMB M77           TERMINATE ON A 77
20047   772032           XBZ M77
20050   130043           BNZ NOTB3
20051   112142           BRS DSKOP         WRITE SPECIAL RECORD ON DISK
20052   000200           OCT 200
20053   510100           OCT 510100
20054   000400           OCT 400
20055   000300           OCT 300
20056   710101           OCT 710101
20057   000400           DEC DLONG
20060   112066           BRS BETA          SET UP TASK TO TYPE -READY-
20061   112326           BRS TYPE
```

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20062   106064          BRU STEXEC  X          EXIT                                05482
20063   100000  NOTBA   INA 0                                                      05483
20064   100000  NOTBB   INA 0                                                      05484
20065   100413  NOTBC   INA NOTICE+1                                               05485
20066   000037  NOTBD   OCT 37                                                     05486
20067   120071  NOTBE   INA NUSER                                                  05487
20070   777772  NOTBF   OCT 777772                                                 05488
20071   646225  NUSER   ALF USE             USER NUMBER--                          05489
20072   516045          ALF R N                                                    05490
20073   644422          ALF UMB                                                    05491
20074   255140          ALF ER-                                                    05492
20075   405577          OCT 405577                                                 05493
                                                                                   05494
                                                                                   05495
                                                                                   05496
                                                                                   05497
20076   112214  NOT1    BRS MESSG                                                  05498
20077   012410          IND IERROR+2                                               05499
20100   106064          BRU STEXEC  X                                              05500
                                                                                   05501
                                                                                   05502
20101   206316  TAPE1   LDC TAPE    X                                             05503
20102   402007          LDA MONE                                                   05504
20103   503164          STA $KFLAG                                                 05505
20104   112214          BRS MESSG                                                  05506
20105   014726          IND READY                                                  05507
20106   106064          BRU STEXEC  X                                              05508
                                                                                   05509
                                                                                   05510
20107   206200  KEY1    LDC KEY     X                                             05511
20110   323164          STZ $KFLAG                                                 05512
20111   112214          BRS MESSG                                                  05513
20112   014726          IND READY                                                  05514
20113   106064          BRU STEXEC  X                                              05515
                                                                                   05516
                                                                                   05517
                                                                                   05518
                                                                                   05519
20114   011001  USERS1  PIC 1               NUMBER OF USERS                        05520
20115   320145          STZ USRMSG+1                                               05521
20116   403044          LDA $WORD1                                                 05522
20117   603054          LDB $WORD2                                                 05523
20120   112330          BRS UCHEK                                                  05524
20121   340145          ADO USRMSG+1                                               05525
20122   010001          AIC 1                                                      05526
20123   014051          XCZ TELET+1                                                05527
20124   130116          BNZ *-6                                                    05528
20125   600145          LDB USRMSG+1                                               05529
20126   130131          BNZ *+3             ZERO USERS IS A SPECIAL CASE           05530
20127   600143          LDB USRNO           PRINT -NO USERS AT XX-XX.-             05531
20130   100133          BRU *+3                                                    05532
20131   112122          BRS CONV                                                   05533
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20132   000012          DEC 10                                          05534
20133   700145          STB USRMSG+1                                    05535
20134   212060          LDD RTIME                                       05536
20135   500151          STA USERB                                       05537
20136   700152          STB USERB+1                                     05538
20137   206334          LDC USERS    X                                  05539
20140   112214          BRS MESSG                                       05540
20141   020144          IND USRMSG                                      05541
20142   106064          BRU STEXEC   X                                  05542
20143   604546  USRNO   ALF  NO                                         05543
20144   773772  USRMSG  OCT 773772          XX USERS AT XX-XX.          05544
20145   606060          ALF                                             05545
20146   606462          ALF  US                                         05546
20147   255162          ALF ERS                                         05547
20150   602163          ALF  AT                                         05548
20151   606060  USERB   ALF                                             05549
20152   606060          ALF                                             05550
20153   333772          OCT 333772                                      05551
20154   557777          OCT 557777                                      05552
                                                                        05553
                                                                        05554
20155   206204  LNGTH1  LDC LNGTH    X      LENGTH INQUIRY              05555
20156   613114          CMB $DPOS3                                      05556
20157   623300          AMB $STAND                                      05557
20160   062404          TRC B,B                                         05558
20161   112122          BRS CONV                                        05559
20162   000012          DEC 10                                          05560
20163   700171          STB LNGTHB                                      05561
20164   112214          BRS MESSG                                       05562
20165   120167          INA LNGTHA                                      05563
20166   106064          BRU STEXEC   X                                  05564
20167   372122  LNGTHA  OCT 372122                                      05565
20170   466463          ALF OUT                                         05566
20171   606060  LNGTHB  ALF                                             05567
20172   000060          ALF 00                                          05568
20173   233021          ALF CHA                                         05569
20174   516233          ALF RS.                                         05570
20175   377255          OCT 377255                                      05571
20176   206150  EDIT1   LDC EDIT     X      GET EDIT VERB AND STORE ON DISK 05572
20177   112270          BRS RUNCH           CHECK FOR RUNNING           05573
20200   223134          LDZ $IF             IS OTHER BUFFER OPEN        05574
20201   126065          BZE STING    X                                  05575
20202   112140          BRS DSKCH           IS THE DISK AVAILABLE       05576
20203   106065          BRU STING    X      NO...SO WAIT                05577
20204   403130          LDA $IDLOC          GET BEGINNING OF LINE POINTER 05578
20205   420326          AMA EDIT26          GET ADDRESS OF LAST PAIR OF WORDS 05579
20206   061004          TRA A,B                                         05580
20207   432026          NMA OM200           WIPE OUT LOW-ORDER SEVEN BITS 05581
20210   573154          XAZ $INSTD          SEE IF OUTSIDE UPPER BUFFER 05582
20211   120213          BZE *+2                                         05583
20212   622026          AMB OM200           FUDGE TO LOWER BUFFER       05584
20213   640331          RMB EINC            OR IN INC BITS FOR MOVE     05585
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20214  060410          TRA B,A                                          05586
20215  420327          AMA EDM26        MOVE FROM END TO PSEUDO BEGINNING 05587
20216  500332          STA EDITFR       SET FROM POINTER                 05588
20217  632032          NMB M77          GET POSITION WITHIN BUFFER       05589
20220  620327          AMB EDM26        CHECK FOR CROSSOVER              05590
20221  150223          BMI *+2                                           05591
20222  060004          TRA 0,B          IF NONE, C TERMINATION IS SIMPLE 05592
20223  140226          BPL *+3                                           05593
20224  062404          TRC B,B          OTHERWISE TERMINATE AT CROSSOVER, 05594
20225  622006          AMB ONE          BUT THEN CONTINUE                05595
20226  700334          STB EDCTM        SAVE TERMINATION CONSTANT        05596
20227  403130          LDA $IDLOC       GET BEGINNING OF LINE POINTER    05597
20230  432031          NMA IMSK12       DROP LOW-ORDER SIX BITS          05598
20231  452023          XMA STAT2        GET BEGINNING OF TO BUFFER       05599
20232  500322          STA EDITMA       SAVE FOR LATER                   05600
20233  440331          RMA EINC         OR IN INC BITS FOR MOVE          05601
20234  500333          STA EDITTO       SAVE FOR MOVE                    05602
20235  200330          LDC EDIT28       INITIALIZE C FOR MOVE            05603
20236  010176  EDLP    AIC 126          DECREMENT BY 2                   05604
20237  214332          LDD EDITFR   X   MOVE LOOP                        05605
20240  314333          STD EDITTO   X                                    05606
20241  060210          TRA C,A                                           05607
20242  570334          XAZ EDCTM                                         05608
20243  130236          BNZ EDLP                                          05609
20244  220334          LDZ EDCTM        CHECK FOR FINAL TERMINATION      05610
20245  120262          BZE EDITDW       YES, GET OUT                     05611
20246  320334          STZ EDCTM        NO, FUDGE AND CONTINUE           05612
20247  300335          STC EDITC        SAVE C FOR CONTINUATION          05613
20250  206150          LDC EDIT     X   RESTORE C FOR CHANNEL TABLE REFERENCES 05614
20251  400332          LDA EDITFR       SEE IF EDITFR IS OUTSIDE LOWER BUFFER 05615
20252  420335          AMA EDITC                                         05616
20253  430336          NMA EDITZ                                         05617
20254  573154          XAZ $INSTD       IS BUFFER CROSSOVER NECESSARY    05618
20255  130260          BNZ *+3                                           05619
20256  402024          LDA STAT4                                         05620
20257  520332          AAM EDITFR       FUDGE FROM POINTER               05621
20260  200335          LDC EDITC        PREPARE TO REENTER LOOP          05622
20261  100236          BRU EDLP                                          05623
20262  206150  EDITDW  LDC EDIT     X   GET TTY NO. BACK IN C             05624
20263  400322          LDA EDITMA       PUT USER NO. IN BUFFER           05625
20264  420330          AMA EDIT28                                        05626
20265  500335          STA EDITC                                         05627
20266  403044          LDA $WORD1       HIGH ORDER 3 NUMERICS            05628
20267  603054          LDB $WORD2       LOW ORDER                        05629
20270  314335          STD EDITC    X                                    05630
20271  402010          LDA TWO          NOW PUT SYSTM IN BUFFER          05631
20272  520335          AAM EDITC                                         05632
20273  403314          LDA $SYSTM                                        05633
20274  504335          STA EDITC    X                                    05634
20275  503270          STA $SAVSY       ALSO SAVE CURRENT SYSTEM         05635
20276  402042          LDA EDI          NOW SUBSTITUTE -EDI-             05636
20277  503314          STA $SYSTM       FOR CURRENT SYSTM                05637
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20300   400331          LDA EINC                MOVE DATE TO BUFFER                     05638
20301   540335          RAM EDITC                                                       05639
20302   011001          PIC 1                                                           05640
20303   404337  EDATE   LDA EIMPT   X                                                  05641
20304   504335          STA EDITC   X                                                   05642
20305   010001          AIC 1                                                           05643
20306   014006          XCZ 6                                                           05644
20307   130303          BNZ EDATE                                                       05645
20310   206150          LDC EDIT    X                                                   05646
20311   403300          LDA $STAND              PREPARE TO WRITE A RECORD ON DSU        05647
20312   422030          AMA OM276               DISK ADDRESS IS FIRST RECORD OF OUTPUT AREA 05648
20313   500317          STA EDITX               WHICH IS AT THE BEGINNING OF THE OUTPUT AREA 05649
20314   112142          BRS DSKOP               GO TO DISK SUBROUTINE                   05650
20315   000200          OCT 200                                                         05651
20316   510100          OCT 510100                                                      05652
20317   000000  EDITX   OCT 0                                                           05653
20320   000300          OCT 300                                                         05654
20321   710101          OCT 710101                                                      05655
20322   000000  EDITMA  OCT 0                                                           05656
20323   112066          BRS BETA                SET UP TASK TO BEGIN RUN                05657
20324   112266          BRS RUN                                                         05658
20325   106064          BRU STEXEC  X           EXIT                                    05659
20326   000032  EDIT26  DEC 26                                                          05660
20327   777746  EDM26   DEC -26                                                         05661
20330   000034  EDIT28  DEC 28                                                          05662
20331   300000  EINC    INC 0                                                           05663
        20332   EDITFR  BSS 1                                                           05664
        20333   EDITTO  BSS 1                                                           05665
        20334   EDCTM   BSS 1                                                           05666
        20335   EDITC   BSS 1                                                           05667
20336   077777  EDITZ   OCT 77777                                                       05668
20337   300402  EIMPT   INC IMAGE-1                                                     05669
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                                                                                                    05673
                                                                                                    05674
                                                                                                    05675
                                                                                                    05676
                                                                                                    05677
                                                                                                    05678
20340   206070   BOOTA1 LDC BOOTA   X        BOOTSTRAP CALLED FROM TELETYPE                        05679
20341   014001          XCZ 1               ********** ONLY FROM TELETYPE 1 **********           05680
20342   131207          BNZ PUNT                                                                  05681
20343   342402          ADO DATE            INCREMENT EDITING DATE                                05682
20344   112302          BRS SPINP           SET SPECIAL INPUT FLAG                                05683
20345   200072          INB BOOTB           FILL WITH BLANKS AND SET UP BOOTB                     05684
20346   602400          LDB DLONG                                                                 05685
20347   112122          BRS CONV                                                                  05686
20350   000010          DEC 8                                                                     05687
20351   500377          STA BODAS                                                                 05688
20352   700400          STB BODAS+1                                                               05689
20353   602402          LDB DATE                                                                  05690
20354   112122          BRS CONV                                                                  05691
20355   000010          DEC 8                                                                     05692
20356   500406          STA BODAT                                                                 05693
20357   700407          STB BODAT+1                                                               05694
20360   112214          BRS MESSG                                                                 05695
20361   020363          IND BOMESS                                                                05696
20362   106064          BRU STEXEC  X                                                             05697
20363   374525   BOMESS OCT 374525          NEXT SAVED STORAGE IS DISK ADDRESS XXXXXX             05698
20364   676360          ALF XT                                                                    05699
20365   622165          ALF SAV                                                                   05700
20366   252460          ALF ED                                                                    05701
20367   626346          ALF STO                                                                   05702
20370   512127          ALF RAG                                                                   05703
20371   256031          ALF E I                                                                   05704
20372   626024          ALF S D                                                                   05705
20373   316242          ALF ISK                                                                   05706
20374   602124          ALF  AD                                                                   05707
20375   245125          ALF DRE                                                                   05708
20376   626260          ALF SS                                                                    05709
20377   606060   BODAS  ALF                                                                       05710
20400   606060          ALF                                                                       05711
20401   372346          OCT 372346          CODED DATE IS XXXXXX                                  05712
20402   242524          ALF DED                                                                   05713
20403   602421          ALF  DA                                                                   05714
20404   632560          ALF TE                                                                    05715
20405   316260          ALF IS                                                                    05716
20406   606060   BODAT  ALF                                                                       05717
20407   606060          ALF                                                                       05718
20410   372545          OCT 372545          ENTER DATE--                                          05719
20411   632551          ALF TER                                                                   05720
20412   602421          ALF  DA                                                                   05721
20413   632540          ALF TE-                                                                   05722
20414   405577          OCT 405577                                                                05723
```

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20415  011001  BOOTB1 PIC 1              OPERATOR INITIATED BOOTSTRAP ENTRY
20416  222053         LDZ KLISTF         CHECK DISK I/O AREA PROTECT FLAG
20417  136065         BNZ STING    X     IF ON, TRY AGAIN LATER
20420  112140         BRS DSKCH
20421  106065         BRU STING    X
20422  217150         LDD $INLOC   X
20423  112162         BRS HCHEK          CHECK FOR STOP OR HELLO
20424  403150         LDA $INLOC
20425  440650         RMA BINA
20426  500651         STA B001
20427  060010         TRA 0,A
20430  604651         LDB B001     X
20431  704652         STB B002     X
20432  422006         AMA ONE
20433  462015         AAZ MFIVE
20434  150430         BMI *-4
20435  112142         BRS DSKOP          WRITE NEW DATE ON DISK
20436  000200         OCT 200
20437  510100         OCT 510100
20440  000400         OCT 400
20441  000300         OCT 300
20442  710101         OCT 710101
20443  000400         DEC DLONG
20444  112142         BRS DSKOP          READ IN SPECIAL RECORD
20445  000200         OCT 200
20446  510100         OCT 510100
20447  000402         OCT 402            DISK ADDRESS
20450  000100         OCT 100
20451  210101         OCT 210101
20452  022000         DEC LIST
20453  324452         STZ *-1      X     ZERO OUT COUNTER
20454  112142         BRS DSKOP          REWRITE SPECIAL RECORD
20455  000200         OCT 200
20456  510100         OCT 510100
20457  000402         OCT 402            DISK ADDRESS
20460  000300         OCT 300
20461  711101         OCT 711101
20462  022000         DEC LIST
20463  322045         STZ DKFLG1
20464  402006         LDA ONE
20465  100467         BRU *+2
20466  402007  BOOTC1 LDA MONE           MACHINE INITIATED BOOTSTRAP ENTRY
20467  502050         STA STOPF
20470  422007  BAGN   AMA MONE           DISTINCTIVE PATTERN IS BACKWARDS COUNT
20471  060020         TRA S,Z            IF SW 18 DOWN, DISPLAY PATTERN
20472  150470         BMI *-2
20473  062010         TRC 0,A
20474  502054         STA BFLAG
20475  011075         PIC 61             SELECT CIU
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20476   110550          BRS BWAIT               WIAT FOR CIU                            05776
20477   027000          DEF 0                   SET T = 0                               05777
20500   060010          TRA 0,A                                                         05778
20501   600611          LDB BBRU                                                        05779
20502   110556          BRS BSEND               FILL CORE OF 235 WITH BRANCHES          05780
20503   420612          AMA B20                                                         05781
20504   130502          BNZ *-2                                                         05782
20505   110570          BRS BLDT                SET T TO UPPER MEMORY                   05783
20506   020020          OCT 20020                                                       05784
20507   110600          BRS BXMIT               SEND OVER UPPER MEMORY PART OF LOADER   05785
20510   020641          IND BUPPER                                                      05786
20511   110570          BRS BLDT                SET T TO LOWER MEMORY                   05787
20512   000001          OCT 1                                                           05788
20513   110600          BRS BXMIT               SEND OVER LOWER MEMORY PART OF LOADER   05789
20514   020613          IND BLOWER                                                      05790
20515   322054          STZ BFLAG                                                       05791
20516   060010          TRA 0,A                                                         05792
20517   110570          BRS BLDT                                                        05793
20520   000213          DEC SMBX                SET T TO MAILBOX                        05794
20521   110550          BRS BWAIT               WAIT FOR CIU                            05795
20522   060044          TRA R,B                 PICK UP MAILBOX                         05796
20523   422021          AMA EIGHT                                                       05797
20524   120470          BZE BAGN                COUNTDOWN                               05798
20525   772006          XBZ ONE                 IS BOOTSTRAP DONE...                    05799
20526   130517          BNZ *-7                 IF NOT, KEEP WATCHING                   05800
20527   222050          LDZ STOPF               IF MACHINE INITIATED BOOTSTRAP...       05801
20530   150545          BMI EXOUT               SKIP OUTPUT MESSAGES                    05802
20531   011001          PIC 1                                                           05803
20532   223250          LDZ $OUTFF              WAIT FOR TELETYPE                       05804
20533   130532          BNZ *-1                                                         05805
20534   112214          BRS MESSG               TYPE OUT READY ON TELETYPE 1+           05806
20535   014726          IND READY                                                       05807
20536   010001          AIC 1                   TYPE OUT MESSAGE ON ALL MACHINES        05808
20537   223250          LDZ $OUTFF                                                      05809
20540   130543          BNZ *+3                                                         05810
20541   112214          BRS MESSG                                                       05811
20542   020653          IND BOOM                                                        05812
20543   014050          XCZ TELET                                                       05813
20544   130536          BNZ *-6                                                         05814
20545   322050  EXOUT   STZ STOPF                                                       05815
20546   322046          STZ DKFLG2              ASSUME D-30 HAS THE DISK                05816
20547   106064          BRU STEXEC  X                                                   05817
20550   000000  BWAIT   IND 0                   WAIT FOR CIU                            05818
20551   020552          IND *+1                                                         05819
20552   022001          NES 1                                                           05820
20553   120552          BZE *-1                                                         05821
20554   104550          BRU BWAIT   X                                                   05822
20556   000000  BSEND   IND 0                   SEND OVER ONE WORD VIA CIU              05823
20557   020560          IND *+1                                                         05824
20560   110550          BRS BWAIT                                                       05825
20561   024001          DIF 1                   RESET SFF                               05826
20562   060400          TRA B,7                                                         05827
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20563   140565          BPL *+2                 IF 235 BIT 2 ON, THEN BIT 0 ON          05828
20564   024400          DIF 9                                                           05829
20565   060401          TRA B,T                                                         05830
20566   104556          BRU BSEND    X                                                  05831
20570   000000  BLDT    IND 0                   LOAD T REGISTER                         05832
20571   020572          IND *+1                                                         05833
20572   110550          BRS BWAIT                                                       05834
20573   027000          DEF 0                   CLEAR T                                 05835
20574   254570          LDT BLDT     X          LOAD T                                  05836
20575   340570          ADD BLDT                                                        05837
20576   104570          BRU BLDT     X                                                  05838
20600   000000  BXMIT   IND 0                   SEND OVER CONTIGUOUS CORE               05839
20601   020602          IND *+1                                                         05840
20602   404600          LDA BXMIT    X          PICK UP ADDRESS                         05841
20603   340600          ADD BXMIT                                                       05842
20604   604650          LDB BINA     X          PICK UP WORD                            05843
20605   124600          BZE BXMIT    X          TERMINATE ON ZERO                       05844
20606   110556          BRS BSEND               SEND OVER                               05845
20607   422006          AMA ONE                 STEP INDEX REGISTER                     05846
20610   100604          BRU BXMIT+4                                                     05847
20611   600026  BBRU    OCT 600026              BRU 26                                  05848
20612   000020  B20     OCT 20                                                          05849
20613   506016  BLOWER  OCT 506016                2   SET PBK                           05850
20614   504022          OCT 504022                3   LDO                               05851
20615   506012          OCT 506012                4    SET BINMODE                      05852
20616   300226          OCT 300226                5   STA SPECIAL MAILBOX               05853
20617   512022          OCT 512022                6   SLA 18                            05854
20620   100021          OCT 100021                7   ADD RRF                           05855
20621   300021          OCT 300021               10   STA RRF                           05856
20622   516020          OCT 516020               11   BCS BRN 0                         05857
20623   600011          OCT 600011               12   BRU *-1                           05858
20624   500020          OCT 500020               13   SEL 0                             05859
20625   510000          OCT 510000               14   PRF     0                         05860
20626   002476          OCT 002476               15   OCT 2476                          05861
20627   516020          OCT 516020               16   BCS BRN 0                         05862
20630   600016          OCT 600016               17   BRU *-1                           05863
20631   500020          OCT 500020               20   SEL 0                             05864
20632   210001          OCT 210001               21   RRF 1                             05865
20633   006000          OCT 006000               22        6000[8]                      05866
20634   516020          OCT 516020               23   BCS BRN 0                         05867
20635   600023          OCT 600023               24   BRU *-1                           05868
20636   606000          OCT 606000               25   BRU 6000[8]                       05869
20637   600002          OCT 600002               26   BRU 2                             05870
20640   000000          OCT 0                   TERMINATE                               05871
20641   506013  BUPPER  OCT 506013              20021   SXG 0                           05872
20642   504002          OCT 504002              20022   LDZ                             05873
20643   300001          OCT 300001              20023   STA 1                           05874
20644   300201          OCT 300201              20024   STA 201[8]                      05875
20645   620026          OCT 620026              20025   BRU 26[8],1                     05876
20646   600021          OCT 600021              20026   BRU 21[8]                       05877
20647   000000          OCT 0                   TERMINATE                               05878
20650   100000  BINA    INA 0                                                           05879
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20651   100000   B001    INA 0                                                    05880
20652   100403   B002    INA IMAGE                                                05881
20653   377272   BOOM    OCT 377272          THE TIME-SHARING SYSTEM NOW RESUMES NORMAL  05882
20654   633025          ALF THE             OPERATION.                           05883
20655   606331          ALF  TI                                                  05884
20656   442540          ALF ME-                                                  05885
20657   623021          ALF SHA                                                  05886
20660   513145          ALF RIN                                                  05887
20661   276062          ALF G S                                                  05888
20662   706263          ALF YST                                                  05889
20663   254460          ALF EM                                                   05890
20664   454666          ALF NOW                                                  05891
20665   605125          ALF  RE                                                  05892
20666   626444          ALF SUM                                                  05893
20667   256260          ALF ES                                                   05894
20670   454651          ALF NOR                                                  05895
20671   442143          ALF MAL                                                  05896
20672   604647          ALF  OP                                                  05897
20673   255121          ALF ERA                                                  05898
20674   633146          ALF TIO                                                  05899
20675   453337          OCT 453337                                               05900
20676   727255          OCT 727255                                               05901
                                                                                 05902
                                                                                 05903
                                    ENTRANCE TO BBUG                             05904
20677   011075          PIC 61              BOOTSTRAP FULL 16K TO 235 CORE FOR HSMP  05905
20700   024001          DIF 1               RESET SFF                            05906
20701   027000          DEF 0               RESET T-REGISTER TO 0                05907
20702   060010          TRA 0,A             RESET INDEX REGISTER                 05908
20703   512050          CAM STOPF           STOP CIU RTN                         05909
20704   512054          CAM BFLAG                                                05910
20705   422006  BBUGA   AMA ONE             STEP MEMORY ADDRESS IN INDEX REGISTER  05911
20706   604650          LDB BINA    X       LOAD WORD                            05912
20707   110550          BRS BWAIT           WAIT FOR CIU                         05913
20710   060401          TRA B,T             SEND OVER                            05914
20711   570715          XAZ B16K            FINISHED YET...                      05915
20712   130705          BNZ BBUGA           IF NOT, CONTINUE                     05916
20713   322054          STZ BFLAG           START SERVICING SPECIAL MAILBOX AGAIN  05917
20714   106064          BRU STEXEC  X       FINALLY, CRUMP                       05918
20715   037777  B16K    OCT 37777                                                05919
                                                                                 05920
                                                                                 05921
20716   112142  LOAD    BRS DSKOP           READ IN DASSGN, DATE, AND IMAGE FROM DISK  05922
20717   000200          OCT 200                                                  05923
20720   510100          OCT 510100                                               05924
20721   000400          OCT 400                                                  05925
20722   000100          OCT 100                                                  05926
20723   210101          OCT 210101                                               05927
20724   000400          DEC DLONG                                                05928
20725   011000          PIC 0                                                    05929
20726   060020          TRA S,Z             LOOK AT CONSOLE SWITCHES             05930
20727   176065          BOD STING   X       SWITCH ONE DOWN TO SUPRESS HWE LOAD MESSAGE  05931
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20730   010001          AIC 1                SEND OUT MESSAGE ON ALL MACHINES   05932
20731   112214          BRS MESSG                                               05933
20732   020736          IND HLOAD                                               05934
20733   014050          XCZ TELET                                               05935
20734   130730          BNZ *-4                                                 05936
20735   106065          BRU STING . X                                           05937
20736   377272  HLOAD   OCT 377272                                              05938
20737   633025          ALF THE                                                 05939
20740   512560          ALF RE                                                  05940
20741   302162          ALF HAS                                                 05941
20742   602225          ALF  BE                                                 05942
20743   254560          ALF EN                                                  05943
20744   216044          ALF A M                                                 05944
20745   214326          ALF ALF                                                 05945
20746   644523          ALF UNC                                                 05946
20747   633146          ALF TIO                                                 05947
20750   453337          OCT 453337                                              05948
20751   637047          ALF TYP                                                 05949
20752   256034          OCT 256034                                              05950
20753   302543          ALF HEL                                                 05951
20754   434634          OCT 434634                                              05952
20755   602145          ALF  AN                                                 05953
20756   246062          ALF D S                                                 05954
20757   632151          ALF TAR                                                 05955
20760   636021          ALF T A                                                 05956
20761   272131          ALF GAI                                                 05957
20762   453360          ALF N.                                                  05958
20763   377255          OCT 377255                                              05959
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                                                -DUMP- CAUSES A HSMP-STYLE OCTAL MEMORY DUMP
                                                OF ANY SEGMENT OF MEMORY ON THE CONTROL TELE-
                                                TYPE.

                                                TYPE -DUMP--XXXXX- TO INITIATE DUMP FROM X.
                                                TYPE -S- TO TERMINATE DUMP.

20764   206146   DUMPS1 LDC DUMPS   X               THIS ENTRY IS SET UP ALL BUT THE FIRST TIME
20765   223250          LDZ $OUTFF                  IT DIFFERS FROM -DUMP1- IN THAT IT DOESN-T
20766   136065          BNZ STING   X               PICK UP NEW PARAMETERS FROM THE INPUT LINE.
20767   100776          BRU PKOM

20770   206144   DUMP1  LDC DUMP    X               THIS ENTRY SET UP FIRST TIME THROUGH
20771   111120          BRS PPARAM                  GO PICK UP ADDRESS TO DUMP FROM
20772   222052          LDZ PARAF
20773   130776          BNZ PKOM
20774   401077          LDA PDBUF
20775   501223          STA PADDR
20776   402012   PKOM   LDA THREE                   INITIALIZE COUNTERS.
20777   501213          STA PCMESS
21000   402010          LDA TWO
21001   501214          STA PCNT3
21002   403154          LDA $INSTD                  SET POINTER TO LOWER BUFFER, IGNORING
21003   503240          STA $OLOC                   UNPROCESSED INPUT LINES.
21004   501215          STA POUT                    OUTPUT POINTER INITIALIZED.
21005   321212          STZ PSTOR                   CLEAR CHARACTER ACCUMULATOR.
21006   601216          LDB PLF                     OUTPUT TWO LINE-FEEDS.
21007   111100          BRS PWR
21010   601216          LDB PLF
21011   111100          BRS PWR
21012   401223   PXBK   LDA PADDR                   ADDRESS OF FIRST WORD OF LINE IS CONVERTED
21013   041010          SL1 A,A                     TO OCTAL.
21014   041010          SL1 A,A
21015   041010          SL1 A,A
21016   602013          LDB FOUR                    SET DIGIT COUNTER FOR FIVE-DIGIT FIELD.
21017   701221          STB PCDIG
21020   051010   PABK   CL1 A,A                     SHIFT HIGH-ORDER OCTAL DIGIT OF A-REGISTER
21021   051010          CL1 A,A                     INTO LOW-ORDER POSITION, AND PUT A COPY
21022   051014          CL1 A,AB                    INTO B.
21023   632017          NMB SEVEN                   MASK OFF SINGLE OCTAL DIGIT IN B.
21024   111100          BRS PWR                     OUTPUT IT.
21025   351221          SBO PCDIG                   DECREMENT DIGIT COUNTER.
21026   141020          BPL PABK                    IF NOT DONE, GO BACK FOR ANOTHER DIGIT.
21027   601217          LDB PSP                     GENERAGE EXTRA SPACE TO SEPARATE ADDRESS.
21030   111100          BRS PWR                     FROM DUMPED DATA.
21031   402017          LDA SEVEN                   SET WORD COUNTER FOR EIGHT/LINE
21032   501221          STA PCDIG
21033   601217   PBK    LDB PSP                     OUTPUT A LEADING SPACE BEFORE EACH FIELD.
21034   111100          BRS PWR
21035   402014          LDA FIVE                    SET DIGIT COUNTER FOR SIX OCTAL DIGITS.
21036   501220          STA PWRCNT
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21037  405223          LDA PADDR   X       PICK UP WORD TO CONVERT.                                  06014
21040  051010          CL1 A,A             SHIFT HIGH-ORDER DIGIT TO LOW-ORDER POSITION.            06015
21041  051010          CL1 A,A                                                                       06016
21042  051014          CL1 A,AR            PUT A COPY INTO B.                                        06017
21043  632017          NMB SEVEN           ISOLATE SINGLE DIGIT IN B.                                06018
21044  111100          BRS PWR             OUTPUT IT.                                                06019
21045  351220          SBO PWRCNT          STEP DIGIT COUNTER.                                       06020
21046  141040          BPL *-6             IF NOT YET SIX DIGITS, GO OUTPUT NEXT DIGIT.              06021
21047  341223          ADO PADDR           OTHERWISE, STEP TO NEXT WORD IN MEMORY.                   06022
21050  351221          SBO PCDIG           TEST WORD COUNTER FOR END OF LINE.                        06023
21051  141033          BPL PBK             LINE NOT COMPLETE--GO OUTPUT NEXT WORD.                   06024
21052  601226          LDB PCR             OUTPUT CARRIAGE RETURN (LINE-FEED AUTOMATIC)              06025
21053  111100          BRS PWR                                                                       06026
21054  351213          SBO PCMESS          STEP LINE-COUNTER TO SEE IF OUTPUT BUFFER                 06027
21055  141012          BPL PXBK            IS FULL--IF NOT, GO PROCESS NEXT LINE.                    06028
21056  601222          LDB PEOM            END OF BUFFER--OUTPUT END-OF-MESSAGE CHAR.                06029
21057  111100          BRS PWR                                                                       06030
21060  401212          LDA PSTOR           FORCE OUT PARTIAL ACCUMULATOR.                            06031
21061  045010          SL6 A,A             LEFT-JUSTIFY WHAT IS LEFT IN ACCUMULATOR.                 06032
21062  351214          SBO PCNT3                                                                     06033
21063  141061          BPL *-2                                                                       06034
21064  505215          STA POUT    X       OUTPUT FINAL CHARACTERS.                                  06035
21065  112066          BRS BETA            INSERT TASK IN LIST TO CONTINUE DUMP                      06036
21066  112146          BRS DUMPS           WHEN THIS BUFFER HAS BEEN OUTPUTTED.                      06037
21067  402033          LDA M7777           SET OUTPUT ROUTINE A-TYPIN.                               06038
21070  543050          RAM $SW2                                                                      06039
21071  503040          STA $SW1                                                                      06040
21072  503234          STA $OF                                                                       06041
21073  323230          STZ $ODC                                                                      06042
21074  026100          DEF 7                                                                         06043
21075  343250          ADO $OUTFF                                                                    06044
21076  106064          BRU STEXEC  X       EXIT TO SPARE-TIME EXECUTIVE.                             06045
21077  000500  PDBUF   IND DBUF                                                                     06046
                                                                                                     06047
                                   -PWR- ACCUMULATES CHARACTERS IN PSTOR,                            06048
                                   AND OUTPUTS FILLED WORDS INTO THE OUTPUT                          06049
                                   AREA.                                                             06050
                                                                                                     06051
21100  000000  PWR     IND 0                                                                         06052
21101  021102          IND *+1                                                                       06053
21102  501224          STA PT              SAVE A-REGISTER.                                          06054
21103  401212          LDA PSTOR           LOAD CHARACTER ACCUMULATOR.                               06055
21104  045010          SL6 A,A             SHIFT TO MAKE ROOM FOR NEW CHARACTER.                     06056
21105  061404          TRA AR,B            INCLUDE NEW CHARACTER.                                    06057
21106  351214          SBO PCNT3           STEP CHARACTER COUNTER.                                   06058
21107  141115          BPL PWC             IF ACCUMULATOR NOT FULL, SAVE IT AND EXIT.                06059
21110  705215          STB POUT    X       OTHERWISE, PUT FULL WORD INTO OUTPUT AREA.                06060
21111  341215          ADO POUT            STEP POINTER                                              06061
21112  402010          LDA TWO             RESET CHARACTER COUNTER                                   06062
21113  501214          STA PCNT3                                                                     06063
21114  060004          TRA 0,B             ZERO OUT ACCUMULATOR FOR NEXT TIME                        06064
21115  701212  PWC     STB PSTOR           SAVE (OR ZERO) CHARACTER ACCUMULATOR.                     06065
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21116   401224           LDA PT                    RESTORE A-REGISTER.                    06066
21117   105100           BRU PWR      X            RETURN                                 06067
                                                                                         06068
                                                  -PPARAM- PICKS UP AN OCTAL ADDRESS FROM 06069
                                                  THE INPUT LINE (WORD 3 AND AFTER).     06070
                                                                                         06071
21120   000000   PPARAM  IND 0                                                           06072
21121   021122           IND *+1                                                         06073
21122   112116           BRS CNTRL                 CHECK FOR CONTROL TELETYPE            06074
21123   101207           BRU PUNT                  IF NOT, TYPE ILLEGAL COMMAND          06075
21124   112254           BRS PICK                  GET PARAMETER                         06076
21125   431130           NMA PPMSK                                                       06077
21126   501223           STA PADDR                 PLACE IN ADDRESS POINTER              06078
21127   105120           BRU PPARAM   X            EXIT                                  06079
21130   077777   PPMSK   OCT 77777                                                       06080
                                                                                         06081
                                                                                         06082
                                                                                         06083
                                                  -OCTAL- ALLOWS OCTAL CORRECTIONS TO BE 06084
                                                  ENTERED INTO D-30 CORE FROM THE CONTROL06085
                                                  TELETYPE.                              06086
                                                                                         06087
                                                  TYPE -OCTAL XXXXX- TO ENTER ROUTINE.   06088
                                                  TYPE VACUOUS LINE (CR ONLY) TO TERMINATE.06089
                                                                                         06090
21131   206240   OCTAL1  LDC OCTAL    X            GET TELETYPE NUMBER OF CALLING TELETYPE.06091
21132   111120           BRS PPARAM                PICK UP STARTING ADDRESS OF INSERTION. 06092
21133   222052           LDZ PARAF                                                       06093
21134   121207           BZE PUNT                                                        06094
21135   112302           BRS SPINP                 SET SPECIAL INPUT FLAG                06095
21136   200236           INB OCT                   FILL WITH BLANKS AND SET UP OCT       06096
21137   112066   ORET    BRS BETA                  SET UP TASK TO TYPE -READY.-          06097
21140   112326           BRS TYPE                                                        06098
21141   106064           BRU STEXEC   X            EXIT                                  06099
                                                                                         06100
                                                  -OCT1- IS ENTERED EACH TIME A LINE IS  06101
                                                  INPUTTED AND $HFLAG = -4.              06102
                                                                                         06103
21142   206236   OCT1    LDC OCT      X                                                  06104
21143   217150           LDD $INLOC   X            FIRST TWO WORDS OF LINE.              06105
21144   571227           XAZ PEND                  CHECK FOR VACUOUS LINE (LOOKS LIKE SPACES)06106
21145   121137           BZE ORET                  IF SO, TERMINATE -OCTAL-              06107
21146   701212           STR PSTOR                 SAVE B--WORK ON A FIRST.              06108
21147   321214           STZ PCNT3                 ZERO WORD ACCUMULATOR.                06109
21150   111170           BRS PCON                  ACCUMULATE...                         06110
21151   111170           BRS PCON                  THREE...                              06111
21152   111170           BRS PCON                  DIGITS.                               06112
21153   401212           LDA PSTOR                 NOW WORK ON OTHER WORD.               06113
21154   111170           BRS PCON                  ACCUMULATE...                         06114
21155   111170           BRS PCON                  THREE...                              06115
21156   111170           BRS PCON                  DIGITS AGAIN.                         06116
21157   401214   PACCUM  LDA PCNT3                 STORE ACCUMULATED WORD IN MEMORY.     06117
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21160   505223          STA PADDR   X                                   06118
21161   341223          ADO PADDR                   STEP POINTER.       06119
21162   401225          LDA PTWOLF                  CHEAP AND DIRTY WAY TO OUTPUT LINE-FEED.  06120
21163   503040          STA $SW1                    WELL, WHY NOT...    06121
21164   026100          DEF 7                       RESET ECHOPLEX MODE, GET OUTPUT RTN ANGRY.  06122
21165   112302          BRS SPINP                   SET SPECIAL INPUT FLAG  06123
21166   200236          INB OCT                     FILL WITH BLANKS AND SET UP OCT  06124
21167   106064          BRU STEXEC  X               EXIT TO SPARE TIME EXECUTIVE.  06125
                                                                        06126
                                                -PCON- ACCUMULATES ONE CHARACTER AT A TIME  06127
                                                INTO PCNT3 FROM HIGH END OF A-REGISTER.  06128
                                                                        06129
21170   000000  PCON    IND 0                                           06130
21171   021172          IND *+1                                         06131
21172   055014          CL6 A,AB                                        06132
21173   632032          NMB M77                     MASK OFF CHARACTER  06133
21174   771217          XBZ PSP                     CHECK FOR SPACE     06134
21175   121157          BZE PACCUM                  IF SO, TERMINATE WORD.  06135
21176   632017          NMB SEVEN                   TRIM TO OCTAL DIGIT (THREE BITS).  06136
21177   701213          STB PCMESS                  SAVE IN PCMESS.     06137
21200   601214          LDB PCNT3                   PICK UP ACCUMULATOR.  06138
21201   040404          SL1 B,B                     SHIFT               06139
21202   040404          SL1 B,B                                         06140
21203   040404          SL1 B,B                                         06141
21204   641213          RMB PCMESS                  INSERT NEW CHARACTER  06142
21205   701214          STB PCNT3                   ACCUMULATE WORD.    06143
21206   105170          BRU PCON    X               EXIT SUBROUTINE.    06144
                                                                        06145
21207   112214  PUNT    BRS MESSG                   TYPE ILLEGAL COMMAND IF NOT TELETYPE 1.  06146
21210   012410          IND IERROR+2                                    06147
21211   106064          BRU STEXEC  X               EXIT.               06148
                                                                        06149
                                                                        06150
                                                CONSTANTS AND WORKING.  06151
21212   000000  PSTOR   OCT 0                                           06152
21213   000000  PCMESS  OCT 0                                           06153
21214   000000  PCNT3   OCT 0                                           06154
21215   000000  POUT    OCT 0                                          06155
21216   000072  PLF     OCT 72                                         06156
21217   000060  PSP     OCT 60                                         06157
21220   000000  PWRCNT  OCT 0                                          06158
21221   000000  PCDIG   OCT 0                                          06159
21222   000055  PEOM    OCT 55                                         06160
21223   000000  PADDR   OCT 0                                          06161
21224   000000  PT      OCT 0                                          06162
21225   007424  PTWOLF  OCT 7424                                       06163
21226   000037  PCR     OCT 37                                         06164
21227   606060  PEND    ALF                                            06165
                                                                        06166
                                                                        06167
                                                -RRF- READS THE SPECIFIED DISK RECORD INTO  06168
                                                THE 64-WORD DISK BUFFER.  06169
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                                                -WRF- WRITES THE 64-WORD DISK BUFFER ONTO THE
                                                SPECIFIED DISK RECORD

21230  321300  RRF1   STZ RFFL
21231  206264         LDC RRF      X
21232  112140         BRS DSKCH
21233  106065         BRU STING    X
21234  112116         BRS CNTRL
21235  105301         BRU RFER     X       NOT CONTROL TTY, SO ERROR
21236  112254         BRS PICK             GET DISK ADDRESS
21237  222052         LDZ PARAF
21240  125301         BZE RFER     X
21241  562006         NAZ ONE
21242  131302         BNZ RFIA             RNS BIT ON, SO ILLEGAL ADDRESS
21243  063004         TRC A,B
21244  762025         NBZ STAT6
21245  121302         BZE RFIA             BITS 7 AND 8 ON, SO ILLEGAL ADDRESS
21246  501255         STA RFAD1
21247  501265         STA RFAD2
21250  221300         LDZ RFFL
21251  131262         BNZ RFW
21252  112142         BRS DSKOP
21253  000200         OCT 200
21254  510100         OCT 510100
21255  000000  RFAD1  OCT 0
21256  000100         OCT 100
21257  211101         OCT 211101           READ, DROP, LOCKOUT
21260  000500         DEC DBUF
21261  101271         BRU RFCOM
21262  112142  RFW    BRS DSKOP
21263  000200         OCT 200
21264  510100         OCT 510100
21265  000000  RFAD2  OCT 0
21266  000300         OCT 300
21267  711101         OCT 711101           WRITE, DROP, LOCKOUT
21270  000500         DEC DBUF
21271  112214  RFCOM  BRS MESSG
21272  014726         IND READY
21273  106064         BRU STEXEC   X
21274  402006  WRF1   LDA ONE
21275  501300         STA RFFL
21276  206342         LDC WRF      X
21277  101232         BRU RRF1+2
21300  000000  RFFL   OCT 0
21301  020076  RFER   IND NOT1
21302  112214  RFIA   BRS MESSG
21303  021305         IND RFIAM
21304  106064         BRU STEXEC   X
21305  773731  RFIAM  OCT 773731           ILLEGAL DISK ADDRESS
21306  434325         ALF LLE
21307  272143         ALF GAL
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21310   602431          ALF  DI                  06222
21311   624260          ALF SK                   06223
21312   212424          ALF ADD                  06224
21313   512562          ALF RES                  06225
21314   623360          ALF S.                   06226
21315   377255          OCT 377255               06227
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22000            LOC 22000                                      06230
22000   LIST     BSS 1024            DISK READ-IN AREA          06231
```

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           24000          LOC 24000                                                     06234
           24000          BSS 6144          TELETYPE I/O BUFFER AREAS                   06235
                                                                                        06236
  20716                   END LOAD          ********** LAST CARD IN D-30 EXEC ********** 06237
END OF PASS 2
```