```
                        /MAGNETIC TAPE EXERCISER MODULE AVAILABLE IN 2 SIZES
                        /MAGTAP OR MAGTPS (4000 OR 400 WORD BUFFERS)
                        /REV. DATE - 4/15/71 --- (1)
                        /
                                .EBREL
                        /
                        /ASSEMBLY PARAMETERS--------
          004000 A      BUFSIZ=4000                     /SIZE OF BUFFERS. ****** (400 FOR MAGTPS)
          000010 A      NUMHAN=10                       /NUMBER OF HANDLERS ALLOWED.
          002000 A      TSTRUN=2000
          000020 A      NUMPAR=20                       /NUMBER OF HANDLER PARAMETERS.
          707341 A      MTSF=707341                     /SKIP ON MAG. TAPE FLAG.
          707321 A      MTCR=707321                     /SKIP ON CONTROLLER READY.
          707301 A      MTTR=707301                     /SKIP ON TRANSPORT READY.
          707322 A      MTAF=707322                     /CLEAR STATUS AND COMMAND REGS.
          707324 A      MTCM=707324                     /OR AC TO COMMAND REG.
          707326 A      MTLC=707326                     /LOAD AC TO COMMAND REG.
          707352 A      MTRS=707352                     /READ STATUS REGISTER
          707312 A      MTRC=707312                     /READ COMMAND REGISTER
          707304 A      MTGO=707304                     /SET GO FLIP-FLOP IN CONTROLLER
          707702 A      EEM=707702
          707764 A      EBA=707764
00000 R 603005 A      UODSW   603005
00001 R 000000 A              0                       /PATTERN WORD FOR PARAMETER MODE
00002 R 000000 A              0                       /RECORD LENGTH FOR PARAMETER MODE
00003 R 000000 A              0                       /RUN LENGTH. 0=2000
00004 R 000301 R              .DSA    MSERV           /SERVICE ENTRANCE
00005 R 000205 R              .DSA    MINIT           /INITIATION ENTRANCE
00006 R 150107 A              .SIXBT  "MAGTAP"        /PROGRAM TITLE ****** (MAGTPS)
00007 R 240120 A
00010 R 000001 A              1                       /MASK FOR CHAIN MODE
00011 R         A              .BLOCK  7
                        /
00020 R 000000 A      SYSERR  0                       /ERROR IND. TO MON.,=-1 FIRST ER.,=-2 SECOND ER.
00021 R 000000 A              0                       /WORD COUNT FOR DATA WORDS.
00022 R 000000 A      ERCODE  0                       /ERROR CODE.
00023 R 000000 A              0                       /HANDLER NO.
00024 R 000000 A              0                       /COMMAND
00025 R 000000 A              0                       /STATUS RETURN
00026 R 000000 A              0                       /STARTING WC
00027 R 000000 A              0                       /FINAL WC
00030 R 000000 A              0                       /STARTING CA
00031 R 000000 A              0                       /FINAL CA
                        /
                        /MAGNETIC TAPE SYSTEMS TEST.
                        /TEST 0---RUN ALL AVAILABLE HANDLERS SELECTING HANDLERS AND
                        /         OPERATIONS ON A RANDOM BASIS.
                        /TEST 1---WRITE 100,1000 WORD RECORDS, EACH RECORD ALL ONES, DENSITY
                        /         800 BPI, ODD PARITY. THEN REWIND AND REPEAT.
                        /TEST 2---PERFORM TEST 1, AFTER WRITE SEQUENCE AND REWIND, READ
                        /         ALL RECORDS, REWIND, AND REPEAT READ CYCLE.
                        /TEST 3---SIMULATED COPY OPERATION, WRITE 1000 RECORDS OF RANDOM LENGTH MADE
                        /         UP OF RANDOM DATA, REWIND AND COPY DATA FROM ONE HANDLER TO
```

```
                    /       THE NEXT, AT END OF FILE REWIND BOTH TAPES AND REPEAT.
                   .EJECT
```

```
                        /COMMAND SKELETON TABLE - CONTAINS COMMAND CODE FOR EACH COMMAND.
                        /                               /WITH INTERRUPT ENABLE BIT SET.
00032 R 000000 A        NOOP    000000                  /NO OP COMMAND. (0)
00033 R 001000 A        REWIND  001000                  /REWIND COMMAND. (1)
00034 R 002400 A        READ    002400                  /READ DATA COMMAND. (2)
00035 R 000000 A        RDCOMP  0                       /READ AND COMPARE COMMAND. (3)
00036 R 004400 A        WRITE   004400                  /WRITE COMMAND. (4)
00037 R 005400 A        WRTEOF  005400                  /WRITE EOF COMMAND. (5)
00040 R 006400 A        SPCFWD  006400                  /SPACE FORWARD COMMAND. (6)
00041 R 007400 A        SPCREV  007400                  /SPACE REVERSE COMMAND. (7)
00042 R 014400 A        WRTEXT  014400                  /WRITE EXTENDED CMD.
00043 R 000400 A        NOOP1   000400
00044 R 001400 A        REWND1  001400
                        /
        000032 R        CMDSKL=NOOP                     /EQUATE FOR START OF COMMAND TABLE.
                        /
00045 R 000000 A        HANDNM  000000                  /HANDLER NOS. POSITIONED FOR DIRECT
00046 R 100000 A                100000                  /INSERTION IN COMMANDS.
00047 R 200000 A                200000
00050 R 300000 A                300000
00051 R 400000 A                400000
00052 R 500000 A                500000
00053 R 600000 A                600000
00054 R 700000 A                700000
                        /
                        /CHECK ROUTINE POINTERS ASSOCIATED WITH EACH COMMAND.
                        /
00055 R 000000 A        CKNOOP  0                       /CHECK NO-OP (0)
00056 R 000000 A        CKRWND  0                       /CHECK REWIND (1)
00057 R 000666 R        CKREAD  CKSR2                   /CHECK READ DATA (2)
00060 R 000000 A        CKRDCM  0                       /CHECK READ COMPARE (3)
00061 R 001000 R        CKWRT   CKSR4                   /CHECK WRITE DATA (4)
00062 R 001015 R        CKWTEF  CKSR5                   /CHECK WRITE EOF (5)
00063 R 001024 R        CKSPFD  CKSR6                   /CHECK SPACE FORWARD (6)
00064 R 001027 R        CKSPBK  CKSR7                   /CHECK SPACE BACKWARD. (7)
                        /
        000055 R        CHKTAB=CKNOOP                   /EQUATE FOR START OF CHECK TAB.
                                .EJECT
```

```
                        /THIS HANDLER AND NEXT HANDLER NUMBERS.
                        /
00065 R 000000 A        THSHAN  0                       /THIS HANDLER.
00066 R 000000 A        CURHAN  0                       /CURRENT HANDLER.
                        /
                        /POINTER LOCATIONS FOR VARIOUS PARAMETERS AND CONSTANTS STORED IN OPRTAB.
                        /
00067 R 000000 A        CMD     0                       /CURRENT COMMAND.
00070 R 000000 A        CA      0                       /CURRENT ADR. USED.
00071 R 000000 A        WC      0                       /WORD COUNT USED.
00072 R 000000 A        CHKPTR  0                       /POINTER TO OPER. CHECK ROUTINE.
00073 R 000000 A        CNTR    0                       /CURRENT POSITION COUNTER.
00074 R 000000 A        CNTW    0                       /NO. OF RECORDS WRITTEN COUNTER.
00075 R 000000 A        DENPAR  0                       /CURRENT DENSITY AND PARITY.
00076 R 000000 A        NONSEN  0                       /NONSENSE STATUS BITS FOR THIS CMD
00077 R 000000 A        HANNUM  0                       /HANDLER NUMBER FOR INSERTION IN CMD.
00100 R 000000 A        CMDCNT  0                       /COMMAND COUNT.
00101 R 000000 A        EOFCNT  0                       /END OF FILE COUNT.
00102 R 000000 A        RDCNT   0                       /READ COUNT.
00103 R 000000 A        WRTCNT  0                       /WRITE COUNT.
00104 R 000000 A        SPFCNT  0                       /SPACE FORWARD COUNT.
00105 R 000000 A        SPBCNT  0                       /SPACE BACKWARD COUNT.
00106 R 000000 A                0
                        /
        000067 R        PARTAB=CMD
                        /
                        /SAVE STORAGE CELLS FOR END OF OPERATION
                        /
00107 R 000000 A        SVCMD   0
00110 R 000000 A        SVSTAT  0
00111 R 000000 A        SVCA    0                       /SAVE FINAL CA.
00112 R 000000 A        SVWC    0                       /SAVE FINAL WC.
00113 R 000033 A        SYSCA   33                      /POINTERS FOR SYSTEM CA
00114 R 000032 A        SYSWC   32                      /AND WC
                        /
00115 R 000000 A        DISTSW  0                       /TEST DISTRIBUTION SW. AT SERVICE ENTRANCE.
                                .EJECT
```

```
                        /NONSENSE STATUS BITS ASSOCIATED WITH EACH COMMAND.
                        /
00116 R 037600 A    NONTAB  037600                  /FOR NOOP(0)
00117 R 037600 A            037600                  /FOR REWIND(1)
00120 R 302000 A            302000                  /FOR READ(2)
00121 R 000000 A            0                       /FOR READ-COMPARE(3)
00122 R 313000 A            313000                  /FOR WRITE(4)
00123 R 303400 A            303400                  /FOR WRITE EOF(5)
00124 R 303400 A            303400                  /FOR SPACE FORWARD(6)
00125 R 207400 A            207400                  /FOR SPACE REVERSE(7)
                        /
                        /CONSTANTS FOR COMMAND DISTRIBUTIONS.
                        /
00126 R 000400 A    EOFCON  400                     /WRITE EOF
00127 R 000200 A    SPFCON  200                     /SPACE FORWARD
00130 R 000200 A    SPBCON  200                     /SPACE BACKWARD.
                        /MASK TABLE USED FOR SETTING UP STATUS MASKS FOR SELECTABLE HANDLERS.
                        /
00131 R 377777 A    MSKTAB  377777                  /BIT 0 CORRESPONDS TO HANDLER
00132 R 577777 A            577777                  /ZERO WHILE BIT 7 CORRESPONDS
00133 R 677777 A            677777                  /TO HANDLE SEVEN.
00134 R 737777 A            737777                  /NOTE: THAT MASK TABLE IS IN
00135 R 757777 A            757777                  /COMPLEMENTARY FORM.
00136 R 767777 A            767777
00137 R 773777 A            773777
00140 R 775777 A            775777
                        /
                        /STATUS WORDS FOR ESTABLISHING CURRENT STATUS OF HANDLERS.
                        /RECORD LENGTH TABLE
                        /
00141 R 004000 A    RECTAB  BUFSIZ
00142 R 002000 A            BUFSIZ/2
00143 R 001000 A            BUFSIZ/4
00144 R 004000 A            BUFSIZ/1
00145 R 002000 A            BUFSIZ/2
00146 R 001000 A            BUFSIZ/4
00147 R 000400 A            BUFSIZ/10
00150 R 000200 A            BUFSIZ/20
                        /TRACK TABLE FOR SEVEN AND NINE TRACK TRANSPORTS.
                        /
00151 R         A   TRKTAB  .BLOCK  10
                        /
00161 R 000000 A    ACTIVE  0                       /0=NOT ACTIVE, 1=ACTIVE
00162 R 777777 A    ANRWD   LAW     -1              /0=REWINDING, 1=NOT REWINDING
00163 R 774000 A    MAXBUF  -BUFSIZ
                        /SPECIAL TABLE FOR DETERMINING WHICH HANDLERS ARE ACTUALLY AVAILABLE.
                        /
00164 R         A   SELHAN  .BLOCK  10
                        /
                        /SECOND ERROR SAVE TABLE.
00174 R 000000 A            0
00175 R         A   SAVERR  .BLOCK  10
                        .EJECT
```

```
                        /**********************************************************************
                        /MAGNETIC TAPE INITIALIZATION ROUTINE.
                        /
00205 R 000000 A    MINIT   0
00206 R 707764 A            EBA
00207 R 707702 A            EEM
00210 R 200001 R            LAC     UODSW+1
00211 R 047460 R            DAC     PATTEN#
00212 R 773777 A            LAW     -BUFSIZ-1
00213 R 340002 R            TAD     UODSW+2
00214 R 740100 A            SMA
00215 R 600224 R            JMP     MINIT1
00216 R 750001 A            CLC
00217 R 340002 R            TAD     UODSW+2
00220 R 740001 A            CMA
00221 R 047466 R            DAC     RECLEN#
00222 R 741100 A            SPA
00223 R 600226 R            JMP     .+3
00224 R 774000 A    MINIT1  LAW     -BUFSIZ
00225 R 600221 R            JMP     .-4
00226 R 200003 R            LAC     UODSW+3
00227 R 507520 R            AND     (377777)
00230 R 740200 A            SZA
00231 R 600235 R            JMP     .+4
00232 R 776000 A            LAW     -TSTRUN
00233 R 047465 R            DAC     RANLEN#
00234 R 600240 R            JMP     .+4
00235 R 740001 A            CMA
00236 R 347521 R            TAD     (1)
00237 R 047465 R            DAC     RANLEN
00240 R 200205 R            LAC     MINIT           /SET LINK IN MSERV IN CASE
00241 R 040301 R            DAC     MSERV           /OF ERROR.
00242 R 147442 R            DZM     DSTSW1#
00243 R 147457 R            DZM     MOVERR#         /CLEAR SECOND ERROR FLAG.
00244 R 147416 R            DZM     APIFLG#         /CLEAR API FLAG.
00245 R 140020 R            DZM     SYSERR          /CLEAR SYSERR.
00246 R 140021 R            DZM     ERCODE-1
00247 R 147441 R            DZM     DONE#
                            .EJECT
```

```
00250 R 707322 A          MTAF                    /RESET MAG TAPE FLAGS.
00251 R 707321 A          MTCR                    /CHECK CONTROLLER RDY.
00252 R 602646 R          JMP     ER01            /NOT READY, TERMINATE.
00253 R 100627 R          JMS     CLOPTB          /READY, CLEAR HANDLER TABLE.
00254 R 140110 R          DZM     SVSTAT          /CLEAR STATUS
00255 R 140161 R          DZM     ACTIVE          /RESET ACTIVE, AND
00256 R 102617 R          JMS     RESBUF
00257 R 102601 R          JMS     BUFGEN
00260 R 750001 A          CLC                     /REWIND MASKS.
00261 R 040162 R          DAC     ANRWD
00262 R 200000 R          LAC     UODSW           /GET UODSW FOR TEST NO.
00263 R 507522 R          AND     (100000)
00264 R 741200 A          SNA
00265 R 600457 R          JMP     RANINT+1
00266 R 200000 R          LAC     UODSW
00267 R 507523 R          AND     (300
00270 R 547524 R          SAD     (0)             /TEST ZERO, RANDOM HANDLER
00271 R 600457 R          JMP     RANINT+1        /TEST.
00272 R 547525 R          SAD     (100)           /TEST ONE, WRITE TEST.
00273 R 602317 R          JMP     TEST1+1
00274 R 547526 R          SAD     (200)           /TEST TWO, WRITE THEN READ
00275 R 602324 R          JMP     TEST2+1         /TEST.
00276 R 547523 R          SAD     (300)           /TEST 3, COPY TEST.
00277 R 602372 R          JMP     TEST3+1
                    /
00300 R 600367 R          JMP     TERMIN
                          .EJECT
```

```
                        /**********************************************************************
                        /SERVICE ENTRANCE FOR MAGNETIC TAPE EXERCISER.
                        /
00301 R 000000 A    MSERV   0
00302 R 707764 A            EBA
00303 R 707702 A            EEM
00304 R 100307 R            JMS     TSTFLG          /TEST FLAGS
00305 R 120115 R            JMS*    DISTSW          /TEST DISTRIBUTION SWITCH.
00306 R 600356 R    EXIT    JMP     ENDOPR          /END OPERATION, EXIT.
                        /**********************************************************************
                        /TEST FLAGS FOR TYPE OF ENTRY.
                        /
00307 R 000000 A    TSTFLG  0
00310 R 047415 R            DAC     ACSAVE#         /SAVE AC INCASE API IS ON.
00311 R 707312 A            MTRC
00312 R 040107 R            DAC     SVCMD
00313 R 707352 A            MTRS
00314 R 040110 R            DAC     SVSTAT
00315 R 200020 R            LAC     SYSERR          /CHECK SYSERR FLAG. IF ZERO
00316 R 741200 A            SNA                     /MIGHT BE AN ARTIFICIAL ENTRY.
00317 R 600332 R            JMP     TSTF.1          /ZERO, SO CHECK MOVE FLAG.
                        /
00320 R 207527 R    TSTF.4  LAC     (400000)        /NOT ZERO CHECK API.
00321 R 705501 A            SPI
00322 R 741000 A            SKP
00323 R 600344 R            JMP     TSTF.2          /API IS ON, GO SET API FLAG.
00324 R 147416 R            DZM     APIFLG          /API NOT ON, CLEAR API FLAG.
00325 R 707341 A            MTSF                    /CHECK MAG. TAPE FLAG
00326 R 600353 R            JMP     TSTF.3          /NOT ON. EXIT, NOT MAG. TAPE.
00327 R 100653 R            JMS     SAVEOP          /ON, SAVE STATUS, WC AND CA FROM
00330 R 707322 A            MTAF                    /PREVIOUS OPER. CLEAR MAG TAPE FLAGS.
00331 R 620307 R            JMP*    TSTFLG          / GO PROC. THIS INTERRUPT.
                        /
00332 R 207457 R    TSTF.1  LAC     MOVERR          /CHECK MOVE ERROR FLAG.
00333 R 740200 A            SZA
00334 R 103172 R            JMS     MOVPUT          /ON RETURN MOVE ERROR FROM ERROR SAVE THEN,
                        /
00335 R 207442 R            LAC     DSTSW1
00336 R 740200 A            SZA
00337 R 600451 R            JMP     BREAK1
00340 R 207441 R            LAC     DONE
00341 R 740200 A            SZA
00342 R 603154 R            JMP     DON.1
00343 R 600320 R            JMP     TSTF.4
                        /
                                                    /MAGTAPE FLAGS.
00344 R 777777 A    TSTF.2  LAW     -1              /SET API FLAG
00345 R 047416 R            DAC     APIFLG
00346 R 707341 A            MTSF                    /CHECK MAG. TAPE FLAG
00347 R 602663 R            JMP     ER16            /API IS ON BUT MAG. TAPE FLAG OFF.
00350 R 100653 R            JMS     SAVEOP
00351 R 707322 A            MTAF
00352 R 620307 R            JMP*    TSTFLG          /ON, GO PROC. INTERRUPT.
```

```
.EJECT
```

```
00353 R 750001 A    TSTF.3  CLC             /NOT MAG. TAPE - EXIT TO MONITOR
00354 R 703344 A            DBR
00355 R 620301 R            JMP*    MSERV   /WITH AC= -1.
                    /
00356 R 207416 R    ENDOPR  LAC     APIFLG  /END OPERATION EXIT., CHECK API
00357 R 741200 A            SNA             /FLAG FOR RESTORING ACCUMULATOR
00360 R 600364 R            JMP     TSTF.5  /FLAG OFF.
00361 R 207415 R            LAC     ACSAVE  /ON, RESTORE AC, DEBREAK,
00362 R 703344 A            DBR             /AND EXIT.
00363 R 620301 R            JMP*    MSERV
                    /
00364 R 750000 A    TSTF.5  CLA             /CLEAR ACCUM. AND EXIT.
00365 R 703344 A            DBR
00366 R 620301 R            JMP*    MSERV
                    /
00367 R 200033 R    TERMIN  LAC     REWIND  /REWIND ALL HANDLERS
00370 R 047505 R            DAC     TER.1#  /THEN EXIT.
00371 R 77777Ø A            LAW     -1Ø
00372 R 047506 R            DAC     TER.2#
00373 R 207530 R    TERM.1  LAC     (-1200)
00374 R 047507 R            DAC     TER.3#
00375 R 707321 A            MTCR
00376 R 741000 A            SKP
00377 R 600407 R            JMP     .+1Ø
00400 R 100433 R            JMS     BREAK
00401 R 447507 R            ISZ     TER.3
00402 R 600375 R            JMP     .-5
00403 R 207531 R    TERM.2  LAC     (-4)
00404 R 040020 R            DAC     SYSERR
00405 R 140021 R            DZM     ERCODE-1
00406 R 600356 R            JMP     ENDOPR
00407 R 207530 R            LAC     (-1200)
00410 R 047507 R            DAC     TER.3
00411 R 207505 R            LAC     TER.1
00412 R 707326 A            MTLC
00413 R 707301 A            MTTR
00414 R 741000 A            SKP
00415 R 600422 R            JMP     .+5
00416 R 100433 R            JMS     BREAK
00417 R 447507 R            ISZ     TER.3
00420 R 600413 R            JMP     .-5
00421 R 741000 A            SKP
00422 R 707304 A            MTGO
00423 R 347522 R            TAD     (100000)
00424 R 047505 R            DAC     TER.1
00425 R 447506 R            ISZ     TER.2
00426 R 600373 R            JMP     TERM.1
00427 R 707321 A            MTCR
00430 R 600427 R            JMP     .-1
00431 R 707322 A            MTAF
00432 R 600403 R            JMP     TERM.2
                            .EJECT
```

```
00433 R 000000 A    BREAK   0
00434 R 047417 R            DAC     BRKAC#
00435 R 750010 A            GLK
00436 R 047456 R            DAC     LINK#
00437 R 200020 R            LAC     SYSERR
00440 R 741200 A            SNA
00441 R 600444 R            JMP     .+3
00442 R 777776 A            LAW     -2
00443 R 600445 R            JMP     .+2
00444 R 777773 A            LAW     -5
00445 R 040020 R            DAC     SYSERR
00446 R 777777 A            LAW     -1
00447 R 047442 R            DAC     DSTSW1
00450 R 600306 R            JMP     EXIT
                    /
00451 R 147442 R    BREAK1  DZM     DSTSW1
00452 R 207456 R            LAC     LINK
00453 R 740020 A            RAR
00454 R 207417 R            LAC     BRKAC
00455 R 620433 R            JMP*    BREAK
                            .EJECT
```

```
                        /**********************************************************************
                        /MAGNETIC TAPE EXCERSISER INITIATION ROUTINE.
                        /
00456 R 000000 A    RANINT  0
00457 R 750000 A            CLA                     /SET TEST NO. TO 0 FOR RANTST
00460 R 047514 R            DAC     TSTNO#          /SET CYCLE COUNT FOR END OF PASS.
00461 R 207532 R            LAC     (RANTST)        /SET TEST DISTRIBUTION SWITCH IN
00462 R 040115 R            DAC     DISTSW          /MSERV TO RAN TST.
00463 R 147446 R            DZM     HANCNT#         /CLEAR NUMBER OF AVAILABLE
00464 R 100513 R            JMS     POLINT          /HANDLERS, GO TO POLLING INITIALIZE.
                        /
00465 R 100525 R    MINI.1  JMS     POLHAN          /POLL HANDLERS, EXIT +2 IF ACTIVE FND.
00466 R 600507 R            JMP     MINI.2          /EXIT +1 IF POLLING COMPLETE.
00467 R 447446 R            ISZ     HANCNT          /COUNT THIS HANDLER.
00470 R 101242 R            JMS     SETNXT          /GO TO SET NXT FOR PARAMETER P.A.
00471 R 100621 R            JMS     GET             /SET THIS HANDLER ACTIVE.
00472 R 000131 R            .DSA    MSKTAB
00473 R 740001 A            CMA
00474 R 340161 R            TAD     ACTIVE
00475 R 040161 R            DAC     ACTIVE
00476 R 101513 R            JMS     CLRDIS          /CLEAR DISTRIBUTION.
00477 R 101344 R            JMS     SLNXOP          /SELECT NEXT OPERATION FOR THIS
00500 R 207446 R            LAC     HANCNT          /HANDLER, THEN CHECK FOR THIS ONE
00501 R 547521 R            SAD     (1)             /BEING THE FIRST POLLED AND FOUND
00502 R 741000 A            SKP
00503 R 600465 R            JMP     MINI.1
00504 R 207451 R            LAC     HNDNUM#         /SET FIRST HANDLER AS "THIS"
00505 R 040065 R            DAC     THSHAN
00506 R 600465 R            JMP     MINI.1          /RETURN FOR NEXT HANDLER.
                        /
00507 R 207446 R    MINI.2  LAC     HANCNT          /POLLING COMPLETE
00510 R 547524 R            SAD     (0)
00511 R 602665 R            JMP     ER20            /NO HANDLERS AVAILABLE, EXIT
00512 R 600651 R            JMP     RANTS5
                            .EJECT
```

```
                        /HANDLER POLLING INITIATION ROUTINE
                        /
00513 R 000000 A    POLINT  0
00514 R 200032 R            LAC     NOOP            /SET TEST COMMAND AS NOOP.
00515 R 047513 R            DAC     TSTCMD#
00516 R 777767 A            LAW     -11             /SET POLLING  COUNT,
00517 R 047461 R            DAC     POLDON#
00520 R 750001 A            CLC                     /CLEAR CURRENT HANDLER
00521 R 047451 R            DAC     HNDNUM          /NUMBER
00522 R 207533 R            LAC     (TRKTAB)
00523 R 047510 R            DAC     TKTBPT#
00524 R 620513 R            JMP*    POLINT          /EXIT.
                        /
                        /HANDLER POLLING ROUTINE
                        /
00525 R 000000 A    POLHAN  0
00526 R 447461 R            ISZ     POLDON
00527 R 741000 A            SKP
00530 R 620525 R            JMP*    POLHAN
00531 R 207513 R    POLH.7  LAC     TSTCMD          /PICK UP TEST COMMAND (NOOP)
00532 R 707326 A            MTLC                    /LOAD IT AND CHECK THAT THIS
00533 R 707301 A            MTTR                    /IS READY.
00534 R 600570 R            JMP     POLH.5
00535 R 707352 A    POLH.9  MTRS                    / CHECK HANDLER
00536 R 040110 R            DAC     SVSTAT          /STATUS
00537 R 507522 R            AND     (100000)        /ON BOT.
00540 R 741200 A            SNA
00541 R 600562 R            JMP     POLH.4          /HANDLER NOT ON BOT.
00542 R 200110 R            LAC     SVSTAT          /CHECK HANDLER INDICATOR FOR
00543 R 507534 R            AND     (10)            /SEVEN OR NINE TRACK.
00544 R 741200 A            SNA
00545 R 600550 R            JMP     .+3
00546 R 750001 A            CLC
00547 R 741000 A            SKP
00550 R 207535 R            LAC     (177777)
00551 R 067510 R            DAC*    TKTBPT
00552 R 100604 R            JMS     INCRE           /INCREMENT TEST COMMAND.
00553 R 440525 R            ISZ     POLHAN          /NOT END, EXIT +1 TO LOG ANOTHER
00554 R 620525 R            JMP*    POLHAN          /HANDLER ON LINE.
                        /
00555 R 200115 R    POLH.2  LAC     DISTSW          /SAVE DISTRIBUTION SW
00556 R 047470 R            DAC     SAVDIS#         /UNTIL AFTER REWIND.
00557 R 207536 R            LAC     (POLH.6)
00560 R 040115 R            DAC     DISTSW          /END OF REWIND
00561 R 600306 R            JMP     EXIT            /RETURN TO MONITOR VIA EXIT, I/O STARTED.
                        /
00562 R 207513 R    POLH.4  LAC     TSTCMD          /HANDLER NOT AT BEGINNING OF
00563 R 507537 R            AND     (700000)        /TAPE, MAKE UP REWIND COMMAND,
00564 R 340044 R            TAD     REWND1          /TRANSMIT IT AND WAIT FOR
00565 R 707326 A            MTLC                    /COMPLETION.
00566 R 707304 A            MTGO                    /TRANSMIT GO.
00567 R 600555 R            JMP     POLH.2
                            .EJECT
```

```
00570 R 707352 A    POLH.5  MTRS
00571 R 040110 R            DAC     SVSTAT
00572 R 507540 R            AND     (200000)
00573 R 740200 A            SZA
00574 R 600577 R            JMP     POLH.8
00575 R 100604 R            JMS     INCRE           /INCREMENT TEST COMMAND
00576 R 600526 R            JMP     POLHAN+1        /NOT DONE, LOOK AT NEXT HANDLER.
                    /
00577 R 100433 R    POLH.8  JMS     BREAK
00600 R 707301 A            MTTR
00601 R 741000 A            SKP
00602 R 600535 R            JMP     POLH.9
00603 R 600577 R            JMP     .-4
                    /
00604 R 000000 A    INCRE   0
00605 R 447510 R            ISZ     TKTBPT
00606 R 207513 R            LAC     TSTCMD          /INCRE. TEST COMMAND,
00607 R 347522 R            TAD     (100000)        /AND PULLING COUNTER AND CHECK
00610 R 047513 R            DAC     TSTCMD
00611 R 447451 R            ISZ     HNDNUM          /FOR END
00612 R 740000 A            NOP
00613 R 207451 R            LAC     HNDNUM
00614 R 620604 R            JMP*    INCRE           /SET HANDLER NO. IN AC.
                    /
00615 R 000000 A    POLH.6  0                       /RETURN FROM REWIND, RESTORE
00616 R 207470 R            LAC     SAVDIS          /DISTRIBUTION SW., RETURN TO
00617 R 040115 R            DAC     DISTSW          /RETEST HANDLER.
00620 R 600531 R            JMP     POLH.7
                    /
                    /GET SUBROUTINE
                    /
00621 R 000000 A    GET     0                       /USED TO GET A VALUE FROM
00622 R 360621 R            TAD*    GET             /A TABLE. ENTRY WITH INDEX,
00623 R 047445 R            DAC     GET.1#          /BASE IS +1 ON CALL.
00624 R 227445 R            LAC*    GET.1           /RETURN WITH VALUE.
00625 R 440621 R            ISZ     GET
00626 R 620621 R            JMP*    GET
                    /
                    /CLEAR HANDLER OPERATION TABLE.
                    /
00627 R 000000 A    CLOPTB  0
00630 R 207541 R            LAC     (-NUMHAN*NUMPAR) /SET OPP TAB LENGTH,
00631 R 047436 R            DAC     CLO.1#
00632 R 207542 R            LAC     (OPRTAB)        /SET START OF OPP TAB.
00633 R 047437 R            DAC     CLO.2#
00634 R 167437 R    CLOP.1  DZM*    CLO.2           /ZERO OPR TAB
00635 R 447437 R            ISZ     CLO.2
00636 R 447436 R            ISZ     CLO.1
00637 R 600634 R            JMP     CLOP.1
00640 R 620627 R            JMP*    CLOPTB
                            .EJECT
```

```
                        /**********************************************************************
                        /RANDOM HANDLER EXERCISER - TEST0.
                        /
00641 R 000000 A    RANTST  0
00642 R 447465 R            ISZ     RANLEN          /INCREMENT PASS COUNTER.
00643 R 741000 A            SKP
00644 R 600367 R            JMP     TERMIN          /DONE WITH TEST.
00645 R 100661 R            JMS     CHKOPR          /CHECK PREVIOUS OPERATION
00646 R 101270 R    RANTS2  JMS     UPDTCT          /UPDATE COUNTERS.
00647 R 101344 R    RANTS6  JMS     SLNXOP          /SELECT NEXT OPER. FOR THIS HANDLER.
00650 R 102104 R    RANTS3  JMS     SLNXHN          /SELECT NEW NEXT HANDLER.
00651 R 101673 R    RANTS5  JMS     INTOPR          /INITIATE OPERATION ON NEXT HANDLER.
00652 R 600306 R            JMP     EXIT            /EXIT.
                        /**********************************************************************
                        /SAVE TERMINATION PARAMETERS FOR THIS HANDLER AFTER OPERATION COMPLETE.
                        /
00653 R 000000 A    SAVEOP  0
00654 R 220113 R            LAC*    SYSCA           /AND WORD COUNT AND SAVE.
00655 R 040111 R            DAC     SVCA
00656 R 220114 R            LAC*    SYSWC
00657 R 040112 R            DAC     SVWC
00660 R 620653 R            JMP*    SAVEOP
                        /**********************************************************************
                        /CHECK OPERATION OF PREVIOUS COMMAND--
                        /
00661 R 000000 A    CHKOPR  0
00662 R 220072 R            LAC*    CHKPTR          /GET CHECK ROUTINE POINTER FOR
00663 R 047424 R            DAC     CKO.1#          /PREVIOUS COMMAND THEN CHECK.
00664 R 127424 R            JMS*    CKO.1           /RESULTS OF THE LAST OPERATION.
00665 R 620661 R            JMP*    CHKOPR          /EXIT.
                        /
                        /CHECK READ COMMAND TERMINATION FOR ERRORS
00666 R 000000 A    CKSR2   0                       /CHECK COMMON ERROR, THEN
00667 R 101032 R            JMS     CHKCOM          /CHECK FOR CORRECT VALUES OF
00670 R 200110 R            LAC     SVSTAT
00671 R 507543 R            AND     (10000)
00672 R 740200 A            SZA
00673 R 600717 R            JMP     CKSR.4          /END OF FILE
00674 R 200065 R            LAC     THSHAN
00675 R 347533 R            TAD     (TRKTAB)
00676 R 047427 R            DAC     CKS.3#
00677 R 750001 A            CLC
00700 R 343414 R            TAD     BUF1
00701 R 740001 A            CMA
00702 R 360073 R            TAD*    CNTR
00703 R 527427 R            AND*    CKS.3
00704 R 740200 A            SZA
00705 R 602670 R            JMP     ER23
00706 R 750001 A            CLC
00707 R 340112 R            TAD     SVWC
00710 R 740001 A            CMA
00711 R 347544 R            TAD     (-BUFSIZ)
00712 R 047426 R            DAC     CKS.2#
```

```
00713 R 343415 R            TAD     BUF1+1
00714 R 527427 R            AND*    CKS.3
00715 R 740200 A            SZA
00716 R 602666 R            JMP     ER21
00717 R 750001 A    CKSR.4  CLC                     /WC AND CA AT TERMINATION.
00720 R 340163 R            TAD     MAXBUF          /FORM (CA+MAXBUF) AND SAVE.
00721 R 740001 A            CMA
00722 R 360070 R            TAD*    CA
00723 R 047430 R            DAC     CKS2.1#
00724 R 340112 R            TAD     SVWC            /FORM (CA+MAXBUF-WC) AND CHECK
00725 R 540111 R            SAD     SVCA            /FOR MATCH WITH FINAL CA.
00726 R 741000 A            SKP
00727 R 602656 R            JMP     ER11            /MISMATCH, WC/CA ERROR 11.
00730 R 200111 R            LAC     SVCA            /CHECK FOR MATCH OF (CA+MAXBUF)
00731 R 547430 R            SAD     CKS2.1          /WITH FINAL CA.
00732 R 600743 R            JMP     CKS2.2          /MATCH, CHECK WC AND INCOR. REC. LEN.
00733 R 200112 R            LAC     SVWC            /MISMATCH, WC SHOULD NOT EQUAL ZERO,
00734 R 741200 A            SNA                     /AND INCORRECT RECORD LENGTH BIT
00735 R 602657 R            JMP     ER12            /SHOULD BE SET.
00736 R 200110 R            LAC     SVSTAT
00737 R 507545 R            AND     (1000)
00740 R 741200 A            SNA
00741 R 602657 R            JMP     ER12            /INCORRECT REC. LENGTH BIT NOT SET.
00742 R 600752 R            JMP     CKS2.3
                    /
00743 R 200112 R    CKS2.2  LAC     SVWC            /WC SHOULD BE ZERO, AND
00744 R 740200 A            SZA                     /INCORRECT RECORD LENGTH SHOULD
00745 R 602657 R            JMP     ER12            /NOT BE SET
00746 R 200110 R            LAC     SVSTAT
00747 R 507545 R            AND     (1000)          /RECORD LENGTH INCORRECT
00750 R 740200 A            SZA
00751 R 602657 R            JMP     ER12            /IS SET, ERROR.
00752 R 200110 R    CKS2.3  LAC     SVSTAT
00753 R 507543 R            AND     (10000)
00754 R 740200 A            SZA
00755 R 620666 R            JMP*    CKSR2           /END OF FILE
00756 R 207546 R            LAC     (BUF1+1)
00757 R 047425 R            DAC     CKS.1#
00760 R 207426 R            LAC     CKS.2
00761 R 347547 R            TAD     (2)
00762 R 047426 R            DAC     CKS.2
00763 R 203414 R            LAC     BUF1
00764 R 367425 R            TAD*    CKS.1
00765 R 447425 R            ISZ     CKS.1
00766 R 447426 R            ISZ     CKS.2
00767 R 600764 R            JMP     .-3
00770 R 740001 A            CMA
00771 R 347521 R            TAD     (1)
00772 R 367425 R            TAD*    CKS.1
00773 R 527427 R            AND*    CKS.3
00774 R 047444 R            DAC     ERR.22#
00775 R 740200 A            SZA
00776 R 602667 R            JMP     ER22            /CHECK SUM ERROR
```

```
00777 R 620666 R                JMP*    CKSR2           /NOT SET, NO ERROR EXIT.
                                .EJECT
```

```
                        /CHECK WRITE COMMAND TERMINATION FOR ERRORS.
                        /
01000 R 000000 A    CKSR4   0
01001 R 101032 R            JMS     CHKCOM          /CHECK COMMON ERRORS THEN
01002 R 750001 A            CLC                     /CHECK FOR CORRECT VALUES OF
01003 R 360071 R            TAD*    WC              /WC AND CA AT TERMINATION.
01004 R 740001 A            CMA
01005 R 360070 R            TAD*    CA              /FORM (CA+WC) AND MATCH AGAINST
01006 R 540111 R            SAD     SVCA            /FINAL CA.
01007 R 741000 A            SKP
01010 R 602660 R            JMP     ER13            /MISMATCH, WC/CA ERROR 4.
01011 R 200112 R            LAC     SVWC            /MATCH, CHECK FOR WC=0.
01012 R 740200 A            SZA
01013 R 602661 R            JMP     ER14            /WC NOT=0. ERROR 5.
01014 R 621000 R            JMP*    CKSR4           /NO ERROR, EXIT.
                        /
                        /CHECK WRITE END OF FILE COMMAND TERMINATION FOR ERRORS.
                        /
01015 R 000000 A    CKSR5   0
01016 R 101032 R            JMS     CHKCOM          /CHECK COMMON ERRORS THEN,
01017 R 200110 R            LAC     SVSTAT          /GET STATUS REGISTER AND CHECK
01020 R 507543 R            AND     (010000)        /THAT END OF FILE BIT WAS SET.
01021 R 741200 A            SNA
01022 R 602662 R            JMP     ER15            /EOF BIT NOT SET, ERROR 5.
01023 R 621015 R            JMP*    CKSR5           /NO ERROR EXIT.
                        /
                        /CHECK SPACE FORWARD COMMAND TERMINATION FOR ERRORS.
                        /
01024 R 000000 A    CKSR6   0
01025 R 101032 R            JMS     CHKCOM          /CHECK COMMON ERRORS THEN.
01026 R 621024 R            JMP*    CKSR6           /EXIT.
                        /
                        /CHECK SPACE REVERSE COMMAND FOR TERMINATION ERRORS.
                        /
01027 R 000000 A    CKSR7   0
01030 R 101032 R            JMS     CHKCOM          /CHECK COMMON ERRORS THEN
01031 R 621027 R            JMP*    CKSR7           /EXIT
                        /
                        /CHECK OPERATION FOR COMMON ERROR ITEMS
                        /
01032 R 000000 A    CHKCOM  0
01033 R 200110 R            LAC     SVSTAT          /GET SAVED STATUS AND
01034 R 740100 A            SMA
01035 R 601045 R            JMP     CHKC.1
01036 R 507550 R            AND     (40000)         /CHECK FOR ILLEGAL COMMAND.
01037 R 741200 A            SNA
01040 R 601045 R            JMP     CHKC.1          /NOT ILLEGAL
01041 R 200110 R            LAC     SVSTAT
01042 R 507551 R            AND     (137600)
01043 R 741200 A            SNA
01044 R 602650 R            JMP     ER03            /NOT FIRST COMMAND, ILLEGAL.
                        /
01045 R 200110 R    CHKC.1  LAC     SVSTAT
```

```
01046 R 520076 R            AND*    NONSEN          /CHECK NONSENSE BITS FOR THIS
01047 R 740200 A            SZA                     /COMMAND.
01050 R 602652 R            JMP     ER05            /SOME ON, ERROR 5.
01051 R 200110 R            LAC     SVSTAT          /CHECK ERROR FLAG. IF NOT
01052 R 740100 A            SMA
01053 R 601057 R            JMP     CHKC.2
01054 R 507551 R            AND     (137600)        /IF ON CHECK THAT SOME CAUSE
01055 R 741200 A            SNA                     /BITS ARE ON.
01056 R 602651 R            JMP     ER04            /NONE ON, ERROR 4.
                      /
01057 R 101064 R    CHKC.2  JMS     PARDRL          /SOME ON, CHECK BAD TAPE, ETC.
01060 R 601105 R            JMP     ER10.1          /DATA REQUEST LATE ERROR
01061 R 602653 R            JMP     ER06            /BAD TAPE ERROR
01062 R 602654 R            JMP     ER07            /PARITY ERROR
01063 R 621032 R            JMP*    CHKCOM          /NO ERROR, EXIT.
                      /
                      /PARITY ERROR, DATA REQUEST LATE, AND BAD TAPE ERRORS.
                      /
01064 R 000000 A    PARDRL  0                       /CHECKS SAVE STATUS REGISTER ERROR
01065 R 200110 R            LAC     SVSTAT          /BITS AND IF BAD TAPE ERROR
01066 R 507552 R            AND     (400)           /RETURNS CALL+2; IF PARITY
01067 R 740200 A            SZA                     /ERROR, CALL+3; IF DATA
01070 R 621064 R            JMP*    PARDRL          /REQUEST LATE ERROR, CALL
01071 R 200110 R            LAC     SVSTAT
01072 R 507526 R            AND     (200)           /+1 AND IF NO ERROR, CALL
01073 R 740200 A            SZA                     /+4.
01074 R 601103 R            JMP     PARD.2
01075 R 200110 R            LAC     SVSTAT
01076 R 507553 R            AND     (20000)
01077 R 740200 A            SZA
01100 R 741000 A            SKP
01101 R 441064 R            ISZ     PARDRL
01102 R 441064 R            ISZ     PARDRL
01103 R 441064 R    PARD.2  ISZ     PARDRL
01104 R 621064 R            JMP*    PARDRL
                            .EJECT
```

```
01105 R 200003 R     ER10,1  LAC     UODSW+3
01106 R 740100 A             SMA                     /CHECK TO SEE IF OPERATOR WANTS TO
                                                     /IGNORE DATA LATE ERRORS BY SPACE REVERSE ONE
                                                     /RECORD AND THEN TRY THE FAILING OPERATION AGAIN.
                             /
01107 R 602655 R             JMP     ER10            /DON'T RETRY, JUST REPORT THE ERROR.
                             /
01110 R 101126 R             JMS     SAVOLD
01111 R 207554 R             LAC     (DOOVER)
01112 R 040115 R             DAC     DISTSW
01113 R 102543 R             JMS     TRNCMD
01114 R 603044 R             JMP     BDTAP3
01115 R 600306 R             JMP     EXIT
                             /
01116 R 000000 A     DOOVER  0
01117 R 207467 R             LAC     SAVCMD#
01120 R 060067 R             DAC*    CMD
01121 R 207471 R             LAC     SAVWC#
01122 R 060071 R             DAC*    WC
01123 R 207470 R             LAC     SAVDIS
01124 R 040115 R             DAC     DISTSW
01125 R 600651 R             JMP     RANTS5
                             /
01126 R 000000 A     SAVOLD  0
01127 R 220067 R             LAC*    CMD
01130 R 047467 R             DAC     SAVCMD
01131 R 220071 R             LAC*    WC
01132 R 047471 R             DAC     SAVWC
01133 R 200041 R             LAC     SPCREV
01134 R 360075 R             TAD*    DENPAR
01135 R 360077 R             TAD*    HANNUM
01136 R 060067 R             DAC*    CMD
01137 R 777777 A             LAW     -1
01140 R 060071 R             DAC*    WC
01141 R 200115 R             LAC     DISTSW
01142 R 047470 R             DAC     SAVDIS
01143 R 621126 R             JMP*    SAVOLD
                             .EJECT
```

```
01144 R 101126 R     ER07.1  JMS      SAVOLD
01145 R 147511 R             DZM      TOTPAR#
01146 R 200110 R             LAC      SVSTAT
01147 R 047503 R             DAC      SSVTAT#
01150 R 777773 A             LAW      -5
01151 R 047512 R             DAC      TOTRTY#
01152 R 207555 R             LAC      (FIVTRY)
01153 R 040115 R             DAC      DISTSW
01154 R 102543 R             JMS      TRNCMD
01155 R 740000 A             NOP
01156 R 600306 R             JMP      EXIT
                             /
01157 R 000000 A     FIVTRY  0
01160 R 207556 R             LAC      (FIV.1)
01161 R 040115 R             DAC      DISTSW
01162 R 207467 R             LAC      SAVCMD
01163 R 060067 R             DAC*     CMD
01164 R 207471 R             LAC      SAVWC
01165 R 060071 R             DAC*     WC
01166 R 102543 R             JMS      TRNCMD
01167 R 740000 A             NOP
01170 R 600306 R             JMP      EXIT
                             /
01171 R 000000 A     FIV.1   0
01172 R 200110 R             LAC      SVSTAT
01173 R 507552 R             AND      (400)
01174 R 740200 A             SZA
01175 R 601224 R             JMP      DLRETY
01176 R 200110 R             LAC      SVSTAT
01177 R 507526 R             AND      (200)
01200 R 740200 A             SZA
01201 R 602653 R             JMP      ER06
01202 R 200110 R             LAC      SVSTAT
01203 R 507553 R             AND      (20000)
01204 R 740200 A             SZA
01205 R 447511 R             ISZ      TOTPAR
01206 R 447512 R             ISZ      TOTRTY
01207 R 741000 A             SKP
01210 R 601230 R             JMP      RPTER7
01211 R 200041 R     FIV.2   LAC      SPCREV
01212 R 360075 R             TAD*     DENPAR
01213 R 360077 R             TAD*     HANNUM
01214 R 060067 R             DAC*     CMD
01215 R 777777 A             LAW      -1
01216 R 060071 R             DAC*     WC
01217 R 207555 R             LAC      (FIVTRY)
01220 R 040115 R             DAC      DISTSW
01221 R 102543 R             JMS      TRNCMD
01222 R 740000 A             NOP
01223 R 600306 R             JMP      EXIT
                             .EJECT
```

```
01224 R 200003 R    DLRETY  LAC     UODSW+3
01225 R 740100 A            SMA
01226 R 602655 R            JMP     ER10
01227 R 601211 R            JMP     FIV.2
                            /
01230 R 207511 R    RPTER7  LAC     TOTPAR
01231 R 744020 A            RCR
01232 R 742020 A            RTR
01233 R 740020 A            RAR
01234 R 247557 R            XOR     (7)
01235 R 047443 R            DAC     ERN.1
01236 R 207470 R            LAC     SAVDIS
01237 R 040115 R            DAC     DISTSW
01240 R 103112 R            JMS     RESPUT
01241 R 602725 R            JMP     ERR2.1
                            /
                    /SET NEXT OPERATION TABLE POINTERS
                    /
01242 R 000000 A    SETNXT  0                       /ENTRY WITH HANDLER NUMBER.
01243 R 040066 R            DAC     CURHAN
01244 R 101263 R            JMS     MPY             /MULTIPLY HANDLER NO. BY NO.
01245 R 347542 R            TAD     (OPRTAB)        /OF ENTRIES PER HANDLER AND
01246 R 040067 R            DAC     PARTAB          /SET FIRST POINTER.
01247 R 207560 R            LAC     (PARTAB+1)      /GET NXT P.A. LOC. AND SET.
01250 R 047474 R            DAC     SET.1#
01251 R 777762 A            LAW     -NUMPAR+2       /GET NUM. OF PARAMETERS
01252 R 047475 R            DAC     SET.2#
01253 R 200067 R            LAC     PARTAB          /PICK UP FIRST POINTER, INCREMENT
                    /
01254 R 347521 R    SETN.1  TAD     (1)             /FOR NEXT ENTRY
01255 R 067474 R            DAC*    SET.1           /AND P.A.
01256 R 447474 R            ISZ     SET.1
01257 R 447475 R            ISZ     SET.2           /CONTINUE UNTIL DONE.
01260 R 601254 R            JMP     SETN.1
01261 R 200066 R            LAC     CURHAN          /RESTORE INBOUND HANDLER NO.
01262 R 621242 R            JMP*    SETNXT          /EXIT.
                    /
                    /MULTIPLY BY 16 UTILITY ROUTINE.
                    /
01263 R 000000 A    MPY     0                       /ENTRY WITH ARGUMENT IN AC.
01264 R 744000 A            CLL                     /EXIT WITH PRODUCT IN AC.
01265 R 742010 A            RTL
01266 R 742010 A            RTL
01267 R 621263 R            JMP*    MPY
                            .EJECT
```

```
                        /**********************************************************************
                        /UPDATE POSITION COUNTERS BASED ON PREVIOUS COMMAND EXECUTED.
                        /
01270 R 000000 A    UPDTCT  0
01271 R 220067 R            LAC*    CMD             /GET PREVIOUS COMMAND AND
01272 R 507561 R            AND     (7000)          /CHECK FOR TYPE.
01273 R 547561 R            SAD     (7000)
01274 R 601306 R            JMP     UPDT.1          /WAS A BACK SPACE.
01275 R 547562 R            SAD     (6000)
01276 R 601321 R            JMP     UPDT.2          /WAS A FORWARD SPACE.
01277 R 547563 R            SAD     (2000)
01300 R 741000 A            SKP
01301 R 601337 R            JMP     UPDT.3          /WAS A WRITE OR WRITE EOF.
01302 R 460073 R            ISZ*    CNTR            /WAS A READ(CNTR+1=CNTR)
01303 R 740000 A            NOP
01304 R 220073 R            LAC*    CNTR
01305 R 601331 R            JMP     UPDT.4
                        /
01306 R 750001 A    UPDT.1  CLC                     /WAS A BACK SPACE.
01307 R 340112 R            TAD     SVWC            /FORM(CNTR=(INIT. WC-FINAL WC.))
01310 R 740001 A            CMA                     /SET IN CNTR.
01311 R 360071 R            TAD*    WC
01312 R 740300 A            SZA!SMA
01313 R 740040 A            HLT
01314 R 360073 R            TAD*    CNTR
01315 R 060073 R            DAC*    CNTR
01316 R 741100 A            SPA
01317 R 740040 A            HLT
01320 R 621270 R            JMP*    UPDTCT          /EXIT
                        /
01321 R 750001 A    UPDT.2  CLC                     /WAS A FORWARD SPACE.
01322 R 360071 R            TAD*    WC              /FORM CNTR+(INIT. WC-FINAL WC)
01323 R 740001 A            CMA                     /SET IN CNTR.
01324 R 340112 R            TAD     SVWC
01325 R 741100 A            SPA
01326 R 740040 A            HLT
01327 R 360073 R            TAD*    CNTR
01330 R 060073 R            DAC*    CNTR
01331 R 740001 A    UPDT.4  CMA
01332 R 347521 R            TAD     (1)
01333 R 360074 R            TAD*    CNTW
01334 R 741100 A            SPA
01335 R 740040 A            HLT
01336 R 621270 R            JMP*    UPDTCT
                        /
01337 R 220073 R    UPDT.3  LAC*    CNTR            /WAS A WRITE OR WRITE END OF FILE.
01340 R 347521 R            TAD     (1)             /INCREMENT CNTR AND SET
01341 R 060073 R            DAC*    CNTR            /IN BOTH CNTR AND CNTW.
01342 R 060074 R            DAC*    CNTW
01343 R 621270 R            JMP*    UPDTCT
                            .EJECT
```

```
                        /**********************************************************************
                        /SELECT NEXT OPERATION FOR THIS HANDLER TO PERFORM.
                        /
01344 R 000000 A    SLNXOP  0
01345 R 200110 R            LAC     SVSTAT          /CHECK FOR HANDLER AT
01346 R 507564 R            AND     (4000)          /END OF TAPE.
01347 R 741200 A            SNA
01350 R 601353 R            JMP     SLNO.0          /NO, NORMAL SELECTION.
01351 R 101505 R            JMS     GENRWD          /YES, GENERATE REWIND COMMAND.
01352 R 621344 R            JMP*    SLNXOP          /EXIT.
                        /
01353 R 200110 R    SLNO.0  LAC     SVSTAT          /CHECK FOR BOT MARKER.
01354 R 507522 R            AND     (100000)
01355 R 740200 A            SZA
01356 R 601467 R            JMP     SLNO.8
01357 R 220073 R            LAC*    CNTR            /CHECK POSITION COUNTER FOR 0.
01360 R 741200 A            SNA                     /0 MEANS BOT.
01361 R 601467 R            JMP     SLNO.8          /IS ZERO.
01362 R 560074 R            SAD*    CNTW            /NOT ZERO, CHECK CNTR=CNTW.
01363 R 601473 R            JMP     SLNO.9          /ARE EQUAL.
                        /
01364 R 101624 R    SLNO.1  JMS     RANGEN          /NEITHER, ANY IMPLEMENTED
01365 R 507557 R            AND     (7)             /COMMAND FITTING DISTRIBUTION IS
01366 R 047476 R            DAC     SLN.1#          /LEGAL. GET COMMAND NO. AND
01367 R 547565 R            SAD     (4)
01370 R 601364 R            JMP     SLNO.1
01371 R 547566 R            SAD     (5)
01372 R 601364 R            JMP     SLNO.1
01373 R 101537 R            JMS     CMDDIS          /CHECK IF DISTRIBUTION OK.
01374 R 601364 R            JMP     SLNO.1          /NOT OR, GET ANOTHER NUMBER.
01375 R 100621 R    SLNO.7  JMS     GET             /OK, GET COMMAND SKELETON
01376 R 000032 R            .DSA    CMDSKL          /FOR THIS ONE AND
01377 R 047477 R            DAC     SLN.2#          /SAVE IT.
01400 R 207476 R            LAC     SLN.1           /GET COMMAND NO. AGAIN
01401 R 547521 R            SAD     (1)             /DOES FIT, CHECK FOR REWIND.
01402 R 741000 A            SKP
01403 R 601406 R            JMP     SLNO.2
01404 R 101505 R            JMS     GENRWD          /IS REWIND, GEN. COMMAND AND EXIT.
01405 R 621344 R            JMP*    SLNXOP
                        /
01406 R 207477 R    SLNO.2  LAC     SLN.2           /NOT REWIND, GET COMD. SKELETON.
01407 R 360077 R            TAD*    HANNUM          /OR IN HANDLER NUMBER AND
01410 R 360075 R            TAD*    DENPAR          /CURRENT DESITY AND PARITY.
01411 R 060067 R            DAC*    CMD             /SAVE IN COMMAND
                        /
01412 R 101624 R    SLNO.3  JMS     RANGEN          /GET RANDOM NUMBER FOR
01413 R 507567 R            AND     (77)            /POSSIBLE WC.
01414 R 741200 A            SNA
01415 R 601412 R            JMP     .-3             /ZERO, DON'T USE.
01416 R 047500 R            DAC     SLN.3#          /SAVE.
01417 R 207476 R            LAC     SLN.1           /GET COMMAND NUMBER
01420 R 547570 R            SAD     (6)             /AND CHECK FOR SPACE FORWARD
01421 R 601434 R            JMP     SLNO10          /OR REVERSE.
```

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01422 R 547557 R            SAD     (7)
01423 R 741000 A            SKP
01424 R 601456 R            JMP     SLNO.6          /NEITHER CONTINUE.
01425 R 750001 A            CLC                     /SPACE BACKWARD.
01426 R 347500 R            TAD     SLN.3           /CHECK THAT WC DOES NOT
01427 R 740001 A            CMA                     /EXCEED CNTR.
01430 R 360073 R            TAD*    CNTR
01431 R 741100 A            SPA
01432 R 601412 R            JMP     SLNO.3          /EXCEEDS CNTR, GET ANOTHER WC.
01433 R 601451 R            JMP     SLNO.4          /OK, CONTINUE.
01434 R 207500 R    SLNO10  LAC     SLN.3           /SET WC MOD 8
01435 R 507557 R            AND     (7)
01436 R 347521 R            TAD     (1)
01437 R 047500 R            DAC     SLN.3
01440 R 750001 A            CLC                     /SPACE FORWARD, MAKE SURE
01441 R 360074 R            TAD*    CNTW            /WC DOES NOT EXCEED:
01442 R 740001 A            CMA                     /(CNTW-CNTR)
01443 R 360073 R            TAD*    CNTR
01444 R 347500 R            TAD     SLN.3
01445 R 740001 A            CMA
01446 R 347521 R            TAD     (1)
01447 R 741100 A            SPA
01450 R 601412 R            JMP     SLNO.3          /IT DOES, GET ANOTHER.
01451 R 750001 A    SLNO.4  CLC                     /OK, GET WC, COMPLIMENT
01452 R 347500 R            TAD     SLN.3
01453 R 740001 A            CMA
01454 R 060071 R            DAC*    WC              /AND SET IN WORD COUNT.
01455 R 160070 R            DZM*    CA              /CLEAR CA.
                    /
01456 R 207476 R    SLNO.6  LAC     SLN.1           /GET CHECK POINTER FOR
01457 R 100621 R            JMS     GET             /THIS COMMAND.
01460 R 000055 R            .DSA    CHKTAB
01461 R 060072 R            DAC*    CHKPTR
01462 R 207476 R            LAC     SLN.1           /GET NONSENSE BIT MASK.
01463 R 100621 R            JMS     GET             /AND PUT AWAY FOR THIS COMMAND.
01464 R 000116 R            .DSA    NONTAB
01465 R 060076 R            DAC*    NONSEN
01466 R 621344 R            JMP*    SLNXOP          /EXIT.
                    /CNTR=ZERO-----TAPE AT BOT.
01467 R 740000 A    SLNO.8  NOP                     /CHECK BOT FLAG, SHOULD
01470 R 101513 R            JMS     CLRDIS          /CLEAR COMMAND DISTRIBUTION CNTRS.
01471 R 102255 R            JMS     GENWRT          /GENERATE A WRITE
01472 R 621344 R            JMP*    SLNXOP
                    /CNTR=CNTW-----TAPE AT END OF WRITTEN RECORDS.
01473 R 101624 R    SLNO.9  JMS     RANGEN          /GET NEXT COMMAND AND
01474 R 507557 R            AND     (7)             /CHECK FOR READ OR SPACE
01475 R 047476 R            DAC     SLN.1           /FORWARD. ELIMINATE THESE.
01476 R 547570 R            SAD     (6)
01477 R 601473 R            JMP     SLNO.9          /SPACE FORWARD, REJECT
01500 R 547547 R            SAD     (2)
01501 R 601473 R            JMP     SLNO.9          /READ, REJECT.
01502 R 101537 R            JMS     CMDDIS          /CHECK DISTRIBUTION OF COMMANDS.
01503 R 601473 R            JMP     SLNO.9          /NOT OK.
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01504 R 601375 R            JMP     SLNO.7          /OK
                            .EJECT
```

```
                        /GENERATE A REWIND COMMAND EITHER AT END OF TAPE OR BY SELECTION
01505 R 000000 A    GENRWD  0
01506 R 200033 R            LAC     REWIND          /SET REWIND COMMAND AS NEXT
01507 R 360077 R            TAD*    HANNUM          /COMMAND WHEN THIS HANDLER SELECTED.
01510 R 060067 R            DAC*    CMD             /CLEAN UP OPR TAB FOR THIS HANDLER
01511 R 101513 R            JMS     CLRDIS
01512 R 621505 R            JMP*    GENRWD
                        /
                        /CLEAR HANDLER PARAMETERS, OCCURS ON REWIND AND AT BOT.
                        /
01513 R 000000 A    CLRDIS  0                       /CLEAR HANDLER PARAMETERS.
01514 R 160070 R            DZM*    CA
01515 R 160071 R            DZM*    WC
01516 R 160073 R            DZM*    CNTR
01517 R 160074 R            DZM*    CNTW
01520 R 207571 R            LAC     (40300)
01521 R 060075 R            DAC*    DENPAR
01522 R 160076 R            DZM*    NONSEN
01523 R 160100 R            DZM*    CMDCNT          /CLEAR COMMAND COUNT.
01524 R 200126 R            LAC     EOFCON          /SET NEW EOF DISTRIBUTION COUNTER.
01525 R 060101 R            DAC*    EOFCNT
01526 R 207545 R            LAC     (1000)
01527 R 060104 R            DAC*    SPFCNT
01530 R 207545 R            LAC     (1000)
01531 R 060105 R            DAC*    SPBCNT
01532 R 200066 R            LAC     CURHAN
01533 R 100621 R            JMS     GET
01534 R 000045 R            .DSA    HANDNM
01535 R 060077 R            DAC*    HANNUM
01536 R 621513 R            JMP*    CLRDIS
                        /
                        /CHECK SELECTED COMMAND FOR PROPER DISTRIBUTION.
                        /
01537 R 000000 A    CMDDIS  0
01540 R 047440 R            DAC     CMD.1#          /SAVE COMMAND NUMBER.
01541 R 547521 R            SAD     (1)             /CHECK FOR REWIND
01542 R 601556 R            JMP     CMDD.1
01543 R 547547 R            SAD     (2)             /READ
01544 R 601562 R            JMP     CMDD.2
01545 R 547565 R            SAD     (4)             /WRITE
01546 R 601562 R            JMP     CMDD.2
01547 R 547566 R            SAD     (5)             /WRITE EOF
01550 R 601566 R            JMP     CMDD.5
01551 R 547570 R            SAD     (6)             /FORWARD SPACE
01552 R 601600 R            JMP     CMDD.6
01553 R 547557 R            SAD     (7)             /BACKWARD SPACE
01554 R 601612 R            JMP     CMDD.7
01555 R 621537 R            JMP*    CMDDIS
                        /
01556 R 220100 R    CMDD.1  LAC*    CMDCNT          /CHECK REWIND COUNT. ALLOWS
01557 R 347572 R            TAD     (-10000)        /REWIND ONLY AFTER 4K WRITTEN
01560 R 741100 A            SPA                     /RECORDS ARE ON TAPE.
01561 R 621537 R            JMP*    CMDDIS          /NOT ENOUGH-EXIT
```

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                        /
01562 R 460100 R    CMDD.2  ISZ*    CMDCNT          /ENOUGH-EXIT
01563 R 207440 R            LAC     CMD.1
01564 R 441537 R            ISZ     CMDDIS
01565 R 621537 R            JMP*    CMDDIS
                        /
                        /
01566 R 750001 A    CMDD.5  CLC                     /WRITE EOF, CHECK END OF FILE
01567 R 360100 R            TAD*    CMDCNT          /COUNTER AGAINST COMMAND
01570 R 740001 A            CMA                     /COUNT.
01571 R 360101 R            TAD*    EOFCNT
01572 R 740100 A            SMA
01573 R 621537 R            JMP*    CMDDIS          /EXIT-NOT ENOUGH
01574 R 220101 R            LAC*    EOFCNT          /ENOUGH-SET NEW COUNT.
01575 R 340126 R            TAD     EOFCON
01576 R 060101 R            DAC*    EOFCNT
01577 R 601562 R            JMP     CMDD.2
                        /
01600 R 750001 A    CMDD.6  CLC                     /SPACE FORWARD, CHECK SPACE
01601 R 360100 R            TAD*    CMDCNT          /FORWARD COUNTER AGAINST
01602 R 740001 A            CMA                     /COMMAND COUNT.
01603 R 360104 R            TAD*    SPFCNT
01604 R 740100 A            SMA
01605 R 621537 R            JMP*    CMDDIS          /EXIT, NOT ENOUGH.
01606 R 220104 R            LAC*    SPFCNT          /ENOUGH-SET NEW COUNT.
01607 R 340127 R            TAD     SPFCON
01610 R 060104 R            DAC*    SPFCNT
01611 R 601562 R            JMP     CMDD.2
                        /
01612 R 750001 A    CMDD.7  CLC                     /SPACE BACKWARD, CHECK SPACE
01613 R 360100 R            TAD*    CMDCNT          /BACKWARD COUNTER AGAINST
01614 R 740001 A            CMA                     /COMMAND COUNT.
01615 R 360105 R            TAD*    SPBCNT
01616 R 740100 A            SMA
01617 R 621537 R            JMP*    CMDDIS          /EXIT, NOT ENOUGH.
01620 R 220105 R            LAC*    SPBCNT          /ENOUGH-SET NEW COUNT
01621 R 340130 R            TAD     SPBCON
01622 R 060105 R            DAC*    SPBCNT
01623 R 601562 R            JMP     CMDD.2
                            .EJECT
```

```
                        /RANDOM NUMBER GENERATOR-FROM TAPE EXERCISER EXEC.
                        /
01624 R 000000 A    RANGEN  0
01625 R 201662 R            LAC     RANDEX          /GET RANDOM TABLE INDEX AND
01626 R 547573 R            SAD     (RANTBL+10)     /CHECK FOR END OF TABLE.
01627 R 741000 A            SKP
01630 R 601640 R            JMP     RANTAD-1        /NO, CONTINUE.
01631 R 207574 R            LAC     (RANTBL)        /YES, RESET INDEX TO START OF
01632 R 041662 R            DAC     RANDEX          /TABLE.
01633 R 201661 R            LAC     RANCON          /DO A ROTATE ON RANCON
01634 R 745100 A            SPA!CLL                 /AND REPLACE.
01635 R 744002 A            STL
01636 R 740010 A            RAL
01637 R 041661 R            DAC     RANCON
01640 R 221662 R            LAC*    RANDEX          /PICK UP TABLE ENTRY AND
                        /
01641 R 341661 R    RANTAD  TAD     RANCON          /ADD CONSTANT, REPLACING IN
01642 R 061662 R            DAC*    RANDEX          /ENTRY.
01643 R 441660 R            ISZ     RANCNT
01644 R 601651 R            JMP     .+5
01645 R 367524 R            TAD*    (0)
01646 R 061662 R            DAC*    RANDEX
01647 R 777400 A            LAW     -400
01650 R 041660 R            DAC     RANCNT
01651 R 201657 R            LAC     RANSAV          /PICK UP PREVIOUS RANDOM NUMBER
01652 R 740020 A            RAR                     /ROTATE IT ON RIGHT AND ADD
01653 R 361662 R            TAD*    RANDEX          /IT TO THIS TABLE ENTRY.
01654 R 041657 R            DAC     RANSAV          /SAVE THE NUMBER.
01655 R 441662 R            ISZ     RANDEX          /INCREMENT RANDEX FOR NEXT
01656 R 621624 R            JMP*    RANGEN          /CYCLE AND EXIT WITH NUMBER INAC.
01657 R 000000 A    RANSAV  0                       /CURRENT RANDOM NUMBER.
01660 R 777400 A    RANCNT  -400
                        /
01661 R 123456 A    RANCON  123456                  /RANDOM CONSTANT.
01662 R 001673 R    RANDEX  RANTBL+10               /RANTBL INDEX
01663 R 654321 A    RANTBL  654321                  /RANDOM VALUE TABLE.
01664 R 361416 A            361416
01665 R 055363 A            055363
01666 R 546060 A            546060
01667 R 243035 A            243035
01670 R 762572 A            762572
01671 R 453237 A            453237
01672 R 150214 A            150214
                            .EJECT
```

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                        /**********************************************************************
                        /INITIATE NEXT OPERATION ON NEXT HANDLER.
                        /
01673 R 000000 A    INTOPR  0
01674 R 102601 R            JMS     BUFGEN
01675 R 102307 R            JMS     HOLD
01676 R 147452 R            DZM     INT.3#          /RESET REPEAT FLAG
01677 R 207575 R            LAC     (-12000)        /WAIT FOR TRANSPORT READY.
01700 R 047453 R            DAC     INT.4#
01701 R 707321 A            MTCR
01702 R 741000 A            SKP
01703 R 601707 R            JMP     .+4
01704 R 447453 R            ISZ     INT.4
01705 R 601701 R            JMP     .-4
01706 R 602646 R            JMP     ER01
01707 R 102023 R            JMS     CKRWD           /READY, CHECK ANY HANDLERS DONE REWIND.
01710 R 200065 R            LAC     THSHAN
01711 R 101242 R            JMS     SETNXT
01712 R 220067 R            LAC*    CMD             /CHECK NEXT COMMAND FOR READ,
01713 R 507561 R            AND     (7000)          /WRITE, OR REWIND.
01714 R 547563 R            SAD     (2000)
01715 R 601757 R            JMP     INTO.3          /READ COMMAND NEXT.
01716 R 547564 R            SAD     (4000)
01717 R 601731 R            JMP     INTO.4          /WRITE COMMAND NEXT
01720 R 547545 R            SAD     (1000)
01721 R 601764 R            JMP     INTO.5          /REWIND COMMAND NEXT.
01722 R 102543 R    INTO.1  JMS     TRNCMD          /TRANSMIT CURRENT COMMAND
01723 R 601727 R            JMP     INTO.6          /HANDLER NOT RDY, RETURN
01724 R 207452 R            LAC     INT.3           /CHECK REPEAT FLAG. IF ON JUST
01725 R 741200 A            SNA                     /ISSUED A REWIND,
01726 R 621673 R            JMP*    INTOPR          /NOT ON, EXIT.
01727 R 102104 R    INTO.6  JMS     SLNXHN          /ON SELECT NEW HANDLER AND
01730 R 601674 R            JMP     INTOPR+1        /REPEAT. IF NO MORE HANDLERS SEE SLNXHN.
                        /GENERATE DATA AND SET UP PARAMETERS TO INITIATE A WRITE.
01731 R 207576 R    INTO.4  LAC     (BUF1-1)        /INITIATE A WRITE-GET
                                                    /NEXT BUFFER AND SAVE IN
01732 R 060070 R            DAC*    CA              /OPRTAB AND IN SYSTEM CA.
01733 R 101624 R            JMS     RANGEN          /GET RECORD LENGTH FROM RANGEN
01734 R 507557 R            AND     (7)             /USING REC TAB.
01735 R 100621 R            JMS     GET
01736 R 000141 R            .DSA    RECTAB
01737 R 043415 R            DAC     BUF1+1
01740 R 740001 A            CMA
01741 R 347521 R            TAD     (1)
01742 R 060071 R            DAC*    WC              /SET THE VALUE IN OPRTAB AND
01743 R 347547 R            TAD     (2)
01744 R 047454 R            DAC     INT.5#
01745 R 207546 R            LAC     (BUF1+1)
01746 R 047455 R            DAC     INT.6#
01747 R 220073 R            LAC*    CNTR
01750 R 043414 R            DAC     BUF1
01751 R 367455 R            TAD*    INT.6
01752 R 447455 R            ISZ     INT.6
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01753 R 447454 R            ISZ     INT.5
01754 R 601751 R            JMP     .-3
01755 R 067455 R            DAC*    INT.6
01756 R 601722 R            JMP     INTO.1          /RETURN TO START OPERATION.
                      /SET UP PARAMETERS TO INITIATE A READ.
01757 R 207576 R    INTO.3  LAC     (BUF1-1)        /GET NEXT BUFFER AND SAVE
01760 R 060070 R            DAC*    CA              /IN OPRTAB AND SYSTEM CA.
01761 R 200163 R            LAC     MAXBUF          /SET SYSTEM WORD COUNT TO
01762 R 060071 R            DAC*    WC              /MAXIMUM BUFFER SIZE AND
01763 R 601722 R            JMP     INTO.1          /RETURN TO INITIATE COMMAND.
                      /SET REWIND OPERATION
01764 R 101772 R    INTO.5  JMS     SETRWD          /GO SET REWINDING LOCK OUT.
01765 R 547524 R            SAD     (0)             /THIS IS LAST HANDLER
01766 R 601771 R            JMP     .+3             /DON'T REPEAT.
01767 R 777777 A            LAW     -1              /ESSENTIALLY TERMINATES
01770 R 047452 R            DAC     INT.3           /CYCLE ON THIS HANDLER, SET REPEAT
01771 R 601722 R            JMP     INTO.1          /INITIATION FLAG AND INITIATE REWIND.
                      /
                      /SET REWIND BITS FOR HANDLER REWINDING.
                      /
01772 R 000000 A    SETRWD  0
01773 R 200066 R            LAC     CURHAN
01774 R 100621 R            JMS     GET
01775 R 000131 R            .DSA    MSKTAB
01776 R 500162 R            AND     ANRWD
01777 R 040162 R            DAC     ANRWD
02000 R 777777 A            LAW     -1
02001 R 347446 R            TAD     HANCNT
02002 R 047446 R            DAC     HANCNT
02003 R 740200 A            SZA
02004 R 621772 R            JMP*    SETRWD          /EXIT.
02005 R 200044 R            LAC     REWND1
02006 R 360077 R            TAD*    HANNUM
02007 R 060067 R            DAC*    CMD
02010 R 207577 R            LAC     (SETR.1)
02011 R 040115 R            DAC     DISTSW
02012 R 750000 A            CLA
02013 R 621772 R            JMP*    SETRWD
02014 R 000000 A    SETR.1  0
02015 R 200065 R            LAC     THSHAN
02016 R 102057 R            JMS     CLRRWD
02017 R 207532 R            LAC     (RANTST)
02020 R 040115 R            DAC     DISTSW
02021 R 101513 R            JMS     CLRDIS
02022 R 600647 R            JMP     RANTS6
                      /
                      /TEST FOR ANY HANDLERS REWINDING AND IF SO, IS THE OPERATION COMPLETE.
                      /
02023 R 000000 A    CKRWD   0
02024 R 147433 R            DZM     CKW.3#
02025 R 200162 R            LAC     ANRWD           /GET HANDLER REWINDING FLAG
02026 R 740001 A            CMA                     /MORE, COMPLIMENT IT AND SAVE.
02027 R 047431 R            DAC     CKW.1#
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02030 R 741200 A            SNA                     /ARE ANY REWINDING.
02031 R 622023 R            JMP*    CKRWD           /NO,EXIT.
02032 R 200032 R            LAC     NOOP            /YES, SET UP NOOP COMMAND FOR
02033 R 047432 R            DAC     CKW.2#          /REWINDING UNIT SELECTION.
02034 R 207431 R    CKRW.2  LAC     CKW.1           /GET REWINDING FLAG WORD AND
02035 R 740100 A            SMA                     /CHECK FOR THIS ONE REWINDING.
02036 R 602045 R            JMP     CKRW.1
02037 R 207432 R            LAC     CKW.2           /TRANSMIT NOOP (UNIT NO.) TO CONTROL
                    /
02040 R 707326 A            MTLC
02041 R 707301 A            MTTR
02042 R 602045 R            JMP     CKRW.1
02043 R 207433 R            LAC     CKW.3           /CHECK FOR TRANSPORT READY.
02044 R 102057 R            JMS     CLRRWD          /READY, CLEAR REWINDING.
                    /
02045 R 447433 R    CKRW.1  ISZ     CKW.3
02046 R 207431 R            LAC     CKW.1           /GET REWINDING FLAG AGAIN AND
02047 R 744010 A            RCL                     /CHECK THE NEXT HANDLER.
02050 R 047431 R            DAC     CKW.1
02051 R 741200 A            SNA                     /ANY MORE?
02052 R 622023 R            JMP*    CKRWD           /NO, EXIT.
02053 R 207432 R            LAC     CKW.2           /YES, STEP THE NOOP
02054 R 347522 R            TAD     (100000)        /AND GO AROUND AGAIN.
02055 R 047432 R            DAC     CKW.2
02056 R 602034 R            JMP     CKRW.2
                    /
                    /CLEAR REWINDING HANDLER ROUTINE
                    /
02057 R 000000 A    CLRRWD  0                       /GET MASK POSITIONED FOR THIS
02060 R 101242 R            JMS     SETNXT
02061 R 101344 R            JMS     SLNXOP
02062 R 200066 R            LAC     CURHAN
02063 R 100621 R            JMS     GET             /HANDLER NO. AND SET HANDLER
02064 R 000131 R            .DSA    MSKTAB          /REWINDING BIT FOR THIS HANDLER
02065 R 740001 A            CMA                     /SO THAT IT CAN BE RANDOMLY
02066 R 340162 R            TAD     ANRWD           /SELECTED AGAIN IN SEL. NEXT.
02067 R 040162 R            DAC     ANRWD           /HANDLER
02070 R 447446 R            ISZ     HANCNT
02071 R 622057 R            JMP*    CLRRWD
                    /
02072 R 000000 A    CHKHAN  0
02073 R 207575 R            LAC     (-12000)        /WAIT FOR HANDLER
02074 R 047423 R            DAC     CHK.1#          /TO COME READY. NO MORE THAN
02075 R 707301 A            MTTR                    /40 MS.
02076 R 602101 R            JMP     .+3
02077 R 442072 R            ISZ     CHKHAN
02100 R 622072 R            JMP*    CHKHAN          /HANDLER READY, RETURN.
02101 R 447423 R            ISZ     CHK.1
02102 R 602075 R            JMP     .-5
02103 R 602647 R            JMP     ER02            /NOT RDY, ERROR
                            .EJECT
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                        /**********************************************************************
                        /SELECT NEW NEXT HANDLER ROUTINE.
                        /
02104 R 000000 A    SLNXHN  0
02105 R 102152 R    SLNX.5  JMS     SELTAB          /GET NO. OF HANDLERS AVAILABLE
02106 R 740200 A            SZA                     /FOR RANDOM SELECTION.
02107 R 602137 R            JMP     SLNX.1          /ONE OR MORE AVAILABLE.
02110 R 200162 R            LAC     ANRWD           /NO HANDLERS AVAILABLE FOR SELECTION. CHECK
02111 R 740001 A            CMA                     /FOR AN OUTSTANDING REWIND.
02112 R 741200 A            SNA
02113 R 602665 R            JMP     ER20            /NO REWINDS-ALL OUT OF HANDLERS.
02114 R 147501 R            DZM     SLX.1#          /YES AN OUTSTANDING REWIND.
02115 R 741100 A            SPA                     /FIND FIRST REWINDING HANDLER
02116 R 602122 R            JMP     .+4             /FOUND.
02117 R 744010 A            RCL                     /NOT FOUND, CONTINUE SEARCH.
02120 R 447501 R            ISZ     SLX.1
02121 R 602115 R            JMP     .-4
02122 R 207501 R            LAC     SLX.1           /SET HANDLER SELECTION
02123 R 100621 R            JMS     GET
02124 R 000045 R            .DSA    HANDNM
02125 R 340043 R            TAD     NOOP1
02126 R 707326 A            MTLC
02127 R 207600 R            LAC     (SLNX.4)        /EXIT TO MONITOR SETTING
02130 R 040115 R            DAC     DISTSW          /DISTRIBUTOR SWITCH TO RETURN
02131 R 600306 R            JMP     EXIT            /HERE ON INTERRUPT.
02132 R 207501 R    SLNX.4  LAC     SLX.1           /AFTER REWINDING COMPLETE.
02133 R 102057 R            JMS     CLRRWD          /CLEAR REWINDING BIT FOR THIS HANDLER.
02134 R 207532 R            LAC     (RANTST)        /RESET DISTRIBUTION SWITCH.
02135 R 040115 R            DAC     DISTSW
02136 R 602105 R            JMP     SLNX.5          /TRY AGAIN.
02137 R 101624 R    SLNX.1  JMS     RANGEN          /GET NEXT RANDOM NUMBER
02140 R 507557 R            AND     (7)             /AND CHECK SELECTION TABLE
02141 R 047501 R            DAC     SLX.1           /TO DETERMINE IF THAT ONE
02142 R 347601 R            TAD     (SELHAN)        /IS AVAILABLE.
02143 R 047502 R            DAC     SLX.2#
02144 R 227502 R            LAC*    SLX.2
02145 R 740200 A            SZA                     /NO, GET ANOTHER HANDLER NO.
02146 R 602137 R            JMP     SLNX.1          /YES, USE THAT NO. FOR NEW
02147 R 207501 R            LAC     SLX.1           /NEXT HANDLER.
02150 R 040065 R            DAC     THSHAN          /SET OLD NEXT HANDLER IN THIS
02151 R 622104 R            JMP*    SLNXHN          /EXIT.
                            .EJECT
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                        /ROUTINE TO DETERMINE WHICH HANDLERS ARE AVAILABLE FOR RANDOM SELECTION.
                        /
02152 R 000000 A    SELTAB  0
02153 R 777770 A            LAW     -10             /CLEAR SELECTABLE HANDLERS
02154 R 047472 R            DAC     SEL.1#          /TO MINUS ONES.
02155 R 207601 R            LAC     (SELHAN)        /AS EACH HANDLER IS EXAMINED FOR
02156 R 047473 R            DAC     SEL.2#          /SELECTABILITY, ITS ENTRY IS ZEROED
02157 R 750001 A            CLC                     /IF AVAILABLE FOR SERVICE.
02160 R 067473 R    SELT.1  DAC*    SEL.2           /RETURN TO SLNXHN WITH NUMBER
02161 R 447473 R            ISZ     SEL.2           /HANDLERS AVAILABLE.
02162 R 447472 R            ISZ     SEL.1           /AND TOGETHER THE FOLLOWING TO DETER-
02163 R 602160 R            JMP     SELT.1          /MINE SELECTABILITY.
02164 R 207601 R            LAC     (SELHAN)
02165 R 047473 R            DAC     SEL.2           /ACTIVE:0=INACTIVE;1=ACTIVE
02166 R 147472 R            DZM     SEL.1           /ARWD;0=REWINDING;1=NOT REWINDING
                                                    /SPECIAL:0=SPEC. SEQ;1=NOT SPECIAL
02167 R 200161 R            LAC     ACTIVE          /ALL THOSE WITH A ONE RESULT ARE SELECTABLE.
02170 R 500162 R            AND     ANRWD
02171 R 740100 A    SELT.2  SMA                     /CHECK LEFT MOST BIT.
02172 R 602175 R            JMP     SELT.3          /OFF-NOT AVAILABLE.
02173 R 167473 R            DZM*    SEL.2           /ON-CLEAR HANDLER ENTRY.
02174 R 447472 R            ISZ     SEL.1           /COUNT THE NO.AVAILABLE.
02175 R 744010 A    SELT.3  RCL                     /SHIFT TO GET NEXT ONE.
02176 R 741200 A            SNA
02177 R 602202 R            JMP     SELT.4          /DONE-NO MORE AVAILABLE.
02200 R 447473 R            ISZ     SEL.2           /MORE AVAILABLE-GET THEM.
02201 R 602171 R            JMP     SELT.2
02202 R 207472 R    SELT.4  LAC     SEL.1           /SET NUMBER AVAILABLE IN AC.
02203 R 622152 R            JMP*    SELTAB          /AND RETURN.
                        .EJECT
```

```
                        /**********************************************************************
                        /WRITE EXERCISER TEST
02204 R 000000 A    TST1.1  0
02205 R 207602 R            LAC     (TST1.2)        /SET DISTRIBUTION SWITCH FOR RETURN.
02206 R 040115 R            DAC     DISTSW
02207 R 100513 R            JMS     POLINT          /GO TO POLL HANDLERS AND
02210 R 100525 R            JMS     POLHAN          /FIND ONE ACTIVE.
02211 R 602665 R            JMP     ER20            /NONE ACTIVE-TERMINATE.
02212 R 101242 R            JMS     SETNXT          /SET THIS HANDLER
02213 R 101513 R            JMS     CLRDIS          /CLEAR PARAMETERS
02214 R 207521 R            LAC     (1)
02215 R 047446 R            DAC     HANCNT
02216 R 102255 R            JMS     GENWRT          /GENERATE WRITE COMMAND.
02217 R 102274 R            JMS     CLBM1           /CLEAR WRITE BUFFER TO ALL 1'S
02220 R 207465 R            LAC     RANLEN          /SET NUMBER OF CYCLES TO 300
02221 R 047515 R            DAC     TS1.2#          /OCTAL.
02222 R 207576 R            LAC     (BUF1-1)
02223 R 060070 R            DAC*    CA
02224 R 207466 R            LAC     RECLEN
02225 R 060071 R            DAC*    WC
02226 R 102307 R    TST1.3  JMS     HOLD
02227 R 102543 R            JMS     TRNCMD
02230 R 602665 R            JMP     ER20            /HANDLER NOT READY ERROR.
02231 R 600306 R            JMP     EXIT
02232 R 000000 A    TST1.2  0
02233 R 100661 R            JMS     CHKOPR          /CHECK OPERATION
02234 R 200110 R            LAC     SVSTAT
02235 R 507564 R            AND     (4000)
02236 R 740200 A            SZA
02237 R 602242 R            JMP     .+3
02240 R 447515 R            ISZ     TS1.2           /COUNT END
02241 R 602226 R            JMP     TST1.3          /NOT END
02242 R 200044 R            LAC     REWND1
02243 R 360077 R            TAD*    HANNUM
02244 R 060067 R            DAC*    CMD
02245 R 101513 R            JMS     CLRDIS
02246 R 102543 R            JMS     TRNCMD
02247 R 602665 R            JMP     ER20
02250 R 207603 R            LAC     (TST1.4)
02251 R 040115 R            DAC     DISTSW
02252 R 600306 R            JMP     EXIT
02253 R 000000 A    TST1.4  0
02254 R 622204 R            JMP*    TST1.1
                            .EJECT
```

```
                        /GENERATE A WRITE COMMAND
                        /
02255 R 000000 A    GENWRT  0
02256 R 200036 R            LAC     WRITE           /GET WRITE COMMAND
02257 R 360077 R            TAO*    HANNUM          /SET HANDLER NUMBER,
02260 R 360075 R            TAO*    DENPAR          /DENSITY AND PARITY AND
02261 R 060067 R            DAC*    CMD             /SET IN COMMAND.
02262 R 207576 R            LAC     (BUF1-1)
02263 R 060070 R            DAC*    CA
02264 R 200061 R            LAC     CKWRT           /SET CHECK WRITE POINTER.
02265 R 060072 R            DAC*    CHKPTR
02266 R 207565 R            LAC     (4)
02267 R 100621 R            JMS     GET
02270 R 000116 R            .DSA    NONTAB
02271 R 060076 R            DAC*    NONSEN
02272 R 460100 R            ISZ*    CMDCNT          /INCREMENT COMMAND COUNT.
02273 R 622255 R            JMP*    GENWRT          /EXIT.
                        /
                        /CLEAR BUFFER TO MINUS ONES.
                        /
02274 R 000000 A    CLBM1   0
02275 R 207604 R            LAC     (BUF1)
02276 R 047434 R            DAC     CLBM.1#
02277 R 774000 A            LAW     -BUFSIZ
02300 R 047435 R            DAC     CLBM.2#
02301 R 207460 R            LAC     PATTEN
02302 R 067434 R            DAC*    CLBM.1
02303 R 447434 R            ISZ     CLBM.1
02304 R 447435 R            ISZ     CLBM.2
02305 R 602302 R            JMP     .-3
02306 R 622274 R            JMP*    CLBM1
                        /
02307 R 000000 A    HOLD    0
02310 R 750004 A            LAS
02311 R 507521 R            AND     (1)
02312 R 741200 A            SNA
02313 R 622307 R            JMP*    HOLD
02314 R 100433 R            JMS     BREAK
02315 R 602310 R            JMP     .-5
                            .EJECT
```

```
                        /**********************************************************************
                        /WRITE EXERCISER
                        /
02316 R 000000 A    TEST1   0
02317 R 207521 R            LAC     (1)
02320 R 047514 R            DAC     TSTNO
02321 R 102204 R            JMS     TST1.1
02322 R 600367 R            JMP     TERMIN
                        /
                        /**** WRITE-READ EXERCISER
                        /
02323 R 000000 A    TEST2   0
02324 R 207547 R            LAC     (2)             /SET TEST NO. TO 2.
02325 R 047514 R            DAC     TSTNO
02326 R 102204 R            JMS     TST1.1          /WRITE RECORDS.
02327 R 750001 A            CLC
02330 R 347515 R            TAD     TS1.2
02331 R 740001 A            CMA
02332 R 347465 R            TAD     RANLEN
02333 R 047516 R            DAC     TS2.1#
02334 R 102336 R            JMS     TST2.1          /READ RECORDS.
02335 R 602327 R            JMP     .-6
                        /
                        /**********************************************************************
                        /WRITE-READ EXERCISER TEST
                        /
02336 R 000000 A    TST2.1  0                       /ASSUMES EXECUTION OF TST1.1
02337 R 102625 R            JMS     GENRD           /GENERATE A READ COM.
02340 R 207605 R            LAC     (TST2.2)        /SET DISTRIBUTION SWITCH.
02341 R 040115 R            DAC     DISTSW
02342 R 102307 R    TST2.3  JMS     HOLD
02343 R 102543 R            JMS     TRNCMD          /TRANSMIT COMMAND.
02344 R 602665 R            JMP     ER20            /HANDLER NOT READY.
02345 R 600306 R            JMP     EXIT            /EXIT.
02346 R 000000 A    TST2.2  0
02347 R 100661 R            JMS     CHKOPR          /CHECK OPERATION
02350 R 200110 R            LAC     SVSTAT
02351 R 507564 R            AND     (4000)
02352 R 740200 A            SZA
02353 R 602356 R            JMP     .+3
02354 R 447516 R            ISZ     TS2.1           /COUNT CYCLES,
02355 R 602342 R            JMP     TST2.3          /NOT DONE, REPEAT.
02356 R 200044 R            LAC     REWND1
02357 R 360077 R            TAD*    HANNUM
02360 R 060067 R            DAC*    CMD
02361 R 101513 R            JMS     CLRDIS
02362 R 102543 R            JMS     TRNCMD          /TRANSMIT IT.
02363 R 602665 R            JMP     ER20            /HANDLER NOT READY.
02364 R 207606 R            LAC     (TST2.4)        /SET DISTRIBUTION SWITCH.
02365 R 040115 R            DAC     DISTSW
02366 R 600306 R            JMP     EXIT            /EXIT.
02367 R 000000 A    TST2.4  0                       /DONE REWINDING, RETURN.
02370 R 622336 R            JMP*    TST2.1
```

```
.EJECT
```

```
                        /*****************************************************************
                        /
02371 R 000000 A    TEST3   0
02372 R 207607 R            LAC     (3)
02373 R 047514 R            DAC     TSTNO           /SET TEST NUMBER.
02374 R 102376 R            JMS     TST3.1          /GO TO TEST
02375 R 600367 R            JMP     TERMIN          /EXIT, END OF TEST.
                        /
02376 R 000000 A    TST3.1  0
02377 R 147446 R            DZM     HANCNT          /SEGMENT 1, INIT., CLR HANDLER CNT.
02400 R 207610 R            LAC     (TST3.3)
02401 R 040115 R            DAC     DISTSW
02402 R 100513 R            JMS     POLINT
02403 R 100525 R    TST3.7  JMS     POLHAN
02404 R 602665 R            JMP     ER20
02405 R 447446 R            ISZ     HANCNT
02406 R 047517 R            DAC     TS3.1#
02407 R 207446 R            LAC     HANCNT
02410 R 547521 R            SAD     (1)
02411 R 741000 A            SKP
02412 R 602416 R            JMP     TST3.6
02413 R 207517 R            LAC     TS3.1
02414 R 047447 R            DAC     HANNO1#
02415 R 602403 R            JMP     TST3.7
02416 R 207517 R    TST3.6  LAC     TS3.1
02417 R 047450 R            DAC     HANNO2#
02420 R 101242 R            JMS     SETNXT
02421 R 101513 R            JMS     CLRDIS
02422 R 207447 R            LAC     HANNO1
02423 R 101242 R            JMS     SETNXT
02424 R 101513 R            JMS     CLRDIS
02425 R 102274 R            JMS     CLBM1
02426 R 102255 R            JMS     GENWRT
02427 R 207465 R            LAC     RANLEN
02430 R 047517 R            DAC     TS3.1
02431 R 102307 R    TST3.4  JMS     HOLD
02432 R 101624 R            JMS     RANGEN
02433 R 507557 R            AND     (7)
02434 R 100621 R            JMS     GET
02435 R 000141 R            .DSA    RECTAB
02436 R 740001 A            CMA
02437 R 347521 R            TAD     (1)
02440 R 060071 R            DAC*    WC
02441 R 102543 R            JMS     TRNCMD
02442 R 602665 R            JMP     ER20
02443 R 600306 R            JMP     EXIT
                            .EJECT
```

```
02444 R 000000 A    TST3.3  0
02445 R 100661 R            JMS     CHKOPR
02446 R 200110 R            LAC     SVSTAT
02447 R 507564 R            AND     (4000)
02450 R 740200 A            SZA
02451 R 602454 R            JMP     .+3
02452 R 447517 R            ISZ     TS3.1
02453 R 602431 R            JMP     TST3.4
02454 R 200044 R            LAC     REWND1
02455 R 360077 R            TAD*    HANNUM
02456 R 060067 R            DAC*    CMD
02457 R 101513 R            JMS     CLRDIS
02460 R 102543 R            JMS     TRNCMD
02461 R 602665 R            JMP     ER20
02462 R 207611 R            LAC     (TST3.5)
02463 R 040115 R            DAC     DISTSW
02464 R 750001 A            CLC
02465 R 347517 R            TAD     TS3.1
02466 R 740001 A            CMA
02467 R 347465 R            TAD     RANLEN
02470 R 047517 R            DAC     TS3.1
02471 R 600306 R            JMP     EXIT
                    /
02472 R 000000 A    TST3.5  0
02473 R 102307 R            JMS     HOLD
02474 R 207447 R            LAC     HANN01
02475 R 101242 R            JMS     SETNXT
02476 R 207612 R            LAC     (TST3.8)
02477 R 040115 R            DAC     DISTSW
02500 R 102625 R            JMS     GENRD
02501 R 102543 R            JMS     TRNCMD
02502 R 602665 R            JMP     ER20
02503 R 600306 R            JMP     EXIT
                            .EJECT
```

```
02504 R 000000 A    TST3.8  0
02505 R 100661 R            JMS     CHKOPR
02506 R 200110 R            LAC     SVSTAT
02507 R 507564 R            AND     (4000)
02510 R 740200 A            SZA
02511 R 602542 R            JMP     TST3.2
02512 R 102307 R            JMS     HOLD
02513 R 207450 R            LAC     HANNO2
02514 R 101242 R            JMS     SETNXT
02515 R 207613 R            LAC     (TST3.9)
02516 R 040115 R            DAC     DISTSW
02517 R 102255 R            JMS     GENWRT
02520 R 750001 A            CLC
02521 R 340112 R            TAD     SVWC
02522 R 740001 A            CMA
02523 R 340163 R            TAD     MAXBUF
02524 R 741200 A            SNA
02525 R 602664 R            JMP     ER17
02526 R 060071 R            DAC*    WC
02527 R 102543 R            JMS     TRNCMD
02530 R 602665 R            JMP     ER20
02531 R 600306 R            JMP     EXIT
                            /
02532 R 000000 A    TST3.9  0
02533 R 100661 R            JMS     CHKOPR
02534 R 200110 R            LAC     SVSTAT
02535 R 507564 R            AND     (4000)
02536 R 740200 A            SZA
02537 R 602542 R            JMP     TST3.2
02540 R 447517 R            ISZ     TS3.1
02541 R 602473 R            JMP     TST3.5+1
                            /
02542 R 622376 R    TST3.2  JMP*    TST3.1
                            .EJECT
```

```
                        /TRANSMIT COMMAND TO HANDLER.
                        /
02543 R 000000 A    TRNCMD  0
02544 R 220071 R            LAC*    WC              /TRANSMIT COMMAND SUBROUTINE.
02545 R 060114 R            DAC*    SYSWC           /LOAD WC AND CURRENT ADR.
02546 R 220070 R            LAC*    CA              /FROM OPR TAB.
02547 R 060113 R            DAC*    SYSCA
02550 R 220067 R            LAC*    CMD             /THEN, GET CURRENT COMMAND
02551 R 707321 A            MTCR                    /AND CHECK CONTROLLER.
02552 R 602551 R            JMP     .-1             /NOT READY, ERROR AND TERMIN.
02553 R 707326 A            MTLC                    /READY, LOAD COMMAND AND
02554 R 707352 A            MTRS
02555 R 507534 R            AND     (10)
02556 R 745200 A            SNA!CLL
02557 R 602573 R            JMP     TRNC.1
02560 R 200000 R            LAC     UODSW
02561 R 507614 R            AND     (3000)
02562 R 547614 R            SAD     (3000)
02563 R 602573 R            JMP     TRNC.1
02564 R 742020 A            RTR
02565 R 740020 A            RAR
02566 R 047504 R            DAC     SVPAR#
02567 R 707312 A            MTRC
02570 R 507615 R            AND     (777477)
02571 R 247504 R            XOR     SVPAR
02572 R 707326 A            MTLC
02573 R 102072 R    TRNC.1  JMS     CHKHAN          /CHECK HANDLER
02574 R 622543 R            JMP*    TRNCMD          /NEED ANOTHER HANDLER,
02575 R 102307 R            JMS     HOLD
02576 R 707304 A            MTGO                    /OK, SET GO.
02577 R 442543 R            ISZ     TRNCMD
02600 R 622543 R            JMP*    TRNCMD
                            .EJECT
```

```
                        /BUFFER RANDOM DATA GENERATION ROUTINE
                        /
02601 R 000000 A    BUFGEN  0
02602 R 777740 A            LAW     -40
02603 R 047420 R            DAC     BUF.1#          /FORTY OCTAL LOCATIONS PER
02604 R 101624 R            JMS     RANGEN          /ENTRY
02605 R 741200 A            SNA
02606 R 602604 R            JMP     .-2
02607 R 067421 R            DAC*    BUF.2#
02610 R 447421 R            ISZ     BUF.2
02611 R 447422 R            ISZ     BUF.3#
02612 R 741000 A            SKP
02613 R 102617 R            JMS     RESBUF
02614 R 447420 R            ISZ     BUF.1
02615 R 602604 R            JMP     .-11
02616 R 622601 R            JMP*    BUFGEN
                        /
02617 R 000000 A    RESBUF  0
02620 R 774000 A            LAW     -BUFSIZ
02621 R 047422 R            DAC     BUF.3
02622 R 207604 R            LAC     (BUF1)
02623 R 047421 R            DAC     BUF.2
02624 R 622617 R            JMP*    RESBUF
                        /
                        /
                        /
02625 R 000000 A    GENRD   0                       /GENERATE READ
02626 R 200034 R            LAC     READ
02627 R 360077 R            TAD*    HANNUM
02630 R 360075 R            TAD*    DENPAR
02631 R 060067 R            DAC*    CMD
02632 R 207576 R            LAC     (BUF1-1)
02633 R 060070 R            DAC*    CA
02634 R 200163 R            LAC     MAXBUF
02635 R 060071 R            DAC*    WC
02636 R 200057 R            LAC     CKREAD
02637 R 060072 R            DAC*    CHKPTR
02640 R 207547 R            LAC     (2)
02641 R 100621 R            JMS     GET
02642 R 000116 R            .DSA    NONTAB
02643 R 060076 R            DAC*    NONSEN
02644 R 460100 R            ISZ*    CMDCNT
02645 R 622625 R            JMP*    GENRD
                            .EJECT
```

```
                        /**********************************************************************
                        /ERROR DECODER AND PROCESSOR.
                        /                                   /POSSIBLE ERRORS------
02646 R 102671 R    ER01    JMS     ERR00                   /CONTROLLER NOT READY AT INITIATION.
02647 R 102677 R    ER02    JMS     ERR01                   /SELECTED TRANSPORT NOT READY AT INIT.
02650 R 102723 R    ER03    JMS     ERR02                   /ILLEGAL COMMAND RETURN.
02651 R 102723 R    ER04    JMS     ERR02                   /EF HIGH, NO CAUSE BITS HIGH.
02652 R 102723 R    ER05    JMS     ERR02                   /NONSENSE BITS HIGH FOR THIS CMD.
02653 R 102727 R    ER06    JMS     ERR03                   /BAD TAPE ERROR-INITIATE RECOVERY.
02654 R 601144 R    ER07    JMP     ER07,1                  /PARITY ERROR.
02655 R 102723 R    ER10    JMS     ERR02                   /DATA REQUEST LATE ERROR.
02656 R 102723 R    ER11    JMS     ERR02                   /WC--CA ERROR ON READ.
02657 R 102723 R    ER12    JMS     ERR02                   /WC--INCORRECT LENGTH BIT ERROR.
02660 R 102723 R    ER13    JMS     ERR02                   /WC--CA ERROR ON WRITE.
02661 R 102723 R    ER14    JMS     ERR02                   /WC NON-ZER0 AFTER WRITE
02662 R 102723 R    ER15    JMS     ERR02                   /EOF BIT NOT SET AFTER WRITE.
02663 R 102671 R    ER16    JMS     ERR00                   /ILLEGAL ENTRY TO MAG. TAPE.
02664 R 102671 R    ER17    JMS     ERR00                   /NOT BOT AND CNTR=0.
02665 R 102671 R    ER20    JMS     ERR00                   /ALL OUT OF HANDLERS
02666 R 102733 R    ER21    JMS     ERR04
02667 R 102733 R    ER22    JMS     ERR04
02670 R 102733 R    ER23    JMS     ERR04
                        /
02671 R 000000 A    ERR00   0
02672 R 103075 R            JMS     ERNUM               /CONTROLLER NOT READY
02673 R 777777 A            LAW     -1
02674 R 047441 R            DAC     DONE
02675 R 103135 R            JMS     ENDPUT              /SET ERROR NUMBER AND SYSERR
02676 R 600367 R            JMP     TERMIN              /FLAG AND TERMINATE.
                        /
02677 R 000000 A    ERR01   0                           /TRANSPORT NOT READY, SET ER.NUM.,
02700 R 103075 R            JMS     ERNUM               /HANDLER NUM., COMMAND, AND SYSERR
02701 R 220067 R            LAC*    CMD
02702 R 103130 R            JMS     PUT
02703 R 200065 R            LAC     THSHAN
02704 R 100621 R            JMS     GET                 /DE-ACTIVATE THIS
02705 R 000131 R            .DSA    MSKTAB              /HANDLER.
02706 R 500161 R            AND     ACTIVE
02707 R 040161 R            DAC     ACTIVE
02710 R 103135 R            JMS     ENDPUT              /DECREMENT HANDLER COUNT AND
02711 R 750001 A            CLC                         /CHECK FOR NO MORE LEFT AND
02712 R 347446 R            TAD     HANCNT              /NONE REWINDING.
02713 R 047446 R            DAC     HANCNT
02714 R 740200 A            SZA
02715 R 622072 R            JMP*    CHKHAN
02716 R 200162 R            LAC     ANRWD               /CHECK FOR
02717 R 740001 A            CMA                         /ANY REWINDING.
02720 R 740200 A            SZA
02721 R 622072 R            JMP*    CHKHAN              /YES, CONTINUE.
02722 R 602665 R            JMP     ER20                /NO. TERMINATE
                            .EJECT
```

```
02723 R 000000 A   ERR02   0                       /OTHER ERRORS, SET ERROR NUMBER
02724 R 103075 R           JMS     ERNUM
02725 R 103050 R   ERR2.1  JMS     ERRPUT          /THEN SET REMAINING PARAMETERS.
02726 R 602771 R           JMP     ERR.1
                   /
02727 R 000000 A   ERR03   0                       /BAD TAPE ERROR, SET ERROR
02730 R 103075 R           JMS     ERNUM
02731 R 103050 R           JMS     ERRPUT          /NUMBER, THEN REMAINING PAPAMETERS
02732 R 603001 R           JMP     BADTAP          /AND FINALLY BAD TAPE SPECIAL SEQ.
02733 R 000000 A   ERR04   0
02734 R 202733 R           LAC     ERR04
02735 R 042742 R           DAC     ERR4.2
02736 R 207514 R           LAC     TSTNO
02737 R 741200 A           SNA
02740 R 602743 R           JMP     ERR4.1
02741 R 620666 R           JMP*    CKSR2
02742 R 000000 A   ERR4.2  0
02743 R 103075 R   ERR4.1  JMS     ERNUM
02744 R 220067 R           LAC*    CMD
02745 R 103130 R           JMS     PUT
02746 R 200110 R           LAC     SVSTAT
02747 R 103130 R           JMS     PUT
02750 R 220073 R           LAC*    CNTR
02751 R 103130 R           JMS     PUT
02752 R 203414 R           LAC     BUF1
02753 R 103130 R           JMS     PUT
02754 R 203415 R           LAC     BUF1+1
02755 R 103130 R           JMS     PUT
02756 R 207564 R           LAC     (BUFSIZ
02757 R 340112 R           TAD     SVWC
02760 R 103130 R           JMS     PUT
02761 R 207444 R           LAC     ERR.22
02762 R 103130 R           JMS     PUT
02763 R 103135 R           JMS     ENDPUT
02764 R 460073 R           ISZ*    CNTR
02765 R 740000 A           NOP
02766 R 220073 R           LAC*    CNTR
02767 R 060074 R           DAC*    CNTW
02770 R 600647 R           JMP     RANTS6
                   /
02771 R 103135 R   ERR.1   JMS     ENDPUT          /CLOSE PUT ROUTINE, IF SECOND ERROR
02772 R 207514 R           LAC     TSTNO
02773 R 740200 A           SZA
02774 R 620661 R           JMP*    CHKOPR
02775 R 207443 R           LAC     ERN.1
02776 R 547607 R           SAD     (3)
02777 R 600647 R           JMP     RANTS6
03000 R 620661 R           JMP*    CHKOPR          /ENDPUT RETURNS TO SELECT NEXT OPER.
                   .EJECT
```

```
03001 R 740000 A   BADTAP  NOP                  /BAD TAPE SEQUENCE. PERFORMED
03002 R 200041 R           LAC      SPCREV       /IN THE EVENT OF A BAD TAPE
03003 R 360075 R           TAD*     DENPAR       /ERROR. THE SEQUENCE IS AS
03004 R 360077 R           TAD*     HANNUM       /FOLLOWS. A FORCED BACKWARD
03005 R 060067 R           DAC*     CMD          /SPACE IS ARTIFICIALLY SET AS
03006 R 200115 R           LAC      DISTSW
03007 R 047470 R           DAC      SAVDIS
03010 R 207616 R           LAC      (BDTAP1)     /THE NEST OPERATION FOR THIS
03011 R 040115 R           DAC      DISTSW       /HANDLER.
03012 R 777777 A           LAW      -1
03013 R 060071 R           DAC*     WC
03014 R 103135 R           JMS      ENDPUT       /SET SPECIAL SEQUENCE SWITCH TO
03015 R 102543 R           JMS      TRNCMD       /AVOID SELECT NXT OP FOR THIS HANDLER.
03016 R 603044 R           JMP      BDTAP3
03017 R 600306 R           JMP      EXIT
                   /
03020 R 000000 A   BDTAP1  0                    /SECOND PORTION OF BAD TAPE
03021 R 200042 R           LAC      WRTEXT       /SEQUENCE, FORCE AN EXTENDED
03022 R 360075 R           TAD*     DENPAR       /WRITE
03023 R 360077 R           TAD*     HANNUM
03024 R 060067 R           DAC*     CMD
03025 R 200163 R           LAC      MAXBUF
03026 R 060071 R           DAC*     WC
03027 R 207576 R           LAC      (BUF1-1)
03030 R 060070 R           DAC*     CA
03031 R 207617 R           LAC      (BDTAP2)
03032 R 040115 R           DAC      DISTSW
03033 R 200061 R           LAC      CKWRT        /SET CHECK POINTER AS FOR A
03034 R 060072 R           DAC*     CHKPTR       /NORMAL WRITE.
03035 R 102543 R           JMS      TRNCMD       /RETURN TO NORMAL SEQUENCE.
03036 R 603044 R           JMP      BDTAP3
03037 R 600306 R           JMP      EXIT
                   /
03040 R 000000 A   BDTAP2  0
03041 R 207470 R           LAC      SAVDIS
03042 R 040115 R           DAC      DISTSW
03043 R 600642 R           JMP      RANTST+1
                   /
03044 R 207514 R   BDTAP3  LAC      TSTNO
03045 R 547524 R           SAD      (0)
03046 R 600650 R           JMP      RANTS3
03047 R 600367 R           JMP      TERMIN
                           .EJECT
```

```
03050 R 000000 A  ERRPUT  0
03051 R 220067 R          LAC*    CMD             /SET INITIAL COMMAND.
03052 R 103130 R          JMS     PUT
03053 R 200022 R          LAC     ERCODE
03054 R 507557 R          AND     (7)
03055 R 547557 R          SAD     (7)
03056 R 741000 A          SKP
03057 R 603062 R          JMP     .+3
03060 R 207503 R          LAC     SSVTAT
03061 R 741000 A          SKP
03062 R 200110 R          LAC     SVSTAT          /SET RESULTING STATUS.
03063 R 103130 R          JMS     PUT
03064 R 220071 R          LAC*    WC              /SET INITIAL WORD COUNT.
03065 R 103130 R          JMS     PUT
03066 R 200112 R          LAC     SVWC            /SET FINAL WORD COUNT.
03067 R 103130 R          JMS     PUT
03070 R 220070 R          LAC*    CA              /SET INITIAL CURRENT ADDRESS.
03071 R 103130 R          JMS     PUT
03072 R 200111 R          LAC     SVCA            /SET FINAL CURRENT ADDRESS.
03073 R 103130 R          JMS     PUT
03074 R 623050 R          JMP*    ERRPUT          /RETURN.
                  /
                  /ROUTINE FOR DETERMINING ERROR NUMBER.
03075 R 000000 A  ERNUM   0
03076 R 203075 R          LAC     ERNUM           /GET ERROR ENTRY ADDRESS AND
03077 R 507620 R          AND     (77777)
03100 R 347621 R          TAD     (-2)            /FORM:
03101 R 047443 R          DAC     ERN,1#          /(ERR. ADR.-BASE ADR.)=ER.NUM.
03102 R 750001 A          CLC
03103 R 347622 R          TAD     (ER01)
03104 R 740001 A          CMA
03105 R 367443 R          TAD*    ERN,1
03106 R 507620 R          AND     (77777)
03107 R 047443 R          DAC     ERN,1
03110 R 103112 R          JMS     RESPUT          /SET ERROR NUMBER IN PROPER TABLE.
03111 R 623075 R          JMP*    ERNUM           /RETURN.
                          .EJECT
```

```
                        /PUT ROUTINE, PLACES ERROR PARAMETERS IN SUCCESSIVE LOCS, IN PROPER
                        /ERROR TABLE FOR MONITOR.
                        /
03112 R 000000 A    RESPUT  0
03113 R 200020 R            LAC     SYSERR          /GET SECOND ERROR FLAG, IS IT ON?
03114 R 740200 A            SZA
03115 R 603122 R            JMP     PUTS.1          /YES, THIS IS SECOND ERROR.
03116 R 207443 R            LAC     ERN.1           /NO, FIRST ERROR. GET ERROR NUMBER.
03117 R 040022 R            DAC     ERCODE          /SET ERROR NUMBER.
03120 R 207623 R            LAC     (ERCODE+1)      /SET START PUTAWAY ADDRESS.
03121 R 603125 R            JMP     PUTS.2
03122 R 207443 R    PUTS.1  LAC     ERN.1
03123 R 040175 R            DAC     SAVERR          /SET ERROR NUMBER.
03124 R 207624 R            LAC     (SAVERR+1)
03125 R 047462 R    PUTS.2  DAC     PUT.1#          /SET START PUTAWAY ADR.
03126 R 147463 R            DZM     PUT.2#          /CLEAR PARAMETER COUNTER.
03127 R 623112 R            JMP*    RESPUT          /EXIT.
03130 R 000000 A    PUT     0                       /PUT SUBROUTINE, DEPOSITS PARAMETERS
03131 R 067462 R            DAC*    PUT.1           /IN SUCCESSIVE LOCS.
03132 R 447462 R            ISZ     PUT.1
03133 R 447463 R            ISZ     PUT.2
03134 R 623130 R            JMP*    PUT
03135 R 000000 A    ENDPUT  0
03136 R 447463 R            ISZ     PUT.2
03137 R 200020 R            LAC     SYSERR          /CHECK SECOND ERROR FLAG.
03140 R 740200 A            SZA
03141 R 603160 R            JMP     PUTS.3          /ON, THIS WAS SECOND ERROR.
03142 R 207463 R            LAC     PUT.2           /OFF, THIS WAS FIRST ERROR.
03143 R 740001 A            CMA
03144 R 347521 R            TAD     (1)
03145 R 040021 R            DAC     ERCODE-1        /SET PARAMETER COUNT IN
03146 R 207441 R            LAC     DONE
03147 R 741200 A            SNA
03150 R 603155 R            JMP     ENDP.1
03151 R 777776 A            LAW     -2
03152 R 040020 R            DAC     SYSERR
03153 R 600306 R            JMP     EXIT
                            .EJECT
```

```
03154 R 600367 R    DON.1   JMP     TERMIN
03155 R 207625 R    ENDP.1  LAC     (-1)            /NORMAL ERROR TABLE, SET
03156 R 040020 R            DAC     SYSERR          /SYSERR TO -1 FOR MONITOR.
03157 R 623135 R            JMP*    ENDPUT          /EXIT.
03160 R 207463 R    PUTS.3  LAC     PUT.2           /THIS IS SECOND ERROR, SET
03161 R 740001 A            CMA
03162 R 347521 R            TAD     (1)
03163 R 040174 R            DAC     SAVERR-1        /PARAMETER COUNT, SET ERROR
03164 R 777777 A            LAW     -1              /SWITCH TO MOVE PARAMETERS,
03165 R 047457 R            DAC     MOVERR          /SET -2 FOR MONITOR IN
03166 R 207621 R            LAC     (-2)            /SYSERR AND
03167 R 040020 R            DAC     SYSERR
03170 R 707322 A            MTAF
03171 R 600306 R            JMP     EXIT            /EXIT TO MONITOR, NO NEW I/O.
03172 R 000000 A    MOVPUT  0
03173 R 200174 R            LAC     SAVERR-1        /GET PARAMETER COUNT +1 AND
03174 R 347625 R            TAD     (-1)            /SET FOR MOVE.
03175 R 047462 R            DAC     PUT.1
03176 R 207626 R            LAC     (SAVERR-1)      /SET--FROM--ADDRESS
03177 R 047463 R            DAC     PUT.2
03200 R 207627 R            LAC     (ERCODE-1)      /SET--TO--ADDRESS
03201 R 047464 R            DAC     PUT.3#
03202 R 227463 R    PUTS.4  LAC*    PUT.2           /MAKE THE MOVE OF ERROR
03203 R 067464 R            DAC*    PUT.3           /PARAMETERS.
03204 R 447463 R            ISZ     PUT.2
03205 R 447464 R            ISZ     PUT.3
03206 R 447462 R            ISZ     PUT.1
03207 R 603202 R            JMP     PUTS.4
03210 R 777777 A            LAW     -1              /DONE WITH MOVE.
03211 R 040020 R            DAC     SYSERR
03212 R 147457 R            DZM     MOVERR          /RESET MOVE ERROR SWITCH.
03213 R 623135 R            JMP*    ENDPUT          /GO TO INITIATE NEW I/O.
                            /
                    /OPERATION TABLE, ENTRIES BY HANDLER
03214 R         A   OPRTAB  .BLOCK  NUMHAN*NUMPAR   /CONTAINS-------------
                                                    /COMMAND
                                                    /CURRENT ADDRESS
                                                    /WORD COUNT
                                                    /CHECK ROUTINE POINTER FOR THIS CMD.
                                                    /CNTR
                                                    /CNTW
                                                    /CURRENT DENSITY AND PARITY.
                                                    /NINETRACK HANDLER.
                                                    /ACTIVE - INACTIVE
                                                    /REWINDING - NOT REWINDING.
                    /
                    /INPUT-OUTPUT BUFFERS
                    /
03414 R         A   BUF1    .BLOCK  BUFSIZ          /BUFFER1.
07414 R 000000 A    ENDBUF  0
                            .EJECT
```

```
                000000 R          .END    UODSW
     07520 R 377777 A *L
     07521 R 000001 A *L
     07522 R 100000 A *L
     07523 R 000300 A *L
     07524 R 000000 A *L
     07525 R 000100 A *L
     07526 R 000200 A *L
     07527 R 400000 A *L
     07530 R 776000 A *L
     07531 R 777774 A *L
     07532 R 000641 R *L
     07533 R 000151 R *L
     07534 R 000010 A *L
     07535 R 177777 A *L
     07536 R 000615 R *L
     07537 R 700000 A *L
     07540 R 200000 A *L
     07541 R 777600 A *L
     07542 R 003214 R *L
     07543 R 010000 A *L
     07544 R 774000 A *L
     07545 R 001000 A *L
     07546 R 003415 R *L
     07547 R 000002 A *L
     07550 R 040000 A *L
     07551 R 137600 A *L
     07552 R 000400 A *L
     07553 R 020000 A *L
     07554 R 001116 R *L
     07555 R 001157 R *L
     07556 R 001171 R *L
     07557 R 000007 A *L
     07560 R 000070 R *L
     07561 R 007000 A *L
     07562 R 006000 A *L
     07563 R 002000 A *L
     07564 R 004000 A *L
     07565 R 000004 A *L
     07566 R 000005 A *L
     07567 R 000077 A *L
     07570 R 000006 A *L
     07571 R 040300 A *L
     07572 R 770000 A *L
     07573 R 001673 R *L
     07574 R 001663 R *L
     07575 R 766000 A *L
     07576 R 003413 R *L
     07577 R 002014 R *L
     07600 R 002132 R *L
     07601 R 000164 R *L
     07602 R 002232 R *L
     07603 R 002253 R *L
```

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07604 R 003414 R *L
07605 R 002346 R *L
07606 R 002367 R *L
07607 R 000003 A *L
07610 R 002444 R *L
07611 R 002472 R *L
07612 R 002504 R *L
07613 R 002532 R *L
07614 R 003000 A *L
07615 R 777477 A *L
07616 R 003020 R *L
07617 R 003040 R *L
07620 R 077777 A *L
07621 R 777776 A *L
07622 R 002646 R *L
07623 R 000023 R *L
07624 R 000176 R *L
07625 R 777777 A *L
07626 R 000174 R *L
07627 R 000021 R *L
        SIZE=07642      NO ERROR LINES
```

ACSAVE	07415	R	ACTIVE	00161	R	ANRWD	00162	R	APIFLG	07416	R
BADTAP	03001	R	BDTAP1	03020	R	BDTAP2	03040	R	BDTAP3	03044	R
BREAK	00433	R	BREAK1	00451	R	BRKAC	07417	R	BUFGEN	02601	R
BUFSIZ	004000	A	BUF.1	07420	R	BUF.2	07421	R	BUF.3	07422	R
BUF1	03414	R	CA	00070	R	CHKCOM	01032	R	CHKC.1	01045	R
CHKC.2	01057	R	CHKHAN	02072	R	CHKOPR	00661	R	CHKPTR	00072	R
CHKTAB	000055	R	CHK.1	07423	R	CKNOOP	00055	R	CKO.1	07424	R
CKRDCM	00060	R	CKREAD	00057	R	CKRWD	02023	R	CKRWND	00056	R
CKRW.1	02045	R	CKRW.2	02034	R	CKSPBK	00064	R	CKSPFD	00063	R
CKSR.4	00717	R	CKSR2	00666	R	CKSR4	01000	R	CKSR5	01015	R
CKSR6	01024	R	CKSR7	01027	R	CKS.1	07425	R	CKS.2	07426	R
CKS.3	07427	R	CKS2.1	07430	R	CKS2.2	00743	R	CKS2.3	00752	R
CKWRT	00061	R	CKWTEF	00062	R	CKW.1	07431	R	CKW.2	07432	R
CKW.3	07433	R	CLBM.1	07434	R	CLBM.2	07435	R	CLBM1	02274	R
CLOPTB	00627	R	CLOP.1	00634	R	CLO.1	07436	R	CLO.2	07437	R
CLRDIS	01513	R	CLRRWD	02057	R	CMD	00067	R	CMDCNT	00100	R
CMDDIS	01537	R	CMDD.1	01556	R	CMDD.2	01562	R	CMDD.5	01566	R
CMDD.6	01600	R	CMDD.7	01612	R	CMDSKL	000032	R	CMD.1	07440	R
CNTR	00073	R	CNTW	00074	R	CURHAN	00066	R	DENPAR	00075	R
DISTSW	00115	R	DLRETY	01224	R	DONE	07441	R	DON.1	03154	R
DOOVER	01116	R	DSTSW1	07442	R	EBA	707754	A	EEM	707702	A
ENDBUF	07414	R	ENDOPR	00356	R	ENDPUT	03135	R	ENDP.1	03155	R
EOFCNT	00101	R	EOFCON	00126	R	ERCODE	00022	R	ERNUM	03075	R
ERN.1	07443	R	ERRPUT	03050	R	ERR.1	02771	R	ERR.22	07444	R
ERR00	02671	R	ERR01	02677	R	ERR02	02723	R	ERR03	02727	R
ERR04	02733	R	ERR2.1	02725	R	ERR4.1	02743	R	ERR4.2	02742	R
ER01	02646	R	ER02	02647	R	ER03	02650	R	ER04	02651	R
ER05	02652	R	ER06	02653	R	ER07	02654	R	ER07.1	01144	R
ER10	02655	R	ER10.1	01105	R	ER11	02656	R	ER12	02657	R
ER13	02660	R	ER14	02661	R	ER15	02662	R	ER16	02663	R
ER17	02664	R	ER20	02665	R	ER21	02666	R	ER22	02667	R
ER23	02670	R	EXIT	00306	R	FIVTRY	01157	R	FIV.1	01171	R
FIV.2	01211	R	GENRD	02625	R	GENRWD	01505	R	GENWRT	02255	R
GET	00621	R	GET.1	07445	R	HANCNT	07446	R	HANDNM	00045	R
HANNO1	07447	R	HANNO2	07450	R	HANNUM	00077	R	HNDNUM	07451	R
HOLD	02307	R	INCRE	00604	R	INTOPR	01673	R	INTO.1	01722	R
INTO.3	01757	R	INTO.4	01731	R	INTO.5	01764	R	INTO.6	01727	R
INT.3	07452	R	INT.4	07453	R	INT.5	07454	R	INT.6	07455	R
LINK	07456	R	MAXBUF	00163	R	MINIT	00205	R	MINIT1	00224	R
MINI.1	00465	R	MINI.2	00507	R	MOVERR	07457	R	MOVPUT	03172	R
MPY	01263	R	MSERV	00301	R	MSKTAB	00131	R	MTAF	707322	A
MTCM	707324	A	MTCR	707321	A	MTGO	707304	A	MTLC	707326	A
MTRC	707312	A	MTRS	707352	A	MTSF	707341	A	MTTR	707301	A
NONSEN	00076	R	NONTAB	00116	R	NOOP	00032	R	NOOP1	00043	R
NUMHAN	000010	A	NUMPAR	000020	A	OPRTAB	03214	R	PARDRL	01064	R
PARD.2	01103	R	PARTAB	000067	R	PATTEN	07460	R	POLDON	07461	R
POLHAN	00525	R	POLH.2	00555	R	POLH.4	00562	R	POLH.5	00570	R
POLH.6	00615	R	POLH.7	00531	R	POLH.8	00577	R	POLH.9	00535	R
POLINT	00513	R	PUT	03130	R	PUTS.1	03122	R	PUTS.2	03125	R
PUTS.3	03160	R	PUTS.4	03202	R	PUT.1	07462	R	PUT.2	07463	R
PUT.3	07464	R	RANCNT	01660	R	RANCON	01661	R	RANDEX	01662	R
RANGEN	01624	R	RANINT	00456	R	RANLEN	07465	R	RANSAV	01657	R
RANTAD	01641	R	RANTBL	01663	R	RANTST	00641	R	RANTS2	00646	R

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RANTS3  00650 R    RANTS5  00651 R    RANTS6  00647 R    RDCNT   00102 R
RDCOMP  00035 R    READ    00034 R    RECLEN  07466 R    RECTAB  00141 R
RESBUF  02617 R    RESPUT  03112 R    REWIND  00033 R    REWND1  00044 R
RPTER7  01230 R    SAVCMD  07467 R    SAVDIS  07470 R    SAVEOP  00653 R
SAVERR  00175 R    SAVOLD  01126 R    SAVWC   07471 R    SELHAN  00164 R
SELTAB  02152 R    SELT.1  02160 R    SELT.2  02171 R    SELT.3  02175 R
SELT.4  02202 R    SEL.1   07472 R    SEL.2   07473 R    SETNXT  01242 R
SETN.1  01254 R    SETRWD  01772 R    SETR.1  02014 R    SET.1   07474 R
SET.2   07475 R    SLNO.0  01353 R    SLNO.1  01364 R    SLNO.2  01406 R
SLNO.3  01412 R    SLNO.4  01451 R    SLNO.6  01456 R    SLNO.7  01375 R
SLNO.8  01467 R    SLNO.9  01473 R    SLNO10  01434 R    SLNXHN  02104 R
SLNXOP  01344 R    SLNX.1  02137 R    SLNX.4  02132 R    SLNX.5  02105 R
SLN.1   07476 R    SLN.2   07477 R    SLN.3   07500 R    SLX.1   07501 R
SLX.2   07502 R    SPBCNT  00105 R    SPBCON  00130 R    SPCFWD  00040 R
SPCREV  00041 R    SPFCNT  00104 R    SPFCON  00127 R    SSVTAT  07503 R
SVCA    00111 R    SVCMD   00107 R    SVPAR   07504 R    SVSTAT  00110 R
SVWC    00112 R    SYSCA   00113 R    SYSERR  00020 R    SYSWC   00114 R
TERMIN  00367 R    TERM.1  00373 R    TERM.2  00403 R    TER.1   07505 R
TER.2   07506 R    TER.3   07507 R    TEST1   02316 R    TEST2   02323 R
TEST3   02371 R    THSHAN  00065 R    TKTBPT  07510 R    TOTPAR  07511 R
TOTRTY  07512 R    TRKTAB  00151 R    TRNCMD  02543 R    TRNC.1  02573 R
TSTCMD  07513 R    TSTFLG  00307 R    TSTF.1  00332 R    TSTF.2  00344 R
TSTF.3  00353 R    TSTF.4  00320 R    TSTF.5  00364 R    TSTNO   07514 R
TSTRUN 002000 A    TST1.1  02204 R    TST1.2  02232 R    TST1.3  02226 R
TST1.4  02253 R    TST2.1  02336 R    TST2.2  02346 R    TST2.3  02342 R
TST2.4  02367 R    TST3.1  02376 R    TST3.2  02542 R    TST3.3  02444 R
TST3.4  02431 R    TST3.5  02472 R    TST3.6  02416 R    TST3.7  02403 R
TST3.8  02504 R    TST3.9  02532 R    TS1.2   07515 R    TS2.1   07516 R
TS3.1   07517 R    UODSW   00000 R    UPDTCT  01270 R    UPDT.1  01306 R
UPDT.2  01321 R    UPDT.3  01337 R    UPDT.4  01331 R    WC      00071 R
WRITE   00036 R    WRTCNT  00103 R    WRTEOF  00037 R    WRTEXT  00042 R
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UODSW   00000 R   NUMHAN 000010 A   NUMPAR 000020 A   SYSERR  00020 R
ERCODE  00022 R   CMDSKL 000032 R   NOOP    00032 R   REWIND  00033 R
READ    00034 R   RDCOMP  00035 R   WRITE   00036 R   WRTEOF  00037 R
SPCFWD  00040 R   SPCREV  00041 R   WRTEXT  00042 R   NOOP1   00043 R
REWND1  00044 R   HANDNM  00045 R   CHKTAB 000055 R   CKNOOP  00055 R
CKRWND  00056 R   CKREAD  00057 R   CKRDCM  00060 R   CKWRT   00061 R
CKWTEF  00062 R   CKSPFD  00063 R   CKSPBK  00064 R   THSHAN  00065 R
CURHAN  00066 R   CMD      00067 R   PARTAB 000067 R   CA      00070 R
WC      00071 R   CHKPTR  00072 R   CNTR    00073 R   CNTW    00074 R
DENPAR  00075 R   NONSEN  00076 R   HANNUM  00077 R   CMDCNT  00100 R
EOFCNT  00101 R   RDCNT   00102 R   WRTCNT  00103 R   SPFCNT  00104 R
SPBCNT  00105 R   SVCMD   00107 R   SVSTAT  00110 R   SVCA    00111 R
SVWC    00112 R   SYSCA   00113 R   SYSWC   00114 R   DISTSW  00115 R
NONTAB  00116 R   EOFCON  00126 R   SPFCON  00127 R   SPBCON  00130 R
MSKTAB  00131 R   RECTAB  00141 R   TRKTAB  00151 R   ACTIVE  00161 R
ANRWD   00162 R   MAXBUF  00163 R   SELHAN  00164 R   SAVERR  00175 R
MINIT   00205 R   MINIT1  00224 R   MSERV   00301 R   EXIT    00306 R
TSTFLG  00307 R   TSTF.4  00320 R   TSTF.1  00332 R   TSTF.2  00344 R
TSTF.3  00353 R   ENDOPR  00356 R   TSTF.5  00364 R   TERMIN  00367 R
TERM.1  00373 R   TERM.2  00403 R   BREAK   00433 R   BREAK1  00451 R
RANINT  00456 R   MINI.1  00465 R   MINI.2  00507 R   POLINT  00513 R
POLHAN  00525 R   POLH.7  00531 R   POLH.9  00535 R   POLH.2  00555 R
POLH.4  00562 R   POLH.5  00570 R   POLH.8  00577 R   INCRE   00604 R
POLH.6  00615 R   GET      00621 R   CLOPTB  00627 R   CLOP.1  00634 R
RANTST  00641 R   RANTS2  00646 R   RANTS6  00647 R   RANTS3  00650 R
RANTS5  00651 R   SAVEOP  00653 R   CHKOPR  00661 R   CKSR2   00666 R
CKSR.4  00717 R   CKS2.2  00743 R   CKS2.3  00752 R   CKSR4   01000 R
CKSR5   01015 R   CKSR6   01024 R   CKSR7   01027 R   CHKCOM  01032 R
CHKC.1  01045 R   CHKC.2  01057 R   PARDRL  01064 R   PARD.2  01103 R
ER10.1  01105 R   DOOVER  01116 R   SAVOLD  01126 R   ER07.1  01144 R
FIVTRY  01157 R   FIV.1   01171 R   FIV.2   01211 R   DLRETY  01224 R
RPTER7  01230 R   SETNXT  01242 R   SETN.1  01254 R   MPY     01263 R
UPDTCT  01270 R   UPDT.1  01306 R   UPDT.2  01321 R   UPDT.4  01331 R
UPDT.3  01337 R   SLNXOP  01344 R   SLNO.0  01353 R   SLNO.1  01364 R
SLNO.7  01375 R   SLNO.2  01406 R   SLNO.3  01412 R   SLNO10  01434 R
SLNO.4  01451 R   SLNO.6  01456 R   SLNO.8  01467 R   SLNO.9  01473 R
GENRWD  01505 R   CLRDIS  01513 R   CMDDIS  01537 R   CMDD.1  01556 R
CMDD.2  01562 R   CMDD.5  01566 R   CMDD.6  01600 R   CMDD.7  01612 R
RANGEN  01624 R   RANTAD  01641 R   RANSAV  01657 R   RANCNT  01660 R
RANCON  01661 R   RANDEX  01662 R   RANTBL  01663 R   INTOPR  01673 R
INTO.1  01722 R   INTO.6  01727 R   INTO.4  01731 R   INTO.3  01757 R
INTO.5  01764 R   SETRWD  01772 R   TSTRUN 002000 A   SETR.1  02014 R
CKRWD   02023 R   CKRW.2  02034 R   CKRW.1  02045 R   CLRRWD  02057 R
CHKHAN  02072 R   SLNXHN  02104 R   SLNX.5  02105 R   SLNX.4  02132 R
SLNX.1  02137 R   SELTAB  02152 R   SELT.1  02160 R   SELT.2  02171 R
SELT.3  02175 R   SELT.4  02202 R   TST1.1  02204 R   TST1.3  02226 R
TST1.2  02232 R   TST1.4  02253 R   GENWRT  02255 R   CLBM1   02274 R
HOLD    02307 R   TEST1    02316 R   TEST2   02323 R   TST2.1  02336 R
TST2.3  02342 R   TST2.2  02346 R   TST2.4  02367 R   TEST3   02371 R
TST3.1  02376 R   TST3.7  02403 R   TST3.6  02416 R   TST3.4  02431 R
TST3.3  02444 R   TST3.5  02472 R   TST3.8  02504 R   TST3.9  02532 R
TST3.2  02542 R   TRNCMD  02543 R   TRNC.1  02573 R   BUFGEN  02601 R
RESBUF  02617 R   GENRD   02625 R   ER01    02646 R   ER02    02647 R
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ER03	02650	R	ER04	02651	R	ER05	02652	R	ER06	02653	R
ER07	02654	R	ER10	02655	R	ER11	02656	R	ER12	02657	R
ER13	02660	R	ER14	02661	R	ER15	02662	R	ER16	02663	R
ER17	02664	R	ER20	02665	R	ER21	02666	R	ER22	02667	R
ER23	02670	R	ERR00	02671	R	ERR01	02677	R	ERR02	02723	R
ERR2.1	02725	R	ERR03	02727	R	ERR04	02733	R	ERR4.2	02742	R
ERR4.1	02743	R	ERR.1	02771	R	BADTAP	03001	R	BDTAP1	03020	R
BDTAP2	03040	R	BDTAP3	03044	R	ERRPUT	03050	R	ERNUM	03075	R
RESPUT	03112	R	PUTS.1	03122	R	PUTS.2	03125	R	PUT	03130	R
ENDPUT	03135	R	DON.1	03154	R	ENDP.1	03155	R	PUTS.3	03160	R
MOVPUT	03172	R	PUTS.4	03202	R	OPRTAB	03214	R	BUF1	03414	R
BUFSIZ	004000	A	ENDBUF	07414	R	ACSAVE	07415	R	APIFLG	07416	R
BRKAC	07417	R	BUF.1	07420	R	BUF.2	07421	R	BUF.3	07422	R
CHK.1	07423	R	CKO.1	07424	R	CKS.1	07425	R	CKS.2	07426	R
CKS.3	07427	R	CKS2.1	07430	R	CKW.1	07431	R	CKW.2	07432	R
CKW.3	07433	R	CLBM.1	07434	R	CLBM.2	07435	R	CLO.1	07436	R
CLO.2	07437	R	CMD.1	07440	R	DONE	07441	R	DSTSW1	07442	R
ERN.1	07443	R	ERR.22	07444	R	GET.1	07445	R	HANCNT	07446	R
HANNO1	07447	R	HANNO2	07450	R	HNDNUM	07451	R	INT.3	07452	R
INT.4	07453	R	INT.5	07454	R	INT.6	07455	R	LINK	07456	R
MOVERR	07457	R	PATTEN	07460	R	POLDON	07461	R	PUT.1	07462	R
PUT.2	07463	R	PUT.3	07464	R	RANLEN	07465	R	RECLEN	07466	R
SAVCMD	07467	R	SAVOIS	07470	R	SAVWC	07471	R	SEL.1	07472	R
SEL.2	07473	R	SET.1	07474	R	SET.2	07475	R	SLN.1	07476	R
SLN.2	07477	R	SLN.3	07500	R	SLX.1	07501	R	SLX.2	07502	R
SSVTAT	07503	R	SVPAR	07504	R	TER.1	07505	R	TER.2	07506	R
TER.3	07507	R	TKTBPT	07510	R	TOTPAR	07511	R	TOTRTY	07512	R
TSTCMD	07513	R	TSTNO	07514	R	TS1.2	07515	R	TS2.1	07516	R
TS3.1	07517	R	MTTR	707301	A	MTGO	707304	A	MTRC	707312	A
MTCR	707321	A	MTAF	707322	A	MTCM	707324	A	MTLC	707326	A
MTSF	707341	A	MTRS	707352	A	EEM	707702	A	EBA	707764	A