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.REM
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IDENTIFICATION

PRODUCT CODE: MAINDEC-11-DTTMA-B

PRODUCT NAME: TM11 DEVICE ROUTINE FOR MPG

DATE: APRIL 1976

MAINTAINER: SYSTEMS RELIABILITY

AUTHOR: C. E. HARPER

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                        .SBTTL  REVISION HISTORY

                        APR 76  DTTMA-B RELEASE

                        DEC 75  MADE CHANGES REQUIRED FOR THE MEMORY MANAGEMENT
                                VERSION OF MPG.

                        DEC 75  WILL NOW DISPLAY THE ENTIRE UNIT # BYTE IN OCTAL
                                FOR INVALID UNIT # ERROR MESSAGES.

                        AUG 75  DTTMA-A INITIAL RELEASE
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                                        .SBTTL  STANDARD DEVICE ROUTINE TABLE


                                        .TITLE  MAINDEC-11-DTTMA-B   TM11/TU10 DEVICE ROUTINE FOR MPG

                                        ;REVISION 'B'

                                        ;FILENAME OF "TTMAB0.MPG" ON MPG/XXDP MEDIA

                                        ;MACY11:  DTTMA?,DTTMA?/CRF:SYM/DOC=DTTMA?.P11
                                        ;LNKX11:  DTTMA?.MPG/B:0+DTTMA?/E
                                        ;PAPER TAPE:  PUNCH DTTMA?.MPG/FILE:ELEV

            000000'                     .CSECT  TM11
                                        .DSABL  GBL


                                        ;THE FOLLOWING TABLE IS IN THE STANDARDIZED FORMAT REQUIRED
                                        ;TO INTERFACE WITH MPG.

000000' 005340          LOCZ:   .WORD   DVREND-.                ;DEVICE ROUT SIZE IN BYTES
000002' 000000          DFLGWD: .WORD   0                       ;DEVICE ROUT FLAGWORD
                                                                ;   BIT 15 = "NOWAIT" FLAG
                                                                ;   BIT 14 = BPI DEN 8 BIT
                                                                ;   BIT 13 = BPI DEN 5 BIT
                                                                ;   BIT 11 = EVEN PARITY BIT
                                                                ;   BIT  3 = ROLLBACK EXH. FLAG
                                                                ;   BIT  1 = DO I/O TERMINATION
                                                                ;   BIT  0 = ERROR ON I/O CMND
000004' 000000          RDRB:   .WORD   0                       ;# OF ROLLBACKS FOR READ
000006' 000000          WRRB:   .WORD   0                       ;# OF ROLLBACKS FOR WRITE
000010' 000000          EOF:    .WORD   0                       ;1 = EOF ENCOUNTERED
000012' 000000          EOT:    .WORD   0                       ;1 = EOT ENCOUNTERED
000014' 000000                  .WORD   0                       ;INTERFACE WORD # 5 (NOT USED)
000016' 000000                  .WORD   0                       ;INTERFACE WORD # 6 (NOT USED)
000020' 000001          SIZE:   .WORD   1                       ;# OF BYTES TRANSFERRED / UNIMAP FLG
000022' 000000          ERR:    .WORD   0                       ;ERROR ON LAST I/O INDICATOR
000024' 172520          DREGAD: .WORD   172520                  ;FIRST DEVICE REGISTER ADR
000026' 000224          IVCTAD: .WORD   224                     ;INTERRUPT VECTOR ADR
000030' 000240          PSWD:   .WORD   240                     ;INT PROC STATUS WORD (BR 5)
000032' 000000                  .WORD   0                       ;NOT USED
000034' 001022                  .WORD   HSKEEP-.                ;HOUSEKEEPING ROUT REL ADR
000036' 001076                  .WORD   REPORT-.                ;REPORT ROUT REL ADR
000040' 001524                  .WORD   KILL-.                  ;KILL ROUT REL ADR
000042' 000762                  .WORD   DATAER-.                ;DATA ERROR COUNTER REL ADR
000044' 001420                  .WORD   TOUTER-.                ;TIME OUT ERROR ROUT REL ADR
000046' 000000          CIOBSY: .WORD   0                       ;I/O BUSY BRANCH ADR
000050' 000000          CUPGER: .WORD   0                       ;DEVICE ERROR BRANCH ADR
000052' 000000          ULIST:  .WORD   0                       ;USER MODE PRINT ROUTINE BRANCH ADR
000054' 000000          CLIST:  .WORD   0                       ;CMND MODE PRINT ROUTINE BRANCH ADR
000056' 000000          BINASC: .WORD   0                       ;CONVERT BINARY TO ASCII ROUT BR ADR
000060' 000000          BTASLZ: .WORD   0                       ;CONVERT BINARY TO DECIMAL ASCII BR ADR
000062' 000000          DECASC: .WORD   0                       ;CONVERT PACKED DECIMAL TO ASCII BR ADR
000064' 000000          CSYSFW: .WORD   0                       ;MPG SYSTEM FLAGWORD ADR
000066' 000000          SETVEC: .WORD   0                       ;SET INT VECT ROUT BR ADR
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                                                CLRVEC: .WORD   0                       ;CLEAR INT VECTOR ROUT BR ADR
                                                TSTVEC: .WORD   0                       ;TEST INT VECTOR ROUT BR ADR
                                                RTNINT: .WORD   0                       ;RETURN FROM INT ROUT BR ADR
                                                GETBYT: .WORD   0                       ;GET DATA BYTE ROUT BR ADR
                                                PUTBYT: .WORD   0                       ;PUT DATA BYTE ROUT BR ADR
                                                        .WORD   DVREGS-.                ;ADR OF DEVICE REGISTER NAMES
                                                        .WORD   DVCMDS-.                ;ADR OF DEVICE FUNCTIONS
                                                        .WORD   DVPKTE-.                ;ADR OF PACK TBL EXTENSION
                                                        .WORD   DVMVTE-.                ;ADR OF MODEL VECTOR TBL EXTEN.
                                                        .WORD   DVCPTE-.                ;ADR OF COMPILER TBL EXTEN.
                                                        .WORD   DVIWST-.                ;ADR OF DEV INTERFACE WD SYM TBL

                                                DVREGS: .ASCII  /MTS /                  ;VALID DEVICE REGISTER NAMES &
                                                        .WORD   0                       ;THEIR POSITIONS RELATIVE TO
                                                        .ASCII  /MTC /                  ;THE DEVICE REGISTERS BASE ADDRESS.
                                                        .WORD   2
                                                        .ASCII  /MBRC/
                                                        .WORD   4
                                                        .ASCII  /MCMA/
                                                        .WORD   6
                                                        .ASCII  /MTD /
                                                        .WORD   10
                                                        .ASCII  /MTRD/
                                                        .WORD   12
                                                DVREGE= .

                                                DVCMDS: .BYTE   120,201                 ;VALID DEVICE FUNCTIONS
                                                        .WORD   READ-.                  ;  FLAG BYTE:
                                                        .BYTE   130,201                 ;     BIT 7 = NPR DEV
                                                        .WORD   WRITE-.                 ;     BIT 3 = MASSBUS DEV
                                                        .BYTE   376,0                   ;     BIT 0 = 2 WORDS FOR ADR
                                                        .WORD   NOWAIT-.                ;             (18 BIT ADRS
                                                        .BYTE   375,0
                                                        .WORD   WAIT-.
                                                        .BYTE   374,0
                                                        .WORD   REPORT-.
                                                        .BYTE   373,0
                                                        .WORD   REPORT-.
                                                        .BYTE   372,0
                                                        .WORD   CRESET-.
                                                        .BYTE   371,201
                                                        .WORD   WREIRG-.
                                                        .BYTE   370,0
                                                        .WORD   WREOF-.
                                                        .BYTE   367,0
                                                        .WORD   SPFWD-.
                                                        .BYTE   366,0
                                                        .WORD   SPREV-.
                                                        .BYTE   365,0
                                                        .WORD   REWIND-.
                                                        .BYTE   364,0
                                                        .WORD   OFFLIN-.
                                                        .BYTE   363,0
                                                        .WORD   EVEN-.
                                                        .BYTE   362,0
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                                                .WORD   ODD-.
                                                .BYTE   361,0
                                                .WORD   BPI-.
                                                .WORD   177777          ;TABLE TERMINATOR

                        DVPKTE: .ASCII  /NOWAIT/        ;PACK TABLE EXTENSION
                                .BYTE   376,0
                                .ASCII  /  WAIT/
                                .BYTE   375,0
                                .ASCII  /STATUS/
                                .BYTE   374,0
                                .ASCII  /COUNTS/
                                .BYTE   373,0
                                .ASCII  /CRESET/
                                .BYTE   372,0
                                .ASCII  /WREIRG/
                                .BYTE   371,0
                                .ASCII  / WREOF/
                                .BYTE   370,0
                                .ASCII  / SPFWD/
                                .BYTE   367,0
                                .ASCII  / SPREV/
                                .BYTE   366,0
                                .ASCII  /REWIND/
                                .BYTE   365,0
                                .ASCII  /OFFLIN/
                                .BYTE   364,0
                                .ASCII  /  EVEN/
                                .BYTE   363,0
                                .ASCII  /   ODD/
                                .BYTE   362,0
                                .ASCII  /   BPI/
                                .BYTE   361,0

                        DVMVTE: .WORD   376,LNWAIT-LOCZ         ;MODEL VECTOR TABLE EXTEN.
                                .WORD   375,LWAIT-LOCZ
                                .WORD   374,LSTATS-LOCZ
                                .WORD   373,LCOUNT-LOCZ
                                .WORD   372,LCRST-LOCZ
                                .WORD   371,LWEIRG-LOCZ
                                .WORD   370,LWREOF-LOCZ
                                .WORD   367,LSPFWD-LOCZ
                                .WORD   366,LSPREV-LOCZ
                                .WORD   365,LRWIND-LOCZ
                                .WORD   364,LOFFLN-LOCZ
                                .WORD   363,LEVEN-LOCZ
                                .WORD   362,LODD-LOCZ
                                .WORD   361,LBPI-LOCZ

                        ;
                        ;       COMPILER TABLE EXTENSION
                        ;
                        DVCPTE: .BYTE   3,376           ;NO WAIT
                                .WORD   4537,10.
                                .BYTE   3,375           ;WAIT
                                .WORD   4537,10.
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000550' 004 374                 .BYTE   4,374                   ;STATUS
000552' 004537 000012 001002    .WORD   4537,10.,1002
000560' 004 373                 .BYTE   4,373                   ;COUNTS
000562' 004537 000012 001001    .WORD   4537,10.,1001
000570' 003 372                 .BYTE   3,372                   ;CONTROL RESET
000572' 004537 000012           .WORD   4537,10.
000576' 006 371                 .BYTE   6,371                   ;WRITE EXTENDED INTER-RECORD GAP
000600' 004537 000012 000000    .WORD   4537,10.,0,2,2
000606' 000002 000002
000612' 003 370                 .BYTE   3,370                   ;WRITE END OF FILE
000614' 004537 000012           .WORD   4537,10.
000620' 004 367                 .BYTE   4,367                   ;SPACE FORWARD
000622' 004537 000012 000000    .WORD   4537,10.,0
000630' 004 366                 .BYTE   4,366                   ;SPACE REVERSE
000632' 004537 000012 000000    .WORD   4537,10.,0
000640' 003 365                 .BYTE   3,365                   ;REWIND
000642' 004537 000012           .WORD   4537,10.
000646  003 364                 .BYTE   3,364                   ;OFFLINE
000650' 004537 000012           .WORD   4537,10.
000654' 003 363                 .BYTE   3,363                   ;EVEN
000656' 004537 000012           .WORD   4537,10.
000662' 003 362                 .BYTE   3,362                   ;ODD
000664' 004537 000012           .WORD   4537,10.
000670' 004 361                 .BYTE   4,361                   ;BPI
000672' 004537 000012 000000    .WORD   4537,10.,0


                        ;
                        ;       DEVICE INTERFACE WORD SYMBOL TABLE
                        ;
000700' 042122 041122   DVIWST: .ASCII  /RORB/
000704' 000004                  .WORD   DEVIW1
000706' 051127 041122           .ASCII  /WRRB/
000712' 000006                  .WORD   DEVIW2
000714' 047505 020106           .ASCII  /EOF /
000720' 000010                  .WORD   DEVIW3
000722' 047505 020124           .ASCII  /EOT /
000726' 000012                  .WORD   DEVIW4
000730' 177777                  .WORD   177777                  ;END OF TABLE


                        ;
                        ;       MODEL STATEMENT TABLE EXTENSION
                        ;
000732'                 LNWAIT:
000732'                 LWAIT:
000732'                 LSTATS:
000732'                 LCOUNT:
000732'                 LWREOF:
000732'                 LRWIND:
000732'                 LOFFLN:
000732'                 LEVEN:
000732'                 LODD:
000732'    000          LCRST:  .BYTE   0
000733'    377 051106 046517    LWEIRG: .ASCIZ  <377>/FROM/<377>
000740' 000377
000742'                 LSPFWD:
000742'                 LSPREV:
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                                LBPI:   .BYTE   377.0
                                        .EVEN

                        000744' HSKPST= .
000744' 000000          ISTAT:  .WORD   0                ;STORAGE FOR DEV REG'S AT INT
000746' 000000                  .WORD   0
000750' 000000                  .WORD   0
000752' 000000                  .WORD   0
000754' 000000                  .WORD   0
000756' 000000                  .WORD   0

000760' 000006          CSTAT:  .BLKW   6                ;DEV REG CURRENT VALUES STORAGE

000774' 000000          BYRD:   .WORD   0                ;BYTES READ COUNT (READ)
000776' 000000                  .WORD   0
001000' 000000          BYWR:   .WORD   0                ;BYTES WRITTEN COUNT (WRITE & WREIRG)
001002' 000000                  .WORD   0
001004' 000000          RDCNT:  .WORD   0                ;READ CMND COUNT (READ)
001006' 000000          WRCNT:  .WORD   0                ;WRITE CMND COUNT (WRITE & WREIRG)
001010' 000000          MISCNT: .WORD   0                ;MISC. CMND COUNT (WREOF, SPFWD, SPREV,
                                                         ; REWIND, OFFLIN, & CRESET)
001012' 000000          RRBCNT: .WORD   0                ;# OF READ ROLLBACKS
001014' 000000          WRBCNT: .WORD   0                ;# OF WRITE ROLLBACKS
001016' 000000          EOFCNT: .WORD   0                ;# OF EOF'S
001020' 000000          EOTCNT: .WORD   0                ;# OF EOT'S
001022' 000000          ERRCNT: .WORD   0                ;DEVICE ERRORS COUNT
001024' 000000          DATAER: .WORD   0                ;DATA ERRORS COUNT
001026' 000000          INTCNT. .WORD   0                ;INTERRUPTS COUNT

001030' 000000          TOECNT: .WORD   0                ;# OF ENTRIES INTO T/O ERROR ROUT
001032' 000000          TOEMAX: .WORD   0                ;MAX # OF TIMEOUTS
001034' 000000          ERRADR: .WORD   0                ;CURR ADR IN USER PROG
001036' 000000          CNTADR: .WORD   0                ;ADR OF BYTE COUNT TOTALS
001040' 000000          CURFLG: .WORD   0                ;FLAG WORD OF CURR CMND
001042' 000000          CURCNT: .WORD   0                ;BYTE CNT FOR CURR CMND
001044' 000000          FINCNT: .WORD   0                ;FINAL WORD COUNT (MBRC)
001046' 000000          RBCMD:  .WORD   0                ;CURR CMND FOR ROLLBACK
001050' 000000          RBADR:  .WORD   0                ;CURR ADR FOR ROLLBACK
001052' 000000          RBCNT:  .WORD   0                ;CURR BYTE CNT FOR ROLLBACK
001054' 000000          NUMRB:  .WORD   0                ;NUMBER OF ROLLBACKS ON CURR CMND
                        001056' HSKPEN= .

                        000000  XXXX=   0                ;VALUE TO BE TAILORED BY DEV ROUT
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                                        .SBTTL  TM11 SUPPORT ROUTINES ENTERED FROM MPG


                                        ;DEVICE ROUTINE HOUSEKEEPING

                                                ;JSR    R5,HSKEEP       S/R CALL
                                                ;.WORD  0 OR 1          0 = DO HSKP PER OPSW
                                                ;                       1 = UNCOND. DO HSKP
                                                ;R2 = PROG'S OPSW
                                                ;DESTROYS R0,R1

001056' 012767  060000  176716  HSKEEP: MOV     #60000,DFLGWD           ;SET BPI TO 800 & PARITY TO ODD
001064' 012767  000001  176712          MOV     #1,RDRB                 ;SET READ ROLLBACK CNT TO 1
001072' 012767  000003  176706          MOV     #3,WRRB                 ;SET WRITE ROLLBACK CNT TO 3
001100' 005725                          TST     (R5)+                   ;UNCONDITIONALLY DO HSKP?
001102' 001003                          BNE     10$                     ;N,Y-10$
001104' 032702  000004                  BIT     #HSKPEP,R2              ;OPSW SPECIFY EACH PASS HSKP?
001110' 001010                          BNE     30$                     ;Y,N-30$
001112' 010700                  10$:    MOV     PC,R0                   ;SET UP FIRST WD ADR
001114' 062700  177630                  ADD     #HSKPST-.,R0
001120' 012701  000045                  MOV     #HSKPEN-HSKPST/2,R1     ;SET UP # OF WORDS
001124' 005020                  20$:    CLR     (R0)+                   ;HSKP ALL NECESSARY AREAS
001126' 005301                          DEC     R1
001130' 001375                          BNE     20$
001132' 000205                  30$:    RTS     R5                      ;EXIT IN-LINE


                                        ;TM11 REPORT ROUTINE

                                                ;JSR    R5,REPORT       S/R CALL
                                                ;.WORD  FLGWD           FLAGWORD
                                                ;                         BIT 15 = CMND MODE CALL
                                                ;                         BIT  9 = PROG STMNT CALL
                                                ;                         BIT  1 = DO STATUS REPORT
                                                ;                         BIT  0 = DO COUNTS REPORT

001134' 004067  002702          REPORT: JSR     R0,SAVREG               ;SAVE REG'S R0 - R5
001140' 032715  177776                  BIT     #177776,(R5)            ;DISPLAYING CNTS AT END OF
001144' 001012                          BNE     10$                     ;PROG PASS? (Y,N-10$)
001146' 010700                          MOV     PC,R0                   ;SET UP ADR OF CNTS
001150' 062700  177624                  ADD     #BYRD-.,R0
001154' 012701  000016                  MOV     #14.,R1                 ;GET # OF CNT WORDS
001160' 005720                  5$:     TST     (R0)+                   ;THIS CNT WORD = 0?
001162' 001003                          BNE     10$                     ;Y,N-10$
001164' 005301                          DEC     R1                      ;DECR WORD CNT
001166' 001374                          BNE     5$                      ;CK'ED ALL WORDS? (Y,N-5$)
001170' 000513                          BR      DVREX                   ;GO TO EXIT -- ALL CNTS ARE 0'S
001172' 004767  002676          10$:    JSR     PC,SUPTAD               ;SET UP PROG TBL ADR IN R3
001176' 012504                          MOV     (R5)+,R4                ;GET FLAGWORD
001200' 032704  000002                  BIT     #2,R4                   ;GOING TO DO STATUS DISPLAY?
001204' 001443                          BEQ     DISCNT                  ;Y,N-DISCNT
001206' 004567  002706                  JSR     R5,STSTAT               ;GO STORE STATUS REG'S
001212' 177546                          .WORD   CSTAT-.
001214' 010700                          MOV     PC,R0                   ;SET UP ADR OF REG'S AT
001216' 062700  177526                  ADD     #ISTAT-.,R0             ;LAST INT
001222' 012701  000006                  MOV     #6,R1                   ;SET UP # OF REG'S
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001226' 005720           20$:    TST     (R0)+           ;ALL REG'S = 0?
001230' 001003                   BNE     30$             ;N,Y-40$
001232' 005301                   DEC     R1
001234' 001374                   BNE     20$
001236' 000412                   BR      40$
001240' 004767 002702    30$:    JSR     PC,DISUNM       ;DISPLAY CURR UNIT #
001244' 004567 003114            JSR     R5,PRINT        ;ISSUE 'AT LAST INT' MSG
001250' 003235                   .WORD   ATIMSG-.
001252' 000014                   .WORD   12.
001254' 004567 002756            JSR     R5,DISPST       ;GO DISPLAY STATUS AT LAST INT
001260' 177464                   .WORD   ISTAT-.
001262' 000402                   BR      45$             ;CONTINUE DISPLAY
001264' 004767 002656    40$:    JSR     PC,DISUNM       ;DISPLAY CURR UNIT #
001270' 004567 003070    45$:    JSR     R5,PRINT        ;ISSUE 'CURRENTLY' MSG
001274' 003225                   .WORD   CURMSG-.
001276' 000012                   .WORD   10.
001300' 004567 002732            JSR     R5,DISPST       ;GO DISPLAY CURRENT STATUS
001304' 177454                   .WORD   CSTAT-.
001306' 004767 003014            JSR     PC,PRTIWD       ;GO DISPLAY INFO WORDS
001312' 000402                   BR      DISCT1          ;CHECK FOR COUNTS DISPLAY
001314' 004767 002626    DISCNT: JSR     PC,DISUNM       ;DISPLAY CURR UNIT #
001320' 032704 000001    DISCT1: BIT     #1,R4           ;DISPLAY COUNTS?
001324' 001431                   BEQ     RPTEND          ;Y,N-RPTEND
001326' 012700 000016            MOV     #14.,R0         ;SET UP # OF WORDS
001332' 010701                   MOV     PC,R1           ;SET UP ADR OF CNTS
001334' 062701 177440            ADD     #BYRD-.,R1
001340' 010702                   MOV     PC,R2           ;SET UP TBL ADR
001342' 062702 000066            ADD     #REPTBL-.,R2
001346' 012267 000012    RPTLP:  MOV     (R2)+,RPTBAS    ;MOV MSG ADR TO S/R LINKAGE
001352' 004067 002464            JSR     R0,SAVREG       ;SAVE ALL REG'S
001356' 011100                   MOV     (R1),R0         ;GET CURRENT COUNT
001360' 004577 176472            JSR     R5,@BINASC      ;CONVERT IT TO ASCII
001364' 000000           RPTBAS: .WORD   XXXX
001366' 004067 002464            JSR     R0,RESREG       ;RESTORE REG'S
001372' 005721                   TST     (R1)+           ;POINT AT NXT CNT
001374' 005300                   DEC     R0              ;DONE ALL WORDS?
001376' 001363                   BNE     RPTLP           ;Y,N-RPTLP
001400' 004567 002760            JSR     R5,PRINT        ;GO ISSUE COUNTS MSG
001404' 003212                   .WORD   CNTSMG-.
001406' 000330                   .WORD   CNTSEN-CNTSMG
001410' 004567 002750    RPTEND: JSR     R5,PRINT        ;ISSUE "END OF REPORT" MSG
001414' 003117                   .WORD   RENDMG-.
001416' 177763                   .WORD   -13.
001420' 004067 002432    DVREX:  JSR     R0,RESREG       ;RESTORE REGISTERS
001424' 005725                   TST     (R5)+           ;SET UP RETURN POINT
001426' 000205                   RTS     R5              ;EXIT IN-LINE


001430' 003246           REPTBL: .WORD   BCMRD-RPTBAS
001432' 003254                   .WORD   BCMRD+6-RPTBAS
001434' 003270                   .WORD   BCMWR-RPTBAS
001436' 003276                   .WORD   BCMWR+6-RPTBAS
001440' 003323                   .WORD   CMDCRD-RPTBAS
001442' 003336                   .WORD   CMDCWR-RPTBAS
001444' 003353                   .WORD   CMDCMS-RPTBAS
001446' 003404                   .WORD   CNTRRB-RPTBAS
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001450' 003417                          .WORD   CNTWR9-RPTBAS
001452' 003444                          .WORD   CNTEOF-RPTBAS
001454' 003462                          .WORD   CNTEOT-RPTBAS
001456' 003511                          .WORD   CNTERR-RPTBAS
001460' 003526                          .WORD   CNTDER-RPTBAS
001462' 003554                          .WORD   CNTINT-RPTBAS


                                        ;TIMEOUT ERROR ROUTINE

                                                ;JSR    R5,TOUTER       S/R CALL

001464' 005267  177340          TOUTER: INC     TOECNT                  ;INCR # OF TIMEOUTS THAT OCCURRED
001470' 126767  177334  177335           CMPB    TOECNT,TOEMAX+1         ;AT MAX # OF TIMEOUTS IN A ROW?
001476' 001031                           BNE     TOUTEX                  ;Y,N-TOUTEX
001500' 004067  002336                   JSR     R0,SAVREG               ;SAVE ALL REGISTERS
001504' 004767  002364                   JSR     PC,SUPTAD               ;SET UP MTC & PROG TBL ADR'S
001510' 004567  002404                   JSR     R5,STSTAT               ;STORE CURRENT STATUS
001514' 177244                           .WORD   CSTAT-.
001516' 004567  002270                   JSR     R5,TVECT                ;DO I HAVE VECTOR CONTROL?
001522' 000404                           BR      10$                     ;BR IF I DON'T
001524' 112714  000011                   MOVB    #11,(R4)                ;RESET INT ENABLE
001530' 004767  002232                   JSR     PC,RINTV                ;RESET THE INTERRUPT VECTOR
001534' 042713  000010          10$:     BIC     #WT4IOT,(R3)            ;RESET WAITING FOR I/O FLAG
001540' 004567  001440                   JSR     R5,ERRCS1               ;ISSUE TIMEOUT ERROR MSG
001544' 001644                           .WORD   IOTO-ERMBAS
001546' 000016                           .WORD   14.
001550' 004067  002302                   JSR     R0,RESREG               ;RESTORE REGISTERS
001554' 012605                           MOV     (SP)+,R5                ;REMOVE RETURN ADR
001556' 000177  176266                   JMP     @CUPGER                 ;GO TO ERROR EXIT
001562' 000205                  TOUTEX: RTS     R5                      ;EXIT IN-LINE


                                        ;KILL USER PROGRAM ROUTINE

                                                ;JSR    R5,KILL         S/R CALL
                                                ;R3 MUST CONTAIN PROG TBL ADR
                                                ;DESTROYS R0,R1

001564' 004567  002222          KILL:   JSR     R5,TVECT                ;CK IF I HAVE VECTOR CONTROL
001570' 000407                          BR      KILLEX                  ;BR IF I DON'T
001572' 016701  176226                  MOV     DREGAD,R1               ;GET DEV REG ADR
001576' 112761  000011  000002          MOVB    #11,2(R1)               ;RESET INT ENABLE
001604' 004767  002156                  JSR     PC,RINTV                ;RESET INT VECTOR INFO
001610' 000205                  KILLEX: RTS     R5                      ;EXIT IN-LINE
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                                        .SBTTL  TM11 FUNCTION ROUTINES

                                        ;"WAIT" FUNCTION ROUTINE

                                                ;JSR    R5,WAIT         FUNCTION CALL

001612' 042767  100000  176162  WAIT:   BIC     #100000,DFLGWD          ;RESET THE "NOWAIT" FLAG
001620' 004767  001252                  JSR     PC,CKDBSY               ;WAIT IF BUSY & DO TERMINATION
001624' 004767  002136                  JSR     PC,RINTV                ;RESET THE INTERRUPT VECTOR
001630' 000205                          RTS     R5                      ;EXIT IN-LINE


                                        ;"NOWAIT" FUNCTION ROUTINE

                                                ;JSR    R5,NOWAIT       FUNCTION CALL

001632' 052767  100000  176142  NOWAIT: BIS     #100000,DFLGWD          ;SET THE "NOWAIT" FLAG
001640' 000205                          RTS     R5                      ;EXIT IN-LINE


                                        ;"ODD" FUNCTION ROUTINE

                                                ;JSR    R5,ODD          FUNCTION CALL

001642' 042767  004000  176132  ODD:    BIC     #4000,DFLGWD            ;RESET THE EVEN FLAG
001650' 000205                          RTS     R5                      ;EXIT IN-LINE


                                        ;"EVEN" FUNCTION ROUTINE

                                                ;JSR    R5,EVEN         FUNCTION CALL

001652' 052767  004000  176122  EVEN:   BIS     #4000,DFLGWD            ;SET THE EVEN FLAG
001660' 000205                          RTS     R5                      ;EXIT IN-LINE


                                        ;"BPI" FUNCTION ROUTINE

                                                ;JSR    R5,BPI          FUNCTION CALL
                                                ;.WORD  VALUE           BPI BITS VALUE

001662' 004767  001274          BPI:    JSR     PC,STSADR               ;STORE THIS STMNT'S MEM ADR
001666' 012500                          MOV     (R5)+,R0                ;GET BIT VALUES
001670' 010701                          MOV     PC,R1                   ;SET UP ADR OF VALID BPI VALUES
001672' 062701  000060                  ADD     #BPIVVL-.,R1
001676' 112102                  10$:    MOVB    (R1)+,R2                ;GET VALID VALUE
001700' 100412                          BMI     BPIER                   ;END OF TBL? (N,Y-BPIER)
001702' 112103                          MOVB    (R1)+,R3                ;GET CORRESP. BIT VALUES
001704' 020200                          CMP     R2,R0                   ;MATCH THIS VALID VALUE?
001706' 001373                          BNE     10$                     ;Y,N-10$
001710' 042767  060000  176064          BIC     #60000,DFLGWD           ;RESET BPI BITS IN FLGWD
001716' 000303                          SWAB    R3                      ;ALIGN BIT VALUES
001720' 050367  176056                  BIS     R3,DFLGWD               ;SET IN NEW BPI BIT VALUES
001724' 000205                          RTS     R5                      ;EXIT TO USER PROG
001726' 004767  002142          BPIER:  JSR     PC,SUPTAD               ;SET UP PROG TBL ADR
001732' 042767  000010  176042          BIC     #10,DFLGWD              ;HOUSEKEEP ERROR FLAG
```

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001740' 004567 001250                   JSR     R5,ERRIS                ;REPORT INV BPI VALUE ERROR
001744' 002020                          .WORD   INVBPI-ERMBAS
001746' 000015                          .WORD   13.
001750' 000565                          BR      DERROR                  ;GO TO ERROR EXIT

001752'    000     000          BPIVVL: .BYTE   00,000                  ;VALID BPI VALUES
001754'    001     040                  .BYTE   01,040
001756'    010     100                  .BYTE   10,100
001760'    011     140                  .BYTE   11,140
001762'    377     377                  .BYTE   377,377


                                        ;"READ" FUNCTION ROUTINE

                                                ;JSR    R5,READ         FUNCTION CALL
                                                ;.WORD  ADR             DATA ADDRESS (BITS 16 & 17)
                                                ;.WORD  ADR             DATA ADDRESS (BITS 0 - 15)
                                                ;.WORD  CNT             BYTE COUNT
                                                ;.WORD  DEV             (NOT USED)

001764' 012701 000103          READ:    MOV     #103,R1                 ;SET UP READ CMND CODE
001770' 012702 001421                   MOV     #1421,R2                ;SET UP READ FLAG WORD
001774' 004767 001076          RDCOM:   JSR     PC,CKDBSY               ;GO CK IF DEV IS BUSY
002000' 005267 177000                   INC     RDCNT                   ;ADD 1 TO READ CMND CNT
002004' 010700                          MOV     PC,R0                   ;SET UP ADR OF BYTES READ CNT
002006' 062700 176770                   ADD     #BYRD+2-.,R0
002012' 000465                          BR      CMDCOM                  ;GO TO CMND COMMON PROCESSING


                                        ;"WRITE" FUNCTION ROUTINE

                                                ;JSR    R5,WRITE        FUNCTION CALL
                                                ;.WORD  ADR             DATA ADDRESS (BITS 16 & 17)
                                                ;.WORD  ADR             DATA ADDRESS (BITS 0 - 15)
                                                ;.WORD  CNT             BYTE COUNT
                                                ;.WORD  DEV             (NOT USED)

002014' 012701 000105          WRITE:   MOV     #105,R1                 ;SET UP WRITE CMND CODE
002020' 012702 001441                   MOV     #1441,R2                ;SET UP CMND FLAG WORD
002024' 004767 001046          WRCOM:   JSR     PC,CKDBSY               ;GO CK IF DEV IS BUSY
002030' 005267 176752                   INC     WRCNT                   ;ADD 1 TO WRITE CMND CNT
002034' 010700                          MOV     PC,R0                   ;SET UP ADR OF BYTES WRITTEN CNT
002036' 062700 176744                   ADD     #BYWR+2-.,R0
002042' 000451                          BR      CMDCOM                  ;GO TO CMND COMMON PROCESSING


                                        ;"WREIRG" FUNCTION ROUTINE

                                                ;JSR    R5,WREIRG       FUNCTION CALL
                                                ;.WORD  ADR             DATA ADDRESS (BITS 16 & 17)
                                                ;.WORD  ADR             DATA ADDRESS (BITS 0 - 15)
                                                ;.WORD  CNT             BYTE COUNT

002044' 012701 000115          WREIRG:  MOV     #115,R1                 ;SET UP WREIRG CMND CODE
002050' 012702 001442                   MOV     #1442,R2                ;SET UP CMND FLAG WORD.
002054' 000763                          BR      WRCOM                   ;GO TO COMMON WRITE PROCESSING
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                                        ;"WREOF" FUNCTION ROUTINE

                                        ;JSR    R5,WREOF        FUNCTION CALL

002056' 012701  000107          WREOF:  MOV     #107,R1         ;SET UP WREOF CMND CODE
002062' 012702  000450                  MOV     #450,R2         ;SET UP CMND FLAG WORD
002066' 000756                  WRCOM   BR      WRCOM           ;GO TO COMMON WRITE PROCESSING


                                        ;"SPFWD" FUNCTION ROUTINE

                                        ;JSR    R5,SPFWD        FUNCTION CALL
                                        ;.WORD  CNT             # OF RECORDS TO SPACE

002070' 012701  000111          SPFWD:  MOV     #111,R1         ;SET UP SPFWD CMND CODE
002074' 012702  003014          SPCOM:  MOV     #3014,R2        ;SET UP CMND FLAG WORD
002100' 004767  000772'         MISCOM: JSR     PC,CKDBSY       ;GO CK IF DEV IS BUSY
002104' 005267  176700                  INC     MISCNT          ;ADD 1 TO MISC. CMND CNT
002110' 000426                  CMDCOM  BR      CMDCOM          ;GO TO CMND COMMON PROCESSING


                                        ;"SPREV" FUNCTION ROUTINE

                                        ;JSR    R5,SPREV        FUNCTION CALL
                                        ;.WORD  CNT             # OF RECORDS TO SPACE

002112' 012701  000113          SPREV:  MOV     #113,R1         ;SET UP SPREV CMND CODE
002116' 000766                  SPCOM   BR      SPCOM           ;GO TO SPACE COM PROC.


                                        ;"REWIND" FUNCTION ROUTINE

                                        ;JSR    R5,REWIND       FUNCTION CALL

002120' 012701  000117          REWIND: MOV     #117,R1         ;SET UP REWIND CMND CODE
002124' 012702  011510                  MOV     #11510,R2       ;SET UP CMND FLAG WORD
002130' 000763                  MISCOM  BR      MISCOM          ;GO TO COMMON MISC. PROCESSING


                                        ;"OFFLIN" FUNCTION ROUTINE

                                        ;JSR    R5,OFFLIN       FUNCTION CALL

002132' 012701  000101          OFFLIN: MOV     #101,R1         ;SET UP OFFLIN CMND CODE
002136' 012702  000410                  MOV     #410,R2         ;SET UP CMND FLAG WORD
002142' 000755                  MISCOM  BR      MISCOM          ;GO TO MISC. CMND COM PROCESSING


                                        ;"CRESET" FUNCTION ROUTINE

                                        ;JSR    R5,CRESET       FUNCTION CALL

002144' 004767  000726          CRESET: JSR     PC,CKDBSY       ;GO CK IF DEV BUSY
002150' 005267  176634                  INC     MISCNT          ;ADD 1 TO MISC. CMND CNT
002154' 004767  001714                  JSR     PC,SUPTAD       ;SET UP MTC & PROG TBL ADR'S
002160' 052714  010000                  BIS     #10000,(R4)     ;SET POWER CLEAR BIT IN MTC
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 649  002164' 000205                          RTS     R5                      ;EXIT TO USER PROG
 650
 651
 652                                          ;COMMAND COMMON PROCESSING ROUTINE
 653
 654                                                  ;R4 = ADR OF MTC DEV REG
 655                                                  ;R3 = PROG TBL ADR
 656                                                  ;R2 = COMMAND FLAG WORD
 657                                                  ;R1 = COMMAND CODE
 658                                                  ;R0 = ADR OF BYTE COUNT TOTALS, IF APPLICABLE
 659
 660
 661                                                  ;CMND FLAGWORD FORMAT:
 662
 663                                                          ;BIT 15 = ROLLBACK IN PROG (INT SRV.)
 664                                                          ;BIT 14 = RC'VD 1ST RWD INT (INT SRV.)
 665                                                          ;BIT 12 = T/O CNT BIT 4
 666                                                          ;BIT 11 = T/O CNT BIT 3
 667                                                          ;BIT 10 = T/O CNT BIT 2
 668                                                          ;BIT  9 = T/O CNT BIT 1
 669                                                          ;BIT  8 = T/O CNT BIT 0
 670                                                          ;BIT  6 = REWIND CMND
 671                                                          ;BIT  5 = DO WRITE ROLLBACK
 672                                                          ;BIT  4 = DO READ ROLLBACK
 673                                                          ;BIT  3 = DO NOT INCREMENT BYTE COUNTS
 674                                                          ;BIT  2 = 1 ARGUMENT CMND
 675                                                          ;BIT  1 = 3 ARGUMENT CMND
 676                                                          ;BIT  0 = 4 ARGUMENT CMND
 677
 678  002166' 010067  176644          CMDCOM: MOV     R0,CNTADR               ;SAVE ADR OF BYTE COUNT
 679  002172' 010267  176642                  MOV     R2,CURFLG               ;SAVE FLAGWD FOR TERMINATION
 680  002176' 010267  176630                  MOV     R2,TOEMAX               ;SAVE # OF TIMEOUTS FOR CMND
 681  002202' 005067  175614                  CLR     ERR                     ;RESET THE ERROR INDICATOR
 682  002206' 032702  000007                  BIT     #7,R2                   ;THIS CMND HAVE ARGUMENTS?
 683  002212' 001433                          BEQ     10$                     ;Y,N-10$
 684  002214' 062704  000004                  ADD     #4,R4                   ;POINT AT BUS ADR REG
 685  002220' 032702  000004                  BIT     #4,R2                   ;RECORD COUNT ONLY?
 686  002224' 001011                          BNE     5$                      ;N,Y-5$
 687  002226' 012500                          MOV     (R5)+,R0                ;GET BITS 16 & 17 OF BUS ADR
 688  002230' 006300                          ASL     R0                      ;ALIGN THEM TO CORRECT
 689  002232' 006300                          ASL     R0                      ;BIT POSITIONS
 690  002234' 006300                          ASL     R0
 691  002236' 006300                          ASL     R0
 692  002240' 050001                          BIS     R0,R1                   ;SET THEM INTO CMND CODE WORD
 693  002242' 011514                          MOV     (R5),(R4)               ;GET BUS ADR BITS 0 - 15
 694  002244' 012567  176600                  MOV     (R5)+,RBADR             ;SAVE ADR FOR ROLLBACK
 695  002250' 012544                  5$:     MOV     (R5)+,-(R4)             ;GET BYTE/RECORD COUNT
 696  002252' 011467  176564                  MOV     (R4),CURCNT             ;SAVE THE COUNT
 697  002256' 011467  176562                  MOV     (R4),FINCNT             ;INITIALIZE FINAL CNT TO SAME
 698  002262' 005414                          NEG     (R4)                    ;MAKE IT NEGATIVE
 699  002264' 011467  176562                  MOV     (R4),RBCNT              ;SAVE CNT FOR ROLLBACK
 700  002270' 005744                          TST     -(R4)                   ;REALIGN REG ADR TO MTC
 701  002272' 032702  000001                  BIT     #1,R2                   ;4 ARGUMENT CMND?
 702  002276' 001401                          BEQ     10$                     ;Y,N-10$
 703  002300' 005725                          TST     (R5)+                   ;BYPASS FOURTH ARGUMENT
 704  002302' 116300  000035          10$:    MOVB    PCURDV(R3),R0           ;GET CURR DEV #
```

```
705  002306' 020027 000007          CMP     R0,#7                   ;INV DEV #?
706  002312' 101415                 BLOS    DEVOK                   ;Y,N-DEVOK
707  002314' 004567 000656          JSR     R5,ERRCS                ;GO REPORT INV DEV # ERROR
708  002320' 002006                 .WORD   INVDVN-ERMBAS
709  002322' 000012                 .WORD   10.
710  002324' 005267 176474  DERROR: INC     DATAER                  ;ADD 1 TO DATA ERR CNT
711  002330' 012767 000001 175464  MOV     #1,ERR                  ;SET THE ERROR INDICATOR
712  002336' 005367 176460          DEC     ERRCNT                  ;REMOVE THE 1 ADDED TO DEV ERR CNT
713  002342' 000177 175502          JMP     @CUPGER                 ;GO TO MPG ERR RETN POIN
714  002346' 110064 000001  DEVOK:  MOVB    R0,1(R4)                ;PUT DEV # IN MTC BITS 8 THRU 10
715  002352' 016700 175424          MOV     DFLGWD,R0               ;GET DEV ROUT FLGWD
716  002356' 042700 113777          BIC     #113777,R0              ;RESET ALL BITS EXCEPT BPI & PARITY
717  002362' 050014                 BIS     R0,(R4)                 ;SET UP BPI & PARITY
718  002364' 011467 176456          MOV     (R4),RBCMD              ;SAVE DEV #, BPI & PARITY INFO
719  002370' 042767 000011 175404  BIC     #11,DFLGWD              ;RESET THE ERROR FLAGS
720  002376' 005063 000030          CLR     PTOCNT(R3)              ;INITIALIZE TIMEOUT COUNTER
721  002402' 005067 176422          CLR     TOECNT                  ;RESET # OF TIMEOUTS
722  002406' 005067 176442          CLR     NUMRB                   ;RESET # OF ROLLBACKS
723  002412' 005067 175372          CLR     EOF                     ;RESET EOF INDICATOR
724  002416' 005067 175370          CLR     EOT                     ;RESET EOT INDICATOR
725  002422' 052767 000002 175352  BIS     #2,DFLGWD               ;SET THE "PROCESS TERMINATION" FLAG
726  002430' 052713 000010          BIS     #WT4IOT,(R3)            ;SET WAITING FOR I/O TERM FLAG
727  002434' 110167 176406          MOVB    R1,RBCMD                ;SAVE CMND CODE FOR ROLLBACK
728  002440' 110114                 MOVB    R1,(R4)                 ;ISSUE THE CMND
729  002442' 005767 175334          TST     DFLGWD                  ;"NOWAIT" BIT SET?
730  002446' 100405                 BMI     WTNOT                   ;N,Y-WTNOT
731  002450' 004577 175372          JSR     R5,@CIOBSY              ;WAIT FOR I/O TO COMPLETE
732  002454' 004767 000730          JSP     PC,PROCTM               ;GO PROCESS TERMINATION
733  002460' 000205         CMDEX:  RTS     R5                      ;EXIT IN-LINE TO USER PROG
734
735  002462' 042713 000010  WTNOT:  BIC     #WT4IOT,(R3)            ;RESET WAITING FOR I/O TERM
736  002466' 000774                 BR      CMDEX                   ;GO TO EXIT
```

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                                                .SBTTL  TM11 INTERRUPT SERVICE ROUTINE
                
002470' 004067 001346          TMINT:   JSR     R0,SAVREG               ;SAVE ALL REGISTERS
002474' 005267 176326                   INC     INTCNT                  ;ADD 1 TO INTERRUPT CNT
002500' 004767 001370                   JSR     PC,SUPTAD               ;SET UP PROG TBL & MTC ADR'S
002504' 004567 001410                   JSR     R5,STSTAT               ;STORE ALL DEV REG'S
002510' 176234                          .WORD   ISTAT-.
002512' 016702 176322                   MOV     CURFLG,R2               ;GET THIS CMND'S FLGWD
002516' 005702                          TST     R2                      ;ROLLBACK IN PROGRESS?
002520' 100025                          BPL     20$                     ;Y,N-20$
002522' 042702 100000                   BIC     #100000,R2              ;RESET ROLLBACK IN PROG FLG
002526' 016764 176316 000004            MOV     RBADR,4(R4)             ;SET UP ORG DATA ADR
002534' 016764 176312 000002            MOV     RBCNT,2(R4)             ;SET UP ORG BYTE COUNT
002542' 016700 176300                   MOV     RBCMD,R0                ;GET ORG CMND
002546' 042700 177761                   BIC     #177761,R0              ;LEAVE ONLY THE FUNCT BITS
002552' 020027 000004                   CMP     R0,#4                   ;ORG CMD A WRITE DATA?
002556' 001003                          BNE     10$                     ;Y,N-10$
002560' 052767 000014 176260            BIS     #14,RBCMD               ;SET UP "WREIRG" CMND CODE
002566' 016714 176254          10$:     MOV     RBCMD,(R4)              ;RE-ISSUE CMND
002572' 000471                          BR      90$                     ;GO TO INT EXIT
                
002574' 005714                 20$:     TST     (R4)                    ;ERROR BIT SET?
002576' 100414                          BMI     30$                     ;N,Y-30$
002600' 032702 000100          25$:     BIT     #100,R2                 ;THIS A REWIND CMND?
002604' 001455                          BEQ     80$                     ;Y,N-80$
002606' 032702 040000                   BIT     #40000,R2               ;ALREADY RC'VD 1ST INT?
002612' 001052                          BNE     80$                     ;N,Y-80$
002614' 052702 040000                   BIS     #40000,R2               ;SET RC'VD 1ST INT FLG
002620' 032744 000040                   BIT     #40,-(R4)               ;AT BOT?
002624' 001044                          BNE     70$                     ;N,Y-70$
002626' 000453                          BR      90$                     ;GO TO INT EXIT
                
                                        ;ERROR BIT SET
                
002630' 032744 040000          30$:     BIT     #40000,-(R4)            ;EOF SET?
002634' 001407                          BEQ     40$                     ;Y,N-40$
002636' 012767 000001 175144            MOV     #1,EOF                  ;SET THE EOF FLAG
002644' 005267 176146                   INC     EOFCNT                  ;ADD 1 TO EOF CNT
002650' 052702 000010                   BIS     #10,R2                  ;DON'T ADD IN ITS BYTE CNT
002654' 032714 002000          40$:     BIT     #2000,(R4)              ;EOT SET?
002660' 001405                          BEQ     45$                     ;Y,N-45$
002662' 012767 000001 175122            MOV     #1,EOT                  ;SET THE EOT FLAG
002670' 005267 176124                   INC     EOTCNT                  ;ADD 1 TO EOT CNT
002674' 032714 000100          45$:     BIT     #100,(R4)               ;SELECT REMOTE SET?
002700' 001413                          BEQ     60$                     ;Y,N-60$
002702' 032714 105600                   BIT     #105600,(R4)            ;ANY HARD ERRORS?
002706' 001010                          BNE     60$                     ;N,Y-60$
002710' 032714 030000                   BIT     #30000,(R4)             ;CRC OR LRC ERRORS?
002714' 001026                          BNE     100$                    ;N,Y-100$
002716' 005724                          TST     (R4)+                   ;POINT AT MTC
002720' 000727                          BR      25$                     ;GO CK CMND TYPE
```

```
                                                        ;ERROR & NORMAL TERMINATION
                                                        ;
002722' 052767  000010  175052  50$:    BIS     #10,DFLGWD              ;SET ROLLBACK EXH FLG
002730' 052767  000001  175044  60$:    BIS     #1,DFLGWD               ;SET THE ERROR FLG
002736' 005724                  70$:    TST     (R4)+                   ;POINT R4 AT MTC
002740' 042714  000100          80$:    BIC     #100,(R4)               ;RESET INT ENABLE
002744' 016467  000002  176072          MOV     2(R4),FINCNT            ;STORE FINAL COUNT
002752' 042713  000010                  BIC     #WT4IOI,(R3)            ;RESET WAITING FOR I/O TERM
002756' 010267  176056          90$:    MOV     R2,CURFLG               ;STORE CMD FLGWD
002762' 004067  001070                  JSR     R0,RESREG               ;RESTORE ALL REGISTERS
002766' 000177  175102                  JMP     @RTNINT                 ;EXIT FROM INTERRUPT
                                                        ;
                                                        ;
                                                        ;ROLLBACK TYPE OF ERROR
                                                        ;
002772' 032702  000060          100$:   BIT     #60,R2                  ;ROLLBACK TYPE OF CMND?
002776' 001754                          BEQ     60$                     ;Y,N-60$
003000' 032763  000400  000002          BIT     #DOERCK,POPSW(R3        ;DO ERROR CK/RECOVERY?
003006' 001350                          BNE     60$                     ;Y,N-60$
003010' 032702  000040                  BIT     #40,R2                  ;THIS A WRITE ROLLBACK?
003014' 001407                          BEQ     110$                    ;Y,N-110$
003016' 026767  176032  174762          CMP     NUMRB,WRRB              ;EXHAUSTED WR ROLLBACKS?
003024' 001736                          BEQ     50$                     ;N,Y-50$
003026' 005267  175762                  INC     WRBCNT                  ;INCR TOTAL # OF WR ROLLBACKS
003032' 000406                          BR      120$                    ;GO TO COMMON ROLLBACK PROC
003034' 026767  176014  174742  110$:   CMP     NUMRB,RDRB              ;EXHAUSTED READ ROLLBACKS?
003042' 001727                          BEQ     50$                     ;N,Y-50$
003044' 005267  175742                  INC     RRBCNT                  ;INCR TOTAL # OF READ ROLLBACKS
003050' 005267  176000          120$:   INC     NUMRB                   ;ADD 1 TO ROLLBACK CNT
003054' 052702  100000                  BIS     #100000,R2              ;SET ROLLBACK IN PROGRESS FLG
003060' 005724                          TST     (R4)+                   ;POINT AT MTC
003062' 012764  177777  000002          MOV     #-1,2(R4)               ;SET UP RECORD CNT OF 1
003070' 112714  000113                  MOVB    #113,(R4)               ;ISSUE SPACE REV CMND
003074' 000730                          BR      90$                     ;GO TO INT EXIT
```

```
                                        .SBTTL  SUBROUTINES FOR TM11 FUNCTION ROUTINES
                                        ;CHECK IF DEVICE IS BUSY AND WAIT IF IT IS
                                                ;JSR    PC,CKDBSY       S/R CALL
                                                ;DESTROYS R0,R3,R4
                                                ;ON EXIT:
                                                ;R3 = PROG TBL ADR
                                                ;R4 = MTC ADR
003076' 004767  000772          CKDBSY: JSR     PC,SUPTAD               ;SET UP PROG TBL & MTC ADR'S
003102' 032714  000100          10$:    BIT     #100,(R4)               ;INT ENABLE ON?
003106' 001403                          BEQ     20$                     ;Y,N-20$
003110' 004577  174732                  JSR     R5,@CIOBSY              ;RELEASE CONTROL
003114' 000772                          BR      10$                     ;GO CK AGAIN
003116' 032767  000002  174656  20$:    BIT     #2,DFLGWD               ;HAVE TO PROCESS PREV TERMINATION?
003124' 001403                          BEQ     30$                     ;Y,N-30$
003126' 004767  000256                  JSR     PC,PROCTM               ;GO PROCESS TERMINATION
003132' 000763                          BR      10$                     ;GO RECHECK INT ENABLE
003134' 016767  174666  000012  30$:    MOV     IVCTAD,40$              ;STORE INT VECTOR ADR
003142' 016767  174662  000006          MOV     PSWD,45$                ;STORE PROG STATUS WORD
003150' 004577  174712                  JSR     R5,@SETVEC              ;GO SET UP THE VECTOR
003154' 000000                  40$:    .WORD   XXXX                    ;   INT VECTOR ADR
003156' 000000                  45$:    .WORD   XXXX                    ;   PSW
003160' 1773.0                          .WORD   TMINT-.                 ;   REL INT ROUT ADR
003162' 010567  17[illegible]646 STSADR: MOV     R5,ERRADR               ;SAVE CURR USER STMN* ADR
003166' 162767  000004  175640          SUB     #4,ERRADR
003174' 000207                          RTS     PC                      ;EXIT IN-LINE
                                        ;ERROR INFORMATION DISPLAY S/R
                                                ;JSR    R5,ERRCS        S/R CALL FOR CURR STATUS
                                                ;JSR    R5,ERRIS        S/R CALL FOR INT STATUS
                                                ;.WORD  MSGADR-ERMBAS   REL ADR OF ERROR MSG
                                                ;.WORD  MSGCNT          # OF BYTES IN ERROR MSG
                                                ;R3 = PROG TBL ADR
                                                ;DESTROYS R0,R1,R2
003176' 004567  000716          ERRCS:  JSR     R5,STSTAT               ;STORE CURR STATUS
003202' 175556                          .WORD   CSTAT-.
003204' 012767  175436  000110  ERRCS1: MOV     #CSTAT-ERSTAD,ERSTAD    ;STORE ADR OF CURR STATUS
003212' 000403                          BR      ERRCOM                  ;GO TO COMMON POINT
003214' 012767  175422  000100  ERRIS:  MOV     #ISTAT-ERSTAD,ERSTAD    ;STORE ADR OF LAST INT STATUS
003222' 012567  000054          ERRCOM: MOV     (R5)+,ERMBAS            ;STORE MSG ADR
003226' 012567  000052                  MOV     (R5)+,ERMBAS+2          ;STORE MSG CNT
003232' 005267  175564                  INC     ERRCNT                  ;ADD 1 TO ERROR CNT
003236' 032763  020000  000002          BIT     #PRONER,POPSW(R3)       ;ERROR PRINTING INHIBITED?
003244' 001060                          BNE     ERREX                   ;N,Y-ERREX
003246' 010446                          MOV     R4,-(SP)                ;SAVE R4
003250' 005004                          CLR     R4                      ;SET USER MODE PRINT FLAG
003252' 004767  000670                  JSR     PC,DISUNM               ;DISPLAY UNIT #
003256' 032767  000010  174516          BIT     #10,DFLGWD              ;ROLLBACK EXHAUSTED?
003264' 001404                          BEQ     5$                      ;Y,N-5$
003266' 004567  001072                  JSR     R5,PRINT                ;ISSUE ROLLBK EXH MSG
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 882  003272' 002001                          .WORD   RBEXHM-.
 883  003274' 000015                          .WORD   13.
 884  003276' 004567  001062          5$:     JSR     R5,PRINT                ;PRINT ERROR MSG SPECIFIED
 885  003302' 000000                  ERMBAS: .WORD   XXXX
 886  003304' 000000                          .WORD   XXXX
 887  003306' 026727  177770  002006        CMP     ERMBAS,#INVDVN-ERMBAS   ;INVALID UNIT # OR BPI ERROR?
 888  003314' 103005                        BHIS    ERRSNM                  ;N,Y-ERRSNM
 889  003316' 004567  000714                JSR     R5,DISPST               ;DISPLAY STATUS REG'S
 890  003322' 000000                  ERSTAD: .WORD   XXXX
 891  003324' 004767  000776                JSR     PC,PRTIWD               ;DISPLAY EOT & EOF VALUES
 892  003330' 016300  000022          ERRSNM: MOV     PSRCST(R3),R0           ;GET ADR OF SRC STMNTS
 893  003334' 111001                  10$:    MOVB    (R0),R1                 ;SAVE STMNT LENGTH
 894  003336' 026067  000004  175470        CMP     4(R0),ERRADR            ;ERROR OCCUR ON THIS STMNT?
 895  003344' 001402                        BEQ     20$                     ;N,Y-20$
 896  003346' 060100                        ADD     R1,R0                   ;POINT AT NXT STMNT
 897  003350' 000771                        BR      10$                     ;GO CK NXT STMNT
 898  003352' 005720                  20$:    TST     (R0)+                   ;SET UP ADR OF STMNT # DATA
 899  003354' 010701                        MOV     PC,R1                   ;SET UP DATA OUTPUT ADR
 900  003356' 062701  001646                ADD     #STMNUM-.,R1
 901  003362' 004577  174474                JSR     R5,@DECASC              ;CONVERT IT TO ASCII
 902  003366' 012767  020040  001634        MOV     #20040,STMNUM+4         ;SET 2 LOW DIGITS TO SPACES
 903  003374' 004567  000764                JSR     R5,PRINT                ;ISSUE STMNT # MSG
 904  003400' 001614                        .WORD   STMNMG-.
 905  003402' 177762                        .WORD   -14.
 906  003404' 012604                        MOV     (SP)+,R4                ;RESTORE R4
 907  003406' 000205                  ERREX:  RTS     R5                      ;EXIT IN-LINE
 908
 909
 910                                          ;PROCESS TERMINATION OF PREVIOUS I/O FUNCTION
 911
 912                                                  ;JSR    PC,PROCTM       S/R CALL
 913
 914  003410' 004067  000426          PROCTM: JSR     R0,SAVREG               ;SAVE ALL REG'S
 915  003414' 042767  000002  174360        BIC     #2,DFLGWD               ;RESET PROCESS TERMINATION FLAG
 916  003422' 032767  000010  175410        BIT     #10,CURFLG              ;INCR BYTE COUNT?
 917  003430' 001015                        BNE     6$                      ;Y,N-6$
 918  003432' 016700  175404                MOV     CURCNT,R0               ;GET INITIAL BYTE CNT
 919  003436' 016701  175402                MOV     FINCNT,R1               ;GET FINAL BYTE CNT
 920  003442' 100001                        BPL     2$                      ;IS IT NEGATIVE? (Y,N-2$,
 921  003444' 005401                        NEG     R1                      ;MAKE IT POSITIVE
 922  003446' 160100                  2$:     SUB     R1,R0                   ;SUB REMAINING CNT FROM INITIAL CNT
 923  003450' 010067  174344                MOV     R0,SIZE                 ;STORE # OF BYTES ACTUALLY XFERRED
 924  003454' 016701  175356                MOV     CNTADR,R1               ;GET ADR OF BYTE CNT TOTALS
 925  003460' 060011                        ADD     R0,(R1)                 ;ADD IN THIS CNT
 926  003462' 005541                        ADC     -(R1)                   ;UPDATE MOST SIGNF WORD OF CNT
 927  003464' 032767  000001  174310  6$:     BIT     #1,DFLGWD               ;WAS THERE AN ERROR?
 928  003472' 001504                        BEQ     80$                     ;Y,N-80$
 929  003474' 012767  000001  174320        MOV     #1,ERR                  ;SET THE ERROR INDICATOR
 930  003502' 032763  000400  000002        BIT     #DOERCK,POPSW(R3)       ;SUPPOSED TO DO ERROR CHECKING?
 931  003510' 001073                        BNE     70$                     ;Y,N-70$
 932  003512' 010701                        MOV     PC,R1                   ;GET ADR OF CODE  AREA IN ERR MSG
 933  003514' 062701  001534                ADD     #CODFLD-.,R1
 934  003520' 010102                        MOV     R1,R2                   ;MOVE IT TO WORK REG
 935  003522' 012700  000023                MOV     #19.,R0                 ;SET UP AREA SIZE
 936  003526' 112722  000040          10$:    MOVB    #40,(R2)+               ;CLEAR AREA TO SPACES
 937  003532' 005300                        DEC     R0
```

```
003534' 001374                  BNE     10$
003536' 010700                  MOV     PC,R0           ;SET UP ADR OF ERROR CODE TBL
003540' 062700  000156          ADD     #ERCDTB-.,R0
003544' 010702                  MOV     PC,R2           ;SET UP ADR OF STORED DEV REG'S - 1
003546' 062702  175175          ADD     #ISTAT-1-.,R2
003552' 005046                  CLR     -(SP)           ;INITIALIZE CODE CNT
003554' 005202          15$:    INC     R2              ;POINT AT NXT STATUS BYTE
003556' 112004          20$:    MOVB    (R0)+,R4        ;GET ERROR BIT MASK CODE
003560' 120427  000377          CMPB    R4,#377         ;GO TO NXT STAT BYTE CODE?
003564' 001773                  BEQ     15$             ;N,Y-15$
003566' 005704                  TST     R4              ;END OF THE CODE TBL?
003570' 001427                  BEQ     60$             ;N,Y-60$
003572' 120427  000376          CMPB    R4,#376         ;BIT VALUE OF 0 = ERR COND?
003576' 001004                  BNE     30$             ;Y,N-30$
003600' 112004                  MOVB    (R0)+,R4        ;GET BIT VALUE
003602' 130412                  BITB    R4,(R2)         ;THIS BIT RESET IN STAT BYTE?
003604' 001406                  BEQ     40$             ;N,Y-40$
003606' 000402                  BR      35$             ;GO TO NXT TBL ENTRY
003610' 130412          30$:    BITB    R4,(R2)         ;THIS ERROR BIT SET IN STATUS BYTE?
003612' 001003                  BNE     40$             ;N,Y-40$
003614' 062700  000003  35$:    ADD     #3,R0           ;POINT AT NXT CODE TBL ENTRY
003620' 000756                  BR      20$             ;GO CK FOR NXT CODE
003622' 005716          40$:    TST     (SP)            ;FIRST ERROR CODE IN MSG?
003624' 001402                  BEQ     50$             ;N,Y-50$
003626' 112721  000054          MOVB    #',,(R1)+       ;MOVE COMMA TO MSG
003632' 005216          50$:    INC     (SP)            ;INC # OF CODES IN THE MSG
003634' 112021                  MOVB    (R0)+,(R1)+     ;MOVE ERROR CODE TO MSG
003636' 112021                  MOVB    (R0)+,(R1)+
003640' 112021                  MOVB    (R0)+,(R1)+
003642' [illegible]  000005     CMP     #5,(SP)         ;PUT 5 CODES IN THE MSG?
003646' [illegible]             BNE     20$             ;Y,N-20$
003650' 005726          60$:    TST     (SP)+           ;RESTORE STACK
003652' 004567  177336          JSR     R5,ERRIS        ;GO ISSUE STATUS ERROR MSG
003656' 001730                  .WORD   TMEMSG-ERMBAS
003660' 000041                  .WORD   33.
003662' 004767  000100  65$:    JSR     PC,RINTV        ;GO RESET INT VECTOR
003666' 004067  000164          JSR     R0,RESREG       ;RESTORE REG'S
003672' 004577  174152          JSR     R5,@CUPGER      ;GO TO MPG ERR RETN POINT
003676' 000207                  RTS     PC              ;EXIT IN-LINE
003700' 005267  175116  70$:    INC     ERRCNT          ;ADD 1 TO ERROR CNT
003704' 004767  000056  80$:    JSR     PC,RINTV        ;GO RESET INT VECTOR
003710' 004067  000142          JSR     R0,RESREG       ;RESTORE REG'S
003714' 000207                  RTS     PC              ;EXIT IN-LINE

003716' 047200  046530  ERCDTB: .ASCII  <200>/NXM/      ;ERROR MSG CODE TABLE
003722'    376                  .BYTE   376
003723'    100  046123  122     .ASCII  <100>/SLR/
003727'    004  051127  114     .ASCII  <004>/WRL/
003733'    377                  .BYTE   377
003734' 044600  041514          .ASCII  <200>/ILC/
003740' 041440  042522          .ASCII  <040>/CRE/
003744' 050020  042501          .ASCII  <020>/PAE/
003750' 041010  046107          .ASCII  <010>/BGL/
003754' 051002  042514          .ASCII  <002>/RLE/
003760' 041001  042524          .ASCII  <001>/BTE/
```

```
 994  003764'  000                    .BYTE   0                       ;TABLE TERMINATOR
 995           003766'                .EVEN
 996
 997
 998                                  ;RESET INTERRUPT VECTOR S/R
 999
1000                                          ;JSR    PC,RINTV        S/R CALL
1001                                          ;R3 MUST CONTAIN PROG TBL ADR
1002                                          ;DESTROYS R0
1003
1004  003766'  004567  000020        RINTV:  JSR     R5,TVECT                ;GO CK IF I HAVE VECTOR CONTROL
1005  003772'  000406                BR      RINTEX                  ;BR IF I DON'T
1006  003774'  016767  174026  000004       MOV     IVCTAD,10$              ;GET CURR INT VECT ADR
1007  004002'  004577  174062               JSR     R5,@CLRVEC              ;GO HAVE MPG CLEAR IT
1008  004006'  000000                10$:    .WORD   XXXX
1009  004010'  000207                RINTEX: RTS     PC                      ;EXIT IN-LINE
1010
1011
1012                                  ;TEST INTERRUPT VECTOR S/R
1013
1014                                          ;JSR    R5,TVECT        S/R CALL
1015                                          ;BR     LABEL           EXECUTED IF NOT SAME
1016                                          ;R3 MUST CONTAIN PROG TBL ADR
1017                                          ;DESTROYS R0
1018
1019  004012'  016767  174010  000010  TVECT:  MOV     IVCTAD,20$              ;GET CURR INT VECT ADR
1020  004020'  016346  000004                MOV     PFWADR(R3),-(SP)        ;STORE FLGWD ADR TO IDENTIFY ME
1021  004024'  004577  174042                JSR     R5,@TSTVEC              ;DO I HAVE VECTOR CONTROL?
1022  004030'  000000                20$:    .WORD   XXXX                    ;  MPG WILL TELL ME SINCE I CAN'T
1023  004032'  176436                        .WORD   TMINT-.                 ;  GET AT LOWER MEM IF MEM MGMNT
1024  004034'  000401                        BR      TVECTX                  ;BR IF I DONT'T HAVE CNTRL
1025  004036'  005725                        TST     (R5)+                   ;BYPASS BR INST IN S/R CALL
1026  004040'  000205                TVECTX: RTS     R5                      ;EXIT IN-LINE
```

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                                        .SBTTL  SUBROUTINES FOR TM11 DEVICE ROUTINE


                                        ;SAVE REGISTERS R0 THRU R5

                                                ;JSR    R0,SAVREG       S/R CALL

004042' 010146                  SAVREG: MOV     R1,-(SP)                ;SAVE R0 THRU R5
004044' 010246                          MOV     R2,-(SP)
004046' 010346                          MOV     R3,-(SP)
004050' 010446                          MOV     R4,-(SP)
004052' 010546                          MOV     R5,-(SP)
004054' 010007                          MOV     R0,PC                   ;EXIT IN-LINE


                                        ;RESTORE REGISTERS R0 THRU R5

                                                ;JSR    R0,RESREG       S/R CALL

004056' 005726                  RESREG: TST     (SP)+                   ;RESTORE R5 THRU R0
004060' 012605                          MOV     (SP)+,R5
004062' 012604                          MOV     (SP)+,R4
004064' 012603                          MOV     (SP)+,R3
004066' 012602                          MOV     (SP)+,R2
004070' 012601                          MOV     (SP)+,R1
004072' 000200                          RTS     R0                      ;EXIT IN-LINE


                                        ;SET PROGRAM'S PROG TABLE ADR IN R3 & MTC ADR IN R4

                                                ;JSR    PC,SUPTAD       S/R CALL

004074' 010703                  SUPTAD: MOV     PC,R3                   ;SET UP LOCATION ZERO ADR
004076' 062703  173702                  ADD     #LOCZ-.,R3
004102' 166303  177776                  SUB     -2(R3),R3               ;SUBTRACT PROG TBL LENGTH
004106' 016704  173712                  MOV     DREGAD,R4               ;GET DEV REG BASE ADR
004112' 062704  000002                  ADD     #2,R4                   ;POINT AT MTC
004116' 000207                          RTS     PC                      ;EXIT IN-LINE


                                        ;STORE DEVICE'S STATUS REGISTERS

                                                ;JSR    R5,STSTAT       S/R CALL
                                                ;.WORD  STADR-.         REL STORAGE ADR
                                                ;DESTROYS R0,R1

004120' 010501                  STSTAT: MOV     R5,R1                   ;GET REL STORAGE ADR & MAKE
004122' 062501                          ADD     (R5)+,R1                ;IT ABSOLUTE
004124' 016700  173674                  MOV     DREGAD,R0               ;GET ADR OF DEV REG'S
004130' 012021                          MOV     (R0)+,(R1)+             ;STORE ALL DEV REG'S
004132' 012021                          MOV     (R0)+,(R1)+
004134' 012021                          MOV     (R0)+,(R1)+
004136' 012021                          MOV     (R0)+,(R1)+
004140' 012021                          MOV     (R0)+,(R1)+
004142' 011011                          MOV     (R0),(R1)
004144' 000205                          RTS     R5                      ;EXIT IN-LINE
```

```
1084
1085
1086                                    ;DISPLAY CURRENT UNIT #
1087
1088                                            ;JSR    PC,DISUNM       S/R CALL
1089                                            ;R3 MUST CONTAIN PROG TBL ADR
1090                                            ;DESTROYS R0,R1,R2
1091
1092  004146' 012767  000026  000056  DISUNM: MOV     #22.,DISUML             ;INITIALIZE TO NORMAL MSG LNGTH
1093  004154' 116300  000035                 MOVB    PCURDV(R3),R0           ;GET CURR UNIT #
1094  004160' 020027  000007                 CMP     R0,#7                   ;VALID UNIT #?
1095  004164' 101007                         BHI     DISUIV                  ;Y,N-DISUIV
1096  004166' 004577  173666                 JSR     R5,@BTASLZ              ;CONVERT # TO DECIMAL ASCII
1097  004172' 000402                         .WORD   UNASCI-.
1098  004174' 016767  000400  000372         MOV     UNASCI+4,UNASCI         ;MOVE ASCII # TO 1ST TWO DIGITS
1099  004202' 000410                         BR      DISUPR                  ;GO ISSUE MSG
1100  004204' 012767  000032  000020  DISUIV: MOV     #26.,DISUML             ;SET UP ERR COND MSG LNGTH
1101  004212' 042700  177400                 BIC     #177400,R0              ;RESET HIGH BYTE
1102  004216' 004577  173634                 JSR     R5,@BINASC              ;CONVERT BINARY # TO ASCII
1103  004222' 000352                         .WORD   UNASCI-.
1104  004224' 004567  000134          DISUPR: JSR     R5,PRINT                ;GO ISSUE UNIT # MSG
1105  004230' 000320                         .WORD   UNITMG-.
1106  004232' 000026                  DISUML: .WORD   22.
1107  004234' 000207                         RTS     PC                      ;EXIT IN-LINE
1108
1109
1110                                    ;TAILOR STATUS MSG & PRINT IT
1111
1112                                            ;JSR    R5,DISPST       S/R CALL
1113                                            ;WORD   STATADR-.       REL ADR OF STATUS DATA
1114                                            ;DESTROYS R0,R1,R2
1115
1116  004236' 010502                  DISPST: MOV     R5,R2                   ;GET REL DATA ADR
1117  004240' 062502                          ADD     (R5)+,R2                ;MAKE IT ABS
1118  004242' 010701                          MOV     PC,R1                   ;SET UP ADR OF REG NAMES IN ASCII
1119  004244' 062701  173652                  ADD     #DVREGS-.,R1
1120  004250' 012746  000006                  MOV     #DVREGE-DVREGS/6,-(SP)  ;GET # OF REGISTERS TO DISPLAY
1121  004254' 012167  000322          10$:    MOV     (R1)+,DVRGMG            ;MOVE REG NAME TO MSG
1122  004260' 012167  000320                  MOV     (R1)+,DVRGMG+2
1123  004264' 005721                          TST     (R1)+                   ;BYPASS DISP VALUE
1124  004266' 012200                          MOV     (R2)+,R0                ;GET REG'S STORED VALUE
1125  004270' 010146                          MOV     R1,-(SP)                ;SAVE R1 & R2
1126  004272' 010246                          MOV     R2,-(SP)
1127  004274' 004577  173556                  JSR     R5,@BINASC              ;CONVERT IT TO ASCII
1128  004300' 000310                          .WORD   DVRGDT-.
1129  004302' 004567  000056                  JSR     R5,PRINT                ;PRINT THE STATUS MSG
1130  004306' 000274                          .WORD   DVRGMG-.
1131  004310' 000014                          .WORD   12.
1132  004312' 012602                          MOV     (SP)+,R2                ;RESTORE R1 & R2
1133  004314' 012601                          MOV     (SP)+,R1
1134  004316' 005316                          DEC     (SP)                    ;DECR REG CNT
1135  004320' 001355                          BNE     10$                     ;DONE ALL? (Y,N-10$)
1136  004322' 005726                          TST     (SP)+                   ;REMOVE COUNT FROM STACK
1137  004324' 000205                          RTS     R5                      ;EXIT IN-LINE
```

```
1139                                            ;DISPLAY CONTENTS OF EOF & EOT WORDS
1140
1141                                                    ;JSR     PC,PRTIWD      S/R CALL
1142                                                    ;DESTROYS R0,R1,R2
1143
1144  004326' 016700  173456          PRTIWD: MOV     EOF,R0                  ;GET EOF VALUE
1145  004332' 004577  173520                  JSR     R5,@BINASC              ;CONVERT ITS VALUE TO ASCII
1146  004336' 000633                          .WORD   IFEOF-.
1147  004340' 016700  173446                  MOV     EOT,R0                  ;GET EOT VALUE
1148  004344' 004577  173506                  JSR     R5,@BINASC              ;CONVERT IT TO ASCII
1149  004350' 000635                          .WORD   IFEOT-.
1150  004352' 004567  000006                  JSR     R5,PRINT                ;PRINT MSG WITH THEIR VALUES
1151  004356' 000606                          .WORD   INFOMG-.
1152  004360' 000027                          .WORD   23.
1153  004362' 000207                          RTS     PC                      ;EXIT IN-LINE
1154
1155                                            ;ISSUE MSG TO LIST DEVICE
1156
1157                                                    ;JSR     R5,PRINT       S/R CALL
1158                                                    ;.WORD   MSGADR-.       REL ADR OF MSG
1159                                                    ;.WORD   BYTCNT         MSG BYTE CNT (IF NEGATIVE,
1160                                                    ;                         RESET PRT DEV DEDICATED.)
1161                                                    ;R3 = PROG TBL ADR
1162                                                    ;R4 = FLAGWORD -- IF NEGATIVE, USE CMND MODE PRINT
1163                                                    ;DESTROYS R0,R1,R2
1164
1165  004364' 010500                  PRINT:  MOV     R5,R0                   ;GET MSG ADR & MAKE IT ABS
1166  004366' 062500                          ADD     (R5)+,R0
1167  004370' 012501                          MOV     (R5)+,R1                ;GET BYTE COUNT
1168  004372' 005704                          TST     R4                      ;USE CMND MODE PRINT?
1169  004374' 100030                          BPL     40$                     ;Y,N-40$
1170  004376' 010702                          MOV     PC,R2                   ;SET UP LINK INFO ADR
1171  004400' 062702  000040                  ADD     #20$-.,R2
1172  004404' 160200                          SUB     R2,R0                   ;MAKE MSG ADR REL
1173  004406' 010022                          MOV     R0,(R2)+                ;STORE MSG ADR
1174  004410' 010112                          MOV     R1,(R2)                 ;STORE MSG'S BYTE COUNT
1175  004412' 100001                          BPL     10$                     ;CNT NEG? (Y,N-10$)
1176  004414' 005412                          NEG     (R2)                    ;MAKE IT POSITIVE
1177  004416' 016367  000006  000056   10$:   MOV     PASCIN(R3),PROGNM       ;STORE PROG'S # IN MSG
1178  004424' 004577  173424                  JSR     R5,@CLIST               ;ISSUE PROG #
1179  004430' 000050                          .WORD   PNUMSG-.
1180  004432' 000005                          .WORD   5
1181  004434' 004577  173414                  JSR     R5,@CLIST               ;ISSUE MSG SPECIFIED
1182  004440' 000000                  20$:    .WORD   XXXX
1183  004442' 000000                          .WORD   XXXX
1184  004444' 004577  173404                  JSR     R5,@CLIST               ;ISSUE A <CR> & <LF>
1185  004450' 000220                          .WORD   CRLF-.
1186  004452' 000002                          .WORD   2
1187  004454' 000410                          BR      PRTEX                   ;GO TO EXIT
1188  004456' 010067  000010          40$:   MOV     R0,50$                  ;STORE MSG'S ABS ADR
1189  004462' 010167  000006                  MOV     R1,60$                  ;STORE ITS BYTE CNT
1190  004466' 004577  173360                  JSR     R5,@ULIST               ;GO TO MPG TO ISSUE THE MSG
1191  004472' 000000                  50$:    .WORD   XXXX
1192  004474' 000000                  60$:    .WORD   XXXX
1193  004476' 000205                  PRTEX:  RTS     R5                      ;EXIT IN-LINE
```

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                                                .SBTTL  TM11 MESSAGE STORAGE AREA

                                                .NLIST  BEX

                                                .EVEN
004500' 021520                          PNMMSG: .ASCII  /P#/
004502' 054130      011                 PROGNM: .ASCII  /XX/<011>
004505'    101  020124  040514          ATIMSG: .ASCII  'AT LAST INT:'
004521'    103  051125  042522          CURMSG: .ASCII  /CURRENTLY:/
004533'    105  042116  047440          RENDMG: .ASCII  /END OF REPORT/
                                                .EVEN
004550' 025052  025052  046524          UNITMG: .ASCII  /****TM11 TAPE UNIT: /
004574' 054130  054130  054130          UNASCI: .ASCII  /XXXXXX/
                                                .EVEN
004602' 054130  054130  020075          DVRGMG: .ASCII  /XXXX= /
004610' 054130  054130  054130          DVRGDT: .ASCII  /XXXXXX/
004616' 054502  042524  035123          CNTSMG: .ASCII  /BYTES:  RD= /
004632' 054130  054130  054130          BCMRD:  .ASCII  /XXXXXXXXXXX  WR= /
004654' 054130  054130  054130          BCMWR:  .ASCII  /XXXXXXXXXXX/
004670' 005015  041411  047115          CRLF:   .ASCII  <015><012><011>/CMNDS:  RD= /
004707'    130  054130  054130          CMDCRD: .ASCII  /XXXXXX WR= /
004722' 054130  054130  054130          CMDCWR: .ASCII  /XXXXXX MISC= /
004737'    130  054130  054130          CMDCMS: .ASCII  /XXXXXX/<015><012><011>/ROLLBACKS:  RD= /
004770' 054130  054130  054130          CNTRRB: .ASCII  /XXXXXX WR= /
005003'    130  054130  054130          CNTWRB: .ASCII  /XXXXXX/<015><012><011>/# OF EOF'S= /
005030' 054130  054130  054130          CNTEOF: .ASCII  /XXXXXX EOT'S= /
005046' 054130  054130  054130          CNTEOT: .ASCII  /XXXXXX/<015><012><011>/ERRORS:  DEV= /
005075'    130  054130  054130          CNTERR: .ASCII  /XXXXXX DATA= /
005112' 054130  054130  054130          CNTDER: .ASCII  /XXXXXX/<015><012><011>/INTERRUPTS:  /
005140' 054130  054130  054130          CNTINT: .ASCII  /XXXXXX/
        005146'                         CNTSEN= .
005146' 044524  042515  052517          IOTO:   .ASCII  'TIMEOUT ON I/O'
005164' 047505  036506     040          INFOMG: .ASCII  /EOF= /
005171'    130  054130  054130          IFEOF:  .ASCII  /XXXXXX EOT= /
005205'    130  054130  054130          IFEOT:  .ASCII  /XXXXXX/
        005214'                                 .EVEN
005214' 052123  047115  020124          STMNMG: .ASCII  /STMNT # /
005224' 054130  054130  054130          STMNUM: .ASCII  /XXXXXX/
005232' 052123  052101  051525          TMEMSG: .ASCII  /STATUS ERROR: /
005250' 000023                          CODFLD: .BLKB   19.

005273'    122  046117  041114          RBEXHM: .ASCII  /ROLLBACK EXH./
005310' 047111  020126  047125          INVDVN: .ASCII  /INV UNIT #/
005322' 047111  020126  050102          INVBPI: .ASCII  /INV BPI VALUE/
        005340'                                 .EVEN

                                                .LIST   BEX

        005340'                         DVREND= ..
```

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                                .SBTTL  FORMATS FOR PROGRAM & DEVICE ROUTINE TABLES

                        ;       PROGRAM TABLE FORMAT

000242                  PTLGTH= 162.    ;PROGRAM TABLE LENGTH - NON MEM MGMNT VERSION OF MPG

                        ;(PTLGTH= 212.  ;PROGRAM TABLE LENGTH - MEM MGMNT VERSION OF MPG)

000000                  PFLGWD= +0.     ;PROGRAM FLAG WORD - 1 WORD

000002                          URSTOP= 2       ; 1 = USER HAS STOPPED THIS PROGRAM
000004                          ERSTOP= 4       ; 1 = AN ERROR HAS STOPPED THIS PROGRAM
000010                          WT4IOT= 10      ; 1 = WAITING FOR I/O TERMINATION
000020                          CTPRIO= 20      ; 1 = CONSOLE OR PRINTER I/O IN PROGRESS
000040                          SETDED= 40      ; 1 = THIS PROG SET THE PRT DEV DEDICATED FLAG
000100                          OCPRES= 100     ; 1 = OBJ CODE IS PRESENT
000200                          USEUBM= 200     ; 1 = THIS PROG USES THE UNIBUS MAP (MEM MGMNT ONLY)
100000                          ACTIVE= 100000  ; 1 = PROGRAM IS ACTIVE (SPECIFIED FOR EXECUTION)

000002                  POPSW=  +2.     ;PROGRAM'S OPERATION SWITCHES - 1 WORD

100000                          STONER= 100000  ; 1 = STOP PROG EXECUTION UPON ERROR
040000                          CYCPRG= 40000   ; 1 = CYCLE PROGRAM (ON CURRENT DEVICE)
020000                          PRONER= 20000   ; 1 = DO NOT PRINT ON ERROR
010000                          BIT12=  10000   ; 0 = NOT USED
004000                          BIT11=  4000    ; 0 = NOT USED
002000                          CYCDVL= 2000    ; 1 = CYCLE THE DEVICE LIST
001000                          GTNXTD= 1000    ; 1 = CYCLE ON SAME DEVICE UPON ERROR
000400                          DOERCK= 400     ; 1 = DON'T DO ERROR CHECKING
000200                          SPOPER= 200     ; 1 = DEVICE SPECIAL OPERATION
000100                          BIT6=   100     ; 0 = NOT USED
000040                          DOIOT=  40      ; 1 = DO NOT PERFORM I/O TIMEOUT
000020                          AUTORP= 20      ; 1 = DO NOT AUTOMATICALLY DISPLAY COUNTS
000010                          AURPEP= 10      ; 1 = AUTO DISPLAY COUNTS AT END OF FINAL PASS ONLY
000004                          HSKPEP= 4       ; 1 = HOUSEKEEP COUNTS ONLY AT RUN COMMAND
000002                          PFBBOV= 2       ; 1 = PRINT FIRST BAD BYTE ONLY ON VERIFY
000001                          NOCOMP= 1       ; 1 = DO NOT PRINT PROG COMPLETED MSG

000004                  PFWADR= +4.     ;*;PROGRAM FLAGWORD ADDRESS - 1 WORD

000006                  PASCIN= +6.     ;PROGRAM'S NUMBER IN ASCII - 1 WORD

000010                  PNAME=  +8.     ;PROGRAM'S NAME IN ASCII - 6 BYTES

000016                  PRDIOA= +14.    ;ADDRESS OF READ I/O AREA - 1 WORD

000020                  PWRIOA= +16.    ;ADDRESS OF WRITE I/O AREA - 1 WORD

000022                  PSRCST= +18.    ;SOURCE STATEMENTS START ADDRESS - 1 WORD

000024                  POBJST= +20.    ;OBJECT CODE START ADDRESS - 1 WORD

000026                  PLNGTH= +22.    ;PROG AREA LENGTH (OBJ END MINUS PROG TBL START) - 1 WORD

000030                  PTOCNT= +24.    ;I/O TIMEOUT COUNT - 1 WORD
```

```
000032                  PMDLCD= +26.    ;DEV ROUT MODEL # CODE - 1 WORD
000034                  PDPNTR= +28.    ;CURRENT DEVICE NUMBER POINTER - 1 BYTE
000035                  PCURDV= +29.    ;CURRENT DEVICE # - 1 BYTE
000036                  PDNUMS= +30.    ;DEVICE NUMBERS - 16 BYTES
000056                  PTEM0=  +46.    ;USER PROGRAM TEMPORARY STORAGE - 1 WORD
000060                  PTEM1=  +48.    ;USER PROGRAM TEMPORARY STORAGE - 1 WORD
000062                  PTEM2=  +50.    ;USER PROGRAM TEMPORARY STORAGE - 1 WORD
000064                  PTEM3=  +52.    ;USER PROGRAM TEMPORARY STORAGE - 1 WORD
000066                  PTEM4=  +54.    ;USER PROGRAM TEMPORARY STORAGE - 1 WORD
000070                  PTEM5=  +56.    ;USER PROGRAM TEMPORARY STORAGE - 1 WORD
000072                  PTEM6=  +58.    ;USER PROGRAM TEMPORARY STORAGE - 1 WORD
000074                  PTEM7=  +60.    ;USER PROGRAM TEMPORARY STORAGE - 1 WORD
000076                  PTEM8=  +62.    ;USER PROGRAM TEMPORARY STORAGE - 1 WORD
000100                  PTEM9=  +64.    ;USER PROGRAM TEMPORARY STORAGE - 1 WORD
000102                  PTEM10= +66.    ;USER PROGRAM TEMPORARY STORAGE - 1 WORD
000104                  PTEM11= +68.    ;USER PROGRAM TEMPORARY STORAGE - 1 WORD
000106                  PTEM12= +70.    ;USER PROGRAM TEMPORARY STORAGE - 1 WORD
000110                  PTEM13= +72.    ;USER PROGRAM TEMPORARY STORAGE - 1 WORD
000112                  PTEM14= +74.    ;USER PROGRAM TEMPORARY STORAGE - 1 WORD
000114                  PTEM15= +76.    ;USER PROGRAM TEMPORARY STORAGE - 1 WORD
000116                  PNBR=   +78.    ;NUMBER OF BYTES TO TRANSFER ON MOVE (NBR) - 1 WORD
000120                  PSRC=   +80.    ;DATA SOURCE ADDRESS ON MOVE (SRC) - 1 WORD
000122                  PDST=   +82.    ;DATA DESTINATION ADDRESS ON MOVE (DST) - 1 WORD
000124                  PSTKCT= +84.    ;# OF WORDS (X 2) SAVED OFF STACK - 1 WORD
000126                  PSTKSV= +86.    ;STACK WORDS STORAGE AREA - 30 WORDS
000222                  PSVREG= +146.   ;USER'S R0 THRU R5 REGISTERS STORAGE AREA - 6 WORDS
000236                  PUSRPC= +158.   ;USER'S CURRENT PROGRAM COUNTER - 1 WORD
```

```
                                        ;FOLLOWING ENTRIES (PRDIOX THRU PUBMAP) ARE ONLY IN MEM MGMNT VERSION
                                ;(PRDIOX= +160. ;18/22 BIT ABSOLUTE ADDRESS OF READ I/O AREA - 2 WORDS)
                                ;(PRDIOV= +164. ;18 BIT VIRTUAL ADDRESS OF READ I/O AREA - 2 WORDS)
                                ;(PWRIOX= +168. ;18/22 BIT ABSOLUTE ADDRESS OF WRITE I/O AREA - 2 WORDS)
                                ;(PWRIOV= +172. ;18 BIT VIRTUAL ADDRESS OF WRITE I/O AREA - 2 WORDS)
                                ;(PUPARS= +176. ;STORAGE AREA FOR USER'S PAR'S 0 THRU 7 - 8 WORDS)
                                ;(PUPDRS= +192. ;STORAGE AREA FOR USER'S PDR'S 0 THRU 7 - 8 WORDS.
                                ;(PUBMAP= +208. ;1ST UNIBUS MAP REG # AND # OF REGS USED - 1 WORD)
                                        ;END OF MEM MGMNT ONLY ENTRIES

000240                          PTSIZE= +160.   ;PROGRAM TABLE SIZE IN BYTES - 1 WORD - NON MEM MGMNT

                                ;(PTSIZE= +210. ;PROGRAM TABLE SIZE IN BYTES - 1 WORD - MEM MGMNT VERSION.

000242                          PTEND=  +162.   ;END OF PROGRAM TABLE - NON MEM MGMNT VERSION

                                ;.PTEND=  +212. ;END OF PROGRAM TABLE - MEM MGMNT VERSION
```

```
                                ;       DEVICE ROUTINE TABLE
                                ;
000116                          DRTLTH= 78.     ;DEVICE ROUTINE TABLE LENGTH
                                ;
000000                          DEVRSZ= +0.     ;DEVICE ROUTINE SIZE IN BYTES - 1 WORD
000002                          DEVFWD= +2.     ;DEVICE ROUTINE FLAGWORD - 1 WORD
000004                          DEVIW1= +4.     ;DEVICE INTERFACE WORD # 1 - 1 WORD
000006                          DEVIW2= +6.     ;DEVICE INTERFACE WORD # 2 - 1 WORD
000010                          DEVIW3= +8.     ;DEVICE INTERFACE WORD # 3 - 1 WORD
000012                          DEVIW4= +10.    ;DEVICE INTERFACE WORD # 4 - 1 WORD
000014                          DEVIW5= +12.    ;DEVICE INTERFACE WORD # 5 - 1 WORD
000016                          DEVIW6= +14.    ;DEVICE INTERFACE WORD # 6 - 1 WORD
000020                          DEVIW7= +16.    ;DEVICE INTERFACE WORD # 7 - 1 WORD  (SIZE)
000022                          DEVIW8= +18.    ;DEVICE INTERFACE WORD # 8 - 1 WORD  (ERR)
000024                          DEVDRA= +20.    ;DEVICE REGISTERS ADDRESS - 1 WORD
000026                          DEVIVA= +22.    ;DEVICE INTERRUPT VECTOR ADDRESS - 1 WORD
000030                          DEVRPS= +24.    ;DEVICE READ PROCESSOR STATUS WORD (BUS REQ) - 1 WORD
000032                          DEVWPS= +26.    ;DEVICE WRITE PROC STATUS WORD (BUS REQ) - 1 WORD
000034                          DHKPAD= +28.    ;DEVICE ROUT HOUSEKEEPING ROUT REL ENTRY ADR - 1 WORD
000036                          DERPAD= +30.    ;DEVICE ROUT REPORT ROUT REL ENTRY ADR - 1 WORD
000040                          DKILAD= +32.    ;DEVICE ROUT KILL ROUTINE REL ENTRY ADR - 1 WORD
000042                          DECTAD= +34.    ;DEVICE ROUT ERROR COUNTER REL ADR - 1 WORD
000044                          DTOEAD= +36.    ;DEVICE ROUT TIMEOUT ERR ROUT REL ENTRY ADR - 1 WORD
000046                          DEVIOB= +38.    ;DEVICE I/O BUSY BRANCH ADDRESS (CIOBSY) - 1 WORD
000050                          DEVDER= +40.    ;DEVICE ERROR BRANCH ADDRESS (CUPGER) - 1 WORD
000052                          DVUPRT= +42.    ;USER MODE PRINT BRANCH ADDRESS (ULIST) - 1 WORD
000054                          DVCPRT= +44.    ;CMND MODE PRINT BRANCH ADDRESS (CLIST) - 1 WORD
000056                          DEVBTA= +46.    ;CONVERT BINARY TO ASCII BR ADR (BINASC) - 1 WORD
000060                          DVBTDA= +48.    ;CONVERT BINARY TO DECIMAL ASCII BR ADR (BTASLZ) - 1 WORD
```

```
1439    000062                  DVPDTA= +50.    ;CONVERT PACKED DECIMAL TO ASCII BR ADR (DECASC) - 1 WORD
1440
1441    000064                  DVSFWD= +52.    ;MPG SYSTEM FLAGWORD ADDRESS (CSYSFW) - 1 WORD
1442
1443    000066                  DVSVEC= +54.    ;SET INTERRUPT VECTOR BR ADR (SETVEC) - 1 WORD
1444
1445    000070                  DVCVEC= +56.    ;CLEAR INTERRUPT VECTOR BR ADR (CLRVEC) - 1 WORD
1446
1447    000072                  DVTVEC= +58.    ;TEST INTERRUPT VECTOR BR ADR (TSTVEC) - 1 WORD
1448
1449    000074                  DVRINT= +60.    ;RETURN FROM INTERRUPT BR ADR (RTNINT) - 1 WORD
1450
1451    000076                  DVGETB= +62.    ;GET DATA BYTE BR ADR (GETBYT) - 1 WORD
1452
1453    000100                  DVPUTB= +64.    ;PUT DATA BYTE BR ADR (PUTBYT) - 1 WORD
1454
1455    000102                  DEVSTP= +66.    ;DEVICE ROUT REL SYMBOL TABLE POINTER - 1 WORD
1456
1457    000104                  DEVETP= +68.    ;DEVICE ROUT REL ENTRY TABLE POINTER - 1 WORD
1458
1459    000106                  DVPTEP= +70.    ;PACK TABLE EXTEN. REL POINTER - 1 WORD
1460
1461    000110                  DVVTEP= +72.    ;VECTOR TABLE EXTEN. REL POINTER - 1 WORD
1462
1463    000112                  DVCTEP= +74.    ;COMPILER TBL EXTEN. REL POINTER - 1 WORD
1464
1465    000114                  DVIWSP= +76.    ;DEVICE INTERFACE WORD SYMBOL TBL REL POINTER - 1 WORD
1466
1467    000116                  DRTEND= +78.    ;END OF DEVICE ROUTINE TABLE
1468
1469
1470    000001                          .END
```

```
A.TIME= 100000          DEVDER= 000050          DVRGDT  004610R 002  LSPFWD  000742R 002  PTEMH = 000066
ATIMSG  004505R 002     DEVDRA= 000024          DVRGMG  004602R 002  LSPREV  000742R 002  PTEM5 = 000070
AURPEP= 000010          DEVETP= 000104          DVRINT= 000074       LSTATS  000732R 002  PTEM6 = 000072
AUTORP= 000020          DEVFWD= 000002          DVSFWD= 000064       LWAIT   000732R 002  PTEM7 = 000074
BIMRD   004632R 002     DEVIOB= 000046          DVSVEC= 000066       LWEIRG  000732R 002  PTEM8 = 000076
BOMWR   004654R 002     DEVIVA= 000026          DVTVEC= 000072       LWREOF  000732R 002  PTEM9 = 000100
BYMASC  000056R 002     DEVIW1= 000004          DVUPRT= 000052       MISCNT  001010R 002  PTEND = 000242
BIT11 = 004000          DEVIW2= 000006          DVVTEP= 000110       MISCOM  002100R 002  PTLGTH= 000242
BIT12 = 010000          DEVIW3= 000010          EOF     000010R 002  NOCOMP= 000001       PTOCNT= 000030
BIT6  = 000100          DEVIW4= 000012          EOFCNT  001016R 002  NOWAIT  001632R 002  PTSIZE= 000240
BPI     001662R 002     DEVIW5= 000014          EOT     000012R 002  NUMRB   001054R 002  PUSRPC= 000236
BFIER   001726R 002     DEVIW6= 000016          EOTCNT  001020R 002  OCPRES= 000100       PUTBYT  000100R 002
BFIVVL  001752R 002     DEVIW7= 000020          ERCDTB  003716R 002  OOO     001642R 002  PWR.OA= 000020
BTASLZ  000060R 002     DEVIW8= 000022          ERMBAS  003302R 002  OFFLIN  002132R 002  RBADR   001050R 002
BYRD    000774R 002     DEVOW   002346R 002     ERR     000022R 002  PASCIN= 000006       RBCMD   001046R 002
BYWR    001000R 002     DEVRPS= 000030          ERRADR  001034R 002  PC    =%000007       RBCNT   001052R 002
CIOBSY  000046R 002     DEVRSZ= 000000          ERRCNT  001022R 002  PCURDV= 000035       RBEXMM  005273R 002
CMOBSY  003076R 002     DEVSTP= 000102          ERRCOM  003222R 002  PDNUMS= 000036       RDCNT   001004R 002
CLIST   000054R 002     DEVWPS= 000032          ERRCS   003176R 002  PDPNTR= 000034       RDCOM   001774R 002
CLRVEC  000070R 002     DFLGWD  000002R 002     ERRCS1  003204R 002  PDST  = 000122       RDRB    000004R 002
CMDCMS  004737R 002     DHKPAD= 000034          ERREX   003406R 002  PFBBOV= 000002       READ    001764R 002
CMDCOM  002166R 002     DISCNT  001314R 002     ERRIS   003214R 002  PFLGWD= 000000       RENDMG  004533R 002
CMDCRD  004707R 002     DISCT1  001320R 002     ERRSNM  003330R 002  PFWADR= 000004       REPORT  001134R 002
CMDCWR  004722R 002     DISPST  004236R 002     ERSTAD  003322R 002  PLNGTH= 000026       REPTBL  001430R 002
CMDEX   002460R 002     DISUIV  004204R 002     ERSTOP= 000004       PMDLCD= 000032       RESREG  004056R 002
CNTADR  001036R 002     DISUML  004232R 002     EVEN    001652R 002  PNAME = 000010       REWIND  002120R 002
CNTDER  005112R 002     DISUNM  004146R 002     FINCNT  001044R 002  PNBR  = 000116       RINTEX  004010R 002
CNTEOF  005030R 002     DISUPR  004224R 002     GETBYT  000076R 002  PNMMSG  004500R 002  RINTV   003766R 002
CNTEOT  005046R 002     DKILAD= 000040          GTNXTD= 001000       POBJST= 000024       RPTBAS  001364R 002
CNTERR  005075R 002     DOERCK= 000400          HSKEEP  001056R 002  POPSW = 000002       RPTEND  001410R 002
CNTINT  005140R 002     DOIOT = 000040          HSKPEN= 001056R 002  PRDIOA= 000016       RPTLP   001346R 002
CNTRRB  004770R 002     DREGAD  000024R 002     HSKPEP= 000004       PRINT   004364R 002  RRBCNT  001012R 002
CNTSEN= 005146R 002     DRTEND= 000116          HSKPST= 000744R 002  PROCTM  003410R 002  RTNINT  000074R 002
CNTSMG  004616R 002     DRTLTH= 000116          IFEOF   005171R 002  PROGNM  004502R 002  R0    =%000000
CNTWRB  005003R 002     DTOEAD= 000044          IFEOT   005205R 002  PRONER= 020000       R1    =%000001
CODFLD  005250R 002     DVBTDA= 000060          INFOMG  005164R 002  PRTEX   004476R 002  R2    =%000002
CPESET  002144R 002     DVCMDS  000162R 002     INTCNT  001026R 002  PRTIWD  004326R 002  R3    =%000003
CRLF    004670R 002     DVCPRT= 000054          INVBPI  005322R 002  PSRC  = 000120       R4    =%000004
CSTAT   000760R 002     DVCPTE  000534R 002     INVDVN  005310R 002  PSRCST= 000022       R5    =%000005
CSYSFW  000064R 002     DVCTEP= 000112          IOTO    005146R 002  PSTKCT= 000124       SAVREG  004042R 002
CTPRIO= 000020          DVCVEC= 000C^0          ISTAT   000744R 002  PSTKSV= 000126       SETDED= 000040
CUPGER  000050R 002     DVGETB= 000076          IVCTAD  000026R 002  PSVREG= 000222       SETVEC  000066R 002
CURCNT  001042R 002     DVIWSP= 000114          KILL    001564R 002  PSWD    000030R 002  SIZE    000020R 002
CURFLG  001040R 002     DVIWST  000700R 002     KILLEX  001610R 002  PTEM0 = 000056       SP    =%000006
CURMSG  004521R 002     DVMVTE  000444R 002     LBPI    000742R 002  PTEM1 = 000060       SPCOM   002074R 002
CYCDVL= 002000          DVPDTA= 000062          LCOUNT  000732R 002  PTEM10= 000102       SPFWD   002070R 002
CYCPRG= 040000          DVPKTE  000264R 002     LCRST   000732R 002  PTEM11= 000104       SPOPER= 000200
DATAER  001024R 002     DVPTEP= 000106          LEVEN   000732R 002  PTEM12= 000106       SPREV   002112R 002
DECASC  000062R 002     DVPUTB= 000100          LNWAIT  000732R 002  PTEM13= 000110       STMNMG  005214R 002
DECTAD= 000042          DVREGE= 000162R 002     LOCZ    000000R 002  PTEM14= 000112       STMNUM  005224R 002
DERPAD= 000036          DVREGS  000116R 002     LODD    000732R 002  PT    . 000114       STONER= 100000
DERROR  002324R 002     DVREND= 005340R 002     LOFFLN  000732R 002  R     000062       STSADR  003162R 002
DE.BTA= 000056          DVREV   001420R 002     LRWIND  000732R 002  R     000064       STSTAT  004.20R 002
```

```
MA:NDEC-11-D**MA-B  TM11/TU10 DEVICE ROUTINE FOR MPG  MACY11 27(732)  24-SEP-76  14:00  PAGE 11-1                    SEQ 0420
D**MAB.P11      SYMBOL TABLE

SUPTAB  004074R     002   TOUTEX  001562R     002   UNITMG  004550R     002   WRCOM   002024R     002   WT4IO*= 000010
*MEMSG  005232R     002   TSTVEC  000072R     002   URSTOP= 000002          WREIRG  002044R     002   XXXX  = 000000
*MINT   002470R     002   TVECT   004012R     002   USEUBM= 000200          WREOF   002056R     002   .     = 005340      002

. ABS.  000000      000
        000000      001
**.:    005340      002


ERRORS DETECTED:  0
DEFAULT GLOBALS GENERATED:  0

*,D**MAB/ML:TOC/DOC=D**MAB.P11
RUN-*IME:  4 9 1 SECONDS
RUN-*IME RATIO: 22 14=1.5
CORE USED:  5K  (9 PAGES)

DOCUMEN* PAGES:  32
```