```
                   *
                   *                    MAINTAIN III TEST EXECUTIVE FOR MAG TAPE
                   *                    MAG TAPE CAN OPERATE UNDER BIC OR SENSE MODE
                   *
                   *             *   * *****   ***        *   ***   ***    ***
                   *             *   *     *  *   *      *   *   * *   *  *   *
                   *             *   *    *   *   *     *    *         *  *   *
                   *              * *    *    *   *    *     * **     *   *   *
                   *              * *    *    *   *   *      **  *   *    *   *
                   *               *     *    *   *  *       *   *  *     *   *
                   *               *     *     ***  *         ***  *****   ***
                   *
                   *                          ***** ***** ***  *****
                   *                            *   *    *   *   *
                   *                            *   *     *      *
                   *                            *   ***    *     *
                   *                            *   *       *    *
                   *                            *   *    *   *   *
                   *                            *   ***** ***    *
                   *
                   *          ***** *   * *****  *** *   * ***** ***  *   * *****
                   *          *     *   * *     *   **   *   *    *    *   * *
                   *          *      * *  *     *    *   *   *    *    *   * *
                   *          ***     *   ***   *    *   *   *    *     * *  **
                   *          *      * *  *     *    *   *   *    *     * *  *
                   *          *     *   * *     *   **   *   *    *      *   *
                   *          ***** *   * *****  ***  ***    *   ***     *   *****
                   *
                   *                       ***  *   * ***  ***** ***** *   *
                   *                      *   * *   **   *   *   *     ** **
                   *                       *     * *  *      *   *     * * *
                   *                        *     *    *     *   ***   * * *
                   *                         *    *     *    *   *     *   *
                   *                      *   *   *  *   *   *   *     *   *
                   *                       ***    *   ***    *   ***** *   *
                   *      *******************************
                   *      *                             *
                   *      * AREAS RESERVED BY EXECUTIVE *
                   *      *******************************
                   *      ORG     0
                   *      JMP     EXECUTIVE
                   *      ORG     040
                   *      JMPM    POWER DOWN ROUTINE
                   *      JMP     POWER UP   ROUTINE
                   *      NOTE:   THE TEST EXECUTIVE ALSO RESERVES LOCATIONS 0400 TO 0477
                   *              FOR A POINTER TABLE TO STANDARD ROUTINES,AND AS AN AREA
                   *              FOR EXECUTIVE DATA. ALL TEST PROGRAMS WORKING WITH THE
                   *              EXECUTIVE MUST PRESERVE THIS BLOCK.
                   *              STANDARD ROUTINES WILL BE CALLED INDIRECTLY THRU
                   *              THIS TABLE
                   *
                   ************************************************************************
                   *                                                                      *
                   ************************************************************************
       000000 A    R0     SET     0                                                      B
       000001 A    R1     SET     1                                                      B
       000002 A    R2     SET     2                                                      B
       000003 A    R3     SET     3                                                      B
       000004 A    R4     SET     4                                                      B
       000005 A    R5     SET     5                                                      B
       000006 A    R6     SET     6                                                      B
       000007 A    R7     SET     7                                                      B
000000                    ORG     0
000000 001000 A           JMP     ETOP                CONSOLE INTERRUPT ENTRANCE
000001 015033 A
000040                    ORG     040
000040 002000 A           JMPM    PWDN            POWER DOWN
000041 015221 A
000042 001000 A           JMP     PWRU            POWER UP
000043 015250 A
                   *
000400                    ORG     0400
                   *
                   *   POINTER TABLE FOR EXEC STANDARD ROUTINES AND DATA
                   *   TEST PROGRAMS USING EXECUTIVE ROUTINES WILL CALL THEM
                   *   INDIRECTLY THRU THIS TABLE
                   *
                   *
                   *
000400 016247 A    EX00   DATA    OUTA            OUTPUT ONE CHAR ROUTINE
000401 016300 A    EX01   DATA    OUTB            OUTPUT TWO CHAR ROUTINE
000402 016313 A    EX02   DATA    OUTC            OUTPUT CR & LF ROUTINE
000403 016354 A    EX03   DATA    OUTD            OUTPUT MESSAGE ROUTINE
000404 016325 A    EX04   DATA    OUTE            OUTPUT OCTAL WORD ROUTINE
000405 016365 A    EX05   DATA    OUTF            OUTPUT OCTAL ADDRESS ROUTINE
000406 016404 A    EX06   DATA    OUTG            OUTPUT ERROR MSG ROUTINE
000407 016431 A    EX07   DATA    OUTH            OUTPUT CONTROL CHAR TO TTY
000410 015660 A    EX10   DATA    INPA            INPUT ONE CHAR ROUTINE
000411 015674 A    EX11   DATA    INPB            INPUT AND PRINT ONE CHAR ROUTINE
000412 015726 A    EX12   DATA    INPC            INPUT ONE CHAR EDITED ROUTINE
000413 015762 A    EX13   DATA    INPD            INPUT ONE ALPHA CHAR ROUTINE
000414 016023 A    EX14   DATA    INPE            INPUT TWO ALPHA CHAR ROUTINE
000415 016063 A    EX15   DATA    INPF            INPUT COMMA/PERIOD TERMINATOR ROUTINE
000416 016143 A    EX16   DATA    INPG            INPUT OCTAL NUMBER ROUTINE
000417 016452 A    EX17   DATA    TOUT            TIME-OUT ROUTINE
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000420 016436 A    94 EX20   DATA    TDLY          TIME DELAY ROUTINE
000421 015641 A    95 EX21   DATA    SSWT          STANDARD SENSE SWITCH ROUTINE
000422 014000 A    96 EX26   DATA    ELOC          LOWEST CORE LOCATION USED BY THE EXEC
000423 014764 A    97 EX27   DATA    ESZC          DETERMINE MEMORY SIZE
000424 015354 A    98 EX30   DATA    MSG3          MEMORY SIZE IS ... MESSAGE
000425 016232 A    99 EX31   DATA    INPH          SENSE TTY BFR RDY
000426 016244 A   100 EX32   DATA    INPI          INIT  TTY (INPUT CHAR W/OUT SENSE BFR RDY)
000427 017327 A   101 EX33   DATA    EDEX          HIGHEST LOCATION USED BY THE EXEC
000430 000000 A   102 V75    DATA    0             V75 CPU FLAG                                  B
000431 000000 A   103 E3R1   DATA    0             PSEUDO REGISTER 3                             B
000432 000000 A   104 E4R1   DATA    0             PSEUDO REGISTER 4                             B
000433 000000 A   105 E5R1   DATA    0             PSEUDO REGISTER 5                             B
000434 000000 A   106 E6R1   DATA    0             PSEUDO REGISTER 6                             B
000435 000000 A   107 E7R1   DATA    0             PSEUDO REGISTER 7                             B
000436            108        BSS     1             LOCATION NOT USED
000437            109        BSS     1             LOCATION NOT USED
                  110 *
                  111 *
                  112 *
                  113 *
                  114 *
                  115 *     EXECUTIVE DATA TABLE
                  116 *
000440 000000 A   117 $FLG   DATA    0             LOOP ON ERROR FLAG, 0=DON'T LOOP  1=LOOP
000441 000000 A   118 $MEM   DATA    0             MEMORY SIZE (HIGHEST AVAIL CORE)
000442 000000 A   119 $CON   DATA    0             0=CONSOLE MODE   1=TTY MODE
                  120 *
000443 000000 A   121 EAR1   DATA    0             PSEUDO A REG
000444 000000 A   122 EBR1   DATA    0             PSEUDO B REG
000445 000000 A   123 EXR1   DATA    0             PSEUDO X REG
000446            124 ETS1   BSS     6             TEMPORARY STORAGE
000454 000240 A   125 EK00   DATA    0240          ASCII BLANK(SPACE)
000455 000215 A   126 EK01   DATA    0215          ASCII CARRIAGE RETURN
000456 000212 A   127 EK02   DATA    0212          ASCII LINE FEED
000457 000040 A   128 K40    DATA    040
000460 000100 A   129 K100   DATA    0100
000461 000200 A   130 K200   DATA    0200
000462            131 FRST   BSS     1             INITIAL PUNCH ADDRESS
000463            132 LAST   BSS     1             LAST PUNCH ADDRESS
000464 000000 A   133 CKSM   DATA    0             CHECKSUM
000465 000000 A   134 EXEC   DATA    0             EXECUTION ADDRESS
000466 000224 A   135 TAPN   DATA    0224          PUNCH OFF CODE
000467 000222 A   136 TAPE   DATA    0222          PUNCH ON CODE
000470 016573 A   137 LOAD   DATA    LODE          ADDRESS OF BINARY LOADER
000471 000000 A   138 TS04   DATA    0             DIGIT COUNTER FOR INPG
000472 000000 A   139 PWRK   DATA    0             POWER FAIL COUNTER
000473 000001 A   140 STTY   DATA    1
000474            141 OADR   BSS     1             OBJECT MEDIA DEVICE ADDRESS
000475 000221 A   142 XON    DATA    0221          READER ON
000476 000223 A   143 XOFF   DATA    0223          READER OFF
000477 177700 A   144 MASK   DATA    0177700       I/O INSTRUCTION MASK
                  145 *
                  146 *
                  147 *
                  148 *
                  149 ******************************
                  150 *
014000            151        ORG     014000
                  152 *
                  153 ******************************
                  154 *
                  155 *
                  156 *
                  157 *
       014000 A   158 ELOC   EQU     *             LOWEST CORE LOCATION USED BY THE EXEC
                  159 *
014000 007400 A   160 EBG0   ROF                                                            B
014001 007411 A   161        DATA    07411         A V75 SYSTEM ?                          B
014002 001001 A   162        JOF     NOV75                                                 B
014003 014007 A
014004 006010 A   163        LDAI    -1            YES                                     B
014005 177777 A
014006 050430 A   164        STA     V75                                                   B
014007 001000 A   165 NOV75  JMP     EBG1          COLD START ENTRY                        B
014010 014774 A
                  166 *
                  167 *
                  168 *   INIT--INITIALIZE MEMORY.
                  169 *       X=START ADDRESS
                  170 *       Y=FINAL ADDRESS
                  171 *       Z=INITIALIZING VALUE
                  172 *
                  173 *       FORMAT: IX,Y,Z.
                  174 *
                  175 *
014011 006020 A   176 INIT   LDBI    ETS1          ADDRESS FOR STORING INPUT PARAMETERS
014012 000446 A
014013 002000 A   177        CALL    INPG          GET OCTAL PARAMETER
014014 016143 A
014015 001000 A   178        JMP     ETOP          TERMINATION EXIT VIA SS3
014016 015033 A
014017 001000 A   179        JMP     ETOP          ABORT
014020 015033 A
014021 001000 A   180        JMP     INI3          COMMA EXIT--GET NEXT PARAMETER
014022 014051 A
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                    181 *   NORMAL RETURN FROM INPG--A REG CONTAINS THIRD PARAMETER
014023 030446 A     182         LDX     ETS1            START ADDRESS
014024 050452 A     183         STA     ETS1+4          SAVE INITIALIZING VALUE
014025 005021 A     184         TBA                     TEST NO. PARAMETERS
014026 006140 A     185         SUBI    ETS1+2          *
014027 000450 A
014030 001010 A     186         JAZ     *+4             *
014031 014034 A
014032 001000 A     187         JMP     EXIT            *
014033 015203 A
014034 010447 A     188         LDA     ETS1+1          TEST PARAMETER
014035 140446 A     189         SUB     ETS1            RANGE
014036 001004 A     190         JAN     EXIT            ***
014037 015203 A
014040 010452 A     191 INI2    LDA     ETS1+4          STORE VALUE Z
014041 055000 A     192         STA     0,1
014042 005041 A     193         TXA
014043 140447 A     194         SUB     ETS1+1          FINAL ADDRESS
014044 001010 A     195         JAZ     ETOP                YES
014045 015033 A
014046 005144 A     196         IXR
014047 001000 A     197         JMP     INI2            STORE Z AT NEXT LOCATION
014050 014040 A
                    198 *
014051 056000 A     199 INI3    STA     0,2             SAVE INPUT PARAMETER
014052 005122 A     200         IBR
014053 001000 A     201         JMP     INIT+2          GET NEXT PARAMETER
014054 014013 A
                    202 *
                    203 *
                    204 *
                    205 *
                    206 *   ETRP--TRAP TO LOCATION X STARTING FROM LOCATION Y.
                    207 *         IF LOCATION X IS REACHED: RESTORE  LOCATIONS X & X+1, PRINT
                    208 *         THE  CURRENT VALUES OF REGISTERS A,B,X, AND RETURN TO THE
                    209 *         EXEC SUPERVISOR
                    210 *
                    211 *         NOTE: CONTENTS OF LOCATIONS X AND X+1 MUST BE RESTORED BY
                    212 *               USER IF TRAP IS NOT REACHED BY THIS ROUTINE
                    213 *
                    214 *         FORMAT: TX,Y.
                    215 *
                    216 *
014055 006020 A     217 ETRP    LDBI    ETS1            (B) POINTS TO PARAMETER TBL
014056 000446 A
014057 010446 A     218         LDA     ETS1            X = PREVIOUS Y
014060 050447 A     219         STA     ETS1+1
014061 002000 A     220         CALL    INPG            INPUT OCTAL NUMBER
014062 016143 A
014063 001000 A     221         JMP     ETOP            TERMINATION EXIT VIA SS3
014064 015033 A
014065 001000 A     222         JMP     ETOP            ABORT
014066 015033 A
014067 001000 A     223         JMP     ETR1            COMMA EXIT--GET SECOND PARAMETER
014070 014212 A
                    224 *   NORMAL RETURN FROM INPG
014071 056000 A     225         STA     0,2             STORE PARAMETER
014072 006030 A     226         LDXI    ETS1+2          TEMP STORE ADDRESS
014073 000450 A
014074 020446 A     227         LDB     ETS1            X PARAMETER(TRAP LOCATION)
014075 016000 A     228         LDA     0,2
014076 055000 A     229         STA     0,1             SAVE CONTENTS OF LOCATION X AT TS02
014077 016001 A     230         LDA     1,2
014100 055001 A     231         STA     1,1             SAVE CONTENTS OF LOC. X+1 AT TS03
014101 006010 A     232         LDAI    02000           OP CODE FOR JMPM
014102 002000 A
014103 056000 A     233         STA     0,2             STORE JMPM AT LOC X
014104 006010 A     234         LDAI    ETR2
014105 014222 A
014106 056001 A     235         STA     1,2             STORE TRAP RETURN ADDRESS AT X+1
014107 001000 A     236         JMP     EGO1            LOAD PSEUDO REGISTERS AND GOTO LOC Y
014110 014606 A
                    237 *
014111 050443 A     238 ETR3    STA     EAR1            PUT A CONTENTS INTO PSEUDO A REG
014112 060444 A     239         STB     EBR1            PUT B CONTENTS INTO PSEUDO B REG
014113 070445 A     240         STX     EXR1            PUT X CONTENTS INTO PSEUDO X REG
014114 010430 A     241         LDA     V75                                                 B
014115 001010 A     242         JAZ     ETR3A                                               B
014116 014131 A
014117 007130 A     243         ST,R3   E3R1            PUT R3 CONTENTS INTO PSEUDO R3      B
014120 000431 A
014121 007140 A     244         ST,R4   E4R1            PUT R4 CONTENTS INTO PSEUDO R4      B
014122 000432 A
014123 007150 A     245         ST,R5   E5R1            PUT R5 CONTENTS INTO PSEUDO R5      B
014124 000433 A
014125 007160 A     246         ST,R6   E6R1            PUT R6 CONTENTS INTO PSEUDO R6      B
014126 000434 A
014127 007170 A     247         ST,R7   E7R1            PUT R7 CONTENTS INTO PSEUDO R7      B
014130 000435 A
014131 005001 A     248 ETR3A   TZA                                                         B
014132 005511 A     249         AOFA
014133 054501 A     250         STA     EOV1            PUT OVERFLOW IN PSEUDO OV
014134 034065 A     251         LDX     ETR2
014135 005344 A     252         DXR
014136 005344 A     253         DXR                     SET X REG TO TRAP LOCATION ADDRESS
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014137 010450 A  254          LDA     ETS1+2
014140 020451 A  255          LDB     ETS1+3
014141 055000 A  256          STA     0,1             RESTORE CONTENTS OF LOC X
014142 065001 A  257          STB     1,1             RESTORE CONTENTS OF X+1
014143 002000 A  258          CALL    OUTC            OUTPUT CR & LF
014144 016313 A
014145 005041 A  259          TXA                     OUTPUT ADDRS OF TRAP RETURN
014146 002000 A  260          CALL    OUTF
014147 016365 A
014150 010443 A  261          LDA     EAR1
014151 002000 A  262          CALL    OUTE            PRINT CONTENTS OF PSEUDO A
014152 016325 A
014153 010444 A  263          LDA     EBR1
014154 002000 A  264          CALL    OUTE            PRINT CONTENTS OF PSEUDO B
014155 016325 A
014156 010445 A  265          LDA     EXR1
014157 002000 A  266          CALL    OUTE            PRINT CONTENTS OF PSEUDO X
014160 016325 A
014161 010430 A  267          LDA     V75                                              B
014162 001010 A  268          JAZ     ETR38                                            B
014163 014203 A
014164 010431 A  269          LDA     E3R1            PRINT CONTEMTS OF PSEUDO R3      B
014165 002000 A  270          CALL    OUTE                                             B
014166 016325 A
014167 010432 A  271          LDA     E4R1            PRINT CONTENTS OF PSEUDO R4      B
014170 002000 A  272          CALL    OUTE                                             B
014171 016325 A
014172 010433 A  273          LDA     E5R1            PRINT CONTENTS OF PSEUDO R5      B
014173 002000 A  274          CALL    OUTE                                             B
014174 016325 A
014175 010434 A  275          LDA     E6R1            PRINT CONTENTS OF PSEUDO R6      B
014176 002000 A  276          CALL    OUTE                                             B
014177 016325 A
014200 010435 A  277          LDA     E7R1            PRINT CONTENTS OF PSEUDO R7      B
014201 002000 A  278          CALL    OUTE                                             B
014202 016325 A
014203 014431 A  279 ETR38    LDA     EOV1                                             B
014204 006120 A  280          ADDI    '0'
014205 120260 A
014206 002000 A  281          CALL    OUTB            PRINT CONTENTS OF OVERFLOW
014207 016300 A
014210 001000 A  282          JMP     ETOP            RETURN TO EXEC SUPERVISOR
014211 015033 A
                 283 *
014212 056000 A  284 ETR1     STA     0,2             STORE PARAMETER X
014213 005123 A  285          INCR    023             INC PARAMETER PTR
014214 006140 A  286          SUBI    ETS1+1          MORE THAN 1 X PARAMETER ?
014215 000447 A
014216 001010 A  287          JAZ     ETRP+4           NO CONTINUE
014217 014061 A
014220 001000 A  288          JMP     EXIT            YES PRINT INVALID AND GO TO ETOP
014221 015203 A
                 289 *
014222 000000 A  290 ETR2     ENTR    0
014223 001000 A  291          JMP     ETR3            PROCESS TRAP RETURN
014224 014111 A
                 292 *
                 293 *
                 294 *
                 295 *   ESRC--SEARCH MEMORY FOR SPECIFIED VALUE,
                 296 *         PRINT LOCATION AND CONTENTS WHRER MATCH IS FOUND
                 297 *
                 298 *         X=START ADDRESS
                 299 *         Y=FINAL ADDRESS
                 300 *         Z=SEARCH VALUE
                 301 *         M=MASK WORD
                 302 *
                 303 *         FORMAT: SX,Y,Z,M.
                 304 *
                 305 *
014225 006020 A  306 ESRC     LDBI    ETS1            ADDRESS FOR STORING INPUT PARAMETERS
014226 000446 A
014227 002000 A  307          CALL    INPG            GET OCTAL PARAMETER
014230 016143 A
014231 001000 A  308          JMP     ETOP            TERMINATION EXIT VIA SS3
014232 015033 A
014233 001000 A  309          JMP     ETOP            ABORT
014234 015033 A
014235 001000 A  310          JMP     ESR5            COMMA EXIT--GET NEXT PARAMETER
014236 014306 A
                 311 *   NORMAL RETURN FROM INPG--A REG CONTAINS FOURTH PARAMETER
014237 050451 A  312          STA     ETS1+3          SAVE MASK WORD
014240 150450 A  313          ANA     ETS1+2          MASK SEARCH VALUE
014241 050452 A  314          STA     ETS1+4          MASKED SEARCH VALUE
014242 005021 A  315          TBA                     TEST NO. OF PARAMETERS
014243 006140 A  316          SUBI    ETS1+3          *
014244 000451 A
014245 001010 A  317          JAZ     **+4            *
014246 014251 A
014247 001000 A  318          JMP     EXIT            ***
014250 015203 A
014251 030446 A  319 ESR4     LDX     ETS1            START ADDRESS
014252 015000 A  320          LDA     0,1
014253 150451 A  321          ANA     ETS1+3          MASK IT
014254 140452 A  322          SUB     ETS1+4
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014255 001010 A  323          JAZ     ESR2            GOOD COMPARE
014256 014270 A
014257 040446 A  324 ESR1     INR     ETS1            START ADDRESS
014260 001400 A  325          JSS3    ETOP            RETURN TO SUPERVISOR
014261 015033 A
014262 005041 A  326          TXA
014263 140447 A  327          SUB     ETS1+1          END ADDRESS
014264 001002 A  328          JAP     ETOP            RETURN TO SUPERVISOR
014265 015033 A
014266 001000 A  329          JMP     ESR4            GET NEXT WORD
014267 014251 A
014270 002000 A  330 ESR2     CALL    OUTC            CR/LF
014271 016313 A
014272 010446 A  331          LDA     ETS1            ADDRS OF WORD
014273 002000 A  332          CALL    OUTF            PRINT MEMORY ADDRESS
014274 016365 A
014275 006010 A  333          LDAI    '='             EQUAL SIGN
014276 000275 A
014277 002000 A  334          CALL    OUTA
014300 016247 A
014301 015000 A  335          LDA     0,1             CONTENTS OF ADDRESS
014302 002000 A  336          CALL    OUTE            PRINT CONTENTS
014303 016325 A
014304 001000 A  337          JMP     ESR1            CONTINUE
014305 014257 A
014306 056000 A  338 ESR5     STA     0,2
014307 005122 A  339          IBR
014310 001000 A  340          JMP     ESRC+2          GET NEXT PARAMETER
014311 014227 A
                 341 *
                 342 *
                 343 *
                 344 *
                 345 *    DISPLAY/CHANGE THE PSEUDO A REGISTER
                 346 *
014312 006010 A  347 EARG     LDAI    0240            ASCII SPACE
014313 000240 A
014314 002000 A  348          CALL    OUTA
014315 016247 A
014316 010443 A  349          LDA     EAR1            LOAD PSEUDO A
014317 002000 A  350          CALL    OUTE            PRINT CONTENTS
014320 016325 A
014321 002000 A  351          CALL    INPG            INPUT OCTAL  AND/OR PERIOD
014322 016143 A
014323 001000 A  352          JMP     ETOP            TERMINATION EXIT VIA SS3
014324 015033 A
014325 001000 A  353          JMP     ETOP            ABORT EXIT
014326 015033 A
014327 001000 A  354          JMP     *+2             COMMA EXIT=-ACCEPT IT
014330 014331 A
                 355 *    NORMAL RETURN FROM INPG
014331 050446 A  356          STA     ETS1            SAVE INPUT
014332 010471 A  357          LDA     TS04            TS04=DIGIT COUNTER FOR INPG
014333 001010 A  358          JAZ     ETOP            0=NO OCTAL INPUT,RETURN TO SUPERVISOR
014334 015033 A
014335 010446 A  359          LDA     ETS1
014336 050443 A  360          STA     EAR1            STORE NEW VALUE IN PSEUDO A
014337 001000 A  361          JMP     ETOP            RETURN TO SUPERVISOR
014340 015033 A
                 362 *
                 363 *
                 364 *    DISPLAY/CHANGE THE PSEUDO B REGISTER
                 365 *
                 366 *
014341 010454 A  367 EBRG     LDA     EK00            ASCII BLANK(SPACE)
014342 002000 A  368          CALL    OUTA
014343 016247 A
014344 010444 A  369          LDA     EBR1            LOAD PSEUDO B
014345 002000 A  370          CALL    OUTE            PRINT CONTENTS
014346 016325 A
014347 002000 A  371          CALL    INPG            INPUT OCTAL AND/OR PERIOD
014350 016143 A
014351 001000 A  372          JMP     ETOP            TERMINATION EXIT VIA SS3
014352 015033 A
014353 001000 A  373          JMP     ETOP            ABORT EXIT
014354 015033 A
014355 001000 A  374          JMP     *+2             COMMA EXIT=-ACCEPT IT
014356 014357 A
                 375 *    NORMAL RETURN FROM INPG
014357 050446 A  376          STA     ETS1            SAVE INPUT
014360 010471 A  377          LDA     TS04            TS04=DIGIT COUNTER FOR INPG
014361 001010 A  378          JAZ     ETOP            0=NO OCTAL INPUT,RETURN TO SUPERVISOR
014362 015033 A
014363 010446 A  379          LDA     ETS1
014364 050444 A  380          STA     EBR1            STORE NEW VALUE IN PSEUDO B
014365 001000 A  381          JMP     ETOP            RETURN TO SUPERVISOR
014366 015033 A
                 382 *
                 383 *
                 384 *    DISPLAY/CHANGE THE PSEUDO X REGISTER
                 385 *
                 386 *
014367 010454 A  387 EXRG     LDA     EK00            ASCII BLANK(SPACE)
014370 002000 A  388          CALL    OUTA
014371 016247 A
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014372 010445 A  389          LDA     EXR1            LOAD PSEUDO X
014373 002000 A  390          CALL    OUTE            PRINT CONTENTS
014374 016325 A
014375 002000 A  391          CALL    INPG            INPUT OCTAL AND/OR PERIOD
014376 016143 A
014377 001000 A  392          JMP     ETOP            TERMINATION EXIT VIA SS3
014400 015033 A
014401 001000 A  393          JMP     ETOP            ABORT
014402 015033 A
014403 001000 A  394          JMP     *+2             COMA EXIT--ACCEPT IT
014404 014405 A
                 395 *    NORMAL RETURN FROM INPG
014405 050446 A  396          STA     ETS1            SAVE INPUT
014406 010471 A  397          LDA     TS04            TS04=DIGIT COUNTER FOR INPG
014407 001010 A  398          JAZ     ETOP            0=NO OCTAL INPUT,RETURN TO SUPERVISOR
014410 015033 A
014411 010446 A  399          LDA     ETS1
014412 050445 A  400          STA     EXR1            STORE NEW VALUE IN PSEUDO X
014413 001000 A  401          JMP     ETOP            RETURN TO SUPERVISOR
014414 015033 A
                 402 *        DISPLAY/CHANGE THE PSEUDO R3 REGISTER                    B
014415 010454 A  403 E3RG     LDA     EK00            ASCII SPACE                      B
014416 002000 A  404          CALL    OUTA                                             B
014417 016247 A
014420 010431 A  405          LDA     E3R1            LOAD PSEUDO R3                   B
014421 002000 A  406          CALL    OUTE            PRINT CONTENTS                   B
014422 016325 A
014423 002000 A  407          CALL    INPG            INPUT OCTAL AND/OR PERIOD        B
014424 016143 A
014425 001000 A  408          JMP     ETOP            TERMINATION EXIT VIA SS3         B
014426 015033 A
014427 001000 A  409          JMP     ETOP            ABORT EXIT                       B
014430 015033 A
014431 001000 A  410          JMP     *+2             COMMA EXIT--ACCEPT IT            B
014432 014433 A
                 411 *    NORMAL RETURN FROM INPG                                      B
014433 050446 A  412          STA     ETS1            SAVE INPUT                       B
014434 010471 A  413          LDA     TS04            TS04=DIGIT COUNTER FOR INPG      B
014435 001010 A  414          JAZ     ETOP            0=NO OCTAL INPUT,RETURN TO SUPERVISOR B
014436 015033 A
014437 010446 A  415          LDA     ETS1                                             B
014440 050431 A  416          STA     E3R1            STORE NEW VALUE IN PSEUDO R3     B
014441 001000 A  417          JMP     ETOP            RETURN TO SUPERVISOR             B
014442 015033 A
                 418 *        DISPLAY/CHANGE THE PSEUDO R4 REGISTER                    B
014443 010454 A  419 E4RG     LDA     EK00            ASCII SPACE                      B
014444 002000 A  420          CALL    OUTA                                             B
014445 016247 A
014446 010432 A  421          LDA     E4R1            LOAD PSEUDO R4                   B
014447 002000 A  422          CALL    OUTE            PRINT CONTENTS                   B
014450 016325 A
014451 002000 A  423          CALL    INPG            INPUT OCTAL AND/OR PERIOD        B
014452 016143 A
014453 001000 A  424          JMP     ETOP            TERMINATION EXIT VIA SS3         B
014454 015033 A
014455 001000 A  425          JMP     ETOP            ABORT EXIT                       B
014456 015033 A
014457 001000 A  426          JMP     *+2             COMMA EXIT--ACCEPT IT            B
014460 014461 A
                 427 *    NORMAL RETURN FROM INPG                                      B
014461 050446 A  428          STA     ETS1            SAVE INPUT                       B
014462 010471 A  429          LDA     TS04            TS04=DIGIT COUNTER FOR INPG      B
014463 001010 A  430          JAZ     ETOP            0=NO OCTAL INPUT,RETURN TO SUPERVISOR B
014464 015033 A
014465 010446 A  431          LDA     ETS1                                             B
014466 050432 A  432          STA     E4R1            STORE NEW VALUE IN PSEUDO R4     B
014467 001000 A  433          JMP     ETOP            RETURN TO SUPERVISOR             B
014470 015033 A
                 434 *        DISPLAY/CHANGE THE PSEUDO R5 REGISTER                    B
014471 010454 A  435 E5RG     LDA     EK00            ASCII SPACE                      B
014472 002000 A  436          CALL    OUTA                                             B
014473 016247 A
014474 010433 A  437          LDA     E5R1            LOAD PSEUDO R5                   B
014475 002000 A  438          CALL    OUTE            PRINT CONTENTS                   B
014476 016325 A
014477 002000 A  439          CALL    INPG            INPUT OCTAL AND/OR PERIOD        B
014500 016143 A
014501 001000 A  440          JMP     ETOP            TERMINATION EXIT VIA SS3         B
014502 015033 A
014503 001000 A  441          JMP     ETOP            ABORT EXIT                       B
014504 015033 A
014505 001000 A  442          JMP     *+2             COMMA EXIT--ACCEPT IT            B
014506 014507 A
                 443 *    NORMAL RETURN FROM INPG                                      B
014507 050446 A  444          STA     ETS1            SAVE INPUT                       B
014510 010471 A  445          LDA     TS04            TS04=DIGIT COUNTER FOR INPG      B
014511 001010 A  446          JAZ     ETOP            0=NO OCTAL INPUT,RETURN TO SUPERVISOR B
014512 015033 A
014513 010446 A  447          LDA     ETS1                                             B
014514 050433 A  448          STA     E5R1            STORE NEW VALUE IN PSEUDO R5     B
014515 001000 A  449          JMP     ETOP            RETURN TO SUPERVISOR             B
014516 015033 A
                 450 *        DISPLAY/CHANGE THE PSEUDO R6 REGISTER                    B
014517 010454 A  451 E6RG     LDA     EK00            ASCII SPACE                      B
014520 002000 A  452          CALL    OUTA                                             B
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014521 016247 A
014522 010434 A  453          LDA     E6R1          LOAD PSEUDO R6                    C
014523 002000 A  454          CALL    OUTE          PRINT CONTENTS                    B
014524 016325 A
014525 002000 A  455          CALL    INPG          INPUT OCTAL AND/OR PERIOD         B
014526 016143 A
014527 001000 A  456          JMP     ETOP          TERMINATION EXIT VIA SS3          B
014530 015033 A
014531 001000 A  457          JMP     ETOP          ABORT EXIT                        B
014532 015033 A
014533 001000 A  458          JMP     *+2           COMMA EXIT=-ACCEPT IT             B
014534 014535 A
                 459 *   NORMAL RETURN FROM INPG                                     B
014535 050446 A  460          STA     ETS1          SAVE INPUT                        B
014536 010471 A  461          LDA     TS04          TS04=DIGIT COUNTER FOR INPG       B
014537 001010 A  462          JAZ     ETOP          0=NO OCTAL INPUT,RETURN TO SUPERVISOR B
014540 015033 A
014541 010446 A  463          LDA     ETS1                                            B
014542 050434 A  464          STA     E6R1          STORE NEW VALUE IN PSEUDO R6      B
014543 001000 A  465          JMP     ETOP          RETURN TO SUPERVISOR              B
014544 015033 A
                 466 *       DISPLAY/CHANGE THE PSEUDO R7 REGISTER                   B
014545 010454 A  467 E7RG     LDA     EK00          ASCII SPACE                       B
014546 002000 A  468          CALL    OUTA                                            B
014547 016247 A
014550 010435 A  469          LDA     E7R1          LOAD PSEUDO R7                    B
014551 002000 A  470          CALL    OUTE          PRINT CONTENTS                    B
014552 016325 A
014553 002000 A  471          CALL    INPG          INPUT OCTAL AND/OR PERIOD         B
014554 016143 A
014555 001000 A  472          JMP     ETOP          TERMINATION EXIT VIA SS3          B
014556 015033 A
014557 001000 A  473          JMP     ETOP          ABORT EXIT                        B
014560 015033 A
014561 001000 A  474          JMP     *+2           COMMA EXIT=-ACCEPT IT             B
014562 014563 A
                 475 *   NORMAL RETURN FROM INPG                                     B
014563 050446 A  476          STA     ETS1          SAVE INPUT                        B
014564 010471 A  477          LDA     TS04          TS04=DIGIT COUNTER FOR INPG       B
014565 001010 A  478          JAZ     ETOP          0=NO OCTAL INPUT,RETURN TO SUPERVISOR B
014566 015033 A
014567 010446 A  479          LDA     ETS1                                            B
014570 050435 A  480          STA     E7R1          STORE NEW VALUE IN PSEUDO R7      B
014571 001000 A  481          JMP     ETOP          RETURN TO SUPERVISOR              B
014572 015033 A
                 482 *
                 483 *
                 484 *
                 485 *
                 486 *
                 487 *   EGOT=-LOAD PSEUDO REGISTERS INTO A,B,X AND TRANSFER TO
                 488 *   LOCATION SPECIFIED BY USER.
                 489 *   THE PSEUDO REGISTERS CAN BE PRESET WITH THE A,B,X
                 490 *   UTILITY FUNCTIONS.
                 491 *
                 492 *
014573 002000 A  493 EGOT     CALL    INPG          INPUT OCTAL NUMBER
014574 016143 A
014575 001000 A  494          JMP     ETOP          TERMINATION EXIT VIA SS3
014576 015033 A
014577 001000 A  495          JMP     ETOP          ABORT
014600 015033 A
014601 001000 A  496          JMP     *+2           COMMA EXIT=-ACCEPT IT
014602 014603 A
                 497 *   NORMAL RETURN FROM INPG
014603 050447 A  498          STA     ETS1+1
014604 002000 A  499          CALL    OUTC          DO A CR + LF
014605 016313 A
014606 010443 A  500 EGO1     LDA     EAR1          LOAD PSEUDO A REG.
014607 020444 A  501          LDB     EBR1          LOAD PSEUDO B REG.
014610 030430 A  502          LDX     V75           V75 SYSTEM ?                      B
014611 001040 A  503          JXZ     RESOF         NO                                B
014612 014625 A
014613 007030 A  504          LD,R3   E3R1          YES, LOAD THE PSEUDO R3,          B
014614 000431 A
014615 007040 A  505          LD,R4   E4R1          R4,                               B
014616 000432 A
014617 007050 A  506          LD,R5   E5R1          R5,                               B
014620 000433 A
014621 007060 A  507          LD,R6   E6R1          R6,                               B
014622 000434 A
014623 007070 A  508          LD,R7   E7R1          AND R7                            B
014624 000435 A
014625 007400 A  509 RESOF    ROF                                                     B
014626 034006 A  510          LDX     EOV1
014627 001040 A  511          JXZ     *+3           SET/RESET OVERFLOW
014630 014632 A
014631 007401 A  512          SOF
014632 030445 A  513          LDX     EXR1          LOAD PSEUDO X REG.
014633 001000 A  514          JMP*    ETS1+1
014634 100447 A
014635 000000 A  515 EOV1     DATA    0             PSEUDO OVERFLOW
                 516 *   DUMP CORE MEMORY TO TTY PRINTER
                 517 *
014636 002000 A  518 EDUM     CALL    INPG          INPUT START LOCATION (OCTAL)
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014637 016143 A
014640 001000 A  519          JMP     ETOP          TERMINATION EXIT VIA SS3
014641 015033 A
014642 001000 A  520          JMP     ETOP          ABORT
014643 015033 A
014644 001000 A  521          JMP     *+2           COMMA EXIT=-ACCEPT IT
014645 014646 A
                 522 *   NORMAL RETURN FROM INPG
014646 050446 A  523          STA     ETS1
014647 002000 A  524          CALL    OUTC          OUTPUT CR & LF
014650 016313 A
014651 010446 A  525          LDA     ETS1
014652 005014 A  526          TAX
014653 002000 A  527 EDU1     CALL    OUTF          OUTPUT MEMORY ADDRESS
014654 016365 A
014655 010454 A  528          LDA     EK00          ASCII BLANK(SPACE)
014656 002000 A  529          CALL    OUTA
014657 016247 A
014660 015000 A  530 EDU2     LDA     0,1
014661 002000 A  531          CALL    OUTE          PRINT LOCATION CONTENTS
014662 016325 A
014663 001400 A  532          JSS3    ETOP
014664 015033 A
014665 005145 A  533          INCR    045           INCREMENT X AND PUT INTO A&X
014666 005002 A  534          TZB
014667 004543 A  535          LLSR    3             LINE LENGTH IS 8 LOCATIONS
014670 001020 A  536          JBZ     EDU4          NEXT LINE
014671 014674 A
014672 001000 A  537          JMP     EDU2          NEXT WORD
014673 014660 A
                 538 *
014674 002000 A  539 EDU4     CALL    OUTC          OUTPU CR & LF
014675 016313 A
014676 002000 A  540          CALL    INPI
014677 016244 A
014700 006140 A  541          SUBI    0377
014701 000377 A
014702 001010 A  542          JAZ     ETOP
014703 015033 A
014704 005041 A  543          TXA
014705 001000 A  544          JMP     EDU1
014706 014653 A
                 545 *
                 546 *
                 547 *
                 548 *
                 549 *
                 550 *   PRINT/CHANGE CONTENTS OF MEMORY LOCATION SPECIFIED BY USER
                 551 *
                 552 *
014707 002000 A  553 ECNG     CALL    INPG          INPUT OCTAL MEMORY ADDRESS
014710 016143 A
014711 001000 A  554          JMP     ETOP          TERMINATION EXIT VIA SS3
014712 015033 A
014713 001000 A  555          JMP     ETOP          ABORT
014714 015033 A
014715 001000 A  556          JMP     *+2           COMMA EXIT=-ACCEPT IT
014716 014717 A
                 557 *   NORMAL RETURN FROM INPG
014717 005014 A  558          TAX
014720 006010 A  559 ECN3     LDAI    '='           EQUAL SIGN
014721 000275 A
014722 002000 A  560          CALL    OUTA
014723 016247 A
014724 015000 A  561          LDA     0,1
014725 002000 A  562          CALL    OUTE          OUTPUT OCTAL WORD
014726 016325 A
014727 002000 A  563          CALL    INPG          INPUT OCTAL WORD
014730 016143 A
014731 001000 A  564          JMP     ETOP          TERMINATION EXIT VIA SS3
014732 015033 A
014733 001000 A  565          JMP     ETOP          ABORT
014734 015033 A
014735 001000 A  566          JMP     ECN2          COMMA EXIT=-PRINT NEXT LOCATION & CONTENTS
014736 014747 A
                 567 *   NORMAL RETURN FROM INPG WITH PERIOD
014737 050446 A  568          STA     ETS1          SAVE INPUT
014740 010471 A  569          LDA     TS04          TS04=DIGIT COUNTER FOR INPG
014741 001010 A  570          JAZ     *+4
014742 014745 A
014743 010446 A  571          LDA     ETS1          GET LAST INPUT
014744 055000 A  572          STA     0,1
014745 001000 A  573          JMP     ETOP
014746 015033 A
                 574 *
014747 050446 A  575 ECN2     STA     ETS1          SAVE INPUT
014750 010471 A  576          LDA     TS04          TS04=DIGIT COUNTER FOR INPG
014751 001010 A  577          JAZ     *+4
014752 014755 A
014753 010446 A  578          LDA     ETS1          GET  LAST INPUT
014754 055000 A  579          STA     0,1           STORE NEW VALUE IN LOCATION
014755 002000 A  580          CALL    OUTC          CR & LF
014756 016313 A
014757 005145 A  581          INCR    045           INCREMENT X AND PUT INTO A AND X
014760 002000 A  582          CALL    OUTF          PRINT NEXT MEMORY ADDRESS
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014761 016365 A
014762 001000 A  583          JMP     ECN3          PRINT CONTENTS
014763 014720 A
                 584 *
014764 000000 A  585 ESZC     ENTR    0             DETERMINE MEMORY SIZE
014765 002000 A  586          CALL    ESZA          *
014766 015417 A
014767 050441 A  587          STA     $MEM          *
014770 002000 A  588          CALL    ESZB          *
014771 015453 A
014772 001000 A  589          JMP     (ESZC)*       ****** EXIT
014773 114764 A
014774 005101 A  590 EBG1     INCR    01            TTY MODE
014775 050442 A  591          STA     $CON          *   $CON = 01
014776 002000 A  592          CALL    ESZC          *   $TTY = 01,UNLESS SET
014777 014764 A
015000 005101 A  593          INCR    01            *             BY
015001 000000 A  594          HLT                   *             OPERATOR
015002 006030 A  595          LDXI    $TTY
015003 000473 A
015004 055000 A  596          STA     0,1
015005 002000 A  597 EBG2     CALL    OUTH,0201     PRINT ENABLE
015006 016431 A
015007 000201 A
015010 002000 A  598          CALL    OUTC          OUTPUT CR&LF
015011 016313 A
015012 010430 A  599          LDA     V75                                       B
015013 001010 A  600          JAZ     DOMSG1                                    B
015014 015023 A
015015 006030 A  601          LDXI    MSG6          THIS IS THE V75 TEST EXECUTIVE  B
015016 015375 A
015017 002000 A  602          CALL    OUTD          OUTPUT MESSAGE              B
015020 016354 A
015021 001000 A  603          JMP     DOMSG3        GO OUTPUT MSG3              B
015022 015027 A
015023 006030 A  604 DOMSG1   LDXI    MSG1          THIS IS THE V70/620 TEST EXECUTIVE  B
015024 015315 A
015025 002000 A  605          CALL    OUTD          OUTPUT MESSAGE
015026 016354 A
015027 006030 A  606 DOMSG3   LDXI    MSG3          MEMORY SIZE IS ==K          B
015030 015354 A
015031 002000 A  607          CALL    OUTD          OUTPUT MESSAGE
015032 016354 A
                 608 *
                 609 *
                 610 *
                 611 *   TEST EXECUTIVE SUPERVISOR
                 612 *
015033 006010 A  613 ETOP     LDAI    0207          TTY BELL
015034 000207 A
015035 002000 A  614          CALL    OUTA          OUTPUT
015036 016247 A
015037 002000 A  615          CALL    OUTH,0201     PRINT ENABLE
015040 016431 A
015041 000201 A
015042 002000 A  616          CALL    INPI          INIT TTY
015043 016244 A
015044 002000 A  617          CALL    OUTC
015045 016313 A
015046 002000 A  618          CALL    INPB          INPUT ONE CHARACTER
015047 015674 A
015050 001000 A  619          JMP     ETOP          ABORT EXIT
015051 015033 A
015052 054011 A  620          STA     ETO4+1        SAVE INPUT
015053 006140 A  621          SUBI    0212          LINE FEED CODE
015054 000212 A
015055 001010 A  622          JAZ     ETOP          YES
015056 015033 A
015057 006140 A  623          SUBI    3             CARRIAGE RETURN(0215)
015060 000003 A
015061 001010 A  624          JAZ     ETOP          YES
015062 015033 A
015063 006010 A  625 ETO4     LDAI    0             GET ORIGINAL INPUT
015064 000000 A
015065 006140 A  626          SUBI    'A'
015066 000301 A
015067 001004 A  627          JAN     EXIT          INVALID INPUT
015070 015203 A
015071 006140 A  628          SUBI    032           Z CHAR
015072 000032 A
015073 001002 A  629          JAP     EXIT          INVALID INPUT
015074 015203 A
015075 006120 A  630          ADDI    (ETBL+032)*   INDIRECT ADDRESS POINTER FOR UTILITY TABLE
015076 115152 A
015077 054017 A  631          STA     PETBL+2                                   B
015100 030430 A  632          LDX     V75           IF                          B
015101 001040 A  633          JXZ     PETBL                                     B
015102 015115 A
015103 007443 A  634          LDI,R3  0             V75 SYSTEM                  B
015104 000000 A
015105 007444 A  635          LDI,R4  0             CLEAR R3                    B
015106 000000 A
015107 007445 A  636          LDI,R5  0             R4                          B
015110 000000 A
015111 007446 A  637          LDI,R6  0             R5                          B
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015112 000000 A
015113 007447 A  638          LDI,R7  0               R6,AND R7                                   B
015114 000000 A
015115 005007 A  639 PETBL    ZERO    7               CLEAR REGISTERS A,B,X ANYWAY                B
015116 001000 A  640          JMP     *
015117 015116 A
015120 014312 A  641 ETBL     DATA    EARG            A  PRINT/CHANGE PSEUDO A REG
015121 014341 A  642          DATA    EBRG            B  PRINT/CHANGE PSEUDO B REG
015122 014707 A  643          DATA    ECNG            C  PRINT/CHANGE MEMORY LOCATION
015123 014636 A  644          DATA    EDUM            D  DUMP CORE TO TTY PRINTER
015124 016751 A  645          DATA    EOF             E  WRITE END OF FILE
015125 016724 A  646          DATA    FIL             F  FILE POSITION
015126 014573 A  647          DATA    EGOT            G  TRANSFER TO SPECIFIED LOCATION
015127 015203 A  648          DATA    EXIT            H  NOT USED
015130 014011 A  649          DATA    INIT            I  INITIALIZE CORE
015131 015203 A  650          DATA    EXIT            J  NOT USED
015132 015203 A  651          DATA    EXIT            K  NOT USED
015133 016573 A  652          DATA    ELOD            L  LOAD OBJECT TAPE AND TRANSFER TO PROGRAM
015134 015203 A  653          DATA    EXIT            M  NOT USED
015135 015203 A  654          DATA    EXIT            N  NOT USED
015136 015203 A  655          DATA    EXIT            O  NOT USED
015137 016463 A  656          DATA    EPUN            P  CREATE OBJECT
015140 015203 A  657          DATA    EXIT            Q  NOT USED
015141 015152 A  658          DATA    V75REG                                                      B
015142 014225 A  659          DATA    ESRC            S  SEARCH MEMORY
015143 014055 A  660          DATA    ETRP            T  TRAP
015144 015203 A  661          DATA    EXIT            U  NOT USED
015145 015203 A  662          DATA    EXIT            V  NOT USED
015146 015203 A  663          DATA    EXIT            W  NOT USED
015147 014367 A  664          DATA    EXRG            X  PRINT/CHANGE PSEUDO X REG
015150 015203 A  665          DATA    EXIT            Y  NOT USED
015151 015203 A  666          DATA    EXIT            Z  NOT USED
                 667 *
                 668 *
015152 010430 A  669 V75REG   LDA     V75                                                         B
015153 001010 A  670          JAZ     EXIT            NO V75 HERE                                 B
015154 015203 A
015155 002000 A  671          CALL    INPB            GRAB THE REGISTER NUMBER                    B
015156 015674 A
015157 001000 A  672          JMP     EXIT                                                        B
015160 015203 A
015161 006150 A  673          ANAI    07              MAKE SURE ITS  0 THRU 7                     B
015162 000007 A
015163 006120 A  674          ADDI    REGTBL                                                      B
015164 015172 A
015165 006110 A  675          ORAI    0100000                                                     B
015166 100000 A
015167 054001 A  676          STA     REGJMP+1                                                    B
015170 001000 A  677 REGJMP   JMP*    REGTBL                                                      B
015171 115172 A
015172 014312 A  678 REGTBL   DATA    EARG            R0 THRU R7                                  B
015173 014341 A  679          DATA    EBRG            DISPLAY/CHANGE                              B
015174 014367 A  680          DATA    EXRG            ROUTINES.                                   B
015175 014415 A  681          DATA    E3RG                                                        B
015176 014443 A  682          DATA    E4RG                                                        B
015177 014471 A  683          DATA    E5RG                                                        B
015200 014517 A  684          DATA    E6RG                                                        B
015201 014545 A  685          DATA    E7RG                                                        B
015202 015203 A  686          DATA    EXIT                                                        B
                 687 *
                 688 *
015203 002000 A  689 EXIT     CALL    OUTG            PRINT INVALID & CR/LF
015204 016404 A
015205 001000 A  690          JMP     ETOP            RETURN TO TOP OF SUPERVISOR
015206 015033 A
015207 005042 A  691 LOAW     TXB                     SAVE X
015210 006030 A  692          LDXI    MSG2            MESSAGE: CHECKSUM ERROR
015211 015341 A
015212 002000 A  693          CALL    OUTD            PRINT MESSAGE
015213 016354 A
015214 005021 A  694          TBA                     OUTPUT X
015215 002000 A  695          CALL    OUTE
015216 016325 A
015217 001000 A  696          JMP     ETOP            EXEC SUPERVISOR
015220 015033 A
                 697 *
                 698 *
                 699 *
                 700 *
                 701 *
                 702 *                 TYPICAL POWER UP/DOWN SUBROUTINE
                 703 *                 POWER DOWN INTERRUPT ADDRESS 040
                 704 *                 POWER UP INTERRUPT ADDRESS 042
                 705 *
                 706 *                 POWER DOWN PROCESSOR
                 707 *
015221 000000 A  708 PWDN     ENTR    0
015222 054060 A  709          STA     SAVA            SAVE A, B AND X REGISTERS
015223 064060 A  710          STB     SAVB
015224 074060 A  711          STX     SAVX
015225 010430 A  712          LDA     V75                                                         B
015226 001010 A  713          JAZ     PWDN1                                                       B
015227 015242 A
015230 007130 A  714          ST,R3   SAVR3           AND THE R3,                                 B
015231 015306 A
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015232 007140 A  715          ST,R4   SAVR4          R4,                                    B
015233 015307 A
015234 007150 A  716          ST,R5   SAVR5          R5,                                    B
015235 015310 A
015236 007160 A  717          ST,R6   SAVR6          R6,                                    B
015237 015311 A
015240 007170 A  718          ST,R7   SAVR7          AND R7 IF ANY                          B
015241 015312 A
015242 005001 A  719 PWDN1    TZA                                                            B
015243 005511 A  720          DATA    005511         INCREMENT A IF OVERFLOW SET
015244 054046 A  721          STA     SAVO
015245 044046 A  722          INR     HLTF           SET POWER FAIL/RESTRT FLAG.
015246 040472 A  723          INR     PWRK           STEP POWER FAIL COUNTER
015247 000000 A  724 PHLT     HLT
                 725 *
                 726 *                POWER UP PROCESSOR
                 727 *
015250 014043 A  728 PWRU     LDA     HLTF           CHECK IF POWERING UP FROM RUN CONDITION
015251 001010 A  729          JAZ     PHLT
015252 015247 A
015253 005001 A  730          TZA                    CLEAR POWER FAIL/RESTRT FLAG
015254 054037 A  731          STA     HLTF
                 732 *
                 733 *                CODING TO REINSTATE 620/F OPTIONAL HARDWARE AFTER A
                 734 *                POWER FAILURE, MUST BE DEFINED HERE.  THE TOTAL EXECUTION
                 735 *                TIME NOT TO EXCEED A SPECIFIED TIME PERIORD.  SEE PPS
                 736 *                FOR TIMING CONSTRANTS.
015255 014035 A  737          LDA     SAVO           SETUP OVERFLOW FLAG
015256 001010 A  738          JAZ     *+3
015257 015261 A
015260 007401 A  739          SOF
015261 010430 A  740          LDA     V75            IF V75                                 B
015262 001010 A  741          JAZ     ABX                                                    B
015263 015276 A
015264 007030 A  742          LD,R3   SAVR3          RETURN R3,                             B
015265 015306 A
015266 007040 A  743          LD,R4   SAVR4          R4,                                    B
015267 015307 A
015270 007050 A  744          LD,R5   SAVR5          R5,                                    B
015271 015310 A
015272 007060 A  745          LD,R6   SAVR6          R6,                                    B
015273 015311 A
015274 007070 A  746          LD,R7   SAVR7          R7                                     B
015275 015312 A
015276 014004 A  747 ABX      LDA     SAVA           RETURN A,B,X REGISTERS                 B
015277 024004 A  748          LDB     SAVB
015300 034004 A  749          LDX     SAVX
015301 001000 A  750          JMP*    PWDN           RETURN TO LOCATION INTERRUPTED FROM
015302 115221 A
                 751 *
015303 000000 A  752 SAVA     DATA    0
015304 000000 A  753 SAVB     DATA    0
015305 000000 A  754 SAVX     DATA    0
015306 000000 A  755 SAVR3    DATA    0                                                      B
015307 000000 A  756 SAVR4    DATA    0                                                      B
015310 000000 A  757 SAVR5    DATA    0                                                      B
015311 000000 A  758 SAVR6    DATA    0                                                      B
015312 000000 A  759 SAVR7    DATA    0                                                      B
015313 000000 A  760 SAVO     DATA    0
015314 000000 A  761 HLTF     DATA    0
                 762 *
                 763 *
                 764 *
                 765 *
                 766 *
                 767 *    MESSAGE TABLE
                 768 *
015315 106612 A  769 MSG1     DATA    0106612,'THIS IS THE V70/620 TEST EXECUTIVE',0106612,0
015316 152310 A
015317 144723 A
015320 120311 A
015321 151640 A
015322 152310 A
015323 142640 A
015324 153267 A
015325 130257 A
015326 133262 A
015327 130240 A
015330 152305 A
015331 151724 A
015332 120305 A
015333 154305 A
015334 141725 A
015335 152311 A
015336 153305 A
015337 106612 A
015340 000000 A
015341 141710 A  770 MSG2     DATA    'CHECKSUM ERROR  X = ',0
015342 142703 A
015343 145723 A
015344 152715 A
015345 120305 A
015346 151322 A
015347 147722 A
015350 120240 A
```

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015351 154240 A
015352 136640 A
015353 000000 A
015354 146705 A  771 MSG3   DATA    'MEMORY SIZE IS '
015355 146717 A
015356 151331 A
015357 120323 A
015360 144732 A
015361 142640 A
015362 144723 A
015363 120240 A
015364 126655 A  772 MSG4   DATA    '--K',0
015365 145640 A
015366 000000 A
015367 120240 A  773 MSG5   DATA    '  INVALID',0
015370 144716 A
015371 153301 A
015372 146311 A
015373 142240 A
015374 000000 A
015375 106612 A  774 MSG6   DATA    0106612,'THIS IS THE V75 TEST EXECUTIVE',0106612,0     B
015376 152310 A
015377 144723 A
015400 120311 A
015401 151640 A
015402 152310 A
015403 142640 A
015404 153267 A
015405 132640 A
015406 152305 A
015407 151724 A
015410 120305 A
015411 154305 A
015412 141725 A
015413 152311 A
015414 153305 A
015415 106612 A
015416 000000 A
                 775 *
                 776 *
                 777 *   ROUTINE FOR DETERMINING CORE SIZE
                 778 *
015417 000000 A  779 ESZA   ENTR    0
015420 100545 A  780        EXC     0545          DISABLE MEMORY PARITY INT.
015421 006010 A  781        LDAI    014000        DISABLE                              D
015422 014000 A
015423 103146 A  782        OAR     046             CACHE                              D
015424 010000 A  783        LDA     0
015425 050002 A  784        STA     2             SAVE CONTENTS OF LOCATION ZERO
015426 005001 A  785        IZA
015427 050000 A  786        STA     0
015430 005311 A  787        DAR                   A=-1
015431 006120 A  788 ESZ1   ADDI    4096          NEXT 4K MEMORY ADDRESS
015432 010000 A
015433 005014 A  789        TAX
015434 025001 A  790        LDB     1,1           SAVE MEMORY CELL IN B REG
015435 055001 A  791        STA     1,1
015436 015001 A  792        LDA     1,1
015437 130000 A  793        ERA     0
015440 001010 A  794        JAZ     ESZ2          JUMP IF END OF MEMORY
015441 015446 A
015442 065001 A  795        STB     1,1           RESTORE MEMORY CELL
015443 005041 A  796        TXA
015444 001000 A  797        JMP     ESZ1
015445 015431 A
015446 010002 A  798 ESZ2   LDA     2             RESTORE CONTENTS OF
015447 050000 A  799        STA     0             LOCATION ZERO
015450 005041 A  800        TXA
015451 001000 A  801        JMP*    ESZA
015452 115417 A
                 802 *
                 803 *
                 804 *
                 805 *   CONVERT MEMORY SIZE FOR ASCII PRINTOUT
                 806 *
015453 000000 A  807 ESZB   ENTR    0
015454 010441 A  808        LDA     $MEM          GET CORE SIZE(X7777)
015455 004354 A  809        LSRA    12            TRUNCATE 7777
015456 006120 A  810        ADDI    ETAB          ADDRESS OF THE ASCII EQUIV TABLE
015457 015467 A
015460 005014 A  811        TAX
015461 015000 A  812        LDA     0,1           GET ASCII EQUIV FROM TABLE ETAB
015462 006020 A  813        LDBI    MSG4          SET MEMORY SIZE(04,08,ETC) INTO MSG4
015463 015364 A
015464 056000 A  814        STA     0,2
015465 001000 A  815        JMP*    ESZB          RETURN
015466 115453 A
015467 120264 A  816 ETAB   DATA    0120264       ASCII 04
015470 120270 A  817        DATA    0120270
015471 130662 A  818        DATA    0130662
015472 130666 A  819        DATA    0130666
015473 131260 A  820        DATA    0131260
015474 131264 A  821        DATA    0131264
015475 131270 A  822        DATA    0131270
015476 131662 A  823        DATA    0131662
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                    824 *
                    825 *
                    826 *
                    827 *
                    828 *
                    829 *
                    830 ********************************************************************************
                    831 *                                                                              *
                    832 *                SENSE SWITCH SUBROUTINE                                       *
                    833 *        THIS SUBROUTINE PROVIDES A STANDARD SENSE SWITCH INTERFACE.           *
                    834 *        THE CALLING SEQUENCE IS AS FOLLOWS                                    *
                    835 *                THE A, B, AND X REGISTERS CONTAIN ERROR HALT VALUES.          *
                    836 *                CALL SSWT                                                     *
                    837 *                DATA    (U REGISTER VALUE)                                    *
                    838 *                DATA    (ERROR MESSAGE ADDRESS) (IF NEG, ERROR SUB.)          *
                    839 *                DATA    (TERMINATION EXIT)                                    *
                    840 *                DATA    (LOOP ON ERROR EXIT)                                  *
                    841 *                *       NORMAL EXIT RETURN                                    *
                    842 *                                                                              *
                    843 *        STANDARD SENSE SWITCH SETTINGS                                        *
                    844 *                SS1 =(SET) SUPPRESS ERROR PRINTOUT                            *
                    845 *                     (RESET) ALLOW ERROR PRINTOUTS                            *
                    846 *                SS2  (SET) HALT ON ERROR                                      *
                    847 *                           (IF SET AFTER HALT = CONTINUE )                    *
                    848 *                     (RESET) DO NOT HALT ON ERROR                             *
                    849 *                           (IF HALT ON ERROR SET FIRST THEN RESET ON          *
                    850 *                            HALT CONDITION = LOOP UNTIL SET )                 *
                    851 *                SS3  (SET) TERMINATE TEST = RETURN TO BEGINING OF TEST        *
                    852 *                     (RESET)  CONTINUE TEST                                   *
                    853 ********************************************************************************
                    854 *
015477 054125 A     855 SSWP    STA     SSWS            SAVE VOLATILE REGISTERS
015500 064125 A     856         STB     SSWS+1
015501 074125 A     857         STX     SSWS+2
015502 001400 A     858         JSS3    SSWE            IF SS3 SET  RETURN THROUGH TERMINATION EXIT
015503 015630 A
015504 001100 A     859         JSS1    SSW1            CHECK IF TTY SUPPRESSED
015505 015527 A
015506 024132 A     860         LDB     SSWT            GET 2ND PARAMETER
015507 005122 A     861         IBR
015510 016000 A     862         LDA     0,2
015511 001010 A     863         JAZ     SSW1
015512 015527 A
015513 005012 A     864         TAB                     CHECK IF BIT 15 SET
015514 006150 A     865         ANAI    0100000
015515 100000 A
015516 005014 A     866         TAX
015517 005021 A     867         TBA
015520 001040 A     868         JXZ     *+4
015521 015524 A
015522 001000 A     869         JMP     SSWR            CALL ERROR SUBROUTINE
015523 015613 A
015524 005014 A     870         TAX                     PRINT ERROR MESSAGE
015525 002000 A     871         CALL    OUTD
015526 016354 A
[illegible]         872 SSW1    JSS3    SSWF            IF SS3 SET = RETURN THROUGH TERMINATION EXI
015530 015630 A
015531 010440 A     873         LDA     $FLG            CHECK IF LOOPING
015532 001010 A     874         JAZ     SSW4
015533 015564 A
015534 001200 A     875 SSW2    JSS2    SSW3            LOOPING = CHECK IF TERMINATE LOOPING.
015535 015551 A
015536 024102 A     876 SSWL    LDB     SSWT              RETURN THROUGH LOOP EXIT
015537 005122 A     877         IBR
015540 005122 A     878         IBR
015541 005122 A     879         IBR
015542 016000 A     880         LDA     0,2
015543 054004 A     881         STA     *+5
015544 014060 A     882         LDA     SSWS            RETURN VOLATILE REGISTERS.
015545 024060 A     883         LDB     SSWS+1
015546 034060 A     884         LDX     SSWS+2
015547 001000 A     885         JMP     *
015550 015547 A
015551 005001 A     886 SSW3    TZA                     RETURN TO NORMAL EXIT (CONTINUATION EXIT)
015552 050440 A     887         STA     $FLG              CLEAR LOOP FLAG.
015553 014065 A     888         LDA     SSWT
015554 006120 A     889         ADDI    4
015555 000004 A
015556 054004 A     890         STA     *+5
015557 014045 A     891         LDA     SSWS            RETURN VOLATILE REGISTERS.
015560 024045 A     892         LDB     SSWS+1
015561 034045 A     893         LDX     SSWS+2
015562 001000 A     894         JMP     *
015563 015562 A
015564 001200 A     895 SSW4    JSS2    SSW5            CHECK IF HALT ON ERROR
015565 015570 A
015566 001000 A     896         JMP     SSW3            RETURN TO NORMAL EXIT LOC.
015567 015551 A
015570 024050 A     897 SSW5    LDB     SSWT            GET FIRST PARAMETER
015571 016000 A     898         LDA     0,2
015572 054003 A     899         STA     *+4
015573 014031 A     900         LDA     SSWS            RETURNED SAVED PARAMETERS.
015574 024031 A     901         LDB     SSWS+1
015575 034031 A     902         LDX     SSWS+2
015576 005000 A     903         NOP                     1ST PARAMETER STORED HERE AND EXECUTED.
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015577 001400 A  904 SSW6   JSS3    SSWE          IF SS3 SET  RETURN THROUGH TERMINATION EXIT
015600 015630 A
015601 010440 A  905         LDA     $FLG          CHECK IF LOOPING
015602 001010 A  906         JAZ     *+4
015603 015606 A
015604 001000 A  907         JMP     SSW2
015605 015534 A
015606 001200 A  908         JSS2    SSW3            LOOP FLAG ZERO - CHECK IF LOOP REQUEST
015607 015551 A
015610 040440 A  909         INR     $FLG          INCREMENT LOOP FLAG
015611 001000 A  910         JMP     SSWL            JUMP THROUGH LOOP EXIT
015612 015536 A
015613 006150 A  911 SSWR    ANAI    077777        ERROR SUBROUTINE   MASK OUT BIT 15
015614 077777 A
015615 054004 A  912         STA     *+5
015616 014006 A  913         LDA     SSWS
015617 024006 A  914         LDB     SSWS+1
015620 034006 A  915         LDX     SSWS+2
015621 002000 A  916         JMPM    *               CALL ERROR SUBROUTINE
015622 015621 A
015623 001000 A  917         JMP     SSW1
015624 015527 A
015625           918 SSWS    BSS     3
015630 005001 A  919 SSWE    TZA                   JUMP THROUGH TERMINATION EXIT.
015631 050440 A  920         STA     $FLG            CLEAR LOOP FLAG.
015632 024006 A  921         LDB     SSWT
015633 005122 A  922         IBR                     SET UP TERMINATION EXIT
015634 005122 A  923         IBR
015635 016000 A  924         LDA     0,2
015636 054001 A  925         STA     *+2
015637 001000 A  926         JMP     *
015640 015637 A
015641 000000 A  927 SSWT    ENTR                  SENSE SWITCH SUBROUTINE ENTRANCE
015642 001000 A  928         JMP     SSWP
015643 015477 A
                 929 *
                 930 *       INPUT ONE CHARACTER FROM TTY TO (A) REGISTER
                 931 *
015644 002000 A  932 INA1    CALL    INPH,INA2     SENSE BFR RDY
015645 016232 A
015646 015653 A
015647 001400 A  933         JSS3    INA3
015650 015657 A
015651 001000 A  934         JMP     INA1
015652 015644 A
015653 002000 A  935 INA2    CALL    INPI          INPUT CHARACTEP
015654 016244 A
015655 044002 A  936         INR     INPA          NORMAL EXIT
015656 044001 A  937         INR     INPA
015657 001000 A  938 INA3    JMP     000
015660 000000 A
015660           939 INPA    BES     0             ENTER
015661 001000 A  940         JMP     INA1
015662 015644 A
                 941 *
                 942 *       INPUT ONE CHARACTER + PRINT FROM TTY TO A REGISTER
                 943 *
015663 002000 A  944 INB1    CALL    INPA          INPUT ONE CHARACTER
015664 015660 A
015665 001000 A  945         JMP*    INPB          TERMINATE EXIT
015666 115674 A
015667 002000 A  946         CALL    OUTA          OUTPUT ONE CHARACTER
015670 016247 A
015671 044002 A  947         INR     INPB
015672 044001 A  948         INR     INPB
015673 001000 A  949         JMP*    0             EXIT
015674 100000 A
015674           950 INPB    BES     0
015675 001000 A  951         JMP     INB1
015676 015663 A
                 952 *
                 953 *
                 954 *     INPUT ONE CHARACTER (EDITED)
                 955 *
015677 002000 A  956 INC3    CALL    INPB
015700 015674 A
015701 001000 A  957         JMP*    INPC          TERMINATE EXIT
015702 115726 A
015703 006130 A  958         ERAI    '\'           BACKSLASH
015704 000334 A
015705 001010 A  959         JAZ     INC2          ABORT INPUT EXIT
015706 015723 A
015707 006130 A  960         ERAI    '\'           RESTORE A
015710 000334 A
015711 006130 A  961         ERAI    0337          BACKARROW
015712 000337 A
015713 001010 A  962         JAZ     INC1          DELETE ONE CHARACTER EXIT
015714 015721 A
015715 006130 A  963         ERAI    0337          RESTORE A
015716 000337 A
015717 044006 A  964         INR     INPC
015720 044005 A  965         INR     INPC
015721 044004 A  966 INC1    INR     INPC
015722 044003 A  967         INR     INPC
015723 044002 A  968 INC2    INR     INPC
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015724 044001 A  969          INR     INPC
015725 001000 A  970          JMP*    0               EXIT
015726 100000 A
015726           971 INPC     BES     0
015727 001000 A  972          JMP     INC3
015730 015677 A
                 973 *
                 974 *   INPUT ONE ALPHA CHARACTER FROM TTY KEYBOARD TO A REG
                 975 *
015731 002000 A  976 IND4     CALL    INPC            INPUT ONE CHAR
015732 015726 A
015733 001000 A  977          JMP*    INPD            TERMINATE EXIT
015734 115762 A
015735 001000 A  978          JMP     IND2            ABORT INPUT EXIT
015736 015757 A
015737 001000 A  979          JMP     IND1            DELETE PREVIOS CHARACTER EXIT
015740 015755 A
015741 006140 A  980          SUBI    0301            CHAR A
015742 000301 A
015743 001004 A  981          JAN     IND3            INVALID INPUT
015744 015765 A
015745 006140 A  982          SUBI    032             CHAR Z
015746 000032 A
015747 001002 A  983          JAP     IND3            INVALID INPUT
015750 015765 A
015751 006120 A  984          ADDI    0333            RESTORE A
015752 000333 A
015753 044006 A  985          INR     INPD            NORMAL EXIT
015754 044005 A  986          INR     INPD
015755 044004 A  987 IND1     INR     INPD            DELETE PREVIOS CHARACTER EXIT
015756 044003 A  988          INR     INPD
015757 044002 A  989 IND2     INR     INPD            ABORT INPUT EXIT
015760 044001 A  990          INR     INPD
015761 001000 A  991          JMP*    0               EXIT
015762 100000 A
015762           992 INPD     BES     0
015763 001000 A  993          JMP     IND4
015764 015731 A
015765 002000 A  994 IND3     CALL    OUTG            INVALID INPUT--PRINT MESSAGE
015766 016404 A
015767 001000 A  995          JMP     IND2            ABORT
015770 015757 A
                 996 *
                 997 *
                 998 *    INPUT TWO LETTER CHARACTERS FROM TTY
                 999 *
015771 002000 A 1000 INE3     CALL    INPD            INPUT ALPHA CHAR
015772 015762 A
015773 001000 A 1001          JMP*    INPE            TERMINATE EXIT
015774 116023 A
015775 001000 A 1002          JMP     INE2            ABORT INPUT EXIT
015776 016020 A
015777 001000 A 1003          JMP     INE1            DELETE PREVIOS CHARACTER EXIT
016000 016016 A
016001 004250 A 1004          LRLA    8
[illegible]                   STA     TS02
016003 002000 A 1006          CALL    INPD            INPUT ALPHA CHAR
016004 015762 A
016005 001000 A 1007          JMP*    INPE            TERMINATE EXIT
016006 116023 A
016007 001000 A 1008          JMP     INE2            ABORT INPUT EXIT
016010 016020 A
016011 001000 A 1009          JMP     INE3            DELETE PREVIOUS CHARACTER EXIT
016012 015771 A
016013 114442 A 1010          ORA     TS02
016014 044006 A 1011          INR     INPE            NORMAL EXIT
016015 044005 A 1012          INR     INPE
016016 044004 A 1013 INE1     INR     INPE            DELETE PREVIOS CHARACTER EXIT
016017 044003 A 1014          INR     INPE
016020 044002 A 1015 INE2     INR     INPE            ABORT INPUT EXIT
016021 044001 A 1016          INR     INPE
016022 001000 A 1017          JMP*    0               EXIT
016023 100000 A
016023          1018 INPE     BES     0
016024 001000 A 1019          JMP     INE3
016025 015771 A
                1020 *
                1021 *    INPUT PERIOD,COMMA  FOR MESSAGE TERMINATOR
                1022 *
016026 002000 A 1023 INF5     CALL    INPC            INPUT ONE CHARACTER
016027 015726 A
016030 001000 A 1024          JMP*    INPF            TERMINATE EXIT
016031 116063 A
016032 001000 A 1025          JMP     INF2            ABORT INPUT EXIT
016033 016060 A
016034 001000 A 1026          JMP     INF1            DELETE PREVIOS CHARACTER EXIT
016035 016056 A
016036 006140 A 1027          SUBI    0254            COMMA
016037 000254 A
016040 001010 A 1028          JAZ     INF3            COMMA EXIT
016041 016054 A
016042 006140 A 1029          SUBI    02              PERIOD
016043 000002 A
016044 001010 A 1030          JAZ     INF4            PERIOD EXIT
016045 016052 A
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016046 002000 A 1031        CALL    OUTG        PRINT INVALID MESSAGE
016047 016404 A
016050 001000 A 1032        JMP     INF2        ABORT
016051 016060 A
016052 044010 A 1033 INF4   INR     INPF        NORMAL EXIT
016053 044007 A 1034        INR     INPF
016054 044006 A 1035 INF3   INR     INPF        COMMA EXIT
016055 044005 A 1036        INR     INPF
016056 044004 A 1037 INF1   INR     INPF        DELETE PREVIOS CHARACTER EXIT
016057 044003 A 1038        INR     INPF
016060 044002 A 1039 INF2   INR     INPF        ABORT INPUT EXIT
016061 044001 A 1040        INR     INPF
016062 001000 A 1041        JMP*    0           EXIT
016063 100000 A
016063          1042 INPF   BES     0
016064 001000 A 1043        JMP     INF5
016065 016026 A
                1044 *
                1045 *   INPUT OCTAL NUMBER FROM TTY KEYBOARD
                1046 *   ASSEMBLE AS 16 BIT NUMBER IN A REG
                1047 *   ONLY OCTAL NUMBERS ACCEPTED
                1048 *
016066 005001 A 1049 ING7   TZA
016067 054366 A 1050        STA     TS02        TEMP STORAGE FOR OCTAL NUMBER
016070 050471 A 1051        STA     TS04        TEMP STORAGE FOR DIGIT COUNTER
016071 064370 A 1052        STB     TS07
016072 005002 A 1053        TZB
016073 002000 A 1054 ING5   CALL    INPC        INPUT ONE CHARACTER
016074 015726 A
016075 001000 A 1055        JMP*    INPG        TERMINATE EXIT
016076 116143 A
016077 001000 A 1056        JMP     ING2        ABORT INPUT EXIT
016100 016136 A
016101 001000 A 1057        JMP     ING1        DELETE PREVIOS CHARACTER EXIT
016102 016171 A
016103 054354 A 1058        STA     TS05        SAVE INPUT
016104 006140 A 1059        SUBI    0260
016105 000260 A
016106 001004 A 1060        JAN     ING6        INVALID IF NOT OCTAL NUMBER
016107 016150 A
016110 006140 A 1061        SUBI    010
016111 000010 A
016112 001002 A 1062        JAP     ING6        INVALID IF NOT OCTAL NUMBER
016113 016150 A
016114 006120 A 1063        ADDI    010         RESTORE DIGIT
016115 000010 A
016116 054340 A 1064        STA     TS03        SAVE CHARACTOR
016117 014336 A 1065        LDA     TS02        INSERT CHARACTOR
016120 004443 A 1066        LLRL    3           INTO
016121 114335 A 1067        ORA     TS03          OCTAL NUMBER
016122 001020 A 1068        JBZ     *+4         TOO MANY BITS ?
016123 016126 A
016124 001000 A 1069        JMP     ING8            YES
016125 016165 A
016126 054327 A 1070        STA     TS02            NO
016127 040471 A 1071        INR     TS04        INCR # DIGITS
016130 001000 A 1072        JMP     ING5        GET NEXT DIGIT
016131 016073 A
016132 044010 A 1073 ING3   INR     INPG        NORMAL EXIT
016133 044007 A 1074        INR     INPG
016134 044006 A 1075 ING4   INR     INPG        COMMA EXIT
016135 044005 A 1076        INR     INPG
016136 044004 A 1077 ING2   INR     INPG        ABORT INPUT EXIT
016137 044003 A 1078        INR     INPG
016140 024321 A 1079        LDB     TS07
016141 014314 A 1080        LDA     TS02        GET ASSEMBLED OCTAL NUMBER
016142 001000 A 1081        JMP     0           EXIT
016143 000000 A
016143          1082 INPG   BES     0
016144 002000 A 1083        CALL    INPI        INIT TTY BFR
016145 016244 A
016146 001000 A 1084        JMP     ING7
016147 016066 A
016150 014307 A 1085 ING6   LDA     TS05        GET LAST INPUT
016151 006140 A 1086        SUBI    0254        IS IT A COMMA
016152 000254 A
016153 001010 A 1087        JAZ     ING4        YES
016154 016134 A
016155 006140 A 1088        SUBI    02          IS IT A PERIOD
016156 000002 A
016157 001010 A 1089        JAZ     ING3        YES
016160 016132 A
016161 006140 A 1090        SUBI    0256-0215
016162 000041 A
016163 001010 A 1091        JAZ     ING3        RETURN IS AS GOOD AS PERIOD
016164 016132 A
016165 002000 A 1092 ING8   CALL    OUTG        PRINT INVALID MESSAGE
016166 016404 A
016167 001000 A 1093        JMP     ING2        ABORT
016170 016136 A
                1094 *
016171 014264 A 1095 ING1   LDA     TS02        DELETE LAST CHARACTOR
016172 004343 A 1096        LSRA    3
016173 054262 A 1097        STA     TS02
016174 010471 A 1098        LDA     TS04
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016175 005311 A 1099          DAR                     REDUCE DIGIT COUNT
016176 050471 A 1100          STA     TS04
016177 001000 A 1101          JMP     ING5
016200 016073 A
                1102 *
016201 000000 A 1103 INN      ENTR                    INPUT TO TERMINATOR
                1104 *
016202 002000 A 1105          CALL    INPG
016203 016143 A
016204 001000 A 1106          JMP     ETOP
016205 015033 A
016206 001000 A 1107          JMP     ETOP
016207 015033 A
016210 001000 A 1108          JMP*    INN
016211 116201 A
016212 001000 A 1109          JMP*    INN
016213 116201 A
                1110 *
                1111 *        SENSE TTY BFR RDY
                1112 *
016214 054020 A 1113 INH1     STA     INH2            SAVE A
016215 014014 A 1114          LDA     INPH            MODIFY RETURN
016216 006110 A 1115          ORAI    0100000
016217 100000 A
016220 054006 A 1116          STA     INH3+1
016221 010473 A 1117          LDA     $TTY            ADJ SBR
016222 006110 A 1118          ORAI    0101200
016223 101200 A
016224 054001 A 1119          STA     *+2
016225 014007 A 1120          LDA     INH2            RESTORE A
016226 101000 A 1121 INH3     SEN     0,*
016227 016226 A
016230 044001 A 1122          INR     INPH
016231 001000 A 1123          JMP     0
016232 000000 A
016232          1124 INPH     BES     0               ENTER
016233 001000 A 1125          JMP     INH1
016234 016214 A
016235 000000 A 1126 INH2     DATA    0
                1127 *
                1128 *        INPUT CHARACTER FROM TTY W/OUT SENSING BFR RDY
                1129 *
016236 010473 A 1130 INI1     LDA     $TTY            ADJ. CIA
016237 006110 A 1131          ORAI    0102500
016240 102500 A
016241 054000 A 1132          STA     *+1
016242 102500 A 1133          CIA     0               INPUT
016243 001000 A 1134          JMP     0
016244 000000 A
016244          1135 INPI     BES     0               ENTER
016245 001000 A 1136          JMP     INI1
016246 016236 A
                1137 *
                1138 *        OUTPUT ONE CHARACTER FROM A REG TO TTY
                1139 *
016247 000000 A 1140 OUTA     ENTR    0
016250 074204 A 1141          STX     TS01            SAVE X
016251 005014 A 1142          TAX
016252 010473 A 1143          LDA     $TTY
016253 006110 A 1144          ORAI    0101100         ADJUST TTY DA
016254 101100 A
016255 054006 A 1145          STA     *+7
016256 006120 A 1146          ADDI    002000
016257 002000 A
016260 054013 A 1147          STA     OUT1
016261 005041 A 1148          TXA
016262 006030 A 1149          LDXI    -1              TIME = OUTCONSTANT
016263 177777 A
016264 101000 A 1150          SEN     0,OUT1          WRITE REGISTER READY
016265 016274 A
016266 002000 A 1151          CALL    TOUT
016267 016452 A
016270 005011 A 1152          MERG    011
016271 000115 A 1153          HLT     77
016272 001000 A 1154          JMP     *-6
016273 016264 A
016274 103100 A 1155 OUT1     DAR     0
016275 034157 A 1156          LDX     TS01            RESTORE X
016276 001000 A 1157          JMP*    OUTA            RETURN
016277 116247 A
                1158 *
                1159 *
                1160 *    OUTPUT TWO CHARACTERS FROM A REG TO TTY (HIGH ORDER FIRST)
                1161 *    ENTER WITH CHARACTERS IN A REG
                1162 *
016300 000000 A 1163 OUTB     ENTR    0
016301 064157 A 1164          STB     TS06            SAVE B
016302 004550 A 1165          LLSR    8
016303 002000 A 1166          CALL    OUTA            OUTPUT FIRST CHAR
016304 016247 A
016305 004450 A 1167          LLRL    8
016306 002000 A 1168          CALL    OUTA            OUTPUT SECOND CHAR
016307 016247 A
016310 024150 A 1169          LDB     TS06            RESTORE B
016311 001000 A 1170          JMP*    OUTB            RETURN
```

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016312 116300 A
                    1171 *
                    1172 *   OUTPUT CARRIAGE RETURN AND LINE FEED TO TTY
                    1173 *
016313 000000 A     1174 OUTC   ENTR    0
016314 054005 A     1175        STA     *+6             SAVE A
016315 006010 A     1176        LDAI    0106612         CR AND LF
016316 106612 A
016317 002000 A     1177        CALL    OUTB            OUTPUT 2 CHAR
016320 016300 A
016321 006010 A     1178        LDAI    0               RESTORE A
016322 000000 A
016323 001000 A     1179        JMP*    OUTC            RETURN
016324 116313 A
                    1180 *
                    1181 *   OUTPUT OCTAL WORD AND A SPACE TO TTY
                    1182 *
016325 000000 A     1183 OUTE   ENTR    0
016326 064022 A     1184        STB     *+19            SAVE B
016327 005002 A     1185        TZB
016330 004557 A     1186        LLSR    15
016331 005122 A     1187        IBR
016332 006110 A     1188 OUT2   ORAI    '0'             MAKE DIGIT
016333 000260 A
016334 002000 A     1189        CALL    OUTA            OUTPUT ONE DIGIT
016335 016247 A
016336 005001 A     1190        TZA
016337 004443 A     1191        LLRL    3
016340 001020 A     1192        JBZ     *+4             OCTAL OUTPUT COMPLETE
016341 016344 A
016342 001000 A     1193        JMP     OUT2
016343 016332 A
016344 006010 A     1194        LDAI    0240            ASCII BLANK CODE
016345 000240 A
016346 002000 A     1195        CALL    OUTA            OUTPUT SPACE
016347 016247 A
016350 006020 A     1196        LDBI    0               RESTORE B
016351 000000 A
016352 001000 A     1197        JMP*    OUTE            RETURN
016353 116325 A
                    1198 *
                    1199 *   OUTPUT MESSAGE TO TTY (X REG CONTAINS ADDRESS OF MESSAGE)
                    1200 *
016354 000000 A     1201 OUTD   ENTR    0
016355 015000 A     1202        LDA     0,1
016356 001010 A     1203        JAZ*    OUTD
016357 116354 A
016360 002000 A     1204        CALL    OUTB
016361 016300 A
016362 005144 A     1205        IXR
016363 001000 A     1206        JMP     OUTD+1
016364 016355 A
                    1207 *
                    1208 *   OUTPUT OCTAL MEMORY ADDRESS TO TTY PRINTER
                    1209 *
016365 000000 A     1210 OUTF   ENTR    0
016366 054067 A     1211        STA     TS02            SAVE WORD
016367 006010 A     1212        LDAI    '( '            PAREN SPACE
016370 124240 A
016371 002000 A     1213        CALL    OUTB            PRINT CHAR
016372 016300 A
016373 014062 A     1214        LDA     TS02
016374 002000 A     1215        JMPM    OUTE            OUTPUT OCTAL WORD
016375 016325 A
016376 006010 A     1216        LDAI    ') '            RIGHT PARENTHESIS AND SPACE
016377 124640 A
016400 002000 A     1217        CALL    OUTB
016401 016300 A
016402 001000 A     1218        JMP*    OUTF
016403 116365 A
                    1219 *
                    1220 *   INVALID INPUT--PRINT MESSAGE
                    1221 *
016404 000000 A     1222 OUTG   ENTR    0
016405 006030 A     1223        LDXI    MSG5            INVALID MESSAGE
016406 015367 A
016407 002000 A     1224        CALL    OUTD            OUTPUT MESSAGE
016410 016354 A
016411 001000 A     1225        JMP*    OUTG
016412 116404 A
                    1226 *
                    1227 *   OUTPUT CONTROL CHARACTER SUBROUTINE
                    1228 *
016413 054020 A     1229 OUT3   STA     OUTH+3          SAVE A
016414 074020 A     1230        STX     OUTH+4          SAVE X
016415 034013 A     1231        LDX     OUTH            A=CONTROL
016416 015000 A     1232        LDA     0,1              CHARACTER
016417 002000 A     1233        CALL    OUTA            OUTPUT CHARACTER
016420 016247 A
016421 006030 A     1234        LDXI    077777          INIT
016422 077777 A
016423 002000 A     1235        CALL    TDLY             TIME DELAY
016424 016436 A
016425 044003 A     1236        INR     OUTH            SET RETURN
016426 014005 A     1237        LDA     OUTH+3          RESTORE A
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016427 034005 A 1238          LDX     OUTH+4          RESTORE X
016430 001000 A 1239          JMP     0               RETURN
016431 000000 A
016431          1240 OUTH     BES     0               ENTRY
016432 001000 A 1241          JMP     OUT3            LOOP
016433 016413 A
016434          1242          BSS     2               STORAGE FOR A + X
                1243 *
                1244 *  TIME DELAY SUBROUTINE
                1245 *
016436 000000 A 1246 TDLY     ENTR    0
016437 005344 A 1247          DXR
016440 001040 A 1248          JXZ*    TDLY            RETURN
016441 116436 A
016442 001000 A 1249          JMP     *-3
016443 016437 A
                1250 *
                1251 *  I/O TIME-OUT SUBROUTINE
                1252 *
016444 005344 A 1253 TOU1     DXR
016445 001040 A 1254          JXZ*    TOUT            TIME-OUT RETURN
016446 116452 A
016447 044002 A 1255          INR     TOUT            SET UP FOR
016450 044001 A 1256          INR     TOUT                NORMAL EXIT
016451 001000 A 1257          JMP     0
016452 000000 A
016452          1258 TOUT     BES     0
016453 001000 A 1259          JMP     TOU1
016454 016444 A
                1260 *
                1261 *    DATA TABLE
                1262 *
                1263 *
016455 000000 A 1264 TS01     DATA    0               TEMPORARY STORAGE
016456 000000 A 1265 TS02     DATA    0               TEMPORARY STORAGE
016457 000000 A 1266 TS03     DATA    0               TEMPORARY STORAGE
016460 000000 A 1267 TS05     DATA    0               TEMPORARY STORAGE
016461 000000 A 1268 TS06     DATA    0               TEMPORARY STORAGE
016462 000000 A 1269 TS07     DATA    0               TEMPORARY STORAGE
       015033 A 1270 END      EQU     ETOP
                1271 *
                1272 *       MAG TAPE I/O ROUTINES, WITH OPTIONAL BIC.
                1273 *
       000010 A 1274 MT       EQU     010
       000026 A 1275 BIC      EQU     026
                1276 *
                1277 *       DUMP PROGRAM ONTO MAG TAPE  UNIT 0 TO 7
                1278 *       WRITE FIRST,LAST,EXECUTION,DRIVE=CTLR[,BIC].
                1279 *       'PX,Y,Z,DC[,BIC].'
       016463 A 1280 EPUN     EQU     *
       016463 A 1281 PCHM     EQU     *
016463 006010 A 1282          LDAI    MTO
016464 017056 A
016465 054057 A 1283          STA     MCO1
016466 054101 A 1284          STA     MCO2
016467 002000 A 1285 WMT      CALL    INN
016470 016201 A
016471 050462 A 1286          STA     FRST
016472 002000 A 1287          CALL    INN
016473 016201 A
016474 050463 A 1288          STA     LAST
016475 002000 A 1289          CALL    INN
016476 016201 A
016477 050465 A 1290          STA     EXEC
016500 002000 A 1291          CALL    SETM
016501 016625 A
016502 005001 A 1292 WRI2     TZA
016503 054440 A 1293          STA     CNTR            RESET COUNTER
016504 030462 A 1294          LDX     FRST
016505 074441 A 1295          STX     MTBF+1          SET ADDRESS CONTROL
016506 024433 A 1296          LDB     BUFR            BUFFER ADDRESS
016507 070464 A 1297          STX     CKSM
016510 005122 A 1298          IBR
016511 005122 A 1299 WRI3     IBR
016512 015000 A 1300          LDA     0,1             PICK UP WORD
016513 056000 A 1301          STA     0,2             PUT IN BUFFER
016514 130464 A 1302          ERA     CKSM
016515 050464 A 1303          STA     CKSM
016516 044425 A 1304          INR     CNTR            INCREMENT WORD COUNT
016517 005041 A 1305          TXA
016520 140463 A 1306          SUB     LAST            END OF RECORD
016521 005144 A 1307          IXR
016522 001010 A 1308          JAZ     WRI4            YES
016523 016531 A
016524 014417 A 1309          LDA     CNTR
016525 006140 A 1310          SUBI    075             RECORD FULL
016526 000075 A
016527 001004 A 1311          JAN     WRI3            NO
016530 016511 A
016531 070462 A 1312 WRI4     STX     FRST            SAVE POINTER
016532 005122 A 1313          IBR
016533 010464 A 1314          LDA     CKSM
016534 134407 A 1315          ERA     CNTR
016535 056000 A 1316          STA     0,2
016536 024405 A 1317          LDB     CNTR
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016537 064406 A 1318          STB     MTBF            SET RECORD LENGTH
016540 005122 A 1319          IBR
016541 005122 A 1320          IBR
016542 005122 A 1321          IBR
016543 034376 A 1322          LDX     BUFR
016544 002000 A 1323          CALL    MTO
016545 017056 A
       016545 A 1324 MCO1     EQU     *-1
016546 010462 A 1325          LDA     FRST
016547 005311 A 1326          DAR
016550 140463 A 1327          SUB     LAST
016551 001004 A 1328          JAN     WRI2            MORE
016552 016502 A
016553 054372 A 1329          STA     MTBF            SET FOR EXECUTION RECORD
016554 010465 A 1330          LDA     EXEC
016555 001004 A 1331          JAN     END             NO EXECUTION RECORD
016556 015033 A
016557 054367 A 1332          STA     MTBF+1
016560 005301 A 1333          DECR    1
016561 054364 A 1334          STA     MTBF
016562 134364 A 1335          ERA     MTBF+1
016563 054364 A 1336          STA     MTBF+2
016564 006020 A 1337          LDBI    3
016565 000003 A
016566 034353 A 1338          LDX     BUFR
016567 002000 A 1339          CALL    MTO
016570 017056 A
       016570 A 1340 MCO2     EQU     *-1
016571 001000 A 1341          JMP     END
016572 015033 A
                1342 *         LOAD PROGRMM FROM MAG TAPE   UNIT 0 TO 7
                1343 *         READ DRIVE=CTLR[,BIC].  LOAD AND GO.  LDC[,BIC].
       016573 A 1344 LODE     EQU     *
       016573 A 1345 ELOD     EQU     *
016573 002000 A 1346 RMT      CALL    SETM            SET DRIVE NUMBER
016574 016625 A
016575 002000 A 1347          CALL    MTI             INPUT RECORD
016576 016756 A
016577 005001 A 1348          TZA
016600 054343 A 1349          STA     CNTR            RESET WORD COUNTER
016601 014344 A 1350          LDA     MTBF            IS IT EXECUTION RECORD
016602 001004 A 1351          JAN     RMT2            YES
016603 016623 A
016604 034335 A 1352          LDX     BUFR
016605 005144 A 1353          IXR
016606 025000 A 1354          LDB     0,1             GET STORE POINTER
016607 005144 A 1355          IXR                     SET LOAD POINTER
016610 015000 A 1356 RMT1     LDA     0,1             GET WORD
016611 056000 A 1357          STA     0,2             STORE WORD
016612 044331 A 1358          INR     CNTR            COUNT WORDS
016613 014330 A 1359          LDA     CNTR
016614 144331 A 1360          SUB     MTBF            DONE YET
016615 005144 A 1361          IXR
016616 005122 A 1362          IBR
016617 001004 A 1363          JAN     RMT1            NO
016620 016610 A
016621 001000 A 1364          JMP     RMT+2           READ ANOTHER RECORD
016622 016575 A
016623 001000 A 1365 RMT2     JMP*    MTBF+1          -EXECUTE-
016624 117147 A
                1366 *
                1367 *          SET UP MAG TAPE DEVICE ADDRESS & OPTIONAL BIC
                1368 *
016625 000000 A 1369 SETM     ENTR    0
016626 002000 A 1370          CALL    INN             GET DRIVE NUMBER
016627 016201 A
016630 004542 A 1371          LL8R    2               CONTROLLER TO B
016631 004341 A 1372          LSRA    1
016632 004442 A 1373          LLRL    2               UNIT/CONTROLLER
016633 006150 A 1374          ANAI    017
016634 000017 A
016635 006120 A 1375          ADDI    UTBL
016636 017247 A
016637 005012 A 1376          TAB
016640 026000 A 1377          LDB     0,2
016641 006010 A 1378          LDAI    0104000         SELECT COMMAND
016642 104000 A
016643 005031 A 1379          MERGE   031             NEW SELECT COMMAND
016644 054000 A 1380          STA     *+1
016645 104110 A 1381 MT00     SEL2    0100+MT         SELECT MT (MODIFIED)
016646 006150 A 1382          ANAI    077             DA
016647 000077 A
016650 054272 A 1383          STA     DA              SAVE DA
016651 006030 A 1384          LDXI    MTL
016652 017267 A
016653 002000 A 1385          CALL    SETD            SET MAG TAPE DA
016654 016711 A
                1386 *          CHECK FOR OPTIONAL BIC
016655 006030 A 1387          LDXI    TS05            GET LAST CHAR INPUT
016656 016460 A
016657 015000 A 1388          LDA     0,1
016660 006130 A 1389          ERAI    '.'             USE SENSE MODE IF PERIOD
016661 000256 A
016662 001010 A 1390          JAZ     SET3            (PERIOD = SENSE)
016663 016670 A
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016664 002000 A 1391          CALL    INN             (COMMA = GET BIC DA)
016665 016201 A
016666 006150 A 1392          ANAI    076             SAVE EVEN ADDR
016667 000076 A
016670 054250 A 1393 SET3     STA     BADR            SAVE DA OR 0 IF NO BIC
016671 001010 A 1394          JAZ     SET4            ZERO USE SENSE
016672 016705 A
016673 054247 A 1395          STA     DA
016674 006030 A 1396          LDXI    BIC0
016675 017315 A
016676 002000 A 1397          CALL    SETD            SET BIC DEVICE ADDRESSES
016677 016711 A
016700 044242 A 1398          INR     DA              SET BIC+1 DA
016701 006030 A 1399          LDXI    BIC1
016702 017322 A
016703 002000 A 1400          CALL    SETD            SET BIC+1 DEVICE ADDRESSES
016704 016711 A
016705 002000 A 1401 SET4     CALL    SMR             SENSE MT READY
016706 017116 A
016707 001000 A 1402          JMP*    SETM            RETURN
016710 116625 A
                    1403 *
                    1404 *      SET DEVICE ADDRESSES
                    1405 *
016711 000000 A 1406 SETD     ENTR    0
016712 025000 A 1407 SET1     LDB     0,1
016713 001020 A 1408          JBZ*    SETD
016714 116711 A
016715 016000 A 1409          LDA     0,2             GET COMMAND
016716 150477 A 1410          ANA     MASK
016717 114223 A 1411          ORA     DA
016720 056000 A 1412          STA     0,2
016721 005144 A 1413          IXR
016722 001000 A 1414          JMP     SET1
016723 016712 A
                    1415 *
                    1416 *      SKIP TO FILE (X)   UNIT 0 TO 7
                    1417 *      FILE NO,DRIVE=CTLR[,BIC], FN,DC[,BIC], (BIC NOT USED)
                    1418 *
016724 002000 A 1419 FIL      CALL    INN
016725 016201 A
016726 050465 A 1420          STA     EXEC            SAVE
016727 002000 A 1421          CALL    SETM
016730 016625 A
016731 101610 A 1422 MT01     SEN     0600+MT,FIL1    SENSE LOAD POINT
016732 016734 A
016733 100710 A 1423 MT02     SEL     0700+MT         REWIND
016734 010465 A 1424 FIL1     LDA     EXEC            GET FILE NO.
016735 001010 A 1425 FIL2     JAZ     END             DONE
016736 015033 A
016737 005311 A 1426          DAR
016740 002000 A 1427 FIL3     CALL    SMR
016741 017116 A
016742 100510 A 1428 MT03     SEL     0500+MT         FORWARD 1 RECORD
016743 002000 A 1429          CALL    SMR
016744 017116 A
016745 101310 A 1430 MT04     SEN     0300+MT,FIL2    SENSE FILE MARK
016746 016735 A
016747 001000 A 1431          JMP     FIL3            NO, KEEP GOING
016750 016740 A
                    1432 *
                    1433 *      WRITE FILE MARK   UNIT 0 TO 7
                    1434 *      E DRIVE=CTLR[,BIC], EDC[,BIC],  (BIC NOT USED)
                    1435 *
016751 002000 A 1436 EOF      CALL    SETM
016752 016625 A
016753 100410 A 1437 MT05     SEL     0400+MT         WRITE FILE MARK
016754 001000 A 1438          JMP     END
016755 015033 A
                    1439 *
                    1440 *      MAG TAPE INPUT
                    1441 *      INPUT RECORDS OF RANDOM SIZE, UP TO 64 WORDS
                    1442 *
016756 000000 A 1443 MTI      ENTR                    MAG TAPE INPUT
016757 005001 A 1444          TZA
016760 054164 A 1445          STA     MGER
016761 020460 A 1446 MTI0     LDB     K100            BUFFER SIZE
016762 034157 A 1447          LDX     BUFR            BUFFER ADDRESS
016763 002000 A 1448          CALL    SMR             MT RDY
016764 017116 A
016765 014153 A 1449          LDA     BADR            IS BIC BEING USED?
016766 001010 A 1450          JAZ     MT06            INPUT UNDER SENSE IF 0
016767 016772 A
016770 001000 A 1451          JMP     BIY1            OTHERWISE USE BIC INPUT
016771 017036 A
016772 100010 A 1452 MT06     SEL     MT              READ BINARY UNDER SENSE CONTROL
016773 101110 A 1453 MT07     SEN     0100+MT,MTI2    BFR RDY
016774 017002 A
016775 101210 A 1454 MT08     SEN     0200+MT,MT10    MT RDY
016776 017012 A
016777 005000 A 1455          NOP
017000 001000 A 1456          JMP     MT07            LOOP
017001 016773 A
017002 001020 A 1457 MTI2     JBZ     MTI4            RCD TOO LONG
017003 017020 A
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017004 102510 A 1458 MT09   CIA     MT              INPUT
017005 055000 A 1459        STA     0,1             STORE
017006 005144 A 1460        IXR                     COUNT
017007 005322 A 1461        DBR
017010 001000 A 1462        JMP     MT07
017011 016773 A
017012 101310 A 1463 MT10   SEN     0300+MT,MTI4    FLAG, IF FILE MARK
017013 017020 A
017014 101010 A 1464 MT11   SEN     MT,MTI5         PARITY TEST
017015 017026 A
017016 001000 A 1465        JMP*    MTI             RETURN
017017 116756 A
017020 006010 A 1466 MTI4   LDAI    0336            OUTPUT UP ARROW IF FILE MARK
017021 000336 A
017022 002000 A 1467        CALL    OUTA            OR IF RECORD GT.64 WORDS.
017023 016247 A
017024 001000 A 1468        JMP     END
017025 015033 A
017026 044116 A 1469 MTI5   INR     MGER
017027 014115 A 1470        LDA     MGER
017030 140460 A 1471        SUB     K100
017031 001002 A 1472        JAP     ERR
017032 017112 A
017033 100610 A 1473 MT12   EXC     0600+MT         BACKSPACE
017034 001000 A 1474        JMP     MTI0
017035 016761 A
                1475 *
                1476 *      INPUT UNDER BIC CONTROL
                1477 *
017036 100027 A 1478 BIY1   EXC     BIC+1           INITIALIZE BIC
017037 014102 A 1479        LDA     BUFR
017040 103126 A 1480 BIX1   OAR     BIC             SET INITIAL ADDR
017041 120460 A 1481        ADD     K100            ALLOW 65 WORDS (1.GT.MAX)
017042 103127 A 1482 BIY2   OAR     BIC+1           SET FINAL ADDR (1 EXTRA WORD)
017043 100026 A 1483 BIX2   EXC     BIC             ACTIVATE BIC
017044 100010 A 1484 MT13   EXC     MT              READ BINARY RECORD W/ BIC
017045 101210 A 1485 MT14   SEN     0200+MT,BIY3    SEN MT READY
017046 017052 A
017047 005000 A 1486        NOP                     END OF RECORD WILL STOP BIC
017050 001000 A 1487        JMP     MT14            WAIT FOR READY
017051 017045 A
017052 101027 A 1488 BIY3   SEN     BIC+1,MT10      SEN ABNORMAL STOP
017053 017012 A
                1489 *      ABNORMAL STOP DESIRED, INDICATES LESS THAN 65 WORDS!
017054 001000 A 1490        JMP     MTI4            RECORD .GT.64 WORDS (DIDN'T STOP)
017055 017020 A
                1491 *
                1492 *      MAG TAPE OUTPUT
                1493 *
                1494 *
017056 000000 A 1495 MTO    ENTR                    MAG TAPE OUTPUT
017057 002000 A 1496        CALL    SMR
017060 017116 A
017061 014057 A 1497        LDA     BADR            IS BIC BEING USED?
017062 001010 A 1498        JAZ     MT15            USE SENSE MODE IF NO BIC
017063 017066 A
017064 001000 A 1499        JMP     BIY4            OTHERWISE USE BIC OUTPUT
017065 017122 A
017066 100210 A 1500 MT15   SEL     0200+MT         WRITE BINARY UNDER SENSE CONTROL
017067 101110 A 1501 MT16   SEN     0100+MT,MTO1    BFR READY
017070 017074 A
017071 005000 A 1502        NOP
017072 001000 A 1503        JMP     MT16
017073 017067 A
017074 015000 A 1504 MTO1   LDA     0,1             GET WORD
017075 103110 A 1505 MT17   OAR     MT              OUTPUT
017076 005144 A 1506        IXR                     COUNT
017077 005322 A 1507        DBR
017100 001020 A 1508        JBZ     *+4             DONE
017101 017104 A
017102 001000 A 1509        JMP     MT16
017103 017067 A
017104 002000 A 1510        CALL    SMR             MT RDY
017105 017116 A
017106 101010 A 1511 MT18   SEN     MT,ERR          PARITY ERR
017107 017112 A
017110 001000 A 1512        JMP*    MTO             RETURN
017111 117056 A
                1513 *
                1514 *
017112 034034 A 1515 ERR    LDX     MT8F+1          MAG TAPE ERROR
017113 001000 A 1516        JMP     LOAW
017114 015207 A
                1517 *
                1518 *      SENSE MAG TAPE READY
                1519 *
017115 101210 A 1520 MT19   SEN     0200+MT,*       RETURN IF MT RDY
017116 017115 A
017116          1521 SMR    BES     0               ENTR/RETURN SENSE MT READY
017117 005000 A 1522        NOP
017120 001000 A 1523        JMP     MT19            WAIT TILL READY
017121 017115 A
                1524 *
                1525 *      OUTPUT MT UNDER BIC CONTROL
                1526 *
```

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017122 100027 A 1527 BIY4   EXC     BIC+1           INITIALIZE BIC
017123 005041 A 1528        TXA                     GET BUFFER ADDR IN X
017124 103126 A 1529 BIX3   OAR     BIC             SET INITIAL ADDRESS
017125 054120 A 1530        STA     XTRA            SAVE START ADDR TEMP
017126 005021 A 1531        TBA                     GET SIZE OF XFER
017127 005311 A 1532        DAR
017130 124115 A 1533        ADD     XTRA            FORM LAST ADDRESS
017131 103127 A 1534 BIY5   OAR     BIC+1           SET FINAL ADDR
017132 100026 A 1535 BIX4   EXC     BIC             ACTIVATE BIC
017133 100210 A 1536 MT20   EXC     0200+MT         WRITE BINARY RECORD W/ BIC
017134 101210 A 1537 MT21   SEN     0200+MT,MT18    SEN MT READY
017135 017106 A
017136 005000 A 1538        NOP
017137 001000 A 1539        JMP     MT21            WAIT UNTIL READY
017140 017134 A
                1540 *
                1541 *
                1542 *
017141 000000 A 1543 BADR   DATA    0               BIC ADDR IF USED,OTHERWISE 0
017142 017146 A 1544 BUFR   DATA    MTBF
017143          1545 DA     BSS     1               TEMP DA
017144          1546 CNTR   BSS     1
017145          1547 MGER   BSS     1
017146          1548 MTBF   BSS     64              MAG TAPE I/O BUFFER
017246          1549 XTRA   BSS     1               XTRA WD TO DETECT BIG REC W/BIC
                1550 *
                1551 *              DRIVE/CONT TABLE
017247 000110 A 1552 UTBL   DATA    0110,0111,0112,0113
017250 000111 A
017251 000112 A
017252 000113 A
017253 000210 A 1553        DATA    0210,0211,0212,0213
017254 000211 A
017255 000212 A
017256 000213 A
017257 000310 A 1554        DATA    0310,0311,0312,0313
017260 000311 A
017261 000312 A
017262 000313 A
017263 000410 A 1555        DATA    0410,0411,0412,0413
017264 000411 A
017265 000412 A
017266 000413 A
                1556 *              MAG TAPE DEVICE ADDRESS TABLE
017267 016731 A 1557 MTL    DATA    MT01,MT02,MT03,MT04,MT05,MT06,MT07
017270 016733 A
017271 016742 A
017272 016745 A
017273 016753 A
017274 016772 A
017275 016773 A
017276 016775 A 1558        DATA    MT08,MT09,MT10,MT11,MT12,MT13,MT14
017277 017004 A
017300 017012 A
017301 017014 A
017303 017044 A
017304 017045 A
017305 017066 A 1559        DATA    MT15,MT16,MT17,MT18,MT19,MT20,MT21,0
017306 017067 A
017307 017075 A
017310 017106 A
017311 017115 A
017312 017133 A
017313 017134 A
017314 000000 A
                1560 *              BIC DEVICE ADDRESS TABLE
017315 017040 A 1561 BIC0   DATA    BIX1,BIX2,BIX3,BIX4,0
017316 017043 A
017317 017124 A
017320 017132 A
017321 000000 A
                1562 *              BIC+1 DEVICE ADDRESS TABLE
017322 017036 A 1563 BIC1   DATA    BIY1,BIY2,BIY3,BIY4,BIY5,0
017323 017042 A
017324 017052 A
017325 017122 A
017326 017131 A
017327 000000 A
                1564 *
                1565 *
        017327 A 1566 EDEX  EQU     *-1
        014000 A 1567       END     EBG0                                        B
ENTRY NAMES
EXTERNAL NAMES
SYMBOLS
000442 A SCON   000440 A $FLG   000441 A $MEM   000473 A $TTY
015276 A ABX    017141 A BADR   000026 A BIC    017315 A BIC0
017322 A BIC1   017040 A BIX1   017043 A BIX2   017124 A BIX3
017132 A BIX4   017036 A BIY1   017042 A BIY2   017052 A BIY3
017122 A BIY4   017131 A BIY5   017142 A BUFR   000464 A CKSM
017144 A CNTR   017143 A DA     015023 A DOMSG1 015027 A DOMSG3
000431 A E3R1   014415 A E3RG   000432 A E4R1   014443 A E4RG
000433 A E5R1   014471 A E5RG   000434 A E6R1   014517 A E6RG
000435 A E7R1   014545 A E7RG   000443 A EAR1   014312 A EARG
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014000 A EBG0   014774 A EBG1   015005 A EBG2   000444 A EBR1
014341 A EBRG   014747 A ECN2   014720 A ECN3   014707 A ECNG
017327 A EDEX   014653 A EDU1   014660 A EDU2   014674 A EDU4
014636 A EDUM   014606 A EG01   014573 A EGOT   000454 A EK00
000455 A EK01   000456 A EK02   014000 A ELOC   016573 A ELOD
015033 A END    016751 A EOF    014635 A EOV1   016463 A EPUN
017112 A ERR    014257 A ESR1   014270 A ESR2   014251 A ESR4
014306 A ESR5   014225 A ESRC   015431 A ESZ1   015446 A ESZ2
015417 A ESZA   015453 A ESZB   014764 A ESZC   015467 A ETAB
015120 A ETBL   015063 A ETO4   015033 A ETOP   014212 A ETR1
014222 A ETR2   014111 A ETR3   014131 A ETR3A  014203 A ETR3B
014055 A ETRP   000446 A ET81   000400 A EX00   000401 A EX01
000402 A EX02   000403 A EX03   000404 A EX04   000405 A EX05
000406 A EX06   000407 A EX07   000410 A EX10   000411 A EX11
000412 A EX12   000413 A EX13   000414 A EX14   000415 A EX15
000416 A EX16   000417 A EX17   000420 A EX20   000421 A EX21
000422 A EX26   000423 A EX27   000424 A EX30   000425 A EX31
000426 A EX32   000427 A EX33   000465 A EXEC   015203 A EXIT
000445 A EXR1   014367 A EXRG   016724 A FIL    016734 A FIL1
016735 A FIL2   016740 A FIL3   000462 A FRST   015314 A HLTF
015644 A INA1   015653 A INA2   015657 A INA3   015663 A INB1
015721 A INC1   015723 A INC2   015677 A INC3   015755 A IND1
015757 A IND2   015765 A IND3   015731 A IND4   016016 A INE1
016020 A INE2   015771 A INE3   016056 A INF1   016060 A INF2
016054 A INF3   016052 A INF4   016026 A INF5   016171 A ING1
016136 A ING2   016132 A ING3   016134 A ING4   016073 A ING5
016150 A ING6   016066 A ING7   016165 A ING8   016214 A INH1
016235 A INH2   016226 A INH3   016236 A INI1   014040 A INI2
014051 A INI3   014011 A INIT   016201 A INN    015660 A INPA
015674 A INP8   015726 A INPC   015762 A INPD   016023 A INPE
016063 A INPF   016143 A INPG   016232 A INPH   016244 A INPI
000460 A K100   000461 A K200   000457 A K40    000463 A LAST
000470 A LOAD   015207 A LOAW   016573 A LODE   000477 A MASK
016545 A MCO1   016570 A MCO2   017145 A MGER   015315 A MSG1
015341 A MSG2   015354 A MSG3   015364 A MSG4   015367 A MSG5
015375 A MSG6   000010 A MT     016645 A MT00   016731 A MT01
016733 A MT02   016742 A MT03   016745 A MT04   016753 A MT05
016772 A MT06   016773 A MT07   016775 A MT08   017004 A MT09
017012 A MT10   017014 A MT11   017033 A MT12   017044 A MT13
017045 A MT14   017066 A MT15   017067 A MT16   017075 A MT17
017106 A MT18   017115 A MT19   017133 A MT20   017134 A MT21
017146 A MTBF   016756 A MTI    016761 A MTI0   017002 A MTI2
017020 A MTI4   017026 A MTI5   017267 A MTL    017056 A MTO
017074 A MTO1   014007 A NOV75  000474 A OADR   016274 A OUT1
016332 A OUT2   016413 A OUT3   016247 A OUTA   016300 A OUTB
016313 A OUTC   016354 A OUTD   016325 A OUTE   016365 A OUTF
016404 A OUTG   016431 A OUTH   016463 A PCHM   015115 A PETBL
015247 A PHLT   015221 A PWDN   015242 A PWDN1  000472 A PWRK
015250 A PWRU   000000 A R0     000001 A R1     000002 A R2
000003 A R3     000004 A R4     000005 A R5     000006 A R6
000007 A R7     015170 A REGJMP 015172 A REGTBL 014625 A RESOF
016573 A RMT    016610 A RMT1   016623 A RMT2   015303 A SAVA
015304 A SAVB   015313 A SAVD   015306 A SAVR3  015307 A SAVR4
015310 A SAVR5  015311 A SAVR6  015312 A SAVR7  015305 A SAVX
016712 A SET1   016670 A SET3   016705 A SET4   016711 A SETD
016625 A SETM   017116 A SMR    015527 A SSW1   015534 A SSW2
015551 A SSW3   015564 A SSW4   015570 A SSW5   015577 A SSW6
015630 A SSWE   015536 A SSWL   015477 A SSWP   015613 A SSWR
015625 A SSWS   015641 A SSWT   000467 A TAPE   000466 A TAPN
016436 A TDLY   016444 A TOU1   016452 A TOUT   016455 A TS01
016456 A TS02   016457 A TS03   000471 A TS04   016460 A TS05
016461 A TS06   016462 A TS07   017247 A UTBL   000430 A V75
015152 A V75REG 016467 A WMT    016502 A WRI2   016511 A WRI3
016531 A WRI4   000476 A XOFF   000475 A XON    017246 A XTRA
  0 ERRORS ASSEMBLY COMPLETE
 LITERALS
 POINTERS
* * UNREFRENCED SYMBOLS * *

  597 EBG2      126 EK01      127 EK02       78 EX00       79 EX01       80 EX02
   81 EX03       82 EX04       83 EX05       84 EX06       85 EX07       86 EX10
   87 EX11       88 EX12       89 EX13       90 EX14       91 EX15       92 EX16
   93 EX17       94 EX20       95 EX21       96 EX26       97 EX27       98 EX30
   99 EX31      100 EX32      101 EX33      130 K200      128 K40       137 LOAD
 1381 MT00      141 OADR      1281 PCHM      56 R0         57 R1         58 R2
  904 SSW6      136 TAPE      135 TAPN      1285 WMT       143 XOFF      142 XON

* * PROGRAM / SUBROUTINE ENTRY POINTS * *

  779 ESZA   -LD-   586   801
  807 ESZB   -LD-   588   815
  585 ESZC   -LD-    97   589   592
 1103 INN    -LD-  1108  1109  1285  1287  1289  1370  1391  1419
  939 INPA   -ST-   936   937  -LD-    86   944
  950 INPB   -ST-   947   948  -LD-    87   618   671   945   956
  971 INPC   -ST-   964   965   966   967   968   969  -LD-    88   957   976  1023  1054
  992 INPD   -ST-   985   986   987   988   989   990  -LD-    89   977  1000  1006
 1082 INPG   -ST-  1073  1074  1075  1076  1077  1078  -LD-    92   177   220   307   351   371
              391   407   423   439   455   471   493   518   553   563  1055  1105
 1124 INPH   -ST-  1122  -LD-    99   932  1114
 1135 INPI   -LD-   100   540   616   935  1083
 1443 MTI    -LD-  1347  1465
 1495 MTO    -LD-  1282  1323  1339  1512
 1140 OUTA   -LD-    78   334   348   368   388   404   420   436   452   468   529   560   614
              946  1157  1166  1168  1189  1195  1233  1467
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1163  OUTH    -LD-   79   281  1170  1177  1204  1213  1217
1174  OUTC    -LD-   80   258   330   409   524   539   580   598   617  1179
1201  OUTD    -LD-   81   602   605   607   693   871  1203  1206  1224
1183  OUTE    -LD-   82   262   264   266   270   272   274   276   278   336   350   370   390
               406   422   438   454   470   531   562   695  1197  1215
1210  OUTF    -LD-   83   260   332   527   582  1218
1222  OUTG    -LD-   84   689   994  1031  1092  1225
1240  OUTH    -ST-  1229  1230  1236  -LD-   85   597   615  1231  1237  1238
 708  PWDN    -LD-   67   750
1406  SETD    -LD-  1385  1397  1400  1408
1369  SETM    -LD-  1291  1346  1402  1421  1436
1521  SMR     -LD-  1401  1427  1429  1448  1496  1510
1246  TDLY    -LD-   94  1235  1248
1258  TOUT    -ST-  1255  1256  -LD-   93  1151  1254
* * REFRENCED SYMBOLS * *

 119  $CON    -ST-   591
 117  $FLG    -ST-   887   909   920  -LD-   873   905
 118  $MEM    -ST-   587  -LD-   808
 140  $TTY    -LD-   595  1117  1130  1143
 747  ABX     -LD-   741
1543  BADR    -ST-  1393  -LD-  1449  1497
1275  BIC     -LD-  1478  1480  1482  1483  1488  1527  1529  1534  1535
1561  BIC0    -LD-  1396
1563  BIC1    -LD-  1399
1480  BIX1    -LD-  1561
1483  BIX2    -LD-  1561
1529  BIX3    -LD-  1561
1535  BIX4    -LD-  1561
1478  BIY1    -LD-  1451  1563
1482  BIY2    -LD-  1563
1488  BIY3    -LD-  1485  1563
1527  BIY4    -LD-  1499  1563
1534  BIY5    -LD-  1563
1544  BUFR    -LD-  1296  1322  1338  1352  1447  1479
 133  CKSM    -ST-  1297  1303  -LD-  1302  1314
1546  CNTR    -ST-  1293  1304  1349  1358  -LD-  1309  1315  1317  1359
1545  DA      -ST-  1383  1395  1398  -LD-  1411
 604  DOMSG1  -LD-   600
 606  DOMSG3  -LD-   603
 103  E3R1    -ST-   416  -LD-   243   269   405   504
 403  E3RG    -LD-   681
 104  E4R1    -ST-   432  -LD-   244   271   421   505
 419  E4RG    -LD-   682
 105  E5R1    -ST-   448  -LD-   245   273   437   506
 435  E5RG    -LD-   683
 106  E6R1    -ST-   464  -LD-   246   275   453   507
 451  E6RG    -LD-   684
 107  E7R1    -ST-   480  -LD-   247   277   469   508
 467  E7RG    -LD-   685
 121  EAR1    -ST-   238   360  -LD-   261   349   500
 347  EARG    -LD-   641   678
 160  EBG0    -LD-  1567
 590  EBG1    -LD-   165
 122  EBR1    -ST-   239   380  -LD-   263   369   501
 367  EBRG    -LD-   642   679
 [illegible]
 559  ECN3    -LD-   583
 553  ECNG    -LD-   643
1566  EDEX    -LD-   101
 527  EDU1    -LD-   544
 530  EDU2    -LD-   537
 539  EDU4    -LD-   536
 518  EDUM    -LD-   644
 500  EGO1    -LD-   236
 493  EGOT    -LD-   647
 125  EK00    -LD-   367   387   403   419   435   451   467   528
 158  ELOC    -LD-    96
1345  ELOD    -LD-   652
1270  END     -LD-  1331  1341  1425  1438  1468
1436  EOF     -LD-   645
 515  EOV1    -ST-   250  -LD-   279   510
1280  EPUN    -LD-   656
1515  ERR     -LD-  1472  1511
 324  ESR1    -LD-   337
 330  ESR2    -LD-   323
 319  ESR4    -LD-   329
 338  ESR5    -LD-   310
 306  ESRC    -LD-   340   659
 788  ESZ1    -LD-   797
 798  ESZ2    -LD-   794
 779  ESZA    -LD-   586   801
 807  ESZB    -LD-   588   815
 585  ESZC    -LD-    97   589   592
 816  ETAB    -LD-   810
 641  ETBL    -LD-   630
 625  ETO4    -ST-   620
 613  ETOP    -LD-    65   178   179   195   221   222   282   308   309   325   328   352   353
               358   361   372   373   378   381   392   393   398   401   408   409   414   417
               424   425   430   433   440   441   446   449   456   457   462   465   472   473
               478   481   494   495   519   520   532   542   554   555   564   565   573   619
               622   624   690   696  1106  1107  1270
 284  ETR1    -LD-   223
 290  ETR2    -LD-   234   251
 238  ETR3    -LD-   291
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 248 ETR3A  -LD-  242
 279 ETR3B  -LD-  268
 217 ETRP   -LD-  287  660
 124 ETS1   -ST-  183  219  312  314  324  356  376  396  412  428  444  460  476
             498  523  568  575 -LD-  176  182  185  188  189  191  194  217  218
             226  227  254  255  286  306  313  316  319  321  322  327  331  359
             379  399  415  431  447  463  479  514  525  571  578
 134 EXEC   -ST- 1290 1420 -LD- 1330 1424
 689 EXIT   -LD-  187  190  288  318  627  629  648  650  651  653  654  655  657
             661  662  663  665  666  670  672  686
 123 EXR1   -ST-  240  400 -LD-  265  389  513
 387 EXRG   -LD-  664  680
1419 FIL    -LD-  646
1424 FIL1   -LD- 1422
1425 FIL2   -LD- 1430
1427 FIL3   -LD- 1431
 131 FRST   -ST- 1286 1312 -LD- 1294 1325
 761 HLTF   -ST-  722  731 -LD-  728
 932 INA1   -LD-  934  940
 935 INA2   -LD-  932
 938 INA3   -LD-  933
 944 INB1   -LD-  951
 966 INC1   -LD-  962
 968 INC2   -LD-  959
 956 INC3   -LD-  972
 987 IND1   -LD-  979
 989 IND2   -LD-  978  995
 994 IND3   -LD-  981  983
 976 IND4   -LD-  993
1013 INE1   -LD- 1003
1015 INE2   -LD- 1002 1008
1000 INE3   -LD- 1009 1019
1037 INF1   -LD- 1026
1039 INF2   -LD- 1025 1032
1035 INF3   -LD- 1028
1033 INF4   -LD- 1030
1023 INF5   -LD- 1043
1095 ING1   -LD- 1057
1077 ING2   -LD- 1056 1093
1073 ING3   -LD- 1089 1091
1075 ING4   -LD- 1087
1054 ING5   -LD- 1072 1101
1085 ING6   -LD- 1060 1062
1049 ING7   -LD- 1084
1092 ING8   -LD- 1069
1113 INH1   -LD- 1125
1126 INH2   -ST- 1113 -LD- 1120
1121 INH3   -ST- 1116
1130 INI1   -LD- 1136
 191 INI2   -LD-  197
 199 INI3   -LD-  180
 176 INIT   -LD-  201  649
1103 INN    -LD- 1108 1109 1285 1287 1289 1370 1391 1419
 939 INPA   -ST-  936  937 -LD-   86  944
 950 INPB   -ST-  947  948 -LD-   87  618  671  945  956
 971 INPC   -ST-  964  965  966  967  968  969 -LD-   88  957  976 1023 1054
 992 INPD   -ST-  985  986  987  988  989  990 -LD-   89  977 1000 1006
1018 INPE   -ST- 1011 1012 1013 1014 1015 1016 -LD-   90 1001 1007
1042 INPF   -ST- 1033 1034 1035 1036 1037 1038 1039 1040 -LD-   91 1024
1082 INPG   -ST- 1073 1074 1075 1076 1077 1078 -LD-   92  177  220  307  351  371
             391  407  423  439  455  471  493  518  553  563 1055 1105
1124 INPH   -ST- 1122 -LD-   99  932 1114
1135 INPI   -LD-  100  540  616  935 1083
 129 K100   -LD- 1446 1471 1481
 132 LAST   -ST- 1288 -LD- 1306 1327
 691 LOAW   -LD- 1516
1344 LODE   -LD-  137
 144 MASK   -LD- 1410
1324 MCO1   -ST- 1283
1340 MCO2   -ST- 1284
1547 MGER   -ST- 1445 1469 -LD- 1470
 769 MSG1   -LD-  604
 770 MSG2   -LD-  692
 771 MSG3   -LD-   98  606
 772 MSG4   -LD-  813
 773 MSG5   -LD- 1223
 774 MSG6   -LD-  601
1274 MT     -LD- 1381 1422 1423 1428 1430 1437 1452 1453 1454 1458 1463 1464 1473
             1484 1485 1500 1501 1505 1511 1520 1536 1537
1422 MT01   -LD- 1557
1423 MT02   -LD- 1557
1428 MT03   -LD- 1557
1430 MT04   -LD- 1557
1437 MT05   -LD- 1557
1452 MT06   -LD- 1450 1557
1453 MT07   -LD- 1456 1462 1557
1454 MT08   -LD- 1558
1458 MT09   -LD- 1558
1463 MT10   -LD- 1454 1488 1558
1464 MT11   -LD- 1558
1473 MT12   -LD- 1558
1484 MT13   -LD- 1558
1485 MT14   -LD- 1487 1558
1500 MT15   -LD- 1498 1559
1501 MT16   -LD- 1503 1509 1559
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1505  MTI7    =LD=  1559
1511  MTI8    =LD=  1537  1559
1520  MTI9    =LD=  1523  1559
1536  MTI20   =LD=  1559
1537  MTI21   =LD=  1539  1559
1548  MTSF    =ST=  1295  1318  1329  1332  1334  1336  =LD=  1335  1350  1360  1365  1515  1544
1443  MTI     =LD=  1347  1465
1446  MTIO    =LD=  1474
1457  MTI2    =LD=  1453
1466  MTI4    =LD=  1457  1463  1490
1469  MTI5    =LD=  1464
1557  MTL     =LD=  1384
1495  MTO     =LD=  1282  1323  1339  1512
1504  MTQ1    =LD=  1501
 165  NOV75   =LD=   162
1155  OUT1    =ST=  1147  =LD=  1150
1188  OUT2    =LD=  1193
1229  OUT3    =LD=  1241
1140  OUTA    =LD=    78   334   348   368   388   404   420   436   452   468   529   560   614
               946  1157  1166  1168  1189  1195  1233  1467
1163  OUTB    =LD=    79   281  1170  1177  1204  1213  1217
1174  OUTC    =LD=    80   258   330   499   524   539   580   598   617  1179
1201  OUTD    =LD=    81   602   605   607   693   871  1203  1206  1224
1183  OUTE    =LD=    82   262   264   266   270   272   274   276   278   336   350   370   390
               406   422   438   454   470   531   562   695  1197  1215
1210  OUTF    =LD=    83   260   332   527   582  1218
1222  OUTG    =LD=    84   689   994  1031  1092  1225
1240  OUTH    =ST=  1229  1230  1236  =LD=    85   597   615  1231  1237  1238
 639  PETBL   =ST=   631  =LD=   633
 724  PHLT    =LD=   729
 708  PWDN    =LD=    67   750
 719  PWDN1   =LD=   713
 139  PWRK    =ST=   723
 728  PWRU    =LD=    68
  59  R3      =LD=   243   504   634   714   742
  60  R4      =LD=   244   505   635   715   743
  61  R5      =LD=   245   506   636   716   744
  62  R6      =LD=   246   507   637   717   745
  63  R7      =LD=   247   508   638   718   746
 677  REGJMP  =ST=   676
 678  REGTBL  =LD=   674   677
 509  RESOF   =LD=   503
1346  RMT     =LD=  1364
1356  RMT1    =LD=  1363
1365  RMT2    =LD=  1351
 752  SAVA    =ST=   709  =LD=   747
 753  SAVB    =ST=   710  =LD=   748
 760  SAVO    =ST=   721  =LD=   737
 755  SAVR3   =LD=   714   742
 756  SAVR4   =LD=   715   743
 757  SAVR5   =LD=   716   744
 758  SAVR6   =LD=   717   745
 759  SAVR7   =LD=   718   746
 754  SAVX    =ST=   711  =LD=   749
1407  SET1    =LD=  1414
1393  SET3    =LD=  1390
1401  SET4    =LD=  1394
1406  SETD    =LD=  1385  1397  1400  1406
1369  SETM    =LD=  1291  1346  1402  1421  1436
1521  SMR     =LD=  1401  1427  1429  1448  1496  1510
 872  SSW1    =LD=   859   863   917
 875  SSW2    =LD=   907
 886  SSW3    =LD=   875   896   908
 895  SSW4    =LD=   874
 897  SSW5    =LD=   895
 919  SSWE    =LD=   858   872   904
 876  SSWL    =LD=   910
 855  SSWP    =LD=   928
 911  SSWR    =LD=   869
 918  SSWS    =ST=   855   856   857  =LD=   882   883   884   891   892   893   900   901   902
               913   914   915
 927  SSWT    =LD=    95   860   876   888   897   921
1246  TDLY    =LD=    94  1235  1248
1253  TOU1    =LD=  1259
1258  TOUT    =ST=  1255  1256  =LD=    93  1151  1254
1264  TS01    =ST=  1141  =LD=  1156
1265  TS02    =ST=  1005  1050  1070  1097  1211  =LD=  1010  1065  1080  1095  1214
1266  TS03    =ST=  1064  =LD=  1067
 138  TS04    =ST=  1051  1071  1100  =LD=   357   377   397   413   429   445   461   477   569
               576  1098
1267  TS05    =ST=  1058  =LD=  1085  1387
1268  TS06    =ST=  1164  =LD=  1169
1269  TS07    =ST=  1052  =LD=  1079
1552  UTBL    =LD=  1375
 102  V75     =ST=   164  =LD=   241   267   502   599   632   669   712   740
 669  V75REG  =LD=   658
1292  WRI2    =LD=  1328
1299  WRI3    =LD=  1311
1312  WRI4    =LD=  1308
1549  XTRA    =ST=  1530  =LD=  1533
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