```
000.001                 1  PUBLIC  EQU     1               NOT PUBLIC
                        3  ***     SET - SET SYSTEM PARAMETERS.
                        4  *
                        5  *       JGL, 1/16/78 FOR *HEATH* COMPANY
                        6  *
                        7  *       COPYRIGHT 1978 BY HEATH COMPANY


                        9  ***     SET - SET OPTIONS.
                       10  *
                       11  *       SET     DEV:    OPTIONS
                       12  *
                       13  *
                       14  *       SET HELP        LIST GENERAL HELP OPTIONS
                       15  *
                       16  *       SET TT: BKS     TERMINAL PROCESSES BACKSPACES
                       17  *       SET TT: MLI     MAP LOWER CASE TO UPPER ON INPUT
                       18  *       SET TT: MLO     MASK LOWER CASE TO UPPER ON OUTPUT
                       19  *       SET TT: BKM     MAP BKSP TO RUBOUT
                       20  *       SET TT: TAB     SEND TAB CHARACTERS TO TERMINAL
                       21  *       SET TT: FILL CC NN      PAD CHARACTER CC WITH NN NULLS
                       22  *       SET TT: HELP    LIST SET OPTIONS FOR TT:
                       23  *
                       24  *       SET SY: STEP NN SET TRACK STEP TIME TO NN
                       25  *       SET SY: HELP    LIST SET OPTIONS FOR SY:
                       26  *
                       27  *       SET HDOS HELP   LIST HDOS SETTABLE PARAMETERS
                       28  *       SET HDOS STAND-ALONE    ENABLE HDOS TO RUN STAND-ALONE
                       29
                       30
                       31  ***     IN ADDITION TO THE ABOVE 'BUILT-IN' OPTIONS, SET HAS THE
                       32  *       ABILITY TO SET OPTIONS IN DISK-RESIDENT DEVICE DRIVERS. THE
                       33  *       FORMAT FOR THE COMMAND IS:
                       34  *
                       35  *       SET dev: <OPTIONS>
                       36  *
                       37  *       WHERE 'DEV:' IS A DEVICE AND (OPTIONALLY) A UNIT NUMBER.
                       38  *
                       39  *       SET WILL LOAD THE DEVICE DRIVER INTO MEMORY, RELOCATE THE
                       40  *       'SET PREAMBLE' (THAT CODE BELOW DVD.ENT) AND CALL THE
                       41  *       PREAMBLE CODE WITH
                       42  *
                       43  *       (DE) = ADDRESS OF <OPTIONS> STRING
                       44  *       (A) = UNIT NUMBER
                       45  *
                       46  *       THE DEVICE DRIVER PREAMBLE IS RESPONSIBLE FOR ANALYZINT THE
                       47  *       OPTION STRING (WITH THE HELP OF SOME ROUTINES IN *SET*) AND
                       48  *       SETTING ITS OWN OPTION FLAGS. WHEN IT RETURNS TO SET,
                       49  *       *SET* WILL POST THE DRIVER BACK TO THE DISK.
```

```
                        51  ****    ASSEMBLY CONSTANTS
                        52
000.000                 53  CN.DVD  EQU     0       CHANNEL NUMBER FOR READING/WRITING DEVICE DRIVERS
                        54
                        55  ****
```

```
000.000                 58          XTEXT   ASCII

                        60X **      ASCII CHARACTER EQUIVALENCES.
                        61X
000.015                 62X CR      EQU     13              CARRIAGE RETURN
000.012                 63X LF      EQU     10              LINE FEED
000.200                 64X NULL    EQU     200Q            PAD CHARACTER
000.000                 65X NUL2    EQU     0
000.007                 66X BELL    EQU     7               BELL CHARACTER
000.177                 67X RUBOUT  EQU     177Q
000.010                 68X BKSP    EQU     10Q             CTL-H
000.026                 69X C.SYN   EQU     26Q             SYNC
000.002                 70X C.STX   EQU     2               STX
000.047                 71X QUOTE   EQU     47Q
000.011                 72X TAB     EQU     11Q
000.033                 73X ESC     EQU     33Q
000.012                 74X NL      EQU     12Q             NEW LINE (HDOS SYSTEMS)
000.212                 75X ENL     EQU     NL+200Q         NL + END-OF-LINE-FLAG
000.014                 76X FF      EQU     14Q             FORM FEED
000.001                 77X CTLA    EQU     01Q             CTL-A
000.002                 78X CTLB    EQU     02Q             CTL-B
000.003                 79X CTLC    EQU     03Q             CTL-C
000.004                 80X CTLD    EQU     04Q             CTL-D
000.017                 81X CTLO    EQU     17Q             CTL-O
000.020                 82X CTLP    EQU     20Q             CTL-P
000.021                 83X CTLQ    EQU     21Q             CTL-Q
000.023                 84X CTLS    EQU     23Q             CTL-S
000.032                 85X CTLZ    EQU     32Q             CTL-Z
000.000                 86          XTEXT   HOSDEF

                        88X **      HOSDEF - DEFINE HOS PARAMETER.
                        89X *
                        90X
                        91X
000.026                 92X VERS    EQU     1*16+6          VERSION 1.6
                        93X
000.377                 94X SYSCALL EQU     377Q            SYSCALL INSTRUCTION
                        95X
                        96X
000.000                 97X         ORG     0
                        98X
                        99X *       RESIDENT FUNCTIONS
                       100X
000.000                101X .EXIT   DS      1               EXIT (MUST BE FIRST)
000.001                102X .SCIN   DS      1               SCIN
000.002                103X .SCOUT  DS      1               SCOUT
000.003                104X .PRINT  DS      1               PRINT
000.004                105X .READ   DS      1               READ
000.005                106X .WRITE  DS      1               WRITE
000.006                107X .CONSL  DS      1               SET/CLEAR CONSOLE OPTIONS
000.007                108X .CLRCO  DS      1               CLEAR CONSOLE BUFFER
000.010                109X .LOADO  DS      1               LOAD AN OVERLAY
000.011                110X .VERS   DS      1               RETURN HDOS VERSION NUMBER
```

```
000.012                 111X .SYSRES DS      1              PRECEDING FUNCTIONS ARE RESIDENT
                        112X
                        113X
                        114X *       *HDOSOVL0.SYS*  FUNCTIONS
                        115X
000.040                 116X         ORG     40A
                        117X
000.040                 118X .LINK   DS      1              LINK  (MUST BE FIRST)
000.041                 119X .CTLC   DS      1              CTL-C
000.042                 120X .OPENR  DS      1              OPENR
000.043                 121X .OPENW  DS      1              OPENW
000.044                 122X .OPENU  DS      1              OPENU
000.045                 123X .OPENC  DS      1              OPENC
000.046                 124X .CLOSE  DS      1              CLOSE
000.047                 125X .POSIT  DS      1              POSITION
000.050                 126X .DELET  DS      1              DELETE
000.051                 127X .RENAM  DS      1              RENAME
000.052                 128X .SETTP  DS      1              SETTOP
000.053                 129X .DECODE DS      1              NAME DECODE
000.054                 130X .NAME   DS      1              GET FILE NAME FROM CHANNEL
000.055                 131X .CLEAR  DS      1              CLEAR CHAN
000.056                 132X .CLEARA DS      1              CLEAR ALL CHANS
000.057                 133X .ERROR  DS      1              LOOKUP ERROR
000.060                 134X .CHFLG  DS      1              CHANGE FLAGS
000.061                 135X .DISMT  DS      1              FLAG SYSTEM DISK DISMOUNTED
000.062                 136X .LOADD  DS      1              LOAD DEVICE DRIVER
                        137X
                        138X
                        139X *       *HDOSOVL1.SYS*  FUNCTIONS
                        140X
000.200                 141X         ORG     200Q
                        142X
000.200                 143X .MOUNT  DS      1              MOUNT  (MUST BE FIRST)
000.201                 144X .DMOUN  DS      1              DISMOUNT
000.202                 145X .MONMS  DS      1              MOUNT/NO MESSAGE
000.203                 146X .DMNMS  DS      1              DISMOUNT/NO MESSAGE
000.204                 147X .RESET  DS      1              RESET = DISMOUNT/MOUNT OF UNIT
000.205                 148          XTEXT   DIRDEF



                        150X **      DIRECTORY ENTRY FORMAT.
                        151X
000.000                 152X         ORG     0
                        153X
                        154X
000.377                 155X DF.EMP  EQU     377Q           FLAGS ENTRY EMPTY
000.376                 156X DF.CLR  EQU     376Q           FLAGS ENTRY EMPTY, REST OF DIR ALSO CLEAR
                        157X
000.000                 158X DIR.NAM DS      8              NAME
000.010                 159X DIR.EXT DS      3              EXTENSION
000.013                 160X DIR.PRO DS      1              PROJECT
000.014                 161X DIR.VER DS      1              VERSION
000.015                 162X DIRIDL  EQU     *              FILE IDENTIFICATION LENGTH
                        163X
000.015                 164X DIR.CLU DS      1              CLUSTER FACTOR
```

```
000.016                 165X DIR.FLG DS      1              FLAGS
000.017                 166X         DS      1              RESERVED
000.020                 167X DIR.FGN DS      1              FIRST GROUP NUMBER
000.021                 168X DIR.LGN DS      1              LAST GROUP NUMBER
000.022                 169X DIR.LSI DS      1              LAST SECTOR INDEX (IN LAST GROUP)
000.023                 170X DIR.CRD DS      2              CREATION DATE
000.025                 171X DIR.ALD DS      2              LAST ALTERATION DATE
                        172X
000.027                 173X DIRELEN EQU     *              DIRECTORY ENTRY LENGTH
000.027                 174          XTEXT   ECDEF


                        176X **      ERROR CODE DEFINITIONS.
                        177X
000.000                 178X         ORG     0
000.000                 179X         DS      1              NO ERROR #0
000.001                 180X EC.EOF  DS      1              END OF FILE
000.002                 181X EC.EOM  DS      1              END OF MEDIA
000.003                 182X EC.ILC  DS      1              ILLEGAL SYSCALL CODE
000.004                 183X EC.CNA  DS      1              CHANNEL NOT AVAILABLE
000.005                 184X EC.DNS  DS      1              DEVICE NOT SUITABLE
000.006                 185X EC.IDN  DS      1              ILLEGAL DEVICE NAME
000.007                 186X EC.IFN  DS      1              ILLEGAL FILE NAME
000.010                 187X EC.NRD  DS      1              NO ROOM FOR DEVICE DRIVER
000.011                 188X EC.FNO  DS      1              CHANNEL NOT OPEN
000.012                 189X EC.ILR  DS      1              ILLEGAL REQUEST
000.013                 190X EC.FUC  DS      1              FILE USAGE CONFLICT
000.014                 191X EC.FNF  DS      1              FILE NAME NOT FOUND
000.015                 192X EC.UND  DS      1              UNKNOWN DEVICE
000.016                 193X EC.ICN  DS      1              ILLEGAL CHANNEL NUMBER
000.017                 194X EC.DIF  DS      1              DIRECTORY FULL
000.020                 195X EC.IFC  DS      1              ILLEGAL FILE CONTENTS
000.021                 196X EC.NEM  DS      1              NOT ENOUGH MEMORY
000.022                 197X EC.RF   DS      1              READ FAILURE
000.023                 198X EC.WF   DS      1              WRITE FAILURE
000.024                 199X EC.WPV  DS      1              WRITE PROTECTION VIOLATION
000.025                 200X EC.WP   DS      1              DISK WRITE PROTECTED
000.026                 201X EC.FAP  DS      1              FILE ALREADY PRESENT
000.027                 202X EC.DDA  DS      1              DEVICE DRIVER ABORT
000.030                 203X EC.FL   DS      1              FILE LOCKED
000.031                 204X EC.FAO  DS      1              FILE ALREADY OPEN
000.032                 205X EC.IS   DS      1              ILLEGAL SWITCH
000.033                 206X EC.UUN  DS      1              UNKNOWN UNIT NUMBER
000.034                 207X EC.FNR  DS      1              FILE NAME REQUIRED
000.035                 208X EC.DIW  DS      1              DEVICE IS NOT WRITABLE (OR WRITE LOCKED)
000.036                 209X EC.UNA  DS      1              UNIT NOT AVAILABLE
000.037                 210X EC.ILV  DS      1              ILLEGAL VALUE
000.040                 211X EC.ILO  DS      1              ILLEGAL OPTION
000.041                 212X EC.VPM  DS      1              VOLUME PRESENTLY MOUNTED ON DEVICE
000.042                 213X EC.NVM  DS      1              NO VOLUME PRESENTLY MOUNTED
000.043                 214X EC.FOD  DS      1              FILE OPEN ON DEVICE
000.044                 215X EC.NPM  DS      1              NO PROVISIONS MADE FOR REMOUNTING MORE DISKS
000.045                 216X EC.DNI  DS      1              DISK NOT INITIALIZED
000.046                 217X EC.DNR  DS      1              DISK IS NOT READABLE
000.047                 218X EC.DSC  DS      1              DISK STRUCTURE IS CORRUPT
```

```
000.050                 219X EC.NCV  DS      1               NOT CORRECT VERSION OF HDOS
000.051                 220X EC.NOS  DS      1               NO OPERATING SYSTEM MOUNTED
000.052                 221X EC.IOI  DS      1               ILLEGAL OVERLAY INDEX
000.053                 222X EC.OTL  DS      1               OVERLAY TO LARGE
000.054                 223          XTEXT   IOCDEF


                        225X **      I/O CHANNEL DEFINITIONS.
                        226X
000.000                 227X         ORG     0
                        228X
000.000                 229X IOC.LNK DS      2               ADDRESS OF NEXT CHANNEL, =0 IF LAST
000.002                 230X IOC.DDA DS      2               THREAD JUMP TO DEVICE DRIVER (VIA DEV TABLE)
                        231X
000.004                 232X IOC.FLG DS      1               FILE TYPE FLAGS
000.001                 233X FT.DD   EQU     00000001B       =1 IF DIRECTORY DEVICE
000.002                 234X FT.OR   EQU     00000010B       =1 IF OPEN FOR READ
000.004                 235X FT.OW   EQU     00000100B       =1 IF OPEN FOR WRITE
000.010                 236X FT.OU   EQU     00001000B       =1 IF OPEN FOR UPDATE
000.003                 237X IOC.SQL EQU     *-IOC.DDA       LENGTH OF INFO FOR SEQUENTIAL FILE (FROM IOC)
                        238X
000.005                 239X IOC.GRT DS      2               ADDRESS OF GROUP RESERVATION TABLE
000.007                 240X IOC.SPG DS      1               SECTORS PER GROUP, THIS DEVICE
000.010                 241X IOC.CGN DS      1               CURRENT GROUP NUMBER
000.011                 242X IOC.CSI DS      1               CURRENT SECTOR INDEX (IN CURRENT GROUP)
000.012                 243X IOC.LGN DS      1               LAST GROUP NUMBER
000.013                 244X IOC.LSI DS      1               LAST SECTOR INDEX (IN LAST GROUP)
000.010                 245X IOC.DRL EQU     *-IOC.FLG       LENGTH OF INFO NORMALLY COPIED BACK TO
                        246X *                               THE CHANNEL TABLE
000.014                 247X IOC.DTA DS      2               DEVICE TABLE ADDRESS FOR THIS DEVICE
000.016                 248X IOC.DES DS      2               SECTOR NUMBER OF DIRECTORY ENTRY
000.020                 249X IOC.DEV DS      2               DEVICE CODE
000.022                 250X IOC.UNI DS      1               UNIT NUMBER (0-9)
000.021                 251X IOC.DIL EQU     *-IOC.DDA       LENGTH OF INFO FOR DIRECTORY FILE (FROM IOC)
                        252X
000.023                 253X IOC.DIR DS      DIRELEN         DIRECTORY ENTRY
                        254X
000.052                 255X IOCELEN EQU     *               IOC ENTRY LENGTH
                        256X
000.001                 257X IOCCTD  EQU     1               INDEX OF USER CHANNEL #0 IN CHANTAB (FIRST = 0)
000.052                 258          XTEXT   HOSEQU


                        260X **      HDOS SYSTEM EQUIVALENCES.
                        261X *
                        262X
024.000                 263X S.GRT0  EQU     24000A          SYSTEM AREA FOR  GRT0
025.000                 264X S.GRT1  EQU     25000A          SYSTEM AREA FOR  GRT1
026.000                 265X S.GRT2  EQU     26000A          SYSTEM AREA FOR  GRT2
                        266X
030.000                 267X ROMBOOT EQU     30000A          ROM BOOT ENTRY
                        268X
040.100                 269X         ORG     40100A          FREE SPACE FROM PAM-8
```

```
                    270X
040.100             271X            DS      8               JUMP TO SYSTEM EXIT
040.110             272X D.CON      DS      16              DISK CONSTANTS
040.130             273X SYDD       EQU     *               SYSTEM DISK ENTRY POINT
040.130             274X D.VEC      DS      24*3            SYSTEM ROM ENTRY VECTORS
040.240             275X D.RAM      DS      31              SYSTEM ROM WORK AREA
040.277             276X S.VAL      DS      36              SYSTEM VALUES
040.343             277X S.INT      DS      115             SYSTEM INTERNAL WORK AREAS
041.126             278X            DS      16
041.146             279X S.SOVR     DS      2               STACK OVERFLOW WARNING
041.150             280X            DS      42200A-*        SYSTEM STACK
001.032             281X STACKL     EQU     *-S.SOVR        STACK SIZE
                    282X
042.200             283X STACK      EQU     *               LWA+1 SYSTEM STACK
042.200             284X USERFWA    EQU     *               USER FWA
042.200             285             XTEXT   EDCON


                    287X **         D.CON DETAILED EQUIVALENCES.
                    288X *
                    289X *          HOSEQU MUST BE MODIFIED WHEN THIS TABLE IS MODIFIED.
                    290X
040.110             291X            ORG     D.CON
                    292X
040.110             293X D.XITA     DS      2               SEE SYSTEM ROM FOR DESCRIPTION
040.112             294X D.WRITA    DS      1
040.113             295X D.WRITB    DS      1
040.114             296X D.WRITC    DS      1
040.115             297X D.MAIA     DS      1
040.116             298X D.LPSA     DS      1
040.117             299X D.SDPA     DS      1
040.120             300X D.SDPB     DS      1
040.121             301X D.STSA     DS      1
040.122             302X D.STSB     DS      1
040.123             303X D.WHDA     DS      1
040.124             304X D.WNHA     DS      1
040.125             305X D.WSCA     DS      1
                    306X
040.126             307X D.ERTS     DS      2               TRACK AND SECTOR OF LAST DISK ERRORS
040.130             308             XTEXT   ESVAL


                    310X **         S.VAL - SYSTEM VALUE DEFINTIONS.
                    311X *
                    312X *          THESE VALUES ARE SET AND MAINTAINED BY THE SYSTEM.
                    313X *
                    314X *          THE DECK HOSEQU MUST BE MODIFIED WHEN THIS IS MODIFIED.
                    315X
                    316X
040.277             317X            ORG     S.VAL
                    318X
040.277             319X S.DATE     DS      9               SYSTEM DATE (IN ASCII)
```

```
040.310                320X S.DATC  DS    2              CODED DATE
040.312                321X S.TIME  DS    4              TIME FROM MIDNIGHT (IN TICS)
040.316                322X S.HIMEM DS    2              HARDWARE HIGH MEMORY ADRESS+1
                       323X
040.320                324X S.SYSM  DS    2              FWA RESIDENT SYSTEM
                       325X
040.322                326X S.USRM  DS    2              LWA USER MEMORY
                       327X
040.324                328X S.OMAX  DS    2              MAX OVERLAY SIZE FOR SYSTEM
                       329X
                       330X
                       331X **      THE FOLLOWING FIVE CELLS SHOULD BE MODIFIED/READ ONLY VIA THE .CONSL SYSCALL
                       332X
000.200                333X CSL.ECH EQU   10000000B      SUPPRESS ECHO
000.002                334X CSL.WRP EQU   00000010B      WRAP LINES AT WIDTH
000.001                335X CSL.CHR EQU   00000001B      OPERATE IN CHARACTER MODE
                       336X
000.000                337X I.CSLMD EQU   0              S.CSLMD IS FIRST BYTE
040.326                338X S.CSLMD DS    1              CONSOLE MODE
                       339X
000.200                340X CTP.BKS EQU   10000000B      TERMINAL PROCESSES BACKSPACES
000.040                341X CTP.MLI EQU   00100000B      MAP LOWER CASE TO UPPER ON INPUT
000.020                342X CTP.MLO EQU   00010000B      MAP LOWER CASE TO UPPER ON OUTPUT
000.010                343X CTP.2SB EQU   00001000B      TERMINAL NEEDS TWO STOP BITS
000.002                344X CTP.BKM EQU   00000010B      MAP BKSP (UPON INPUT) TO RUBOUT
000.001                345X CTP.TAB EQU   00000001B      TERMINAL SUPPORTS TAB CHARACTERS
                       346X
000.001                347X I.CONTY EQU   1              S.CONTY IS 2ND BYTE
000.000                348X         ERRNZ *-S.CSLMD-I.CONTY
040.327                349X S.CONTY DS    1              CONSOLE TYPE FLAGS
000.002                350X I.CUSOR EQU   2              S.CUSOR IS 3RD BYTE
000.000                351X         ERRNZ *-S.CSLMD-I.CUSOR
040.330                352X S.CUSOR DS    1              CURRENT CURSOR POSITION
000.003                353X I.CONWI EQU   3              S.CONWI IS 4TH BYTE
000.000                354X         ERRNZ *-S.CSLMD-I.CONWI
040.331                355X S.CONWI DS    1              CONSOLE WIDTH
                       356X
000.001                357X CO.FLG  EQU   00000001B      CTL-O FLAG
000.200                358X CS.FLG  EQU   10000000B      CTL-S FLAG
                       359X
000.004                360X I.CONFL EQU   4              S.CONFL IS 5TH BYTE
000.000                361X         ERRNZ *-S.CSLMD-I.CONFL
040.332                362X S.CONFL DS    1              CONSOLE FLAGS
                       363X
040.333                364X S.CAADR DS    2              ADDRESS FOR ABORT PROCESSING (>256 IF VALID)
040.335                365X S.CCTAB DS    6              ADDR FOR CTL-A, CTL-B, CTL-C PROCESSING
040.343                366          XTEXT ESINT
```

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                        368X **     S.INT - SYSTEM INTERNAL WORKAREA DEFINITIONS.
                        369X *
                        370X *      THESE CELLS ARE REFERENCED BY OVERLAYS AND MAIN CODE, AND
                        371X *      MUST THEREFORE RESIDE IN FIXED LOW MEMORY.
                        372X
                        373X
    040.343             374X        ORG     S.INT
                        375X
                        376X **     CONSOLE STATUS FLAGS
                        377X
    040.343             378X S.CDB  DS      1               CONSOLE DESCRIPTOR BYTE
    000.000             379X CDB.H85 EQU    00000000B
    000.001             380X CDB.H84 EQU    00000001B       =0 IF H8-5, =1 IF H8-4
    040.344             381X S.BAUD DS      2               [0-14]  H8-4 BAUD RATE, =0 IF H8-5
                        382X *                              [15]    =1 IF BAUD RATE => 2 STOP BITS
                        383X
                        384X **     TABLE ADDRESS WORDS
                        385X
    040.346             386X S.DLINK DS     2               ADDRESS OF DATA IN HDOS CODE
    040.350             387X S.OFWA DS      2               FWA  OVERLAY  TABLE
    040.352             388X S.CFWA DS      2               FWA  CHANNEL  TABLE
    040.354             389X S.DFWA DS      2               FWA  DEVICE   TABLE
    040.356             390X S.RFWA DS      2               FWA  RESIDENT HDOS CODE
                        391X
                        392X **     DEVICE DRIVER DELAYED LOAD FLAGS
                        393X
    040.360             394X S.DDLDA DS     2               DRIVER LOAD ADDRESS (HIGH BYTE=0 IF NO LOAD PENDING)
    040.362             395X S.DDLEN DS     2               CODE LENGTH IN BYTES
    040.364             396X S.DDGRP DS     1               GROUP NUMBER FOR DRIVER
    040.365             397X        DS      1               HOLD PLACE
                        398X *S.DDSEC       DS      2               SECTOR NUMBER FOR DRIVER ( * OBSOLETE ! * )
    040.366             399X S.DDDTA DS     2               DEVICE'S ADDRESS IN DEVLST +DEV.RES
    040.370             400X S.DDOPC DS     1               OPEN OPCODE PENDEDING
                        401X
                        402X **     OVERLAY MANAGEMENT FLAGS
                        403X
    000.001             404X OVL.IN  EQU    00000001B       IN MEMORY
    000.002             405X OVL.RES EQU    00000010B       PERMINANTLY RESIDENT
    000.014             406X OVL.NUM EQU    00001100B       OVERLAY NUMBER MASK
    000.200             407X OVL.UCS EQU    10000000B       USER CODE SWAPPED FOR OVERLAY
                        408X
    040.371             409X S.OVLFL DS     1               OVERLAY FLAG
    040.372             410X S.UCSF DS      2               FWA SWAPPED USER CODE
    040.374             411X S.UCSL DS      2               LENGTH SWAPPED USER CODE
    040.376             412X S.OVLS DS      2               SIZE OF OVERLAY CODE
    041.000             413X S.OVLE DS      2               ENTRY POINT OF OVERLAY CODE
                        414X
    041.002             415X S.SSN  DS      2               SWAP AREA SECTOR NUMBER
    041.004             416X S.OSN  DS      2               OVERLAY SECTOR NUMBER
                        417X
                        418X *      SYSCALL PROCESSING WORK AREAS
                        419X
    041.006             420X S.CACC DS      1               (ACC) UPON SYSCALL
    041.007             421X S.CODE DS      1               SYSCALL INDEX IN PROGRESS
                        422X
                        423X *      JUMPS TO ROUTINES IN RESIDENT HDOS CODE
```

```
                    424X
041.010             425X S.JUMPS DS      0              START OF DUMP VECTORS
041.010             426X S.SDD   DS      3              JUMP TO STAND-IN DEVICE DRIVER
041.013             427X S.FASER DS      3              JUMP TO FATSERR (FATAL SYSTEM ERROR)
041.016             428X S.DIREA DS      3              JUMP TO DIREAD (DISK FILE READ)
041.021             429X S.FCI   DS      3              JUMP TO FCI (FETCH CHANNEL INFO)
041.024             430X S.SCI   DS      3              JUMP TO SCI (STORE CHANNEL INFO)
041.027             431X S.GUP   DS      3              JUMP TO GUP (GET UNIT POINTER)
                    432X .
041.032             433X S.MOUNT DS      1              <>0 IF THE SYSTEM DISK IS MOUNTED
041.033             434X S.DCS   DS      1              DEFAULT CLUSTER SIZE-1
                    435X
041.034             436X S.BOOTF DS      1              BOOT FLAGS
000.001             437X BOOT.P  EQU     00000001B      EXECUTE PROLOGUE UPON BOOTUP
                    438X
                    439X *       STACK VALUE SAVED FOR OVERLAY SYSCALLS
                    440X
041.035             441X S.OVSTK DS      2              VALUE OF SP UPON SYSCALLS USING OVERLAY
                    442X
041.037             443X         DS      1              RESERVED


                    445X **      ACTIVE I/O AREA.
                    446X *
                    447X *       THE AIO.XXX AREA CONTAINS INFORMATION ABOUT THE I/O OPERATION
                    448X *       CURRENTLY BEING PERFORMED. THE INFORMATION IS OBTAINED FROM
                    449X *       THE CHANNEL TABLE, AND WILL BE RESTORED THERE WHEN DONE.
                    450X *
                    451X *       NORMALLY, THE AIO.XXX INFORMATION WOULD BE OBTAINED DIRECTLY
                    452X *       FROM VARIOUS SYSTEM TABLES VIA POINTER REGISTERS. SINCE THE
                    453X *       8080 HAS NO GOOD INDEXED ADDRESSING, THE DATA IS MANUALLY
                    454X *       COPIED INTO THE AIO.XXX CELLS BEFORE PROCESSING, AND
                    455X *       BACKDATED AFTER PROCESSING.
                    456X
041.040             457X AIO.VEC DS      3              JUMP INSTRUCTION
041.041             458X AIO.DDA EQU     *-2            DEVICE DRIVER ADDRESS
041.043             459X AIO.FLG DS      1              FLAG BYTE
041.044             460X AIO.GRT DS      2              ADDRESS OF GROUP RESERV TABLE
041.046             461X AIO.SPG DS      1              SECTORS PER GROUP
041.047             462X AIO.CGN DS      1              CURRENT GROUP NUMBER
041.050             463X AIO.CSI DS      1              CURRENT SECTOR INDEX
041.051             464X AIO.LGN DS      1              LAST GROUP NUMBER
041.052             465X AIO.LSI DS      1              LAST SECTOR INDEX
041.053             466X AIO.DTA DS      2              DEVICE TABLE ADDRESS
041.055             467X AIO.DES DS      2              DIRECTORY SECTOR
041.057             468X AIO.DEV DS      2              DEVICE CODE
041.061             469X AIO.UNI DS      1              UNIT NUMBER (0-9)
                    470X
041.062             471X AIO.DIR DS      DIRELEN        DIRECTORY ENTRY
                    472X
041.111             473X AIO.CNT DS      1              SECTOR COUNT
041.112             474X AIO.EOM DS      1              END OF MEDIA FLAG
041.113             475X AIO.EOF DS      1              END OF FILE FLAG
041.114             476X AIO.TFP DS      2              TEMP FILE POINTERS
```

```
041.116                 477X A10.CHA DS      2              ADDRESS OF CHANNEL BLOCK (IOC.DDA)


041.120                 479X S.SCR   DS      2              SYSTEM SCRATCH AREA ADDRESS
041.122                 480          XTEXT   MTRDEF


                        482X **      HDOS MONITOR PRIVATE RAM AREA DEFINITIONS.
                        483X
000.000                 484X         ORG     0
000.000                 485X M.SYSM  DS      1              SYSCALL ITTERATION COUNT
000.001                 486X M.SALO  DS      1              STAND-ALONE FLAG
000.002                 487X M.CSLC  DS      1              LINES IN CONSOLE BUFFER
000.003                 488X M.CPRE  DS      1              CONSOLE PREVIOUS CHARACTER
000.004                 489X M.CRUB  DS      1              CONSOLE RUBOUT FLAG
000.005                 490X M.CINT  DS      1              CONSOLE INTERRUPT FLAG
000.006                 491X M.CIN   DS      2              CONSOLE CB IN POINTER
000.010                 492X M.COUT  DS      2              CONSOLE CB OUT POINTER
000.012                 493X M.CFWA  DS      2              CONSOLE CB FWA POINTER
000.014                 494X M.CLWA  DS      2              CONSOLE CB LWA POINTER
000.016                 495X M.CDLY  DS      1              CONSOLE PAD CHARACTER COUNT
000.017                 496X M.CDCA  DS      2              ADDRESS OF CHARACTER BEING PADDED
000.021                 497          XTEXT   DDDEF


                        499X **      DEVICE DRIVER COMMUNICATION FLAGS.
                        500X *
                        501X
000.000                 502X         ORG     0
                        503X
000.000                 504X DC.REA  DS      1              READ
000.001                 505X DC.WRI  DS      1              WRITE
000.002                 506X DC.RER  DS      1              READ REGARDLESS
000.003                 507X DC.OPR  DS      1              OPEN FOR READ
000.004                 508X DC.OPW  DS      1              OPEN FOR WRITE
000.005                 509X DC.OPU  DS      1              OPEN FOR UPDATE
000.006                 510X DC.CLO  DS      1              CLOSE
000.007                 511X DC.ABT  DS      1              ABORT
000.010                 512X DC.MOU  DS      1              MOUNT DEVICE
000.011                 513X DC.LOD  DS      1              LOAD DEVICE DRIVER
000.012                 514X DC.MAX  DS      1              MAXIMUM ENTRY INDEX
000.013                 515          XTEXT   FLTDEF
```

```
                        517X **      FLTDEF - DEFAULT SECTOR DEFINITIONS
                        518X
000.000                 519X         ORG     0
000.000                 520X FLT.CTY DS      1          CONSOLE TYPE FLAGS (FOR S.CONTY)
000.001                 521X FLT.CWI DS      1          CONSOLE WIDTH (FOR S.CONWI)
000.002                 522X FLT.CFC DS      1          CONSOLE FILL CHARACTERS NEEDED
000.003                 523X FLT.CRF DS      1          CONSOLE CHARACTER REQUIRING FILL(377Q IF NONE)
000.004                 524X FLT.MNC DS      1          MAXIMUM NUMBER OF I/O CHANNELS
000.005                 525X FLT.TDT DS      1          TRACK SEEK DELAY TIME (MS/2)
000.006                 526X FLT.CDB DS      1          CONSOLE DEFINITION BYTE
000.007                 527X FLT.CBD DS      2          CONSOLE BAUD RATE
000.011                 528X FLT.BOF DS      1          BOOTUP FLAGS
000.012                 529X FLT.SAL DS      1          STAND-ALONE FLAG( != 0  => CAN GO STAND-ALONE)
000.013                 530          XTEXT   FILDEF


                        532X **      FILDEF - FILE TYPE DEFINITIONS.
                        533X *
                        534X *       DB      377Q,FT.XXX
                        535X
                        536X
000.000                 537X FT.ABS  EQU     0          ABSOLUTE BINARY
000.001                 538X FT.PIC  EQU     1          POSITION INDEPENDANT CODE
000.002                 539X FT.REL  EQU     2          RELOCATABLE CODE
000.003                 540X FT.BAC  EQU     3          COMPILED BASIC CODE
000.013                 541          XTEXT   ABSDEF


                        543X **      ABS FORMAT EQUIVALENCES.
                        544X
000.000                 545X         ORG     0
                        546X
000.000                 547X ABS.ID  DS      1          377Q = BINARY FILE FLAG
000.001                 548X         DS      1          FILE TYPE (FT.ABS)
000.002                 549X ABS.LDA DS      2          LOAD ADDRESS
000.004                 550X ABS.LEN DS      2          LENGTH OF ENTIRE RECORD
000.006                 551X ABS.ENT DS      2          ENTRY POINT
                        552X
000.010                 553X ABS.COD DS      0          CODE STARTS HERE
000.010                 554          XTEXT   PICDEF


                        556X **      PIC FORMAT EQUIVALENCES.
                        557X
000.000                 558X         ORG     0
                        559X
000.000                 560X PIC.ID  DS      1          377Q = BINARY FILE FLAG
000.001                 561X         DS      1          FILE TYPE (FT.PIC)
000.002                 562X PIC.LEN DS      2          LENGTH OF ENTIRE RECORD
000.004                 563X PIC.PTR DS      2          INDEX OF START OF PIC TABLE
                        564X
000.006                 565X PIC.COD DS      0          CODE STARTS HERE
```

```
000.006                 566         XTEXT   DVDDEF


                        568X **     DEVICE DRIVER EQUIVALENCES.
                        569X
000.307                 570X DVDFLV EQU     307Q            DEVICE DRIVER FLAG VALUE
                        571X
000.006                 572X        ORG     PIC.COD         STARTS AT PIC CODE AREA
                        573X
000.006                 574X DVD.DVD DS     1               MUST BE DVDFLV, FLAGS TO HDOS AS DRIVER
000.007                 575X DVD.CAP DS     1               DEVICE CAPABILITY FLAG
000.010                 576X DVD.MUM DS     1               MOUNTED UNIT MASK
000.011                 577X DVD.MNU DS     1               MAXIMUM NUMBER OF UNITS
000.012                 578X DVD.UFL DS     8               UNIT SUB-CAPABILITY FLAGS FOR UNITS 0-7
000.022                 579X DVD.SET DS     1               = DVDFLV IFF DRIVER WILL TAKE SET OPTIONS
000.023                 580X        DS      24              RESERVED, MUST BE 0
000.053                 581X DVD.STE EQU    *               ENTRY FOR 'SET' INVOCATION
                        582X
002.000                 583X DVD.ENT EQU    2000A           DRIVER ENTRY POINT (MUST BE MULT OF 256)
                        584
                        585
042.170                 586         ORG     USERFWA-ABS,COD
042.170  377 000       587         DB      377Q,FT.ABS
042.172  200 042       588         DW      USERFWA         LOAD ADDR
042.174  232 011       589         DW      MEML-USERFWA    LOAD LENGTH
042.176  333 042       590         DW      ENTRY           ENTRY ADDRESS
```

```
                                593  ***     FIXED ADDRESS UTILITY ROUTINES.
                                594  *
                                595  *       THESE VECTORS RESIDE AT A FIXED ADDRESS RELATIVE TO 'USERFWA'
                                596  *       AND ARE CALLED BY DEVICE DRIVER SET CODE.
                                597
                                598
000.000                         599          ERRNZ   STACK-*
042.200  000                   600          DB      0               STACK+1 MUST BE 0
                                601
                                602


                                604  ***     SNA. - SCAN TO NEXT ARGUMENT.
                                605  *
                                606  *       SNA IS CALLED TO SKIP BLANKS UNTIL THE NEXT ARGUMENT.
                                607  *
                                608  *       ENTRY   (BC) = LINE POINTER
                                609  *       EXIT    (BC) UPDATED
                                610  *               'Z' SET IF AT END OF LINE
                                611  *       USES    A,F,B,C
                                612
                                613
042.201  303 153 052            614  SNA.    JMP     SKB             SCAN NEXT ARGUMENT


                                616  ***     DCS. - DELIMIT CHARACTER STRING.
                                617  *
                                618  *       DCS SCANS A CHARACTER STRING (ANYTHING BUT BLANKS) IN
                                619  *       THE LINE.
                                620  *
                                621  *       ENTRY   (BC) = LINE POINTER
                                622  *       EXIT    (BC) UPDATED PAST STRING
                                623  *               (DE) = ADDR FIRST STRING CHARACTER
                                624  *               (HL) = ADDR LAST STRING CHARACTER
                                625  *               (A) = STRING LENGTH
                                626  *               'Z' SET IF STRING EMPTY
                                627  *       USES    ALL
                                628
                                629
042.204  303 327 051            630  DCS.    JMP     DCS


                                632  ***     CNA. - CONVERT NUMERIC ARGUMENT.
                                633  *
                                634  *       CNA. CONVERTS A NUMERIC ARGUMENT IN THE COMMAND LINE
                                635  *       TO A BINARY VALUE.
                                636  *
                                637  *       THE NUMBER MAY USE A 'B', 'O', 'Q', OR 'D' POSTRADIX.
                                638  *
                                639  *       ENTRY   (BC) = LINE POINTER
```

```
                                640  *               (A) = DEFAULT RADIX
                                641  *       EXIT    (BC) UPDATED
                                642  *               (HL) = VALUE
                                643  *               'C' CLEAR IF OK
                                644  *               'C' SET IF ERROR
                                645  *                (A) = ERROR CODE
                                646  *       USES    ALL
                                647
                                648
042.207  303 357 051           649  CNA.    JMP     DNF             DECODE NUMERIC FIELD


                                651  ***     FST. - FIND IN SERIAL TABLE
                                652  *
                                653
042.212  303 163 052           654  FST.    JMP     $FST


                                656  ***     TBLS. - TABLE SEARCH
                                657  *
                                658
042.215  303 126 053           659  TBLS.   JMP     $TBLS


                                661  ***     WTBLS. - WORD TABLE SEARCH
                                662  *
                                663
042.220  303 157 053           664  WTBLS.  JMP     $WTBLS


                                666  ***     LBD. - LOOK UP BAUD RATE
                                667  *
                                668
042.223  303 266 052           669  LBD.    JMP     $LBD


                                671  ***     SOP. - SET OPTIONS
                                672  *
                                673
042.226  303 350 052           674  SOP.    JMP     SOP
```

```
                                676  ***     PBF. - PROCESS BYTE FLAG
                                677  *
                                678
042.231  303 017 053           679  PBF.    JMP     PBF


                                681  ***     PBV. - PROCESS BYTE VALUE
                                682  *
                                683
042.234  303 036 053           684  PBV.    JMP     PBV
042.237                         685          DS      60              RESERVED
```

```
                                688  ***     MAIN ROUTINE.
                                689  *
                                690
                                691
042.333                         692  ENTRY   EQU     *
042.333  041 032 055           693          LXI     H,RMEML
042.336  377 052               694          DB      SYSCALL,.SETTP  SET TOP OF USED MEMORY
042.340  041 000 000           695          LXI     H,0
042.343  071                   696          DAD     SP
042.344  104                   697          MOV     B,H
042.345  115                   698          MOV     C,L             (BC)  = COMMAND LINE
042.346  315 354 042           699          CALL    SET1            PERFORM PROCESSING
042.351  303 240 043           700          JMP     EXIT
                                701
                                702  *       GET DEVICE CODE
                                703  *
                                704  *       THIS SECTION IS CALLED FROM ABOVE. A 'RETURN' CAUSES SET TO EXIT
                                705
042.354  315 327 051           706  SET1    CALL    DCS
042.357  312 061 043           707          JZ      ERR.IDS         ILLEGAL DEVICE SPEC
042.362  176                   708          MOV     A,M
042.363  366 200               709          ORI     200Q
042.365  167                   710          MOV     M,A
042.366  041 015 043           711          LXI     H,SETA
042.371  315 163 052           712          CALL    $FST
042.374  302 332 050           713          JNZ     PDF             NOT BUILT-IN, PATCH DISK FILE AND RETURN
042.377  176                   714          MOV     A,M
043.000  315 061 031           715          CALL    $TJMP
043.003  244 043               716          DW      SETSY           SY:
043.005  065 044               717          DW      SETTT           TT:
043.007  131 047               718          DW      SETHLP          HELP
043.011  056 050               719          DW      SETVER          VERSION SWITCH
043.013  105 050               720          DW      SETHOS          HDOS PARAMETERS

043.015  060 043               722  SETA    DW      SETAE           END ADDRESS
043.017  001                   723          DB      1               1 BYTE DATA VALUES
                                724
043.020  123 131 272           725          DB      'SY',':'+200Q,0
043.024  123 131 060           726          DB      'SY0',':'+200Q,0
043.031  124 124 272           727          DB      'TT',':'+200Q,1
043.035  124 124 060           728          DB      'TT0',':'+200Q,1
043.042  110 105 114           729          DB      'HEL','P'+200Q,2
043.047  126 105 322           730          DB      'VE','R'+200Q,3
043.053  110 104 117           731          DB      'HDO','S'+200Q,4
                                732
043.060  000                   733  SETAE   DB      0               END OF TABLE
```

```
                                737  ***     WHEN VARIOUS ERROR CONDITIONS ARE DETECTED, CODE MAY DO A
                                738  *       'BAIL OUT' JUMP TO ONE OF THE ERROR ABORT ADDRESSES.
                                739  *
                                740  *       THE STACK MAY BE UNCLEAN, FILES BE OPEN, ETC.
                                741  *       THE ABORT ROUTINES WILL CLEAN THE STACK, ISSUE ANY APPROPRIATE MESSAGES,
                                742  *       AND EXIT, LEAVING THE O/S TO CLEAN UP ANY OPEN FILES.


                                744  **      ERR.IDS - ILLEGAL DEVICE SPECIFICATION
                                745
043.061  315 136 031            746  ERR.IDS CALL    $TYPTX
043.064  007 012 111            747          DB      BELL,NL,'Illegal Device Specification',ENL
043.123  303 240 043            748          JMP     EXIT


                                750  **      ERR.ILO - ILLEGAL OPTION
                                751
                                752
043.126  315 136 031            753  ERR.ILO CALL    $TYPTX
043.131  007 012 111            754          DB      BELL,NL,'Illegal Option',ENL
043.152  303 240 043            755          JMP     EXIT


                                757  **      ERR.IOV - ILLEGAL OPTION VALUE
                                758
                                759
043.155  315 136 031            760  ERR.IOV CALL    $TYPTX
043.160  007 012 111            761          DB      BELL,NL,'Illegal Option Value',ENL
043.207  303 240 043            762          JMP     EXIT


                                764  **      ERROR - HDOS RETURNED ERROR
                                765
                                766
043.212  365                    767  ERROR   PUSH    PSW
043.213  315 136 031            768          CALL    $TYPTX
043.216  007 012 105            769          DB      BELL,NL,'Error -',' '+200Q
043.230  361                    770          POP     PSW
043.231  046 212                771          MVI     H,ENL
043.233  377 057                772          DB      SYSCALL,.ERROR
043.235  303 240 043            773          JMP     EXIT


                                775  **      EXIT - EXIT TO HDOS.
                                776  *
                                777  *       EXIT EXITS TO HDOS WITH THE 'ABORT' FLAG SET.
                                778  *       THIS FORCES THE CONSOLE TO BE RECONFIGURED, IN CASE THE SET
                                779  *       COMMAND CAUSED CONSOLE HANDLING CHANGES.
                                780
043.240  076 001                781  EXIT    MVI     A,1             FORCE RESET
043.242  377 000                782          SCALL   .EXIT
```

```
                                785  ***     SETSY - SET OPTIONS FOR SY:
                                786  *
                                787
                                788
043.244  021 277 043            789  SETSY   LXI     D,SYOPRC
043.247  041 261 043            790          LXI     H,SYOTAB
043.252  315 350 052            791          CALL    SOP
043.255  332 212 043            792          JC      ERROR
043.260  311                    793          RET


                                795
043.261  276 043                796  SYOTAB  DW      SYOTABE         END ADDRESS
043.263  001                    797          DB      1               1 DATA BYTE
                                798
043.264  123 124 105            799          DB      'STE','P'+200Q,STPI
043.271  110 105 114            800          DB      'HEL','P'+200Q,SYHLPI
                                801
043.276  000                    802  SYOTABE DB      0               END OF TABLE


043.277                         804  SYOPRC  DS      0
                                805
000.000                         806  STPI    EQU     *-SYOPRC/2
043.277  303 043                807          DW      SSYSTP
                                808
000.001                         809  SYHLPI  EQU     *-SYOPRC/2
043.301  342 043                810          DW      SYHLP


                                812  **      SSYSTP - SET STEP TIMING.
                                813  *
                                814  *       SET SY: STEP NN
                                815
                                816
043.303  076 012                817  SSYSTP  MVI     A,10
043.305  315 357 051            818          CALL    DNF             DECODE NUMERIC FIELD
043.310  332 155 043            819          JC      ERR.IOV
043.313  174                    820          MOV     A,H
043.314  247                    821          ANA     A
043.315  302 155 043            822          JNZ     ERR.IOV         ILLEGAL OPTION VALUE
043.320  175                    823          MOV     A,L
043.321  037                    824          RAR
043.322  376 003                825          CPI     3
043.324  332 155 043            826          JC      ERR.IOV
043.327  062 115 040            827          STA     D.MAIA          SET VALUE FOR  DISK
043.332  137                    828          MOV     E,A
043.333  026 000                829          MVI     D,0             REPLACE OLD VALUE
043.335  076 005                830          MVI     A,FLT.TDT
043.337  303 000 052            831          JMP     SHO             SET HOS OPTIONS AND EXIT
```

```
                                833  **      SYHLP - SY HELP OPTION
                                834  *
                                835
     043.342  315 136 031       836  SYHLP   CALL    $TYPTX
     043.345  012 012 123       837          DB      NL,NL,'Set Options for SY:',NL,NL
     043.374  123 124 105       838          DB      'STEP  nnn              Set Track Step Time',NL
     044.033  110 105 114       839          DB      'HELP                   Type this text',NL
     044.061  012 212           840          DB      NL,ENL
     044.063  257               841          XRA     A               CLEAR CARRY
     044.064  311               842          RET
```

```
                        845  **      SETTT - SET TT: OPTIONS
                        846  *
                        847
                        848
044.065  021 256 044   849  SETTT   LXI     D,TTOPRC
044.070  041 102 044   850          LXI     H,TTOTAB
044.073  315 350 052   851          CALL    SOP
044.076  332 212 043   852          JC      ERROR
044.101  311           853          RET


044.102  255 044       855  TTOTAB  DW      TTOTABE         LWA
044.104  003           856          DB      3               VALUE BYTES
                        857
044.105  102 113 323   858          DB      'BK','S'+200Q,CTYI,377Q-CTP.BKS,CTP.BKS
044.113  115 114 311   859          DB      'ML','I'+200Q,CTYI,377Q-CTP.MLI,CTP.MLI
044.121  115 114 317   860          DB      'ML','O'+200Q,CTYI,377Q-CTP.MLO,CTP.MLO
044.127  102 113 315   861          DB      'BK','M'+200Q,CTYI,377Q-CTP.BKM,CTP.BKM
044.135  124 101 302   862          DB      'TA','B'+200Q,CTYI,377Q-CTP.TAB,CTP.TAB
044.143  061 123 302   863          DB      '1S','B'+200Q,CTYI,377Q-CTP.2SB,0
044.151  062 123 302   864          DB      '2S','B'+200Q,CTYI,377Q-CTP.2SB,CTP.2SB
044.157  116 117 102   865          DB      'NOBK','S'+200Q,CTYI,377Q-CTP.BKS,0
044.167  116 117 115   866          DB      'NOML','I'+200Q,CTYI,377Q-CTP.MLI,0
044.177  116 117 115   867          DB      'NOML','O'+200Q,CTYI,377Q-CTP.MLO,0
044.207  116 117 102   868          DB      'NOBK','M'+200Q,CTYI,377Q-CTP.BKM,0
044.217  116 117 124   869          DB      'NOTA','B'+200Q,CTYI,377Q-CTP.TAB,0
044.227  127 111 104   870          DB      'WIDT','H'+200Q,WIDI,0,0
044.237  106 111 114   871          DB      'FIL','L'+200Q,FILI,0,0
044.246  110 105 114   872          DB      'HEL','P'+200Q,TTHLPI,0,0
                        873
044.255  000           874  TTOTABE DB      0               END OF TABLE


044.256               876  TTOPRC  DS      0
                        877
000.000               878  CTYI    EQU     *-TTOPRC/2
044.256  266 044       879          DW      STTCTY
                        880
000.001               881  WIDI    EQU     *-TTOPRC/2
044.260  306 044       882          DW      STTWID
                        883
000.002               884  FILI    EQU     *-TTOPRC/2
044.262  344 044       885          DW      STTFIL
                        886
000.003               887  TTHLPI  EQU     *-TTOPRC/2
044.264  044 045       888          DW      TTHLP
```

```
                                890  **      STTCTY - CONSOLE TYPE FLAGS.
                                891  *
                                892
                                893
044.266                         894  STTCTY  EQU     *
044.266  126                   895          MOV     D,M
044.267  043                   896          INX     H
044.270  136                   897          MOV     E,M             (E) = VALUE
044.271  072 327 040           898          LDA     S.CONTY
044.274  242                   899          ANA     D
044.275  263                   900          ORA     E
044.276  062 327 040           901          STA     S.CONTY
044.301  076 000               902          MVI     A,FLT.CTY
044.303  303 000 052           903          JMP     SHO             SET HOS OPTIONS, AND EXIT


                                905  **      STTWID - SET WIDTH OPTION
                                906  *
                                907  *       SET TT: WIDTH NN
                                908
                                909
044.306  076 012               910  STTWID  MVI     A,10            (A) = DEFAULT BASE
044.310  315 357 051           911          CALL    DNF             DECODE NUMERIC FIELD
044.313  332 155 043           912          JC      ERR.IOV
044.316  174                   913          MOV     A,H
044.317  247                   914          ANA     A
044.320  302 155 043           915          JNZ     ERR.IOV         ILLEGAL OPTION VALUE
044.323  175                   916          MOV     A,L
044.324  376 024               917          CPI     20
044.326  332 155 043           918          JC      ERR.IOV         TOO NARROW
044.331  062 331 040           919          STA     S.CONWI
044.334  137                   920          MOV     E,A
044.335  026 000               921          MVI     D,0
044.337  076 001               922          MVI     A,FLT.CWI
044.341  303 000 052           923          JMP     SHO             SET HOS OPTION AND EXIT


                                925  **      STTFIL - FILL OPTION.
                                926  *
                                927  *       SET TT: FILL CC NN
                                928
                                929
044.344  076 012               930  STTFIL  MVI     A,10            (A) = DEFAULT BASE
044.346  315 357 051           931          CALL    DNF             DECOCDE NUMERIC FIELD
044.351  332 155 043           932          JC      ERR.IOV
044.354  174                   933          MOV     A,H
044.355  264                   934          ORA     H
044.356  302 155 043           935          JNZ     ERR.IOV
044.361  265                   936          ORA     L
044.362  312 155 043           937          JZ      ERR.IOV         ILLEGAL OPTION VALUE
044.365  365                   938          PUSH    PSW             SAVE CHARACTER CODE
044.366  076 012               939          MVI     A,10            (A) = DEFAULT BASE
044.370  315 357 051           940          CALL    DNF             DECODE NUMERIC FIELD
044.373  332 155 043           941          JC      ERR.IOV
```

```
044.376  174           942          MOV     A,H
044.377  267           943          ORA     A
045.000  302 155 043   944          JNZ     ERR.IOV         ILLEGAL VALUE
045.003  105           945          MOV     B,L             (B) = DELAY COUNT
                       946
                       947 *        SET IN MEMORY
                       948
045.004  052 346 040   949          LHLD    S.DLINK
045.007  021 016 000   950          LXI     D,M.CDLY
045.012  031           951          DAD     D
045.013  160           952          MOV     M,B             SET DELAY COUNT
000.000                953          ERRNZ   M.CDCA-M.CDLY-1
045.014  043           954          INX     H
045.015  315 211 030   955          CALL    $HLIHL          (HL) = ADDRESS FOR CHAR
045.020  130           956          MOV     E,B             (E) = DELAY
045.021  361           957          POP     PSW             (A) = DELAY CHARACTER
045.022  167           958          MOV     M,A
045.023  365           959          PUSH    PSW
045.024  026 000       960          MVI     D,0
045.026  076 002       961          MVI     A,FLT.CFC
045.030  315 000 052   962          CALL    SHO             SET FILL COUNT
045.033  361           963          POP     PSW
045.034  137           964          MOV     E,A
045.035  026 000       965          MVI     D,0
045.037  076 003       966          MVI     A,FLT.CRF
045.041  303 000 052   967          JMP     SHO             SET CHAR REQUIRING FILL AND EXIT


                       970 **       TTHLP - HELP OPTION FOR DEVICE TT:
                       971 *
                       972
045.044  315 136 031   973  TTHLP   CALL    $TYPTX
045.047  012 012 123   974          DB      NL,NL,'SET Options for TT:',NL,NL
045.076  102 113 123   975          DB      'BKS            CRT terminal allows backspace characters',NL
045.154  115 114 111   976          DB      'MLI            Map lower case input to upper case',NL
045.224  115 114 117   977          DB      'MLO            Map lower case output to upper case',NL
045.275  102 113 115   978          DB      'BKM            Treat 'BKSP' codes (on input) as 'DELETE' ('RUBOUT')',NL
045.367  124 101 102   979          DB      'TAB            Terminal can process tab codes',NL
046.033  012           980          DB      NL
046.034  011 124 150   981          DB      '       The above options can be preceded by 'NO' to negate their',NL
046.127  011 105 146   982          DB      '       Effect. (I.E.  SET TT: NOTAB )',NL
046.167  012           983          DB      NL
046.170  061 123 102   984          DB      '1SB            Use One Stop Bit for Console Terminal',NL
046.243  062 123 102   985          DB      '2SB            Use Two Stop Bits for Console Terminal',NL
046.317  127 111 104   986          DB      'WIDTH NN       Set console width to NN characters',NL
046.373  106 111 114   987          DB      'FILL CC NN     Pad occurrences of character CC with NN null',NL
047.063  011 011 143   988          DB      '               characters',NL
047.100  110 105 114   989          DB      'HELP           Type this text',NL
047.125  012 212       990          DB      NL,ENL
047.127  257           991          XRA     A               CLEAR CARRY
047.130  311           992          RET
```

```
                                995  ***     SETHLP - PRINT HELP TEXT.
                                996  *
                                997
                                998
047.131  315 136 031            999  SETHLP  CALL    $TYPTX
047.134  012 012 107           1000          DB      NL,NL,'General Command Format:',NL
047.166  012                   1001          DB      NL
047.167  040 040 040          1002          DB      '   SET xx: opt',NL
047.206  040 040 040          1003          DB      '     xx: --  Device Name',NL
047.237  040 040 040          1004          DB      '     opt --  Desired Option',NL
047.273  012 012               1005          DB      NL,NL
047.275  106 157 162           1006          DB      'For HELP with a specific device, type:',NL
047.344  012                   1007          DB      NL
047.345  040 040 040          1008          DB      '   SET xx: HELP',NL
047.365  012 012               1009          DB      NL,NL
047.367  124 157 040          1010          DB      'To determine the version of SET, type:',NL
050.036  012                   1011          DB      NL
050.037  040 040 040          1012          DB      '   SET Ver',NL
050.052  012                   1013          DB      NL
                                1014
000.001                         1015          IF      PUBLIC
                                1016          DB      NL
                                1017          DB      'To list settable *HDOS* options, type:',NL
                                1018          DB      NL
                                1019          DB      '     SET HDOS HELP',NL
                                1020          DB      NL
                                1021          ENDIF
                                1022
050.053  212                   1023          DB      ENL
050.054  257                   1024          XRA     A               CLEAR CARRY
050.055  311                   1025          RET
```

```
                                1029  ***     SETVER  - SET VERSION
                                1030  *
                                1031  *       SETVER PRINTS THE VERSION OF THIS SET PROGRAM
                                1032  *
                                1033
050.056  315 136 031            1034  SETVER  CALL    $TYPTX
050.061  123 105 124            1035          DB      '{'SET',TAB,'Version'}
050.077  061 056 066            1036          DB      VERS/16+'0','.',VERS&00001111B+'0'
050.102  212                    1037          DB      ENL
050.103  257                    1038          XRA     A               CLEAR CARRY
050.104  311                    1039          RET
```

```
                                1042  **      SETHOS  -  SET HDOS PARAMETERS
                                1043  *
                                1044  *       SETHOS PERMITS THE SETTING OF  *HDOS*  PARAMETERS.
                                1045  *
                                1046
050.105  021 162 050           1047  SETHOS  LXI     D,HOSPRC
050.110  041 122 050           1048          LXI     H,HOSTAB
050.113  315 350 052           1049          CALL    SOF
050.116  332 212 043           1050          JC      ERROR
050.121  311                   1051          RET


050.122  161 050               1053  HOSTAB  DW      HOSTABE         END ADDRESS
050.124  002                   1054          DB      2               ONE DATA BYTE
                                1055
050.125  123 124 101           1056          DB      'STAND-ALON',"E"+200Q,HOSSALI,1
050.142  116 117 123           1057          DB      'NOSTAND-ALON',"E"+200Q,HOSSALI,0
000.001                         1058          IF      PUBLIC
                                1059          DB      'HEL',"P"+200Q,HELPI,0
                                1060          ENDIF
                                1061
050.161  000                   1062  HOSTABE DB      0               END OF TABLE


050.162                         1064  HOSPRC  DS      0
050.162                         1065  .       SET     *
                                1066
000.000                         1067  HOSSALI EQU     *-./2
050.162  164 050               1068          DW      HOSSAL
                                1069
000.001                         1070          IF      PUBLIC
                                1071  HELPI   EQU     *-./2
                                1072          DW      HOSHLP
                                1073          ENDIF


                                1075  **      HOSSAL  -  SET  *HDOS*  STAND ALONE FLAG
                                1076  *
                                1077  *       HOSSAL SETS THE  *HDOS*  STAND-ALONE FLAG ENABLING  *HDOS*
                                1078  *       TO GO STAND ALONE UPON EXITS TO  *SYSCMD.SYS*  WHEN THE SYSTEM
                                1079  *       DISK HAS BEEN DISMOUNTED.
                                1080  *
                                1081  *
                                1082
050.164  176                   1083  HOSSAL  MOV     A,M
050.165  021 001 000           1084          LXI     D,M.SALO
050.170  052 346 040           1085          LHLD    S.DLINK
050.173  031                   1086          DAD     D
050.174  167                   1087          MOV     M,A             SET  *SALONE*  TO 1, ( != 0  =>  SET ).
050.175  137                   1088          MOV     E,A             (E) = NEW VALUE
```

```
050.176  026 000       1089           MVI     D,0             (D) = CHANGE MASK
050,200  076 012       1090           MVI     A,FLT.SAL       INDEX OF BYTE TO CHANGE
000.001                1091           IF      PUBLIC
                       1092           ELSE
050.202  365           1093           PUSH    PSW
050,203  173           1094           MOV     A,E
050.204  247           1095           ANA     A
050,205  312 326 050   1096           JZ      HOS1
050.210  315 136 031   1097           CALL    $TYPTX
050,213  012 111 164   1098           DB      NL,'It is Now Pitch Dark.  If You Proceed, You Will Likely '
050.303  106 141 154   1099           DB      'Fall Into a Pit.',NL,BELL,ENL
050,326  361           1100  HOS1     POP     PSW
                       1101           ENDIF
050,327  303 000 052   1102           JMP     SHO             SET  *HDOS*  OPTIONS, AND EXIT
000.001                1103           IF      PUBLIC
                       1104  HOSHLP   SPACE   4,10
                       1105  **       HOSHLP  -  PROCESS HELP OPTION FOR PSEUDO-DEVICE  *HDOS*
                       1106  *
                       1107  *
                       1108
                       1109  HOSHLP   CALL    $TYPTX
                       1110           DB      NL,NL,'Set Options for  HDOS',NL,NL
                       1111           DB      'STAND-ALONE            Flag Stand-Alone Operation Legal',NL
                       1112           DB      'HELP                   Print this Text',NL
                       1113           DB      NL,ENL
                       1114           XRA     A       CLEAR CARRY
                       1115           RET
                       1116           ENDIF
```

```
                                1120  **      PDF - PATCH DISK FILE.
                                1121  *
                                1122  *       PDF IS CALLED TO SET (PATCH) A DEVICE DRIVER FILE ON THE DISK.
                                1123  *
                                1124  *       1) THE DRIVER IS FOUND, AND READ IN
                                1125  *       2) ITS FORMAT IS CHECKED
                                1126  *       3) THE 'SET PREAMBLE' IS RELOCATED
                                1127  *       4) ITS 'SET' CODE AREA IS ENTERED
                                1128  *       5) THE DRIVER, EXCEPT FOR THE SET PREAMBLE (BECAUSE IT WAS RELOCATED)
                                1129  *          IS WRITTEN BACK OUT
                                1130  *
                                1131  *       ENTRY   (DE) = ADDRESS OF 'dev:' SPECIFICATION
                                1132  *       EXIT    TO CALLER OF OK
                                1133  *               TO 'ERR.???' IF ERROR
                                1134  *       USES    ALL
                                1135
                                1136
050.332                         1137  PDF     EQU     *
050.332  032                   1138          LDAX    D               (A) = FIRST CHAR OF DEVNAME
050.333  247                   1139          ANA     A
050.334  372 061 043           1140          JM      ERR.IDS         ILLEGAL DEV SPECIFIED
050.337  062 163 051           1141          STA     PDFB
050.342  023                   1142          INX     D
050.343  032                   1143          LDAX    D               (A) = 2ND CHAR OF DEVNAME
050.344  247                   1144          ANA     A
050.345  372 061 043           1145          JM      ERR.IDS
050.350  062 164 051           1146          STA     PDFB+1
050.353  023                   1147          INX     D
050.354  032                   1148          LDAX    D               (A) = UNIT NUMBER OR ':'
050.355  356 272               1149          XRI     ':'+200Q                ASSUME ':'
050.357  312 376 050           1150          JZ      PDF1            IS :, (A) = UNIT NUMBER = 0
050.362  032                   1151          LDAX    D
050.363  326 060               1152          SUI     '0'             DECODE UNIT NUMBER
050.365  332 061 043           1153          JC      ERR.IDS         NOT A UNIT NUMBER
050.370  376 010               1154          CPI     7+1
050.372  322 061 043           1155          JNC     ERR.IDS         NOT A UNIT NUMBER
050.375  023                   1156          INX     D               POINT TO ':'
                                1157
                                1158  *       (A) = UNIT NUMBER (IN BINARY)
                                1159  *       (DE) = ADDRESS OF ':'
                                1160
050.376  365                   1161  PDF1    PUSH    PSW             SAVE UNIT NUMBER
050.377  032                   1162          LDAX    D
051.000  023                   1163          INX     D
051.001  376 272               1164          CPI     ':'+200Q
051.003  302 061 043           1165          JNE     ERR.IDS         ILLEGAL DEVICE SPECIFICATION
                                1166
                                1167  *       HAVE DEVICE NAME CRACKED OUT, FIND IN DIRECTORY
                                1168
051.006  325                   1169          PUSH    D               SAVE POINTER TO COMMAND LINE
051.007  041 157 051           1170          LXI     H,PDFA
000.000                         1171          ERRNZ   CN.DVD          USING CHANNEL 0
051.012  257                   1172          XRA     A
051.013  377 044               1173          SCALL   .OPENU          OPEN DEVICE DRIVER FILE
051.015  332 212 043           1174          JC      ERROR           REPORT ERROR
                                1175
```

```
                                1176  *       READ IN FIRST BLOCK, SEE IF DEVICE DRIVER, AND HOW LONG
                                1177
051.020  001 000 001            1178          LXI     B,256
051.023  021 032 054            1179          LXI     D,BUFF
000.000                         1180          ERRNZ   CN.DVD          USING CHANNEL 0
051.026  257                   1181          XRA     A
051.027  377 004                1182          SCALL   .READ
051.031  332 212 043            1183          JC      ERROR
                                1184
051.034  072 040 054            1185          LDA     BUFF+DVD.DVD
051.037  376 307                1186          CPI     DVDFLV
051.041  312 122 051            1187          JE      PDF3            OK
051.044  315 136 031            1188          CALL    $TYPTX
051.047  007 012 104            1189          DB      BELL,NL,'Disk File DOES Not Have Proper Format',ENL
051.117  303 240 043            1190          JMP     EXIT
                                1191
                                1192  *       IS DEVICE DRIVER. SEE IF SETUP FOR 'SET' USE
                                1193
051.122  072 054 054            1194  PDF3    LDA     BUFF+DVD.SET
051.125  376 307                1195          CPI     DVDFLV
051.127  302 126 043            1196          JNE     ERR.ILO         ANY OPTION IS ILLEGAL, SINCE NOT SETUP
                                1197
                                1198  *       LOAD AND RELOCATE DRIVER
                                1199
051.132  315 172 051            1200          CALL    LDD             LOAD DEVICE DRIVER
                                1201
                                1202  *       CALL DRIVER PREAMBLE CODE
                                1203
051.135  321                   1204          POP     D               (DE) = PARAMETER LIST ADDRESS
051.136  361                   1205          POP     PSW             (A) = UNIT NUMBER
051.137  315 105 054            1206          CALL    BUFF+DVD.STE    ENTER AT SET POINT
051.142  332 212 043            1207          JC      ERROR           ILLEGAL OPTION
                                1208
                                1209  *       HAVE SUCCESSFULLY SET. WRITE DRIVER BACK
                                1210
051.145  315 272 051            1211          CALL    WDD             WRITE DEVICE DRIVER
000.000                         1212          ERRNZ   CN.DVD
051.150  257                   1213          XRA     A               (A) = CN.DVD
051.151  377 046                1214          SCALL   .CLOSE          CLOSE FILE
051.153  332 212 043            1215          JC      ERROR
051.156  311                   1216          RET                     ALL DONE
                                1217
                                1218
051.157  123 131 060            1219  PDFA    DB      'SY0:'          DEVICE DRIVER FILE NAME
051.163                         1220  PDFB    DS      2               CODE STORES NAME HERE
051.165  056 104 126            1221          DB      '.DVD',0
```

```
                                1223  **      LDD - LOAD DEVICE DRIVER.
                                1224  *
                                1225  *       LDD LOADS THE REST OF A DEVICE DRIVER INTO MEMORY, AND DOES A
                                1226  *       PARTICAL RELOCATION.
                                1227  *
                                1228  *       LDD IS ENTERED WITH THE FIRST 256 BYTES OF THE DRIVER IN
                                1229  *       'BUFF', THE DEVICE DRIVER IS OPEN ON CHANNEL 'CN.DVD', AND
                                1230  *       POSITIONED JUST AFTER THE FIRST SECTOR.
                                1231  *
                                1232  *       LDD COMPUTES THE LENGTH OF THE DRIVER, READS IT ALL IN (INCLUDING
                                1233  *       RELOCATION TABLES), AND THEN RELOCATES ANY CODE IN THE SET PREAMBLE.
                                1234  *
                                1235  *       ENTRY   NONE
                                1236  *       EXIT    TO CALLER IF OK
                                1237  *               TO AN ERROR ABORT ADDRESS IF PROBLEMS
                                1238  *       USES    ALL
                                1239
                                1240
051.172  052 034 054           1241  LDD     LHLD    BUFF+PIC.LEN
051.175  001 377 000           1242          LXI     B,255
051.200  011                   1243          DAD     B               ROUND UP
051.201  104                   1244          MOV     B,H
051.202  016 000               1245          MVI     C,0             (BC) = SECTOR COUNT
                                1246
051.204  041 032 054           1247          LXI     H,BUFF
051.207  011                   1248          DAD     B               (HL) = NEW LWA FOR SET AND BUFFERS
051.210  305                   1249          PUSH    B               SAVE (BC)
051.211  377 052               1250          SCALL   .SETTP
051.213  332 212 043           1251          JC      ERROR           NO ROOM
051.216  301                   1252          POP     B
                                1253
051.217  021 032 055           1254          LXI     D,BUFF+256
000.000                         1255          ERRNZ   CN.DVD
051.222  005                   1256          DCR     B               COUNT - 1 FOR SECTOR ALREADY READ
051.223  257                   1257          XRA     A               (A) = CHANNEL NUMBER
051.224  377 004               1258          SCALL   .READ           READ IN REST OF DRIVER
051.226  332 212 043           1259          JC      ERROR           PROBLEMS
                                1260
                                1261  *       RELOCATE ALL REFERENCES WITHIN THE FIRST 512 BYTES
                                1262
051.231  052 036 054           1263          LHLD    BUFF+PIC.PTR    (HL) = ADDRESS OF RELOCATION TABLE
051.234  001 032 054           1264          LXI     B,BUFF          (BC) = RELOCATION CONSTANT
051.237  011                   1265          DAD     B               (HL) = ABS. ADDRESS OF REL. TABLE
051.240  136                   1266  LDD1    MOV     E,M
051.241  043                   1267          INX     H
051.242  126                   1268          MOV     D,M             (DE) = REL ADDRESS OF WORD TO RELOCATE
051.243  043                   1269          INX     H
051.244  172                   1270          MOV     A,D
051.245  263                   1271          ORA     E
051.246  310                   1272          RZ                      DONE
                                1273
                                1274  *       (DE) = REL ADDRESS OF WORD TO RELOCATE. MAKE SURE IS ELIGIBLE
                                1275
000.000                         1276          ERRNZ   DVD.ENT-512
051.247  172                   1277          MOV     A,D
051.250  376 002               1278          CPI     2
```

```
051.252  322 240 051  1279          JNC     LDD1            IS IN DRIVER CODE, DONT RELOCATE
051.255  353          1280          XCHG
051.256  011          1281          DAD     B
051.257  353          1282          XCHG                    (DE) = ABS ADDRESS OF WORD TO RELOCATE
051.260  032          1283          LDAX    D
051.261  201          1284          ADD     C
051.262  022          1285          STAX    D
051.263  023          1286          INX     D
051.264  032          1287          LDAX    D
051.265  210          1288          ADC     B
051.266  022          1289          STAX    D
051.267  303 240 051  1290          JMP     LDD1            RELOCATE NEXT REFERENCE


                      1292  **      WDD - WRITE DEVICE DRIVER.
                      1293  *
                      1294  *       WDD IS CALLED TO WRITE THE MODIFIED PORTION OF THE DEVICE DRIVER
                      1295  *       BACK.
                      1296  *
                      1297  *       THE DEVICE DRIVER IN 'BUFF' IS WRITTEN BACK, EXCEPT FOR THE PREAMBLE,
                      1298  *       WHICH WAS RELOCATED. THE DRIVER ITSELF WAS NOT RELOCATED, NOR WAS THE
                      1299  *       RELOCATION TABLE ITSELF MODIFIED.
                      1300  *
                      1301  *       ENTRY   NONE
                      1302  *       EXIT    NONE
                      1303  *       USES    ALL
                      1304
                      1305
051.272  001 002 000  1306  WDD     LXI     B,DVD.ENT/256   (BC) = SECTOR NUMBER OF START OF CODE
000.000               1307          ERRNZ   #DVD.ENT        MUST BE MULT OF 256
000.000               1308          ERRNZ   CN.DVD
051.275  257          1309          XRA     A               (A) = CN.DVD
051.276  377 047      1310          SCALL   .POSIT          POSITION FILE
051.300  332 212 043  1311          JC      ERROR
                      1312
                      1313  *       WRITE BACK
                      1314
051.303  052 034 054  1315          LHLD    BUFF+PIC.LEN
051.306  001 377 376  1316          LXI     B,255-DVD.ENT
051.311  011          1317          DAD     B
051.312  104          1318          MOV     B,H
051.313  016 000      1319          MVI     C,0             (BC) = LENGTH TO WRITE, ROUNDED TO SECTOR
051.315  021 032 056  1320          LXI     D,BUFF+DVD.ENT
000.000               1321          ERRNZ   CN.DVD
051.320  257          1322          XRA     A
051.321  377 005      1323          SCALL   .WRITE          WRITE DRIVER BACK
051.323  332 212 043  1324          JC      ERROR
051.326  311          1325          RET                     RETURN
```

```
                                1329  **      DCS - DELIMIT CHARACTER STRING.
                                1330  *
                                1331  *       DCS ADVANCES PAST THE NEXT CHARACTER STRING, AND LOCATES
                                1332  *       ITS STARTING AND ENDING ADDRESSES
                                1333  *
                                1334  *       ENTRY   (BC) = LINE POINTER
                                1335  *       EXIT    (BC) ADVANCED
                                1336  *               (DE) = STRING FWA
                                1337  *               (HL) = STRING LWA
                                1338  *               (A) = STRING SIZE
                                1339  *               'Z' SET IF EMPTY
                                1340  *       USES    ALL
                                1341
                                1342
051.327  315 153 052            1343  DCS     CALL    SKB             SKIP BLANKS
051.332  120                    1344          MOV     D,B
051.333  131                    1345          MOV     E,C
051.334  012                    1346  DCS1    LDAX    B
051.335  247                    1347          ANA     A
051.336  312 350 051            1348          JZ      DCS2            END OF LINE
051.341  003                    1349          INX     B
051.342  376 040                1350          CPI     ' '
051.344  302 334 051            1351          JNE     DCS1            NOT END OF STRING
051.347  013                    1352          DCX     B               POINT TO BLANK
                                1353
051.350  140                    1354  DCS2    MOV     H,B
051.351  151                    1355          MOV     L,C             SET LWA
051.352  053                    1356          DCX     H
051.353  175                    1357          MOV     A,L
051.354  223                    1358          SUB     E
051.355  074                    1359          INR     A
051.356  311                    1360          RET


                                1362  **      DNF - DECODE NUMERIC FIELD.
                                1363  *
                                1364  *       DNF CRACKS THE NEXT FIELD AS A NUMBER.
                                1365  *
                                1366  *       ENTRY   (BC) = LINE POINTER
                                1367  *               (A) = DEFAULT BASE
                                1368  *       EXIT    (HL) = VALUE
                                1369  *               (BC) UPDATED
                                1370  *               'C' CLEAR IF OK
                                1371  *               'C' SET IF ERROR
                                1372  *                (A) = ERROR CODE
                                1373  *       USES    ALL
                                1374
                                1375
051.357  365                    1376  DNF     PUSH    PSW             SAVE POSTRADIX
051.360  315 153 052            1377          CALL    SKB             SKIP BLANKS
051.363  361                    1378          POP     PSW             RESTORE POSTRADIX
051.364  140                    1379          MOV     H,B
051.365  151                    1380          MOV     L,C
051.366  315 203 053            1381          CALL    $DNV            DECODE NUMERIC VALUE
```

```
051.371  104           1382          MOV     B,H
051.372  115           1383          MOV     C,L             RESET POINTER
051.373  353           1384          XCHG
051.374  320           1385          RNC                     ALL OK
051.375  076 037       1386          MVI     A,EC.ILV        ILLEGAL VALUE
051.377  311           1387          RET


                       1389  **      SHO - SET HOS OPTIONS.
                       1390  *
                       1391  *       SHO IS CALLED TO SET AN OPTION FIELD IN THE HDOS.SYS FILE
                       1392  *       ON THE DISK.
                       1393  *
                       1394  *       THIS FILE IS FLAGGED READ ONLY, SO SHO MUST GO THROUGH THE
                       1395  *       SYSTEM DEVICE DRIVER TO DO ITS DIRTY WORK.
                       1396  *
                       1397  *       ENTRY   (A) = INDEX OF BYTE TO CHANGE
                       1398  *               (D) = MASK FOR CHANGE
                       1399  *               (E) = NEW VALUE
                       1400  *       EXIT    DONE
                       1401  *       USES    ALL
                       1402
                       1403
052.000  306 011       1404  SHO     ADI     PIC.COD+3
052.002  325           1405          PUSH    D               SAVE VALUES
052.003  365           1406          PUSH    PSW             SAVE INDEX INTO BINARY
                       1407
052.004  041 127 052   1408          LXI     H,SHOA
052.007  021 144 052   1409          LXI     D,SHOB
052.012  076 000       1410          MVI     A,CN.DVD
052.014  377 042       1411          DB      SYSCALL,.OPENR  OPEN FILE TO GET INFO
052.016  332 212 043   1412          JC      ERROR
                       1413
                       1414  *       GET FIRST BLOCK
                       1415
052.021  052 352 040   1416          LHLD    S.CFWA
000.000                1417          ERRNZ   IOCCTD-1        MUST SKIP CHANNEL FOR #0
052.024  315 211 030   1418          CALL    $HLIHL          (HL) = ADDRESS OF CHANNEL #0
000.000                1419          ERRNZ   IOC.LNK
000.000                1420          ERRNZ   CN.DVD
052.027  021 004 000   1421          LXI     D,IOC.FLG
052.032  031           1422          DAD     D               (HL) = FLAG BYTE FOR THIS CHANNEL
052.033  076 014       1423          MVI     A,FT.OW+FT.OU
052.035  266           1424          ORA     M
052.036  167           1425          MOV     M,A             KLUDGE IT TO OPEN FOR UPDATE
                       1426
052.037  076 000       1427          MVI     A,CN.DVD
052.041  001 000 001   1428          LXI     B,256
052.044  021 032 054   1429          LXI     D,BUFF
052.047  377 004       1430          DB      SYSCALL,,READ   READ IN THE FIRST SECTOR
052.051  332 212 043   1431          JC      ERROR
                       1432
                       1433  *       MODIFY THE SPECIFIED BYTE
                       1434
```

```
052.054  361           1435          POP     PSW             (A) = INDEX
052.055  321           1436          POP     D               (DE) = VALUES
052.056  041 032 054   1437          LXI     H,BUFF
052.061  315 101 030   1438          CALL    $DADA.          (HL) = ADDRESS OF  BYTE TO CHANGE
052.064  176           1439          MOV     A,M
052.065  242           1440          ANA     D
052.066  263           1441          ORA     E
052.067  167           1442          MOV     M,A             UPDATE
                       1443
                       1444  *       RE-WRITE THE SECTOR
                       1445
052.070  076 000       1446          MVI     A,CN.DVD
052.072  001 000 000   1447          LXI     B,0
052.075  377 047       1448          DB      SYSCALL,.POSIT
052.077  332 212 043   1449          JC      ERROR
                       1450
052.102  076 000       1451          MVI     A,CN.DVD
052.104  001 000 001   1452          LXI     B,256
052.107  021 032 054   1453          LXI     D,BUFF
052.112  377 005       1454          DB      SYSCALL,.WRITE
052.114  332 212 043   1455          JC      ERROR
                       1456
052.117  076 000       1457          MVI     A,CN.DVD
052.121  377 046       1458          DB      SYSCALL,.CLOSE  CLOSE FILE
052.123  332 212 043   1459          JC      ERROR
052.126  311           1460          RET
                       1461
052.127  123 131 060   1462  SHOA    DB      'SY0:HDOS.SYS',0
052.144  000 000 000   1463  SHOB    DB      0,0,0,0,0,0



                       1465  **      SKB - SKIP BLANKS.
                       1466  *
                       1467  *       SKB SKIPS BLANKS IN THE LINE.
                       1468  *
                       1469  *       ENTRY   (BC) = LINE POINTER
                       1470  *       EXIT    (BC) UPDATE
                       1471  *               'Z' SET IFF END OF LINE
                       1472  *       USES    A,F,B,C
                       1473
                       1474
052.152  003           1475  SKB1    INX     B
052.153  012           1476  SKB     LDAX    B
052.154  376 040       1477          CPI     ' '
052.156  312 152 052   1478          JE      SKB1            IF BLANK
052.161  247           1479          ANA     A
052.162  311           1480          RET
```

```
                                1483
                                1484
052.163                         1485            XTEXT   FST


                                1487X **        $FST - FIND IN SERIAL TABLE
                                1488X *
                                1489X *         $FST SEARCHES A SERIAL TABLE FOR
                                1490X *         A SPECIFIC KEY
                                1491X *
                                1492X *         ENTRY   (HL) = ADDR. OF TABLE
                                1493X *                 (DE) = ADDR. OF SEARCH KEY
                                1494X *         EXIT    (DE) = UNCHANGED
                                1495X *                 'Z' CLEARED IF NO MATCH FOUND
                                1496X *                   (HL) = ADDR. OF NEXT AVAILABLE BYTE
                                1497X *                 'Z' SET IF MATCH FOUND
                                1498X *                   (HL) = ADDR. OF FIRST DATA BYTE
                                1499X *         USES    A,F,H,L
                                1500X
                                1501X
                                1502X
052.163  305                   1503X $FST      PUSH    B               SAVE REGISTERS
052.164  325                   1504X           PUSH    D
                                1505X
                                1506X *         SAVE TABLE LIMIT AND DATA BYTE COUNT
                                1507X
052.165  136                   1508X           MOV     E,M             GET AND SAVE TABLE LIMIT
052.166  043                   1509X           INX     H               (HL) = 2ND BYTE OF SIZE
052.167  126                   1510X           MOV     D,M
052.170  353                   1511X           XCHG
052.171  042 263 052           1512X           SHLD    $FST.L          SAVE MAX. TABLE SIZE
                                1513X
052.174  353                   1514X           XCHG
052.175  043                   1515X           INX     H               (HL) = # OF BYTES OF DATA/ENTRY
052.176  176                   1516X           MOV     A,M
052.177  062 265 052           1517X           STA     $FST.C
052.202  043                   1518X           INX     H               (HL) = BEGINNING OF DATA
052.203  321                   1519X FST1      POP     D               RESTORE ADDR. TO SEARCH KEY
052.204  325                   1520X           PUSH    D
                                1521X
                                1522X *         CHECK FOR END OF DATA
                                1523X
052.205  176                   1524X           MOV     A,M
052.206  267                   1525X           ORA     A               AT END OF DATA? ((A) = 0)
052.207  302 216 052           1526X           JNZ     FST2            NO, START MATCHING
052.212  074                   1527X           INR     A               CLEAR 'Z'
052.213  321                   1528X           POP     D
052.214  301                   1529X           POP     B               RESTORE REGISTERS
052.215  311                   1530X           RET
                                1531X
052.216  032                   1532X FST2      LDAX    D               (A) = KEY CHAR.
052.217  276                   1533X           CMP     M               COMPARE TO TABLE
052.220  302 234 052           1534X           JNE     FST3            NO MATCH, FIND NEXT KEY
052.223  247                   1535X           ANA     A               END OF KEY?
```

```
052.224  372 256 052  1536X          JM      FST4            YES, SET UP FOR EXIT
052.227  043         1537X          INX     H
052.230  023         1538X          INX     D
052.231  303 216 052  1539X          JMP     FST2
                      1540X
052.234  176         1541X FST3     MOV     A,M             SEARCH FOR END OF KEY
052.235  247         1542X          ANA     A               TEST CHAR.
052.236  043         1543X          INX     H
052.237  362 234 052  1544X          JP      FST3            CONTINUE SEARCH
052.242  072 265 052  1545X          LDA     $FST.C          (A) = # OF BYTES OF DATA/ENTRY
052.245  205         1546X          ADD     L
052.246  157         1547X          MOV     L,A
052.247  076 000      1548X          MVI     A,0
052.251  214         1549X          ADC     H
052.252  147         1550X          MOV     H,A             (HL) = HEAD OF NEXT KEY
052.253  303 203 052  1551X          JMP     FST1            COMPARE NEXT KEY
                      1552X
052.256  257         1553X FST4     XRA     A               SET 'Z' FOR EXIT
052.257  043         1554X          INX     H               (HL) = FIRST BYTE OF DATA
052.260  321         1555X          POP     D               RESTORE REGISTERS
052.261  301         1556X          POP     B
052.262  311         1557X          RET                     EXIT
                      1558X
                      1559X
052.263               1560X $FST.L   DS      2
052.265               1561X $FST.C   DS      1
052.266               1562           XTEXT   LBD


                      1564X ***      $LBD - LOOKUP BAUDRATE DIVISOR.
                      1565X *
                      1566X *        $LBD TRANSLATES A BAUD RATE INTO THE PROPER DIVISOR FOR THE
                      1567X *        8250 CHIPS ON THE H8-4 SERIAL CARD.
                      1568X *
                      1569X *        NOTE THAT $LBD DOES NOT ACTUALLY COMPUTE THE TRANSFORMATION, BUT
                      1570X *        SIMPLY LOOKS UP THE VALUE IN A TABLE. THIS IS DONE TO DETECT TYPOS
                      1571X *        IN THE USER SUPPLIED BAUD RATE.
                      1572X *
                      1573X *        ENTRY   (DE) = BAUD RATE (AS A BINARY NUMBER)
                      1574X *        EXIT    'Z' SET IF VALID BAUD RATE
                      1575X *                (HL) = DIVISOR
                      1576X *                'Z' CLEAR IF NOT VALID BAUD RATE
                      1577X *        USES    A,F,D,E,H,L
                      1578X
                      1579X
052.266  172         1580X $LBD     MOV     A,D
052.267  263         1581X          ORA     E               (A) = CODE VALUE
052.270  041 303 052  1582X          LXI     H,LBDA          (HL) = LOOKUP TABLE
052.273  315 157 053  1583X          CALL    $WTBLS          WORD TABLE LOOKUP
052.276  176         1584X          MOV     A,M
052.277  043         1585X          INX     H
052.300  146         1586X          MOV     H,M
052.301  157         1587X          MOV     L,A
052.302  311         1588X          RET                     RETURN WITH CONDITION CODE FROM $WTBLS
```

```
                                1589X
                                1590X
                                1591X **      BAUD RATE VS 8250 DIVISOR TABLE.
                                1592X *
                                1593X *       KEY IS BAUD RATE SQUEEZED INTO ONE BYTE
                                1594X
     052,303                    1595X LBDA    DS      0
     052,303  151               1596X         DB      2400/256!#2400
     052,304  060 000           1597X         DW      000060A
     052,306  245               1598X         DB      9600/256!#9600
     052,307  014 000           1599X         DW      000014A
     052,311  132               1600X         DB      600/256!#600
     052,312  300 000           1601X         DW      000300A
     052,314  113               1602X         DB      19200/256!#19200
     052,315  006 000           1603X         DW      000006A
     052,317  322               1604X         DB      4800/256!#4800
     052,320  030 000           1605X         DW      000030A
     052,322  264               1606X         DB      1200/256!#1200
     052,323  140 000           1607X         DW      000140A
     052,325  055               1608X         DB      300/256!#300
     052,326  200 001           1609X         DW      001200A
     052,330  074               1610X         DB      7200/256!#7200
     052,331  020 000           1611X         DW      000020A
     052,333  036               1612X         DB      3600/256!#3600
     052,334  040 000           1613X         DW      000040A
     052,336  017               1614X         DB      1800/256!#1800
     052,337  100 000           1615X         DW      000100A
     052,341  156               1616X         DB      110/256!#110
     052,342  027 204           1617X         DW      204027A
     052,344  226               1618X         DB      150/256!#150
     052,345  000 003           1619X         DW      003000A
     052,347  000               1620X         DB      0               END OF TABLE
     052,350                    1621          XTEXT   SOP
```

```
                                1623X **      SOP - SET OPTIONS
                                1624X *
                                1625X *       PROCESS OPTION SET VIA OPTION TABLE, AND PROCESSOR TABLE.
                                1626X *
                                1627X *       OPTION TABLE FORMAT:  P(1)=PROCESSOR INDEX, P(2,...,N)=PARAMETERS
                                1628X *
                                1629X *               DW      <END OF TABLE>
                                1630X *               DB      N
                                1631X *               DB      '<SEARCH STRIN','G'+2000,P,P(1),...,P(N)
                                1632X *               .       .                       .
                                1633X *               .       .                       .
                                1634X *       <EOT>   DB      0                       END OF TABLE
                                1635X *
                                1636X *       PROCESSOR TABLE FORMAT:
                                1637X *
                                1638X *               DW      PROC,0
                                1639X *               DW      PROC,1
                                1640X *               .       .
                                1641X *               .       .
                                1642X *               DW      PROC,N
                                1643X *
                                1644X *
                                1645X *
                                1646X *       ENTRY:  (BC)    = LINE POINTER
                                1647X *               (DE)    = JUMP TABLE ADDRESS
                                1648X *               (HL)    = OPTION TABLE ADDRESS
                                1649X *
                                1650X *       EXIT:   (RET)   = TO PROCESSOR IF NO ERROR
                                1651X *                       = 'C' SET IF ERROR
                                1652X *                         (A) = ERROR CODE
                                1653X *               (BC)    = LINE POINTER UPDATED
                                1654X *               (HL)    = ADDRESS OF NEXT AVAILABLE DATA BYTE
                                1655X *
                                1656X *       USES:   ALL
                                1657X
                                1658X
     052.350  325               1659X SOP     PUSH    D
     052.351  345               1660X         PUSH    H
     052.352  315 327 051       1661X         CALL    DCS             (DE) = FWA, (HL) = LWA
     052.355  312 011 053       1662X         JZ      SOP1
     052.360  176               1663X         MOV     A,M
     052.361  366 200           1664X         ORI     200Q
     052.363  167               1665X         MOV     M,A
     052.364  341               1666X         POP     H               (HL) = OPT. TABLE ADDR.
     052.365  315 163 052       1667X         CALL    $FST
     052.370  302 012 053       1668X         JNZ     SOP2
     052.373  353               1669X         XCHG                    (DE) = ADDR. OF FIRST DATA BYTE
     052.374  341               1670X         POP     H               (HL) = JUMP TABLE ADDR.
     052.375  032               1671X         LDAX    D               (A)  = PROCESSOR INDEX
     052.376  007               1672X         RLC                     X 2
     052.377  023               1673X         INX     D
     053.000  315 101 030       1674X         CALL    $DADA.
     053.003  315 211 030       1675X         CALL    $HLIHL          (HL) = PROCESSOR ADDRESS
     053.006  345               1676X         PUSH    H
     053.007  353               1677X         XCHG                    (HL) = NEXT DATA BYTE ADDRESS
     053.010  311               1678X         RET                     ENTER PROCESSOR
```

```
                                1679X
053.011  341                   1680X SOP1    POP     H
053.012  321                   1681X SOP2    POP     D
053.013  076 040               1682X         MVI     A,EC.ILO        ILLEGAL OPTION SPECIFICATION
053.015  067                   1683X         STC
053.016  311                   1684X         RET
053.017                        1685          XTEXT   PBF


                                1687X **      PBF - PROCESS BYTE FLAG
                                1688X *
                                1689X *       PROCESS BYTE FLAG OPTIONS, THE FORMAT FOR TABLE ENTRIES IS:
                                1690X *
                                1691X *             <MASK>,<VALUE>,<LOW ADDR.>,<HIGH ADDR.>
                                1692X *
                                1693X *
                                1694X *       ENTRY:  (HL)    = ADDRESS OF TABLE VECTOR
                                1695X *
                                1696X *       EXIT:   (RET)   = 'C' CLEAR IF OK
                                1697X *                       = 'C' SET IF ERROR
                                1698X *                          (A) = ERROR CODE
                                1699X *
                                1700X *       USES:   ALL
                                1701X *
                                1702X
053.017  176                   1703X PBF     MOV     A,M             (A) = MASK
053.020  043                   1704X         INX     H
053.021  365                   1705X         PUSH    PSW
053.022  246                   1706X         ANA     M               MASK UNUSED BITS OUT OF VALUE
053.023  127                   1707X         MOV     D,A             (D) = VALUE
053.024  043                   1708X         INX     H
053.025  315 211 030           1709X         CALL    $HLIHL          (HL) = ADDRESS TO STORE BYTE
053.030  361                   1710X         POP     PSW
053.031  057                   1711X         CMA
053.032  246                   1712X         ANA     M               MASK OUT PREVIOUS VALUE
053.033  262                   1713X         ORA     D               SET NEW FLAGS
053.034  167                   1714X         MOV     M,A             PATCH IT
053.035  311                   1715X         RET
053.036                        1716          XTEXT   PBV


                                1718X **      PBV - PROCESS BYTE VALUES
                                1719X *
                                1720X *       PROCESS BYTE VALUE OPTIONS.  THE FORMAT FOR TABLE ENTRIES
                                1721X *       IS:
                                1722X *
                                1723X *             <DEFAULT RADIX>,<MIN.>,<MAX.>,<LOW. ADDR.>,<HIGH ADDR.>
                                1724X *
                                1725X *
                                1726X *       ENTRY:  (BC)    = NEXT TEXT CHARACTER ADDRESS
                                1727X *               (HL)    = TABLE VECTOR ADDRESS
                                1728X *
```

```
                                1729X *       EXIT:   (BC)    = UPDATED
                                1730X *               'C' CLEAR IF OK
                                1731X *               'C' SET IF ERROR
                                1732X *                (A) = ERROR CODE
                                1733X *
                                1734X *       USES:   ALL
                                1735X *
                                1736X
053.036  176                    1737X PBV     MOV     A,M             (A)  = DEFAULT RADIX
053.037  043                    1738X         INX     H
053.040  345                    1739X         PUSH    H               SAVE VECTOR ADDRESS
053.041  315 357 051            1740X         CALL    DNF             (HL) = VALUE
053.044  332 107 053            1741X         JC      PBV2
053.047  174                    1742X         MOV     A,H
053.050  247                    1743X         ANA     A
053.051  302 107 053            1744X         JNZ     PBV2
053.054  321                    1745X         POP     D
053.055  353                    1746X         XCHG                    (HL) = NEXT TABLE ADDRESS, (E) = VALUE
053.056  305                    1747X         PUSH    B               SAVE TEXT POINTER
053.057  106                    1748X         MOV     B,M             (B)  = MIN.
053.060  043                    1749X         INX     H
053.061  116                    1750X         MOV     C,M             (C)  = MAX.
053.062  043                    1751X         INX     H
053.063  315 211 030            1752X         CALL    $HLIHL          (HL) = BYTE  VALUE ADDRESS
053.066  173                    1753X         MOV     A,E
053.067  270                    1754X         CMP     B
053.070  332 111 053            1755X         JC      PBV3            (A) < MIN.
053.073  014                    1756X         INR     C
053.074  312 103 053            1757X         JZ      PBV1            IGNORE COMPARE IF C=377Q
053.077  271                    1758X         CMP     C
053.100  322 111 053            1759X         JNC     PBV3            (A) >= MAX. + 1
053.103  301                    1760X PBV1    POP     B               RESTORE TEXT ADDR.
053.104  167                    1761X         MOV     M,A             PATCH IT
053.105  257                    1762X         XRA     A               CLEAR CARRY
053.106  311                    1763X         RET
                                1764X
053.107  341                    1765X PBV2    POP     H
053.110  305                    1766X         PUSH    B
053.111  301                    1767X PBV3    POP     B
053.112  076 037                1768X         MVI     A,EC.ILV        ILLEGAL VALUE SPECIFICATION
053.114  067                    1769X         STC
053.115  311                    1770X         RET
053.116                         1771          XTEXT   TJMP


                                1773X **      $TJMP - TABLE JUMP.
                                1774X *
                                1775X *       USAGE
                                1776X *
                                1777X *       CALL      $TJMP           (A) = INDEX
                                1778X *       DW        ADDR1
                                1779X *       .           .
                                1780X *       .           .
                                1781X *       .           .
```

```
                        1782X *       DW        ADDRN
                        1783X *
                        1784X *       ENTRY     (A) = INDEX
                        1785X *       EXIT      TO PROCESSOR
                        1786X *                 (A) = INDEX*2
                        1787X *       USES      NONE.
                        1788X
                        1789X
    031.061             1790X $TJMP   EQU       31061A          IN H17 ROM, (A) = INDEX*2
                        1791X
    031.062             1792X $TJMP.  EQU       31062A          IN H17 ROM
    053.116             1793          XTEXT     MU86


                        1795X **      $MU86 - MULTIPLY 8X16 UNSIGNED.
                        1796X *
                        1797X *       $MU86 MULTIPLIES A 16 BIT VALUE BY A 8
                        1798X *       BIT VALUE.
                        1799X *
                        1800X *       ENTRY   (A) = MULTIPLIER
                        1801X *               (DE) = MULTIPLICAND
                        1802X *       EXIT    (HL) = RESULT
                        1803X *               'Z' SET IF NOT OVERFLOW
                        1804X *       USES    A,F,H,L
                        1805X
                        1806X
    031.007             1807X $MU86   EQU       31007A          IN H17 ROM
    053.116             1808          XTEXT     DADA2


                        1810X **      $DADA. - ADD (0,A) TO (H,L)
                        1811X *
                        1812X *       ENTRY   NONE
                        1813X *       EXIT    (HL) = (HL) + (0A)
                        1814X *       USES    A,F,H,L
                        1815X
                        1816X
    030.101             1817X $DADA.  EQU       30101A          IN H17 ROM
    053.116             1818          XTEXT     HLIHL


                        1820X **      $HLIHL - LOAD HL INDIRECT THROUGH HL.
                        1821X *
                        1822X *       (HL) = ((HL))
                        1823X *
                        1824X *       ENTRY   NONE
                        1825X *       EXIT    NONE
                        1826X *       USES    A,H,L
                        1827X
    030.211             1828X $HLIHL  EQU       30211A          IN H17 ROM
```

```
053.116                 1829          XTEXT   CVD


                        1831X **      $CVD - CHECK FOR VALID DIGIT.
                        1832X *
                        1833X *       CVD EXAMINES A DIGIT TO SEE IF IT IS A VALID DECIMAL DIGIT.
                        1834X *
                        1835X *       ENTRY   (HL) = ADDRESS OF CHARACTER
                        1836X *       EXIT    'C' SET IF ILLEGAL
                        1837X *                (A) = VALUE
                        1838X *       USES    A,F
                        1839X
                        1840X
053.116  176           1841X $CVD    MOV     A,M             (A) = CHARACTER
053.117  326 060       1842X $CVD.   SUI     '0'
053.121  330           1843X         RC                      ILLEGAL
053.122  376 012       1844X         CPI     9+1
053.124  077           1845X         CMC
053.125  311           1846X         RET
053.126                1847          XTEXT   TBLS


                        1849X **      $TBLS - TABLE SEARCH
                        1850X *
                        1851X *       TABLE FORMAT
                        1852X *
                        1853X *       DB      KEY1,VAL1,
                        1854X *       .       .
                        1855X *       .       .
                        1856X *       DB      KEYN,VALN
                        1857X *       DB      0
                        1858X *
                        1859X *       ENTRY   (A) = PATTERN
                        1860X *               (H,L) = TABLE FWA
                        1861X *       EXIT    (A) = PATTERN IF FOUND
                        1862X *               'Z' SET IF FOUND
                        1863X *               'Z' CLEAR IF NOT FOUND OR PATTERN=0          /78.10.GC/
                        1864X *       USES    A,F,H,L
                        1865X
                        1866X
053.126  305           1867X $TBLS   PUSH    B
053.127  376 000       1868X         CPI     0                                            /78.10.GC/
053.131  312 153 053   1869X         JZ      TBL2                                         /78.10.GC/
053.134  107           1870X         MOV     B,A
053.135  176           1871X TBL1    MOV     A,M             (A) = CHARACTER
053.136  043           1872X         INX     H
053.137  270           1873X         CMP     B
053.140  312 155 053   1874X         JZ      TBL3            IF MATCH
053.143  247           1875X         ANA     A
053.144  043           1876X         INX     H               SKIP PAST
053.145  302 135 053   1877X         JNZ     TBL1            IF NOT END OF TABLE
053.150  053           1878X         DCX     H
```

```
053.151  053          1879X          DCX     H
053.152  257          1880X          XRA     A               SET TO ZERO FOR OLD USERS       /78.10.GC/
053.153  376 001      1881X TBL2     CPI     1               CLEAR ZERO                      /78.10.GC/
                      1882X
                      1883X *        DONE
                      1884X
053.155  301          1885X TBL3     POP     B
053.156  311          1886X          RET
053.157               1887           XTEXT   WTBLS


                      1889X **       $WTBLS - TABLE SEARCH
                      1890X *
                      1891X *        $WTBLS LOOKS UP WORD VALUES IN A TABLE, USING A ONE-BYTE
                      1892X *        KEY.
                      1893X *
                      1894X *        TABLE FORMAT
                      1895X *
                      1896X *        DB      KEY1
                      1897X *        DW      VAL1
                      1898X *        .       .
                      1899X *        .       .
                      1900X *        DB      KEYN
                      1901X *        DW      VALN
                      1902X *        DB      0
                      1903X *
                      1904X *        ENTRY   (A) = PATTERN
                      1905X *                (H,L) = TABLE FWA
                      1906X *        EXIT    (A) = PATTERN IF FOUND
                      1907X *                'Z' SET IF FOUND
                      1908X *        USES    A,F,H,L
                      1909X
                      1910X
053.157  305          1911X $WTBLS   PUSH    B
053.160  107          1912X          MOV     B,A
053.161  176          1913X $WTBL1   MOV     A,M             (A) = CHARACTER
053.162  043          1914X          INX     H
053.163  270          1915X          CMP     B
053.164  312 201 053  1916X          JZ      $WTBL2          IF MATC
053.167  247          1917X          ANA     A
053.170  043          1918X          INX     H
053.171  043          1919X          INX     H               SKIP PAST
053.172  302 161 053  1920X          JNZ     $WTBL1          IF NOT END OF TABLE
053.175  053          1921X          DCX     H
053.176  053          1922X          DCX     H
053.177  053          1923X          DCX     H
053.200  264          1924X          ORA     H               CLEAR 'Z'
                      1925X
                      1926X *        DONE
                      1927X
053.201  301          1928X $WTBL2   POP     B
053.202  311          1929X          RET
053.203               1930           XTEXT   DNV
```

```
                                1932X **      $DNV - DECODE NUMERIC VALUE.
                                1933X *
                                1934X *       $DNV DECODES A NUMERIC VALUE (IN THE FORM OF AN ASCII STRING)
                                1935X *       INTO A BINARY NUMBER. THE MAXIMUM MAGNITUDE IS
                                1936X *       65535D.
                                1937X *
                                1938X *       THE NUMBER MAY CONTAIN A POSTRADIX OF 'B' (BINARY)
                                1939X *       'O' OR 'Q' (OCTAL) OR 'D' (DECIMAL)
                                1940X *
                                1941X *       ENTRY   (HL) = ADDRESS OF FIRST BYTE OF NUMBER
                                1942X *               (A) = DEFAULT BASE (2 FOR BINARY, 10 FOR DECIMAL, ETC.)
                                1943X *       EXIT    'C' CLEAR IF OK
                                1944X *                (HL) ADVANCED PAST NUMBER (AND POSTRADIX)
                                1945X *                (DE) = VALUE
                                1946X *                'C' SET IF ERROR
                                1947X *       USES    ALL
                                1948X
                                1949X
053.203  062 320 053            1950X $DNV    STA     $DNVA           SET DEFAULT BASE
053.206  104                    1951X         MOV     B,H
053.207  115                    1952X         MOV     C,L             (BC) = TEXT ADDRESS
                                1953X
                                1954X *       SCAN FOR POSTRADIX
                                1955X
053.210  176                    1956X $DNV1   MOV     A,M
053.211  315 117 053            1957X         CALL    $CVD.           CHECK FOR VALID DECIMAL DIGIT
053.214  043                    1958X         INX     H
053.215  322 210 053            1959X         JNC     $DNV1           MORE TO GO
053.220  053                    1960X         DCX     H               REMOVE EXTRA INCREMENT
053.221  171                    1961X         MOV     A,C
053.222  275                    1962X         CMP     L               SEE IF THERE WERE ANY NUMBERS
053.223  067                    1963X         STC                     ASSUME NOT
053.224  310                    1964X         RE                      ERROR
                                1965X
                                1966X *       OUT OF NUMBERS. SEE IF POSTRADIX FOLLOWS
                                1967X
053.225  176                    1968X         MOV     A,M             (A) = PROPOSED POSTRADIX
053.226  345                    1969X         PUSH    H               SAVE END ADDRESS
053.227  041 321 053            1970X         LXI     H,$DNVB
053.232  247                    1971X         ANA     A
053.233  312 253 053            1972X         JZ      $DNV2           NO POSTRADIX
053.236  315 126 053            1973X         CALL    $TBLS
053.241  176                    1974X         MOV     A,M
053.242  302 253 053            1975X         JNE     $DNV2           NOT POSTRADIX
053.245  341                    1976X         POP     H
053.246  043                    1977X         INX     H               SKIP POSTRADIX
053.247  345                    1978X         PUSH    H
053.250  062 320 053            1979X         STA     $DNVA           SET NEW POSTRADIX
053.253  021 000 000            1980X $DNV2   LXI     D,0             (DE) = ACCUMULATOR
                                1981X
                                1982X *       BUILD NUMBER
                                1983X
053.256  072 320 053            1984X $DNV3   LDA     $DNVA           (A) = BASE
053.261  365                    1985X         PUSH    PSW             SAVE BASE
053.262  315 007 031            1986X         CALL    $MU86           MULTIPLY
053.265  321                    1987X         POP     D               (D) = BASE
```

```
053.266  332 316 053  1988X          JC      $DNV4           OVERFLOW
053.271  012          1989X          LDAX    B               (A) = DIGIT
053.272  326 060      1990X          SUI     '0'
053.274  003          1991X          INX     B
053.275  272          1992X          CMP     D               COMPARE TO BASE
053.276  077          1993X          CMC
053.277  332 316 053  1994X          JC      $DNV4           TOO LARGE A DIGIT
053.302  315 101 030  1995X          CALL    $DADA.          ADD TO VALUE
053.305  353          1996X          XCHG                    (DE) = VALUE
053.306  012          1997X          LDAX    B
053.307  315 117 053  1998X          CALL    $CVD.
053.312  322 256 053  1999X          JNC     $DNV3           MORE TO GO
053.315  247          2000X          ANA     A               CLEAR CARRY
053.316  341          2001X $DNV4    POP     H               RESTORE POINTER
053.317  311          2002X          RET                     EXIT
                      2003X
053.320  000          2004X $DNVA    DB      0               DEFAULT BASE
053.321  102 002      2005X $DNVB    DB      'B',2           POSTRADIX TABLE
053.323  117 010      2006X          DB      'O',8
053.325  121 010      2007X          DB      'Q',8
053.327  104 012      2008X          DB      'D',10
053.331  000          2009X          DB      0
053.332               2010           XTEXT   TYPTX

                      2012X **       $TYPTX - TYPE TEXT.
                      2013X *
                      2014X *        $TYPTX IS CALLED TO TYPE A BLOCK OF TEXT ON THE SYSTEM CONSOLE.
                      2015X *
                      2016X *        IMBEDDED ZERO BYTES INDICATE A CARRIAGE RETURN LINE FEED,
                      2017X *        A BYTE WITH THE 200Q BIT SET IS THE LAST BYTE IN THE MESSAGE.
                      2018X *
                      2019X *        ENTRY   (RET) = TEXT
                      2020X *        EXIT    TO (RET+LENGTH)
                      2021X *        USES    A,F
                      2022X
                      2023X
031.136               2024X $TYPTX   EQU     31136A          IN H17 ROM
                      2025X
031.144               2026X $TYPTX.  EQU     31144A          IN H17 ROM
```

```
                        2029
      053.332           2030  PATCH   DS      64              PATCH AREA
                        2031
      054.032           2032  MEML    EQU     *               LOAD MEMORY LENGTH
                        2033
                        2034  **      WORK BUFFER.
                        2035  *
                        2036  *       'BUFF' IS A WORK BUFFER, AT LEAST 256 BYTES LONG.
                        2037  *       'BUFF' MAY BE EXTENDED BY ROUTINES BY ISSUING THE '.SETTP' REQUEST.
                        2038  *       THUS, NO DATA AREAS MAY FOLLOW 'BUFF'
                        2039
                        2040
      054.032           2041  BUFF    DS      256             WORK BUFFER
      055.032           2042  RMEML   EQU     *               INITIAL RUNNING LIMIT
                        2043
      055.032           2044          END                     (MUST IMMEDIATELY FOLLOW *BUFF* )
ASSEMBLY COMPLETE
  2044 STATEMENTS
     0 ERRORS DETECTED
12144 BYTES FREE
```

```
$CVD    053116  1841L
$CVD.   053117  1842L  1957  1998
$DADA.  030101  1438   1674  1817E  1995
$DNV    053203  1381   1950L
$DNV1   053210  1956L  1959
$DNV2   053253  1972   1975  1980L
$DNV3   053256  1984L  1999
$DNV4   053316  1988   1994  2001L
$DNVA   053320  1950   1979  1984   2004L
$DNVB   053321  1970   2005L
$FST    052163   654    712  1503L  1667
$FST.C  052265  1517   1545  1561L
$FST.L  052263  1512   1560L
$HLIHL  030211   955   1418  1675   1709   1752   1828E
$LBD    052266   669   1580L
$MU86   031007  1807E  1986
$TBLS   053126   659   1867L  1973
$TJMP   031061   715   1790E
$TJMP.  031062  1792E
$TYPTX  031136   746    753   760    768    836    973    999   1034   1097   1188   2024E
$TYPTX. 031144  2026E
$WTBL1  053161  1913L  1920
$WTBL2  053201  1916   1928L
$WTBLS  053157   664   1583  1911L
.       050162  1065S  1067
.CHFLG  000060   134L
.CLEAR  000055   131L
.CLEARA 000056   132L
.CLOSE  000046   124L  1214  1458
.CLRCO  000007   108L
.CONSL  000006   107L
.CTLC   000041   119L
.DECODE 000053   129L
.DELET  000050   126L
.DISMT  000061   135L
.DMNMS  000203   146L
.DMOUN  000201   144L
.ERROR  000057   133L   772
.EXIT   000000   101L   782
.LINK   000040   118L
.LOADD  000062   136L
.LOADO  000010   109L
.MONMS  000202   145L
.MOUNT  000200   143L
.NAME   000054   130L
.OPENC  000045   123L
.OPENR  000042   120L  1411
.OPENU  000044   122L  1173
.OPENW  000043   121L
.POSIT  000047   125L  1310  1448
.PRINT  000003   104L
.READ   000004   105L  1182  1258  1430
.RENAM  000051   127L
.RESET  000204   147L
.SCIN   000001   102L
.SCOUT  000002   103L
.SETTP  000052   128L   694  1250
.SYSRES 000012   111L
```

```
.VERS    000011    110L
.WRITE   000005    106L   1323   1454
ABS.COD  000010    553L    586
ABS.ENT  000006    551L
ABS.ID   000000    547L
ABS.LDA  000002    549L
ABS.LEN  000004    550L
AIO.CGN  041047    462L
AIO.CHA  041116    477L
AIO.CNT  041111    473L
AIO.CSI  041050    463L
AIO.DDA  041041    458E
AIO.DES  041055    467L
AIO.DEV  041057    468L
AIO.DIR  041062    471L
AIO.DTA  041053    466L
AIO.EOF  041113    475L
AIO.EOM  041112    474L
AIO.FLG  041043    459L
AIO.GRT  041044    460L
AIO.LGN  041051    464L
AIO.LSI  041052    465L
AIO.SPG  041046    461L
AIO.TFP  041114    476L
AIO.UNI  041061    469L
AIO.VEC  041040    457L
BELL     000007     66E    747    754    761    769   1099   1189
BKSP     000010     68E
BOOT.F   000001    437E
BUFF     054032   1179   1185   1194   1206   1241   1247   1254   1263   1264   1315   1320   1429
                  1437   1453   2041L
C.STX    000002     70E
C.SYN    000026     69E
CDB.H84  000001    380E
CDB.H85  000000    379E
CN.DVD   000000     53E   1171   1180   1212   1255   1308   1321   1410   1420   1427   1446   1451
                  1457
CNA.     042207    649L
CO.FLG   000001    357E
CR       000015     62E
CS.FLG   000200    358E
CSL.CHR  000001    335E
CSL.ECH  000200    333E
CSL.WRP  000002    334E
CTLA     000001     77E
CTLB     000002     78E
CTLC     000003     79E
CTLD     000004     80E
CTLO     000017     81E
CTLP     000020     82E
CTLQ     000021     83E
CTLS     000023     84E
CTLZ     000032     85E
CTP.2SB  000010    343E    863    864    864
CTP.BKM  000002    344E    861    861    868
CTP.BKS  000200    340E    858    858    865
CTP.MLI  000040    341E    859    859    866
CTP.MLO  000020    342E    860    860    867
```

```
CTP.TAB 000001  345E  862  862  869
CTYI    000000  858   859  860  861  862  863  864  865  866  867  868  869
                878E
D.CON   040110  272L  291
D.ERTS  040126  307L
D.LPSA  040116  298L
D.MAIA  040115  297L  827
D.RAM   040240  275L
D.SDPA  040117  299L
D.SDPB  040120  300L
D.STSA  040121  301L
D.STSB  040122  302L
D.VEC   040130  274L
D.WHDA  040123  303L
D.WNHA  040124  304L
D.WRITA 040112  294L
D.WRITB 040113  295L
D.WRITC 040114  296L
D.WSCA  040125  305L
D.XITA  040110  293L
DC.ABT  000007  511L
DC.CLO  000006  510L
DC.LOD  000011  513L
DC.MAX  000012  514L
DC.MOU  000010  512L
DC.OPR  000003  507L
DC.OPU  000005  509L
DC.OPW  000004  508L
DC.REA  000000  504L
DC.RER  000002  506L
DC.WRI  000001  505L
DCS     051327  630   706  1343L 1661
DCS.    042204  630L
DCS1    051334  1346L 1351
DCS2    051350  1348  1354L
DF.CLR  000376  156E
DF.EMP  000377  155E
DIR.ALD 000025  171L
DIR.CLU 000015  164L
DIR.CRD 000023  170L
DIR.EXT 000010  159L
DIR.FGN 000020  167L
DIR.FLG 000016  165L
DIR.LGN 000021  168L
DIR.LSI 000022  169L
DIR.NAM 000000  158L
DIR.PRO 000013  160L
DIR.VER 000014  161L
DIRELEN 000027  173E  253  471
DIRIDL  000015  162E
DNF     051357  649   818  911  931  940  1376L 1740
DVD.CAP 000007  575L
DVD.DVD 000006  574L  1185
DVD.ENT 002000  583E  1276 1306 1307 1316 1320
DVD.MNU 000011  577L
DVD.MUM 000010  576L
DVD.SET 000022  579L  1194
DVD.STE 000053  581E  1206
```

```
DVD.UFL 000012    578L
DVDFLV  000307    570E   1186   1195
EC.CNA  000004    183L
EC.DDA  000027    202L
EC.DIF  000017    194L
EC.DIW  000035    208L
EC.DNI  000045    216L
EC.DNR  000046    217L
EC.DNS  000005    184L
EC.DSC  000047    218L
EC.EOF  000001    180L
EC.EOM  000002    181L
EC.FAO  000031    204L
EC.FAP  000026    201L
EC.FL   000030    203L
EC.FNF  000014    191L
EC.FNO  000011    188L
EC.FNR  000034    207L
EC.FOD  000043    214L
EC.FUC  000013    190L
EC.ICN  000016    193L
EC.IDN  000006    185L
EC.IFC  000020    195L
EC.IFN  000007    186L
EC.ILC  000003    182L
EC.ILO  000040    211L   1682
EC.ILR  000012    189L
EC.ILV  000037    210L   1386   1768
EC.IOI  000052    221L
EC.IS   000032    205L
EC.NCV  000050    219L
EC.NEM  000021    196L
EC.NOS  000051    220L
EC.NPM  000044    215L
EC.NRD  000010    187L
EC.NVM  000042    213L
EC.OTL  000053    222L
EC.RF   000022    197L
EC.UNA  000036    209L
EC.UND  000015    192L
EC.UUN  000033    206L
EC.VFM  000041    212L
EC.WF   000023    198L
EC.WP   000025    200L
EC.WPV  000024    199L
ENL     000212     75E    747    754    761    771    840    990   1023   1037   1099   1189
ENTRY   042333    590    692E
ERR.IDS 043061    707    746L   1140   1145   1153   1155   1165
ERR.ILO 043126    753L   1196
ERR.IOV 043155    760L   819    822    826    912    915    918    932    935    937    941    944
ERROR   043212    767L   792    852   1050   1174   1183   1207   1215   1251   1259   1311   1324
                  1412   1431   1449   1455   1459
ESC     000033     73E
EXIT    043240    700    748    755    762    773    781L   1190
FF      000014     76E
FILI    000002    871    884E
FLT.BOP 000011    528L
FLT.CBD 000007    527L
```

```
FLT.CDB 000006      526L
FLT.CFC 000002      522L      961
FLT.CRF 000003      523L      966
FLT.CTY 000000      520L      902
FLT.CWI 000001      521L      922
FLT.MNC 000004      524L
FLT.SAL 000012      529L     1090
FLT.TDT 000005      525L      830
FST.    042212      654L
FST1    052203     1519L     1551
FST2    052216     1526      1532L  1539
FST3    052234     1534      1541L  1544
FST4    052256     1536      1553L
FT.ABS  000000      537E      587
FT.BAC  000003      540E
FT.DD   000001      233E
FT.OR   000002      234E
FT.OU   000010      236E     1423
FT.OW   000004      235E     1423
FT.PIC  000001      538E
FT.REL  000002      539E
HOS1    050326     1096      1100L
HOSPRC  050162     1047      1064L
HOSSAL  050164     1068      1083L
HOSSALI 000000     1056      1057   1067E
HOSTAB  050122     1048      1053L
HOSTABE 050161     1053      1062L
I.CONFL 000004      360E      361
I.CONTY 000001      347E      348
I.CONWI 000003      353E      354
I.CSLMD 000000      337E
I.CUSOR 000002      350E      351
IOC.CGN 000010      241L
IOC.CSI 000011      242L
IOC.DDA 000002      230L      237    251
IOC.DES 000016      248L
IOC.DEV 000020      249L
IOC.DIL 000021      251E
IOC.DIR 000023      253L
IOC.DRL 000010      245E
IOC.DTA 000014      247L
IOC.FLG 000004      232L      245    1421
IOC.GRT 000005      239L
IOC.LGN 000012      243L
IOC.LNK 000000      229L     1419
IOC.LSI 000013      244L
IOC.SPG 000007      240L
IOC.SQL 000003      237E
IOC.UNI 000022      250L
IOCCTD  000001      257E     1417
IOCELEN 000052      255E
LBD.    042223      669L
LBDA    052303     1582      1595L
LDD     051172     1200      1241L
LDD1    051240     1266L     1279   1290
LF      000012       63E
M.CDCA  000017      496L      953
M.CDLY  000016      495L      950    953
```

```
S.DATE  040277  319L
S.DCS   041033  434L
S.DDDTA 040366  399L
S.DDGRP 040364  396L
S.DDLDA 040360  394L
S.DDLEN 040362  395L
S.DDOFC 040370  400L
S.DFWA  040354  389L
S.DIREA 041016  428L
S.DLINK 040346  386L  949  1085
S.FASER 041013  427L
S.FCI   041021  429L
S.GRT0  024000  263E
S.GRT1  025000  264E
S.GRT2  026000  265E
S.GUP   041027  431L
S.HIMEM 040316  322L
S.INT   040343  277L  374
S.JUMPS 041010  425L
S.MOUNT 041032  433L
S.OFWA  040350  387L
S.OMAX  040324  328L
S.OSN   041004  416L
S.OVLE  041000  413L
S.OVLFL 040371  409L
S.OVLS  040376  412L
S.OVSTK 041035  441L
S.RFWA  040356  390L
S.SCI   041024  430L
S.SCR   041120  479L
S.SDD   041010  426L
S.SOVR  041146  279L  281
S.SSN   041002  415L
S.SYSM  040320  324L
S.TIME  040312  321L
S.UCSF  040372  410L
S.UCSL  040374  411L
S.USRM  040322  326L
S.VAL   040277  276L  317
SET1    042354  699   706L
SETA    043015  711   722L
SETAE   043060  722   733L
SETHLP  047131  718   999L
SETHOS  050105  720   1047L
SETSY   043244  716   789L
SETTT   044065  717   849L
SETVER  050056  719   1034L
SHO     052000  831   903  923  962  967  1102  1404L
SHOA    052127  1408  1462L
SHOB    052144  1409  1463L
SKB     052153  614   1343 1377 1476L
SKB1    052152  1475L 1478
SNA     042201  614L
SOP     052350  674   791  851  1049 1659L
SOP     042226  674L
SOP1    053011  1662  1680L
SOP2    053012  1668  1681L
SSYSTP  043303  807   817L
```

STACK	042200	283E	599							
STACKL	001032	281E								
STPI	000000	799	806E							
STTCTY	044266	879	894E							
STTFIL	044344	885	930L							
STTWID	044306	882	910L							
SYDD	040130	273E								
SYHLP	043342	810	836L							
SYHLPI	000001	800	809E							
SYOPRC	043277	789	804L	806	809					
SYOTAB	043261	790	796L							
SYOTABE	043276	796	802L							
SYSCALL	000377	94E	694	772	1411	1430	1448	1454	1458	
TAB	000011	72E	1035							
TBL1	053135	1871L	1877							
TBL2	053153	1869	1881L							
TBL3	053155	1874	1885L							
TBLS.	042215	659L								
TTHLP	045044	888	973L							
TTHLPI	000003	872	887E							
TTOPRC	044256	849	876L	878	881	884	887			
TTOTAB	044102	850	855L							
TTOTABE	044255	855	874L							
USERFWA	042200	284E	586	588	589					
VERS	000026	92E	1036	1036						
WDD	051272	1211	1306L							
WIDI	000001	870	881E							
WTBLS.	042220	664L								

24874 BYTES FREE