

APPENDIX F

HDOS ENTRY POINTS AND I/O ROUTINES

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NORTH STAR HARD DISK OPERATING SYSTEM
SYSTEM DISPATCH TABLE

; THE ORIGIN OF THIS TABLE MUST ALWAYS
; BE A MULTIPLE OF 100H
;
0000' ==      BASE ==
E000' ==      MTOP ==      0E000H ; DEFAULT MEMORY LIMIT

; THE FIRST FOUR BYTES ARE USED BY THE MFDOS,
; IF PRESENT, TO STORE THE CURRENT TRACKS
0000' C3 0000#  GOPNT:  JMP  GBOOT+HDLEN;DOUBLES AS "GO" ENTRY POINT
0003' 59          .BYTE  ZTRAC          ; INITIAL VALUE

; THIS SEQUENTIAL REVISION NUMBER CHANGES
; WITH EACH NEW RELEASE OF THE SOFTWARE
0004'          .LOC  REVN-DSPCH+BASE
0004' 21          .BYTE  REAS

; THE FOLLOWING BYTE IS RESERVED FOR FUTURE USE
;ZILCH: EQU .
0005' 00          .BYTE  0

; MFDOS STORES CURRENTLY SELECTED
; DRIVE NUMBER HERE
0006'          .LOC  SUNIT-DSPCH+BASE
0006' 00          .BYTE  0

; THE OFTEN ROUTINE IS CALLED FREQUENTLY DURING
; USE OF THE DISK SYSTEMS
; OFTEN IS ALWAYS CALLED WITH INTERRUPTS DISABLED
; ONLY ACC AND FLAGS MAY BE MODIFIED
; ONLY 2 BYTES OF STACK CAN BE USED
; MUST NOT BRANCH ANYWHERE DURING COLD BOOT
0007'          .LOC  OFTEN-DSPCH+BASE
0007' C9          RET          ; JUST RET DURING BOOT
0008' 0000        .WORD  0          ; SPACE FOR JMP ADDR

; THIS ENTRY POINT IS USED
; WHEN THE SYSTEM IS BOOTED DIRECTLY
; FROM A MICRO DISK
000A'          .LOC  CBOOT-DSPCH+BASE
000A' C3 010A     JMP  CBOOT      ; NOT YET IMPLEMENTED

; THIS IS THE CHARACTER OUTPUT ROUTINE
; IT IS CALLED WITH THE CHARACTER IN B AND
; WITH THE DEVICE # IN A
; ONLY ACC AND FLAGS MAY BE MODIFIED
; MUST RETURN THE SAME CHARACTER IN A
000D'          .LOC  CHO-DSPCH+BASE
000D' C3 0000#     JMP  DAOT      ; ADDITIONAL DEVICE ROUTING ROUTINE

; THIS IS THE CHARACTER INPUT ROUTINE
; IT IS CALLED WITH THE DEVICE # IN A
; ONLY ACC AND FLAGS MAY BE MODIFIED
; MUST RETURN INPUT CHARACTER IN A
0010'          .LOC  CHI-DSPCH+BASE
0010' C3 0000#     JMP  CIN

; THIS NEXT ROUTINE IS CALLED ONCE AT INIT TIME
; IT CAN THEN USE ALL REGISTERS AND SHOULD
; PERFORM ANY NEEDED INITIALIZATION
0013'          .LOC  INIT-DSPCH+BASE
0013' C3 0000#     JMP  TINIT

; THIS IS THE CONTROL C ROUTINE
; EITHER THIS OR ISTAT IS CALLED FREQUENTLY
; DURING EXECUTION OF ANY NORMAL SOFTWARE
; ALL REGISTERS MAY BE USED
; IF NO INPUT DATA AT DEVICE 0 THEN
; RETURN BOTH Z AND C FLAGS FALSE

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; IF DATA IS AVAILABLE IT IS RETURNED
; IN A WITH C FLAG TRUE
; RETURNS 2 TRUE ONLY IF DATA IS CONTROL C
0016'      .LOC   CON-DSPCH+BASE
0016' C3 0000# JMP   CONTC

; MICRO DISK ERRORS JMP THRU THIS OR OTHER ERROR JMP
0019'      .LOC   HDERR-DSPCH+BASE
0019' C3 0000# JMP   HD

; THIS IS THE MICRO DISK FILE LOOKUP ROUTINE
; A MUST CONTAIN DEFAULT DRIVE(NORMALLY 1)
; HL=POINTER TO FILE NAME IN RAM
; WITH OPTIONAL DRIVE NUMBER
; TERMINATED WITH BLANK OR CR
; DRIVE NUMBER RETURNED IN A IF FILENAME
; SYNTAX OK, ELSE ZERO RETURNED
; IF FOUND IN DIRECTORY THEN
; CARRY RETURNED FALSE AND
; HL=POINTER TO BYTE 8 OF ENTRY
; IF NOT FOUND THEN
; CARRY RETURNED TRUE AND
; HL=FIRST FREE DISK ADDRESS
001C'      .LOC   DLOOK-DSPCH+BASE
001C' C3 0000# JMP   MDLK

; THIS ROUTINE WRITES UPDATED DIRECTORY TO MICRO DISK
; MUST FOLLOW DLOOK
001F'      .LOC   DWRT-DSPCH+BASE
001F' C3 0000# JMP   DWRI

; GENERAL MICRO DISK COMMAND ROUTINE
; ACC= NUMBER OF SECTORS
; B= COMMAND (0=WR, 1=RD, 2=VERIFY)
; C= DRIVE, BIT 7=DOUBLE DENSITY
; DE= STARTING RAM ADDRESS
; HL= STARTING DISK ADDRESS
; RETURNS WITH CARRY TRUE IF BAD ARGS
0022'      .LOC   DCOM-DSPCH+BASE
0022' C3 0000# JMP   DCO

; THIS ROUTINE LISTS MICRO DISK DIRECTORIES
; ACC= DRIVE NUMBER
; L= OUTPUT DEVICE NUMBER
0025'      .LOC   DLIST-DSPCH+BASE
0025' C3 0000# JMP   LIST

; THIS IS THE RESTART ENTRY POINT
; IT WILL ORDINARILY LOAD AND EXECUTE
; THE HDOS COMMAND PROCESSOR
0028'      .LOC   RSTRT-DSPCH+BASE
0028' C3 0000# JMP   RSTO

; BIT 0 OF THIS FLAG CONTROLS THE
; READ AFTER WRITE CHECK OPTION ON
; MICRO DISKS ONLY
; READ AFTER WRITE IS ALWAYS DONE
; ON THE HARD DISK
; IF 1 THEN CHECK ON FLOPPIES ALSO
; BIT 7 OF THIS FLAG IS 1 ONLY IF
; INTERRUPTS SHOULD BE LEFT ENABLED
; AFTER ANY CODE WHICH MUST DISABLE THEM
002B'      .LOC   RWCHK-DSPCH+BASE
002B' 01      .BYTE 1

; MICRO DISK ERRORS JMP THRU THIS OR OTHER ERROR JMP
002C'      .LOC   Doser-DSPCH+BASE
002C' C3 0000# JMP   DSERR

; THIS BYTE SET TO DENSITY OF DIRECTORY
; BY DLOOK CALLS
; 0 IF SINGLE ; 80H IF DOUBLE
002F'      .LOC   DEN-DSPCH+BASE
002F' 00      .BYTE 0

; THIS FLAG BYTE CONTROLS THE AUTOSTART FEATURE
; OF THE COMMAND PROCESSOR. THIS BYTE IS TESTED
; AND SET TO ONE WHENEVER THE COMMAND PROCESSOR
; IS EXECUTED. IF THIS BYTE WAS ZERO THE COMMAND
; PROCESSOR WILL AUTOMATICALLY EXECUTE THE COMMAND
; IN ITS INPUT BUFFER. THIS FEATURE SHOULD BE

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; USED FOR TURNKEY STARTUP OF ANY SYSTEM.
0030'      .LOC  AUTOS-DSPCH+BASE
0030' 01      .BYTE  1

; THIS WORD POINTS TO THE TEXT LINE BUFFER USED BY
; THE COMMAND PROCESSOR. THIS DATA IS PROVIDED FOR
; USE BY THE PERSON WHO PERSONALIZES A BOOTSTRAP
; DISKETTE FOR TURNKEY STARTUP.
0031' 01B0      .WORD  CLINE

; THIS BYTE IS SCREEN LENGTH OF CONSOLE
; USE ZERO IF HARD COPY TERMINAL
3'      .LOC  PAGES-DSPCH+BASE
0033' 18      .BYTE  24

; THIS BYTE SHOWS MICRO DISK DRIVE COMBINATION
; SEE INSTRUCTIONS FOR FORMAT
0034'      .LOC  CONFG-DSPCH+BASE
0034' FF      .BYTE  0FFH

; THE RESULT CODE OF EACH USE OF THE FILE MANAGER
; OTHER THAN FMABT IS STORED HERE FOR USE BY THE COMMAND
; PROCESSOR OR OTHER SOFTWARE WHICH REPORTS ERRORS
0035'      .LOC  RESLT-DSPCH+BASE
0035' 00      .BYTE  NOK

; THIS BYTE CONTAINS THE LAST ERROR CODE NUMBER
; RETURNED TO THE FILE MANAGER BY HD COM
; THE COMMAND PROCESSOR ZEROS THIS BYTE
; WHEN THE ERROR IS REPORTED
0036'      .LOC  HDEMC-DSPCH+BASE
0036' 00      .BYTE  0

; THIS WORD CONTAINS THE ADDRESS OF THE LAST
; SECTOR ACCESS ATTEMPTED BY THE FILE MANAGER
0037'      .LOC  HDEDA-DSPCH+BASE
0037' 0000      .WORD  0

; THIS THE NUMBER OF THE LAST HARD DISK
; DRIVE ACCESSED BY THE FILE MANAGER
0039'      .LOC  HDEDN-DSPCH+BASE
0039' 00      .BYTE  0

; THIS BYTE SHOWS THE ORIGIN OF THE
; MICRO DISK CONTROLLER BOARD WITH WHICH
; THIS SYSTEM OPERATES
003A'      .LOC  MDCB-DSPCH+BASE
003A' E8      .BYTE  BADDR/256

; THE BOOTSTRAP STORES A SPEED CONSTANT HERE
; FOR USE BY MFDOS ONLY
; DON'T EVEN THINK ABOUT TRYING TO USE IT
003B'      .LOC  FTPTM-DSPCH+BASE
003B' 1A      .BYTE  DFSTP

; THIS BYTE CONTAINS THE ADDRESS OF THE FIRST
; PAGE OF MEMORY WHICH SHOULD BE CONSIDERED
; BY USER SOFTWARE TO BE BEYOND THE UPPER LIMIT
003C'      .LOC  HMEM-DSPCH+BASE
003C' E0      .BYTE  MTOP/256

; THIS BYTE CONTAINS THE ADDITIONAL OUTPUT DEVICE NUMBER.
; WHEN THIS BYTE IS NONZERO, ALL OUTPUT TO THE MAIN CONSOLE
; (DEVICE ZERO) WILL BE ECHOED TO THE DEVICE SPECIFIED HERE.
; THIS BYTE IS SET BY THE 'OD COMMAND.
003D'      .LOC  ADEV-DSPCH+BASE
003D' 00      .BYTE  0

; TO ENABLE THE ADDITIONAL OUTPUT DEVICE FEATURE, THE JUMP
; TO THE ACTUAL CHARACTER OUTPUT ROUTINE IS PLACED HERE,
; INSTEAD OF AT CHO, ABOVE.
003E'      .LOC  AOUT-DSPCH+BASE
003E' C3 0000# .JMP  COUT

; THIS IS THE INPUT STATUS ROUTINE

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; IT IS CALLED WITH THE DEVICE # IN A
; RETURNS NUMBER OF DEVICE TESTED IN A
; RETURNS Z FLAG TRUE IF INPUT DATA AVAILABLE
; NO OTHER REGISTERS MAY BE USED
0041' .LOC ISTAT-DSPCH+BASE
0041' C3 0000# JMP IST

; THIS IS THE OUTPUT STATUS ROUTINE
; IT IS CALLED WITH THE DEVICE # IN A
; RETURNS NUMBER OF DEVICE TESTED IN A
; RETURNS Z FLAG TRUE IF OUTPUT DEVICE READY
; NO OTHER REGISTERS MAY BE MODIFIED
; ISTAT AND OSTAT MAY BE USED BY SOFTWARE TO
; DETERMINE WHICH DEVICE NUMBERS ARE IMPLEMENTED
0044' .LOC OSTAT-DSPCH+BASE
0044' C3 0000# JMP OST

; THIS IS THE NORTH STAR LINE EDITOR
; ON ENTRY:
; B= I/O DEVICE NUMBER
; C= LENGTH OF INPUT BUFFER
; DE= ADDR OF OLD LINE
; TERMINATED WITH CR
; HL= ADDR OF INPUT BUFFER
; ON EXIT:
; HL, DE, AND B RESTORED
; C= SPACE UNUSED IN INPUT BUFFER
; A= RESULT CODE:
; 0: RETURN ENTERED
; 1: CONTROL C ENTERED
; 2: 8 OR CONTROL N ENTERED
; 3: TOO MANY CHARS ENTERED
; OLD LINE IS NOT CHANGED
; CR LF IS NOT ECHOED
; NEW LINE ENDS WITH A CR
0047' .LOC LINED-DSPCH+BASE
0047' C3 0000# JMP LNEDT

; THIS IS THE ENTRY POINT TO THE
; HARD DISK FILE MANAGER
004A' .LOC FHMGR-DSPCH+BASE
004A' C3 0000# JMP FME

; THIS IS THE LOW LEVEL HARD DISK
; ACCESS ROUTINE
; THIS ROUTINE SHOULD NOT BE USED
; BY ANY NORMAL SOFTWARE
004D' .LOC HD COM-DSPCH+BASE
004D' C3 0000# JMP BEGIN

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;
; NOTHING BEYOND THIS POINT SHOULD BE CONSIDERED
; FIXED AND INDEPENDENT OF REVISION LEVEL.
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