



MP/M 2.10F0 INSTALLATION PROCEDURE

MARCH 1, 1982

REVISION B

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MP/MII



caution

YOU SHOULD BACKUP YOUR MP/MII
DISTRIBUTION DISKS BEFORE ATTEMPTING
THIS PROCEDURE.

DO NOT USE YOUR DISTRIBUTION DISKS
AS WORKING COPIES.

MP/M 2.10F0 INSTALLATION**INTRODUCTION:**

Before attempting to install Altos MP/M II, read this entire document and familiarize yourself with the various procedures. It is assumed that this is an installation on one of the following Altos systems:

- * ACS 8000-10
- * ACS 8000-12
- * ACS 8000-14
- * ACS 8000-15

There are many utilities and system files that are new to MP/M II. See Table I and Table II for a complete listing of both distribution disks. The multiplicity of XIOSxyz.SPR's, where "xyz" represents a 3 digit number, are present to accomodate any upgrading of hardware possible on your Altos -10, -12, -14 and -15 systems with the maximum hardware limitations below:

- 4 - Floppy Drives
- 2 - 8" Hard Disk Drives
- 1 - Magnetic Tape Drive

The way MP/M II places files on the hard disk is different from the way CP/M and MP/M version 1.1 place files on the hard disk. Along with other changes, the block-size of the files has been changed to allow for more files to be placed on the hard disk. See appendix "A" for more information about the logical structure of the hard disk.

****CAUTION!****

If you are upgrading your system from CP/M or MP/M version 1.1, you must copy all hard disk files from hard disk to floppy before you install MP/M II. You will not be able to use CP/M or MP/M version 1.1 with the hard disk once you have installed MP/M II.

The Altos versions of MP/M II have a "virtual disk" facility. In brief, if you use fewer than 4 banks of memory when you configure your system, the other banks will automatically be made to appear to the system as a low capacity, high speed disk drive. On the disks you receive from Altos the virtual disk is drive P:. The backup procedure takes advantage of the virtual disk.

Other documentation that you should receive with your MP/M II version 2.1 system should include a set of application notes, five Digital Research manuals and three supplements to one of these manuals. You do not need to read it all before you start using your system. However, you should become familiar with the MP/M II User's Guide.

If you have used MP/M II version 2.0 you will want to review the three supplements to the MP/M II Programmer's Guide. The most important new feature in version 2.1 is the compatibility option which overcomes many of the compatibility problems which occurred in 2.0. Persons who upgrade from version 2.0 to version 2.1 will not receive the Digital Research Manuals since the manuals sent with 2.0 are still current.

GUIDELINES FOR PERSONS ALREADY USING CP/M OR MP/M

If you are installing MP/M II version 2.1 on a new machine you may skip this section.

Upgrade from MP/M II version 2.0

If you are upgrading from MP/M II version 2.0 you will not need to re-initialize your hard disk. You will need to remove all of version 2.0 system files and replace them with version 2.1 files. A suggested way of doing this is outlined below.

1. Backup the version 2.1 disks as described below.
2. Create a new MP/M II v2.1 floppy disk system as described below.
3. Erase all 2.0 system files which are on your hard disk. Files which are listed in Tables I and II are system files.
4. Replace the files you have just erased by copying corresponding files from the system disks you made in step 2 above.
5. If you have been doing your cold boot from hard disk, you will have to re-run MPMSETUP to copy the new bootstrap program to hard disk. You will also have to re-initialize other parameters such as the various baud rates in order to have your system run as it did under 2.0.
6. Re-boot your system (press the system reset button) to have the upgrade take effect.

Upgrade from CP/M 2.2 or MP/M 1.1

As noted above, the hard disk file structure for MP/M II is different from the hard disk file structure used in either CP/M 2.2 or MP/M 1.1. If you are going from one of these systems to MP/M II, you must copy files you want to save from hard disk to floppy. You must do the copy while running under your old operating system. After you have installed MP/M II you can copy these files back to hard disk. If your system has a magnetic tape unit, you may use tape to back up files instead of floppy disks.

Do not save any system files that you had on hard disk. These files will be replaced by new system files in MP/M II. If you are upgrading from MP/M 1.1, system files are those that are listed in Tables I and II. If you are upgrading from CP/M, system files are listed in Table III. Since you should not save old system files, you should not use the PIP *.* command to backup your files. Instead, you should use the more selective file copy commands with PIP.

BACKUP FLOPPYS

Use an Altos diagnostic disk ADXP 2.3F (or a later version) to format 2 floppy disks with the option that says:

DOUBLE DENSITY FORMAT FOR MP/M

Format a third floppy disk with the option that says:

DOUBLE DENSITY FORMAT FOR CP/M AND DIAGNOSTIC DISKS

Label the first "MP/M II version 2.10F0 Disk 1 Mode 2". Label the second "MP/M II version 2.10F0 Disk 2 Mode 2". Label the third "ADXP version x.yF Mode 2 Backup" (where "x.y" is the current version number).

If you are using a system with 2 floppy disk drives, use the normal duplication procedure to make backup copies of MP/M II and the ADX diagnostic disks and skip to **INITIALIZE HARD DISK**. Otherwise continue with these instructions.

Transfer the boot tracks of MP/M II Disk 1 to the backup disk 1 using BOOTCOPY.

Transfer the boot tracks of the Altos ADX diagnostic disks to the newly formatted ADX back up disk using BOOTCOPY.

Reset the system and boot from the distribution MP/M II disk1. The load map messages from MP/M II will scroll onto your console ending with the usual **0A>** prompt.

At this point, MP/M does not recognize any devices other than the system disk A: and the virtual disk P:. Confirm this by running DISKSTAT.

Making backup copies of the distribution MP/M II disks has been simplified through the use of the SUBMIT facility. The computer will display the boldface print and you should input the normal print when you execute the following commands:

```
0A>P: (press carriage return) ;log onto P:
0P>A:SUBMIT A:BACKUP1 (cr) ;order it done
```

Your command "A:SUBMIT A:BACKUP1" will invoke a batch process supplied by Altos which at several times will ask you to remove a disk from the floppy drive and replace it with another. Follow these instructions carefully. Remember that the "source" is the MP/M II distribution disk 1 and that the "object" is the disk you previously formatted and labeled as disk 1.

BACKUP1 takes about 20 minutes to complete. Next enter the command:

```
0P>A:SUBMIT A:BACKUP2 (cr)
```

The "source" for BACKUP2 is the MP/M II distribution disk 2 and the "object" your backup disk 2. Messages referring to "MP/M disk #1" or "MP/M disk #2" are requests for the original disks, not the copies you are making. BACKUP2 will take about 15 minutes to complete.

Place the distribution disks of MP/M II in a magnetically safe environment. These disks should not be used for anything other than producing working copies. DO NOT USE YOUR DISTRIBUTION DISKS AS WORKING COPIES.

BACKUP ADX

Execute the following commands to copy the file "HRDINIT8.DIA" on the MP/M II distribution disk 1 to the backup copy of the ADX backup disk. This disk will have only the boot tracks present at this time.

```

0A>PIP (cr)
 *P:=MODE.PRL (cr) ;copy these
 *P:=PIP.PRL (cr) ;files to the
 *P:=HRDINTI8.DIA (cr) ;P: disk
 * (cr) ;exit to MP/M
0A>P: (cr) ;log onto P:
0P>MODE A: R (cr) ;resets A:
0P>

```

Remove the MP/M II distribution disk 1 from the floppy drive and replace it with a backup boot-track-only ADX diagnostic disk. This disk must be write enabled.

Copy HRDINIT8.DIA from P: to A: by entering the following command:

```

0P>PIP A:=P:HRDINIT8.DIA[V] (cr)
0P>

```

You should now have backup copies of MP/M II and a partial backup of the ADX diagnostic disk. Use this copy to initialize the hard disk.

If you have a single floppy disk system, the completion of the ADX backup will have to be done after MP/M II has been installed. For the time being you should skip the following instructions and go to the **INITIALIZE HARD DISK** section. Later, you can complete the backup of your ADX disk by doing the following:

```

0A>x: (cr) ;log onto a logical
 ;hard disk drive,
 ;where "x" is the
 ;proper logical
 ;drive letter

```

(Insert master copy of ADXP)

```

0x>MODE y: R (cr) ;reset floppy drive
 ;"y" where "y" is
 ;the letter for
 ;your floppy disk
 ;drive

```

```

0x>PIP x:=y:*.DIA[V] (cr)
 ;copy DIA file to
 ;hard disk

```

(Insert backup copy of ADXP)

```

0x>MODE y: R (cr) ;reset floppy drive "y"
0x>PIP y:=x:*.DIA[V] (cr)

```


Remove your completed backup and place the ADX diagnostic distribution disk in a magnetically safe environment. This disk should not be used for anything other than producing working copies.

INITIALIZE HARD DISK

If you are upgrading your system from MP/M II version 2.0, you should skip this step.

Boot the system from an ADX disk with HRDINIT8 as a menu choice and run HRDINIT8. Answer the queries from HRDINIT8 carefully. If you have not copied HRDINIT8 to the diagnostic disk, refer to section **BACKUP ADX**.

HRDINIT8 will take about 5 minutes to erase every sector on the physical disk. If there are any bad sectors encountered, these sectors will have alternates assigned. A record of those assignments will be written to the last sector of cylinder 0, track 0 at the conclusion of HRDINIT8.

If you have a second hard disk and you have not already initialized it, you should do so at this time. If at some later time you add a second hard disk, you can initialize it without affecting the first hard disk by replying "N" the first time you receive the following HRDINIT8 message:

*** Warning disk initialization is destructive ***

Do you want to continue, reply with "Y" OR "N"

You will then be given the chance to initialize the second hard disk.

While HRDINIT8 is running, study again the next sections on GENSYS, the program that configures your system to your requirements.

GENSYS INTRODUCTION

In order to properly generate your system, certain tables upon which MP/M II depends, must be built and incorporated into the disk resident files MPM.SYS and SYSTEM.DAT. This will be accomplished by GENSYS.

Note again the multiple XIOSxyz.SPR files. One of these will be renamed to BNKXIOS.SPR and integrated with MPM.SYS. The three digits "xyz" have the following significance:

"x" = The number of floppy drives on your system, can only be 1, 2 or 4

"y" = The unformatted storage capacity of the primary hard disk device:

Model -	Primary Hard Disk capacity	Digit used
ACS8000-15	no hard disk	1
ACS8000-10	10 megabytes	1
ACS8000-12	20 megabytes	2
ACS8000-14	40 megabytes	4

"z" = The unformatted storage capacity of the secondary hard disk device:

Secondary Hard Disk capacity	Digit used
no hard disk	0
10 megabytes	1
20 megabytes	2
40 megabytes	4

As an example, an ACS 8000-10A having one floppy disk device, one 10 megabyte hard disk device, and no secondary hard disk device will require that XIOS110.SPR be renamed to BNKXIOS.SPR. An ACS 8000-15 with an add on 40 megabyte hard disk will require that XIOS240.SPR be renamed to BNKXIOS.SPR

Boot from your copy of MP/M II disk 1. The load map messages should scroll upwards on the screen and end with the prompt: 0A.

If you have only 1 hard disk device, skip to the section labeled **RENAME XIOSxyz.SPR**

With 2 hard disk devices, enter the following commands:

```
0A>PIP
 *P:=DIR.PRL
 *P:=REN.PRL
 *P:=MODE.PRL
 *P:=PIP.PRL
 *(cr)
0A>P:           ;logon to P:
0P>
```

Remove your copy of MP/M II disk 1 and replace it with

your copy of MP/M II disk 2. Enter the following commands:

```

ØP>MODE A: R
ØP>DIR A:XIOS*.SPR

```

Find the XIOSxyz.SPR in the resulting directory listing that corresponds with the "xyz" you previously calculated in the preceding sections. Enter the following commands:

(note that you choose the proper XIOSxyz.SPR)

```

ØP>PIP P:=A:XIOSxyz.SPR
ØP>MODE A: R

```

Remove your copy of MP/M II disk 2 and insert your copy of MP/M II disk 1. Enter the following commands:

```

ØP>PIP A:=XIOSxyz.SPR[V]
ØP>A:
ØA>

```

RENAME XIOSxyz.SPR

Rename the XIOSxyz.SPR file you have selected to be BNKXIOS.SPR. GENSYS will include BNKXIOS.SPR into the MPM.SYS file that it creates. To do the rename, enter the following command:

```

ØA>REN BNKXIOS.SPR=XIOSxyz.SPR
ØA>

```

GENSYS

GENSYS is the MP/M II program which is described in section 5 of your MP/M II System Guide. It allows you to specify many of the optional features of MP/M II as well as the number of memory banks, the number of consoles and the number of printers you expect to have on your system.

You should read through the description of GENSYS before you continue. Given in figures 1, 2, 3 and 4 are examples of GENSYS for 1, 2, 3 or 4 bank systems. These examples can be used to configure systems that most people will find useful.

Please note that GENSYS shows default values in parentheses. You can accept the default by simply pressing return. When you run GENSYS, the values that appear as

defaults in your run may be different from the default values shown in figures 1 through 4.

Except as noted in the next few paragraphs, you should always enter the value shown after the "?" mark if it is different from the value in parentheses. If the default value (ie. the value in parentheses) is the same as the value shown after the "?" mark in the example, you can press return.

Exceptions to the preceding paragraph are entries for the memory segment table. The first entry in the table is for the MP/M II system. That entry should always be accepted as it appears on your console even if it is different from the values shown in the examples.

The last entry in the memory segment table is for the short area in bank 0. (Bank 0 space is less than the space for other banks since MP/M II takes up part of the bank.) Enter it as shown in the example.

You may receive the following message:

```
*** Memory conflict - segment trimmed ***
```

This message indicates that you specified too large an area. The message above will be followed by a repeat of the line preceding the message. The value for "size" will have been changed. Always accept the new value by just pressing "return". The GENSYS example in section 5 of the MP/M II System Guide shows the last segment being trimmed.

Because the size of BNKXIOS.SPR is different for different hardware configurations, other addresses and lengths shown in the examples may also be different from what you see on your terminal.

RUN GENSYS

You may now enter the command GENSYS. It is recommended that you turn to page 52 in the MP/M II System Guide from Digital Research and read the GENSYS description given there:

```
0A>GENSYS (cr)
```

After you run GENSYS you should reset the system and boot from the floppy disk. Next you should run DISKSTAT. The display from DISKSTAT will show the disk configuration of your new system. Be sure that the information shown by DISKSTAT agrees with your hardware configuration. If you are uncertain about your exact hardware configuration, you should ask your Altos dealer

for a correct description.

Do not proceed until DISKSTAT and your hardware configuration agree.

If you cancel GENSYS before it completes, you must erase the SYSTEM.DAT and MPM.SYS files before you attempt to run GENSYS again. If you do not erase these files GENSYS will not run properly. If you do erase these files, you will not get the GENSYS question:

Use SYSTEM.DAT for defaults (Y) ?

GENSYS for 1 bank system

```
0A>GENSYS
00:00:16 A:GENSYS .COM
```

```
MP/M II V2.1 System Generation
Copyright (C) 1981, Digital Research
```

```
Default entries are shown in (parens).
Default base is Hex, precede entry with # for decimal
```

```
Use SYSTEM.DAT for defaults (Y) ? Y
Top page of operating system (FF) ? FF
Number of TMPs (system consoles) (#1) ? #1
Number of Printers (#3) ? #3
Breakpoint RST (07) ? 07
Enable Compatibility Attributes (Y) ? Y
Add system call user stacks (Y) ? Y
Z80 CPU (Y) ? Y
Number of ticks/second (#62) ? #62
System Drive (A:) ? A:
Temporary file drive (P:) ? P:
Maximum locked records/process (#64) ? #64
Total locked records/system (#128) ? #128
Maximum open files/process (#64) ? #64
Total open files/system (#128) ? #128
Bank switched memory (Y) ? Y
Number of user memory segments (#1) ? #1
Common memory base page (C0) ? C0
Dayfile logging at console (Y) ? Y
```

```
SYSTEM DAT FF00H 0100H
TMPD DAT FE00H 0100H
USERSYS STK FD00H 0100H
XIOSJMP TBL FC00H 0100H
```

```
Accept new system data page entries (Y) ? Y
```

```
RESBDOS SPR F000H 0C00H
XDOS SPR CE00H 2200H
```

Figure 1 (Example continued next page)

Select Resident and Banked System Processes:

ABORT RSP (N) ? N
MPMSTAT RSP (N) ? N
SCHED RSP (N) ? N
SPOOL RSP (N) ? N

BNKXIOS SPR AF00H 1F00H
BNKBDOS SPR 8C00H 2300H
BNKXDOS SPR 8A00H 0200H
TMP SPR 8600H 0400H

LCKLSTS DAT 7C00H 0A00H
CONSOLE DAT 7B00H 0100H

Enter memory segment table:

Base,size,attrib,bank (7B,85,80,00) ?
Base size,attrib,bank (00,7B,00,00) ? 00,7B,00,00

MP/M II Sys 7B00H 8500H Bank 00
Memseg Usr 0000H 7B00H Bank 00

Accept new memory segment table entries (Y) ? Y

** GENSYS DONE **
0A>

Figure 1 (continued)

GENSYS for 2 bank system

```

0A>GENSYS
00:00:16 A:GENSYS .COM

```

```

MP/M II V2.1 System Generation
Copyright (C) 1981, Digital Research

```

Default entries are shown in (parens).
 Default base is Hex, precede entry with # for decimal

```

Use SYSTEM.DAT for defaults (Y) ? Y
Top page of operating system (FF) ? FF
Number of TMPs (system consoles) (#2) ? #2
Number of Printers (#3) ? #3
Breakpoint RST (07) ? 07
Enable Compatibility Attributes (Y) ? Y
Add system call user stacks (Y) ? Y
Z80 CPU (Y) ? Y
Number of ticks/second (#62) ? #62
System Drive (A:) ? A:
Temporary file drive (A:) ? A:
Maximum locked records/process (#64) ? #64
Total locked records/system (#128) ? #128
Maximum open files/process (#64) ? #64
Total open files/system (#128) ? #128
Bank switched memory (Y) ? Y
Number of user memory segments (#2) ? #2
Common memory base page (C0) ? C0
Dayfile logging at console (Y) ? Y

```

```

SYSTEM DAT FF00H 0100H
TMPD DAT FE00H 0100H
USERSYS STK FD00H 0100H
XIOSJMP TBL FC00H 0100H

```

Accept new system data page entries (Y) ? Y

```

RESBDOS SPR F000H 0C00H
XDOS SPR CE00H 2200H

```

Figure 2 (Example continued next page)

Select Resident and Banked System Processes:

```

ABORT   RSP (N) ? N
MPMSTAT RSP (N) ? N
SCHED   RSP (N) ? N
SPOOL   RSP (N) ? N

BNKXIOS SPR  AF00H  1F00H
BNKBDOS SPR  8C00H  2300H
BNKXDOS SPR  8A00H  0200H
TMP      SPR  8600H  0400H

LCKLSTS DAT  7C00H  0A00H
CONSOLE DAT  7A00H  0200H

```

Enter memory segment table:

```

Base,size,attrib,bank (7A,86,80,00) ?
Base,size,attrib,bank (00,C0,00,01) ? 00,C0,00,01
Base size,attrib,bank (00,7A,00,00) ? 00,7A,00,00

```

```

MP/M II Sys  7A00H  8600H  Bank 00
Memseg  Usr  0000H  C000H  Bank 01
Memseg  Usr  0000H  7A00H  Bank 00

```

Accept new memory segment table entries (Y) ? Y

```

** GENSYS DONE **
0A>

```

Figure 2 (continued)

GENSYS for 3 bank system

```

0A>GENSYS
00:00:16 A:GENSYS .COM

```

```

MP/M II V2.1 System Generation
Copyright (C) 1981, Digital Research

```

```

Default entries are shown in (parens).
Default base is Hex, precede entry with # for decimal

```

```

Use SYSTEM.DAT for defaults (Y) ? Y
Top page of operating system (FF) ? FF
Number of TMPs (system consoles) (#3) ? #3
Number of Printers (#3) ? #3
Breakpoint RST (07) ? 07
Enable Compatibility Attributes (Y) ? Y
Add system call user stacks (Y) ? Y
Z80 CPU (Y) ? Y
Number of ticks/second (#62) ? #62
System Drive (A:) ? A:
Temporary file drive (A:) ? A:
Maximum locked records/process (#64) ? #64
Total locked records/system (#128) ? #128
Maximum open files/process (#64) ? #64
Total open files/system (#128) ? #128
Bank switched memory (Y) ? Y
Number of user memory segments (#3) ? #3
Common memory base page (C0) ? C0
Dayfile logging at console (Y) ? Y

```

```

SYSTEM DAT FF00H 0100H
TMPD DAT FE00H 0100H
USERSYS STK FD00H 0100H
XIOSJMP TBL FC00H 0100H

```

```

Accept new system data page entries (Y) ? Y

```

```

RESBDOS SPR F000H 0C00H
XDOS SPR CE00H 2200H

```

Figure 3 (Example continued next page)

Select Resident and Banked System Processes:

ABORT RSP (N) ? N
 MPMSTAT RSP (N) ? N
 SCHED RSP (N) ? N
 SPOOL RSP (N) ? N

BNKXIOS SPR AF00H 1F00H
 BNKBDOS SPR 8C00H 2300H
 BNKXDOS SPR 8A00H 0200H
 TMP SPR 8600H 0400H

LCKLSTS DAT 7C00H 0A00H
 CONSOLE DAT 7900H 0300H

Enter memory segment table:

Base,size,attrib,bank (79,87,80,00) ?
 Base,size,attrib,bank (00,C0,00,01) ? 00,C0,00,01
 Base,size,attrib,bank (00,C0,00,02) ? 00,C0,00,02
 Base size,attrib,bank (00,79,00,00) ? 00,79,00,00

MP/M II Sys 7900H 8700H Bank 00
 Memseg Usr 0000H C000H Bank 01
 Memseg Usr 0000H C000H Bank 02
 Memseg Usr 0000H 7900H Bank 00

Accept new memory segment table entries (Y) ? Y

** GENSYS DONE **
 0A>

Figure 3 (continued)

GENSYS for 4 bank system

```
0A>GENSYS
00:00:16 A:GENSYS .COM
```

MP/M II V2.1 System Generation
Copyright (C) 1981, Digital Research

Default entries are shown in (parens).
Default base is Hex, precede entry with # for decimal

```
Use SYSTEM.DAT for defaults (Y) ? Y
Top page of operating system (FF) ? FF
Number of TMPs (system consoles) (#4) ? #4
Number of Printers (#3) ? #3
Breakpoint RST (07) ? 07
Enable Compatibility Attributes (Y) ? Y
Add system call user stacks (Y) ? Y
Z80 CPU (Y) ? Y
Number of ticks/second (#62) ? #62
System Drive (A:) ? A:
Temporary file drive (A:) ? A:
Maximum locked records/process (#64) ? #64
Total locked records/system (#128) ? #128
Maximum open files/process (#64) ? #64
Total open files/system (#128) ? #128
Bank switched memory (Y) ? Y
Number of user memory segments (#4) ? #4
Common memory base page (C0) ? C0
Dayfile logging at console (Y) ? Y
```

```
SYSTEM DAT FF00H 0100H
TMPD DAT FE00H 0100H
USERSYS STK FD00H 0100H
XIOSJMP TBL FC00H 0100H
```

Accept new system data page entries (Y) ? Y

```
RESBDOS SPR F000H 0C00H
XDOS SPR CE00H 2200H
```

Figure 4 (Example continued next page)

Select Resident and Banked System Processes:

```

ABORT   RSP (N) ? N
MPMSTAT RSP (N) ? N
SCHED   RSP (N) ? N
SPOOL   RSP (N) ? N

```

```

BNKXIOS SPR  AF00H 1F00H
BNKBDOS SPR  8C00H 2300H
BNKXDOS SPR  8A00H 0200H
TMP      SPR  8600H 0400H

```

```

LCKLSTS DAT  7C00H 0A00H
CONSOLE DAT  7800H 0400H

```

Enter memory segment table:

```

Base,size,attrib,bank (78,88,80,00) ?
Base,size,attrib,bank (00,C0,00,01) ? 00,C0,00,01
Base,size,attrib,bank (00,C0,00,02) ? 00,C0,00,02
Base,size,attrib,bank (00,C0,00,03) ? 00,C0,00,03
Base size,attrib,bank (00,78,00,00) ? 00,78,00,00

```

```

MP/M II Sys  7800H 8800H Bank 00
Memseg  Usr  0000H C000H Bank 01
Memseg  Usr  0000H C000H Bank 02
Memseg  Usr  0000H C000H Bank 03
Memseg  Usr  0000H 7800H Bank 00

```

Accept new memory segment table entries (Y) ? Y

```

** GENSYS DONE **
0A>

```

Figure 4 (continued)

MPMSETUP

The MPMSETUP program allows you to change certain parameters about your system such as console and printer baud rates. It also allows you to change the default assignment of logical drives. For example, drive A: can be placed on the hard disk instead of the floppy disk. In addition, you will be able to use MPMSETUP to cause your system to boot from the hard disk instead of the floppy disk.

MPMSETUP actually consists of two program files. They are MPMSETUP.COM and SETUP210.COM. Both files must be present in your system in order to do a setup. When you run MPMSETUP, no other program should be running at the same time in another bank.

The changes specified by MPMSETUP do not go into effect until the next time the system is booted. In earlier versions of MPM, it was necessary to copy MPMSETUP to the diagnostic disk before running it. This procedure is no longer necessary and will not work with MP/M II.

Every time you run MPMSETUP you will be asked to describe your hardware configuration. The information you provide here must match the configuration shown by DISKSTAT when it is run with your new system.

After you enter a description of your hardware, you will be given a menu of choices:

- 1) Copy bootfile to hard disk
- 2) Change default logical names
- 3) Console baud rate setup
- 4) Printer setup
- 5) Miscellaneous
- 6) Update setup
- 7) Exit

Copy bootfile to hard disk

This function copies the boot records to the hard disk, so that system boot can be performed from the hard disk. If you are going to select this choice, you must select it before you make any other choice.

Change default logical names

This function allows you to associate a particular drive letter with a specific logical device for the floppy disks, the hard disks and the virtual disk. Only one letter per logical device is allowed. It must not duplicate the letter assigned to another device. One device must have the letter "A".

You should be aware that each physical floppy disk drive corresponds to one logical device, but each physical hard disk drive corresponds to more than 1 logical hard disk device.

The drive letters you specify with this option of MPMSETUP are for logical disk devices. Run DISKSTAT to see which logical disk devices are associated with a particular physical disk drive.

Console baud rate setup

This function is used to set up the baud rates for the various consoles.

Printer setup

This function is used to set up the printer baud rates and to select the parallel port printer. MP/M II supports three printers, 2 serial and one parallel. The printers are numbered as 0, 1 or 2. One of the numbers can be assigned to the parallel port printer. This function also allows you to specify the baud rates for the two serial printer ports. One of the serial printer ports is also called the auxiliary port. You will be prompted to specify the number for the parallel printer. The logical position of the parallel printer determines the precedence for logical assignment of serial printer #1 and the auxiliary serial printer as shown in the table below.

Printer Number

If the parallel printer number is:

Parallel	0	1	2
----------	---	---	---

Then the serial printer numbers are:

Serial Printer #1	1	0	0
Auxillary Serial Printer	2	2	1

Miscellaneous

You can choose to suppress the messages that appear on console #0 during cold boot. You can also select the default density for floppy disks. The default density is the density that will be assumed for a floppy disk at the time a cold boot is done. Usually this should be chosen to be "2" (unblocked double density) since that is the density of the MP/M II disks you receive from Altos.

Update setup

This function actually does the updating of the boot sectors. This function should be selected last and only after making sure that all the settings you have chosen are what you wanted. You will be able to review those parameters you have changed. If any are incorrect, you should reply "N" to the message:

Confirm new settings, (Y/N)

If you reply "N" to this message you will be given another chance to enter the parameters correctly. If you reply "Y" to this message you will be asked whether you want to update the floppy disk boot or the hard disk boot. Reply as appropriate. Remember that if you are going to update the hard disk boot, you must have selected menu option 1 in this run or in a prior run of MPMSETUP.

Exit

This function can be used to exit the MPMSETUP program.

RUN MPMSETUP

You may now invoke the command MPMSETUP. The procedure that will allow you to cold boot MP/M II from the hard disk drive is as follows:

0A>MPMSETUP (cr)

- Answer the questions about your hardware configuration.
- Run selection #1.
- Run selections #2, #3, #4 and #5 as needed.
- Run selection #6 (Update Setup) to physically update the bootstrap. Be sure to say you are updating the hard disk bootstrap.

- Exit from MPMSETUP by choosing selection #7

Before you boot your system, you must copy the MPM.SYS file to the first hard disk drive. If you are uncertain about which drive letter is currently the first hard disk drive, run DISKSTAT. Remember that any choices you made in MPMSETUP about names for the logical drives are not yet in effect.

You should also copy all ".COM" files and all ".PRL" files to the disk drive that you said would be your system drive (see your run of GENSYS for the system drive letter). Again remember that drive letter assignments from the most recent run of MPMSETUP are not yet in effect.

A SUGGESTED WAY TO DO A FIRST TIME INSTALLATION

MP/M II allows you to configure your system in many different ways. To a first time user of MP/M II, all these possibilities can cause a lot of confusion. The following is an outline of one way to do a first time installation. If you install the system the way that is suggested here, you will be able to run most programs that are available without too much trouble. Later, when you have gained some more experience, you may want to change some parameters of your system to make it work better in your particular application.

1. Always make copies of the disks you receive from Altos. Put the original disks away in a safe place and use the copies to configure your system.
2. Copy HRDINIT8.DIA to a working copy of your diagnostic disk. Boot from the diagnostic disk copy and run HRDINIT8 to properly initialize your hard disk.
3. Take the copy of MP/M disk 1 and use it to create a system which will boot from floppy but will talk to your hard disk. Use the GENSYS example for a 4 bank system.
4. After you run GENSYS but before you re-boot your system, run MPMSETUP. Specify that the floppy will be drive F:. For an ACS8000-10, let the hard disk be drives A: and B:. For an ACS8000-12 let the hard disk be drives A:, B: and C:. For an ACS8000-14 let the hard disk be drives A:, B:, C:, D: and E:. Let the virtual disk be drive P:.

Make the proper choices for your console and printer baud rates. Be sure to specify a parallel printer interface if you have such a printer.

5. Update the bootstrap information on your floppy disk by specifying option 6 of MPMSETUP. Then exit from MPMSETUP.
6. Now boot your system from the floppy disk. A: is the hard disk. Change the logged in drive to F:.

```
0A>F:
0F>
```

7. Run DISKSTAT and check your hardware configuration with the information DISKSTAT gives you. Do not continue until you are sure that your hardware configuration is properly specified.
8. Use the PIP program to copy all the files on F: to A:.

```
0F>PIP A:=F:*. *[V]
```

9. Again run MPMSETUP. This time select option 1 (Copy bootfile to hard disk). Now repeat the other selections you made in step 4. Be sure to once more specify the drive names to be assigned to the logical drives.
10. When you update the bootstrap this time specify the hard disk, not the floppy.
11. Once more boot your system. This time boot from hard disk. After you receive the 0A> prompt, run DIR to see the files on your hard disk. Also run DISKSTAT to be sure that your hardware configuration is correct.
12. Enter the following 2 commands as shown:

```
0A>SET *.COM [SYS,RO]
0A>SET *.PRL [SYS,RO]
```

The 2 commands shown above will make it possible for you to execute programs more conveniently on your system. For a complete discussion of program file placement, see section 3.5 in your MP/M II User's Guide. See section 7.1 of the same manual for a discussion of the SET command.

At this point your system should be up and running. Take time to read as much of your User's Guide as possible before starting to run programs. Good Luck.

TABLE I

MPM II DISK 1 DIRECTORY

<u>NAME</u>		<u>BYTES</u>	<u>RECS</u>	<u>NAME</u>	<u>BYTES</u>	<u>RECS</u>	
ABORT	PRL	2k	5	ABORT	RSP	2k	5
ASM	PRL	10k	74	BACKMSGs	PRL	2k	7
BACKUP1	SUB	2k	13	BACKUP2	SUB	2k	7
BNKBDOS	SPR	12k	81	BNKXDOS	SPR	2k	7
CONSOLE	PRL	2k	4	DDT	COM	6k	42
DIR	PRL	2k	14	DISKSTAT	PRL	2k	14
DSKRESET	PRL	2k	5	DUMP	PRL	2k	6
ED	PRL	10k	68	ERA	PRL	2k	15
ERAQ	PRL	4k	29	GENHEX	COM	2k	6
GENMOD	COM	2k	10	GENSYS	COM	10k	74
HRDINIT8	DIA	6k	48	LIB	COM	8k	56
LINK	COM	16k	122	LOAD	COM	2k	14
MODE	PRL	2k	14	MPM	SYS	32k	244
MPMLDR	COM	8k	51	MPMSETUP	COM	2k	3
MPMSTAT	BRS	6k	33	MPMSTAT	PRL	6k	33
MPMSTAT	RSP	2k	3	PIP	PRL	10k	77
PRINTER	PRL	2k	8	PRLCOM	PRL	4k	21
RDT	PRL	8k	50	REN	PRL	4k	19
RESBDOS	SPR	4k	29	RMAC	COM	14k	106
SCHED	BRS	2k	12	SCHED	PRL	4k	20
SCHED	RSP	2k	3	SDIR	PRL	18k	137
SET	PRL	8k	60	SETUP210	COM	16k	128
SHOW	PRL	8k	60	SPOOL	BRS	4k	20
SPOOL	PRL	4k	17	SPOOL	RSP	2k	5
STAT	PRL	10k	78	STOPSPLR	PRL	2k	5
SUBMIT	PRL	6k	42	SYSTEM	DAT	2k	2
TMP	SPR	2k	11	TOD	PRL	4k	20
TYPE	PRL	2k	11	USER	PRL	2k	8
XDOS	SPR	10k	79	XIOS110	SPR	10k	71
XIOS120	SPR	10k	73	XIOS140	SPR	10k	76
XIOS210	SPR	10k	73	XIOS220	SPR	10k	74
XIOS240	SPR	10k	77	XIOS410	SPR	10k	75
XIOS420	SPR	10k	77	XIOS440	SPR	10k	80
XREF	COM	16k	121				

Total Bytes = 430k
 Total Records = 2932

TABLE II

MPM II DISK 2 DIRECTORY

<u>NAME</u>		<u>BYTES</u>	<u>RECS</u>	<u>NAME</u>	<u>BYTES</u>	<u>RECS</u>
BOOT	ASM	2k	15	BUTTONS	LIB	2k
COMPARE	LIB	2k	9	DEBLOCK	ASM	10k
DISK	DOC	2k	10	DISKDEF	LIB	8k
DOWHILE	LIB	2k	7	DSTACK	LIB	10k
DUMB	ASM	6k	36	EXTRN	ASM	2k
I8085	LIB	2k	3	INTER	LIB	4k
LDRBIOS	ASM	8k	64	NCOMPARE	LIB	2k
RESXIOS	ASM	20k	154	SELECT	LIB	2k
SEQIO	LIB	12k	82	SIMPPIO	LIB	2k
STACK	LIB	2k	9	TIP	COM	8k
TODCNV	ASM	16k	126	TREADLES	LIB	2k
WHEN	LIB	2k	7	XIOS111	SPR	10k
XIOS112	SPR	10k	76	XIOS114	SPR	10k
XIOS121	SPR	10k	76	XIOS122	SPR	10k
XIOS124	SPR	12k	81	XIOS141	SPR	10k
XIOS142	SPR	12k	81	XIOS144	SPR	12k
XIOS211	SPR	10k	76	XIOS212	SPR	10k
XIOS214	SPR	12k	81	XIOS221	SPR	10k
XIOS222	SPR	10k	79	XIOS224	SPR	12k
XIOS241	SPR	12k	81	XIOS242	SPR	12k
XIOS244	SPR	12k	86	XIOS411	SPR	10k
XIOS412	SPR	12k	81	XIOS414	SPR	12k
XIOS421	SPR	12k	81	XIOS422	SPR	12k
XIOS424	SPR	12k	85	XIOS441	SPR	12k
XIOS442	SPR	12k	85	XIOS444	SPR	12k
Z80	DOC	10k	70	Z80	LIB	6k

Total Bytes	=	446k
Total Records	=	3150

TABLE III

CP/M SYSTEM FILES

ALL.EQU
ASM.COM
BIOSINFO.DOC
BOOT224.MAC
CBIOS.MAC
CBIOS64.COM
CPMSETUP.COM
DDT.COM
DISKDEF.LIB
DISKSTAT.COM
DUMP.COM
ED.COM
LDRBIOS.MAC
LOAD.COM
MODE.COM
MOVCPM.COM
PIP.COM
STAT.COM
SUBMIT.COM
SYSGEN.COM
XSUB.COM

Appendix A**Logical Structure of the 8" Hard Disk Drives****ACS8000-10 and 10 Mbyte add on drives****Physical Characteristics:**

Total Cylinders: 256
 Heads per Cylinder: 4
 Sectors per Head: 17
 Physical Sector Size: 512 bytes

Cylinder 0:

Head 0 - Bootstrap & Bad Sector Table
 Head 1 - Reserved for future use
 Head 2 - Alternate sectors
 Head 3 - Alternate sectors

Cylinder 1, Head 0 through Cylinder 181, Head 2
 First logical drive (723 tracks).

Cylinder 181, Head 3 through Cylinder 249, Head 3
 Second logical drive (273 tracks).

Cylinder 250, Head 0 through Cylinder 255, Head 3
 Diagnostic Area (24 tracks).

First logical drive

Total Capacity: 6 Mbytes (6,291,456 bytes)
 Blocksize: 4096 bytes
 Total Blocks: 1536
 Directory FCB's: 1536
 Directory Blocks: 12

Second logical drive

Total Capacity: 2.27 Mbytes (2,375,680 bytes)
 Blocksize: 4096 bytes
 Total Blocks: 580
 Directory FCB's: 640
 Directory Blocks: 5

ACS8000-12 and 20 Mbyte add on drives**Physical Characteristics:**

Total Cylinders: 512
 Heads per Cylinder: 4
 Sectors per Head: 17
 Physical Sector Size: 512 bytes

Cylinder 0:
 Head 0 - Bootstrap & Bad Sector Table
 Head 1 - Reserved for future use
 Head 2 - Alternate sectors
 Head 3 - Alternate sectors

Cylinder 1:
 Head 0 - Alternate sectors

Cylinder 1, Head 1 through Cylinder 181, Head 3
 First logical drive (723 tracks).

Cylinder 182, Head 0 through Cylinder 422, Head 3
 Second logical drive (964 tracks).

Cylinder 423, Head 0 through Cylinder 505, Head 3
 Third logical drive (332 tracks).

Cylinder 506, Head 0 through Cylinder 511, Head 3
 Diagnostic Area (24 tracks).

First logical drive

Total Capacity: 6 Mbytes (6,291,456 bytes)
 Blocksize: 4096 bytes
 Total Blocks: 1536
 Directory FCB's: 1536
 Directory Blocks: 12

Second logical drive

Total Capacity: 8 Mbytes (8,388,608 bytes)
 Blocksize: 8192 bytes
 Total Blocks: 1024
 Directory FCB's: 1024
 Directory Blocks: 4

Third logical drive

Total Capacity: 2.75 Mbytes (2,887,680 bytes)
 Blocksize: 4096 bytes
 Total Blocks: 705
 Directory FCB's: 768
 Directory Blocks: 6

ACS8000-14 and 40 Mbyte add on drives

Physical Characteristics:

Total Cylinders: 512
 Heads per Cylinder: 8
 Sectors per Head: 17
 Physical Sector Size: 512 bytes

Cylinder 0:

Head 0 - Bootstrap & Bad Sector Table
 Head 1 - Reserved for future use
 Head 2 - Alternate sectors
 Head 3 - Alternate sectors
 Head 4 - Alternate sectors
 Head 5 - Alternate sectors
 Head 6 - Alternate sectors
 Head 7 - Alternate sectors

Cylinder 1, Head 0 through Cylinder 91, Head 2
 First logical drive (723 tracks).

Cylinder 91, Head 3 through Cylinder 211, Head 6
 Second logical drive (964 tracks).

Cylinder 211, Head 7 through Cylinder 332, Head 2
 Third logical drive (964 tracks).

Cylinder 332, Head 3 through Cylinder 452, Head 6
 Fourth logical drive (964 tracks).

Cylinder 452, Head 7 through Cylinder 508, Head 7
 Fifth logical drive (449 tracks).

Cylinder 509, Head 0 through Cylinder 511, Head 7
 Diagnostic Area (24 tracks).

First logical drive

Total Capacity:	6 Mbytes (6,291,456 bytes)
Blocksize:	4096 bytes
Total Blocks:	1536
Directory FCB's:	1536
Directory Blocks:	12

Second logical drive

Total Capacity:	8 Mbytes (8,388,608 bytes)
Blocksize:	8192 bytes
Total Blocks:	1024
Directory FCB's:	1024
Directory Blocks:	4

Third logical drive

Total Capacity:	8 Mbytes (8,388,608 bytes)
Blocksize:	8192 bytes
Total Blocks:	1024
Directory FCB's:	1024
Directory Blocks:	4

Fourth logical drive

Total Capacity:	8 Mbytes (8,388,608 bytes)
Blocksize:	8192 bytes
Total Blocks:	1024
Directory FCB's:	1024
Directory Blocks:	4

Fifth logical drive

Total Capacity:	3.73 Mbytes (3,907,584 bytes)
Blocksize:	4096 bytes
Total Blocks:	954
Directory FCB's:	1024
Directory Blocks:	8

Appendix BLogical Structure of the 8" Floppy Disk Drives**Single Sided Floppy Disk Drives**

Physical Characteristics:

Total Cylinders (Tracks): 77
 Heads (Sides) per Cylinder: 1

Mode 0 (Unblocked single density format)

Tracks 0 and 1.

Bootstrap tracks formatted in single density format.
 (Each track has 26 sectors of 128 bytes/sector.)

Track 2 through track 76.

Physical Sector Size: 128 bytes
 Sectors per Track: 26
 Total Capacity: 243 Kbytes (248,832 bytes)
 Blocksize: 1024 bytes
 Total Blocks: 243
 Directory FCB's: 64
 Directory Blocks: 2

Mode 1 (Blocked double density format)

Tracks 0 and 1.

Bootstrap tracks formatted in single density format.
 (Each track has 26 sectors of 128 bytes/sector.)

Track 2 through track 76.

Physical Sector Size: 512 bytes
 Sectors per Track: 15
 Total Capacity: 560 Kbytes (573,440 bytes)
 Blocksize: 4096 bytes
 Total Blocks: 140
 Directory FCB's: 128
 Directory Blocks: 1

Mode 2 (Unblocked double density format)

Tracks 0 and 1.

Bootstrap tracks formatted in single density format.
 (Each track has 26 sectors of 128 bytes/sector.)

Track 2 through track 76.

Physical Sector Size: 128 bytes
 Sectors per Track: 48
 Total Capacity: 450 Kbytes (460,800 bytes)
 Blocksize: 2048 bytes
 Total Blocks: 225
 Directory FCB's: 96
 Directory Blocks: 2

Double Sided Floppy Disk Drives**Physical Characteristics:**

Total Cylinders (Tracks): 77
 Heads (Sides) per Cylinder: 2

Mode 0 (Unblocked single density format)**Track 0, Sides 0 and 1.**

Bootstrap formatted in single density format.
 (Each side has 26 sectors of 128 bytes/sector.)

Track 1, Side 0 through Track 76, Side 1.

Physical Sector Size: 128 bytes
 Sectors per Side: 26
 Total Capacity: 492 Kbytes (503,808 bytes)
 Blocksize: 4096 bytes
 Total Blocks: 123
 Directory FCB's: 128
 Directory Blocks: 1

Mode 1 (Blocked double density format)**Track 0, Sides 0 and 1.**

Bootstrap formatted in single density format.
 (Each side has 26 sectors of 128 bytes/sector.)

Track 1, Side 0 through Track 76, Side 1.

Physical Sector Size: 512 bytes
 Sectors per Side: 15
 Total Capacity: 1,140 Kbytes (1,167,360 bytes)
 Blocksize: 4096 bytes
 Total Blocks: 285
 Directory FCB's: 256
 Directory Blocks: 2

Mode 2 (Unblocked double density format)**Track 0, Sides 0 and 1.**

Bootstrap formatted in single density format.
 (Each side has 26 sectors of 128 bytes/sector.)

Track 1, Side 0 through Track 76, Side 1.

Physical Sector Size: 128 bytes
 Sectors per side: 48
 Total Capacity: 912 Kbytes (933,888 bytes)
 Blocksize: 4096 bytes
 Total Blocks: 228
 Directory FCB's: 256
 Directory Blocks: 2