

- If you have an H/Z-37, H/Z-47, H/Z-77, H/Z-87, or H/Z-17-3 drive model and no drive mounted beside the display screen, insert the disk into the drive slot on the left-hand side of the drive model.
  - If you have more than one type of disk drive, insert the disk into the left-hand slot of the drive model that accommodates your Distribution Disk.
  - If you have an H/Z-67 Winchester Disk drive model which does not yet contain the operating system, insert the Distribution Disk into the 8-inch floppy disk drive slot on the right-hand side of the H/Z-67 drive model.
  - If you have an H/Z-67 drive model in which the Winchester Disk already contains a copy of the operating system, insert nothing and proceed to step 4.
4. Respond to the "H:" prompt by typing the bootstrap command **B** and entering a carriage return at the terminal keyboard. The computer will automatically complete your command by displaying the remaining characters in the word "Boot", as shown:

H: **B**oot

This entry should complete a successful bootstrap (or cold boot), which loads a copy of the CP/M Operating System from your Distribution Disk into your microcomputer.

When you have performed a successful bootstrap (cold boot), the light on disk drive A: will glow to indicate that the disk drive is reading the CP/M Operating System from the disk and sending a copy of it into microcomputer memory. (If drive A: is a Winchester Disk partition, no light will glow.) When this CP/M system copy enters the microcomputer, it identifies itself by displaying a message in one of the following forms:

```
nnK HEATH/ZENITH CP/M 2.2.04 09/15/82
FOR Hdd DISKS WITH OPTION(S) cccc
```

Where "nn" is the number of K (kilobytes) of data CP/M is capable of handling now. Make note of this number for future reference;

where "2.2.04" is the version number of your CP/M system. Make note of this version number for future reference;

where "aa" is a number that stands for the kind of disk drives that this CP/M image is capable of controlling now; and

where "cccc" is a group of letters and or numbers that stand for some of the characteristics of this CP/M image.

After identifying itself, CP/M will automatically invoke the "Heath/Zenith Configuration Program", which will display further messages.

NOTE: When you boot up with a CP/M disk other than your Distribution Disk, CP/M might not automatically invoke the "Configuration Program", but instead display the "A>" system prompt immediately after the CP/M identification message. If you boot up with the Setup Utility Disk, Setup displays will appear instead of CP/M messages or a system prompt.

If you are booting up to a new CP/M Distribution Disk, or a new CP/M Backup Disk operating system copy that has not yet been completely customized, then the CP/M identification message may be automatically followed by several additional messages, displayed in the following form:

```
Heath/Zenith Configuration Program
Version 2.2.04
Serial number sss-sssss
```

```
This program configures the CP/M operating system to a
particular hardware environment
```

```
Please wait during hardware verification. . .
```

```
H/Z89 with 48k of random access memory (RAM)
03 minifloppy drives
H/Z47 8 inch floppy disk interface
CRT baud rate is 9600
02 additional serial ports found
```

```
Drive A disk is write protected.
Modifications will NOT be made to the disk for this CONFIGUR run.
```

```
Standard system (Y or N) <Y>:
```

The “Configuration Program” that CP/M invoked automatically is the transient command (utility) called “CONFIGUR”. When invoked, CONFIGUR automatically surveys characteristics of some of the devices in your hardware environment so that CP/M can recognize and control these devices.

5. The “Standard system” prompt can enable you to access the CP/M Operating System immediately if you enter Y. If you enter Y, CP/M will display the “A>” system prompt.

NOTE: If you are booting up as part of a procedure, read the instructions of this procedure to determine whether or not it would be desirable for you to enter Y at this prompt.

Bootstrap will be a frequent activity in future procedures.

## Startup Procedure Two

### *H-8 Microcomputer*

This procedure consists of six steps to help you start up the CP/M Operating System in your H-8 microcomputer (without circuit board or program options).

1. Connect and power up all of your hardware devices.

Refer to the manuals for each device to be sure that it is properly connected and turned on. In general, all of the “on-off” switches should be in the “on” position. When turned on, your microcomputer should display a series of random digits on the LED (Light Emitting Diode) panel.

2. If not, then you can reset the H-8 by pressing the **0** (lower left-hand) and **ALTER / RST/0** (lower right-hand) keypad keys simultaneously.
3. Insert your CP/M Distribution Disk (or Distribution Disk I) into your primary boot drive. You can determine which drive is your primary boot drive by the following guidelines:
  - If you have an H/Z-37, H/Z-47, H/Z-77, H/Z-87, or H/Z-17-3 drive model, insert the disk into the drive slot on the left-hand side of the drive model.

- If you have more than one type of disk drive, insert the disk into the left-hand slot of the drive model that accommodates your Distribution Disk.
  - If you have an H/Z-67 Winchester Disk drive model which does not yet contain the operating system, insert the Distribution Disk into the 8-inch floppy disk drive slot on the right-hand side of the H/Z-67 drive model.
  - If you have an H/Z-67 drive model in which the Winchester Disk already contains a copy of the operating system, insert nothing and proceed to step 4.
4. Make the following entries in sequence, by pressing the appropriate keys on the H-8 keypad:

**REG  
PC  
ALTER  
0300000  
ALTER  
GO**

The H-8 should respond to this entry by displaying one of the following LED messages:

Pri H17            or            Pri H47

(The precise display that follows your bootstrap command depends on the kind of disk drive you are booting from.)

5. Press the **space bar** of the console keyboard several times. These entries should complete a successful bootstrap (cold boot), which loads a copy of the CP/M Operating System from your Distribution Disk into your microcomputer.

When you have performed a successful bootstrap (cold boot), the light on disk drive A: will glow to indicate that the disk drive is reading the CP/M Operating System from the disk and sending a copy of it into microcomputer memory. (If drive A: is a Winchester Disk partition, no light will glow.) When this CP/M system copy enters the microcomputer, it identifies itself by displaying a message in the following form:

nnK HEATH/ZENITH CP/M 2.2.04 09/15/82  
FOR Hdd DISKS WITH OPTION(S) cccc

Where “nn” is the number of K (kilobytes) of data CP/M is capable of handling now. Make note of this number for future reference;

where “2.2.04” is the version number of your CP/M system. Make note of this version number for future reference;

where “aa” is a number that stands for the kind of disk drives that this CP/M image is capable of controlling now; and

where “cccc” is a group of letters and or numbers that stand for some of the characteristics of this CP/M image.

After identifying itself, CP/M will automatically invoke the “Heath/Zenith Configuration Program”, which will display further messages.

NOTE: When you boot up with a CP/M disk other than your Distribution Disk, CP/M might not automatically invoke the “Configuration Program”, but instead display the “A>” system prompt immediately after the CP/M identification message. If you boot up with the Setup Utility Disk, Setup displays will appear instead of identification messages or a system prompt.

If you are booting up to a new CP/M Distribution Disk, or a new CP/M Backup Disk operating system copy that has not yet been completely customized, then the CP/M identification message may be automatically followed by several additional messages, displayed in the following form:

```
Heath/Zenith Configuration Program
Version 2.2.04
Serial number sss-sssss
```

```
This program configures the CP/M operating system to a
particular hardware environment
```

```
Please wait during hardware verification. . .
```

```
H8 with 48k of random access memory (RAM)
03 minifloppy drives
H/Z47 8 inch floppy disk interface
CRT baud rate is 9600
02 additional serial ports found
```

```
Drive A disk is write protected.
Modifications will NOT be made to the disk for this CONFIGUR run.
```

```
Standard system (Y or N) <Y>:
```

The “Configuration Program” that CP/M invoked automatically is the transient command (utility) called “CONFIGUR”. When invoked, CONFIGUR automatically surveys characteristics of some of the devices in your hardware environment.

6. The “Standard system” prompt can enable you to access the CP/M Operating System immediately if you enter Y. If you enter Y, CP/M will display the “A>” system prompt.

NOTE: If you are booting up as part of a procedure, read the instructions of this procedure to determine whether or not it would be desirable for you to enter Y at this prompt.

Bootstrap will be a frequent activity in future procedures.

## Startup Procedure Three

### *H-8 Microcomputer with PAM-8*

This procedure consists of six steps to help you start up the CP/M Operating System in your H-8 microcomputer with the PAM-8 Panel Monitor Program.

1. Connect and power up **all** of your hardware devices.

Refer to the manuals for each device to be sure that it is properly connected and turned on. In general, all of the “on-off” switches should be in the “on” position. When turned on, your microcomputer should display one of the following messages on the LED (Light Emitting Diode) panel:

177377 SP or 277377 SP or 377377 SP

(The exact display you see reflects the current octal address value of the Set Pointer register, which depends on the amount of memory that has been installed in your computer.)

2. If one of these displays does not appear after you turn the computer on (or if another display replaces it before you make an entry), then press the **0** (lower left-hand) and **ALTER / RST/0** (lower right-hand) keypad keys simultaneously. This entry will reset the H-8.

3. Insert your CP/M Distribution Disk (or Distribution Disk I) into your primary boot drive. You can determine which drive is your primary boot drive by the following guidelines:
  - If you have an H/Z-37, H/Z-47, H/Z-77, H/Z-87, or H/Z-17-3 drive model, insert the disk into the drive slot on the left-hand side of the drive model.
  - If you have more than one type of disk drive, insert the disk into the left-hand slot of the drive model that accommodates your Distribution Disk.
  - If you have an H/Z-67 Winchester Disk drive model which does not yet contain the operating system, insert the Distribution Disk into the 8-inch floppy disk drive slot on the right-hand side of the H/Z-67 drive model.
  - If you have an H/Z-67 drive model in which the Winchester Disk already contains a copy of the operating system, insert nothing and proceed to step 4.
4. Press the **4 (GO)** key on the H-8 keypad. The H-8 should respond to this entry by displaying one of the following LED messages:

Pri H17            or            Pri H47

(The precise display that follows your bootstrap command depends on the kind of disk drive you are booting from.)

5. Press the **space bar** of the console keyboard several times. These entries should complete a successful bootstrap (cold boot), which loads a copy of the CP/M Operating System from your Distribution Disk into your microcomputer.

When you have performed a successful bootstrap (cold boot), the light on disk drive A: will glow to indicate that the disk drive is reading the CP/M Operating System from the disk and sending a copy of it into microcomputer memory. (If drive A: is a Winchester Disk partition, no light will glow.) When this CP/M system copy enters the microcomputer, it identifies itself by displaying a message in the following form:

```
nnK HEATH/ZENITH CP/M 2.2.04 09/15/82
FOR Hdd DISKS WITH OPTION(S) cccc
```

Where “m” is the number of K (kilobytes) of data CP/M is capable of handling now. Make note of this number for future reference;

where “2.2.04” is the version number of your CP/M system. Make note of this version number for future reference;

where “dd” is a number that stands for the kind of disk drives that this CP/M image is capable of controlling now; and

where “cccc” is a group of letters and or numbers that stand for some of the characteristics of this CP/M image.

After identifying itself, CP/M will automatically invoke the “Heath/Zenith Configuration Program”, which will display further messages.

NOTE: When you boot up with a CP/M disk other than your Distribution Disk, CP/M might not automatically invoke the “Configuration Program”, but instead display the “A>” system prompt immediately after the CP/M identification message. If you boot up with the Setup Utility Disk, Setup displays will appear instead of CP/M messages or a system prompt.

If you are booting up to a new CP/M Distribution Disk, or a new CP/M Backup Disk operating system copy that has not yet been completely customized, then the CP/M identification message may be automatically followed by several additional messages, displayed in the following form:

```
Heath/Zenith Configuration Program
Version 2.2.04
Serial number sss-sssss
```

```
This program configures the CP/M operating system to a
particular hardware environment
```

```
Please wait during hardware verification. . .
```

```
H8 with 48k of random access memory (RAM)
03 minifloppy drives
H/Z47 8 inch floppy disk interface
CRT baud rate is 9600
02 additional serial ports found
```

```
Drive A disk is write protected.
Modifications will NOT be made to the disk for this CONFIGUR run.
```

```
Standard system (Y or N) <Y>:
```



The "Configuration Program" that CP/M invoked automatically is the transient command (utility) called "CONFIGUR". When invoked, CONFIGUR automatically surveys characteristics of some of the devices in your hardware environment.

6. The "Standard system" prompt can enable you to access the CP/M Operating System immediately if you enter Y. If you enter Y, CP/M will display the "A>" system prompt.

NOTE: If you are booting up as part of a procedure, read the instructions of this procedure to determine whether or not it would be desirable for you to enter Y at this prompt.

Bootstrap will be a frequent activity in future procedures.

## Startup Procedure Four

### *H-8 Microcomputer with HA8-8*

This procedure consists of six steps to help you start up the CP/M Operating System in your H-8 microcomputer with the HA8-8 Extended Configuration Board.

1. Connect and power up **all** of your hardware devices.

Refer to the manuals for each device to be sure that it is properly connected and turned on. In general, all of the "on-off" switches should be in the "on" position. When turned on, your microcomputer should display one of the following messages on the LED (Light Emitting Diode) panel:

177377 SP or 277377 SP or 377377 SP

(The exact display you see reflects the current octal address value of the Set Pointer register, which depends on the amount of memory that has been installed in your computer.)

2. If one of these displays does not appear after you turn the computer on (or if another display replaces it before you make an entry), then press the **0** (lower left-hand) and **ALTER / RST/0** (lower right-hand) keypad keys simultaneously. This entry will reset the H-8.

3. Insert your CP/M Distribution Disk (or Distribution Disk I) into your primary boot drive. You can determine which drive is your primary boot drive by the following guidelines:
  - If you have an H/Z-37, H/Z-47, H/Z-77, H/Z-87, or H/Z-17-3 drive model, insert the disk into the drive slot on the left-hand side of the drive model.
  - If you have more than one type of disk drive, insert the disk into the left-hand slot of the drive model that accommodates your Distribution Disk.
  - If you have an H/Z-67 Winchester Disk drive model which does not yet contain the operating system, insert the Distribution Disk into the 8-inch floppy disk drive slot on the right-hand side of the H/Z-67 drive model.
  - If you have an H/Z-67 drive model in which the Winchester Disk already contains a copy of the operating system, insert nothing and proceed to step 4.
4. Press the **1** (number one) key on the H-8 key pad. The H-8 should respond to this entry by displaying one of the following LED messages:

Pri H17            or            Pri H47

(The precise display that follows your bootstrap command depends on the kind of disk drive you are booting from.)

5. Press the **space bar** of the console keyboard several times. These entries should complete a successful bootstrap (cold boot), which loads a copy of the CP/M Operating System from your Distribution Disk into your microcomputer.

When you have performed a successful bootstrap (cold boot), the light on disk drive A: will glow to indicate that the disk drive is reading the CP/M Operating System from the disk and sending a copy of it into microcomputer memory. (If drive A: is a Winchester Disk partition, no light will glow.) When this CP/M system copy enters the microcomputer, it identifies itself by displaying a message in the following form:

```
nmK HEATH/ZENITH CP/M 2.2.04 09/15/82
FOR Hdd DISKS WITH OPTION(S) cccc
```

Where “nn” is the number of K (kilobytes) of data CP/M is capable of handling now. Make note of this number for future reference;

where “2.2.04” is the version number of your CP/M system. Make note of this version number for future reference;

where “dd” is a number that stands for the kind of disk drives that this CP/M image is capable of controlling now; and

where “cccc” is a group of letters and or numbers that stand for some of the characteristics of this CP/M image.

After identifying itself, CP/M will automatically invoke the “Heath/Zenith Configuration Program”, which will display further messages.

NOTE: When you boot up with a CP/M disk other than your Distribution Disk, CP/M might not automatically invoke the “Configuration Program”, but instead display the “A>” system prompt immediately after the CP/M identification message. If you boot up with the Setup Utility Disk, Setup displays will appear instead of CP/M messages or a system prompt.

If you are booting up to a new CP/M Distribution Disk, or a new CP/M Backup Disk operating system copy that has not yet been completely customized, then the CP/M identification message may be automatically followed by several additional messages, displayed in the following form:

```
Heath/Zenith Configuration Program
Version 2.2.04
Serial number sss-sssss
```

```
This program configures the CP/M operating system to a
particular hardware environment
```

```
Please wait during hardware verification. . .
```

```
H8 with 48k of random access memory (RAM)
03 minifloppy drives
H/Z47 8 inch floppy disk interface
CRT baud rate is 9600
02 additional serial ports found
```

```
Drive A disk is write protected.
Modifications will NOT be made to the disk for this CONFIGUR run.
```

```
Standard system (Y or N) <Y>:
```

The “Configuration Program” that CP/M invoked automatically is the transient command (utility) called “CONFIGUR”. When invoked, CONFIGUR automatically surveys characteristics of some of the devices in your hardware environment.

6. The “Standard system” prompt can enable you to access the CP/M Operating System immediately if you enter Y. If you enter Y, CP/M will display the “A>” system prompt.

NOTE: If you are booting up as part of a procedure, read the instructions of this procedure to determine whether or not it would be desirable for you to enter Y at this prompt.

Bootstrap will be a frequent activity in future procedures.

## Unsuccessful Startup

If the CP/M identification message does not appear within a minute after your bootstrap command, then reset your microcomputer (step 2) and repeat your bootstrap command (step 4).

If your bootstrap command again fails to produce the CP/M identification message or automatic execution of a program that runs under CP/M, then check the following:

- That all components of your hardware environment have been properly connected and powered up. (See manuals for hardware devices.)
- That your bootable disk is within the proper drive slot. (Try the same command with the disk in a different drive; or try an alternate bootstrap command, as explained in Appendix C: “Bootstrap”.)
- That your disk is properly situated in the drive and the drive closed. (See the text in this manual entitled “Microcomputer Concepts”.)
- That your disk is composed of the proper media for your disk drives. (See the manual for your disk drive.)
- That the switches on your CPU circuit board are in the correct positions for your disk drives. (See the manual for your microcomputer.)

# SETUP PROCEDURE

## Introduction

### SPECIAL FEATURES

Setup automatically creates a CP/M system adapted for almost any Heath/Zenith hardware environment except those that include H/Z-67 Winchester drives or small memory capacities.

If you do not have an H/Z-67 Winchester disk drive, and if your computer contains at least 48 kilobytes of random access memory, then you can use Setup instead of following "Backup Procedures", "Customizing Procedures", and "Working Disk Procedures".

If you have an H/Z-67 Winchester disk drive, and/or if your computer contains less than 48 kilobytes of random access memory, then do not use Setup. Proceed immediately to the text entitled "Backup Procedures". After using a backup procedure, you should continue to "Customizing Procedures", and "Working Disk Procedures".

Setup enables even computer novices to create bootable system and application disks designed to meet their special needs, merely by pressing a few keys and viewing several helpful illustrations.

Special features of Setup include:

- Fast creation of CP/M bootable applications disks with automated use of FORMAT, SYSGEN, MOVCPM and PIP
- Clear, easy-to-follow displays
- Use on most combinations of Zenith Data Systems/Heath equipment
- Quick customization routine for adding printers.

## **FUNCTIONAL OVERVIEW**

Setup performs the following automatic activities:

- surveys your equipment (except for the printer) and displays illustrations of it for your approval
- displays the list of printers for you to specify the type of printer you might use
- asks you to insert a disk in any drive
- performs the equivalent of the CP/M operating system commands FORMAT, CONFIGUR, SYSGEN, MOVCPM, and PIP to create the proper BIOS and to copy system and application programs to the disk.

## **WHAT YOU NEED**

In order to use Setup you need a H/Z-89/90 microcomputer with at least 48K of memory.

This version of Setup supports all possible combinations of the Zenith Data Systems/Heath equipment listed in Table 1-1.

Microcomputer	Disk Drive	Printer
Z-89 or H-89	Z-17 or H-17	Diablo 630 (WH54)
Z-90 or H-90	Z-37 or H-37	Diablo 1610
Z-19 or H-19	Z-47 or H-47	Diablo 1620
	Z-87 or H-87	Diablo 1640
	Z-77 or H-77	Diablo 1650
		LA-36 (H-36)
		LA-34 (WH-34)
		H-14
		WH-14
		WH-24 (TI-810)
		Epson MX-80
		Z-25 (H-25)
		Custom
Special: Votrax Type-'N-Talk		

Table 1-1  
Equipment Supported by Setup

When you use Setup, be sure to have on hand a supply of blank or ready to be erased disks of the type that your disk drives require.

## Using Setup

Setup helps you create a disk that is tailored for your printer and that contains application files of your choice. Supported hardware includes any combination of Zenith/Heath Data Systems microcomputer equipment — except for the H/Z-67 Winchester disk or any computer with less than 48 kilobytes of random access memory. Printers supported include both standard printers and custom printers.

Prepare a backup copy of the Setup Utility Disk before attempting any other procedure.

## STANDARD PRINTERS

Setup enables you to specify and install the printer you are using if you simply press the key that describes your printer while you view the printer selection menu. Printers listed on the printer selection menu include:

- Diablo 630 (WH54)
- Diablo 1610
- Diablo 1620
- Diablo 1640
- Diablo 1650
- LA-36 (WH-54)
- H-14
- WH-24 (TI-810)
- Z-25 (H-25)

Votrax Type 'N Talk (although not a printer) is also listed.

Setup enables you to add a custom printer to the printer selection menu with just a few more steps.

## CUSTOM PRINTERS

Adding another printer to the printer selection menu means that you can select and install it again later by simply pressing a key. Adding another printer involves a special procedure in which you specify the printer characteristics:

- Baud rate (75-38400)
- Printer ready signal polarity (high or low)
- Printer ready signal type (DTR or RTS)
- Printer physical type (LPT or UL1)
- Communications method (serial or parallel)
- Printer name (up to 33 characters)

Refer to your printer hardware manual if you are unsure of these characteristics for your printer.

Any printer previously on the printer selection list which you would like to configure in a nonstandard way (refer to the text entitled "Troubleshooting", for standard baud settings) may also be added with the special procedure.



## IMPORTANCE OF MAKING BACKUPS

Make a backup copy of Setup right away. Making a backup copy allows you to put the original away for safekeeping and to use the backup for daily work.

Because backing up disks is so important, Setup provides a very easy backup procedure — you can use the Setup disk to back itself up. Simply insert the Setup disk and press the B key to boot the program. Then follow the instructions in Procedure for Using Setup.

## SPECIAL CAUTIONS:

Before you begin to use Setup, make sure that you have:

- Connected all of your equipment properly and according to the instructions in your hardware manual. If you need help, ask for assistance from your dealer.
- Made available a disk to receive the operating system and application files. **WARNING:** This disk (called the “destination disk”) is erased during Setup.
- A disk from which to copy the application files, that is, the “source disk.”
- **If you are backing up the Setup disk**, all you need is a disk of the same type as the Setup distribution disk — that is, it should be of the same size, TPI (tracks per inch) and use the same number of sides.

## PROCEDURE FOR USING SETUP

Allow up to five minutes for completion of this procedure with multiple-drive hardware and up to 10 minutes with single-drive hardware.

1. Turn on all of your hardware and verify that it is connected properly. Refer to your hardware manual if necessary. The terminal should sound two “beeps” when turned on.
2. Insert the Setup Utility Disk. Then close the drive latch or door.

3. Boot up with the drive containing the Setup Utility Disk. The Setup utility will be invoked automatically and a menu will appear, as shown in Figure 1-4.

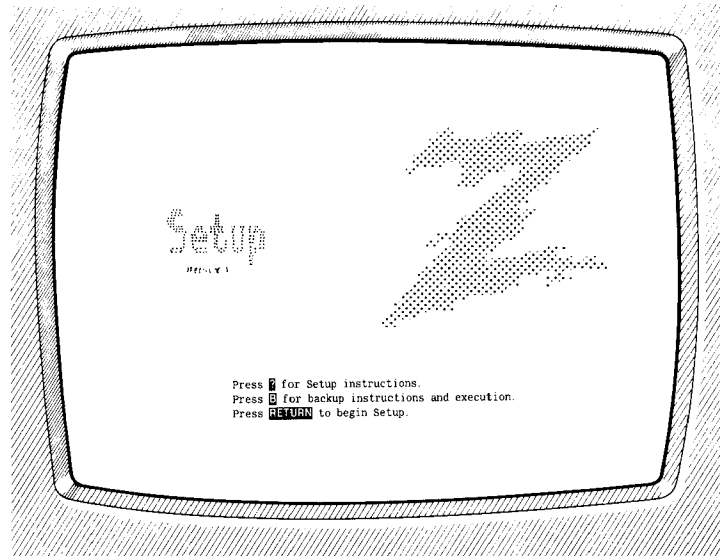


Figure 1-4  
Initial Setup Display

4. If this is the first time you are using Setup, press B to start backing up your disk immediately.
5. Follow the instructions that are displayed on the screen by Setup.
6. Be sure to label your disks right away. After completing a backup procedure, always store the original disk in a safe place.

## Troubleshooting

If for some reason your system does not work after you use Setup, be sure to reread the instructions and repeat the procedure first. Then, if you still have problems, read some of the following instructions related to: problems with your printer, identifying a Setup illustration, or the list of error messages.

## PRINTER PROBLEMS

Zenith Data Systems/Heath supports printers that have selectable settings for the baud rate. If your printer is set for a baud rate not anticipated by Setup, printing problems can result when you use the application disk.

Check the baud setting on your printer by referring to the printer manual. The following list shows the baud rates that Setup will assume your printer has if you select a printer by name.

<u>PRINTER NAME</u>	<u>ANTICIPATED BAUD RATE</u>
Diablo 630 (WH-54)	1200
Diablo 1610	1200
Diablo 1620	1200
Diablo 1640 (WH-44)	1200
Diablo 1650	1200
LA-36 (H-36)	300
LA-34 (WH-34)	300
H-14	4800
WH-14	4800
WH-24 (TI-810)	4800
Epson MX-80	4800
Z-25 (H-25)	4800

If the baud settings do not match, change the setting on your printer or refer to Setup's custom printer procedure to adapt your disks to your printer's baud rate.

### SETUP ILLUSTRATIONS

If you had any difficulty identifying any of the hardware illustrations that Setup uses, Figure 1-5 identifies the illustrations as they look on screen.

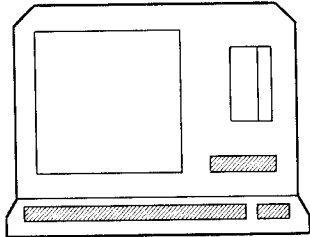
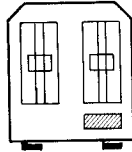
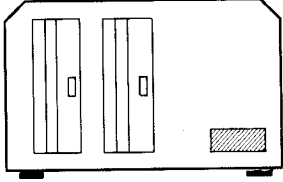
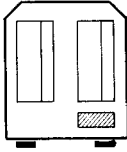
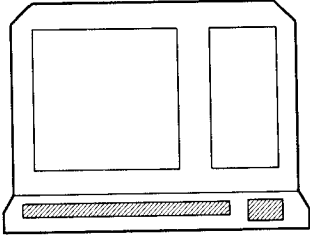
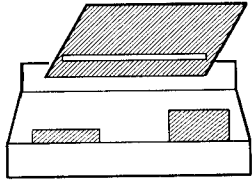
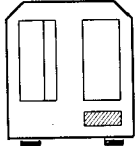
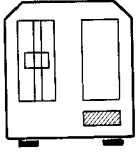
 <p>Z-89, Z-90</p>	 <p>H-37</p>
 <p>Z-47</p>	 <p>H-87</p>
 <p>Z-19</p>	 <p>PRINTER Z-25</p>
 <p>SINGLE DRIVE H-87</p>	 <p>SINGLE DRIVE H-37</p>

Figure 1-5  
Setup Illustrations Identified

## SETUP ERROR MESSAGES

Setup error messages are displayed on your terminal when a hardware failure, software failure, or user failure prevents Setup from performing its function. To help you deal with such failures, most of these error messages explain the reason for the failure and the action that you should take to correct it. Setup also uses some of the standard error messages of CPM utilities, so you should refer to the error message texts for utilities in Appendix A: "Operating System Error Messages" for explanations of messages not listed here. This section shows Setup's error messages.

Setup was unable to find a disk in the disk drives.  
Press RETURN to begin Setup again.

Setup was unable to find the source disk. At this point, your destination disk is bootable but contains no application files. Press RETURN to continue.

An error occurred during your selection of a printer. Setup will continue, but after you have finished copying application files to your destination disk, you should verify that your printer has been correctly installed.  
Press RETURN to continue.

An error occurred during the transferring of files from the source disk to the destination disk. At this point, your destination disk will be bootable and contain some, but not all of your application files. You should now check the status of your files, but first press RETURN to end Setup.

An error occurred as the automatic command was being copied from the source disk to the destination disk. The destination WILL contain all the application files. You can set the automatic command line using the CONFIGUR utility.  
Press RETURN to continue.

An error occurred when Setup tried to read a file off the disk. This can happen when:

- \* the proper file is not on the Setup disk.
- \* the proper file is damaged on the Setup disk.
- \* the Setup disk was not in the proper drive when needed.

If this is the first time you have received this message, try the Setup procedure again. Otherwise, make a new backup of your Setup master and use that instead of your present Setup disk.

Press RETURN to continue.

\*\*\*\*\* An error occurred during the Setup procedure \*\*\*\*\*

NOTE: The last error message listed occurs after you have taken the prescribed corrective action in response to another error message, and this corrective action also fails to produce the desired results. When this error message occurs, reset the computer (press the right-hand **SHIFT** and **RESET** keys simultaneously) and repeat the bootup procedure with the Setup disk. You will then have to repeat the Setup procedure during which you received the error message.

## BACKUP PROCEDURES

A “backup” is a floppy disk or a Winchester Disk partition that contains the same software items as your CP/M distribution media.

We strongly recommend that you make a backup the first time you boot up with a CP/M Distribution Disk. Making backups will help you to protect your software investment.

Because Heath/Zenith offers such a wide range of hardware devices, different users require different procedures for making backups in their own hardware environment. Therefore, this section contains five different procedures for constructing backups. You will need to use only one backup procedure.

To determine which procedure is right for you, refer to Table 1-2. Then turn to your procedure and follow the step-by-step instructions for this procedure.

If you feel that you can perform the procedure without step-by-step instructions, then you can use the “Procedure Synopsis” at the beginning of the procedure for an overview of the steps involved.

Some of the following procedures advise you to back up your software to disks of the “same type”. Disk type, for these procedures, is defined by the following criteria:

- disk material: floppy or Winchester;
- disk size: 5.25-inch or 8-inch;
- sector form: hard-sectored or soft-sectored;
- track density: 48 or 96 tracks per inch (TPI);
- side quantity: single-sided or double-sided; and
- surface density: single-density or double-density or extended double-density.

Some of these criteria are determined by the disk manufacturer, and some are determined by you when you prepare the surface of the disk with the FORMAT utility. The disks you use for backups should be equal to your Distribution Disks in each of these criteria. However, users of 96 TPI drives should back up their three CP/M Distribution Disks to a single 96 TPI disk — even though their CP/M distribution software is recorded on 48 TPI disks.

You can use these procedures to back up any disk, by substituting the disk you wish to back up for the CP/M Distribution Disk.

The backup procedure you use is determined by the kind of drive you used to boot up. You booted up using a drive slot from your primary drive group. Find the description of your primary drive group on the left side of the table. The backup procedure listed to the right of this description is the procedure you should use to backup your CP/M distribution software.

PRIMARY DRIVE GROUP DESCRIPTION	PROPER BACKUP PROCEDURE	PAGE
One 48 TPI, 5.25-inch drive	Backup Procedure One	1-60
One 96 TPI, 5.25-inch drive	Backup Procedure One	1-60
Two 48 TPI, 5.25-inch drives	Backup Procedure Two	1-75
Three 48 TPI, 5.25-inch drives	Backup Procedure Two	1-75
Two 48 TPI, 8-inch drives (H-47 or Z-47)	Backup Procedure Two	1-75
Two 96 TPI, 5.25-inch drives	Backup Procedure Three	1-82
Two 96 TPI, 5.25-inch drives and one 48 TPI, 5.25-inch drive	Backup Procedure Three	1-82
Three 96 TPI, 5.25-inch drives	Backup Procedure Three	1-82
One 96 TPI, 5.25-inch drive and one 48 TPI, 5.25-inch drive	Backup Procedure Four	1-91
One 96 TPI, 5.25-inch drive and two 48 TPI, 5.25-inch drives	Backup Procedure Four	1-91
One Winchester/floppy drive (H-67 or Z-67)	Backup Procedure Five	1-102

Table 1-2  
Backup Procedures



## Backup Procedure One

### *One Primary 5.25-inch Floppy Disk Drive*

This procedure is used to backup CP/M distribution software. To perform this procedure, you will copy both the CP/M Operating System and the utility files from your distribution disks to blank disk media.

You have three CP/M Distribution Disks with software recorded at 48 TPI.

If the disk drive that accommodates your CP/M Distribution Disks is a 5.25-inch, 48 TPI, hard-sectored drive, then you will copy the distribution software to three, blank, 5.25-inch, hard-sectored disks. Prepare for this procedure by labelling these three blank disks "CP/M Backup Disk I", "CP/M Backup Disk II", and "CP/M Backup Disk III".

If the disk drive that accommodates your CP/M Distribution Disks is a 5.25-inch, 48 TPI, soft-sectored drive, then you will copy the distribution software to three, blank, 5.25-inch, 48 TPI, soft-sectored disks. Prepare for this procedure by labelling these three blank disks "CP/M Backup Disk I", "CP/M Backup Disk II", and "CP/M Backup Disk III".

If the disk drive that accommodates your CP/M Distribution Disks is a 5.25-inch, 96 TPI, soft-sectored drive, then you will copy the distribution software to one, blank, 5.25-inch, 96 TPI, soft-sectored disk. Prepare for the procedure by labelling the disk "CP/M Backup Disk".

NOTE: The blank disks that you use to back up distribution software should be write enabled during this entire procedure. Therefore, do not cover the notches of these blank disks with write-protect tabs.

### **PROCEDURE SYNOPSIS**

This procedure requires you to perform the following activities in sequence:

- boot up
- CONFIGUR
- FORMAT
- SYSGEN
- PIP

To begin Procedure One, boot up with Distribution Disk I. The CONFIGUR utility will be invoked automatically. Proceed to the CONFIGUR activity.

## CONFIGUR

This CONFIGUR activity customizes the operating system that you placed in memory when you performed bootstrap so that you can copy data to your backup disk(s). There are two methods for performing this CONFIGUR activity, so use **ONLY** the method specified below for your primary drive group.

If your primary drive (the one used for bootstrap) is a 48 TPI drive, then use Method A for this CONFIGUR activity.

If your primary drive (the one used for bootstrap) is a 96 TPI drive, then use Method B for this CONFIGUR activity.

### Method A

When the CONFIGUR utility is automatically invoked, it will display several messages. When CONFIGUR displays the message:

```
STANDARD SYSTEM (Y OR N)? <Y>:
```

type Y. The CONFIGUR activity will end, and CP/M will display the A> system prompt.

Proceed to the FORMAT activity.

### Method B

When the CONFIGUR utility is automatically invoked, it will display several messages. When CONFIGUR displays the message:

```
STANDARD SYSTEM (Y OR N)? <Y>:
```

type the sequence of keyboard entries listed in Table 1-3. To the right of each entry is an excerpt or description of the part of the display that should appear immediately **after** you type the entry.

Keyboard Entries	Excerpt or Description of Desired Display
<b>N</b> <b>B</b> <b>A</b> <b>6</b> <b>RETURN</b> <b>96</b> <b>RETURN</b> <b>Y</b> <b>X</b>	CP/M CONFIGURATION (Main Menu) 5.25 INCH SOFT-SECTORED UNIT 0 STEP RATE: 30MS TRACK DENSITY: 48TPI SOFT SECTOR UNIT 0 STEP RATE ? SOFT SECTOR UNIT 0 STEP RATE ? 6 SOFT SECTOR UNIT 0 TRACK DENSITY ? SOFT SECTOR UNIT 0 TRACK DENSITY ? 96 5.25 INCH SOFT-SECTORED UNIT 0 STEP RATE: 6M TRACK DENSITY: 96TPI CP/M CONFIGURATION (Main Menu) A> (CP/M system prompt)

Table 1-3  
CONFIGUR Entries for One 96 TPI Drive

When the A> system prompt appears, proceed to the FORMAT activity.

NOTE: If the display excerpted or described in the table does not appear, read the CONFIGUR text in "Volume II: The CP/M Reference Guide".

## FORMAT

This FORMAT activity helps you prepare backup disk media for data storage. The method you use to operate FORMAT depends on the type of disk you are preparing. Use only one of the three FORMAT methods specified below:

If your CP/M Backup Disks are 5.25-inch, 48 TPI, hard-sectored disks, then use Method A to FORMAT and follow the numbered steps preceded by the letter A.

If your CP/M Backup Disks are 5.25-inch, 48 TPI, soft-sectored disks, when use Method B to FORMAT and follow the numbered steps preceded by the letter B.

If your CP/M Backup Disk is a 5.25-inch, 96 TPI, soft-sectored disk, then use Method C to FORMAT and follow the numbered steps preceded by the letter C.

Method A:

- A1. At the A> System Prompt, type **FORMAT** and press **RETURN**. This entry invokes FORMAT, which displays a message in the following form:

```
Format Version 2.04
This program is used to initialize a disk.
All information currently on the disk will be destroyed.
Is that what you want? (y/n):
```

- A2. Type **Y**. FORMAT will display:

```
Which drive do you wish to use for this operation?
```

- A3. Type **A**. FORMAT will display:

```
Put the disk you wish to be formatted in drive A.
Press RETURN to begin, anything else to abort.
```

- A4. Remove Distribution Disk I, and insert Backup Disk I. Then close the disk drive door and press **RETURN**.

- A5. The light on the disk drive will glow for several seconds. Then FORMAT will display:

```
Do you have more disks to format? (y/n):
```

- A6. If you have three Distribution Disks and have not yet formatted three Backup Disks, then type **Y** at this prompt, and resume the FORMAT activity at Step A4 by inserting a different Backup Disk.

If you have formatted all three of your Backup disks then type **N** and FORMAT will display:

```
Place a bootable disk in drive A and press any character:
```

- A7. Remove the last formatted Backup Disk and insert Distribution Disk I. Then type any character. CP/M will display:

```
A>
```

Leave Distribution Disk I in the drive and proceed to SYSGEN.

Method B:

- B1. At the A> System Prompt, type **FORMAT** and press **RETURN**. This entry invokes FORMAT, which displays the following:

```
Format Version 2.04
This program is used to initialize a disk.
All information currently on the disk will be destroyed.
Is that what you want? (y/n):
```

- B2. Type **Y**. FORMAT will display:

```
Which drive do you wish to use for this operation?
```

- B3. Type **A**. FORMAT will display:

```
Put the disk you wish to be formatted in drive A.
Press RETURN to begin, anything else to abort.
```

- B4. Type **S**. FORMAT will display:

```
Number of sides? (1=single, 2=double):
```

- B5. Type **1**. FORMAT will display the following message and prompt:

```
48 TPI drive -- 40 tracks will be formatted
```

```
Put the disk you wish to be formatted in drive A.
Press RETURN to begin, anything else to abort.
```

NOTE: If the message does not indicate "48 TPI drive", then reset the computer and start over at the beginning of Backup Procedure One.

- B6. Immediately remove Distribution Disk I and replace it with Backup Disk I. Then close the disk drive, and press **RETURN**.

- B7. The light on the disk drive will glow for several seconds. Then FORMAT will display:

```
Do you have more disks to format? (y/n):
```

- B8. If you have not yet formatted three Backup Disks, then type **Y** at this prompt, and resume the **FORMAT** activity at Step B3. (Insert a different Backup Disk at Step B6.)

If you have formatted all three Backup Disks, then type **N** and **FORMAT** will display:

Place a bootable disk in drive A and press any character:

- B9. Remove the last formatted Backup Disk and insert Distribution Disk I. Then type any character. **CP/M** will display:

A>

With Distribution Disk I in the drive, proceed to **SYSGEN**.

#### Method C:

- C1. At the A> System Prompt, type **FORMAT** and press **RETURN**. This entry invokes **FORMAT**, which displays the following:

```
Format Version 2.04
This program is used to initialize a disk.
All information currently on the disk will be destroyed.
Is that what you want? (y/n):
```

- C2. Type **Y**. **FORMAT** will display:

```
Which drive do you wish to use for this operation?
```

- C3. Type **A**. **FORMAT** will display:

```
Which density? (S=single, D=double):
```

- C4. Type **D**. **FORMAT** will display:

```
Number of sides? (1=single, 2=double):
```

- C5. Type **2**. **FORMAT** will display the following message and prompt:

```
96 TPI drive -- 80 tracks will be formatted
```

```
Put the disk you wish to be formatted in drive A.
Press RETURN to begin, anything else to abort.
```