4. Press ***RETURN***. FORMAT will begin preparing the surface of the partition (drive B:), and display the following message:

```
FORMATTING PARTITION
```

When finished with its task, FORMAT displays the message:

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

5. Type **N**. CP/M will display:

```
A>
```

Leave the Distribution Disk in the floppy disk drive slot and proceed to the SYSGEN activity.

SYSGEN

The SYSGEN utility puts a copy of the CP/M Operating System on your Backup Partition (drive B:). SYSGEN will get this Operating System copy from the Distribution Disk.

1. At the A> prompt, type **SYSGEN** and press ***RETURN***. This entry invokes SYSGEN, which will display a message in the following form:

```
SYSGEN VERSION 2.0.04
SOURCE DRIVE NAME (OR RETURN TO SKIP):
```

2. Type **A**. SYSGEN will display:

```
SOURCE ON A, THEN TYPE RETURN
```

3. Press ***RETURN***. SYSGEN will display:

```
FUNCTION COMPLETE
COPY BIOS.SYS (Y/N):
```

4. Type **Y**. SYSGEN will respond:

```
FUNCTION COMPLETE
DESTINATION DRIVE NAME (OR RETURN TO REBOOT):
```

5. Type **B**. SYSGEN will display:

```
DESTINATION ON B, THEN TYPE RETURN
```

6. Press ***RETURN***. SYSGEN will display:

```
FUNCTION COMPLETE
DESTINATION DRIVE NAME (OR RETURN TO REBOOT):
```

7. Press ***RETURN***. Now CP/M will display the system prompt:

```
A>
```

Leave the Distribution Disk in the floppy disk drive slot and proceed to the PIP utility.

PIP

You will use the PIP utility to copy all of the files from your Distribution Disk to your Backup Partition.

1. At the A> prompt, type **PIP** and press ***RETURN***. PIP will display the asterisk prompt (*).

2. At the asterisk (*) prompt, type the following command:

   B:=A:*.*

   Where *.* is an ambiguous (wildcard) file name that stands for all of the files on the Distribution Disk in drive A.

   PIP will display the explicit name of each file from drive A: as it copies the file. This display takes the following form:

```
COPYING -
FILE1.EXT
FILE2.EXT
FILE3.EXT
```

3. When PIP finishes copying all of the displayed files, it will redisplay the asterisk (*) prompt. Press ***RETURN*** at the asterisk (*) prompt. Then CP/M will display the system prompt, as shown:

```
A>
```

When you have completed the PIP activity, proceed to the text titled "Customizing Procedures".

NOTE: If you would like to copy the data from the Backup Partition (or any partition) to an 8-inch floppy disk, use the BRS utility as explained in the text titled "BRS" in Volume II: The CP/M Reference Guide.

CUSTOMIZING PROCEDURES

The CP/M Operating System on your Distribution Disk and Backup Disk is already set to control some of the components of your hardware environment in a limited fashion. These customization procedures will help you to make some changes to the CP/M Operating System so that it will control all of the components of your hardware environment at peak efficiency.

The product of these procedures* will be a disk containing a fully customized copy of the CP/M Operating System. We will call this disk the "System Disk", because for now it will contain only the CP/M system kernel and the CP/M file BIOS.SYS. ("Working Disk Procedures" will instruct you to add other useful files to this disk later on.)

Because Heath/Zenith offers such a wide range of hardware devices, different users require different procedures for customizing CP/M. Therefore, this section contains six different procedures for customizing a CP/M Operating System. You will need to use one of these procedures now, and whenever you add devices to your hardware environment.

The procedure you use to customize your operating system depends mainly upon your assortment of disk drives. Use Table 1-5 to determine the proper procedure.

Table 1-5 lists groups of disk drives offered by Heath/Zenith. Every user of Heath/Zenith disk drives has either one or two drive groups. The "primary drive group" is the group of drives that you use to perform bootstrap with your CP/M Distribution Disk(s) and your CP/M Backup Disk(s). The "secondary drive group" consists of drives of a different type which are not accessible through your CP/M distribution software.

To use Table 1-5, locate the intersection of the line that describes your primary drive group and the column that describes your secondary drive group (if any). At the point of intersection is the number of the customization procedure you should use.

* Customizing Procedures Three and Six help you to customize the operating system that already resides on a Backup Partition or Backup Disk, rather than preparing an additional partition or disk to receive the customized operating system.

PRIMARY DRIVE GROUP	SECONDARY DRIVE GROUP: NO SECONDARY DRIVE GROUP	One 48 TPI, 5.25-inch drive	One 96 TPI, 5.25-inch drive	Two 48 TPI, 5.25-inch drives	Three 48 TPI, 5.25-inch drives	Two 48 TPI, 8-inch drives (H-47 or Z-47)	Two 96 TPI, 5.25-inch drives	Two 96 TPI, 5.25-inch drives and one 48 TPI, 5.25-inch drive	Three 96 TPI, 5.25-inch drives	One 96 TPI, 5.25-inch drive and one 48 TPI, 5.25-inch drive	One 96 TPI, 5.25-inch drive and two 48 TPI, 5.25-inch drives	One Winchester/floppy drive (H-67 or Z-67)
One 48 TPI, 5.25-inch drive	1	4	4	4	4	4	4	4	4	4	4	4
One 96 TPI, 5.25-inch drive	1	4		4	4	4						4
Two 48 TPI, 5.25-inch drives	2	5	5	5	5	5	5	5	5	5	5	5
Three 48 TPI, 5.25-inch drives	2	5	5	5	5	5	5	5	5	5	5	5
Two 48 TPI, 8-inch drives (H-47 or Z-47)	2	5	5	5	5		5	5	5	5	5	5
Two 96 TPI, 5.25-inch drives	2	5		5	5	5						5
Two 96 TPI, 5.25-inch drives and one 48 TPI, 5.25-inch drive	2	5		5	5	5						5
Three 96 TPI, 5.25-inch drives	2	5		5	5	5						5
One 96 TPI, 5.25-inch drive and one 48 TPI, 5.25-inch drive	3	6		6	6	6						6
One 96 TPI, 5.25-inch drive and two 48 TPI, 5.25-inch drives	3	6		6	6	6						6
One Winchester/floppy drive (H-67 or Z-67)	3	6	6	6	6	6	6	6	6	6	6	

Table 1-5
Customizing Procedures

When you've found the appropriate procedure, turn to the pages explaining your procedure and follow the step-by-step instructions for this procedure. If you feel that you can perform the activities without step-by-step instructions, then you can use the "Procedure Synopsis" at the beginning of the procedure for an overview of the activities involved.

Customizing Procedure One

One Primary 5.25-inch Floppy Drive, and No Secondary Drives

This procedure will help you to customize a copy of the CP/M Operating System taken from your Backup Disk (or Backup Disk I), and put this customized system copy on a blank disk. The blank disk must be manufactured the same type as the Backup Disk, Label this blank disk as the "System Disk". The System Disk must be write enabled during this procedure.

PROCEDURE SYNOPSIS

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

bootup
CONFIGUR
FORMAT
MOVCPM*
SYSGEN
bootstrap
PIP
bootstrap
CONFIGUR

To begin Procedure One, insert Backup Disk I into the disk drive. Boot up. The CONFIGUR utility will be invoked automatically. Proceed to the CONFIGUR activity.

* Use either MOVCPM17 or MOVCPM37.

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 1-6. To the right of each entry is an excerpt or description of the part of the display that should appear immediately **after** your entry.

Keyboard Entries	Excerpt or Description of Desired Display
N	CP/M CONFIGURATION (Main Menu)
B	5.25 INCH SOFT-SECTORED UNIT 0 STEP RATE: 30MS TRACK DENSITY: 48TPI
A	SOFT-SECTOR UNIT 0 STEP RATE ?
6	SOFT-SECTOR UNIT 0 STEP RATE ? 6
RETURN	SOFT-SECTOR UNIT 0 TRACK DENSITY ?
96	SOFT-SECTOR UNIT 0 TRACK DENSITY ? 96
RETURN	5.25 INCH SOFT-SECTORED UNIT 0 STEP RATE: 6MS TRACK DENSITY: 96TPI
Y	CP/M CONFIGURATION (Main Menu)
D	RUN AUTOMATIC COMMAND LINE ON COLD BOOT: TRUE
A	RUN AUTOMATIC COMMAND LINE ON COLD BOOT: FALSE
Y	CP/M CONFIGURATION (Main Menu)
Y	A> (CP/M system prompt)

Table 1-6
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".

Proceed to the FORMAT activity.

FORMAT

Use the FORMAT utility to prepare a System Disk for data storage. The method you should use to operate FORMAT depends on the type of System Disk you are preparing. Use only one of the two FORMAT methods specified below:

If your System Disk is hard-sectored, use Method A to FORMAT and follow the numbered steps preceded by the letter A.

If your System Disk is soft-sectored, use Method B to FORMAT and follow the numbered steps preceded by the letter B.

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 Backup Disk I, and insert the System Disk. Then close the drive 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. Type **N** and FORMAT will display:

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

A7. Remove the System Disk and insert Backup Disk in the drive. Then type any character. CP/M will display:

```
A>
```

Leave the Backup Disk in the drive and proceed to the MOVCPM activity.

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:

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

B4. If your System Disk is a single-density disk, type **S**.

If your System Disk is a double-density disk, type **D**.

After you respond to the density prompt, FORMAT will display:

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

B5. If your System Disk is a single-sided disk, type **1**.

If your System Disk is a double-sided disk, type **2**.

After you respond to the side quantity prompt, FORMAT will display one of the following two messages:

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

or

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

(If the type of TPI drive specified here is different from your drive, repeat the previous CONFIGUR activity.) FORMAT will also display the following prompt:

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

B6. Immediately remove the Backup Disk (or Backup Disk I) and insert the System Disk. 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. Type **N**, and FORMAT will display:

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

B9. Remove the System Disk and insert the Backup Disk (of Backup Disk I). Then type any character. CP/M will display:

```
A>
```

With the Backup Disk (or Backup Disk I) in the drive, proceed to the MOVCPM activity.

MOVCPM

The MOVCPM utilities enable you to adjust the amount of memory space that your CP/M Operating System will occupy in your microcomputer. Your computer has a memory limit of either 32K, 48K, or 64K. However, the operating system on your Backup Disk is preset to occupy only 32K. ("K" stands for kilobyte, a unit of data storage space.)

MOVCPM loads part of the operating system into a special location in computer memory, and allows it to expand until it fills the computer's entire memory capacity.

If your computer's memory limit is 32K, then skip the MOVCPM activity and proceed to the instructions for the SYSGEN activity (Method B).

If the memory limit "nn" indicated in the bootstrap message ("nnK HEATH/ZENITH CP/M v.v.vv") is smaller than the your computer's limit, then use one of the MOVCPM utilities to raise the memory limit on your operating system, so that it matches that of your computer.

NOTE: If you don't use a MOVCPM utility to take advantage of all of your computer's available memory space, you will not be able to use application programs that require more than 32K of memory space.

1. If the disk that you just formatted is hard-sectored, then enter the following command in response to the system prompt:

   A>**MOVCPM17**

   If the disk that you just formatted is soft-sectored, then enter the following command in response to the system prompt:

   A>**MOVCPM37**

2. Wait for the MOVCPM utility to display a message in the following form:

```
MOVCPMdd Version 2.2.04

CONSTRUCTING 64k CP/M vers 2.2
READY FOR "SYSGEN" OR
"SAVE 38 CPMnn.COM"
```

   Your display may differ in numeric values, depending on which version of MOVCPM you used and how much memory space it found in your computer.

Proceed immediately to the SYSGEN activity.

SYSGEN

The SYSGEN utility copies some or all of the CP/M Operating System onto your System Disk. SYSGEN might get this operating system copy from the Backup Disk, or from a special location in computer memory (if a MOVCPM activity put part of the operating system in this special memory location).

If you just performed a MOVCPM operation, use SYSGEN Method A and follow the numbered steps preceded by the letter A.

If the memory limit indicated in the bootstrap message ("nnK HEATH/ ZENITH CP/M v.v.vv") matches the actual memory limit of your microcomputer, then use SYSGEN Method B and follow the numbered steps preceded by the letter B.

Method A:

A1. At the A> prompt, type **SYSGEN** and press ***RETURN***. This entry invokes the SYSGEN utility, which displays a message in the form:

```
SYSGEN VER 2.2.04
SOURCE DRIVE NAME (OR RETURN TO SKIP): RETURN
```

A2. Press ***RETURN*** as shown above. SYSGEN will display:

```
DESTINATION DRIVE NAME (OR RETURN TO REBOOT):
```

A3. Type **B**. SYSGEN will display:

```
DESTINATION ON B, THEN TYPE RETURN
```

A4. Type ***RETURN***. SYSGEN will display the following prompt:

```
PUT DISK B IN DRIVE A: AND PRESS RETURN
```

A5. Remove the Backup Disk and insert your System Disk. Then press ***RETURN***. SYSGEN will display:

```
FUNCTION COMPLETE.
DESTINATION DRIVE NAME (OR RETURN TO REBOOT):
```

A6. Reset the computer. Do not press ***RETURN*** at this prompt. Then remove the System Disk, insert the Backup Disk, and perform bootstrap. CP/M will display the system prompt:

```
A>
```

Leave the Backup Disk in the drive and proceed to the PIP activity.

Method B

B1. At the A> prompt, type **SYSGEN** and press ***RETURN***. This entry invokes SYSGEN, which displays a message in the following form:

```
SYSGEN VER 2.2.04
SOURCE DRIVE NAME (OR RETURN TO SKIP):
```

B2. Type **A**. SYSGEN will display:

```
SOURCE ON A, THEN TYPE RETURN
```

B3. Press ***RETURN***. SYSGEN will display:

```
FUNCTION COMPLETE.
COPY BIOS.SYS (Y/N):
```

B4. Type **Y**. SYSGEN will display:

```
FUNCTION COMPLETE
DESTINATION DRIVE NAME (OR RETURN TO REBOOT):
```

B5. Type **B**. SYSGEN will display:

```
DESTINATION ON B, THEN TYPE RETURN
```

B6. Press ***RETURN***. SYSGEN will display the following prompts:

```
PUT DISK B IN DRIVE A: AND PRESS RETURN
```

B7. Remove the Backup Disk, insert the System Disk, and press ***RETURN***. SYSGEN will display:

```
FUNCTION COMPLETE.
DESTINATION DRIVE NAME (OR RETURN TO REBOOT):
```

B8. Press ***RETURN***. SYSGEN will display the following prompt:

```
PUT DISK A IN DRIVE A: AND PRESS RETURN
```

B9. Press ***RETURN***. CP/M will display:

```
A>
```

Insert the System Disk in the drive, boot up, and proceed to CONFIGUR.

PIP

The PIP utility is used to copy files between disks. You will use it now to copy the BIOS.SYS file from your Backup Disk to your System Disk.

1. At the A> system prompt type the following command line:

```
A>PIP B:=A:BIOS.SYS[R]
```

Where **B**: represents the System Disk (the destination of the BIOS.SYS file);
where **A**: represents the Backup Disk (the source of the BIOS.SYS file);
where **BIOS.SYS** is the file component of the CP/M Operating System; and
where **[R]** is a command line parameter that allows you to copy a file that has Read/Only status (such as BIOS.SYS.)

2. For the remainder of this activity, PIP will prompt you to insert the Backup Disk and the System Disk alternately by displaying one of the following two prompts:

```
PUT DISK A IN DRIVE A: AND PRESS RETURN
```

or

```
PUT DISK B IN DRIVE A: AND PRESS RETURN
```

Where "DISK A" is the Backup Disk; and
where "DISK B" is the System Disk.

When PIP has finished copying the BIOS.SYS file, CP/M will redisplay the A> system prompt.

3. At the A> system prompt, reset the computer.

4. Insert the System Disk and boot up to test this disk.

Leave the System Disk in the drive and proceed to the CONFIGUR activity.

CONFIGUR

The CONFIGUR utility customizes the operating system on your System Disk to match several characteristics of your hardware environment. This procedure will show you how to use CONFIGUR to customize the system for only essential hardware characteristics. (Use the CONFIGUR instructions in the Volume II: The CP/M Reference Guide if you want more detailed instructions on using CONFIGUR.)

To begin this activity, you should have your System Disk in the drive slot. Refer to the System Disk as "DISK A". Keep your Backup Disk (or Backup Disk I) handy and refer to it as "DISK B". Prompts will instruct you to alternately insert "DISK B" (Backup Disk) and "DISK A" (System Disk).

1. Type the command **B:CONFIGUR *RETURN*** at the system prompt. The terminal display will read:

```
PUT DISK B IN DRIVE A: AND PRESS RETURN
```

2. Remove the System Disk, insert Backup Disk I, and press ***RETURN***. The terminal display will read:

```
PUT DISK A IN DRIVE A: AND PRESS RETURN
```

3. Remove Backup Disk I, insert the System Disk, and press ***RETURN***. The CONFIGUR utility will present a display that begins with an identification message in the following form:

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

   CONFIGUR will continue to display messages, ending with the following prompt:

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

4. Type **N**. CONFIGUR will display a selection menu labelled "CP/M Configuration".

5. Refer to Table 1-7 if you have a Z89-3 interface card, and to Table 1-8 if you have a Z89-11 interface card. Using the appropriate table, type the keyboard entries listed for your terminal. To the right of each entry is an excerpt or description of part of the display that should appear immediately **after** you type the entry. If the excerpted or described display in the table does not appear on your terminal, repeat the entry.

NOTE: Type only the capital letters or numbers featured in bold faced type beneath the heading "Keyboard Entries". Do not change the order of the entries listed. If you type an incorrect entry at a prompt, CONFIGUR will either ignore your mistake, or display it. If a mistake is

ignored, simply answer the prompt again. If CONFIGUR displays your mistake, you can usually change it by typing **Z** and repeating a few entries.

Your Terminal	Keyboard Entries	Excerpt or Description of Desired Display
Zenith or Heath Z-19, H-19, Z-88, H-88, Z-89, H-89, or Z-90 terminal	**A** **A** **9** **350** **Y** **C** **A** **CRT** **Y**	(Terminal and Printer Characteristics – Submenu A) CRT: baud rate: CRT: baud rate: 9600 port: CRT: baud rate: 9600 port: 0E8H = 350Q CP/M Configuration (Main Menu) (Default I/O Configuration – Submenu C) CRT: = CON: = CRT: CP/M Configuration (Main Menu)
DECwriter LA-34 or LA-36 terminal	**A** **B** **30** **320** **Y** **C** **A** **TTY** **Y**	(Terminal and Printer Characteristics – Submenu A) TTY: baud rate: TTY: baud rate: 300 port: TTY: baud rate: 300 port: 0D0H = 320Q CP/M Configuration (Main Menu) (Default I/O Configuration – Submenu C) CON: = CON: = TTY: CP/M Configuration (Main Menu)
Diablo KSR 1640 terminal	**A** **B** **12** **320** **Y** **C** **A** **TTY** **Y**	(Terminal and Printer Characteristics – Submenu A) TTY: baud rate: TTY: baud rate: 1200 port: TTY: baud rate: 1200 port: 0D0H = 320Q CP/M Configuration (Main Menu) (Default I/O Configuration – Submenu C) CON: = CON: = TTY: CP/M Configuration (Main Menu)

Table 1-7
Terminals with Z89-3 Interface

Your Terminal	Keyboard Entries	Excerpt or Description of Desired Display
Zenith or Heath Z-19, H-19, Z-88, H-88, Z-89, H-89, or Z-90 Terminal	**A** **A** **9** **350** **Y** **C** **A** **CRT** **Y**	(Terminal and Printer Characteristics – Submenu A) CRT: baud rate: CRT: baud rate: 9600 port: CRT: baud rate: 9600 port: 0E8H = 350Q CP/M Configuration (Main Menu) (Default I/O Configuration – Submenu C) CRT: = CON: = CRT: CP/M Configuration (Main Menu)
DECwriter LA-34 or LA-36 terminal	**A** **B** **30** **330** **Y** **C** **A** **TTY** **Y**	(Terminal and Printer Characteristics – Submenu A) TTY: baud rate: TTY: baud rate: 300 port: TTY: baud rate: 300 port: 0D8H = 330Q CP/M Configuration (Main Menu) (Default I/O Configuration – Submenu C) CON: = CON: = TTY: CP/M Configuration (Main Menu)
Diablo KSR 1640 terminal	**A** **B** **12** **330** **Y** **C** **A** **TTY** **Y**	(Terminal and Printer Characteristics – Submenu A) TTY: baud rate: TTY: baud rate: 1200 port: TTY: baud rate: 1200 port: 0D8H = 330Q CP/M Configuration (Main Menu) (Default I/O Configuration – Submenu C) CON: = CON: = TTY: CP/M Configuration (Main Menu)

Table 1-8
Terminals with Z89-11 Interface

6. Refer to Table 1-9 if you have a Z89-3 interface card, and to Table 1-10 if you have a Z89-11 interface card. Using the appropriate table, type the keyboard entries listed for your printer. To the right of each entry is an excerpt or description of part of the display that should appear immediately **after** you type the entry. If the excerpted or described display in the table does not appear, repeat the entry.

Your Printer	Keyboard Entries	Excerpt or Description of Desired Display
Diablo 630, 1640, or 1650 printer	**A** **C** **12** **340** none none **Y** **C** **D** **UL1** **Y**	(Terminal and Printer Characteristics – Submenu A) LST: baud rate: LST: baud rate: 1200 port: LST: baud rate: 1200 port: 0E0H = 340Q Serial Printer Ready Signal Polarity: LOW Serial Printer Ready Signal: RTS (Pin 4) CP/M Configuration (Main Menu) (Default I/O Configuration – Submenu C) LST: = LST: = UL1: CP/M Configuration (Main Menu)
DECwriter LA-34 or LA-36 printer	**A** **C** **30** **340** none none **Y** **C** **D** **LPT** **Y**	(Terminal and Printer Characteristics – Submenu A) LST: baud rate: LST: baud rate: 300 port: LST: baud rate: 300 port: 0E0H = 340Q Serial Printer Ready Signal Polarity: LOW Serial Printer Ready Signal: RTS (Pin 4) CP/M Configuration (Main Menu) (Default I/O Configuration – Submenu C) LST: = LST: = LPT: CP/M Configuration (Main Menu)
Heath H-14 printer	**A** **C** **4** **340** none none **Y** **C** **D** **LPT** **Y**	(Terminal and Printer Characteristics – Submenu A) LST: baud rate: LST: baud rate: 4800 port: LST: baud rate: 4800 port: 0E0H = 340Q Serial Printer Ready Signal Polarity: LOW Serial Printer Ready Signal: RTS (Pin 4) CP/M Configuration (Main Menu) (Default I/O Configuration – Submenu C) LST: = LST: = LPT: CP/M Configuration (Main Menu)

Table 1-9
Printers with Z89-3 Interface
(continued on next page)

Your Printer	Keyboard Entries	Excerpt or Description of Desired Display
Texas Instruments TI-810 printer	**A** **C** **4** **340** **none** **none** **Y** **C** **D** **LPT** **Y**	(Terminal and Printer Characteristics – Submenu A) LST: baud rate: LST: baud rate: 4800 port: LST: baud rate: 4800 port: 0E0H = 340Q Serial Printer Ready Signal Polarity: LOW Serial Printer Ready Signal: RTS (Pin 4) CP/M Configuration (Main Menu) (Default I/O Configuration – Submenu C) LST: = LST: = LPT: CP/M Configuration (Main Menu)
Zenith or Heath Z-25 or H-25 printer	**A** **C** **4** **340** **M** none **Y** **C** **D** **LPT** **Y**	(Terminal and Printer Characteristics – Submenu A) LST: baud rate: LST: baud rate: 4800 port: LST: baud rate: 4800 port: 0E0H = 340Q Serial Printer Ready Signal Polarity: HIGH Serial Printer Ready Signal: RTS (Pin 4) CP/M Configuration (Main Menu) (Default I/O Configuration – Submenu C) LST: = LST: = LPT: CP/M Configuration (Main Menu)
Epson MX-80 serial printer	**A** **C** **4** **340** **M** **N** **Y** **C** **D** **LPT** **Y**	(Terminal and Printer Characteristics – Submenu A) LST: baud rate: LST: baud rate: 4800 port: LST: baud rate: 4800 port: 0E0H = 3400 Serial Printer Ready Signal Polarity: HIGH Serial Printer Ready Singal: DTR (Pin 20) CP/M Configuration (Main Menu) (Default I/O Configuration – Submenu C) LST: = LST: = LPT: CP/M Configuration (Main Menu)

Table 1-9
Printers with Z89-3 Interface
(continued from preceding page)

Your Printer	Keyboard Entries	Excerpt or Description of Desired Display
Diablo 630, 1640, or 1650 printer	**A** **C** **12** **340** none none **Y** **C** **D** **UL1** **Y**	(Terminal and Printer Characteristics – Submenu A) LST: baud rate: LST: baud rate: 1200 port: LST: baud rate: 1200 port: 0E0H = 340Q Serial Printer Ready Signal Polarity: LOW Serial Printer Ready Signal: RTS (Pin 4) CP/M Configuration (Main Menu) (Default I/O Configuration – Submenu C) LST: = LST: = UL1: CP/M Configuration (Main Menu)
DECwriter LA-34 or LA-36 printer	**A** **C** **30** **340** none none **P** **Y** **C** **D** **LPT** **Y**	(Terminal and Printer Characteristics – Submenu A) LST: baud rate: LST: baud rate: 300 port: LST: baud rate: 300 port: 0E0H = 340Q Serial Printer Ready Signal Polarity: LOW Serial Printer Ready Signal: RTS (Pin 4) Z89-11 LPT Selection: SERIAL CP/M Configuration (Main Menu) (Default I/O Configuration – Submenu C) LST: = LST: = LPT: CP/M Configuration (Main Menu)
Heath H-14 printer	**A** **C** **4** **340** none none **P** **Y** **C** **D** **LPT** **Y**	(Terminal and Printer Characteristics – Submenu A) LST: baud rate: LST: baud rate: 4800 port: LST: baud rate: 4800 port: 0E0H = 340Q Serial Printer Ready Signal Polarity: LOW Serial Printer Ready Signal: RTS (Pin 4) Z89-11 LPT Selection: SERIAL CP/M Configuration (Main Menu) (Default I/O Configuration – Submenu C) LST: = LST: = LPT: CP/M Configuration (Main Menu)

Table 1-10
Printers with Z89-11 Interface
(continued on next page)

Your Printer	Keyboard Entries	Excerpt or Description of Desired Display
Texas Instruments TI-810 printer	**A**	(Terminal and Printer Characteristics – Submenu A)
	C	LST: baud rate:
	4	LST: baud rate: 4800 port:
	340	LST: baud rate: 4800 port: 0E0H = 340Q
	none	Serial Printer Ready Signal Polarity: LOW
	none	Serial Printer Ready Signal: RTS (Pin 4)
	P	Z89-11 LPT Selection: SERIAL
	Y	CP/M Configuration (Main Menu)
	C	(Default I/O Configuration – Submenu C)
	D	LST: =
	LPT	LST: = LPT:
	Y	CP/M Configuration (Main Menu)
Zenith or Heath Z-25 or H-25 printer	**A**	(Terminal and Printer Characteristics – Submenu A)
	C	LST: baud rate:
	4	LST: baud rate: 4800 port:
	340	LST: baud rate: 4800 port: 0E0H = 340Q
	M	Serial Printer Ready Signal Polarity: HIGH
	none	Serial Printer Ready Signal: RTS (Pin 4)
	P	Z89-11 LPT Selection: SERIAL
	Y	CP/M Configuration (Main Menu)
	C	(Default I/O Configuration – Submenu C)
	D	LST: =
	LPT	LST: = LPT:
	Y	CP/M Configuration (Main Menu)
Epson MX-80 serial printer	**A**	(Terminal and Printer Characteristics – Submenu A)
	C	LST: baud rate:
	4	LST: baud rate: 4800 port:
	340	LST: baud rate: 4800 port: 0E0H = 3400
	M	Serial Printer Ready Signal Polarity: HIGH
	N	Serial Printer Ready Singal: DTR (Pin 20)
	P	Z89-11 LPT Selection: SERIAL
	Y	CP/M Configuration (Main Menu)
	C	(Default I/O Configuration – Submenu C)
	D	LST: =
	LPT	LST: = LPT:
	Y	CP/M Configuration (Main Menu)

Table 1-10
Printers with Z89-11 Interface
(continued on next page)

Your Printer	Keyboard Entries	Excerpt or Description of Desired Display
Epson MX-80 parallel printer	**A** none none **Y** **C** **D** **LPT** **Y**	(Terminal and Printer Characteristics – Submenu A) Parallel Printer Ready Signal Polarity: HIGH Z89-11 LPT Selection: PARALLEL CP/M Configuration (Main Menu) (Default I/O Configuration – Submenu C) LST: = LST: = LPT: CP/M Configuration (Main Menu)

Table 1-10
Printers with Z89-11 Interface
(continued from preceding page)

7. CONFIGUR should now display the selection menu labelled "CP/M Configuration". Respond to the selection prompt in this menu by typing **Y**. CP/M will display the "A>" system prompt.

You have just completed your customization procedure. If you correctly followed your entire customization procedure, your System Disk should contain a copy of the CP/M Operating System that controls all components of your hardware environment.

To combine this customized operating system with an application program, proceed to the "Working Disk Procedures".

NOTE: If you have any hardware devices that are **not** listed in these tables and are still not working with your System Disk, then use the instructions in Volume II: The CP/M Reference Guide to perform the CONFIGUR activity.

If you have devices that are listed in these tables and they still don't function properly with your System Disk, then the devices themselves might have been set with characteristics that this text could not anticipate. Therefore you should refer to your Hardware manual(s) for hardware settings instructions, and to Volume II: The CP/M Reference Guide for CONFIGUR instructions.

Customizing Procedure Two

Two or Three Primary Floppy Drives of the Same Type and No Secondary Drives

This procedure will help you to customize a copy of the CP/M Operating System taken from your Backup Disk (or Backup Disk I), and put this customized system copy on a blank disk. The blank disk must be manufactured the same type as the Backup Disk, Label this blank disk "System Disk". The System Disk must be write enabled during this procedure.

PROCEDURE SYNOPSIS

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

bootstrap
CONFIGUR
FORMAT
MOVCPM*
SYSGEN
bootstrap
PIP
bootstrap
CONFIGUR

To begin Customizing Procedure Two, insert your Backup Disk (or Backup Disk I) in drive A and your System Disk in drive B. Perform bootstrap. The CONFIGUR utility will be invoked automatically. Proceed to the CONFIGUR activity.

* Use either MOVCPM17 or MOVCPM37 or MOVCPM47.

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 drives are 48 TPI 5.25-inch drives or 8-inch drives, then use Method A for this CONFIGUR activity.

If your primary drives are 96 TPI 5.25-inch drives, 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 1-11. 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
N	CP/M CONFIGURATION (Main Menu)
B	5.25 INCH SOFT-SECTORED UNIT 0 STEP RATE: 30MS TRACK DENSITY: 48TPI
	5.25 INCH SOFT-SECTORED UNIT 1 STEP RATE: 30MS TRACK DENSITY: 48TPI
A	SOFT-SECTOR UNIT 0 STEP RATE ?
6	SOFT-SECTOR UNIT 0 STEP RATE ? 6
RETURN	SOFT-SECTOR UNIT 0 TRACK DENSITY ?
96	SOFT-SECTOR UNIT 0 TRACK DENSITY ? 96
RETURN	5.25 INCH SOFT-SECTORED UNIT 0 STEP RATE: 6MS TRACK DENSITY: 96TPI
	5.25 INCH SOFT-SECTORED UNIT 1 STEP RATE: 30MS TRACK DENSITY: 48TPI
B	SOFT-SECTOR UNIT 1 STEP RATE ?
6	SOFT-SECTOR UNIT 1 STEP RATE ? 6
RETURN	SOFT-SECTOR UNIT 1 TRACK DENSITY ?
96	SOFT-SECTOR UNIT 1 TRACK DENSITY ? 96
RETURN	5.25 INCH SOFT-SECTORED UNIT 0 STEP RATE: 6MS TRACK DENSITY: 96TPI
	5.25 INCH SOFT-SECTORED UNIT 1 STEP RATE: 6MS TRACK DENSITY: 96TPI
Y	CP/M CONFIGURATION (Main Menu)
D	RUN AUTOMATIC COMMAND LINE ON COLD BOOT: TRUE
A	RUN AUTOMATIC COMMAND LINE ON COLD BOOT: FALSE
Y	CP/M CONFIGURATION (Main Menu)
Y	A> (CP/M system prompt)

Table 1-11
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

The FORMAT utility prepares your System Disk for data storage. However, FORMAT works differently depending on the type of disk you are using. Therefore, use the FORMAT method specified below:

If your System Disk is hard-sectored, use Method A to FORMAT and follow the numbered steps preceded by the letter A.

If your System Disk is soft-sectored, use Method B to FORMAT and follow the numbered steps preceded by the letter B.

Method A:

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

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

A4. Make sure that the System Disk is properly situated in drive B, and press ***RETURN***. The light on the disk drive will glow for several seconds. Then FORMAT will display:

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

A5. Type **N**. CP/M will display the system prompt:

```
A>
```

Proceed to the MOVCPM activity.

Method B:

B1. After the CP/M prompt A>, type **FORMAT** and press ***RETURN***. This entry invokes FORMAT, which displays a message in the 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):
```

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

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

B3. Type **B**. FORMAT will display one of the following two messages:

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

or

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

B4. If your System Disk is a single-density disk, type **S**.

If your System Disk is a double-density disk, type **D**.

B5. After you respond to the density prompt, FORMAT's response will depend upon the kind of disk you are formatting.

If your System Disk is an 8-inch disk, proceed to step B7.

If your System Disk is a 5.25 inch soft-sectored disk, FORMAT will display:

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

B6. If your System Disk is a single-sided disk, type **1**.

If your System Disk is a double-sided disk, type **2**.

After you respond to the side quantity prompt, FORMAT will display one of the following two messages:

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

or

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

(If the type of TPI drive specified here does not match your drives, repeat the previous CONFIGUR activity.)

B7. FORMAT will also display the following prompt:

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

B8. Make sure that the System Disk is properly situated in drive B, and press ***RETURN***. The light on the disk drive will glow for several seconds. Then FORMAT will display:

```
Do you have more disks to format? (Y/N):
```

B9. Type **N**. CP/M will display:

```
A>
```

Proceed to the MOVCPM activity.

MOVCPM

The MOVCPM utilities enable you to adjust the amount of memory space that the CP/M Operating System will occupy in your microcomputer. Your computer has a memory limit of either 32K, 48K, or 64K. However, the operating system on your Backup Disk is preset to occupy only 32K. ("K" stands for kilobyte, a unit of data storage space.)

MOVCPM loads part of the operating system into a special location in computer memory, and allows this part of the system to expand until it fills the computer's entire memory capacity.

If your computer's memory limit is 32K, then skip the MOVCPM activity and proceed to the instructions for the SYSGEN activity (Method B).

If the memory limit "nn" indicated in the bootstrap message ("nnK HEATH/ZENITH CP/M v.v.vv") is smaller than the your computer's limit, then use one of the MOVCPM utilities to raise the memory limit on your operating system, so that it matches that of your computer.

NOTE: If you don't use MOVCPM to take advantage of all of your computer's available memory space, you will not be able to use your CP/M system with large application programs that require more than 32k of memory space to operate.

1. If you are customizing CP/M Version 2.2.04 with a 5.25-inch hard-sectored System Disk, then enter the following command in response to the system prompt:

   A>**MOVCPM17**

If you are customizing CP/M Version 2.2.04 with a 5.25-inch soft-sectored System Disk, then enter the following command in response to the system prompt:

A>**MOVCPM37**

If you are customizing CP/M Version 2.2.04 with an 8-inch System Disk, then enter the following command in response to the system prompt:

A>**MOVCPM47**

2. Wait for the MOVCPM utility to display a message in the following form:

```
MOVCPMxx Version 2.2.04

CONSTRUCTING nnk CP/M vers 2.2
READY FOR "SYSGEN" OR
"SAVE 38 CPMnn.COM"
```

Proceed immediately to the SYSGEN activity.

SYSGEN

The SYSGEN utility copies some or all of the CP/M Operating System onto your System Disk. SYSGEN might get this operating system copy from the Backup Disk, or from a special location in computer memory (if a MOVCPM activity put part of the operating system in this special memory location.)

If you just performed a MOVCPM activity, use SYSGEN Method A and follow the numbered steps preceded by the letter A.

If the memory limit indicated in the bootstrap message ("nnK HEATH/ZENITH CP/M v.v.vv") matches the actual memory limit of your microcomputer, then use SYSGEN Method B and follow the numbered steps preceded by the letter B.

Method A

A1. At the A> prompt, type **SYSGEN** and press ***RETURN***. This entry invokes the SYSGEN utility, which displays a message in the form:

```
SYSGEN VERSION 2.0.04
SOURCE DRIVE NAME (OR RETURN TO SKIP): RETURN
```

A2. Press ***RETURN*** as shown above. The computer will print:

```
DESTINATION DRIVE NAME (OR RETURN TO REBOOT):
```

A3. Type **B**. CP/M will respond:

```
DESTINATION ON B, THEN TYPE RETURN
```

A4. Press ***RETURN***. CP/M will print:

```
FUNCTION COMPLETE.
DESTINATION DRIVE NAME (OR RETURN TO REBOOT):
```

A5. Reset the computer. Do not enter a carriage return at this prompt. Then perform bootstrap with the Backup Disk in drive A: CP/M will display the system prompt:

```
A>
```

Proceed to the PIP activity.

Method B

B1. At the A> prompt, type **SYSGEN** and press ***RETURN***. This entry invokes SYSGEN, which displays a message in the form:

```
SYSGEN VERSION 2.0.04
SOURCE DRIVE NAME (OR RETURN TO SKIP):
```

B2. Type **A**. SYSGEN will display:

```
SOURCE ON A, THEN TYPE RETURN
```

B3. Press ***RETURN***. SYSGEN will display:

```
FUNCTION COMPLETE
COPY BIOS.SYS (Y/N):
```

B4. Type **Y**. SYSGEN will display:

```
FUNCTION COMPLETE
DESTINATION DRIVE NAME (OR RETURN TO REBOOT):
```

B5. Type **B**. SYSGEN will display:

```
DESTINATION ON B, THEN TYPE RETURN
```

B6. Press ***RETURN***. SYSGEN will display:

```
FUNCTION COMPLETE.
DESTINATION DRIVE NAME (OR RETURN TO REBOOT):
```

B7. Reset the computer. Remove the Backup Disk from drive A:, and insert the System Disk in drive A:. Then insert the Backup Disk in drive B:. Perform bootstrap using the System Disk. CP/M will display the system prompt:

```
A>
```

Proceed to the CONFIGUR activity.

PIP

This PIP activity will help you to copy the BIOS.SYS file from your Backup Disk to your System Disk.

1. At the A> prompt, type the following command line:

   A>**PIP B:=A:BIOS.SYS[R]**

   Where **B:** represents the System Disk (the destination of the BIOS.SYS file);

   where **A:** represents the Backup Disk (the source of the BIOS.SYS file);

   where **BIOS.SYS** is the file component of the CP/M Operating System; and

   where **[R]** is a command line parameter that allows you to copy a file that has Read/Only status (such as BIOS.SYS.)

When PIP has finished copying the BIOS.SYS file, CP/M will redisplay the A> system prompt.

2. At the A> system prompt, reset the computer.

3. Insert the System Disk into drive A, and perform bootstrap to test this disk.

Proceed to the CONFIGUR activity.

CONFIGUR

The CONFIGUR utility customizes the operating system on your System Disk to match several characteristics of your hardware environment. This procedure will show you how to use CONFIGUR to customize the system for only essential hardware characteristics. (Use the CONFIGUR instructions in the Volume II: The CP/M Reference Guide if you want more detailed instructions on using CONFIGUR.)

To begin this activity, you should have your System Disk in drive A, and your Backup Disk (or Backup Disk I) in drive B.

1. Perform bootstrap with the System Disk. CP/M will display the "A>" system prompt.

2. Type the command **B:CONFIGUR *RETURN*** at the system prompt. This entry invokes CONFIGUR, which will present a display that begins with an identification message in the following form:

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

   Take note of your version number. CONFIGUR will continue to display messages, ending with the following prompt:

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

3. Type **N**. CONFIGUR will display a selection menu labelled "CP/M Configuration".

4. Refer to Table 1-12 if you have a Z89-3 interface card, and to Table 1-13 if you have a Z89-11 interface card. Using the appropriate table, type the keyboard entries listed for your terminal. To the right of each entry is an excerpt or description of part of the display that should appear immediately **after** you type the entry. If the excerpted or described display in the table does not appear on your terminal, repeat the entry.

NOTE: Type only the capital letters or numbers featured in bold faced type beneath the heading "Keyboard Entries". Do not change the order of the entries listed. If you type an incorrect entry at a prompt, CONFIGUR will either ignore your mistake, or display it. If a mistake is ignored, simply answer the prompt again. If CONFIGUR displays your mistake, you can usually change it by typing **Z** and repeating a few entries.

Your Terminal	Keyboard Entries	Excerpt or Description of Desired Display
Zenith or Heath Z-19, H-19, Z-88, H-88, Z-89, H-89, or Z-90 terminal	**A** **A** **9** **350** **Y** **C** **A** **CRT** **Y**	(Terminal and Printer Characteristics – Submenu A) CRT: baud rate: CRT: baudrate: 9600 port: CRT: baud rate: 9600 port: 0E8H = 350Q CP/M Configuration (Main Menu) (Default I/O Configuration – Submenu C) CRT: = CON: = CRT: CP/M Configuration (Main Menu)
DECwriter LA-34 or LA-36 terminal	**A** **B** **30** **320** **Y** **C** **A** **TTY** **Y**	(Terminal and Printer Characteristics – Submenu A) TTY: baud rate: TTY: baud rate: 300 port: TTY: baud rate: 300 port: 0D0H = 320Q CP/M Configuration (Main Menu) (Default I/O Configuration – Submenu C) CON: = CON: = TTY: CP/M Configuration (Main Menu)
Diablo KSR 1640 terminal	**A** **B** **12** **320** **Y** **C** **A** **TTY** **Y**	(Terminal and Printer Characteristics – Submenu A) TTY: baud rate: TTY: baud rate: 1200 port: TTY: baud rate: 1200 port: 0D0H = 320Q CP/M Configuration (Main Menu) (Default I/O Configuration – Submenu C) CON: = CON: = TTY: CP/M Configuration (Main Menu)

Table 1-12
Terminals with Z89-3 Interface

Your Terminal	Keyboard Entries	Excerpt or Description of Desired Display
Zenith or Heath Z-19, H-19, Z-88, H-88, Z-89, H-89, or Z-90 terminal	**A** **A** **9** **350** **Y** **C** **A** **CRT** **Y**	(Terminal and Printer Characteristics – Submenu A) CRT: baud rate: CRT: baudrate: 9600 port: CRT: baud rate: 9600 port: 0E8H = 350Q CP/M Configuration (Main Menu) (Default I/O Configuration – Submenu C) CRT: = CON: = CRT: CP/M Configuration (Main Menu)
DECwriter LA-34 or LA-36 terminal	**A** **B** **30** **330** **Y** **C** **A** **TTY** **Y**	(Terminal and Printer Characteristics – Submenu A) TTY: baud rate: TTY: baud rate: 300 port: TTY: baud rate: 300 port: 0D8H = 330Q CP/M Configuration (Main Menu) (Default I/O Configuration – Submenu C) CON: = CON: = TTY: CP/M Configuration (Main Menu)
Diablo KSR 1640 terminal	**A** **B** **12** **330** **Y** **C** **A** **TTY** **Y**	(Terminal and Printer Characteristics – Submenu A) TTY: baud rate: TTY: baud rate: 1200 port: TTY: baud rate: 1200 port: 0D8H = 330Q CP/M Configuration (Main Menu) (Default I/O Configuration – Submenu C) CON: = CON: = TTY: CP/M Configuration (Main Menu)

Table 1-13
Terminals with Z89-11 Interface

5. Refer to Table 1-14 if you have a Z89-3 interface card, and to Table 1-15 if you have a Z89-11 interface card. Using the appropriate table, type the keyboard entries listed for your printer. To the right of each entry is an excerpt or description of part of the display that should appear immediately **after** you type the entry. If the excerpted or described display in the table does not appear, repeat the entry.

Your Printer	Keyboard Entries	Excerpt or Description of Desired Display
Diablo 630, 1640, or 1650 printer	**A** **C** **12** **340** none none **Y** **C** **D** **UL1** **Y**	(Terminal and Printer Characteristics – Submenu A) LST: baud rate: LST: baud rate: 1200 port: LST: baud rate: 1200 port: 0E0H = 340Q Serial Printer Ready Signal Polarity: LOW Serial Printer Ready Signal: RTS (Pin 4) CP/M Configuration (Main Menu) (Default I/O Configuration – Submenu C) LST: = LST: = UL1: CP/M Configuration (Main Menu)
DECwriter LA-34 or LA-36 printer	**A** **C** **30** **340** none none **Y** **C** **D** **LPT** **Y**	(Terminal and Printer Characteristics – Submenu A) LST: baud rate: LST: baud rate: 300 port: LST: baud rate: 300 port: 0E0H = 340Q Serial Printer Ready Signal Polarity: LOW Serial Printer Ready Signal: RTS (Pin 4) CP/M Configuration (Main Menu) (Default I/O Configuration – Submenu C) LST: = LST: = LPT: CP/M Configuration (Main Menu)
Heath H-14 printer	**A** **C** **4** **340** none none **Y** **C** **D** **LPT** **Y**	(Terminal and Printer Characteristics – Submenu A) LST: baud rate: LST: baud rate: 4800 port: LST: baud rate: 4800 port: 0E0H = 340Q Serial Printer Ready Signal Polarity: LOW Serial Printer Ready Signal: RTS (Pin 4) CP/M Configuration (Main Menu) (Default I/O Configuration – Submenu C) LST: = LST: = LPT: CP/M Configuration (Main Menu)

Table 1-14
Printers with Z89-3 Interface
(continued on next page)

Your Printer	Keyboard Entries	Excerpt or Description of Desired Display
Texas Instruments TI-810 printer	**A** **C** **4** **340** **none** **none** **Y** **C** **D** **LPT** **Y**	(Terminal and Printer Characteristics – Submenu A) LST: baud rate: LST: baud rate: 4800 port: LST: baud rate: 4800 port: 0E0H = 340Q Serial Printer Ready Signal Polarity: LOW Serial Printer Ready Signal: RTS (Pin 4) CP/M Configuration (Main Menu) (Default I/O Configuration – Submenu C) LST: = LST: = LPT: CP/M Configuration (Main Menu)
Zenith or Heath Z-25 or H-25 printer	**A** **C** **4** **340** **M** none **Y** **C** **D** **LPT** **Y**	(Terminal and Printer Characteristics – Submenu A) LST: baud rate: LST: baud rate: 4800 port: LST: baud rate: 4800 port: 0E0H = 340Q Serial Printer Ready Signal Polarity: HIGH Serial Printer Ready Signal: RTS (Pin 4) CP/M Configuration (Main Menu) (Default I/O Configuration – Submenu C) LST: = LST: = LPT: CP/M Configuration (Main Menu)
Epson MX-80 serial printer	**A** **C** **4** **340** **M** **N** **Y** **C** **D** **LPT** **Y**	(Terminal and Printer Characteristics – Submenu A) LST: baud rate: LST: baud rate: 4800 port: LST: baud rate: 4800 port: 0E0H = 3400 Serial Printer Ready Signal Polarity: HIGH Serial Printer Ready Singal: DTR (Pin 20) CP/M Configuration (Main Menu) (Default I/O Configuration – Submenu C) LST: = LST: = LPT: CP/M Configuration (Main Menu)

Table 1-14

Printers with Z89-3 Interface

(continued from preceding page)

Your Printer	Keyboard Entries	Excerpt or Description of Desired Display
Diablo 630, 1640, or 1650 printer	**A** **C** **12** **340** none none **Y** **C** **D** **UL1** **Y**	(Terminal and Printer Characteristics – Submenu A) LST: baud rate: LST: baud rate: 1200 port: LST: baud rate: 1200 port: 0E0H = 340Q Serial Printer Ready Signal Polarity: LOW Serial Printer Ready Signal: RTS (Pin 4) CP/M Configuration (Main Menu) (Default I/O Configuration – Submenu C) LST: = LST: = UL1: CP/M Configuration (Main Menu)
DECwriter LA-34 or LA-36 printer	**A** **C** **30** **340** none none **P** **Y** **C** **D** **LPT** **Y**	(Terminal and Printer Characteristics – Submenu A) LST: baud rate: LST: baud rate: 300 port: LST: baud rate: 300 port: 0E0H = 340Q Serial Printer Ready Signal Polarity: LOW Serial Printer Ready Signal: RTS (Pin 4) Z89-11 LPT Selection: SERIAL CP/M Configuration (Main Menu) (Default I/O Configuration – Submenu C) LST: = LST: = LPT: CP/M Configuration (Main Menu)
Heath H-14 printer	**A** **C** **4** **340** none none **P** **Y** **C** **D** **LPT** **Y**	(Terminal and Printer Characteristics – Submenu A) LST: baud rate: LST: baud rate: 4800 port: LST: baud rate: 4800 port: 0E0H = 340Q Serial Printer Ready Signal Polarity: LOW Serial Printer Ready Signal: RTS (Pin 4) Z89-11 LPT Selection: SERIAL CP/M Configuration (Main Menu) (Default I/O Configuration – Submenu C) LST: = LST: = LPT: CP/M Configuration (Main Menu)

Table 1-15
Printers with Z89-11 Interface
(continued on next page)

Your Printer	Keyboard Entries	Excerpt or Description of Desired Display
Texas Instruments TI-810 printer	**A**	(Terminal and Printer Characteristics – Submenu A)
	C	LST: baud rate:
	4	LST: baud rate: 4800 port:
	340	LST: baud rate: 4800 port: 0E0H = 340Q
	none	Serial Printer Ready Signal Polarity: LOW
	none	Serial Printer Ready Signal: RTS (Pin 4)
	P	Z89-11 LPT Selection: SERIAL
	Y	CP/M Configuration (Main Menu)
	C	(Default I/O Configuration – Submenu C)
	D	LST: =
	LPT	LST: = LPT:
	Y	CP/M Configuration (Main Menu)
Zenith or Heath Z-25 or H-25 printer	**A**	(Terminal and Printer Characteristics – Submenu A)
	C	LST: baud rate:
	4	LST: baud rate: 4800 port:
	340	LST: baud rate: 4800 port: 0E0H = 340Q
	M	Serial Printer Ready Signal Polarity: HIGH
	none	Serial Printer Ready Signal: RTS (Pin 4)
	P	Z89-11 LPT Selection: SERIAL
	Y	CP/M Configuration (Main Menu)
	C	(Default I/O Configuration – Submenu C)
	D	LST: =
	LPT	LST: = LPT:
	Y	CP/M Configuration (Main Menu)
Epson MX-80 serial printer	**A**	(Terminal and Printer Characteristics – Submenu A)
	C	LST: baud rate:
	4	LST: baud rate: 4800 port:
	340	LST: baud rate: 4800 port: 0E0H = 3400
	M	Serial Printer Ready Signal Polarity: HIGH
	N	Serial Printer Ready Singal: DTR (Pin 20)
	P	Z89-11 LPT Selection: SERIAL
	Y	CP/M Configuration (Main Menu)
	C	(Default I/O Configuration – Submenu C)
	D	LST: =
	LPT	LST: = LPT:
	Y	CP/M Configuration (Main Menu)

Table 1-15
Printers with Z89-11 Interface
(continued on next page)