AA-W757A-TV

Rainbow™ 100

MS™-DOS

User's Guide

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Preface

Welcome to MS-DOS

We congratulate you on the purchase of the Rainbow 100 personal computing system. The Rainbow 100 computer is today's most versatile MS-DOS system. And it is the only industry standard computer built to DIGITAL'S quality specifications and backed by DIGITAL'S commitment to service and support. The Rainbow 100 computer is a sound investment in personal productivity that you'll enjoy using every day.

To get started, we have prepared a set of easy-to-use documentation. In the back of these manuals is a card that welcomes your comments. Please let us hear from you.

Remember that purchasing your first Rainbow 100 computer is just the beginning of your relationship with Digital Equipment Corporation, the world's leading manufacturer of minicomputers. Our dedication to quality manufacturing, our extensive availability of spares and accessories, and our service organization of 16,000 representatives worldwide are your further assurance of total DIGITAL quality. With the Rainbow 100 computer and the MS-DOS operating system you have an investment that will grow in value as you use it now and in the future.

Intended Reader

This guide is intended for first-time users of Digital Equipment Corporation's Rainbow 100 computer. The purpose of this guide is to provide you with detailed information about the MS-DOS operating system.

This guide assumes that you have:

- Installed the Rainbow 100 computer according to the instructions in the *Rainbow 100 Installation Guide.*
- Read the *Rainbow 100 MS-DOS Getting Started.*
- Made a copy of the MS-DOS master system diskette.

Guide Organization

Chapter 1 introduces the MS-DOS operating system and an example of how to create and print a short memo.

Chapter 2 discusses the MS-DOS operating system commands in alphabetical order.

Chapter 3 describes how to use the MS-DOS editing and function keys.

Chapter 4 discusses how to use the MS-DOS text editor, EDLIN.

Chapter 5 discusses Rainbow 100 and MS-DOS error messages.

Appendix A lists DIGITAL'S International Help Line numbers.

Appendix B describes how to store, handle, and use diskettes.

Conventions Used

Follow the conventions listed below while using this guide.

- In examples of dialog between you and the computer, what the computer displays on the screen is shown in black. The characters you type from the keyboard are shown in color.
- You can type these characters in either lowercase or uppercase characters. Use the Shift or Lock key (see Figure 1) on the keyboard to enable uppercase characters.

  IMPORTANT
  The Lock key does not enable you to type the numeric and special symbol keys. For example, if you want to type $, %, *, (, :, ? you must use the Shift key. The Lock key only affects the alphabetic characters.

- Make sure to type all spaces and punctuation marks exactly as they are printed.
- When you see <Return>, press the Return key on the keyboard (see Figure 1).
- When you see <Ctrl/C>, hold down the control key (Ctrl key on the keyboard as shown in Figure 1). While you are still holding the Ctrl key, press the C key and then release both keys.

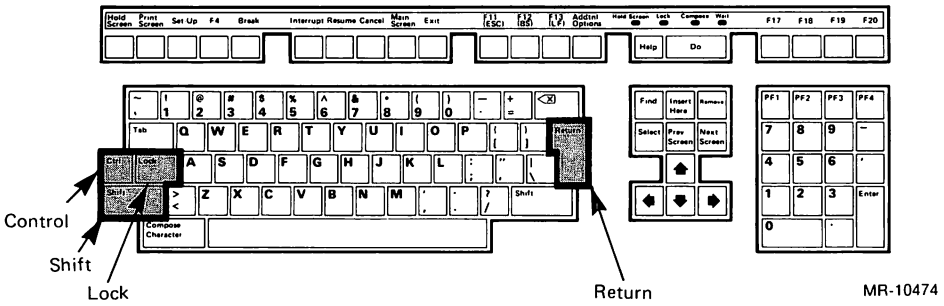


Figure 1. Control, Shift, Lock, and Return Keys

Additional Information

Refer to the *Rainbow 100 User's Guide* for information on:

- Using the keyboard
- Using Set-Up features
- Using the Rainbow 100 computer as a terminal

You can find this guide in the Rainbow 100 User Kit.

Advanced users of the MS-DOS operating system may find the Rainbow 100 MS-DOS Technical Documentation Kit (order number QV025-GZ) useful. Turn to the end of this guide for ordering information.

1

Introducing the MS-DOS Operating System

An operating system is a group of instructions that control the overall operation of the computer. This guide discusses MS-DOS, an operating system for the Rainbow 100 computer. With this operating system, you can run a variety of application programs.

To use this guide, you should have:

1. Installed the Rainbow 100 computer according to the instructions in the *Rainbow 100 Installation Guide.*
2. Read the *Rainbow 100 MS-DOS Getting Started,* which describes:
   - Starting and stopping the computer,
   - Making a copy of the MS-DOS operating system master diskette.

Hands-on Experience

This chapter explains introductory operating system concepts and operations that enable you to:

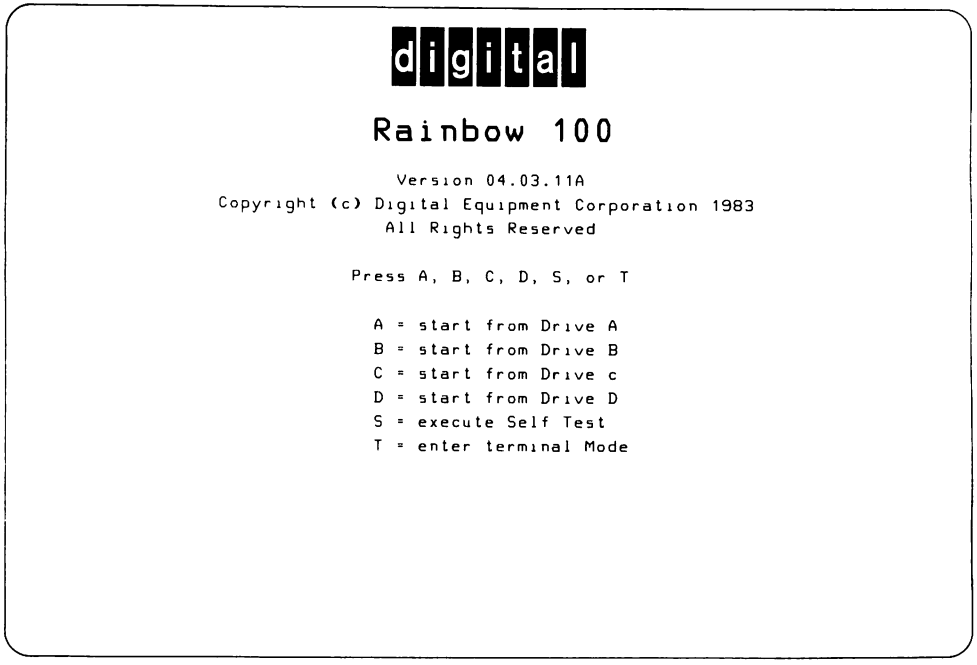
1. Start the operating system.
2. Use a few common commands (instructions to the operating system).
3. Create a short memo.
4. Print the memo on a printer.
5. Copy the memo to another diskette.

The end of this chapter includes information on correcting problems.

Starting the Operating System

Start the MS-DOS operating system by completing the following instructions:

1. Be sure there is no protective card or diskette in any of the drives.
2. Turn on the computer by pressing the power switch to the 1 (on) position on the front of the system unit. The drive doors can be open or closed.
3. Be sure the Main System Menu is displayed on the screen, as shown in Screen 1.



BU-1636

Screen 1. Rainbow 100 Main System Menu

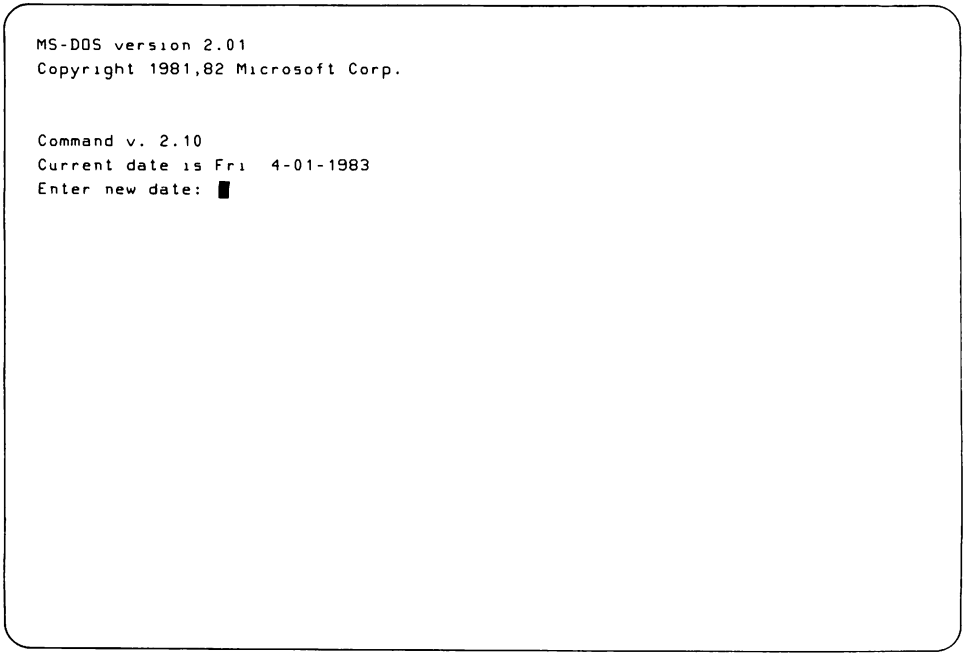
4. Remove the MS-DOS working diskette from its protective paper envelope. (You created this diskette following the instructions in Chapter 2 of the *Rainbow 100 MS-DOS Getting Started.*)
5. Open the door of drive A and insert the working diskette. Be sure to align the orange arrow on the diskette with the orange stripe on the diskette drive.
6. Close the drive door.
7. Start the MS-DOS operating system by pressing:

   A

   in response to the Main System Menu. Pressing A tells the computer which drive contains the MS-DOS operating system diskette. This is the drive from which you want to work.

After you hear clicking and whirring sounds, the MS-DOS operating system displays a start-up message similar to the one shown in Screen 2.

> **NOTE**
> The screens in this guide may not be identical to those displayed on your computer. The general form of the information should be the same, but specific information such as dates and times may differ. If, at anytime, a screen does not display, refer to the end of this chapter for help. For explanations of error messages, refer to Chapter 5.



Screen 2. MS-DOS Operating System Start-Up Message

BU-1637

8. The MS-DOS operating system displays a date and then prompts (asks) you to enter the actual date. You enter the current date using the following format:

   mm-dd-yy

   For example, you would enter June 10, 1983 as:

   ```
   6-10-83
   ```

   Now, enter **today's date** and press the **Return** key.

9. The MS-DOS operating system displays a time and prompts you to enter the actual time. You enter the time using the following format on a twenty-four hour clock:

   hh:mm

   For example, you would enter 9:15 a.m. as:

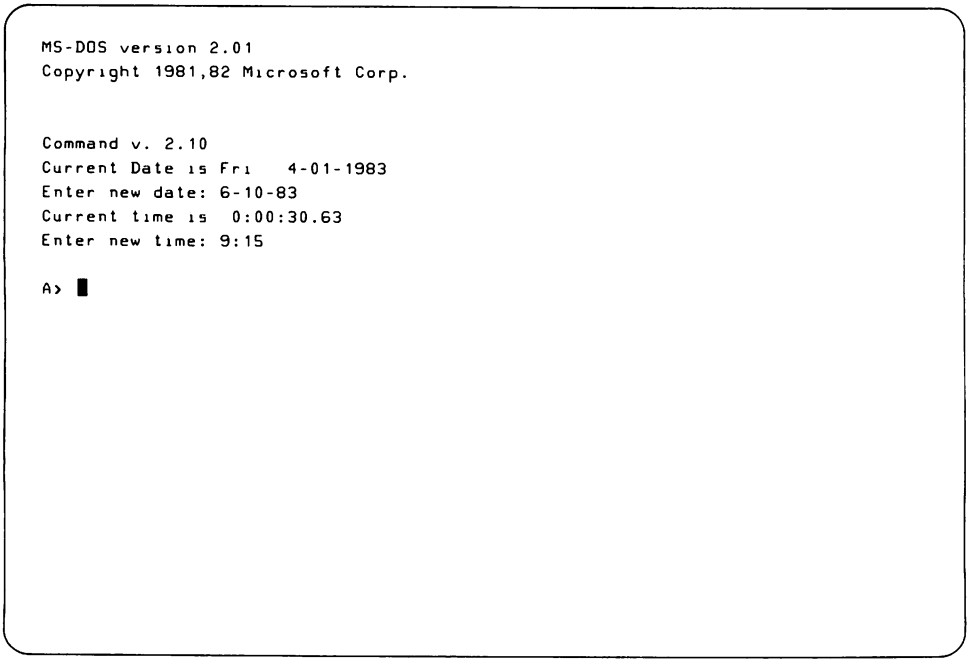
   ```
   9:15
   ```

   and 9:15 p.m. as:

   ```
   21:15
   ```

   Now, enter the **current time** and press the **Return** key.

Screen 3 shows a date and time input sequence.



Screen 3. Date and Time Input

BU-1638

Notice the last two symbols displayed on the left side of the screen, A>. This is called the operating system prompt, or prompt. It indicates that the operating system is waiting for instructions. The prompt consists of the name of the drive the operating system is currently working from (A, B, C, or D) and a right angle bracket. The drive identified in the prompt is known as the active drive, or default drive.

Entering Instructions

Whenever the MS-DOS operating system displays its prompt, you can type an instruction. Instructions are commands that you type on the keyboard. These commands tell the operating system what to do.

Most of the operating system commands are designed to act on a file, which is a collection of information stored on the diskette. The MS-DOS operating system works with two types of files:

- Program files, which contain a collection of instructions telling the computer how to perform a specific task.
- Text files, which contain a collection of user information, such as a list of numbers or a memo.

The operating system accepts commands from you to:

- List the names of files on a diskette.
- Copy the entire contents of a diskette.
- Copy individual files.
- Create text files.
- Display a text file on the screen.
- Print files on a printer.
- Delete files.
- Run programs.

Type a command directly after the A> prompt. As you type a command, the computer displays the command characters on the screen as you enter them.

The cursor is a blinking rectangle or blinking underline that indicates where you enter the next character. The cursor moves to the right each time you type a character.

NOTE
The computer displays the characters you type as lowercase characters unless you use the Shift or Lock keys to obtain uppercase characters. A light above the Help and Do keys indicates when the Lock key is on. To release the Lock key press the Lock key again.

You can type commands in either uppercase or lowercase characters. After typing most commands, press the Return key. Pressing the Return key tells the operating system that you have finished typing the command and want the command executed. Some programs display messages such as <CR> (for carriage return) or "RETURN" to indicate that you should press the Return key.

Displaying a Directory

A commonly-used command is the DIR command, which displays the diskette file directory. Each diskette that contains files also contains a file directory. A file directory—or directory—is like a book's table of contents. It tells the operating system what files are stored on the diskette.

To list the names of files stored on the working diskette in drive A, after the prompt, type:

```
A>DIR<Return>
```

Remember to type only what is printed in color. The symbol <Return> means "press the Return key."

The operating system displays a list of file names. Screen 4 shows the list of files stored on the MS-DOS operating system diskette.

```
A>DIR

 Volume in drive A is MSDOS51783
 Directory of  A:\

COMMAND   COM     15925    5-17-83    1:50p
DEBUG     COM     11764    2-01-83   10:13a
CHKDSK    COM      6330    5-17-83    4:08p
RECOVER   COM      2277    2-01-83    2:22p
SYS       COM       850    5-17-83    4:09p
MORE      COM      4364    1-14-83    6:42p
DISKCOPY  COM      1419    2-14-83    4:39p
EDLIN     COM      4489    5-17-83    4:31p
EXE2BIN   EXE      1649    2-01-83    9:19a
LINK      EXE     42368    1-06-83    4:36p
FIND      EXE      5796    1-14-83    6:35p
FC        EXE      2553    2-01-83    9:36a
SORT      EXE      1360    5-17-83    4:34p
FORMAT    COM      4176    5-10-83   12:12p
PRINT     COM      3335    5-17-83    3:38p
MASM      EXE     77440    2-01-83    1:13p
CREF      EXE     13824    6-02-82    6:06p
        17 File(s)     163840 bytes free

A>
```

BU-1639

Screen 4. DIR Command for Drive A

NOTE

Files are identified by two parts: file name and file type. In the directory, the file name and file type are separated by a space. The file type indicates the type of file. For example, the file type TXT indicates a document or text file. Refer to Chapter 2 for more information on file names.

Correcting Spelling and Typing Mistakes

The operating system executes a command after you press the Return key. If you misspell a command or make a typographical error and then press the Return key, the operating system indicates that it does not understand the command by displaying an error message. Try the following example. Type:

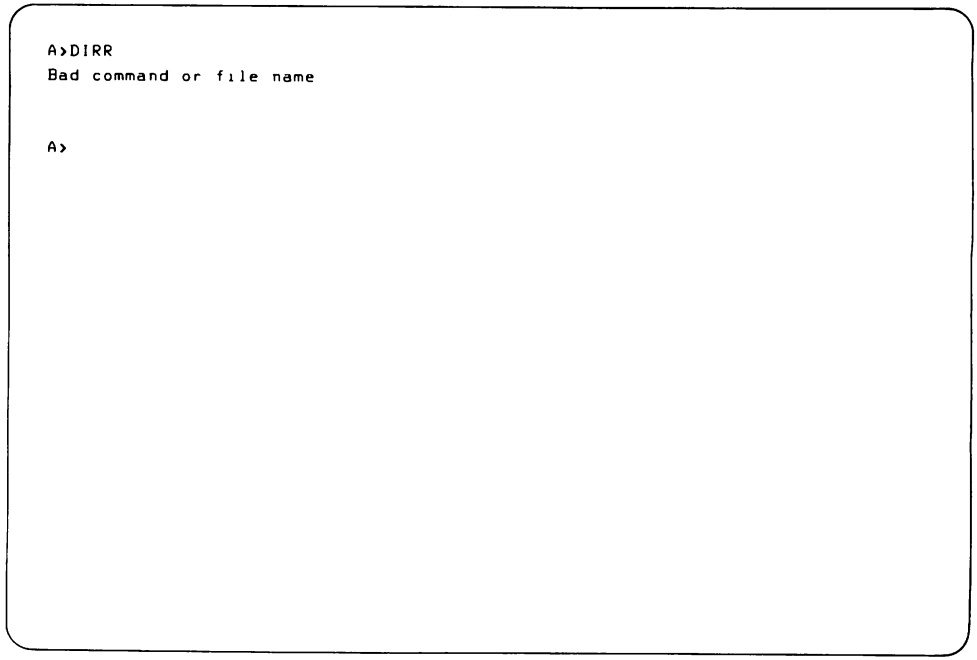
```
A>DIRR<Return>
```

The operating system displays:

```
Bad command or file name

A>
```

The message "Bad command or file name" indicates the MS-DOS operating system did not recognize DIRR as a valid command. The A> prompt indicates that the operating system is waiting for you to retype the command correctly. See Screen 5.



BU-1640

Screen 5. Example of Typing Error

As long as you see the A> prompt, you can retype the command.

If you mistype a command and realize your mistake before you press the Return key, you can correct it using the delete character key.

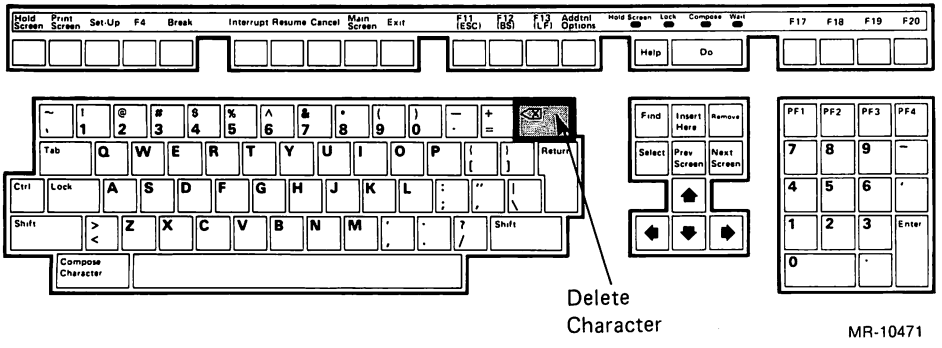


Figure 2. Delete Character Key

Delete Character Key

Each time you press the delete character key, the last character you typed is erased from the screen and the cursor moves back one space. You cannot erase the prompt.

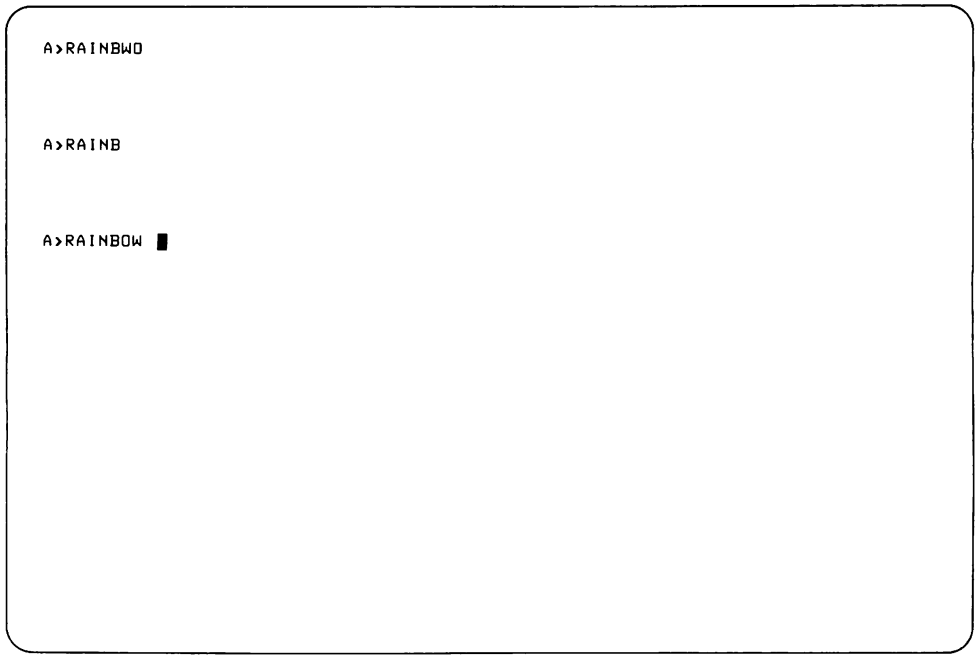
To see how the delete character key works, when you see the A> prompt, complete the following instructions.

1. Type:

   ```
   A>RAINBWO
   ```

2. Press the **delete character** key twice. The characters "O" and "W" are erased, leaving the characters "RAINB" displayed on the screen.

3. Now type **OW** to complete the word RAINBOW.
   Screens 6 shows this sequence.
4. Press the delete character key seven times to erase the entire word.



BU-1641

Screen 6. Delete Character Key

Checking the Diskette in Drive A

You should periodically run the CHKDSK command to check for errors on the diskette. If CHKDSK displays any error messages, refer to the complete discussion of CHKDSK in Chapter 2.

Run CHKDSK by typing:

```
A>CHKDSK<Return>
```

Screen 7 shows the CHKDSK display.

```
A>CHKDSK
Volume MSDOS51783  created May 18, 1983 3:14p


   393216 bytes total disk space
    25600 bytes in 3 hidden files
   203776 bytes in 17 user files
   163840 bytes available on disk


   262144 bytes total memory
   236176 bytes free

A>
```

BU-1642

Screen 7. CHKDSK Display

Creating and Printing a Memo

The following example shows you how to use EDLIN, a text editor, to enter a memo and store it on the diskette. The example also shows you how to print the memo on a printer.

Starting the Editor and Inserting Text

The first step in creating a file is to assign a file name and file type. Because the example is a memo containing text, call the file MEMO.TXT.

1. To start EDLIN, type:

   ```
   A>EDLIN MEMO.TXT<Return>
   ```

   EDLIN responds with:

   ```
   New file
   *
   ```

   The * is the EDLIN prompt. It indicates EDLIN is waiting for you to type an instruction.

2. To type text in the memo, enter insert mode by typing:

   ```
   *I<Return>
   ```

   EDLIN displays:

   ```
       1:*
   ```

   to indicate you can type the first line of the memo.

3. Type the following text and press the Return key:

```
1:*To: Fred<Return>
```

EDLIN displays:

```
2:*
```

4. Type the second line of text and press the Return key:

```
2:*From: Alyce<Return>
```

EDLIN displays:

```
3:*
```

5. Type the third line of text and press the Return key:

```
3:*I'm writing this memo using the Rainbow 100 computer.<Return>
```

EDLIN displays:

```
4:*
```

6. Type the last line and press the Return key:

```
4:*It's very easy to do.<Return>
```

EDLIN displays:

```
5:*
```

7. To leave insert mode hold down the Ctrl key and press the C key. This action is indicated by <Ctrl/C>. Try it now.

```
5:*<Ctrl/C>
```

EDLIN displays:

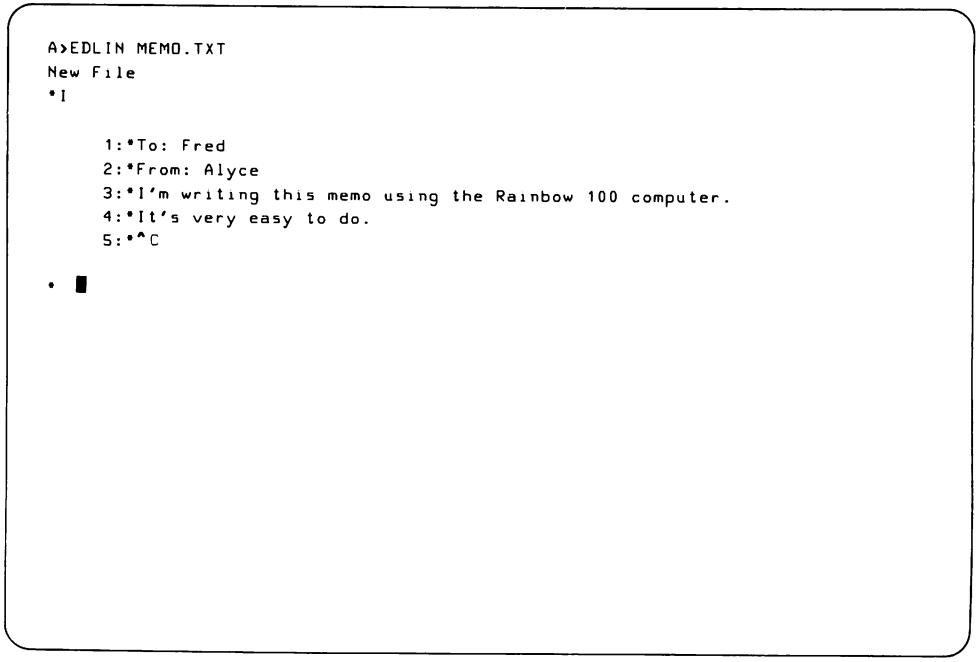
^C

and then

*

The * indicates you are no longer in insert mode.

Screen 8 shows the Insert procedure.



BU-1643

Screen 8. Inserting the Memo

Displaying the Memo

Display the memo again by typing:

```
*L<Return>
```

next to the *. See Screen 9.

```
*L

     1: To: Fred
     2: From: Alyce
     3: I'm writing this memo using the Rainbow 100 computer.
     4: It's very easy to do.

*
```

BU-1644

Screen 9. Displaying the Memo

Leaving the Editor

After displaying the memo, EDLIN displays:

```
*
```

To leave the editor and save MEMO.TXT on the diskette, type:

```
*E<Return>
```

next to the *.

The MS-DOS operating system displays its A> prompt.

Printing the Memo

Before you print the memo, check to see that the printer is connected to the Rainbow 100 computer and that the printer is turned on. The *Rainbow 100 Owner's Manual* shows you how to connect a printer to the Rainbow 100 computer.

To print the memo, type:

```
A>PRINT MEMO.TXT<Return>
```

If this is the first time you have used the PRINT command since you started the computer, the operating system displays the following message:

```
Name of list device [PRN]:
```

In response, press the Return key.

```
Name of list device [PRN]:<Return>
```

The operating system displays:

```
Resident part of PRINT installed
```

As the memo starts to print, the MS-DOS operating system displays:

```
A:MEMO     .TXT is currently being printed
```

Screen 10 shows the PRINT dialog. The "A:" confirms that you are printing a file from the diskette in drive A.

```
A>PRINT MEMO.TXT
Name of list device [PRN]:
Resident part of PRINT installed

       A:MEMO     .TXT is currently being printed

A>
```

BU-1645

Screen 10. PRINT Dialog

Copying a Memo to Another Diskette

You can use the COPY command to copy files from one diskette to another diskette. This is useful if you want to make a backup copy of a file. This example shows you how to copy the memo you just created, MEMO.TXT, from the diskette in drive A to a diskette in drive B.

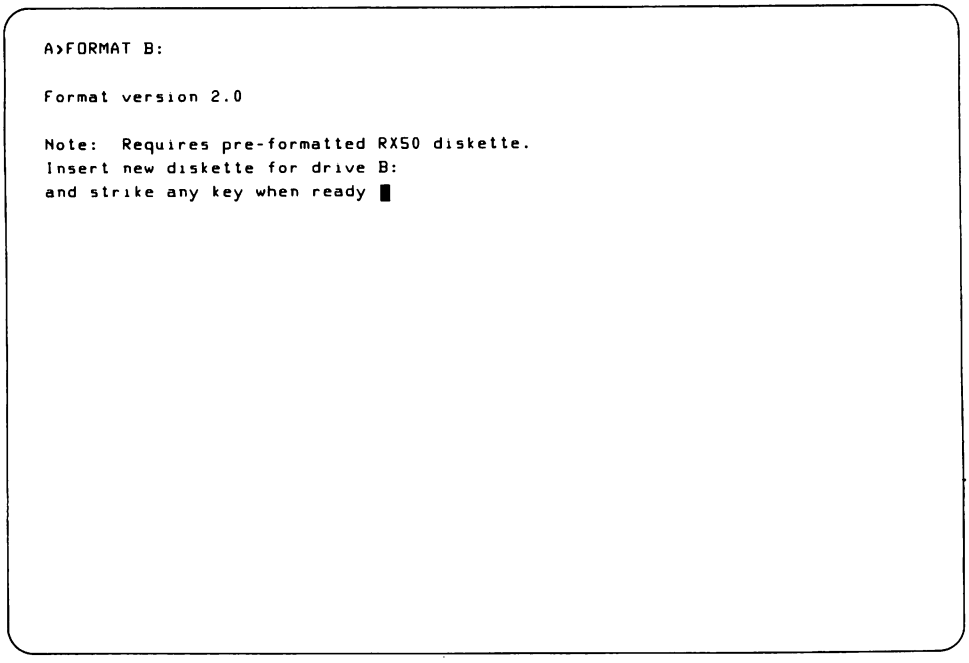
Preparing a Diskette

Before you can copy the memo, you must prepare a new diskette to receive information. The process of preparing the diskette is called formatting. Find a new RX50K diskette and do the following:

1. After the prompt, type:

   ```
   A>FORMAT B:<Return>
   ```

   The FORMAT program displays the introductory message shown in Screen 11.



BU-1646

Screen 11. FORMAT Introductory Message

2. Open the drive B door and insert the blank diskette in drive B.
3. Close the drive B door.
4. Press:

   <Return>

   The FORMAT program displays:

   ```
   Volume label (11 characters, RETURN for none)?
   ```

5. Type:

   MYDISKETTE<Return>

The FORMAT program displays:

```
393216 bytes total disk space
393216 bytes available on disk
```

followed by the prompt:

```
Format another(Y/N)?
```

6. Press:

   N

   The MS-DOS operating system displays the A> prompt.

Screen 12 shows the complete FORMAT dialog.

```
A>FORMAT B:

Format version 2.0

Note:  Requires pre-formatted RX50 diskette.

Insert new diskette for drive B:
and strike any key when ready


Volume label (11 characters, RETURN for none)? MYDISKETTE


   393216 bytes total disk space
   393216 bytes available on disk


Format another (Y/N)?N
A>
```

BU-1647

Screen 12. FORMAT Dialog

Copying the Memo

To copy the memo from the diskette in drive A to the diskette in drive B, next to the prompt, type:

```
A>COPY MEMO.TXT B:MEMO.TXT<Return>
```

The operating system displays:

```
        1 File(s) copied

A>
```

This indicates the copy procedure was successful.

Working with the Diskette in Drive B

This section shows you how to:

1. Change the active drive from A to B.
2. Display the drive B directory.
3. Display MEMO.TXT on the screen.
4. Delete MEMO.TXT from the diskette.
5. Change the active drive from B to A.

Changing the Active Diskette Drive to B

To check that the copy was made, display a directory of drive B. To tell the operating system to look at the diskette in drive B, type:

```
A>B:<Return>
```

The MS-DOS operating system displays:

```
B>
```

indicating that drive B is now active.

Displaying the Directory of Drive B

To display the directory of the diskette in drive B, type:

```
B>DIR<Return>
```

Screen 13 shows that MEMO.TXT is on the diskette in drive B.

```
A>B:

B>DIR

  Volume in drive B is MYDISKETTE
  Directory of B:\


MEMO      TXT       102   6-10-83   9:50a
          1 File(s)   392704 bytes free

B>
```

BU-1648

Screen 13. Directory of Drive B

Displaying a File on the Screen

Use the TYPE command to display the contents of a file. To display MEMO.TXT from the diskette in drive B, type:

```
B>TYPE MEMO.TXT<Return>
```

The operating system displays the memo as shown in Screen 14.

```
B>TYPE MEMO.TXT
To: Fred
From: Alyce
I'm writing this memo using the Rainbow 100 computer.
It's very easy to do.

B>
```

BU-1649

Screen 14. The TYPE Command

Deleting a File

If you no longer need to keep a file, delete it from the diskette directory with the DEL command. Once you delete the file you can never access its contents, so think carefully before you delete it.

To delete MEMO.TXT from the diskette in drive B:, type:

```
B>DEL MEMO.TXT<Return>
```

To check that MEMO.TXT is no longer in the drive B directory, type:

```
B>DIR<Return>
```

Screen 15 shows the directory. Notice MEMO.TXT is not included.

```
B>DIR

 Volume in drive B is MYDISKETTE
 Directory of B:\


File not found

B>
```

BU-1650

Screen 15. Directory of Drive B After Deleting MEMO.TXT

Changing the Active Diskette Drive to A

Because you do not have any files on the diskette in drive B, make drive A the active drive again by typing:

```
B>A:<Return>
```

The MS-DOS operating system displays the prompt:

```
A>
```

What to do in Case of Trouble

If you have any trouble while using the computer, there are several steps to try. These steps are described in the next two sections:

1. Refer to Chapter 5 for a list of operating system messages.
2. Reset the the Rainbow 100 computer.

Operating System Messages

Messages can be displayed for a variety of reasons. For example, if you:

- Type a command incorrectly.
- Type an invalid command.
- Omit some information the operating system needs to process the command.
- Select a nonexistent drive.

You cannot anticipate all the conditions that can cause a message. However, if you get a message:

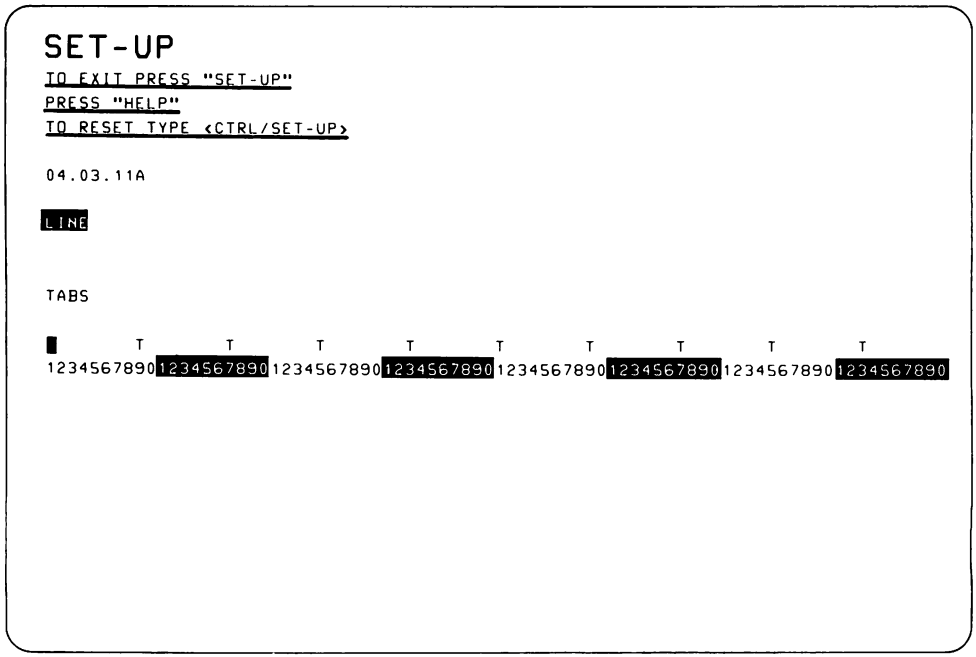
- Check for spelling errors. If you find any, retype the command.
- Check the list of commands in Chapter 2 to determine if the command you typed is a valid MS-DOS operating system command.

- Refer to Chapter 2 for further discussion of the commands or to Chapter 5 for a list of operating system messages, what they mean, and what to do about them.

Resetting the Rainbow 100 Computer

If the operating system encounters a condition it cannot deal with, it may fail to display a message or fail to respond to any key you type. If this happens, or if you want to start over for some reason, reset the computer. You reset while the computer is turned on. Diskettes may be in or out of the drives. To reset the computer:

1. Press the Set-Up key. The text on your screen should look like that in Screen 16.



BU-1652

Screen 16. Set-Up Display

2. Then hold down the Ctrl key while pressing the Set-Up key.

After you press these keys, the computer displays:

```
TESTING...
```

About four seconds later, the test is completed. If the system detects no errors, the computer displays the Main System Menu.

Then, you can restart the MS-DOS operating system by pressing:

```
A
```

2

Using the MS-DOS Operating System

This chapter is divided into three sections:

- Section 1 explains concepts about files, directories, and commands.
- Section 2 discusses the most frequently used commands. The commands are listed alphabetically.
- Section 3 describes batch commands, which allow you to process a group of commands as one operation.

Section 1
Using Commands, Files, and Directories

Commands

A command has three parts:

- The command or keyword
- The optional command tail
- Carriage return, shown as <Return >

Any combination of these parts is a command line. For example, the following is a command line:

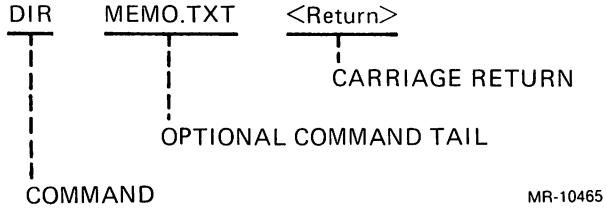


Figure 3. Command Line Example

Commands are instructions that tell the MS-DOS operating system to perform a single operation.

An optional command tail supplies the command with additional information, often a file name.

To have the MS-DOS operating system execute the command, press the Return key.

When you type commands, exact spacing and punctuation are important. In most cases, you must type at least one space after a command to separate the command from the optional command tail. Rarely is a space required between the command tail and the carriage return. Additional spacing and punctuation requirements are noted in Section 2, where each command is described.

Files

Most commands are designed to act on files. A file is a collection of related information. A file on your diskette can be compared to a file folder in a file cabinet. For example, one file folder might contain the names and addresses of the employees who work in your office. You might name this file the Employee Master File in your file cabinet (see Figure 4). A file on your diskette could also contain the names and addresses of the employees in your office and could be named EMPLOYEE.TXT (see Figure 5).

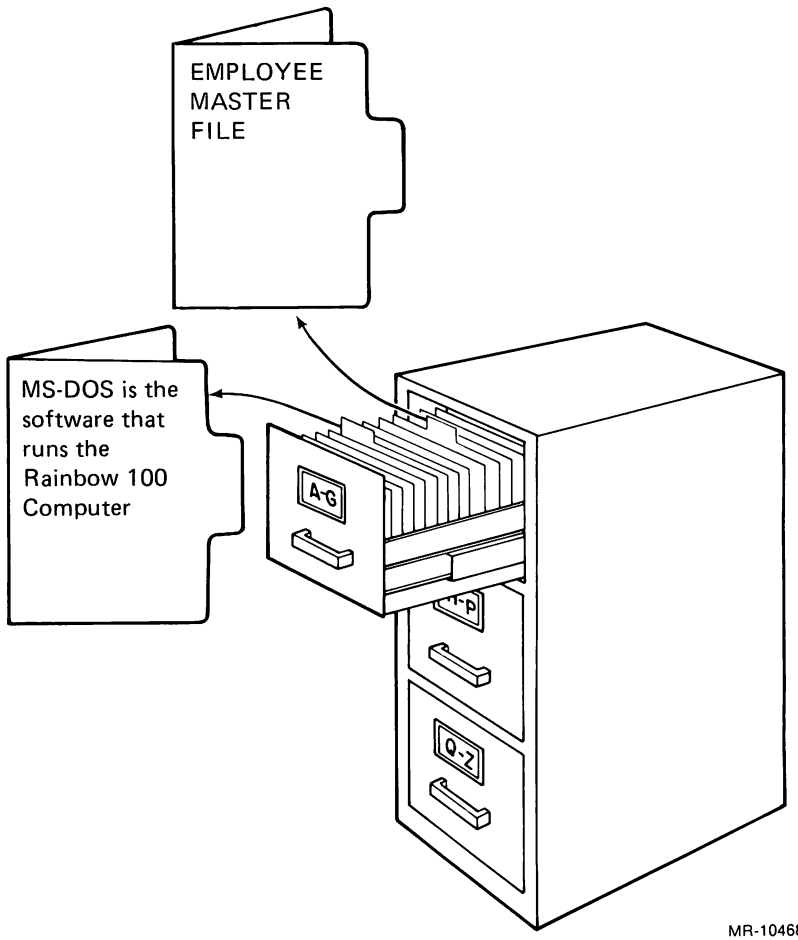


Figure 4. Storing Information in a File Cabinet

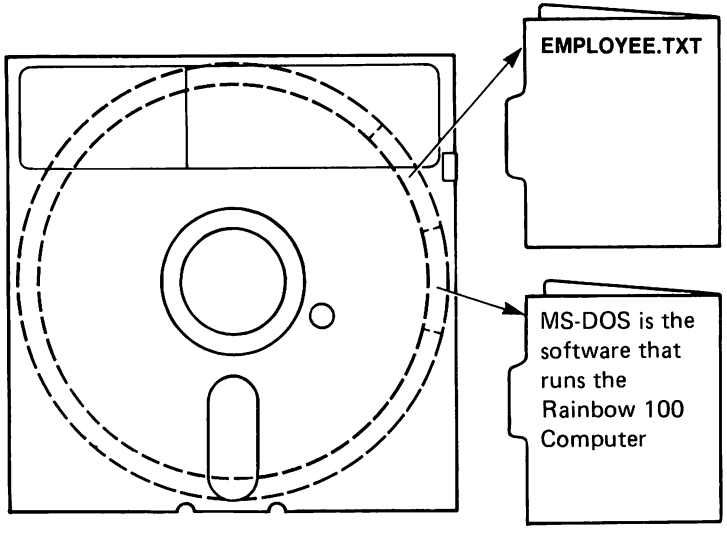


Figure 5. Storing Information on a Diskette

All programs, text, and data on your diskette reside in files, and each file has a unique name. You refer to a file by its name.

Each time you input and save data or text you create a file. You also create a file when you write and name programs and save them on your diskette.

Naming Files

The name of a file has two parts:

- The file name
- The file type

In the example below, MYFILE is the **file name** and .EXE is the **file type.**

```
MYFILE.EXE
```

A file name can be from one to eight characters. The file type can be three or fewer characters. You can type the characters in lowercase or uppercase letters.

File names usually consist of letters and numbers, but other characters are allowed. Acceptable characters for file types are the same as those for file names. The following list specifies the characters you can use in file names and file types.

A through Z
0 through 9
$ (dollar sign)
& (ampersand)
# (number sign)
% (percent)
' (apostrophe)
( ) (parentheses)
- (hyphen)
@ (at sign)
^ (circumflex)
{ } (braces)
~ (tilde)
` (grave accent)
! (exclamation)

Illegal File Names

The MS-DOS operating system reserves certain three-letter words for special purposes. The following three-letter words **cannot** be used as file names or file types:

- AUX
- CON
- LST or PRN
- NUL

Wildcards

You can use two special characters, called wildcards, in file names or file types to take the place of any character. They are:

- The question mark (?)
- The asterisk (*)

The Question Mark

A question mark in a file name or file type indicates that any character can occupy that position. For example, the command:

```
A>DIR TEST?RUN.EXE
```

lists all directory filenames on the default (active) drive that:

- Have eight characters
- Begin with TEST
- Have a character after TEST
- End with the letters RUN
- Have a file type of .EXE

The following are some examples of files that might be listed by the above DIR command:

```
TEST1RUN.EXE
TEST2RUN.EXE
TESTGRUN.EXE
TESTSRUN.EXE
```

The Asterisk

An asterisk in a file name or file type indicates that any character can occupy that position or any of the remaining positions in the file name or file type. For example:

```
A>DIR TEST*.EXE
```

lists all directory entries on the default (active) drive with file names that begin with the character TEST and have a file type of .EXE. Some examples of files that might be listed by the above DIR command are:

```
TEST1.EXE
TEST2RUN.EXE
TESTGRUN.EXE
TESTALL.EXE
```

The wildcard designation *.* refers to **all** files on the diskette. Note that the asterisk wildcard can be very powerful when used in MS-DOS commands.

Directories

The names of your files are kept in a directory on each diskette. The directory also contains information on the size of your files, the locations of the files on the diskette, and the dates the files were created and updated. The directory you are working on is called your current or **working directory**.

For more information on the structure of directories refer to the *MS-DOS Operating System User's Guide* by Microsoft Corporation. This manual is included in the Rainbow 100 MS-DOS Technical Documentation Kit (Order Number QV025-GZ).

Section 2
MS-DOS Operating System Commands

The MS-DOS operating system has two types of commands: internal and external. Table 1 lists the characteristics of internal and external commands.

Internal Commands

Internal commands are the simplest, most commonly used commands. You cannot see these commands when you do a directory listing on your MS-DOS diskette. When you type these commands, they execute immediately. The following internal commands are described in this chapter:

CLS	PAUSE
COPY	REM
DATE	REN (RENAME)
DEL	SET
DIR	SHIFT
ECHO	TIME
ERASE	TYPE
FOR	VER
IF	VERIFY
GOTO	VOL

External Commands

External commands reside on diskettes as program files. They must be read from the diskette before they can execute; therefore, if the diskette containing the command is not in the drive, the MS-DOS operating system will not be able to find and execute the command.

Any file name with a file type of .COM, .EXE or .BAT is considered an external command. For example, programs such as FORMAT.COM and DISKCOPY.COM are external commands.

When you type an external command, do not include its file type. The following external commands are described in this chapter:

CHKDSK
DISKCOPY
FORMAT
PRINT
SYS

Table 1. Internal and External Command Characteristics

Internal Commands	External Commands
Not shown in directory	Shown in directory
Always stored in the computer; automatically read into the computer memory at start up	Stored as files on a diskette; read into the computer only when requested
Can be used at any time regardless of which diskette or drive is being used	Can only be used if the requested file exists on the active diskette or if you specify the diskette that the file is on

Table 2 lists and briefly describes all the internal and external commands.

Table 2. MS-DOS Operating System Commands

Command	Use
CHKDSK	Scans the diskette of the default or designated drive and checks for errors
CLS	Clears the screen
COPY	Copies file(s) you specify
DATE	Displays and sets the date
DEL	Deletes file(s) you specify
DIR	Lists requested directory entries
DISKCOPY	Copies diskettes
ERASE	Deletes file(s) you specify
FORMAT	Prepares a diskette to receive MS-DOS files
PRINT	Prints files you specify
REM	Displays a comment in a batch file
REN	Renames a file
SET	Sets one string value to another string value
SYS	Transfers the MS-DOS operating system files from one diskette to another diskette
TIME	Displays and sets the time
TYPE	Displays the contents of the file you specify
VER	Displays the MS-DOS operating system version number
VERIFY	Checks a diskette to make sure that information has been correctly written on it
VOL	Displays the volume identification number

Processing a Group of Commands as One Operation

Often you may find yourself typing the same sequence of commands over and over to perform some repeatedly used task. With the MS-DOS operating system you can put the command sequence into a special file called a batch file and execute the entire sequence by typing the name of the batch file. "Batches" of your commands in such files are processed as if they were typed on your keyboard. Batch files must be named with the .BAT file type.

You can create a batch file by using the Line Editor, EDLIN, (see Chapter 4 for detailed information on EDLIN).

Two MS-DOS commands are available for use expressly in batch files:

- REM lets you include remarks and comments in your batch files without having these remarks executed as commands
- PAUSE displays an optional message and lets you either continue or stop your batch processing at a given point

Batch processing is useful if you want to execute several MS-DOS commands with one batch command, such as when you copy a new diskette and verify that it has been copied. The following is what a batch file called NEWDISK might contain:

```
1: REM  This is a file to format and copy diskettes<Return>
2: REM  It is named NEWDISK.BAT<Return>
3: PAUSE Insert new diskette into drive B:<Return>
4: FORMAT B:<Return>
5: VERIFY ON<Return>
6: COPY A:*.* B:<Return>
7: VERIFY OFF<Return>
```

To execute this .BAT file, type the file name NEWDISK (without the .BAT file type). Type:

```
A>NEWDISK<Return>
```

The result is the same as if you entered each of the lines in the .BAT file from the keyboard as individual commands.

Batch Processing Hints

The following list contains information you should read before you execute a batch process.

- Do not use the file name BATCH
- Enter only the file name to execute the batch file. Do not enter the file type.
- If you remove the diskette containing a batch file that is being executed, the MS-DOS operating system prompts you to insert it again before the next command can be read.
- The last command in a batch file can be the name of another batch file. This allows you to call one batch file after another when the first is finished.

For more information on batch processing refer to the *MS-DOS Operating System User's Guide* by Microsoft Corporation. This manual is included in the Rainbow 100 MS-DOS Technical Documentation Kit (Order Number QV025-GZ).

Table 3 briefly describes the batch commands.

Table 3. Batch Commands

Command	Usage
ECHO	Turns batch file echo feature on/off
FOR	Batch command extension
GOTO	Batch command extension
IF	Batch command extension
PAUSE	Pauses for directions of information for your batch file
SHIFT	Increases the number of replaceable parameters in the batch process

Advanced Commands

The commands listed in Table 4 are mainly for programmers. They are stored on the MS-DOS master system diskette in the system directory. For more information on these commands refer to the *MS-DOS Operating System User's Guide* by Microsoft Corporation. This manual is included in the Rainbow 100 MS-DOS Technical Documentation Kit (Order Number QV025-GZ).

Table 4. Additional Commands

Command	Usage
BREAK	Sets Ctrl/C check
CHDIR	Changes directories
CTTY	Changes console TTY
EXIT	Exit command, returns to lower level
FIND	Searches for a specific string of text
MKDIR	Makes a directory
MORE	Displays output one screen at a time
PATH	Sets a command search path
PROMPT	Designates the command prompt
RMDIR	Removes a directory
SORT	Sorts data alphabetically, forward or backward

Information Common to All Commands

The following information applies to all MS-DOS commands:

- Commands are usually followed by one or more options (command tails). Options are information you can add to the command line if you choose; they are not necessary to execute the command.
- You enter commands and options in uppercase or lowercase letters, or a combination of both.
- You must separate commands and options by delimiters. You will usually use the space and comma as delimiters.

  For example:

  ```
  DEL MYFILE,OLD NEWFILE,TXT
  RENAME,THISFILE THATFILE
  ```

  You can also use the semicolon (;), the equal sign (=), or the Tab key as delimiters in MS-DOS commands.
- You must include the file type when referring to a file that already has a file type (except for external command files).
- Commands take effect only after you have pressed the Return key.
- Wildcards and reserve words (for example, PRN) are not allowed in the names of any commands.
- The prompt is the default drive designation followed by a greater-than sign (for example, A>).
- Diskette drives are referred to as *source* drives and *destination* drives. The source drive is the drive from which you are transferring information. The destination drive is the drive to which you are transferring information.

Conventions Used

Table 5 lists the conventions used in the discussions of commands.

Table 5. Conventions

Convention	Meaning
drv:	Diskette drive name (A:, B:, C:, or D:).
filename	Any valid file name. The filename option does not refer to a device or to a diskette drive designation.
.typ	Optional file type consisting of a period and one to three characters. When used, file types immediately follow file names (filename.typ).
switches	Options that control the MS-DOS operating system commands. They are preceded by a forward slash (/).
arguments	Provide more information to MS-DOS commands. You usually choose between arguments; for example ON or OFF.
|	Indicates that you can choose one of the options shown.
. . .	Vertical ellipse indicates a sequential progression to the entry shown.

Command Formats

The following information tells you how to format MS-DOS commands:

- All words shown in capital letters must be entered. These words must be spelled and spaced exactly as shown. You can type these words in any combination of uppercase or lowercase characters.
- You must supply the text for any items shown in lowercase. For example, you would enter the name you have chosen for your file when you see:

```
{filename.typ}
```

- Items shown in braces { } are optional. When you include optional information, *do not type* the braces. Include only the information within the braces.
- You must include all punctuation as shown, except for braces, which are used to indicate optional information, and angle brackets, which are used to indicate the key(s) you must press on the keyboard.

CHKDSK

Purpose

CHKDSK is an external command that scans the diskette in the specified drive and checks it for errors.

Form

```
CHKDSK {drv:}filename.typ{/F}{/V}<Return>
```

Instructions

CHKDSK should be run periodically on each diskette to check for errors in the directory. If errors are found CHKDSK displays an error message, and then a status report. (See Chapter 5 for a list of CHKDSK error messages.)

You can redirect information from CHKDSK to a file that you specify by typing:

```
CHKDSK A:filename.typ<Return>
```

The errors are sent to the filename you specify.

Switches

The /F switch corrects errors you find with CHKDSK. Do not use the /F switch if you send CHKDSK errors to a file.

The /V switch displays error messages while you are using CHKDSK.

Example

The following is an example of a status report:

```
160256 bytes total disk space
  8192 bytes in 2 hidden files
   512 bytes in 2 directories
 30720 bytes in 8 user files
121344 bytes available on diskette

 65536 bytes total memory
 53152 bytes free
```

CLS

Purpose

CLS is an internal command that clears the screen.

Form

```
CLS<Return>
```

Instructions

CLS causes the MS-DOS operating system to send the ANSI escape sequence <ESC>[2 to your screen, which then clears the screen.

COPY

Purpose

COPY is an internal command that copies one or more files from one diskette to another. If you prefer, you can give each copy a different name. This command can also copy files to other locations on the same diskette.

Form

```
COPY drv:filename.typ    {drv:}{filename.typ}{/V}<Return>
```

Instructions

Type the command followed by the optional drive name, the name of the file you want to copy, and the optional file type.

- If the second filename.typ is not given, the copy is made to the default drive and has the same name as the original file name.
- If the first filename.typ option is on the default drive and you do not specify the second filename.typ, the COPY command is aborted. The MS-DOS operating system displays the following error message:

```
File cannot be copied onto itself
0 File(s) copied
```

- If the second option is the name of a drive designation only, the original file is copied, with the old file name, to the designated drive you specified.
- The /V switch causes the operating system to verify that the sectors written on the destination diskette are recorded properly. Although there are rarely recording errors when you run COPY, you can verify that critical data has been correctly recorded. This option causes the COPY command to run slower because the MS-DOS operating system must check each entry recorded on the diskette.

- The COPY command also allows file concatenation (joining) while copying. Concatenation is accomplished by simply listing any number of files as options to COPY, separated by +. For example:

```
COPY  A.XYZ+B.COM+B:C.TXT BIGFILE.CRP<Return>
```

  This command concatenates files named A.XYZ, B.COM, and B:C.TXT and places them in the file called BIGFILE.CRP on the default drive.

- To combine several files into one file, you can also use wildcards. For example:

```
COPY *.LST COMBIN.PRN<Return>
```

  This command takes all files with a file type of .LST and combines them into a file named COMBIN.PRN.

Examples

1. In the following example, for each file found matching *.LST, that file is combined with the corresponding .REF file. The result is a file with the same file name but with the file type .PRN. Thus, FILE1.LST will be combined with FILE1.REF to form FILE1.PRN; then XYZ.LST is combined with XYZ.REF to form XYZ.PRN; and so on.

```
COPY *.LST+*.REF *.PRN<Return>
```

2. The following COPY command combines all files matching *.LST, then all files matching *.REF, into one file named COMBIN.PRN:

```
COPY *.LST+*.REF COMBIN.PRN<Return>
```

3. Do not enter a wildcard concatenation COPY command where one of the source file names has the same file type as the destination. For example, the following command is incorrect if ALL.LST already exists:

```
COPY *.LST  ALL.LST
```

The error would not be detected, however, until ALL.LST is added. At this point it could have already been destroyed. COPY compares the file name of the input file with the file name of the destination. If they are the same, that one input file is skipped, and the error message "Content of destination lost before copy" is displayed. Further concatenation proceeds normally. This allows "summing" files, as in:

```
COPY  ALL.LST+*.LST<Return>
```

This command appends all *. LST files, except ALL.LST itself, to ALL.LST. This command will not produce an error message and is the correct way to append files using the COPY command.

DATE

Purpose

DATE is an internal command that lets you enter or change the date known to the operating system. This date is recorded in the directory for any files you create or alter.

You can change the date from your terminal or from a batch file.

Form

```
DATE {mm-dd-yy}<Return>
```

Instructions

If you type DATE, DATE displays the following message:

```
Current date is mm-dd-yy
Enter new date:
```

Press the Return key if you do not want to change the date shown. You can also type a particular date after the DATE command, as in:

```
DATE 3-9-81
```

In this case, you do not have to answer the "Enter new date:" prompt. Enter the new date using numerals only; you cannnot use letters.

The options allowed are:

mm = 1 – 12
dd = 1 – 31
yy = 80 – 99 or 1980 – 2099

You can separate the date, month, and year entries by hyphens (-) or slashes (/). The MS-DOS operating system is programmed to change months and years correctly, whether the month has 31, 30, 29, or 28 days. The operating system handles leap years.

DEL (DELETE)

Purpose

DEL is an internal command that deletes all files with the designated filename.typ. You can also use ERASE instead of DEL to delete files. ERASE is discussed in this chapter.

Form

```
DEL {drv:}filename.typ<Return>
```

Instructions

If you use wildcards for the file name and file type, such as *.*, the prompt "Are you sure?" is displayed. If you type Y, then all files are deleted as requested. DEL performs the same function as ERASE.

DIR (DIRECTORY)

Purpose

DIR is an internal command that lists the files in a directory.

Form

```
DIR {drv:}{filename.typ}{/P}{/W}<Return>
```

Instructions

If you just type DIR, all directory entries on the default drive are displayed. If only the drive specification is given (DIR drv:), all entries on the diskette in the specified drive are displayed. If only a file name is entered with no file type (DIR filename), then *all files* with the designated file name on the diskette in the default drive are displayed. If you designate a file specification (DIR drv:filename.typ), all files with the file name specified on the diskette in the drive you specified are displayed. In all cases, files are listed with their size in bytes and with the time and date of their last modification.

The wildcard characters ? and * (question mark and asterisk) can be used in the file name option. For your convenience, the following DIR command equivalents are listed in Table 6.

Table 6. DIR Command Equivalents

Command	Equivalent
DIR	DIR *.*
DIR FILENAME	DIR FILENAME.*
DIR .EXT	DIR *.EXT
DIR .	DIR *.

Switches

You can use two switches with DIR. They are:

- The /P switch selects page mode. With /P, display of the directory pauses after the screen is filled. To resume display of output, press any key.
- The /W switch selects wide display. With /W, only file names are displayed, without other file information. Files are displayed five per line.

DISKCOPY

Purpose

DISKCOPY is an external command that copies the contents of the diskette in the source drive to the diskette in the destination drive.

Form

```
DISKCOPY {drv1:}{drv2:}<Return>
```

Instructions

The first drive option (drv1:) is the source drive that contains the diskette you want to copy. The second drive option (drv2:) is the destination drive that contains the empty diskette.

The diskette in your destination drive must be a pre-formatted RX50 diskette.

You can specify the same drives or you can specify different drives. If you type the same drive name for drv1 and drv2, you are telling the MS-DOS operating system to copy the contents of the diskette to the same diskette. You are prompted to insert the diskette at the appropriate times. DISKCOPY waits for you to press any key before continuing.

After copying, DISKCOPY displays:

```
Copy complete
Copy another (Y/N)?
```

If you press Y, the next copy is performed on the same drives that you originally specified, after you have been prompted to insert the proper diskettes.

To end the DISKCOPY program, press N.

If you omit both options, a single-drive copy operation will be performed on the default drive.

If you omit the second option, the default drive will be used as the destination drive.

Diskettes that have had a lot of file creation and deletion activity have storage areas fragmented, because diskette space is not allocated sequentially. A file might be separated into several parts and located in several places on the diskette. The first free space (sector) found is the next space (sector) allocated, regardless of its location on the diskette.

A fragmented diskette can cause poor performance due to delays involved in finding, reading, or writing a file. If this is the case, first prepare a diskette, using the FORMAT command and then use the COPY command, instead of DISKCOPY, to copy your diskette and eliminate the fragmentation.

For example:

```
A>COPY  A:*.* B:<Return>
```

copies all files from the diskette in drive A: to the diskette in drive B:.

ERASE

Purpose

ERASE is an internal command that deletes all files with the filename.typ you specify.

Form

```
ERASE {drv:}filename.typ<Return>
```

Instructions

If you use the wildcards *.*, the prompt, "Are you sure?" is displayed. If you type Y, all files are deleted as requested. You can also use the DEL command to erase files.

FORMAT

Purpose

FORMAT is an external command that prepares (formats) the diskette in the specified drive to accept MS-DOS files. You need to prepare all new, empty diskettes before you can copy individual files to the diskette; however, if you use the DISKCOPY program you **do not** need to prepare your diskette.

Form

```
FORMAT {drv:}{/S}<Return>
```

Instructions

This command prepares (formats) the directory on a new, empty diskette. If you do not specify a drive, the diskette in the default drive is formatted.

Switch

The /S switch copies the operating system files from the diskette in the default drive to the newly formatted diskette.

The files are copied in the following order:

1. IO.SYS
2. MSDOS.SYS
3. COMMAND.COM

PRINT

Purpose

PRINT is an external command that prints a text file on a line printer while you are processing other MS-DOS commands.

Form

```
PRINT {{drv:}filename.typ{/T{/C}{/P}}}<Return>
```

Instructions

Use the PRINT command only if you have a line printer attached to your computer.

Switches

Table 7 describes the switches you can use with the PRINT command.

Table 7. PRINT Command Switches

Switch	Usage
/T	Deletes all files in the print queue (those waiting to be printed). A message to this effect is printed.
/C	Turns on cancel mode. The preceding filename.typ and all following filename.typ entries are suspended in the print queue until you type a /P switch.
/P	Turns on print mode. The preceding filename.typ and all following filename.typ entries are added to the print queue until you issue a /C switch.

PRINT with no options displays the contents of the print queue on your screen without affecting the queue.

Examples

1. PRINT /T empties the print queue
2. PRINT /T *.ASM empties the print queue and queues all .ASM files on the default drive
3. PRINT A:TEMP1.TST/C A:TEMP2.TST A:TEMP3.TST removes the three files indicated from the print queue
4. PRINT TEMP1.TST/C TEMP2.TST/P TEMP3.TST removes TEMP1.TST from the queue, and adds TEST2.TST and TEMP3.TST to the queue

REM (REMARK)

Purpose

REM is an internal command that displays remarks or comments that are on the same line as the REM command in a batch file during execution of that batch file. The remarks are ignored by the MS-DOS operating system.

Form

```
REM {Comments}<Return>
```

Instructions

The only separators allowed in the comment are the space, tab, and comma.

Example

```
1:  REM  This file checks new diskettes<Return>
2:  REM  It is named NEWDISK.BAT<Return>
3:  PAUSE  Insert new diskette in drive B:<Return>
4:  FORMAT B:/S<Return>
5:  DIR B:<Return>
```

REN (RENAME)

Purpose

REN is an internal command that changes the name of the first option (filename.typ) to the second option (filename.typ).

Form

```
REN {drv:}oldfilename.typ  {drv:}newfilename.typ<Return>
```

Instructions

The first option (old filename.typ) must be given a drive designation if the diskette resides in a drive other than the default drive. Any drive designation for the second option (newfilename.typ) is ignored. The file remains on the diskette where it currently resides.

The wildcard characters can be used in either option. All files matching the old name are renamed. If wildcard characters appear in the new name, corresponding character positions will not be changed.

Examples

1. The following command changes the names of all files with the .LST file type to similar names with the .PRN file type:

   ```
   REN *.LST *.PRN<Return>
   ```

2. In the next example, REN renames the file ABODE on drive B: to ADOBE:

   ```
   REN B:ABODE *D*B*<Return>
   ```

   The file remains on drive B:.

SET

Purpose

SET is an internal command that sets one string value equivalent to another string value for use in later programs.

Form

```
SET string=string<Return>
```

Instructions

This command is meaningful only if you want to set values that will be used by programs you have written. An application program can check all values that have been set with the SET command by issuing SET with no options.

Examples

- SET TTY = VT52 sets your TTY value to VT52 until you change it with another SET command.
- You can also use the SET command in batch processing. In this way, you can define your replaceable parameters with names instead of numbers. If your batch file contains the statement "LINK %FILE%," you can set the name that the operating system uses for that variable with the SET command. The command:

  ```
  SET FILE=DOMORE<Return>
  ```

  replaces the %FILE% parameter with the file name DOMORE. Therefore, you do not need to edit each batch file to change the replaceable parameter names. Note that when you use *text* (instead of numbers) as replaceable parameters, you must specify the name with a percent sign.

SYS (SYSTEM)

Purpose

SYS is an external command that transfers the MS-DOS system files from the diskette in the default drive to the diskette in the drive you specify by drv:.

Form

```
SYS drv:<Return>
```

Instructions

SYS is normally used to update the system or to place the system on a formatted diskette that contains no files. An entry for drv: is required.

If IO.SYS and MSDOS.SYS are on the destination diskette, they must take up the same amount of space on the diskette as the new system will need. Therefore, you cannot transfer system files from an MS-DOS 2.0 diskette to an MS-DOS 1.1 diskette. You must reformat the MS-DOS 1.1 diskette with the MS-DOS FORMAT command before using the SYS command. The destination diskette must be completely blank or already have the system files IO.SYS and MSDOS.SYS. The transferred files are copied in the following order:

1. IO.SYS
2. MSDOS.SYS

IO.SYS and MSDOS.SYS are both hidden files that are not displayed when the DIR command is executed. COMMAND.COM (the command processor) is *not* transferred. You must use the COPY command to transfer COMMAND.COM.

TIME

Purpose

TIME is an internal command that displays and sets the time.

Form

```
TIME [hh:mm]<Return>
```

Instructions

If you type the TIME command only, the following message is displayed:

```
Current time is <hh>:<mm>:<ss>.<cc>
Enter new time:
```

Press the Return key if you do not want to change the time shown. You can type a new time to the TIME command as:

```
TIME 8:20<Return>
```

Type the new time using numerals only; letters are not allowed. The allowed options are:

- hh = 00 - 24
- mm = 00 - 59

Separate the hour and minute entries by colons (:). You do not have to type the ss (seconds) or cc (hundredths of seconds) options. The MS-DOS operating system uses the time entered as the new time if the options and separators are valid.

TYPE

Purpose

TYPE is an internal command that displays the contents of the file on the screen.

Form

```
TYPE {drv:}filename.typ<Return>
```

Instructions

Use the TYPE command to examine a file without modifying it. (Use DIR to find the name of a file and EDLIN to alter the contents of a file.) The only changes performed by TYPE is that tabs are expanded to spaces consistent with tab stops every eighth column. Do not display binary files with a TYPE command because a display of binary files causes control characters (such as Ctrl/Z) to be sent to your computer, including bells, form feeds, and escape sequences.

VER

Purpose

VER is an internal command that prints the MS-DOS operating system version number.

Form

```
VER<Return>
```

Instruction

If you want to know what version of the MS-DOS operating system you are using, type VER. The version number is displayed on your screen.

VERIFY

Purpose

VERIFY is an internal command that turns the verify switch on or off when writing to a diskette.

Form

```
VERIFY {ON|OFF}<Return>
```

Instructions

This command has the same purpose as the /V switch in the COPY command. If you want to verify that all files are written correctly to a diskette, you can use the VERIFY command to tell the MS-DOS operating system to verify that your files are intact (no bad sectors, for example). The MS-DOS operating system performs a VERIFY each time you write data to a diskette. You receive an error message only if the MS-DOS operating system was unable to successfully write your data to diskette.

VERIFY ON remains in effect until you change it in a program by using the SET VERIFY command, or until you issue a VERIFY OFF command to the MS-DOS operating system.

If you want to know what the current setting of VERIFY is, type VERIFY with no options.

VOL (VOLUME)

Purpose

VOL is an internal command that displays a diskette volume label, if a label exists.

Form

```
VOL {drv:}<Return>
```

Instructions

This command displays the volume label of the diskette in drive you specify. If no drive is specified, the MS-DOS operating system prints the volume label of the diskette in the default drive.

If the diskette does not have a volume label, VOL displays:

```
Volume in drive x has no label
```

Section 3
Batch Processing Commands

The following commands are called batch processing commands. The commands are ECHO, FOR, GOTO, IF, and SHIFT.

If you are not writing batch programs, you do not need to read this section.

ECHO

Purpose

ECHO is an internal command that turns the batch echo feature on and off.

Form

```
ECHO {ON|OFF|message-you-choose}<Return>
```

Instructions

Normally, commands in a batch file are displayed (echoed) when they are seen by the command processor. ECHO OFF turns off this feature. ECHO ON turns the echo back on.

If ON or OFF are not specified, the current setting is used.

FOR

Purpose

FOR is an internal command extension used in batch and interactive file processing.

Form

For batch processing:

```
FOR#%% c  IN  set  DO command
```

For interactive processing:

```
FOR#% c  IN  set  DO  command
```

Instruction

The letter c can be any character except 0,1,2,3,..,9 to avoid confusion with the %0–%9 batch parameters. When you type:

```
a-set is an-item *
```

The %%c variable is set sequentially to each member of the set you choose, and then the command is evaluated. If a member of the set is an expression involving a wildcard (*) and/or (?), then the variable is set to each matching pattern from the diskette. In this case, only one such item can be in the set, and any item besides the first is ignored.

> **IMPORTANT**
> You must type the words IN, FOR, and DO in uppercase characters.

Examples

```
FOR %%f IN ( *.ASM ) DO MASM %%f;

FOR %%f IN (FOO BAR) DO REM %%f
```

The %% is needed so that after batch parameter (%0 – %9) processing is done, there is one % left. If only %f were there, the batch parameter processor would see the %, look at f, decide that %f was an error (bad parameter reference) and throw out the %f, so that the command FOR would never see it. If the FOR is *not* in a batch file, then only one % should be used.

GOTO

Purpose

GOTO is an internal command extension used in batch file processing.

Form

```
GOTO label<Return>
```

Instructions

GOTO causes commands to be taken from the batch file beginning with the line after the definition label. If no label has been defined, the current batch file terminates.

Example

```
:foo
REM looping...
GOTO foo
```

produces an infinite sequence of messages: REM looping....

Starting a line in a batch file with a colon (:) causes the line to be ignored by batch processing and indicates that the line contains a label. The characters following GOTO define a label, but this procedure can also be used to put in comment lines.

IF

Purpose

IF is an internal command extension used in batch file processing.

Form

```
IF condition command<Return>
```

Instructions

The parameter condition is one of the following:

- ERRORLEVEL number – True if and only if the previous program executed by Command had an exit code of the number or higher.
- string1 == string2 – True if and only if string1 and string2 are identical after parameter substitution. Strings can not have embedded separators.
- EXIST filename – True if and only if filename exists.
- NOT condition – True if and only if condition is false.

The IF statement allows conditional execution of commands. When the condition is true, then the command is executed. Otherwise, the command is ignored.

> **NOTE**
> The words ERRORLEVEL, EXIST, and NOT must be uppercase.

Examples

```
IF NOT EXIST \TMP\FOO ECHO Can't find file

IF NOT ERRORLEVEL 3 LINK $1,,;
```

PAUSE

Purpose

PAUSE is an internal command that suspends execution of the batch file.

Form

```
PAUSE comment<Return>
```

Instructions

During the execution of a batch file, you may need to change diskettes or perform some other action. PAUSE suspends execution until you press any key, except Ctrl/C. When the command processor encounters PAUSE, it displays:

```
Strike a key when ready . . .
```

If you press Ctrl/C, another prompt is displayed:

```
Abort batch job (Y/N)?
```

If you type Y, execution of the remainder of the batch command file aborts and control returns to the operating system command level. Therefore, PAUSE can be used to break a batch file into pieces, allowing you to end the batch command file at an intermediate point.

The comment is optional and can be entered on the same line as PAUSE. You may also want to prompt the user of the batch file with some meaningful message when the batch file pauses. For example, you may want to change diskettes in one of the drives. You can add an optional prompt message in such cases. The comment prompt displays *before* the "Strike a key " message.

SHIFT

Purpose

SHIFT is an internal command that allows access to more than 10 replaceable parameters in batch file processing.

Form

```
SHIFT<Return>
```

Instructions

Usually, command files are limited to handling 10 parameters, %0 through %9. To allow access to more than 10 parameters, use SHIFT to change the command line parameters.

Example

If

```
%0 = "foo"
%1 = "bar"
%2 = "name"
%3...%9 are empty
```

then a SHIFT results in the following:

```
%0 = "bar"
%1 = "name"
%2...%9 are empty
```

If there are more than 10 parameters given on a command line, those that appear after the 10th (%9) are shifted one at a time into %9 by successive shifts.

3

MS-DOS Special Editing Keys

Special Editing Keys

In addition to running application programs on the Rainbow 100 computer, you can write programs or short documents (reports, memos, or letters) and store them in files. To create such files, use the MS-DOS text editor, EDLIN, which uses the special editing keys described in this chapter.

The special editing keys deserve particular emphasis because they depart from the way in which most operating systems handle command input. You do not have to type the same sequence of keys repeatedly, because the last command line is placed in a special storage area called a template.

The special editing keys allow you to:

- Repeat a command line by pressing two keys simultaneously
- Edit and retry the command when you make an error, without retyping the entire command line
- Edit and execute a command line that is similar to a preceding command with a minimum of typing

When you type a command to the MS-DOS operating system and press the Return key, the command is automatically sent to the command processor. At the same time, a copy of this command is sent to the template, which allows you to recall the command or modify it using the special editing keys.

Table 8 contains a complete list of the special editing keys. Each of these keys is more fully described in Chapter 4, The Line Editor (EDLIN).

Table 8. Special Editing Keys

Key	Editing Function
➡	Copies one character from the template to the command line
<Select>	Copies characters up to the character specified in the template and puts these characters on the command line
<Do>	Copies all remaining characters in the template to the command line
<Remove>	Skips over (does not copy) a character in the template
<Find>	Skips over (does not copy) the characters in the template up to the character specified
<Cancel>	Voids the current input; leaves the template unchanged
<Insert Here>	Enters/exits insert mode
<Resume>	Makes the new line the new template
<Ctrl/Z>	Puts a Ctrl/Z end-of file character in the new template

Figure 6 shows the location of these keys on the keyboard.

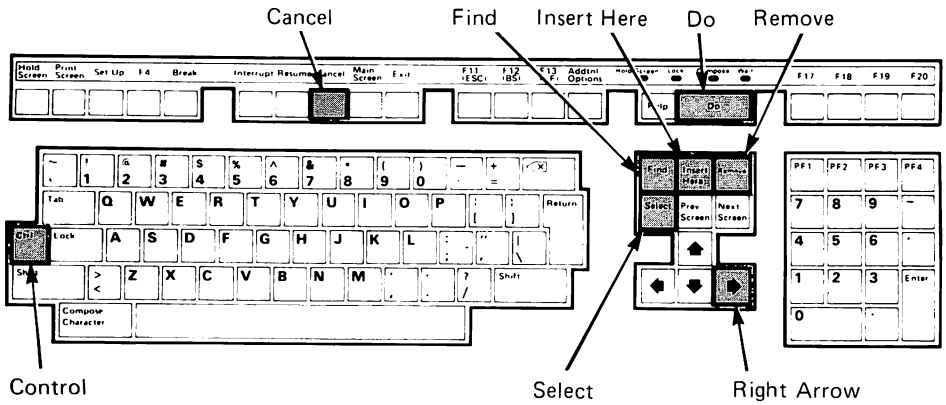


Figure 6. Special Editing Keys

Examples

If you type the following command:

```
DIR PROG.COM
```

the MS-DOS operating system displays information about the file PROG.COM on your screen. The command line is also saved in the template. To repeat the command, just press two keys:

```
<Do>
<Return>
```

The repeated command is displayed on the screen as shown below:

```
<Do>DIR PROG.COM<Return>
```

Notice that pressing the Do key causes the contents of the template to be sent to the command line; pressing the Return key causes the command line to be executed.

If you want to display information about a file named PROG.ASM, you can use the contents of the template and type:

```
<Select>C
```

Pressing the Select key followed by the letter C copies all characters from the template to the command line, up to but not including the character "C". The operating system displays:

```
DIR PROG.
```

Now type:

```
.ASM
```

The result is:

```
DIR PROG.ASM
```

The command line DIR PROG.ASM is now in the template and ready to be sent to the command processor for execution. To do this, press the Return key.

Now assume that you want to execute the following command:

```
TYPE PROG.ASM
```

To do this, type:

```
TYPE<Insert Here><Do><Return>
```

Notice that when you are typing, the characters are entered directly into the command line and overwrite corresponding characters in the command line and template. This automatic replacement feature is turned off when you press the Insert Here key. Thus, the characters "TYPE" replace the characters "DIR " in the template. To insert a space between "TYPE" and "PROG.ASM", press the Insert Here key and then the space bar. Finally, to copy the rest of the template to the command line, press the Do key and then the Return key. The command TYPE PROG.ASM has been processed by the operating system, and the template becomes TYPE PROG.ASM.

If you had misspelled TYPE as BYTE, an error would have occurred. Instead of aborting the whole command, you can save the misspelled line, before you press the Return key, by creating a new template with the Remove key:

```
BYTE PROG.ASM<Resume>
```

You could then edit this command by typing:

```
T➡P<Do>
```

The right arrow key copies a single character from the template to the command line. The resulting command line is then the command that you want:

```
TYPE PROG.ASM
```

As an alternative, you can use the same template containing BYTE PROG.ASM and then use the Remove and Insert Here keys to achieve the same result:

```
<Resume><Resume>➡<Insert Here>YP<Do>
```

To illustrate how the command line is effected as you type, examine Table 9.

Table 9. Effect of Commands on Command Line

Keys	Screen	Effect On Command Line
<Resume>	–	Skips over 1st template character
<Resume>	–	Skips over 2nd template character
➡	T	Copies 3rd template character
<Insert Here>	YP TYP	Inserts characters
<Do>	TYPE PROG.ASM	Copies rest of template

Notice that the Remove key does not affect the command line. It affects the template by deleting the first character. Similarly, the Find key deletes characters in the template, up to but not including a given character.

Control Character Functions

A control character function is a function that affects the command line. The Ctrl key (control key) is a special key that is used in conjunction with certain other keys (see Figure 6 for the location of the Ctrl key). When the Ctrl key is pressed simulaneously with another key, a simple command is sent to the operating system and affects the command line.

Control character keys and their functions are described in Table 10.

Remember that when you type a control character, such as Ctrl/C, you must hold down the control key and then press the C key at the same time.

Table 10. Control Character Keys and Their Functions

Control Character	Function
<Ctrl/N>	Toggles echoing of output to line printer.
<Ctrl/C>	Aborts current command.
<Ctrl/H>	Removes last character from command line, and erases character from terminal screen.
<Ctrl/J>	Inserts physical end-of-line, but does not empty command line. Use the LF key (line feed) to extend the current logical line beyond the physical limits of one terminal screen.
<Ctrl/P>	Toggles terminal output to line printer.
<Ctrl/S>	Stops output display on the screen. Press any key to resume.
<Ctrl/X>	Cancels the current line; empties the command line; and then outputs a back slash (\), carriage return, and line feed. The template used by the special editing commands is not affected.

4

The Line Editor (EDLIN)

Introduction

In this chapter, you will learn how to use EDLIN, the line editor program. Use EDLIN to create, change, and display files.

This chapter:

- Section 1 tells you how to start EDLIN.
- Section 2 describes the special editing keys introduced in Chapter 3.
- Section 3 details EDLIN command information and options.
- Section 4 describes the EDLIN commands.

What You Can Do With EDLIN

You can use EDLIN to:

- Create new files and save them
- Update existing files and save both the updated and original files

- Delete, edit, insert, and display lines
- Search for, delete, or replace text within one or more lines

What Is a Line Editor?

A line editor creates and edits files line by line. EDLIN is divided into lines; each line holds up to 253 characters. Line numbers are generated and displayed by EDLIN during the editing process for your convenience, but are not actually stored in the saved file.

Lines are always numbered consecutively. When you insert lines, all line numbers advance automatically by the number of lines inserted. When you delete lines, all line numbers decrease automatically by the number of lines you deleted.

Section 1
How to Start EDLIN

To start EDLIN, type:

```
EDLIN filename.typ<Return>
```

Making a New File

If you are creating a new file, filename.typ should be the name of the file you wish to create. If EDLIN does not find this file on the diskette, EDLIN creates a new file with the name you specify. The following message and prompt are displayed:

```
New file
*
```

Notice that the prompt for EDLIN is an asterisk (*).

When you see the prompt, you can type lines of text into your new file.

To begin entering text, you must enter the Insert command to insert lines. The Insert command is discussed in Section 4 of this chapter.

Using an Existing File

If you want to edit an existing file, filename.typ should be the name of the file you want to edit. When EDLIN finds the file on the designated or default drive, the file is loaded into memory. This procedure employs the Write command described at the end of this chapter.

- If the entire file can be loaded, EDLIN displays the following message on your screen:

  ```
  End of input file
  *
  ```

  You can then edit the file using EDLIN editing commands.

- If the file is too large to be loaded into memory, EDLIN continues to load lines until memory is 3/4 full and then displays the * prompt. You can now edit the portion of the file that is in memory.

  To edit the remainder of the file, you must save some of the edited lines on the diskette to free memory; then EDLIN loads the unedited lines from the diskette into memory.

When you complete the editing session, save the original (old) and the revised (new) files by using the End command. The End command is discussed later in this chapter. The original file is renamed with a file type of .BAK, and the revised file has the file name and file type you specify in the EDLIN command. The original .BAK file is not erased until the end of the editing session, or until diskette space is needed by the editor, EDLIN.

Do not try to edit a file with a file type of .BAK because EDLIN assumes that any .BAK file is a back-up file. If you find it necessary to edit such a file, rename the file with another file type (using the RENAME command discussed in Chapter 2), then start EDLIN and specify the new filename.typ.

Section 2
Special Editing Keys

The special editing keys and template discussed in Chapter 3 can be used to edit your text files. These keys are discussed in detail in this section.

Table 11 summarizes the commands, codes, and functions. Descriptions of the special editing keys follow the table.

Table 11. Special Editing Keys

Key	Function	Description
➡	Copy one character	Copies one character from the template to the new line.
<Select>	Copy up to character	Copies all characters from the template to the new line, up to the character specified
<Do>	Copies template	Copies all remaining characters in the template to the screen
<Remove>	Skips one character	Does not copy (skips over) a character
<Find>	Skips up to character	Does not copy (skips over) the characters in the template, up to the character specified
<Cancel>	Quits input	Voids the current input; leaves the template unchanged
<Insert Here>	Insert mode	Enters exits insert mode
<Insert Here>	Replace mode	Turns insert mode off; this is the default
<Resume>	New template	Makes the new line the new template

→ (Right Arrow Key)

Purpose

The right arrow key copies one character from the template to the command line.

Instructions

Pressing the right arrow key copies one character from the template to the command line. When you press the right arrow key, one character is inserted in the command line.

Example

If you begin an editing session and your screen displays:

```
1:*This is a sample file.
1:*
```

with the cursor positioned at the beginning of the line, after the asterisk, pressing the right arrow key copies the first character (T) to the second of the two lines displayed:

```
1:*This is a sample file.
1:*➡
```

becomes

```
1:-*This is a sample file.
1:-*T
```

Each time you press the right arrow key, one more character is displayed on the same line:

```
1:*➡

1:*T➡

1:*Th➡

1:*Thi➡

1:*This
```

Select Key

Purpose

The Select key copies multiple characters up to a character you specify.

Instructions

The Select key allows you to copy all characters, up to a character you specify, from the template to the command line. The character you specify is the character you type after you press the Select key; the character is not copied or displayed on the screen. Pressing the Select key causes the cursor to move to the single character that is specified in the command. If the template does not contain the specified character, nothing is copied.

Example

Assume that the screen shows:

```
1:*This is a sample file.
1:*
```

At the beginning of the editing session, the cursor is positioned at the beginning of the line, after the asterisk. Pressing the Select key copies all characters up to the character specified immediately after you press the Select key.

```
1:*This is a sample file.
1:*<Select>e
```

becomes

```
1:*This is a sample file.
1:*This is a sampl
```

with the cursor positioned after the l in the second line.

Do Key

Purpose

The Do key allows you to copy the template to the command line.

Instructions

The Do key lets you copy all remaining characters from the template to the command line. Regardless of the cursor position at the time the Do key is pressed, the rest of the line is displayed, and the cursor is positioned after the last character on the line.

Example

Assume that the screen shows:

```
1:*This is a sample file.
1:*
```

At the beginning of the editing session, the cursor is positioned at the beginning of the line, after the asterisk. Pressing the Do key copies all characters from the template to the line with the cursor.

```
1:*This is a sample file.
1:*<Do>
1:*This is a sample file.
```

Remove Key

Purpose

The Remove key allows you to skip over one character in the template.

Instructions

Each time you press the Remove key, one character is not copied from the template. The action of the Remove key is similar to the right arrow key, except that the Remove key skips a character in the template rather than copy it to the command line.

Example

Assume that the screen shows:

```
1:*This is a sample file.
1:*
```

At the beginning of the editing session, the cursor is positioned at the beginning of the line, after the asterisk. Pressing the Remove key skips over the first character (T).

```
1:*This is a sample file.
1:*<Remove>
```

The cursor position does not change, and only the template is affected. To see how much of the line has been skipped over, press the Do key, which moves the cursor beyond the last character of the line.

```
1:*This is a sample file.
1:*<Remove><Do>
1:*his is a sample file.
```

Find Key

Purpose

The Find key allows you to skip multiple characters in the template, up to the specified character.

Instructions

The Find key lets you skip over all characters up to a character that you specify in the template. This character is not copied and is not shown on the screen. If the template does not contain the specified character, no character is skipped over. The action of the Find key is similar to the Do key, except that the Find key allows you to skip over characters in the template rather than copying them to the command line.

Example

Assume that the screen shows:

```
1:*This is a sample file.
1:*
```

At the beginning of the editing session, the cursor is positioned at the beginning of the line, after the asterisk. The Find key lets you skip over all the characters in the template up to the character specified after you press the Find key:

```
1:*This is a sample file.
1:*<Find>p
```

The cursor position does not change. To see how much of the line has been skipped over, press the Do key to copy the template. This moves the cursor beyond the last character of the line:

```
1:*This is a sample file.
1:*<Find>p<Do>
1:*ple file.
```

Cancel Key

Purpose

The Cancel key allows you to stop inputting and empties the command line.

Instructions

The Cancel key lets you empty the command line, but leaves the template unchanged. The Cancel key also prints a backslash (\), carriage return, and line feed, and turns insert mode off. The cursor is positioned at the beginning of the line, after the asterisk. Pressing the Do key copies the template to the command line and the command line is displayed as it was before the Cancel key was pressed.

Example

Assume that the screen shows:

```
1:*This is a sample file.
1:*
```

At the beginning of the editing session, the cursor is positioned at the beginning of the line, after the asterisk. Next, assume that you want to replace the line with "Sample File":

```
1:*This is a sample file.
1:*Sample File
```

To cancel the line you just entered (Sample File), and to keep "This is a sample file.", press the Cancel key. Notice that a backslash is displayed on the Sample File line to tell you it has been canceled.

```
1:*This is a sample file.
1:*Sample File<Cancel>\
1:*
```

Press the Return key to keep the original line, or to perform any other editing functions. If you press the Do key, the original template is copied to the command line:

```
1:*<Do>This a sample file.
```

Insert Here Key

Purpose

The Insert Here Key is used to insert or replace text in a file. The Insert Here key lets you turn insert and replace modes on and off.

Instructions

Pressing the Insert Here key causes EDLIN to enter and exit insert mode. The current cursor position in the template is not changed. The cursor does move as each character is inserted. However, when you have finished inserting characters, the cursor is positioned at the same character as it was before the insertion began. Thus, characters are inserted **in front of** the character to which the cursor points.

Example

Assume that the screen shows:

```
1:*This is a sample file.
1:*
```

At the beginning of the editing session, the cursor is positioned at the beginning of the line, after the asterisk. Assume that you press the Select and F keys:

```
1:*This is a sample file.
1:*<Select>F
1:*This is a sample
```

Now press the Insert Here key and insert the characters "edit" and a space:

```
1:*This is a sample file.
1:*<Select>F
1:*This is a sample <Insert Here>edit<Space>
1:*This is a sample edit
```

If you now press the Do key, the rest of the template is copied to the line:

```
1:*This is a sample edit
1:*This is a sample edit <Do> file.
```

If you pressed the Return key, the remainder of the template would be truncated, and the command line ends:

```
1:*This is a sample <Insert Here>edit <Return>
1:*This is a sample edit
```

To exit insert mode, simply press the Return key again.

Instructions

Pressing the Insert Here key causes EDLIN to exit insert mode and to enter replace mode. All the characters you type overwrite and replace characters in the template. When you start to edit a line, replace mode is in effect. If the Return key is pressed, the remainder of the template is deleted.

Example

Assume that the screen shows:

```
1:*This is a sample file.
1:*
```

At the beginning of the editing session, the cursor is positioned at the beginning of the line, after the asterisk. Assume that you then type:

```
1:*This is a sample file.
1:*<Select>m
1:*This is a sa<Insert Here>lary tax
1:*This is a salary tax<Do>
1:*This is a salary tax file.
```

Notice that you *replaced* "mple" with "lary tax". If you type characters that extend beyond the length of the template, the remaining characters in the template are automatically added when you press the Do key.

Resume Key

Purpose

The Resume key allows you to create a new template.

Instructions

Pressing the Resume key copies the current command line to the template. The contents of the old template are deleted. Pressing the Resume key outputs an @ ("at" sign) character, a carriage return, and a line feed. The command line is also emptied and insert mode is turned off.

> **IMPORTANT**
> The Resume key performs the same function as the Cancel key, except that the template is changed and an @ ("at" sign) character is printed instead of a \ (backslash).

Example

Assume that the screen shows:

```
1:*This is a sample file.
1:*
```

At the beginning of the editing session the cursor is positioned at the beginning of the line, following the asterisk. Assume that you type:

```
1:*This is a sample file.
1:*<Select>m
1:*This is a sa<Insert Here>lary tax
1:*This is a salary tax<Remove><Remove><Remove><Remove><Do>
1:*This is a salary tax file.
```

At this point, assume that you want this line to be the new template, so you press the Resume key:

```
1:*This is a salary tax file.<Resume>@
```

The @ indicates that this new line is now the new template. Additional editing can be done using the new template.

Section 3
How to Use EDLIN Commands

EDLIN commands perform editing functions on EDLIN commands. You should read the following information before you use EDLIN commands.

Locating Lines

You can reference line numbers relative to the current line (the line with the asterisk). Use a minus sign (hyphen key) with a number to indicate lines before the current line. Use a plus sign with a number to indicate lines after the current line.

Example

```
*-10,+10L<Return>
```

This command lists 10 lines before the current line, the current line, and 10 lines after the current line.

Using Multiple Commands

Multiple commands can be issued on one command line. When you issue a command to edit a single line, a line number and a semicolon must separate commands on the line. Otherwise, one command can follow another without any special separators. In the case of a Search and Replace command, the string can be ended by a Ctrl/Z instead of pressing the Return Key.

Examples

The following command line edits line 15 and then displays lines 10 through 20 on the screen.

```
*15;-5,+5L<Return>
```

The command line in the next example searches for "This string" and then displays five lines before and five lines after the line containing the matched string. If the search fails, then the displayed lines are those line numbers relative to the current line. (The Search command is described later in this chapter.)

```
*SThis string<Ctrl/V>-5,+5L<Return>
```

Spacing in Commands

You can type EDLIN commands **with** or **without** a space between the line number and command. For example, to delete line 6, the command 6D is the same as 6 D.

Inserting Control Characters

It is possible to insert a control character (such as Ctrl/C) into text by using the Ctrl/V characters before it, while you are in insert mode. Ctrl/V tells the MS-DOS operating system to recognize the next *capital* letter typed as a control character. It is also possible to use a control character in any of the string arguments of Search or Replace by using the special quote character. (The Replace command is described later in this chapter.)

Example

The following list describes the function of control characters.

S<Ctrl/V>Z	Finds the first occurrence of Ctrl/Z in a file
R<Ctrl/V>Z<Ctrl/Z>foo	Replaces all occurrences of Ctrl/Z in a file by "foo"
R<Ctrl/V>C<Ctrl/Z>bar	Replaces all occurrences of Ctrl/C by "bar"

It is possible to insert Ctrl/V into the text by typing:

```
<Ctrl/V>/V
```

Inserting the Ctrl/Z Character

The Ctrl/Z character ordinarily tells EDLIN, "This is the end of the file." If you have Ctrl/Z characters elsewhere in your file, you must tell EDLIN that these other control characters do not mean end-of-file. Use the /B switch to tell EDLIN to ignore any Ctrl/Z characters in the file and to show you the entire file.

EDLIN Command Options

Several EDLIN commands accept one or more options. The effect of a command option varies, depending on the command on which is used. The following list describes each option.

1. line — The line option indicates a line number that you type. Line numbers must be separated by a comma or a space from other line numbers, other options, and from the command.

   You can specify the line option in one of three ways:

   - Number — Any number less than 65534. If a number larger than the largest existing line number is specified, then line means the line after the last line number.
   - Period (.) — If you specify a period for line, then line means the current line number. The current line is the last line edited, and is not necessarily the last line displayed. The current line is marked on your screen by an asterisk (*) between the line number and the first character.
   - Pound (#) — The pound sign indicates the line after the last line number. If you specify # for line, this has the same effect as specifying a number larger than the last line number.

   Pressing the Return key without any of the line specifiers listed above directs EDLIN to use a default value appropriate to the command.

2. ? — The question mark option directs EDLIN to ask you if the correct string has been found. The question mark is used only with the Replace and Search commands. Before continuing, EDLIN waits for you to type either a Y or press the Return key for a yes response, or for any other key for a no response.

3. string — The string option represents text to be found, to be replaced, or to replace other text. The string option is used only with the Search and Replace commands. Each string must be ended by a typing a Ctrl/Z or by pressing the Return key (see the Replace command for details). No spaces should be typed between strings or between a string and its command letter, unless you want those spaces to be part of the string.

Section 4
EDLIN Commands

The following pages describe EDLIN editing commands. The commands are listed alphabetically. Refer to Table 5 in Chapter 2 for a list of conventions used in this manual.

Table 12 summarizes the EDLIN commands discussed in this chapter.

Table 12. EDLIN Commands

Command	Purpose
line	Edits line number
A	Appends lines
C	Copies lines
D	Deletes lines
E	Ends editing
I	Inserts lines
L	Lists text
M	Moves lines
P	Pages text
Q	Quits editing
R	Replaces lines
S	Searches text
T	Transfers text
W	Writes lines

(A)ppend

Purpose

Append lets you add the specified number of lines from the diskette to the file being edited in memory. The lines are added at the end of lines that are currently in memory.

Form

```
{n}A<Return>
```

where n = number of lines

Instructions

This command is meaningful only if the file being edited is too large to fit into memory. As many lines as possible are read into memory for editing when you start EDLIN.

To edit the remainder of the file that does not fit into memory, lines that have already been edited must be written to the diskette. Then you can load unedited lines from the diskette into memory with the Append command. Refer to the Write command in this chapter for information on how to write edited lines to the diskette.

> **IMPORTANT**
> If you do not specify the number of lines to append, lines are appended to memory until available memory is 3/4 full. No action is taken if available memory is already 3/4 full.

The message "End of input file" is displayed when the Append command has read the last line of the file into memory.

(C)opy

Purpose

Copy lets you copy a range of lines to a specified line number. The lines can be copied as many times as you want by using the count option.

Form

```
{line},{line},line,{count}C<Return>
```

Instructions

If you do not specify a number in count, EDLIN copies the lines one time. If the first or the second line are omitted, the default is the current line. The file is renumbered automatically after the copy.

The line numbers must not overlap or you will get an "Entry error" message. For example, 3,20,15C would result in an error message.

Examples

Assume that the following file exists and is ready to edit:

```
1: This is a sample file
2: used to show copying lines.
3: See what happens when you use
4: the Copy command
5: (the C command)
6: to copy text in your file.
```

You can copy this entire block of text by issuing the following command:

```
*1,6,7,C<Return>
*
```

When you display your file (using the List command), the result is:

```
*L
1: This is a sample file
2: used to show copying lines.
3: See what happens when you use
4: the Copy command
5: (the C command)
6: to copy text in your file.
7:*This is a sample file
8: used to show copying lines.
9: See what happens when you use
10: the Copy command
11: (the C command)
12: to copy text in your file.
*
```

If you want to place the text within other text, the third line option should specify the line **before** which you want the copied text to appear. For example, assume that you want to copy lines and insert them **within** the following file:

```
1: This is a sample file
2: used to show copying lines.
3: See what happens when you use
4: the Copy command
5: (the C command)
6: to copy text in your file.
7: You can also use COPY
8: to copy lines of text
9: to the middle of your file.
10: End of sample file.
```

The command 3,6,9C results in the following file (which you display using the (L)ist command):

```
1: This is a sample file
2: used to show copying lines.
3: See what happens when you use
4: the Copy command
5: (the C command)
6: to copy text in your file.
7: You can also use COPY
8: to copy lines of text
9: to the middle of your file.
10:*See what happens when you use
11: the Copy command
12: (the C command)
13: to copy text in your file.
14: End of sample file.
```

(D)elete

Purpose

Delete allows you to erase a specified range of lines in a file.

Form

```
{line},{line}D<Return>
```

Instructions

If the first line is omitted, that option defaults to the current line (the line with the asterisk next to the line number). If the second line is omitted, then just the first line is deleted. When lines are deleted, the line immediately after the deleted section becomes the current line and has the same line number as the first deleted line had before the deletion occurred.

Examples

Deleting Muliple Lines. Assume that the following file exists and is ready to edit:

```
1: This is a sample file
2: used to show dynamic line numbers.
3: See what happens when you use
4: Delete and Insert
5: This line will be
6: deleted
        .
        .
        .
25: (the D and I commands)
26: to edit the text
27:*in your file.
```

To delete multiple lines (lines 5 through 24), type:

```
*5,24D<Return>
```

The result is:

```
1: This is a sample file
2: used to show dynamic line numbers.
3: See what happens when you use
4: Delete and Insert
5: (the D and I commands)
6: to edit text
7:*in your file.
```

Deleting a Single Line. To delete a single line, type:

```
*6D<Return>
```

The result is:

```
1: This is a sample file
2: used to show dynamic line numbers.
3: See what happens when you use
4: Delete and Insert
5: (the D and I commands)
6:*in your file.
```

Deleting a Range of Lines. Assume you have the following file:

```
1: This is a sample file
2: used to show dynamic line numbers.
3:*See what happens when you use
4: Delete and Insert
5: (the D and I commands)
6: to edit text
7: which you
8: have put
9: in your file.
```

To delete a range of lines, beginning with the current line, type:

```
*,6D<Return>
```

The result is:

```
1: This is sample file
2: used to show dynamic line numbers.
3:*which you
4: have put
5: in your file
```

Notice that the lines are automatically renumbered.

Edit

Purpose

Edit allows you to change a line of text.

Form

```
{line}<Return>
```

Instructions

When a line number is typed, EDLIN displays the line number and text; then, on the next line, EDLIN reprints the line number. The line is now ready for editing. You can use any of the EDLIN editing commands to edit the line. The existing text of the line serves as the template until the Return key is pressed. If no line number is typed (that is, if only the Return key is pressed), the line after the current line (marked with an asterisk (*)) is edited. If no changes to the current line are needed and the cursor is at the beginning or end of the line, press the Return key to accept the line as is.

> **CAUTION**
> If the Return key is pressed while the cursor is in the middle of the line, the remainder of the line is deleted.

Example

Assume that the following file exists and is ready to edit:

```
1: This is a sample file.
2: used to show
3: the editing of line
4:*four.
```

To edit line 4, type:

```
*4<Return>
```

The contents of the line are displayed with a cursor below the line following the asterisk:

```
4:* four.
4:*
```

Now, using the Do and Insert Here special editing keys, type:

```
4: <Insert Here>number
4: number<Do><Return>
5:*
```

(E)nd

Purpose

End lets you stop the editing session.

Form

```
E<Return>
```

Instructions

This command:

- Saves the edited file on diskette
- Renames the original input file by giving it a file type of .BAK
- Exits EDLIN

If the file was created during the editing session, no .BAK file is created.

The E command takes no options. Therefore, you cannot tell EDLIN on which drive to save the file. The drive on which you want to save the file must be specified when you start the editing session.

If no drive is specified as the active drive when EDLIN is started, the file is saved on the diskette in the default drive. (It is still possible to copy the file to a different drive using the MS-DOS COPY command.)

You must be sure that the diskette contains enough free space for the entire file. If the diskette does not contain enough free space, the write is ended and the edited file lost, although part of the file might be written out to the diskette.

Example

```
*E<Return>
A>
```

After you type the E command and press the Return key, the operating system default drive prompt (for example, A>) is displayed.

(I)nsert

Purpose

Insert allows you to add text immediately before the specified line.

Form

```
{line}I<Return>
```

Instructions

If you are creating a new file, the I command must be given before text can be inserted. Text begins with line number 1. Successive line numbers display automatically each time you press the Return key.

EDLIN remains in insert mode until you press Ctrl/C. When you exit insert mode, the line immediately following the inserted lines becomes the current line. All line numbers following the inserted section are incremented by the number of lines inserted.

If line is not specified, the default is the current line number and the lines are inserted immediately before the current line. If line is any number larger than the last line number, or if a pound sign (#) is specified as line, the inserted lines are appended to the end of the file. In this case, the last line inserted becomes the current line.

Examples

Assume that the following file exists and is ready to edit:

```
1: This is a sample file
2: used to show dynamic line numbers.
3: See what happens when you use
4: Delete and Insert
5: (the D and I commands)
6: to edit text
7:*in your file.
```

To insert text before a specific line that is **not** the current line, type:

```
*7I<Return>
```

The result is:

```
7:*
```

Now, type the new text for line 7:

```
7:* and renumber lines<Return>
```

Then to end the insertion, press Ctrl/C on the *next* line:

```
8:* <Ctrl/C>
```

To see your file type L and press the Return key.

```
*L<Return>

1: This is a sample file
2: used to show dynamic line numbers.
3: See what happens when you use
4: Delete and Insert
5: (the D and I commands)
6: to edit text
7. and renumber lines
8:*in your file.
```

To insert lines immediately before the current line, type:

```
*I<Return>
```

The result is:

```
8:*
```

Now, insert the following text and end by typing Ctrl/C on the next line:

```
8: so they are consecutive
9:*<Ctrl/C>
```

To list the file, type L and press the Return key.

```
*L<Return>
```

The result is:

```
1: This is a sample file
2: used to show dynamic line numbers.
3: See what happens when you use
4: Delete and Insert
5: (the D and I commands)
6: to edit text
7: and renumber lines
8: so they are consecutive
9:*in your file.
```

To append new lines to the end of the file, type:

```
*10I
```

This produces the following:

```
10:*
```

Now, type the following new lines:

```
10: The insert command can place new lines
11: in the file; there's no problem
12: because the line numbers are dynamic;
13: they'll go all the way to 65533.
14:*
```

End the insertion by typing Ctrl/C on line 14. The new lines displays at the end of all previous lines in the file. Now type the List command (L) and press the Return key. The result is:

```
1: This is a sample file
2: used to show dynamic line numbers.
3: See what happens when you use
4: Delete and Insert
5: (the D and I commands)
6: to edit text
7: and renumber lines
8: so they are consecutive
9: in your file.
10: The insert command can place new lines
11: in the file; there's no problem
12: because the line numbers are dynamic;
13: they'll go all the way to 65533.
```

(L)ist

Purpose

List lets you display a range of lines, including the two lines specified.

Form

```
{line}{,line}L<Return>
```

Instructions

Default values are provided if either or both of the options are omitted. If you omit the first option, as in:

```
*,lineL<Return>
```

the display starts 11 lines before the current line and ends with the specified line. The beginning comma is required to indicate the omitted first option.

> **NOTE**
> If the specified line is more than 11 lines before the current line, the display is the same as if you omitted both options.

If you omit the second option, as in:

```
*lineL<Return>
```

23 lines are displayed, starting with the specified line.

If you omit both parameters, as in:

```
*L<Return>
```

23 lines are displayed (the 11 lines before the current line, the current line, and the 11 lines after the current line). If there are fewer than 11 lines before the current line, more than 11 lines after the current line is displayed to make a total of 23 lines.

Examples

1. Assume that the following file exists and is ready to edit:

```
1: This is a sample file
2: used to show dynamic line numbers.
3: See what happens when you use
4: Delete and Insert
5: (the D and I commands)
        .
        .
        .
15:*The current line contains an asterisk.
        .
        .
        .
26: to edit text
27: in your file.
```

2. To list a range of lines without reference to the current line, type line,lineL and press the Return key:

```
*2,5L<Return>
```

   The result is:

```
2: used to show dynamic line numbers.
3: See what happens when you use
4: Delete and Insert
5: (the D and I commands)
```

3. To list a range of lines beginning with the current line, type:

```
*,26L<Return>
```

The result is:

```
15:*The current line contains an asterisk.
          .
          .
          .
26: to edit text
```

4. To list a range of 23 lines centered around the current line, type only L:

```
*L<Return>
```

The result is:

```
4: Delete and Insert
5: (the D and I commands)
         .
         .
         .
13: The current line is listed in the middle of the range.
14: The current line remains unchanged by the L command.
15:*The current line contains an asterisk.
         .
         .
         .
26: to edit text.
```

(M)ove

Purpose

Move allows you to move a range of text to the line specified.

Form

```
{line},{line},lineM<Return>
```

Instructions

Use the Move command to move a block of text (ranging from the first line to the second line) to another location in the file. The lines are renumbered according to the direction of the move.

Example

```
*,+25,100M<Return>
```

moves the text from the current line plus 25 lines to line 100. If the line numbers overlap, EDLIN displays an "Entry error" message.

To move lines 20 — 30 to line 100, type:

```
*20,30,100M<Return>
```

(P)age

Purpose

Page lets you move through a file 23 lines at a time.

Form

```
{line}{,line}P
```

Instructions

If the first line is omitted, that number default to the current line plus one. If the second line is omitted, 23 lines are listed. The line at the bottom of the screen becomes the new current line and is marked with an asterisk.

(Q)uit

Purpose

Quit lets you end the editing session and returns to the MS-DOS operating system.

Quit does not save any changes made to the file.

Form

```
Q<Return>
```

Instructions

EDLIN asks you to be sure you do not want to save your changes.

Type Y if you want to quit the editing session. No editing changes are saved and no .BAK file is created. Refer to the End command in this chapter for information about the .BAK file.

Type N or any other character except Y if you want to continue the editing session.

> **NOTE**
> When started, EDLIN erases any previous copy of the file with a file type of .BAK to make room to save the new copy. If you reply Y to the "Abort edit (Y/N)?" message, your previous backup copy no longer exists.

Example

```
*Q<Return>
Abort edit (Y/N)?Y<Return>
A>
```

(R)eplace

Purpose

Replace lets you substitute all occurrences of a string of text in the specified range with a different string of text or blanks.

Form

```
{line}{,line}{?}R string1<Ctrl/Z>string2<Return>
```

> **NOTE**
> Ctrl/Z may display as ^Z on your screen.

Instructions

As each occurrence of string1 is found, it is replaced by string2. Each line in which a replacement occurs is displayed. If a line contains two or more replacements of string1 with string2, then the line is displayed once for each occurrence. When all occurrences of string1 in the specified range are replaced by string2, the R command terminates and the asterisk prompt reappears.

If a second string is to be given as a replacement, then string1 must be separated from string2 with a Ctrl/Z. String2 **must** also end with a Ctrl/Z and a carriage return combination or simply by pressing the Return key.

If string1 is omitted, then Replace takes the old string1 as its value. If there is no old string1, for example, the first time this is performed, then the replacement process terminates immediately.

If string2 is omitted, end the command line by pressing the Return key.

If the first line is omitted in the range (as in ,line) then the first line defaults to the line *after* the current line.

If the second line is omitted (as in line or line,), the second line defaults to #. Therefore, this is the same as line,#. Remember that # indicates the line after the last line of the file.

If string1 is ended with a Ctrl/Z and there is no string2, string2 is taken as an empty string and becomes the new replace string.

Examples

```
*Rstring2<Ctrl/Z><Return>
```

deletes occurrences of old string1, but:

```
*Rstring1<Return><Return>
```

replaces string1 by the old string2 and the old string1 with the old string2, respectively.

> **NOTE**
> Old refers to a previous string specified either in a Search or a Replace command.

If the question mark (?) option is given, the Replace command stops at each line with a string that matches string1, displays the line with string2 in place, and then display the prompt "O.K.?".

If you press Y or the Return key, then string2 replaces string1, and the next occurrence of string1 is found. Again, the "O.K.?" prompt displays. This process continues until the end of the range or until the end of the file.

After the last occurrence of string1 is found, EDLIN displays the asterisk prompt.

If you press any key besides Y or Return after the "O.K.?" prompt, the string1 is left as it was in the line, and Replace goes to the next occurrence of string1.

If string1 occurs more than once in a line, each occurrence of string1 is replaced individually, and the "O.K.?" prompt is displayed after each replacement. In this way, only the desired string1 is replaced, and you can prevent unwanted substitutions.

Assume that the following file exists and is ready for editing:

```
1: This is a sample file
2: used to show dynamic line numbers.
3: See what happens when you use
4: Delete and Insert
5: (the D and I commands)
6: to edit text
7: in your file.
8: The insert command can place new lines
9: in the file; there's no problem
10: because the line numbers are dynamic;
11: they'll go all the way to 65533.
```

To replace all occurrences of string1 with string2 in a specified range, type:

```
*2,12Rand<Ctrl/Z>or<Return>
```

The result is:

```
4: Delete or Insert
5: (the D or I commands)
8: The insert command can place new lines
```

> **NOTE**
> In the above replacement, some unwanted substitutions have occurred. To avoid these and to confirm each replacement, the same original file can be used with a slightly different command.

In the next example, to replace only certain occurrences of the first string with the second string, type:

```
*2?Rand<Ctrl/Z>or<Return>
```

The result is:

```
4: Delete or Insert
O.K.? Y<Return>
5: (The D or I commands)
O.K.? Y<Return>
5: (The D or I commors)
O.K.? N<Return>
8: The insert commor can place new lines
O.K.? N<Return>
*
```

Now, type the List command (L) to see the result of all these changes:

```
          .
          .
          .
4: Delete or Insert
5: (The D or I commands)
          .
          .
          .
8: The insert command can place new lines
          .
          .
          .
```

(S)earch

Purpose

Search allows you to search the specified range of lines for a specified string of text.

Form

```
{line}{,line}{?}Sstring<Return>
```

Instructions

You end the command line by pressing the Return key. The first line that matches the string is displayed and becomes the current line. If no line contains a match for the string, the message "Not found" is displayed.

If the question mark option is not specified, the Search command ends when a match is found. If the question mark option (?) is included in the command, EDLIN displays the first line with a matching string; it then prompts you with the message "O.K.?".

If you press either the Y or the Return key, the line becomes the current line and the search ends.

If you press any other key, the search continues until another match is found, or until all lines have been searched (and the "Not found" message is displayed).

If the first line is omitted (as in ,line S string), the first line defaults to the line *after* the current line.

If the second line is omitted (as in line S string or line, S string), the second line defaults to # (line after last line of file), which is the same as line,# S string.

If string is omitted, Search takes the old string if there is one. (Note that "old" here refers to a string specified in a previous Search or Replace command.)

If there is not an old string (for example, no previous search or replace has been done), the command terminates immediately.

Examples

Assume that the following file exists and is ready for editing:

```
1: This is a sample file
2: used to show dynamic line numbers.
3: See what happens when you use
4: Delete and Insert
5: (the D and I commands)
6: to edit text
7: in your file.
8: The insert command can place new lines
9: in the file; there's no problem
10: because the line numbers are dynamic;
11:*they'll go all the way to 65533.
```

To search for the first occurrence of the string "and", type:

```
2,12 Sand<Return>
```

The following line is displayed:

```
4: Delete and Insert
```

To get the "and" in line 5, modify the search command by typing:

```
<Remove><Do>,12 Sand<Return>
```

The search then continues from the line after the current line (line 4), since no first line was given. The result is:

```
5: (the D and I commands)
```

To search through several occurrences of a string until the correct string is found, type:

```
1, ? Sand
```

The result is:

```
4: Delete and Insert
O.K.?
```

If you press any key (except Y or the Return key), the search continues, therefore type:

```
O.K.? N
```

Continue:

```
5: (the D and I commands)
O.K.?
```

Now press Y to terminate the search:

```
O.K.? Y
*
```

To search for string XYZ without the verification (O.K.?), type:

```
*Sxyz<Return>
```

EDLIN reports a match and continues to search for the same string when you issue the S command:

```
*S<Return>
```

EDLIN reports another match if there is one. If there are no more matches, EDLIN reports the string is "Not found".

> **NOTE**
> String defaults to any string specified by a previous Replace or Search command.

(T)ransfer

Purpose

Transfer lets you insert (merge) the contents of filename.typ into the file currently being edited at line. If line is omitted, then the current line is used.

Form

```
{line}T filename.typ<Return>
```

Instructions

This command is useful if you want to put the contents of a file into another file or into the text you are typing. The transferred text is inserted at the line number specified by line and the lines are renumbered.

(W)rite

Purpose

Write allows you to write a specified number of lines to the diskette from the lines that are being edited in memory. Lines are written to diskette beginning with line number 1.

Form

```
{n}W<Return>
```

Instructions

This command is meaningful only if the file you are editing is too large to fit into memory. When you start EDLIN, EDLIN reads lines into memory until memory is 3/4 full.

To edit the remainder of your file, you must write edited lines in memory to diskette. Then you can load additional unedited lines from diskette into memory by using the Append command.

> **NOTE**
> If you do not specify the number of lines, lines are written until memory is 3/4 full. No action is taken if available memory is already more than 3/4 full. All lines are renumbered, so that the first remaining line becomes line number 1.

5
Error Messages

This section lists the error messages that can be displayed while using the Rainbow 100 computer. They are listed in alphabetical order for easy reference. Table 13 lists the conventions used in the discussion of the error messages.

Table 13. Error Message Conventions

Convention	Meaning
drv or drv:	Drive name (A, B, C, or D)
nn	Track, sector, or user number on a diskette
filename	File name
.typ	File type
filespec	File specification, including the drive name, file name, and file type

When you are instructed to reset the Rainbow 100 computer, symbolized by Set-Up <Ctrl/Set-Up>:

- Press the Set-Up key.
- Then hold down the control key (Ctrl on the keyboard) while you press the Set-Up key.

Application Program Error Messages

If any error messages are displayed while you are using an application program, refer to the application program's documentation for instructions.

Rainbow 100 MS-DOS Error Messages

The following are the error messages that can be displayed by the Rainbow 100 computer and the MS-DOS operating system. The error message is printed first, followed by what it means and what to do about it.

Some of the error messages suggest that the system module be replaced after other corrective action fails. The system module, which resides inside the system unit, contains the electrical components and circuits of the computer.

> **NOTE**
> It is recommended that you run the diagnostic tests that are stored on the diagnostic diskette included in the Rainbow 100 User Kit before and after you replace any part of the computer.

All specified file(s) are contiguous

The file(s) you specified in CHKDSK are stored sequentially on the diskette. This is an informational message that requires no action by you.

Allocation error, size adjusted

CHKDSK found an invalid sector number in the File Allocation Table. CHKDSK truncated the file filename at the end of the last valid sector.

Bad command or file name

The MS-DOS operating system does not recognize the command or file name. Check for misspelling and typographical errors. Re-enter the command correctly.

Cannot CHDIR to root

The diskette CHKDSK is checking is bad.

Cannot edit .BAK file–rename file

You tried to edit a file with the type .BAK. You can RENAME or COPY the file and give it a different type.

CONSULT USER'S GUIDE FOR ASSISTANCE - boot load

This message can be displayed when you start the operating system if:

- The diskette in the drive is not a Rainbow 100 system diskette. Insert a Rainbow 100 system diskette in the drive.
- The diskette is blank or unformatted or is not inserted fully in the drive. Insert another diskette or reinsert the diskette correctly.
- The diskette is write protected and is upside-down in the drive. Insert the diskette correctly in the drive.

Then, restart the operating system.

If the problem persists, insert another system diskette in the drive and restart the operating system.

CONSULT USER'S GUIDE FOR ASSISTANCE - DRIVE drv - index

This message can be displayed when you run the extended self-test program if:

- The diskette is inserted incorrectly in the drive. Reinsert the diskette correctly into the drive.
- The diskette is write protected and is upside-down in the drive. Reinsert the diskette correctly in the drive.

Then, run the self-test program again.

If the error persists, insert another diskette into the drive or try another drive and run the self-test program again.

If the error persists after you have tried several diskettes, refer to the *Rainbow 100 User's Service Guide* to ensure that the drive cables are installed properly. This guide *is not* included in the Rainbow 100 User Kit.

If the error still persists, replace the drive or diskette controller card by any of the following procedures:

- Reporting the problem to your vendor.
- Reporting the problem to the DIGITAL International Help Line. For the phone number of the office nearest you, refer to Appendix A.
- Ordering the part and installing it yourself if you have the *Rainbow 100 User's Service Guide.*

CONSULT USER'S GUIDE FOR ASSISTANCE - DRIVE drv - motor

This message can be displayed when you run the extended self-test program if the diskette in the drive is unreadable. To correct the problem:

- Check the diskette for creases; if you find no creases, reinsert the diskette again.
- Insert another diskette into the drive.

Then, run the self-test program again.

If the error persists after you have tried several diskettes, replace the drive by any of the following procedures:

- Reporting the problem to your vendor.
- Reporting the problem to the DIGITAL International Help Line. For the phone number of the office nearest you, refer to Appendix A.
- Ordering the part and installing it yourself if you have the *Rainbow 100 User's Service Guide.* This guide *is not* included in the Rainbow 100 User Kit.

CONSULT USER'S GUIDE FOR ASSISTANCE - DRIVE A - not ready

This message can be displayed when you run the extended self-test program if:

- There is no diskette in drive A. Insert a diskette into drive A.
- The diskette is upside-down in the drive. Reinsert the diskette into the drive.
- The drive door is not closed. Close the drive door.

Then, run the self-test program again.

If the error persists after you have tried several diskettes, refer to the *Rainbow 100 User's Service Guide* to ensure that the drive cables are installed properly. This guide *is not* included in the Rainbow 100 User Kit.

If the error still persists, replace the drive by any of the following procedures:

- Reporting the problem to your vendor.
- Reporting the problem to the DIGITAL International Help Line. For the phone number of the office nearest you, refer to Appendix A.
- Ordering the part and installing it yourself if you have the *Rainbow 100 User's Service Guide.*

CONSULT USER'S GUIDE FOR ASSISTANCE - DRIVE drv - read

This message can be displayed when you run the extended self-test program if:

- The diskette in the drive is unformatted. Insert a formatted diskette.
- The diskette in the drive is not a Rainbow 100 (RX50) diskette. Remove the diskette from the drive and insert a Rainbow 100 diskette.

Then, run the self-test program again.

If the error persists after you have tried several diskettes, refer to the *Rainbow 100 User's Service Guide* to ensure that the drive cables are installed properly. This guide *is not* included in the Rainbow 100 User Kit.

If the error still persists, replace the drive or diskette controller card by any of the following procedures:

- Reporting the problem to your vendor.
- Reporting the problem to the DIGITAL International Help Line. For the phone number of the office nearest you, refer to Appendix A.
- Ordering the part and installing it yourself if you have the *Rainbow 100 User's Service Guide.*

CONSULT USER'S GUIDE FOR ASSISTANCE - DRIVE drv - restore

This message can be displayed when you turn on the Rainbow 100 computer. You cannot use the Rainbow 100 computer as a personal computer until the problem is corrected. However, you can use it as a terminal.

To correct the problem, turn the computer off and on again.

If the error persists after several retries, refer to the *Rainbow 100 User's Service Guide* to ensure that the drive cables are installed properly. This guide *is not* included in the Rainbow 100 User Kit.

If the error still persists, replace the drive by any of the following procedures:

- Reporting the problem to your vendor.
- Reporting the problem to the DIGITAL International Help Line. For the phone number of the office nearest you, refer to Appendix A.
- Ordering the part and installing it yourself if you have the *Rainbow 100 User's Service Guide.*

CONSULT USER'S GUIDE FOR ASSISTANCE - DRIVE drv - seek

This message can be displayed when you run the extended self-test program if the diskette in the drive is formatted improperly. Insert a Rainbow 100 diskette into the drive. Then, run the self-test program again.

If the error persists after you have tried several diskettes, refer to the *Rainbow 100 User's Service Guide* to ensure that the drive cables are installed properly. This guide *is not* included in the Rainbow 100 User Kit.

If the error still persists, replace the drive by any of the following procedures:

- Reporting the problem to your vendor.
- Reporting the problem to the DIGITAL International Help Line. For the phone number of the office nearest you, refer to Appendix A.
- Ordering the part and installing it yourself if you have the *Rainbow 100 User's Service Guide.*

CONSULT USER'S GUIDE FOR ASSISTANCE - DRIVE drv - step

This message can be displayed when you turn on the Rainbow 100 computer. You cannot use the Rainbow 100 computer as a personal computer until the problem is corrected. However, you can use it as a terminal.

Reinsert and then remove the protective card that came with the diskette drive. Then turn the computer off and on again.

If the error persists after several retries, refer to the *Rainbow 100 User's Service Guide* to ensure that the drive cables are installed properly. This guide *is not* included in the Rainbow 100 User Kit.

If the error still persists, replace the drive by any of the following procedures:

- Reporting the problem to your vendor.
- Reporting the problem to the DIGITAL International Help Line. For the phone number of the office nearest you, refer to Appendix A.
- Ordering the part and installing it yourself if you have the *Rainbow 100 User's Service Guide.*

CONSULT USER'S GUIDE FOR ASSISTANCE - drive not ready

This message can be displayed when you start the operating system if:

- There is no system diskette in the specified drive. Insert a system diskette into the specified drive.
- The diskette is upside-down in the drive. Insert the diskette correctly into the drive.
- Drive C or D is specified on a computer with drives A and B only. Specify drive A or B.
- The drive door is not closed. Close the drive door.

Then, start the operating system again.

If the error persists after you have tried several system diskettes, refer to the *Rainbow 100 User's Service Guide* to ensure that the drive is installed properly. This guide *is not* included in the Rainbow 100 User Kit.

If the error still persists, replace the drive by any of the following procedures:

- Reporting the problem to your vendor.
- Reporting the problem to the DIGITAL International Help Line. For the phone number of the office nearest you, refer to Appendix A.
- Ordering the part and installing it yourself if you have the *Rainbow 100 User's Service Guide.*

CONSULT USER'S GUIDE FOR ASSISTANCE - KEYBOARD

This message can be displayed when you turn on the Rainbow 100 computer if the keyboard is not working properly. You cannot use the Rainbow 100 computer as a personal computer or a terminal until the problem is corrected. To correct the problem:

- Check to be sure that the monitor cable is securely attached to the back of the system module.
- Make sure that the keyboard cable is secured to the back of the monitor and to the bottom of the keyboard.
- Check for any depressed keys by running your fingers over the top of the keyboard keys.

Then, turn the computer off and on again.

If the error persists after several retries, replace the keyboard or keyboard cable by any of the following procedures:

- Reporting the problem to your vendor.
- Reporting the problem to the DIGITAL International Help Line. For the phone number of the office nearest you, refer to Appendix A.
- Ordering the part and installing it yourself if you have the *Rainbow 100 User's Service Guide*. This guide *is not* included in the Rainbow 100 User Kit.

CONSULT USER'S GUIDE FOR ASSISTANCE - MAIN BOARD - comm. port

This message can be displayed when you turn on the Rainbow 100 computer if the communications port is not working properly. You cannot use the Rainbow 100 computer as a terminal when this message is displayed. However, you can use the Rainbow 100 computer as a personal computer if the communications port is not used.

Turn the computer off and then on again.

If the error persists after several retries, replace the system module by any of the following procedures:

- Reporting the problem to your vendor.
- Reporting the problem to the DIGITAL International Help Line. For the phone number of the office nearest you, refer to Appendix A.
- Ordering the part and installing it yourself if you have the *Rainbow 100 User's Service Guide*. This guide *is not* included in the Rainbow 100 User Kit.

If you want to use the computer as a personal computer, insert a system diskette into a drive and start the operating system.

CONSULT USER'S GUIDE FOR ASSISTANCE - MAIN BOARD - contention

This message can be displayed when you turn on the Rainbow 100 computer. You cannot use the Rainbow 100 computer as a personal computer or a terminal until the problem is corrected.

Turn the computer off and then on again.

If the error persists after several retries, replace the system module by any of the following procedures:

- Reporting the problem to your vendor.
- Reporting the problem to the DIGITAL International Help Line. For the phone number of the office nearest you, refer to Appendix A.
- Ordering the part and installing it yourself if you have the *Rainbow 100 User's Service Guide*. This guide *is not* included in the Rainbow 100 User Kit.

CONSULT USER'S GUIDE FOR ASSISTANCE - MAIN BOARD - interrupts off

This message can be displayed when you turn on the Rainbow 100 computer or while you run an application program.

If the error message is displayed:

1. Alone on the screen (a fatal error), you cannot use the Rainbow 100 computer as a personal computer or as a terminal until the problem is corrected. Turn the computer off and then on again. If the error persists after several retries, replace the system module by any of the following procedures:

   - Reporting the problem to your vendor.
   - Reporting the problem to the DIGITAL International Help Line. For the phone number of the office nearest you, refer to Appendix A.
   - Ordering the part and installing it yourself if you have the *Rainbow 100 User's Service Guide*. This guide *is not* included in the Rainbow 100 User Kit.

2. Above the Main System Menu (a non-fatal error), you can use the Rainbow 100 computer as a personal computer and as a terminal. Turn the computer off and then on again. If the problem persists, you should report the problem to:

   - Your Rainbow 100 computer vendor.
   - The DIGITAL International Help Line. For the phone number of the office nearest you, refer to Appendix A.

3. While running an application program, you should remove the application program diskette from the drive and then turn the computer off and then on again.

   If the error message is not displayed when you turn the computer on, run the application program again. If the error message is displayed while the program is running, report the problem to the vendor who sold you the application program or check the program for misuse of instructions if you wrote the program.

   If the error message displays after you turn the computer on, refer to steps one or two for instructions.

CONSULT USER'S GUIDE FOR ASSISTANCE - MAIN BOARD - keyboard port

This message can be displayed when you turn on the Rainbow 100 computer. You cannot use the Rainbow 100 computer as a personal computer or a terminal until the problem is corrected.

Turn the computer off and then on again.

If the error persists after several retries, replace the system module by any of the following procedures:

- Reporting the problem to your vendor.
- Reporting the problem to the DIGITAL International Help Line. For the phone number of the office nearest you, refer to Appendix A.
- Ordering the part and installing it yourself if you have the *Rainbow 100 User's Service Guide*. This guide *is not* included in the Rainbow 100 User Kit.

CONSULT USER'S GUIDE FOR ASSISTANCE - MAIN BOARD - nvm data

This message can be displayed when you turn on the Rainbow 100 computer if your previous Set-Up selections, such as screen background and number of columns, were not read correctly. You can still use the Rainbow 100 computer as a personal computer or a terminal. However, the Set-Up selections that you previously saved are not in effect.

Review the Set-Up selections. Reset them if necessary. Then save the settings by typing <Shift/S>. Turn the computer off and then on again.

If the error persists after several retries, replace the system module by any of the following procedures:

- Reporting the problem to your vendor.
- Reporting the problem to the DIGITAL International Help Line. For the phone number of the office nearest you, refer to Appendix A.
- Ordering the part and installing it yourself if you have the *Rainbow 100 User's Service Guide.* This guide *is not* included in the Rainbow 100 User Kit.

You can still use the computer as a personal computer or a terminal until the problem is corrected, but you cannot save any Set-Up selections.

CONSULT USER'S GUIDE FOR ASSISTANCE - MAIN BOARD - printer port

This message can be displayed when you turn on the Rainbow 100 computer if the printer port is not working properly. You cannot use a printer if this message is displayed. You can still use the Rainbow 100 computer as a personal computer or a terminal.

Turn the computer off and then on again.

If the error persists after several retries, replace the system module if you want to use a printer. To replace the system module:

- Report the problem to your vendor.
- Report the problem to the DIGITAL International Help Line. For the phone number of the office nearest you, refer to Appendix A.
- Order the part and install it yourself if you have the *Rainbow 100 User's Service Guide*. This guide *is not* included in the Rainbow 100 User Kit.

CONSULT USER'S GUIDE FOR ASSISTANCE - MAIN BOARD - ram 0–64k

This message can be displayed when you turn on the Rainbow 100 computer. You cannot use the Rainbow 100 computer as a personal computer or a terminal until the problem is corrected.

Turn the computer off and then on again.

If the error persists after several retries, replace the system module by any of the following procedures:

- Reporting the problem to your vendor.
- Reporting the problem to the DIGITAL International Help Line. For the phone number of the office nearest you, refer to Appendix A.
- Ordering the part and installing it yourself if you have the *Rainbow 100 User's Service Guide*. This guide *is not* included in the Rainbow 100 User Kit.

CONSULT USER'S GUIDE FOR ASSISTANCE - MAIN BOARD - ram arbitration

This message can be displayed when you turn on the Rainbow 100 computer. You cannot use the Rainbow 100 computer as a personal computer or a terminal until the problem is corrected.

Turn the computer off and then on again.

If the error persists after several retries, replace the system module by any of the following procedures:

- Reporting the problem to your vendor.
- Reporting the problem to the DIGITAL International Help Line. For the phone number of the office nearest you, refer to Appendix A.
- Ordering the part and installing it yourself if you have the *Rainbow 100 User's Service Guide*. This guide *is not* included in the Rainbow 100 User Kit.

CONSULT USER'S GUIDE FOR ASSISTANCE - MAIN BOARD - rom crc - rom #0

This message can be displayed when you turn on the Rainbow 100 computer. You cannot use the Rainbow 100 computer as a personal computer or a terminal until the problem is corrected.

Turn the computer off and then on again.

If the error persists after several retries, replace the system module by any of the following procedures:

- Reporting the problem to your vendor.
- Reporting the problem to the DIGITAL International Help Line. For the phone number of the office nearest you, refer to Appendix A.
- Ordering the part and installing it yourself if you have the *Rainbow 100 User's Service Guide*. This guide *is not* included in the Rainbow 100 User Kit.

CONSULT USER'S GUIDE FOR ASSISTANCE - MAIN BOARD - rom crc - rom #1

This message can be displayed when you turn on the Rainbow 100 computer. You cannot use the Rainbow 100 computer as a personal computer or a terminal until the problem is corrected.

Turn the computer off and then on again.

If the error persists after several retries, replace the system module by any of the following procedures:

- Reporting the problem to your vendor.
- Reporting the problem to the DIGITAL International Help Line. For the phone number of the office nearest you, refer to Appendix A.
- Ordering the part and installing it yourself if you have the *Rainbow 100 User's Service Guide.* This guide *is not* included in the Rainbow 100 User Kit.

CONSULT USER'S GUIDE FOR ASSISTANCE - MAIN BOARD - rom crc - rom #2

This message can be displayed when you turn on the Rainbow 100 computer. You cannot use the Rainbow 100 computer as a personal computer or a terminal until the problem is corrected.

Turn the computer off and then on again.

If the error persists after several retries, replace the system module by any of the following procedures:

- Reporting the problem to your vendor.
- Reporting the problem to the DIGITAL International Help Line. For the phone number of the office nearest you, refer to Appendix A.
- Ordering the part and installing it yourself if you have the *Rainbow 100 User's Service Guide*. This guide *is not* included in the Rainbow 100 User Kit.

CONSULT USER'S GUIDE FOR ASSISTANCE - MAIN BOARD - unsolicited interrupt

This message can be displayed when you turn on the Rainbow 100 computer. You cannot use the Rainbow 100 computer as a personal computer or a terminal until the problem is corrected.

Turn the computer off and then on again.

If the error persists after several retries, replace the system module by any of the following procedures:

- Reporting the problem to your vendor.
- Reporting the problem to the DIGITAL International Help Line. For the phone number of the office nearest you, refer to Appendix A.
- Ordering the part and installing it yourself if you have the *Rainbow 100 User's Service Guide*. This guide *is not* included in the Rainbow 100 User Kit.

CONSULT USER'S GUIDE FOR ASSISTANCE - MAIN BOARD - unsolicited interrupt - Z80

This message can be displayed when you turn on the Rainbow 100 computer. You cannot use the Rainbow 100 computer as a personal computer or a terminal until the problem is corrected.

Turn the computer off and then on again.

If the error persists after several retries, replace the system module by any of the following procedures:

- Reporting the problem to your vendor.
- Reporting the problem to the DIGITAL International Help Line. For the phone number of the office nearest you, refer to Appendix A.
- Ordering the part and installing it yourself if you have the *Rainbow 100 User's Service Guide*. This guide *is not* included in the Rainbow 100 User Kit.

CONSULT USER'S GUIDE FOR ASSISTANCE - MAIN BOARD - video

This message can be displayed when you turn on the Rainbow 100 computer. You cannot use the Rainbow 100 computer as a personal computer or a terminal until the problem is corrected.

Turn the computer off and then on again.

If the error persists after several retries, replace the system module by any of the following procedures:

- Reporting the problem to your vendor.
- Reporting the problem to the DIGITAL International Help Line. For the phone number of the office nearest you, refer to Appendix A.
- Ordering the part and installing it yourself if you have the *Rainbow 100 User's Service Guide*. This guide *is not* included in the Rainbow 100 User Kit.

CONSULT USER'S GUIDE FOR ASSISTANCE - MAIN BOARD - video ram

This message can be displayed when you turn on the Rainbow 100 computer. You cannot use the Rainbow 100 computer as a personal computer or a terminal until the problem is corrected.

Turn the computer off and then on again.

If the error persists after several retries, replace the system module by any of the following procedures:

- Reporting the problem to your vendor.
- Reporting the problem to the DIGITAL International Help Line. For the phone number of the office nearest you, refer to Appendix A.
- Ordering the part and installing it yourself if you have the *Rainbow 100 User's Service Guide*. This guide *is not* included in the Rainbow 100 User Kit.

CONSULT USER'S GUIDE FOR ASSISTANCE - MAIN BOARD - video vfr

This message can be displayed when you turn on the Rainbow 100 computer. You cannot use the Rainbow 100 computer as a personal computer or a terminal until the problem is corrected.

Turn the computer off and then on again.

If the error persists after several retries, replace the system module by any of the following procedures:

- Reporting the problem to your vendor.
- Reporting the problem to the DIGITAL International Help Line. For the phone number of the office nearest you, refer to Appendix A.
- Ordering the part and installing it yourself if you have the *Rainbow 100 User's Service Guide.* This guide *is not* included in the Rainbow 100 User Kit.

CONSULT USER'S GUIDE FOR ASSISTANCE - MAIN BOARD - Z80 crc

This message can be displayed when you turn on the Rainbow 100 computer. You cannot use the Rainbow 100 computer as a personal computer or a terminal until the problem is corrected.

Turn the computer off and then on again.

If the error persists after several retries, replace the system module by any of the following procedures:

- Reporting the problem to your vendor.
- Reporting the problem to the DIGITAL International Help Line. For the phone number of the office nearest you, refer to Appendix A.
- Ordering the part and installing it yourself if you have the *Rainbow 100 User's Service Guide*. This guide *is not* included in the Rainbow 100 User Kit.

CONSULT USER'S GUIDE FOR ASSISTANCE - MAIN BOARD - Z80 response

This message can be displayed when you turn on the Rainbow 100 computer. You can use the computer as a terminal. You cannot use it as a personal computer until the problem is corrected.

Turn the computer off and then on again.

If the error persists after several retries and you want to use your machine as a personal computer, replace the system module by any of the following procedures:

- Reporting the problem to your vendor.
- Reporting the problem to the DIGITAL Customer Help Line. For the phone number of the office nearest you, refer to Appendix A.
- Ordering the part and installing it yourself if you have the *Rainbow 100 User's Service Guide.* This guide *is not* included in the Rainbow 100 User Kit.

CONSULT USER'S GUIDE FOR ASSISTANCE - non-system diskette

This message can be displayed when you start the operating system if the diskette in the drive is not a MS-DOS system diskette. To correct the problem, insert a system diskette into the drive and start the operating system again.

CONSULT USER'S GUIDE FOR ASSISTANCE - RAM OPTION

This message can be displayed when you run the extended self-test program and an error is found in the optional memory. You can use the computer as a personal computer or a terminal. However, if you use it as a personal computer, you may encounter problems running programs.

Check Set-Up for memory settings. Be sure to save the memory size. Turn the computer off and then on again.

If the problem persists after several retries, remove the optional memory board and insert it again. (See the *Rainbow 100 Memory Extension Option Installation Guide* for instructions.)

If the error still persists, replace the optional memory by any of the following procedures:

- Reporting the problem to your vendor.
- Reporting the problem to the DIGITAL International Help Line. For the phone number of the office nearest you, refer to Appendix A.
- Ordering the part and installing it yourself if you have the *Rainbow 100 User's Service Guide*. This guide *is not* included in the Rainbow 100 User Kit.

CONSULT USER'S GUIDE FOR ASSISTANCE - remove card or diskette

This message can be displayed when you turn on the Rainbow 100 computer if:

- The protective card is in the drive and the drive door is closed. Remove the protective card.
- The diskette is upside-down or inserted incorrectly in the drive and the drive door is closed. Remove the diskette.

Turn the computer off and then on again and insert the diskette correctly.

CONSULT USER'S GUIDE FOR ASSISTANCE - RX50 CONTROLLER BOARD

This message can be displayed when you turn on the Rainbow 100 computer. You cannot use the Rainbow 100 computer as a personal computer until the problem is corrected. However, you can use it as a terminal.

If you want to use the Rainbow 100 computer as a personal computer, turn the computer off and then on again.

If the error persists after several retries, remove the RX50 controller board and insert it again. (See the *Rainbow 100 User's Service Guide* for instructions. This guide *is not* included in the Rainbow 100 User Kit.

If the error still persists, replace the RX50 controller board by any of the following procedures:

- Reporting the problem to your vendor.
- Reporting the problem to the DIGITAL International Help Line. For the phone number of the office nearest you, refer to Appendix A.
- Ordering the part and installing it yourself if you have the *Rainbow 100 User's Service Guide.*

CONSULT USER'S GUIDE FOR ASSISTANCE - Set-Up defaults stored

This message can be displayed when you turn on the Rainbow 100 computer. It informs you that a problem was found and corrected in the part of the computer that saves your Set-Up selections. Any Set-Up selections you have previously saved are not in effect; the default Set-Up selections (those set at the factory) are in effect. You can use the Rainbow 100 computer as a personal computer or a terminal; the message is informative only.

Reset and save your desired Set-Up selections.

CONSULT USER'S GUIDE FOR ASSISTANCE - system load

This message can be displayed when you start the operating system if:

- The diskette is not inserted correctly in the drive. Open the drive door and reinsert the diskette into the drive. Close the drive door.
- The diskette is unreadable. Insert another diskette into the drive.

Then, restart the operating system.

CONSULT USER'S GUIDE FOR ASSISTANCE - Z80 response

This message can be displayed when you start the operating system. To correct the problem, insert another diskette into the drive and start the operating system again.

If the error persists after several retries, replace the system module by any of the following procedures:

- Reporting the problem to your vendor.
- Reporting the problem to the DIGITAL International Help Line. For the phone number of the office nearest you, refer to Appendix A.
- Ordering the part and installing it yourself if you have the *Rainbow 100 User's Service Guide.* This guide *is not* included in the Rainbow 100 User Kit.

Contains non-contiguous blocks

CHKDSK finds that the file you specified contains non-contiguous blocks. This means the file is stored in fragments on the diskette rather than sequentially. You can copy the fragmented file to another diskette to increase reading performance.

Data error reading drive drv
Abort, Retry, Ignore?

Press the R key to retry the command. If the error persists, press the A key to abort the command. The diskette is probably unusable. Attempt to copy all files to a new diskette.

Data error writing drive drv
Abort, Retry, Ignore?

Press the R key to retry the command. If the error persists, press the A key to abort the command. The diskette is probably unusable. Attempt to copy all files to a new diskette.

Disk error reading drive drv
Abort, Retry, Ignore?

Press the R key to retry the command. If the error persists, press the A key to abort the command. The diskette is probably unusable. Attempt to copy all files to a new diskette.

Disk error writing drive drv
Abort, Retry, Ignore?

Press the R key to retry the command. If the error persists, press the A key to abort the command. The diskette is probably unusable. Attempt to copy all files to a new diskette.

Disk error reading FAT

Press the R key to retry the command. If the error persists, press the A key to abort the command. The diskette is probably unusable. Attempt to copy all files to a new diskette.

Disk error writing FAT

CHKDSK encountered a diskette error while trying to update the file allocation table. The diskette is probably unusable. Attempt to copy all files to a new diskette.

Diskette not RX50 format
Format failure

You tried to FORMAT a non RX50 diskette. Remove the diskette and use an RX50 diskette.

Errors found, F parameter not specified

You must specify the /F parameter for CHKDSK to correct disk errors it finds.

File allocation table bad for drive drv

The diskette has either not been formatted properly or has not been formatted. Retry the operation. If the error persists, format the diskette using the FORMAT command.

File not found

The file you specified was not found on the diskette. Check to see if you misspelled the file name.

Filename is cross linked on cluster

Make a copy of the file you want to save. Then, delete both files that are cross linked.

FIND: Invalid number of parameters

You did not specify a string in the FIND command. Re-enter the command correctly.

FIND: Syntax error

You typed an illegal string in the FIND command. The string must be enclosed in quotes, "string". Re-enter the command correctly.

FIND: File not found filename

The file name you specified does not exist or FIND cannot find it. Check to see if you misspelled the file name.

FIND: Read error in filename

FIND could not read the file. Retry the command. If the error persists, run CHKDSK.

FIND: Invalid parameter param

The valid parameters are: /V, /C, and /N. Re-enter the command.

Has invalid cluster, size adjusted

CHKDSK finds that file has an invalid pointer. If you selected the /F parameter, CHKDSK truncates filename at the last valid data block.

Insufficient memory

There is not enough memory to run EDLIN or CHKDSK. You must write some files to a diskette or delete some files in memory.

Insufficient room in root directory
Erase files in root and repeat CHKDSK

Copy some files in directory from the root directory. Then erase those files in the root and run CHKDSK.

Invalid current directory
Processing cannot continue

CHKDSK cannot read the current directory. Restart the MS-DOS operating system and rerun CHKDSK.

Invalid date
Enter new date:

The DATE options or separators are not valid. Enter a valid date and press the Return key. If you do not want to enter a date, simply press the Return key.

Invalid drive specification

The diskette drive specification must be A, B, C, or D.

Invalid sub-directory entry

CHKDSK found invalid information in the sub-directory named with this message. Run CHKDSK using the /V parameter to display more information about the error.

Invalid parameter

You specified an invalid command parameter. Re-enter the command with the correct parameter.

Invalid time
Enter new time:

The TIME options or separators are not valid. Enter a valid time and press the Return key. If you do not want to enter a time, simply press the Return key.

Is cross linked on cluster

CHKDSK identifies two files that are cross linked. Use the COPY command to make copies of both files, and then delete the two original files.

List output is not assigned to a device

You specified an invalid list device. A valid standard list devices is PRN.

Must specify destination number

You did not specify a destination line number for the EDLIN COPY or MOVE command. Reenter the command with the destination line number.

No files match d:XXXXXXXX.XXX

The file you specified to add to the print queue does not exist.

No room in directory for file

You specified an illegal diskette drive, or an illegal file name, or else the file directory is full. Check for illegal entries. If there are none, run the CHKDSK program. If the report shows the directory is full, remove the diskette. You will need to use another diskette.

Non-DOS disk error reading drive drv
Abort, Retry, Ignore?

- Check the door on drive drv. If it is open, close the door and press the R key to retry the command.
- Check if the diskette is upside-down in the drive. If it is, place it in the drive correctly and press the R key.
- The diskette in drive drv has not been formatted. Press the A key to abort the comand. Format the diskette using the FORMAT command.
- The diskette in drive drv has a format that is not recognized by MS-DOS. For example, you are trying to use an application that has not been designed to run with MS-DOS. Press the A key to abort the command. Remove the diskette, because you cannot use it with MS-DOS.

Attempt to copy all files to a new diskette.

Not enough room to merge the entire file

There is not enough room in memory to store the file. You must write some files to the diskette or delete some files.

Not ready error reading drive drv
Abort, Retry, Ignore?

Press the R key to retry the command. If the error persists, press the A key to abort the command. The diskette is probably unusable. Attempt to copy all files to a new diskette.

Not ready error writing drive drv
Abort, Retry, Ignore?

Press the R key to retry the command. If the error persists, press the A key to abort the command. The diskette is probably unusable.

PRINT queue is full

The maximum number of files in the PRINT queue is 10. Wait until some files are printed before adding more to the queue.

Probable non-DOS disk
Continue(Y/N)?

The diskette is either not formatted properly or has been damaged. If you type Y, CHKDSK displays possible corrective actions.

Sector not found error reading drive drv
Abort, Retry, Ignore?

Press the R key to retry the command. If the error persists, press the A key to abort the command. The diskette is probably unusable. Attempt to copy all files to a new diskette.

Sector not found error writing drive drv
Abort, Retry, Ignore?

Press the R key to retry the command. If the error persists, press the A key to abort the command. The diskette is probably unusable. Attempt to copy all files to a new diskette.

Seek error reading drive drv
Abort, Retry, Ignore?

Press the R key to retry the command. If the error persists, press the A key to abort the command. The diskette is probably unusable. Attempt to copy all files to a new diskette.

Seek error writing drive drv
Abort, Retry, Ignore?

Press the R key to retry the command. If the error persists, press the A key to abort the command. The diskette is probably unusable. Attempt to copy all files to a new diskette.

Unrecoverable error in directory
Convert directory to file (Y/N)?

CHKDSK finds an error in the directory. If you respond Y to the prompt, CHKDSK converts the bad directory to a file. You can then edit the file or delete it.

Write fault error writing drive drv
Abort, Retry, Ignore?

Press the R key to retry the command. If the error persists, press the A key to abort the command. The diskette is probably unusable. Attempt to copy all files to a new diskette.

Write protect error writing on drive drv
Abort, Retry, Ignore

An error occurred while MS-DOS was trying to write to the diskette in drive drv. Check to see if the diskette has a write protect tab. If it does, remove the write protect tab or select a diskette without a write protect tab. Attempt to proceed by pressing the R key. If the error is not corrected, press the A key to abort the command. The diskette is probable unusable. Attempt to copy all files to a new diskette.

Appendices

A

Getting Help

Help Line Phone Numbers

Country	Phone Number
U.S.A.	(800) DEC-8000
Canada	(800) 267-5251
United Kingdom	(0256) 59 200
Belgium	(02)-24 26 790
West Germany	(089) 95 91 66 44
Italy	(02)-617 53 81 or 617 53 82
Japan	(0424) 64-3302
Denmark	(04)-30 10 05
Spain	(1)-73 34 307
Finland	(90)-42 33 32
Holland	(1820)-31 100
Switzerland	(01)-810 51 21
Sweden	(08)-98 88 35
Norway	(02)-25 64 22
France	(1)-687 31 52
Austria	(222)-67 76 41 extension 444
Australia Sydney	(02) 412-5555
All other areas	(008) 226377

B

Diskettes

Flexible diskettes, when used with care, are remarkably durable and reliable storage devices. Any given portion of a diskette's surface can be read and written upon millions of times before the oxide film that holds the data begins to wear too thin to consistently hold data. Moreover, flexible diskettes routinely pass, without a single error, diagnostic tests that fill the diskettes' tracks with data which is checked, changed, and rewritten in worst-case format, over and over and over.

In spite of their ruggedness and reliability, flexible diskettes (the pros call them "floppies") have acquired a somewhat poor reputation in data processing circles. Why?

A glance in any computer room or office where flexible diskettes are used shows them setting on top of video terminals exposed to heat and magnetic fields, setting beneath coffee cups and cold drink cans, and even lying on the floor without their protective envelopes.

Although many of these diskettes forget what they were told, a surprising number of them continue working through the coffee and cola rings, through the grit and grime and magnetic influences, for months or years at a time.

Don't push your luck. If you wish to avoid joining the ranks of frustrated flexible diskette users, carefully observe the following precautions.

Storing Diskettes

- Keep flexible diskettes in close-fitting, dust-tight boxes (like those they are packaged in when you buy them ten at a time).
- Store these boxes in rooms with consistent temperature, humidity, and cleanliness.

Handling Diskettes

Follow the tips below when handling diskettes.

- Avoid bending the diskettes. The "flexibility" of flexible diskettes is an accident of their design, not a goal. They will bend, but when bent their covers tend to crease or warp in ways that cause wear and binding when the drives rotate the diskette inside. Insert diskettes *gently* into their drives.
- Never allow your fingers to touch the diskette data surface (that is, the shiny, usually brown or black surface inside the black cover). Body oils cause the drive read/write heads (small electromagnets used to read or write information) to behave erratically—usually at the cost of data.
- Always return diskettes to their protective envelopes—even if you expect to use them again in a few seconds. One piece of grit on a diskette picked up from a desk top can wipe out a week's work.
- Keep diskettes far away from magnets. Magnets are often used to hold notes and pictures to metal surfaces. These handy items can damage diskettes.
- The best place to store diskettes, even temporarily, is in their storage boxes. However, if you *must* lay your diskettes (in their protective envelopes, of course) on your desk top rather than replace them in their storage boxes, never lay *anything* on top of them. Once you cover a diskette with a memo, the next thing you lay down will inevitably be a magnetized paperweight, stapler, or a key ring.

Using Diskettes

- Always identify your diskettes with the self-sticking labels. You can always ask the computer to tell you what is on the diskette, but this slows you down unnecessarily. If you fill out these labels after they are applied to the diskette cover, use only felt-tip pens because they require minimum pressure. **Never** use a ball-point pen or pencil. They can seriously deform both the diskette cover and the diskette inside. If you place a new label on a diskette, be sure to gently peel off the old label first. Placing labels on top of labels can cause the diskette to be seated improperly in a drive.
- Never allow diskettes to become so full that you risk running out of space while trying to write data to them. Leave some free space on your data diskettes.
- When running application programs that write data to diskettes, do not exchange one diskette for another except when the program tells you to do so or has finished executing. Some programs open files and leave them open until all the required data has been entered and acted upon. You almost certainly will have trouble if you exchange diskettes in the middle of such an operation.
- Do not turn the computer's power on or off when a diskette is inserted into any drive.

Diskette Backup Procedures

These procedures involve making copies of any edited diskettes.

Why? A diskette is not immortal. Sliding a diskette in and out of its jacket or a poor drive will wear it out. Accidents mentioned above and under "Handling Diskettes" may also occur.

Follow these tips and protect your work.

- Make copies of original diskettes. Label the original "master" and store it. You might want to make two copies of the original.
- Set up a diskette rotation method. Use five diskettes. At the close of day one, copy diskette work onto day two's diskette. At the close of day two copy work onto day three's diskette. Label diskettes with the numbers, actual dates, or days of the week.
- Take diskettes out of use after six months of rotation.

Above all "better safe than sorry". Months of work can be lost due to worn-out or damaged diskettes.

Diskettes and Files

The MS-DOS operating system deals with a wide range of information including programs, text, and data. Information is organized in the form of files, and the files are stored on diskettes. File names distinguish electronic files much the same way as labels on file folders distinguish paper files in a cabinet.

Storing Information on Diskettes

The computer stores and retrieves files by referring to tracks and sectors on a diskette (see Figure 7). Rainbow 100 diskettes have 80 tracks, (numbered 0–79); each diskette is composed of ten sectors. Sectors store blocks of "bytes," each byte represents one character such as a letter, a digit, or a symbol. Because each sector has a unique location on a diskette, the computer can find a particular sector on a particular track and store information in it or retrieve information from it.

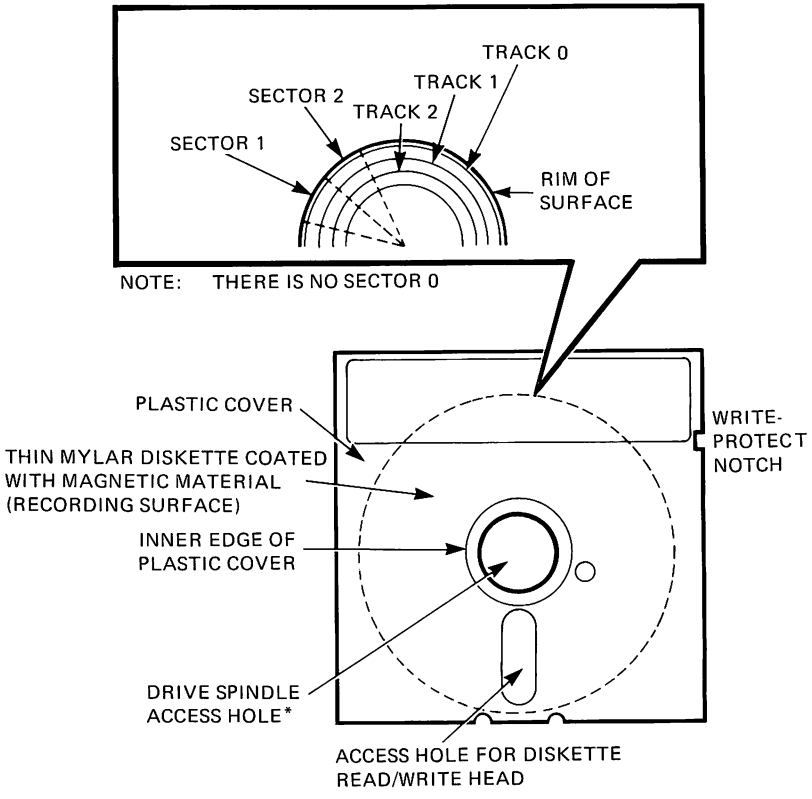


Figure 7. Tracks and Sectors on a Diskette

The amount of information you can store on a diskette depends on the diskette's "density." The Rainbow 100 computer's double density diskettes can hold twice as much information as single density diskettes. You can store about 115 pages of typewritten text on one diskette assuming 54 lines per page and 65 characters per line.

Protecting Data on Diskettes

You can protect the data on a diskette from being accidentally deleted by applying a self-sticking write-protect tab onto the diskette's write-protect notch (Figure 8.) This tab prevents the computer from writing on the diskette. You can remove the write-protect tab by pealing it off the diskette when you want the computer to write on it.

You can purchase write-protect tabs at any computer store.

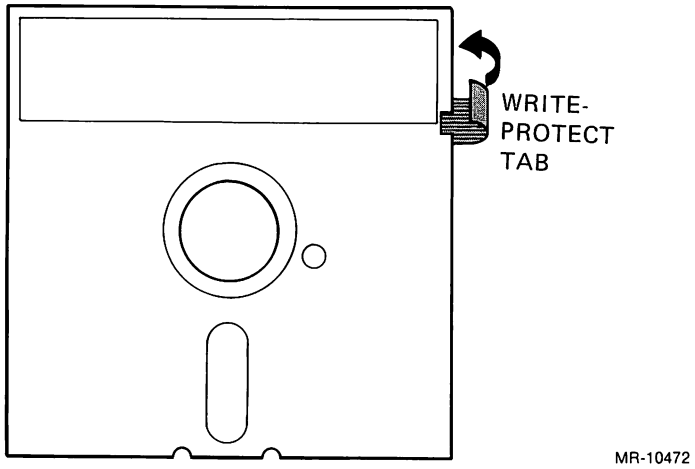


Figure 8. Applying a Write-Protect Tab

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