

MINDSET

Introductory Guide to MSTM -DOS

Personal
Computer
System

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Introductory Guide and Reference Manual Supplement

Please replace the corresponding pages of your Introductory Guide to MS-DOS and MS-DOS Reference Manual with the enclosed revised pages, marked "Rev." for your convenience, and add the enclosed Appendices E and F to your MS-DOS Reference Manual.

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Section 1

Introduction

This Introductory Guide to MS-DOS is intended to help you use the Microsoft MS™-DOS Disk Operating System on your Mindset Personal Computer System. Beginning with background information on the basic operation of a disk operating system (DOS), the guide leads you through short, easy-to-understand discussions and tutorials. It won't take you long before you are using MS-DOS to help you manage your information.

The guide is a short introduction with two goals: to introduce you to MS-DOS operations, and to help you understand how those operations can benefit you. For convenience, place this guide under the OPTIONS tab of your Mindset Personal Computer System Operation Guide.

After you've worked with MS-DOS for a while, you will probably want to learn more details about it. To do so, see the accompanying Mindset MS-DOS Reference Manual, which includes a complete and detailed listing of all MS-DOS commands.

Who Should Read the Guide

This guide was written for the Mindset Personal Computer System owner who has never used diskettes or disk operating systems before. Because many people who have never used a disk system before have also never used a computer before, the guide does not take the reader's

experience for granted. All unfamiliar concepts and terms are spelled out clearly. Procedures are explained in a straightforward, step-by-step manner.

What You Will Learn

In this guide you will gain some insight into what an operating system is, what it does, and how it helps you manage your personal computer resources more effectively.

Then, you'll learn how to get MS-DOS started on your Mindset System, and how to turn it off when you're done. Most importantly, you'll learn how to tell the MS-DOS what to do.

The guide describes how information is organized on diskettes, and how you can manage that organization to keep your electronic files in order. You will learn some of the more common commands used for telling MS-DOS what to do.

How to Use this Guide

Including this introduction, the Introductory Guide to MS-DOS has five sections. Section 2, "Understanding the MS-DOS Disk Operating System" briefly explains what MS-DOS can do.

If you haven't already set up your Mindset Personal Computer System, do so before reading Section 3, "Getting Started". You'll find that you'll learn better and faster if you actually try out the procedures, rather than just read about them. Section 3 shows you how to start and restart MS-DOS, and how to enter commands. If you have two disk drives, you'll want to read about how to switch from one to the other. Finally, the guide will step you through the procedure for making an extra "insurance" copy of your MS-DOS system diskette.

Section 4, "All About Files", explains how you can organize information on diskettes in your Mindset System. You'll learn how to name and refer to computer files, look at the "table of contents" of a diskette, and display computer files on your monitor or TV screen.

The final section of the guide, "Managing Files on Diskettes", introduces you to some of the most common procedures and commands you need

to know to handle information on diskettes. You'll learn how to prepare a diskette for MS-DOS, how to make copies of diskettes, and how to copy, rename, and delete computer files.

Other Mindset Guides and Manuals

Before you read this guide, you should read the Mindset Personal Computer System Operation Guide, which describes the features of your Mindset Personal Computer System and explains how to set it up.

You should also read the Mindset Expansion Unit Operation Guide. The Expansion Unit Guide shows you how to set up your disk drive or drives, and explains how a disk drive operates and how you should handle diskettes.

After you read this Introductory Guide to MS-DOS, you can go on to the Mindset MS-DOS Reference Manual. There, you will find more detailed information on the procedures and commands presented in this introduction. Also, you can read about a number of additional commands to let you do more with MS-DOS.

If You Have a Hard Disk

This Introductory Guide to MS-DOS is addressed chiefly to users of systems with one or two *diskette* drives. If your Mindset Personal Computer System includes a hard disk drive but you are unfamiliar with disk operating systems, it is recommended that you read this Introductory Guide to learn about basic operations with MS-DOS before using MS-DOS with your hard disk. Then refer to Appendix E in your MS-DOS Reference Manual for step-by-step instructions for setting up your hard disk for use with MS-DOS.

Documentation Conventions

To demonstrate a procedure or a program, this guide occasionally instructs you to type something on the keyboard. To distinguish between what you type and what the system may reply, what *you* type appears in **bold** letters.

Names of keys which appear in examples are shown in uppercase and are boxed, for example:

RETURN

Understanding the MS-DOS Disk Operating System

This section describes what a disk operating system is and how it can help you manage your data more effectively.

MS-DOS—the Disk Operating System by Microsoft—is a powerful and easy-to-use disk operating system that you can use to increase the capabilities of your Mindset Personal Computer System.

What Is a Disk Operating System?

An operating system (OS) is a computer program that manages all of the resources of your computer system. Resources can include a printer, a video screen, and even computer memory.

A disk operating system (DOS) is an operating system which can also manage information on diskettes. It comes with a set of programs called utilities. Utilities perform routines that you use frequently to keep your information in useful working order; they enable your computer to perform “information housekeeping” operations. For example, you can use a utility to copy or delete information, or another utility to copy an entire diskette.

A DOS also keeps track of information passing between the computer and the disk drive or other devices such as printers. The DOS gets

information from diskettes, and records information on diskettes. The system also maintains files for organizing your information on diskettes, and enables you to set certain system controls under which your programs operate. Files are explained in more detail in Section 4, "All About Files".

The DOS determines what tasks get done and in what order. For example, Mindset MS-DOS starts a printing task and then lets you continue with what you were doing; you don't have to wait until the printing is finished. The DOS keeps one eye on the printing task and another eye on what you do at the keyboard.

How MS-DOS Expands Your Computer's Capability

Your Mindset Personal Computer System can perform some functions without a disk operating system. For example, it can load and save BASIC programs on cartridges without the use of MS-DOS.

However, there are a number of advantages to using MS-DOS and diskettes, including the following:

- You can store and use larger programs, because a diskette has a greater storage capacity than a cartridge.
- The diskettes that MS-DOS uses are standard computer industry diskettes, 5¼-inches in diameter. You can write a program on one of your diskettes and share a copy of that program with a colleague.
- Many programming languages operate under the control of MS-DOS. You can select the programming language best suited to your needs. MS-DOS supports many languages, including BASIC, FORTRAN, and Pascal.
- MS-DOS enables you to use a wide range of packaged diskette-based software. This software includes spreadsheets, word processors, accounting packages, and financial programs.

In general, MS-DOS and diskettes expand your computer capability by providing versatility and flexibility for managing your information.

Using and Caring for Diskettes

Because your diskettes contain valuable information, you should handle them carefully to prevent the loss of data.

To avoid frustration and extra work, follow these guidelines in caring for your diskettes:

1. Always use a felt-tipped pen when writing on a label affixed to the protective cover.
2. Do not touch the head-slot area, spindle hole, or sector hole. These areas are sensitive to dust, scratches, and fingerprints.
3. Keep your diskettes away from metallic objects such as paper clips and magnetic devices such as magnets, tape recorders, and headphones. These objects may cause distortion or erasure of your stored data.
4. When not using them, store your diskettes in an upright position in their envelopes. Position the label facing up so that you can easily identify each diskette. Diskettes usually come packaged in stand-up boxes. These boxes make excellent storage containers for your diskettes and their envelopes.
5. Do not store your diskettes in locations subject to extreme temperatures.

Section 3

Getting Started

This section describes the basic procedures you need to know to begin using MS-DOS. You will learn how to start up the system, enter and correct commands, make another copy of the system diskette, and shut down the system.

Starting Up MS-DOS on the Mindset Personal Computer System

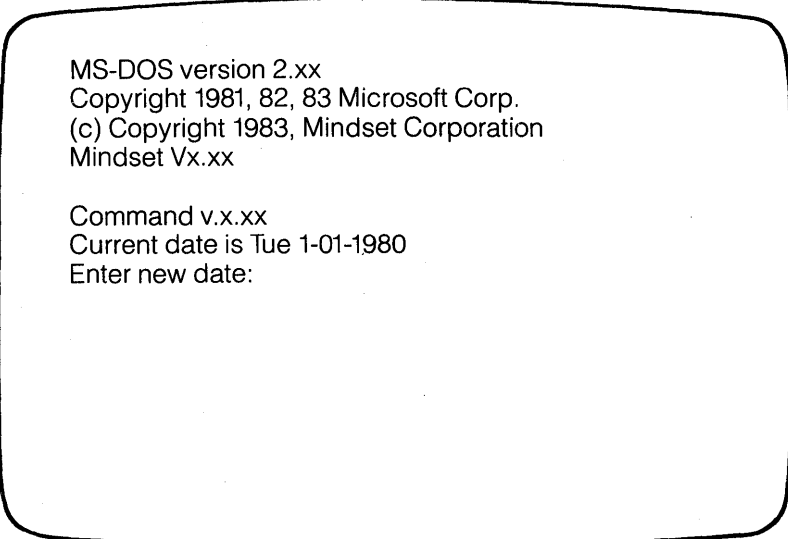
To begin using MS-DOS, you must first transfer it from your MS-DOS system diskette or hard disk to the main memory of your Mindset Personal Computer System. This transfer procedure is called loading MS-DOS.

Loading MS-DOS

To load MS-DOS into main memory when your Mindset System is off, perform the following steps. If your system has a fixed disk with an active MS-DOS partition (see Appendix E in the MS-DOS Reference Manual), skip to step 6.

1. Carefully remove the system diskette (the one labeled MS-DOS) from the protective envelope.
2. Turn the lever on the front of the disk drive (the left drive if you have a two-drive system) counterclockwise 90 degrees. This opens the drive and enables you to insert the diskette in the slot.
3. Hold the diskette with the label side up. Face the head-slot toward the Expansion Unit.

-
4. Insert the diskette all the way into the slot until it stops.
 5. Turn the lever on the front of the disk drive clockwise 90 degrees to close the drive.
 6. Turn on your monitor and System Unit. After you turn on the System Unit, your Mindset System performs a self-test and then automatically transfers MS-DOS from the system diskette or hard disk to the main memory. (The system loads MS-DOS from the hard disk only if it finds no system diskette in the left diskette drive A.) When loading is completed, the system displays a start-up screen similar to the following:



```
MS-DOS version 2.xx  
Copyright 1981, 82, 83 Microsoft Corp.  
(c) Copyright 1983, Mindset Corporation  
Mindset Vx.xx
```

```
Command v.x.xx  
Current date is Tue 1-01-1980  
Enter new date:
```

If a different screen appears on your monitor, be sure you have inserted the diskette correctly. If a message tells you the diskette is a nonsystem disk, be sure you have inserted the MS-DOS system diskette into the drive. Correct the problem and try again.

If the screen that appears on your monitor or TV does not contain light characters on a dark background, then your system configuration is incorrect. Reread the instructions in the Mindset Personal Computer System Operation Guide on configuring your system using the system configuration menu. Then repeat the loading procedure.

Entering the Date and Time

The start-up screen displays information about the version of MS-DOS you are using. Then MS-DOS asks you to enter a date that the system uses when you change information.

You may have already set the current date and time using the SYS CONFIG key and the system configuration menu, as explained in your Mindset Personal Computer System Operation Guide. If so, then the Mindset System real-time clock is already keeping the correct date and time. Simply press the RETURN key in response to the date prompt.

If you did not enter a date using the system configuration menu, then enter a date using the form MM-DD-YY or MM/DD/YY, where:

MM = a one- or two-digit number from 1 to 12, representing the month

DD = a one- or two-digit number from 1 to 31, representing the day of the month

YY = the year (the last two digits for the years 1980 to 1999, or all four digits for the years 1980 to 2099)

You begin entering the date where the cursor is located on the screen. (The cursor is a blinking underscore that shows you where the next character you type will appear.) Separate the parts of the date using hyphens (-) or slashes (/). Press the RETURN key after entering the complete date.

Next, a time-of-day prompt appears on the screen. Again, if you entered the time using the system configuration menu, simply press the RETURN key.

To enter a time, use the form HH:MM:SS, where:

HH = a one- or two-digit number from 0 to 23, representing the hour of the day

MM = a one- or two-digit number from 0 to 59, representing the minute

SS = a one- or two-digit number from 0 to 59, representing seconds (note that you are not required to enter seconds)

Separate HH, MM, and SS (if you enter seconds) with colons (:).

Note that MS-DOS uses a 24-hour clock, instead of a 12-hour clock with “am” and “pm”. That is, the operating system counts all hours from midnight. 1:30 pm is 13:30, 12:30 am is 00:30, and 11:30 pm is 23:30.

The screen below shows an example of entering the date and time:

```
Current date is Tue 1-01-1980
Enter new date: 1/15/84
Current time is 01:01:01
Enter new time: 13:15
```

```
A>
```

The system then tells you it is ready for a command by displaying the MS-DOS system prompt, A> or C>. (A prompt is the system's request for information.) You can then issue commands to MS-DOS.

The A> indicates that disk drive A—the left drive in a two-drive system, or the only drive in a one-drive system—is currently the drive in which MS-DOS expects to find information. A C> indicates that the hard disk (if you have one connected to your system) is the current drive.

Restarting MS-DOS

At times, you may need to restart MS-DOS by reloading it into main memory when your computer is already on. For example, you may want to restart the system when power returns after a power failure has erased MS-DOS from main memory, or if you cannot exit from a running program.

You can always restart MS-DOS by turning the system off and following the procedure described previously for loading MS-DOS. However, there is an easier way to restart MS-DOS using the following procedure:

1. Be sure the diskette containing the MS-DOS operating system is in drive A, unless you have installed MS-DOS on your hard disk (see Appendix E in the MS-DOS Reference Manual).
2. Press the ALT-RESET keys. If the ALT-RESET keys have no effect, turn off the System Unit and then turn it on again after waiting about 5 seconds.
3. Enter the date and time as you would during normal start-up.

Entering Commands

You communicate with MS-DOS and instruct it to perform operations by entering commands at the keyboard.

Understanding Internal and External Commands

The MS-DOS operating system includes two types of commands: Internal and external commands.

Internal commands are part of the DOS residing in memory. They are loaded into the Mindset main memory when you start up MS-DOS. You can use internal commands at any time, even after you remove the MS-DOS diskette from the disk drive. Internal commands include those commands that you use most often, such as the commands to copy or delete information.

External commands are not part of the DOS residing in memory; they are not loaded into the Mindset main memory at start-up. External commands require software stored on the MS-DOS diskette. Consequently, you must have the MS-DOS diskette in the disk drive if you want to use one of these commands. External commands include those commands you don't use often and those that require a large amount of memory, such as the command for formatting a diskette.

The Mindset MS-DOS Reference Manual contains a complete description of internal and external commands.

Three Steps for Entering Commands

To instruct MS-DOS to carry out a task, perform the following three steps:

1. **Be sure the MS-DOS prompt (A> or C>) appears at the left margin of your screen.** If the command refers to a file that is on a diskette in another disk drive, you can either switch to the other drive, as explained later in this section, or include the drive designation in the command.

-
- 2. Type the command, including all file names and other options.**
Be careful to type the command correctly. When entering MS-DOS commands and command options, remember that a space is often required to separate (or *delimit*) commands and options. Watch carefully for the spaces shown in the sample commands listed in your manuals. For detailed information on commands, including the proper syntax, see the Mindset MS-DOS Reference Manual.
 - 3. Press the RETURN key to signal MS-DOS that you have finished typing your command.** Immediately after you press the RETURN key, MS-DOS begins processing your instructions.

Try the two simple commands in the following example. Be sure you have loaded MS-DOS and the A> or C> prompt appears.

1. Type **DIR**, and then press the RETURN key. The DIR command displays the directory, or list, of the contents of the system diskette. The DIR command is described more fully in Section 4, "All About Files".
2. Now type **VER** and press the RETURN key. The VER command shows you what version of MS-DOS you are using.

Correcting Errors While Entering Commands

You can use simple commands from the keyboard to correct any errors you may recognize as you type a command.

The BACK SPACE key enables you to back up and correct the previously typed character. Each time you press BACK SPACE, the cursor moves to the left one position, erasing the character that occupies that position. After you erase all incorrect characters, type the correct characters and continue entering the command.

The left-arrow key (◀) also lets you back up to correct a command.

If you need to correct more than just a few characters of the command you are entering, you may want to cancel the command and start typing again from scratch. MS-DOS provides two ways to cancel a command before you press the RETURN key.

1. Hold down the CTRL (Control) key and press the **C** key. MS-DOS displays ^C at the end of the current entry line and then redisplay the MS-DOS prompt. Retype the command.
2. Press the down-arrow (▼) key. MS-DOS displays a backslash (\) and then repositions the cursor at the beginning of the next entry line without redisplaying the MS-DOS prompt. Retype the command.

For information on additional ways to make corrections, see the Mindset MS-DOS Reference Manual.

Cancelling a Command After Pressing the RETURN Key

MS-DOS begins to execute a command as soon as you finish typing it and press the RETURN key. When the operation ends, MS-DOS redisplay the A> or C> prompt.

To cancel a valid command after you press the RETURN key, you must stop the operation in progress. Hold down the CTRL key and press the **C** key. MS-DOS immediately stops the operation, displays ^C, and redisplay the MS-DOS prompt. The system is then ready to accept any new command.

During certain critical operations, pressing CTRL-C has no effect on MS-DOS. For example, you cannot cancel an operation when information is being copied or updated, because cancellation would leave the information in disarray or in incomplete form.

While doing examples in this guide, you may occasionally get an error message that includes the question, "Abort, Retry, Ignore?". If so, press the **A** key to abort (or cancel) the command. Then reread the instructions to make sure you have done all the steps correctly, and try again.

Switching from One Drive to Another

If you have more than one disk drive and you instruct MS-DOS to locate information on a diskette or hard disk, MS-DOS needs to know which drive to go to.

How MS-DOS Uses the Default Drive

If you have two diskette or floppy disk drives, one drive (the left drive) is called drive A, and the other (the right drive) is called drive B. (If you only have one disk drive, it is called drive A.) If you have a hard disk drive, it is called drive C. The "default drive" is the drive that MS-DOS assumes you are referring to if you do not explicitly name a drive.

When you start up MS-DOS, the initial default drive is always drive A or C, as indicated by the MS-DOS prompt, A> or C>. If you refer to information in a command and don't name the drive where the information can be found, MS-DOS assumes that the information is on the default drive.

If you want information on a drive other than the default drive, you can either name the other drive in the command (as described in Section 4, "All About Files") or you can change the default drive.

How to Change the Default Drive

To change the default drive, perform the following steps:

1. Be sure the MS-DOS prompt naming the current default drive is displayed on the screen.

-
2. Type the name of the drive you want to change to, followed by a colon. Then press the RETURN key. For example, if the current default drive is A, type **B** and a colon, and then press RETURN. The MS-DOS prompt becomes B>, to remind you that B is now the default drive.
 3. To return to the original default drive, just repeat the above procedure using the name of the other drive. For example, to return to drive A when drive B is the default drive, type **A** and a colon when the B> prompt is displayed.

The following lines illustrate what appears on your screen as you change default drives:

```
A>B: 
B>A: 
A>
```

Making a Copy of the MS-DOS System Diskette

If you lose or accidentally damage your system diskette, you cannot use MS-DOS. Consequently, you should make a copy of your MS-DOS system diskette for backup purposes. This is a good idea even if you plan to install MS-DOS on a hard disk.

After backing up the system diskette, you have a working copy of the original diskette for everyday use. If anything happens to this working copy, you still have the original intact and can make another working copy from it.

To back up your MS-DOS diskette, use the procedures for copying a system diskette, described below. (Commands for copying diskettes are discussed in more detail in Section 5, "Managing Files on Diskettes".)

Backing Up the System Diskette on a One-Drive System

If you have only one disk drive, make a backup copy of your MS-DOS system diskette by performing the following steps. (If you have a two-drive system, skip to the next subsection.)

1. Be sure that the system prompt A> is displayed, indicating that MS-DOS is ready to accept a command.
2. Insert your system diskette into the drive, if it is not already there.

3. Type the command **FORMAT A:/S** and press the RETURN key.

4. The following lines appear on the screen:

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

The new diskette will be your backup diskette. Take out the system diskette and replace it in its envelope. Insert a blank (preferably new) diskette into the drive. Press any key on the keyboard to continue.

5. The red disk drive light on drive A comes on, indicating that formatting is in progress.

(Formatting is described in Section 5, "Managing Files on Diskettes".)

6. After a few seconds, the screen displays lines similar to the following:

```
System transferred  
362,496 bytes total disk space  
40,960 bytes used by system  
321,536 bytes available on disk  
Format another (Y/N)?
```

7. Type **N**. The system prompt **A>** reappears on the screen.

8. Remove the new diskette from the drive and reinsert your system diskette.

9. Type the command **COPY A:.* B:** and press the RETURN key. This command causes MS-DOS to copy files from the system diskette into memory.

10. After a few seconds, the following message appears on your screen:

```
Insert diskette for drive B: and press  
any key when ready
```

The **B:** actually refers to your second diskette, not to a second drive. Remove the system diskette from the drive and insert the new diskette. Then press any key to continue.

11. When the following message appears, remove the new diskette and insert the system diskette again:

Insert diskette for drive A: and press
any key when ready

Then press any key to continue.

12. Repeat steps 10 and 11 as often as directed by MS-DOS, until the screen displays a message similar to the following:

18 File(s) copied

Notice that the system displays the A> prompt again.

13. Remove the backup diskette from the drive and label it "System Diskette Working Copy". Take the original system diskette and store it in a safe place. If anything happens to your working copy, use the original system diskette to make another working copy using the procedure just described.

Here is a summary of the steps for backing up your system diskette on a one-drive system:

Actions

Prompts and Responses

- | | |
|--|--|
| 1. Make sure your system diskette is inserted into drive A, and that the A> prompt is displayed. | A> FORMAT A:/S <input type="text" value="RETURN"/>
Insert new diskette for drive A: and strike any key when ready |
| 2. Replace the system diskette in drive A with a blank diskette. | |
| 3. Press any key to continue. The red light on drive A comes on. | System transferred
362,496 bytes total disk space
40,960 bytes used by system
321,536 bytes available on disk
Format another (Y/N?) N
A> |
| 4. Remove the formatted diskette from the drive and reinsert the system diskette. | A> COPY A:.* B: <input type="text" value="RETURN"/>
Insert diskette for drive B: and press any key when ready |

Actions	Prompts and Responses
5. Replace the system diskette with the formatted diskette.	
6. Press any key to continue.	Insert diskette for drive A: and press any key when ready
7. Remove the new diskette and reinsert the system diskette. Press any key to continue.	
8. Repeat Steps 5 through 7 until the system copies all the files.	18 File(s) copied A>

Backing Up the System Diskette on a Two-Drive System

To make a backup copy of your MS-DOS system diskette if you have two disk drives, perform the following steps:

1. Be sure that the system prompt A> is displayed, indicating that MS-DOS is ready to accept a command.
2. Insert your system diskette into drive A (if it is not already there).
3. Type the command **FORMAT B:/S** and press the RETURN key.
4. The following lines appear on the screen:

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

The new diskette is the one you should use for your working copy. Insert a blank (preferably new) diskette into drive B, and then press any key on the keyboard to continue.

5. The red disk drive light on drive B comes on, indicating that formatting is in progress.

(Formatting is described in Section 5, "Managing Files on Diskettes".)

6. After a few seconds, a message similar to the following appears:

```
System transferred
  362,496 bytes total disk space
  40,960 bytes used by system
  321,536 bytes available on disk
Format another (Y/N)?
```

7. Type **N**. The system prompt **A>** reappears on the screen.

8. Type the command **COPY A:*. * B:** and press the RETURN key.

This command causes MS-DOS to copy all the files on your system diskette onto the diskette in drive B. The COPY command is described in more detail in Section 5, "Managing Files on Diskettes".

9. Remove the backup diskette from drive B and label it "System Diskette Working Copy". Carefully store it where convenient. Remove the original system diskette from drive A and store it in a safe place. If anything happens to your working copy, use the original system diskette to make another working copy.

The procedure for backing up your system diskette on a two-drive system is summarized below:

Actions

Prompts and Responses

- | | |
|--|---|
| 1. Make sure your system diskette is inserted into drive A, and that the A> prompt is displayed. | A> FORMAT B:/S <input type="text" value="RETURN"/>
Insert new diskette for drive B: and strike any key when ready |
| 2. Insert a blank diskette into drive B. | |
| 3. Press any key to continue. The red light on drive B comes on. | System transferred
362,496 bytes total disk space
40,960 bytes used by system
321,536 bytes available on disk
Format another (Y/N?) N
A> COPY A:*. * B: <input type="text" value="RETURN"/>
18 File(s) copied
A> |

Shutting Down MS-DOS on the Mindset Personal Computer

To shut down MS-DOS, follow this procedure:

1. Be sure that no red light on any of your disk drives is lit. When a red light is lit, the computer is getting or recording information on that drive. Shutting down the system at that time can damage a diskette or the information on it.
2. Be sure that the MS-DOS prompt (A>, B>, or C>) is displayed on the screen. If a program is running, you must first end it, or wait for it to stop; otherwise, shut-down may result in damaged files.
3. When the MS-DOS prompt appears, unlock your diskette drives and remove the diskettes. Store the diskettes in their envelopes. If your system includes a hard disk, run the QUIT command to protect the disk when the system is switched off (see Section 5 of the MS-DOS Reference Manual).
4. Turn off the system if you have finished using it.

Section 4

All About Files

This section describes the “filing system” MS-DOS uses to organize information on a diskette or hard disk.

You will learn how to name and refer to files, how to list a diskette’s or hard disk’s “table of contents”, and how to display files on your screen.

What Is a File?

A file is a collection of related data, sometimes organized into units called records. If you think of your diskettes and hard disk as filing cabinets, then files are the individual file folders in the filing cabinet drawers. For example, you may have a file folder containing sales orders; each individual sales order would be a record in that file. See Figure 4-1 below:

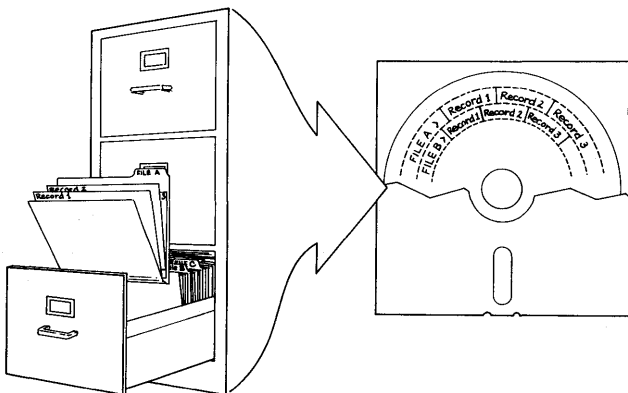


Figure 4-1: Files and records on a diskette

Any information you want to store permanently on a diskette or hard disk must be stored in a file. This includes not only data, such as sales orders, inventory, and address list information, but also the programs that use that data.

Each file on a diskette or hard disk has a name, which you use when referring to that file or in commands or in programs. Note that no two files in the same directory (see page 4-4) can have exactly the same name.

A single-sided diskette can store up to 179,712 characters; a double-sided diskette can store up to 362,496 characters.

File-Naming Conventions

When you enter a command instructing MS-DOS to perform any operation on a file, you refer to the file by typing the file name in the command.

Although you can name a file almost anything you want, you must use the file-naming conventions described below.

What Makes Up a File Name?

The name of a file consists of two parts: a base **file name** and an optional **file name extension**. You can use the base file name to help you identify what the file contains, and the file name extension to distinguish between versions or functions in a group of related files. Giving meaningful names to your files helps you to manage your files easily.

Some Rules for Naming Files

Remember these rules when you name a file:

1. The base file name must consist of at least one character and can be up to 8 characters long. If you include a file name extension, it must be separated from the base file name by a period (.). An extension can be up to 3 characters long. See Figure 4-2 below:

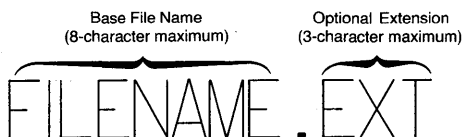


Figure 4-2: File names

Here are some examples of file names:

CHKBOOK.TOM MYFILE TRIALBAL.003 LETTER.TXT

In the first file name, CHKBOOK is the base file name, and TOM is the file name extension.

Note: When MS-DOS requires you to specify a file name in a command, enter the entire file name—the base file name as well as the extension—unless otherwise directed.

2. The file name can include any letter of the alphabet, any digit from 0 to 9, and any of the following characters:

\$ & # % ' () - @ ^ { } ~ ! ,

If you type lowercase letters for a name, MS-DOS automatically converts them to uppercase letters. That is, if you name a new file "myfile", MS-DOS converts the name to "MYFILE".

When referring to an existing file, you can type the letters in the name using either lowercase or uppercase characters.

Note that you cannot use the question mark (?) or the asterisk (*) in the name of a file. These two characters are "wild-card" characters in file names when you use certain commands, and have a special meaning for MS-DOS, as described later in this section.

Here are examples of valid file names:

AUG83.INV	MYFILE.1	ORDERS.EXE	R&D.TXT
SEP83.INV	MYFILE.12	INVOICES.EXE	X
OCT83.INV	MYFILE.123	COMMSNS.EXE	\$\$\$\$\$

If you have two disk drives, you can prefix the name of a file with a **drive designation**. A drive designation is not part of the file name, but in a command it indicates where the system can find the file—the diskette in drive A or the diskette in drive B, or the hard disk.

To specify a drive designation, prefix the name of the file with the name of the drive and a colon. For example, refer to a file named ACCOUNTS as A:ACCOUNTS if the file is on a diskette in drive A, or as B:ACCOUNTS if it is on a diskette in drive B. If you do not specify a drive designation, MS-DOS assumes that the file is located in the default drive.

Displaying the File Directory

MS-DOS automatically maintains a list of files, called a directory, on each diskette and hard disk. By displaying the directory, you can see what files are on the diskette or hard disk.

What Is a Directory?

The directory serves as a “table of contents” for the files on the diskette or hard disk. Each time you create a new file, MS-DOS stores information about the file in the directory. This information includes the location of the file on the diskette or hard disk, the size of the file, and the date and time you last changed the contents of the file.

Entering the DIR Command

You can view the file directory of a diskette or hard disk by issuing the DIR (for “directory”) command at the MS-DOS system prompt. You can use the DIR command to list information about all files or about one file.

Insert the working copy of your system diskette into drive A. and start MS-DOS. Enter the date and time and wait for the A> prompt.

To view the directory of all the files on the system diskette, just type the command **DIR** and press the RETURN key. You see a list of files similar to the list shown below:

```
A>DIR [RETURN]
```

```
Volume in drive A has no label
```

```
Directory of A:\
```

COMMAND	COM	15480	2-08-83	7:50p
FIND	EXE	5796	1-14-83	6:35p
FC	EXE	2553	2-01-83	9:36a
FORMAT	COM	7473	7-26-83	12:57p
EXE2BIN	EXE	1649	2-01-83	9:19a
LINK	EXE	42368	1-06-83	4:36p
SORT	EXE	1216	2-08-83	7:04p
DEBUG	COM	11764	2-01-83	10:13a
CHKDSK	COM	6330	2-01-83	9:16a
EDLIN	COM	4389	2-01-83	9:31a
PRINT	COM	3808	2-01-83	12:39p
RECOVER	COM	2277	2-01-83	2:22p

SYS	COM	850	2-01-83	2:26p
MORE	COM	4364	1-14-83	6:42p
DISKCOPY	COM	1419	2-14-83	4:39p
MODE	COM	1924	8-03-83	1:36p
MBASIC	COM	31360	1-01-80	12:03a
MYFILE1	TXT	235	1-01-80	12:12a
	18 File(s)			182272 bytes free

A>

Notice that the list of files on a diskette or hard disk may not fit on one screen. The lines of the listing “scroll”—that is, they disappear at the top of the screen as new lines appear at the bottom. You may wish to stop the scrolling so that you can read the lines at the top of the display.

To stop scrolling, hold down the CTRL key and press the **S** key.

To restart scrolling, hold down the CTRL key and press the **S** key again.

Enter the **DIR** command again, and use CTRL-S to stop and restart the scrolling of the directory listing.

To view a directory listing for one particular file, type the command **DIR**, a space, and the complete name of the file. Then press the RETURN key. For example, enter **DIR COMMAND.COM** and press RETURN. The display is the same as in the all-files option, but only the line for the specified file is displayed.

Understanding the Directory Display

The first line of the directory display shows the **volume label**, if there is one. A volume label is the name of a diskette or hard disk. (When you initially prepare a diskette for use, you can enter the volume label as an option. Assigning a volume label is explained in Section 5, “Managing Files on Diskettes”.)

The second line of the display indicates that the directory listing is for a diskette in drive A. The backslash (\) is the “subdirectory indicator”. If you think of a diskette as a filing cabinet, a subdirectory is a single filing cabinet drawer.

The sample directory display, shown above, indicates that the listing is not for a subdirectory but for the entire diskette, because no subdirectory name appears after the subdirectory indicator. For more information on subdirectories, see the Mindset MS-DOS Reference Manual.

The names of files appear in the listing at the left margin—the base file name separated from the extension by at least one space.

The second column shows the size of each file in bytes (roughly, the number of letters and other characters contained in the file). The file called MORE.COM is a very small file; the file called COMMAND.COM is a much larger file.

The last two columns of the directory show the date and time that information in the file was created or changed.

After the directory listing, MS-DOS displays a summary of the directory, showing the number of files the directory contains and the amount of free space, in bytes, still available on the diskette or hard disk.

Wild-Card Characters

To simplify your operations, you can use special “wild-card” characters when specifying file names in some MS-DOS commands. Wild-card characters are the question mark (?) and the asterisk (*). They enable you to refer to more than one file in a single command. (Remember that the question mark and the asterisk are not legal characters for file names. They can be used only as wild-card characters in commands.)

As explained in detail below, a file name with wild-card characters in it is a pattern against which MS-DOS matches actual file names. If an actual file name matches the pattern represented by the wild-card file name, the command affects that file.

Wild-card characters are especially useful if you name your files according to a logical naming system. For example, if you create one file for each month's checkbook transactions, you can use wild-card characters to operate on all checkbook files for the year if each file name includes the year as the common element (JAN83, FEB83, and so on). The naming system can be any type you like that makes managing your own files easier.

The Question Mark (?)

A question mark anywhere in a file name means “any single character in this position in the file name”. For example, in the command,

```
DIR MO???.COM
```

?? means that any two characters can follow the first O in the file name.

The DIR command in the example tells MS-DOS to list all the files in the directory that have MO as the first two characters of the file name and any two character after MO, and with .COM as the rest of the file name.

For example, enter the following command:

```
DIR MO??.COM 
```

The following files are listed:

```
MORE.COM  
MODE.COM
```

The Asterisk (*)

An asterisk anywhere in a file name (except the first character) means “one or more characters in this position in the file name”. An asterisk as the first character in a file name means either “all files” or “all files with the given extension” if an extension is specified. For example, enter the command:

```
DIR C*.COM 
```

This command matches files that have C as the first character, and .COM as the extension. The following files are listed:

```
COMMAND.COM  
CHKDSK.COM
```

Using the asterisk wild-card character, you can specify *all* files on the diskette by typing the command:

```
DIR *.* 
```

Although this command can be shortened by simply typing DIR, the *.* specification proves more useful when used in other commands explained later in this guide.

Managing Files on Diskettes

In this section, you will learn how to manage your diskette files. File management includes preparing a new diskette, copying the contents of one diskette to another, copying individual files from one diskette to another, renaming files, and deleting files. These “housekeeping” operations help you to keep your diskette files organized.

The commands you will learn in this section are described in more detail in the Mindset MS-DOS Reference Manual.

Formatting Diskettes

Formatting is the process of preparing a diskette for operation with your Mindset System. Formatting enables a new blank diskette to receive information; unless you format the diskette, you cannot put information on it.

What Formatting Does

When a diskette is formatted, MS-DOS divides it into the tracks and sectors that the system uses to locate data. Formatting also creates space for the directory that will contain the names of the files you store on that diskette.

To format a diskette, use the MS-DOS `FORMAT` command. The `FORMAT` command not only sets up the diskette so MS-DOS can use it to store and retrieve information, but it also analyzes the diskette for defects.

You must format a brand new diskette before you can use it. You can also format a used diskette, but any existing data is erased. Although you can use formatting to erase information on a diskette, you should normally use the MS-DOS DEL (delete) command described later in this section.

You enter the FORMAT command by typing the word **FORMAT** and specifying the drive containing the diskette you want to format.

Formatting Diskettes on a One-Drive System

To format a diskette on a one-drive system, follow this procedure:

1. Make sure that the screen is displaying the A> prompt.
2. Insert your system diskette into the disk drive. This step enables you to call up the external command, FORMAT.
3. Type **FORMAT A:** and press the RETURN key. The screen displays:

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

4. Remove the system diskette from the drive and insert a new diskette (or an old one containing information you don't need).
5. Press any key on the keyboard to continue. As MS-DOS formats your diskette, the red disk drive light comes on, indicating that formatting is in progress.
6. When MS-DOS finishes formatting the diskette, the screen displays a message similar to the following:

```
xxxxxx bytes total disk space  
xxxxxx bytes available on disk
```

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

The number of bytes, represented by xxxxxx above, depends on whether you're formatting a single-sided or a double-sided diskette.

7. In response to the last prompt, type **Y** if you want to format another diskette. For now, type **N** to end formatting and return to the MS-DOS system prompt.

Formatting Diskettes on a Two-Drive System

To format a diskette on a two-drive system, follow this procedure:

1. Make sure that the screen is displaying the A> prompt.
2. Insert your system diskette into disk drive A. This step enables you to call up the external command, **FORMAT**.
3. Type **FORMAT B:** and press the RETURN key. The screen displays:

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

Note: If you do not specify a disk drive (for example, A: or B:), MS-DOS formats the diskette that is in the default drive.

4. Insert a new diskette into drive B.
5. Press any key on the keyboard to continue. As MS-DOS formats your diskette, the red disk drive light for drive B comes on, indicating that formatting is in progress.
6. When MS-DOS finishes formatting the diskette, the screen displays a message similar to the following:

xxxxxx bytes total disk space
xxxxxx bytes available on disk

Format another (Y/N)?__

The number of bytes, represented by xxxxxx above, depends on whether you're formatting a single-sided or a double-sided diskette.

7. In response to the last prompt, type **Y** if you want to format another diskette. For now, type **N** to end formatting and return to the MS-DOS system prompt.

Assigning Volume Labels to Diskettes

A volume label is an optional diskette name. To name a diskette, add /V to the end of the **FORMAT** command (for example, **FORMAT B:/V**). After formatting the diskette, MS-DOS asks you for the volume label of the diskette:

Volume label (11 characters. ENTER for none)?

Type a volume label of up to 11 characters and press the RETURN key. MS-DOS continues by asking you if you want to format another diskette. If you do format another diskette, MS-DOS will ask you for a volume label on that diskette as well.

If you do not want to assign a volume label to the diskette, simply press the RETURN key.

If you assign a unique volume label to a diskette, you can check that you are using the correct diskette for a given application by displaying the volume label. To display the volume label, enter the DIR command. For example:

```
A>DIR [RETURN]
```

```
Volume in drive A is PROGRAMS  
Directory of A:\
```

```
PROG          11      41745      5-22-83      10:14a  
PROG          12      16443      6-10-83       9:34a  
PROGTEST     EXE      53964      6-12-83      12:55p
```

```
3 File(s)    98730 bytes free
```

```
A>
```

The volume label of this sample diskette is PROGRAMS. If you do not assign a label, the first line of the display is "Volume in drive A has no label".

Formatting Backup Diskettes for Application Software

In addition to making a backup copy of your system diskette, you should make a backup copy of any application software diskette you purchase. Note: Some application program diskettes you purchase may be "copy-protected". This means that you cannot copy them for backup. Usually, in such cases, a backup copy is included when you buy the program, or the program documentation gives a procedure for obtaining a backup copy.

While formatting the backup diskette, you may also want to copy the operating system files to the new diskette. Operating system files on an application software diskette enable you to load the diskette directly (without using the system diskette) and to use the MS-DOS internal commands without inserting the system diskette.

To copy MS-DOS internal command files to the new diskette during formatting, type **/S** at the end of the FORMAT command (for example, FORMAT B:/S).

(You can use both the /S and the /V options in the same command, in either order.)

To use external commands with the backup diskette, you must move the appropriate files from the system diskette using the COPY command, which is described next. See the MS-DOS Reference Manual for more information on external commands.

Making Copies of Files

At times, you may need more than one copy of a diskette file. You may want to have a backup copy of a file, or you may want to create a new file based on the contents of an existing file, while keeping the existing file.

The COPY command enables you to copy one or more files to another part of the same diskette or to another diskette. The following examples make use of a sample file named MYFILE1.TXT, located on your system diskette. Here are the lines of text that MYFILE1.TXT contains:

```
This is line 1 of MYFILE1.TXT.  
MYFILE1.TXT is a sample file to be  
used in conjunction with the  
Mindset Introductory Guide to MS-DOS.  
This file is to be used for gaining  
familiarity with MS-DOS on the  
Mindset Personal Computer.
```

Copying Files to the Same Diskette

To make another copy of a file on the same diskette, you must give the second file a different file name. Be careful to name the second copy using a different name from any other file on the diskette; otherwise, the new copy replaces the original file, and information in the original file is lost. If in doubt, use the DIR command to check the names of the files on your diskette.

Use the following procedure to make a copy of MYFILE1.TXT on your formatted diskette. In the procedure, you are copying MYFILE1.TXT to create another file, MYFILE2.TXT. (Note: The procedure is the same for both one- and two-drive systems.)

1. Make sure the A> prompt is displayed.
2. Insert into the disk drive the system diskette that has the original file, MYFILE1.TXT.
3. Type **COPY MYFILE1.TXT MYFILE2.TXT** and press the RETURN key.

In the COPY command, the name of the original file comes first, followed by a space, and then the name you want to give the copy. (If you have a two-drive system and the diskette is not in the default drive, remember to include the drive designation with *each* file name.)

4. After a few seconds, MS-DOS displays the following message on the screen:

1 File(s) copied

followed by the system prompt for the default drive.

You now have two copies of your file on the diskette—one named MYFILE1.TXT and the other named MYFILE2.TXT. Use the DIR command to see the directory listing for the diskette.

Copying Files to Another Diskette

To copy a file from one diskette to another, you can give the copy the same or a different file name.

In the following example, the COPY command copies a file from the system diskette to your formatted diskette. The copy has a different name from the original file.

On a one-drive system: When you copy a file to another diskette on a one-drive system, MS-DOS transfers the file from the original diskette to the Mindset system memory. Then, after you switch the diskettes in the drive, MS-DOS transfers the file from the Mindset system memory to the second diskette.

To make a copy of a file, follow these steps:

1. Make sure the A> prompt is displayed.
2. Insert the diskette containing the file MORE.COM (system diskette) into the disk drive.

-
3. Type **COPY MORE.COM B:MOREFILE.COM** and press the RETURN key.

The B: specifies that the file is to be copied to another diskette. On the second diskette, the file name will be MOREFILE.COM.

If you want to give the same name to the copy on the second diskette, you can simply type the drive designation, as in COPY MORE.COM B:.

4. After you press the RETURN key to enter the COPY command, this message appears:

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

The B: actually refers to your second diskette, not to a second drive. Remove the original diskette and insert another formatted diskette into the disk drive.

5. Press any key on the keyboard to continue. Because you are copying a small file, you can transfer the entire file from one diskette to main memory and then to the other diskette in only one cycle.

However, if your file is large, you may need additional cycles to complete the copy. In this case, the system copies part of the file and then displays the following message:

Insert diskette for drive A: and strike
any key when ready

To complete the copy, remove the second diskette from the drive and reinsert the original diskette. Then press any key to continue. Repeat steps 4 and 5 as often as MS-DOS prompts you to do so.

6. After MS-DOS finishes making the copy, it displays the following message on the screen:

1 File(s) copied

and redisplay the prompt for the default drive.

You now have a copy of MORE.COM, called MOREFILE.COM, on another diskette.

On a two-drive system: To copy a file to another diskette when you have two disk drives, use the following procedure:

1. Make sure the A> prompt is displayed.
2. Insert the diskette containing MORE.COM (the system diskette) into disk drive A.
3. Insert another formatted diskette into disk drive B.
4. Type **COPY MORE.COM B:MOREFILE.COM** and press the RETURN key.

The B: specifies that the file is to be copied to another diskette. The file on the second diskette will have a different name, MOREFILE.COM.

If you want to give the same name to the copy on the second diskette, you can simply type the drive designation, as in COPY MORE.COM B:.

5. After copying is done, MS-DOS displays the following message:

1 File(s) copied

and redisplay the prompt for the default drive.

You now have a copy of MORE.COM on another diskette.

Verifying Files While Copying

If you are copying a file containing very important data, you may want to be sure that the second copy of the file is correct. Although errors in copying are very rare, you can check the validity of a copy operation by adding /V to the end of a COPY command, as in the following example:

```
COPY MORE.COM B:/V
```

When you use this option of the COPY command, the copying process takes a little longer because MS-DOS both copies the file and checks it for accuracy.

Combining Files While Copying

You can create a new file composed of other files by combining file names in a COPY command.

To combine files, first type the names of the original files, using plus signs (+) with no spaces between them. Then type the name of the new file, separating it from the names of the combined files by a space. Perform the following steps to combine files on your formatted diskette:

1. Insert your formatted diskette into the default drive. Your formatted diskette contains the files MYFILE1.TXT, MYFILE2.TXT, and MOREFILE.COM.
2. Type **COPY MYFILE1.TXT + MYFILE2.TXT COMBINE.TXT** and press RETURN.
3. Use the DIR command to list all the files on the diskette. Notice that COMBINE.TXT is approximately as large as MYFILE1.TXT and MYFILE2.TXT combined.

To combine files on different diskettes, use drive designations with the names of files that are not on the default disk drive.

Using Wild-Card Characters to Copy Several Files

You can copy several files at once by using wild-card characters in the file names you specify in a COPY command. (If you need to review the use of wild-card characters, see the previous section.) Enter the following COPY commands to create more copies of files on your diskette; you will use these files later.

Command	Result
COPY MOREFILE.COM *.XXX	Copies the file MOREFILE.COM, but replaces .COM with .XXX.
COPY M??????.* FILES.COP	Combines all files with a seven-character file name beginning with M into one file called FILES.COP.
COPY *.TXT + *.COP COPYTEXT.NEW	Combines all files with an extension of .TXT or .COP into one file called COPYTEXT.NEW.

Changing File Names

At times, you may decide to rename a file to a more appropriate name, or to a name that makes a clearer distinction between that file and others. The renamed file retains the same contents as the original file; only the name changes.

Using the RENAME Command

The RENAME command enables you to rename a file or group of files. Enter the following command to rename one of the files on your diskette:

```
RENAME FILES.COP MYFILE3.TXT 
```

This command gives the file called FILES.COP the new name MYFILE3.TXT. Type the original file name first, followed by a space and then the new file name.

Use the DIR command to check the file names on your diskette. MYFILE3.TXT has taken the place of FILES.COP.

Using Wild-Card Characters to Rename Several Files

You can also rename several files at once by using wild-card characters with the RENAME command. For example, the following command renames all files that have an extension of .TXT to the same base file name with the extension .OLD:

```
RENAME *.TXT *.OLD 
```

Use the DIR command to verify the results.

Displaying the Contents of Files

You can use MS-DOS to look at the contents of any individual file composed of ASCII characters, such as a text file. If you try to display any other type of file, such as a file containing a machine-language program, you will see only an unreadable mishmash of "garbage" characters.

The TYPE Command

To view the contents of an ASCII file using MS-DOS, use the TYPE command. At the system prompt, enter **TYPE**, a space, and the complete file name of the file you want to view. After you press the RETURN key, MS-DOS displays the file line by line. Practice the TYPE command by performing the following steps:

1. Enter the command **TYPE MYFILE1.OLD** and press the RETURN key. MS-DOS displays on the screen the lines of the file MYFILE1.OLD. MYFILE1.OLD is the original file you created on your formatted diskette.
2. Enter the command **TYPE MYFILE2.OLD** and press the RETURN key. The file displayed is the copy you made of the original file MYFILE1.OLD.
3. Enter the command **TYPE COMBINE.OLD** and press the RETURN key. The file displayed is the file you created by combining MYFILE1.OLD and MYFILE2.OLD.
4. Enter the command **TYPE MOREFILE.COM** and press the RETURN key. The display is unreadable because MOREFILE.COM is a copy of a non-ASCII system file on the system diskette.

Deleting Files from Diskettes

You may occasionally want to remove from your diskette those files you no longer need. For example, you may have copied a file and updated the copy, and then found you didn't need the original file anymore. Or you may need to make more room on a nearly full diskette for more files.

Use extreme care when you delete a file, because after the file is gone, you cannot restore it again. Unless you have a backup copy, you can regain the lost information only by recreating the file.

Using the DEL Command

The DEL command enables you to delete one or more files from the diskette. Enter the following command to delete the file MOREFILE.COM from your formatted diskette:

DEL MOREFILE.COM

Use the DIR command to confirm that the file MOREFILE.COM was deleted.

Using Wild-Card Characters to Delete Several Files

You can use wild-card characters with the DEL command to delete several files at a time. However, you must be even more cautious than when you delete a single file. If you are not careful, you may delete files that you didn't intend to delete, because you didn't realize that the file names match the wild-card file name.

To prevent an accidental loss of files, first issue a DIR command with the wild-card name of the files you intend to delete:

```
A>DIR *.OLD [RETURN]
```

```
Volume in drive A has no label
Directory of A:\
```

```
MYFILE1    OLD      55    9-07-83    9:10a
MYFILE2    OLD      55    9-07-83    9:20a
COMBINE    OLD     109    9-07-83    9:45a
MYFILE3    OLD     109    9-07-83    10:30a
           4 File(s) 97844 bytes free
```

Suppose you want to delete all files with the extension .OLD. However, using the DIR command first shows that the directory contains a file you want to keep—COMBINE.OLD. Now you can enter a DEL command that deletes all files with the extension .OLD except COMBINE.OLD:

```
DEL M*.OLD [RETURN]
```

The M refers to the first character of the file names MYFILE1.OLD, MYFILE2.OLD, and MYFILE3.OLD. Because COMBINE.OLD begins with a C, it is excluded from the delete operation.

Deleting All the Files on a Diskette

You can use *.* with the DEL command to delete all the files on a diskette. With a two-drive system, it's a good idea to specify the drive in your command – for example, **DEL B:.*** [RETURN]. In any case, whether you have one disk drive or two, *always check to see that you have the diskette you want to erase in the specified (or default) drive before using DEL *.** – otherwise, you might inadvertently erase your MS-DOS system diskette.

MS-DOS asks you if you're sure you want to delete all the files on the diskette. This prompt ensures that you really want to wipe out the contents of an entire diskette.

Copying Entire Diskettes

In addition to copying individual files, you have two ways to copy an entire diskette. This feature is most useful for making backup copies of your diskettes.

You should habitually create backup copies of all your diskettes. That way, if a diskette becomes damaged or if files are accidentally erased, you still have all of the information on your backup diskette. You can back up diskettes by using either the MS-DOS DISKCOPY command or the COPY command.

DISKCOPY will format the diskette to which you are copying, if necessary; you *must* first format a diskette on which you plan to copy individual files.

Note that if the diskette you are copying is double-sided, the diskette you are copying to must also be double-sided. You can also copy a single-sided diskette to a double-sided diskette.

Using the DISKCOPY Command

The DISKCOPY command copies the entire contents of a diskette onto another diskette. If either of the diskettes you are using has defective tracks, DISKCOPY does not work. Use the COPY command to back up your diskettes in these cases. (COPY skips over defective spots on the disk.)

To copy an entire diskette using the DISKCOPY command, use the following procedure.

Copying Diskettes on a One-Drive System

1. Make sure the A> prompt is displayed.
2. Insert the system diskette into the disk drive.
3. Type **DISKCOPY** and press the RETURN key. The following message appears on your screen:

```
DISKCOPY X1.05 Mindset Corp.
```

```
Please insert the source disk in drive A:  
Press any key when ready (control C to exit)
```

-
4. The source diskette is the diskette you want to copy. Before you press any key, remove the system diskette from the drive and insert the source diskette. Then press any key to continue.
 5. After you press a key, a message similar to the following appears:

Source disk: two sides, nine sectors per track
Please insert the destination disk, and press any key.
 6. The target diskette is the diskette to which you want to copy the source diskette contents. It may be formatted or unformatted. Before you press any key, remove the source diskette from the drive and insert the target diskette. Then press any key to continue. If your destination disk is unformatted, this message appears:

Formatting while copying

If MS-DOS requires more than one cycle to complete the copying, it prompts again:

Please insert the source disk and press any key
 7. Repeat steps 4 and 5 as many times as MS-DOS requires.

When copying ends, the following message appears:

Copy complete
Copy another (Y/N)?
 8. In response to the last prompt, type **Y** to copy another diskette. If you are finished copying diskettes, type **N** to end the DISKCOPY command and return to the MS-DOS system prompt.

Copying Diskettes on a Two-Drive System

1. Make sure the A> prompt is displayed.
2. Insert the system diskette into disk drive A.
3. Type **DISKCOPY A: B:** and press the RETURN key. The following message appears on your screen:

Please insert the source disk in drive A:, and the destination disk in B:.
Press any key when ready (control C to exit)

-
4. Before you press any key, remove the system diskette from disk drive A and insert the diskette you want to copy (the source diskette). Insert the diskette you want to copy to (the destination diskette) into disk drive B. It may be formatted or unformatted. Then press any key to continue.
 5. After you press a key, one of these messages appears:

Copying ...
or
Formatting while copying

6. When the copy is finished, the following message appears:

Copy complete
Copy another (Y/N)?

7. In response to the last prompt, type **Y** to copy another diskette. If you are finished copying diskettes, type **N** to end the DISKCOPY command and return to the MS-DOS system prompt.

Using the COPY Command to Copy Entire Diskettes

You can also copy entire diskettes using the COPY command. Use the following form of the command:

COPY *.* B:

Note that you cannot use this command if you want to copy system files on the diskette; the system files are ignored. This is because MS-DOS "hides" the system files to prevent their accidental erasure or modification. To copy them, you must use the FORMAT or DISKCOPY commands previously discussed, or the SYS command, which is explained in the MS-DOS Reference Guide.

Copying procedures for one- and two-drive systems are the same as for copying individual files, as described earlier.

A Final Hint

When a diskette has been used extensively, the organization of data on the diskette tends to become very complex. As a result, your system takes longer to manage information on that diskette. Using the DISKCOPY command copies all files exactly as they are organized. However, if you use the COPY command, the files are reorganized while they are copied, maximizing your system's efficiency.