AT&T

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Issue 2

Getting Started
With Your
AT&T Personal Computer
6300 PLUS

NOTICE

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L-243568-87

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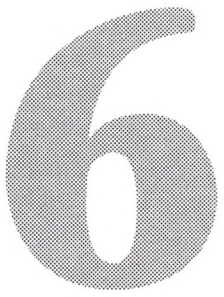


Using Diagnostics

Appendixes

1 Introduction

Welcome

Welcome to the AT&T Personal Computer 6300 PLUS, the computer that offers you the best of two computing worlds—

- the world of MS-DOS, and
- the world of the UNIX System.

Why MS-DOS?

For several years now, MS-DOS has been a standard operating system for personal computers, allowing one person to work on one job at a time. During this time, thousands of programs have been written to work with MS-DOS. By offering MS-DOS with the PC 6300 PLUS, AT&T not only lets you use those MS-DOS programs you already have, but leaves you free to choose from an ever-widening selection in the future.

Why the UNIX System?

Most businesses need more from a personal computer than a single-user, single-task system can deliver. For this reason, AT&T is offering you one of the most popular "multiuser," "multitasking" systems available—the UNIX System.

With its multiuser and multitasking capabilities, the UNIX System helps you get the most out of your PC 6300 PLUS. Each person using the PC 6300 PLUS can work on several jobs at a time and easily switch between them to increase productivity.

In addition, the UNIX System comes with state-of-the-art communication software so you can build your own information network. Once your network is established, you can send electronic mail and set up file transfers to other UNIX System computers.

Best of all, if you choose the UNIX System option, you can use MS-DOS and the UNIX System simultaneously. The unique "Simul-Task Operating System (OS) Merge Feature," lets you switch between MS-DOS and the UNIX System with a single keystroke.

Since you can use both MS-DOS and the UNIX System on your PC 6300 PLUS, you can select application programs written for both of these operating systems instead of just one.

How to Use This Guide

Those of you who are newcomers to personal computers will want to start with Chapter 2, "Getting to Know Your PC 6300 PLUS." In this chapter, we'll tell you about your computer's major parts and the diskettes you'll be using.

If you're experienced with personal computers, you can skip Chapter 2 if you wish. But, if your PC 6300 PLUS has a 1.2-MB diskette drive, you need to familiarize yourself with this drive and the type of diskettes it uses. Information on this drive and its diskettes is in Chapter 2 under the section "Diskettes, Drives, and Compatibility."

Then, when you're ready to get started, turn to one of the Getting Started sections:

- Getting Started—MS-DOS Only
- Getting Started—The UNIX System.

If you wish to use *only* the MS-DOS Operating System with your PC 6300 PLUS, turn to the section "Getting Started—MS-DOS Only." There you'll find two independent getting started sections for MS-DOS. Choose the one that's appropriate for your computer's configuration:

- MS-DOS—Two Diskette Drives
- MS-DOS—Hard Disk Drive.

If you wish to use only the UNIX System *or* use the UNIX System and MS-DOS at the same time, turn to the section "Getting Started—The UNIX System."

If you should ever suspect problems with your computer, turn to the section "Using Diagnostics." There you'll learn how to test the major parts of your computer to see if they're working as they should.

The appendixes contain information on the following topics:

- Appendix A, Moving Your Computer
- Appendix B, Removing the Main Unit Covers
- Appendix C, Installing Expansion Boards
- Appendix D, Setting System DIP Switches
- Appendix E, Printer Cables and DIP Switches
- Appendix F, Switching Operating Systems (Active Partition)
- Appendix G, Servicing, Parts, and Documentation
- Appendix H, Environmental and Safety Specifications.

A glossary of terms and an index are also included.

Federal Communications Commission Radio Frequency Interference Statement

Warning: The equipment described herein has been certified to comply with the limits for a Class B computing device, pursuant to Subpart J of Part 15 of FCC Rules. Only peripherals (computer input/output devices, terminals, printers, etc.) certified to comply with the Class B limits may be attached to this computer. Operation with non-certified peripherals is likely to result in interference to radio and TV reception.

All cables used to connect to peripherals must be shielded and grounded. If the cables between the computer and the peripherals are not shielded and grounded, interference to radio and TV reception may result.

User Instructions

This equipment generates and uses radio frequency energy, and if not installed and used properly, in strict accordance with the Getting Started guide, the reference manual, the installation guide, and the service manual, can cause interference to radio and television reception. It has been type-tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. If this equipment does cause interference to radio or television reception, it may be determined by turning the computing equipment off and on. You are encouraged to try correcting the interference by one or more of the suggestions listed on the next page.

- Reorient the receiving antenna.
- Relocate the computer with respect to the receiver.
- Move the computer away from the receiver.
- Plug the computer into a different outlet so that the computer and receiver are on different branch circuits.
- Move the cables connected to the computer to minimize the interference.
- Tighten all screws on cables and the computer housing.
- Install blank panels (originally supplied with the computer) in all unused card slots.
- Use shielded and grounded cables if other cables, not provided by AT&T, are needed.

If necessary, you should consult the dealer or an experienced radio/television technician for additional suggestions. You may find the following booklet prepared by the Federal Communications Commission helpful:

"How to Identify and Resolve Radio-TV Interference Problems."

This booklet is available from the U.S. Government Printing Office, Washington, DC 20402, Stock No. 004-000-00398-5.

Getting to Know
Your Computer

L-244157-42

2 Getting to Know Your PC 6300 PLUS

Introduction

As with any computer system, there are two types of components that play key roles in making your AT&T computer work:

- Hardware
- Software.

Looking at your computer, you can see the keyboard, display, and the main unit. These parts all make up your computer's hardware. Printers, modems, and color displays are additional pieces of hardware that you may have. A computer's hardware is generally something you can see or touch—the physical parts.

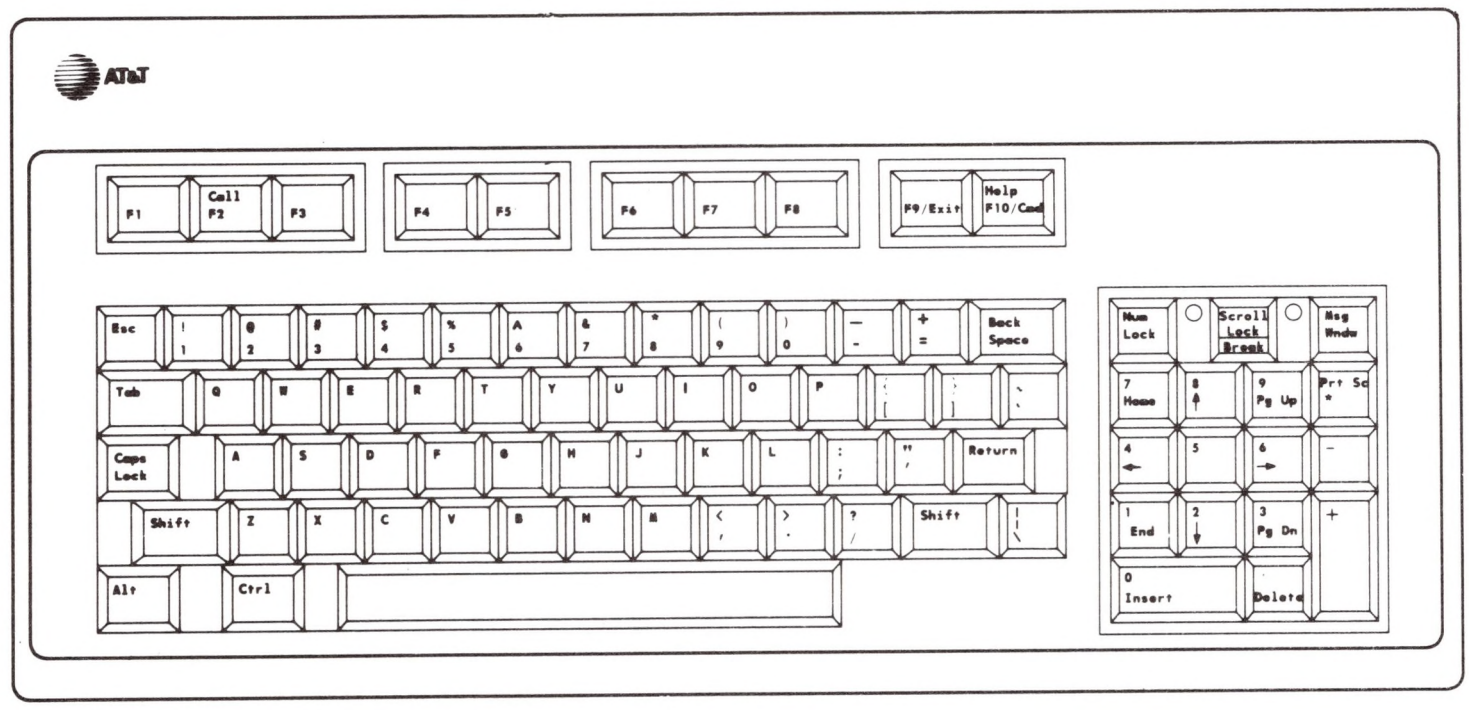
The other major component of your computer, software, is something that you can't see or touch. Software is one or more sets of instructions that tell a computer what, how, and when it's supposed to do something. The software for your computer is initially stored on diskettes.

Hardware

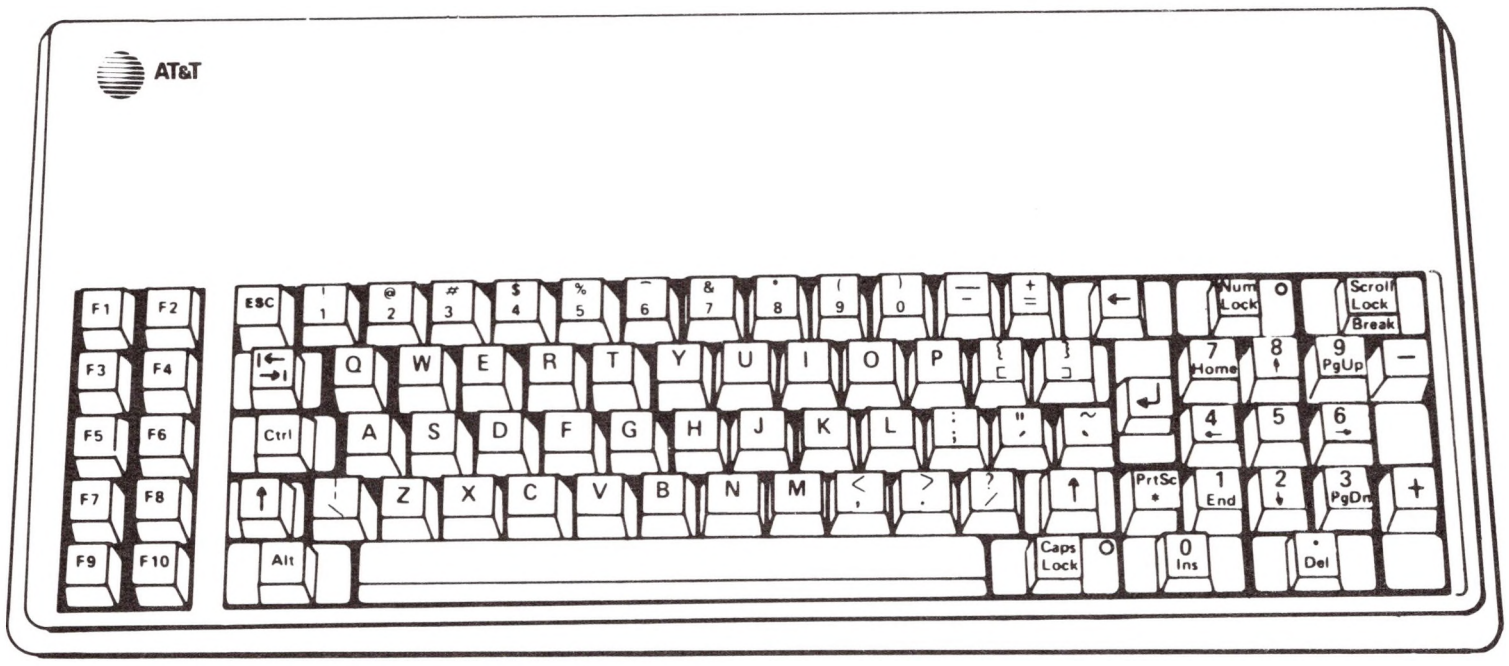
The Keyboard

With your PC 6300 PLUS, you can choose from two keyboards:

1 Model 302 keyboard.



2 Model 301 keyboard.



Since these two keyboards are functionally the same, you can select your keyboard according to personal preference. However, the keyboard layouts and some key labels differ as shown in the illustrations. In addition, the Model 302 keyboard has a [Msg Wndw] key that's used to switch between MS-DOS and the UNIX System. This same function is available on the Model 301 keyboard by pressing [Ctrl], [Alt], and [Back Space] simultaneously.

> ***Note:*** If you purchase an AT&T Mouse 6300 to use with your PC 6300 PLUS, the mouse may come with a replacement Read-Only Memory (ROM) for Model 301 keyboards. If you have a Model 302 keyboard, discard the ROM packaged with the mouse.

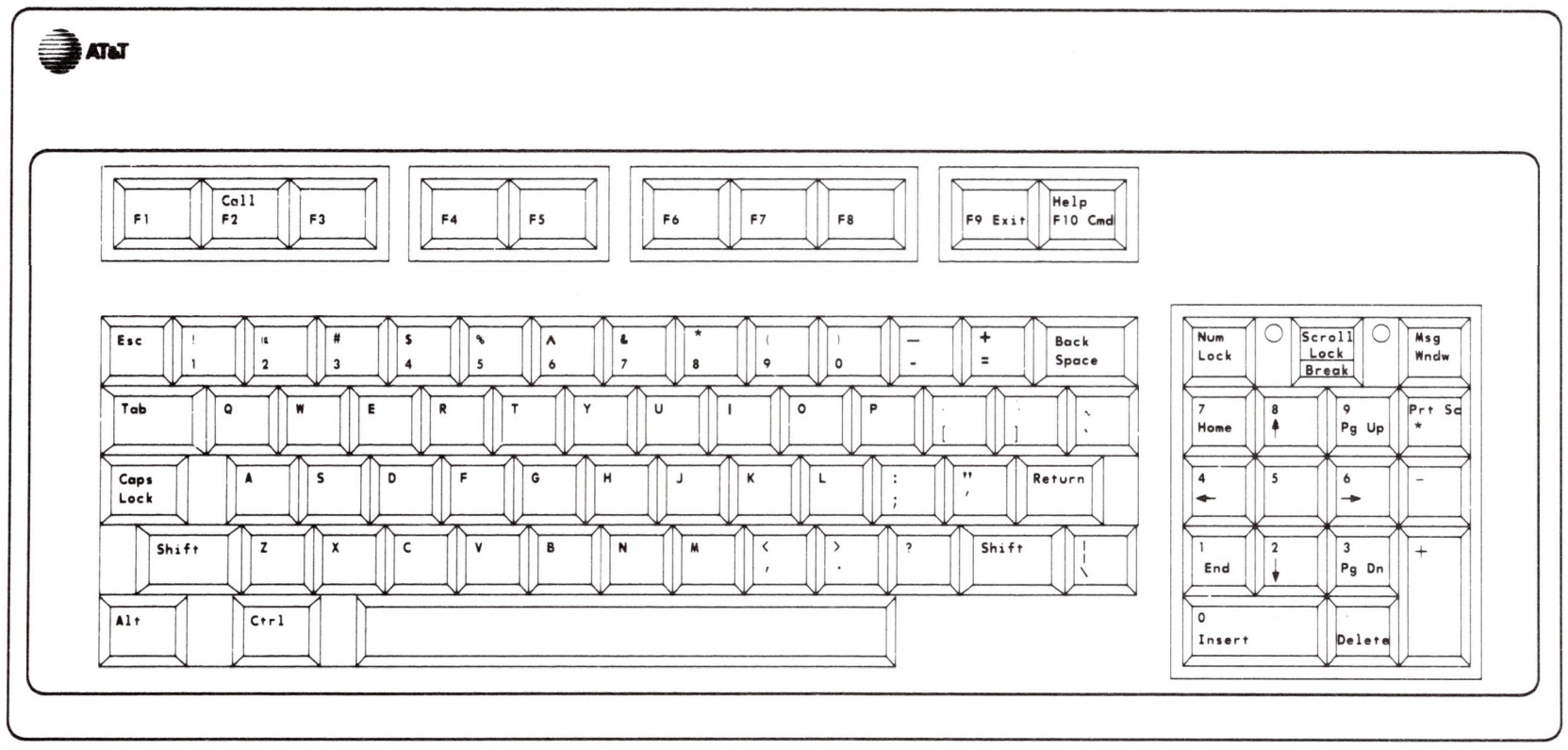
The keyboard described and referenced in this guide is the Model 302. If you have a Model 301 keyboard, see the section "Model 301 and Model 302 Keyboard Differences" on Page 2-15.

The Model 302 keyboard has five main sets of keys:

- Typewriter section keys
- Special purpose keys
- Cursor-control keys
- Numeric keys
- Function keys.

Typewriter Keys

If you've used a typewriter before, this set of keys will be familiar to you. Most of these keys look and work as they would on any typewriter. The keys that look or work differently and those that don't usually appear on a typewriter are listed below.



Return **Return** is similar to the carriage-return key on typewriters. Pressing **Return** tells the computer that you've finished typing a command. **Return** is sometimes referred to as the ENTER key.

Shift **Shift** is used like the shift keys on a typewriter. It is used with other keys to produce upper-case letters or the upper character or function of a key. However, it doesn't work for the numeric keys on the right-hand side of your keyboard. There are two **Shift** keys in the typewriter section of the keyboard.

Tab

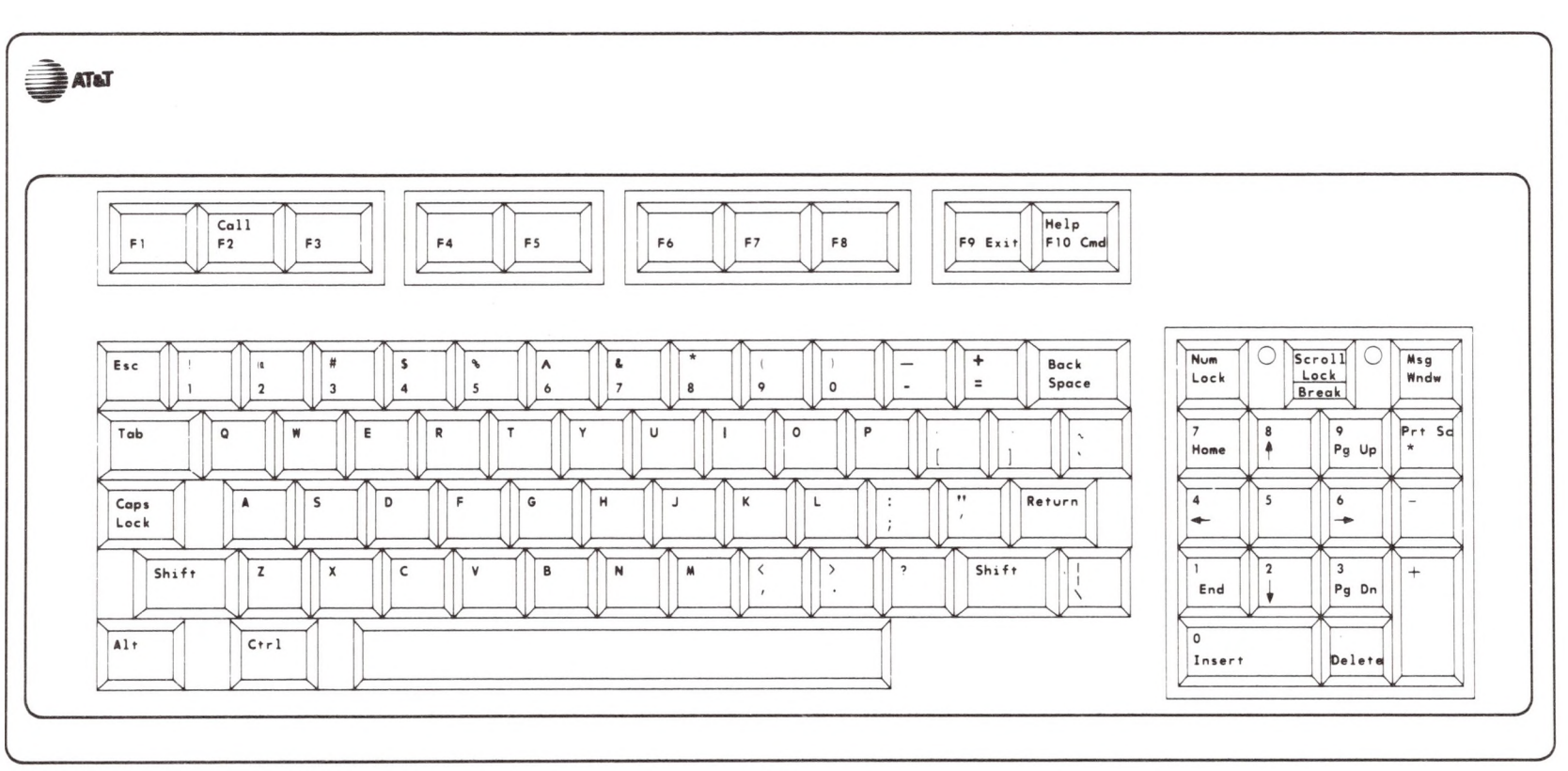
Tab advances the cursor to the next tab stop on the screen. Tab stops are set automatically every eight spaces when you turn on your computer.

Caps Lock

Caps Lock is a "toggle" key that locks the keyboard letters in the shift mode. (To select the upper character or function of a nonletter key, you must use the Shift key.) A light on the Caps Lock key is on whenever the Caps Lock function is active.

Special Purpose Keys

The Model 302 keyboard has a number of special purpose keys in the typewriter section of the keyboard. Others are located with the numeric keys.



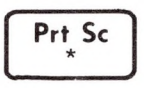
Esc — **Esc**ape is for use mainly with application programs and its meaning varies from one program to another.

Alt — **Alt**ernate is also for use mainly with application programs and its meaning also varies from one program to another.

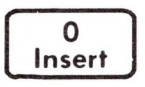
Ctrl — **Ctrl** is used with other keys to perform special functions that are unique to an operating system or application.

Back Space erases the character or space to the left of the cursor each time it's pressed. Its main purpose is to correct typing mistakes.

Scroll Lock when pressed with Ctrl, halts the program that's running. **Break** appears on the front of Scroll Lock.



Pressing this key and Shift at the same time will cause whatever is on the screen to be sent to the printer.



Insert is used mainly with application programs. Insert normally allows you to place data into a line of text. However, its meaning may vary from one application to another.

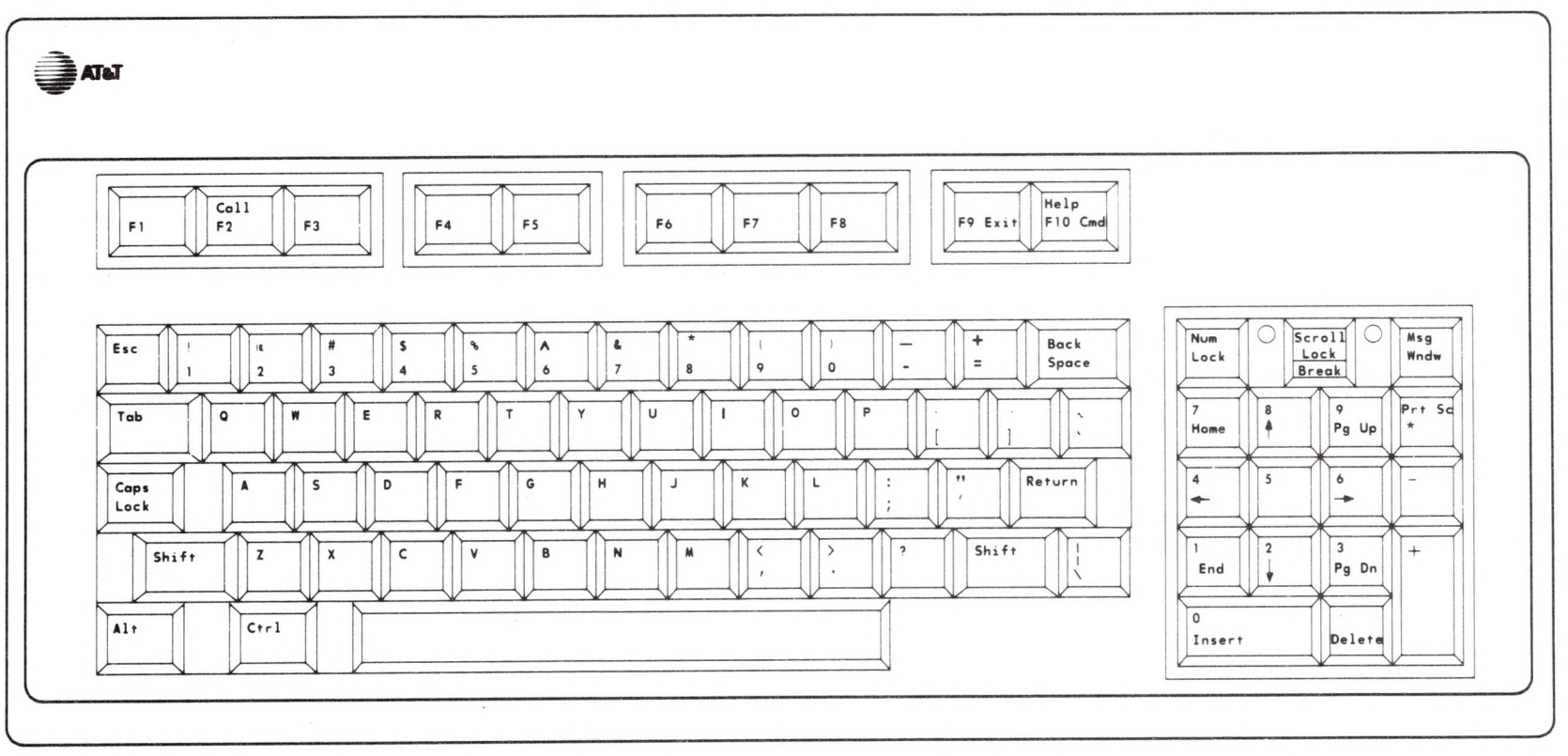
When used with certain applications, Delete erases the character where the cursor is positioned.

This key is used to switch back and forth between the UNIX System and MS-DOS and works only after you install both the UNIX System and MS-DOS on your computer.

Cursor-Control Keys

The Model 302 keyboard has several keys that move the cursor around on the screen. The cursor-control keys are mainly for use with application programs or for filling out forms on the display screen.

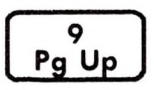
The cursor-control keys are on the numeric keypad portion of the keyboard.



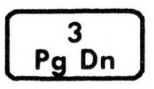
7 Home	**Home** moves the cursor to the top line on the screen.
1 End	**End** moves the cursor to the last line on the screen.
8 ↑	Up Arrow moves the cursor one line up on the screen.
2 ↓	Down Arrow moves the cursor one line down on the screen.

Left Arrow moves the cursor one character or space to the left.

Right Arrow moves the cursor one character or space to the right.



Pg Up (Page Up) scrolls information upward, one screen at a time.



Pg Dn (Page Down) scrolls information downward, one screen at a time.

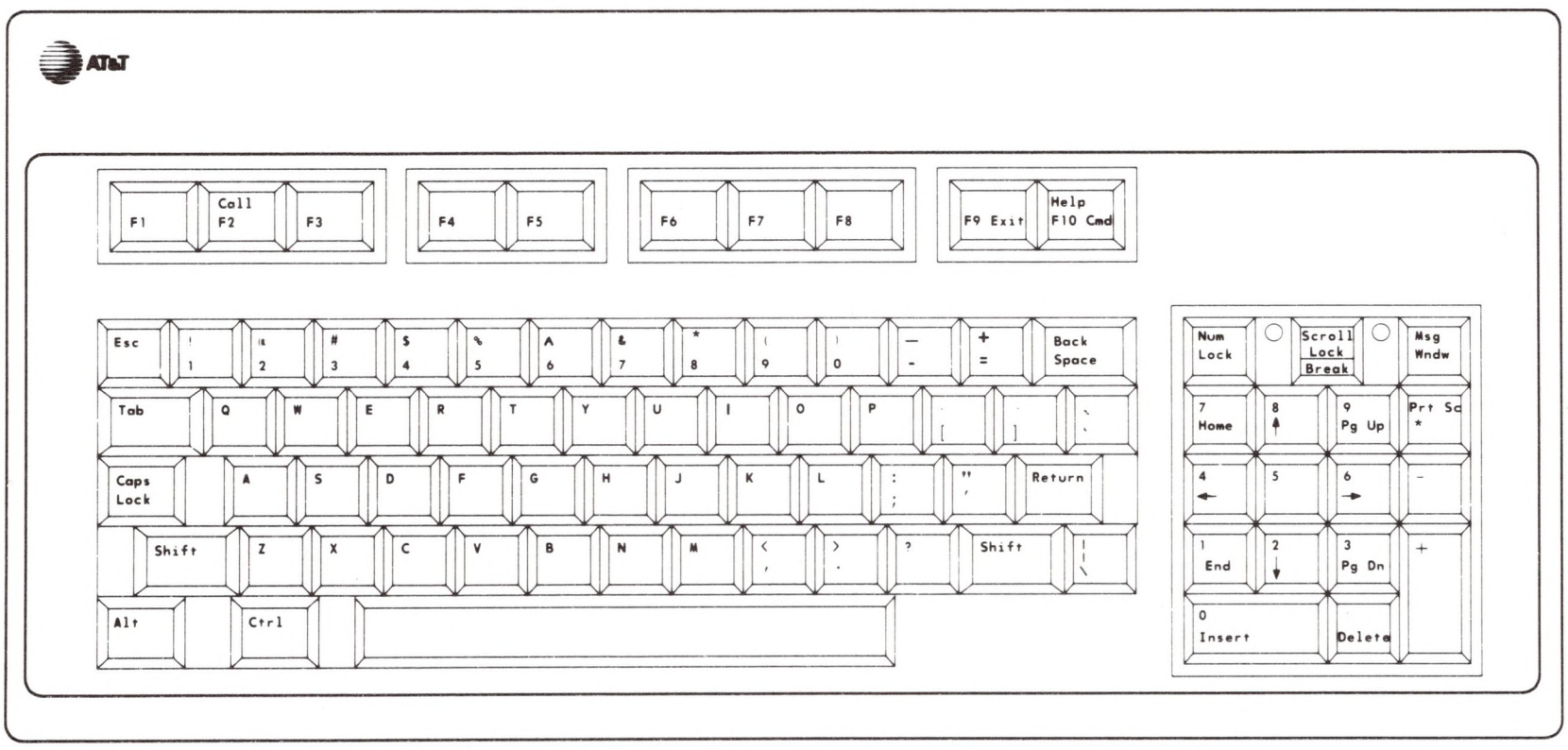
Note: Since these keys are mainly for use with application programs, their function may differ from one application program to another.

Numeric Keys

You can use two sets of keys to enter numbers into your computer; you can use the keys in the upper row of the typewriter section or the numeric keys on the right-hand side of your keyboard.

The numeric keys are set up to resemble the keypad on an adding machine or calculator. So if you've used such a keypad, you'll find entering numbers with these keys very easy.

To use these keys as a numeric keypad, Num Lock must be on or [Shift] must be depressed. Otherwise, the keys work as cursor-control keys. To turn Num Lock on, simply press [Num Lock], and you should see the key's light come on.



The numeric functions are on the upper part of the keys. Ten of the keys are labeled 0 through 9. The other three keys are labeled:

Delete — decimal point

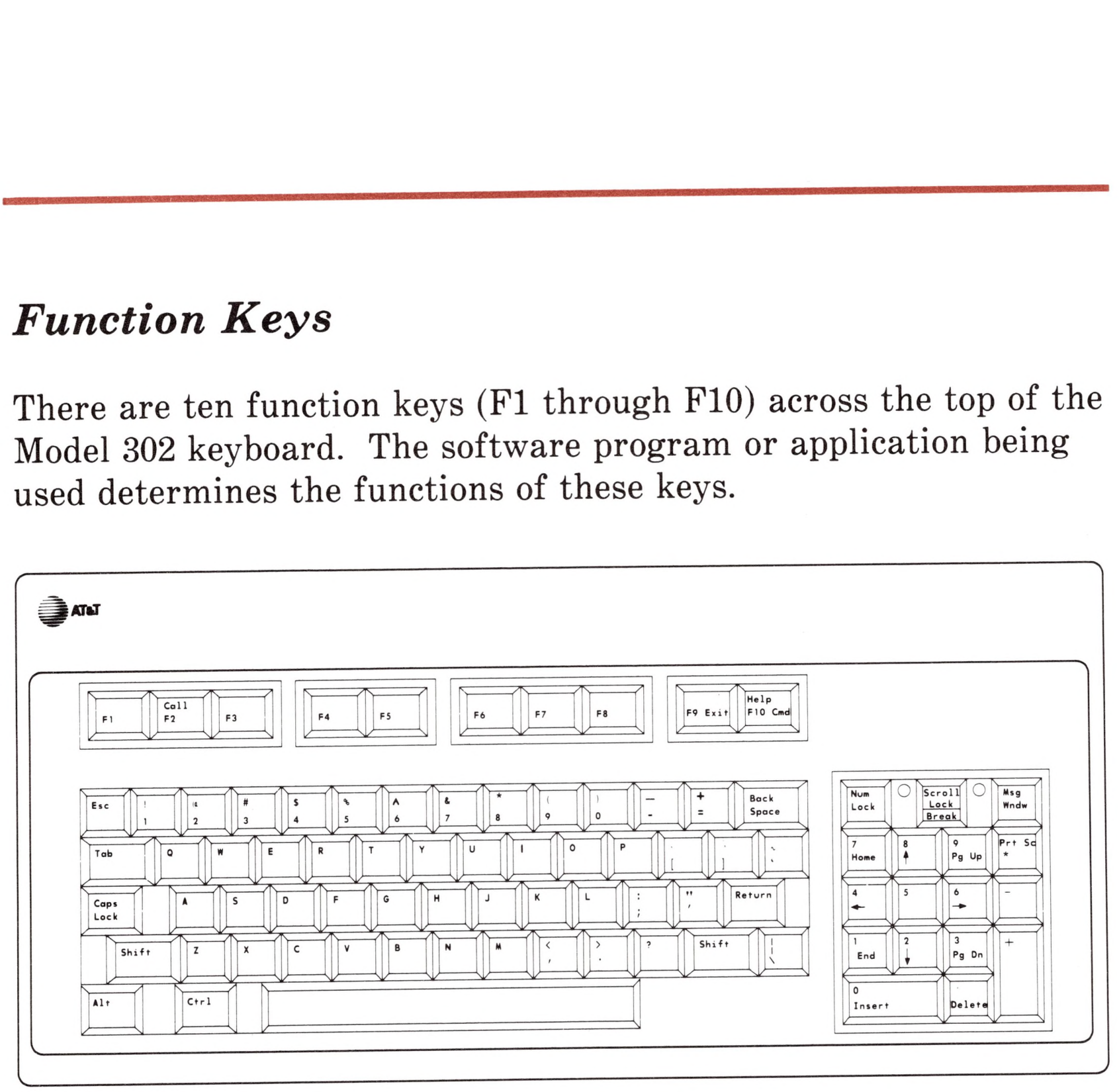
\- — minus sign

\+ — plus sign.

When it comes to numbers, computers differ from typewriters in one very important way; you cannot use a lower-case l for the digit one (1), and you cannot use the letter O for the digit zero (0). If you do, the results are unpredictable. To a computer, a number is a number and a letter is a letter.

Function Keys

There are ten function keys (F1 through F10) across the top of the Model 302 keyboard. The software program or application being used determines the functions of these keys.

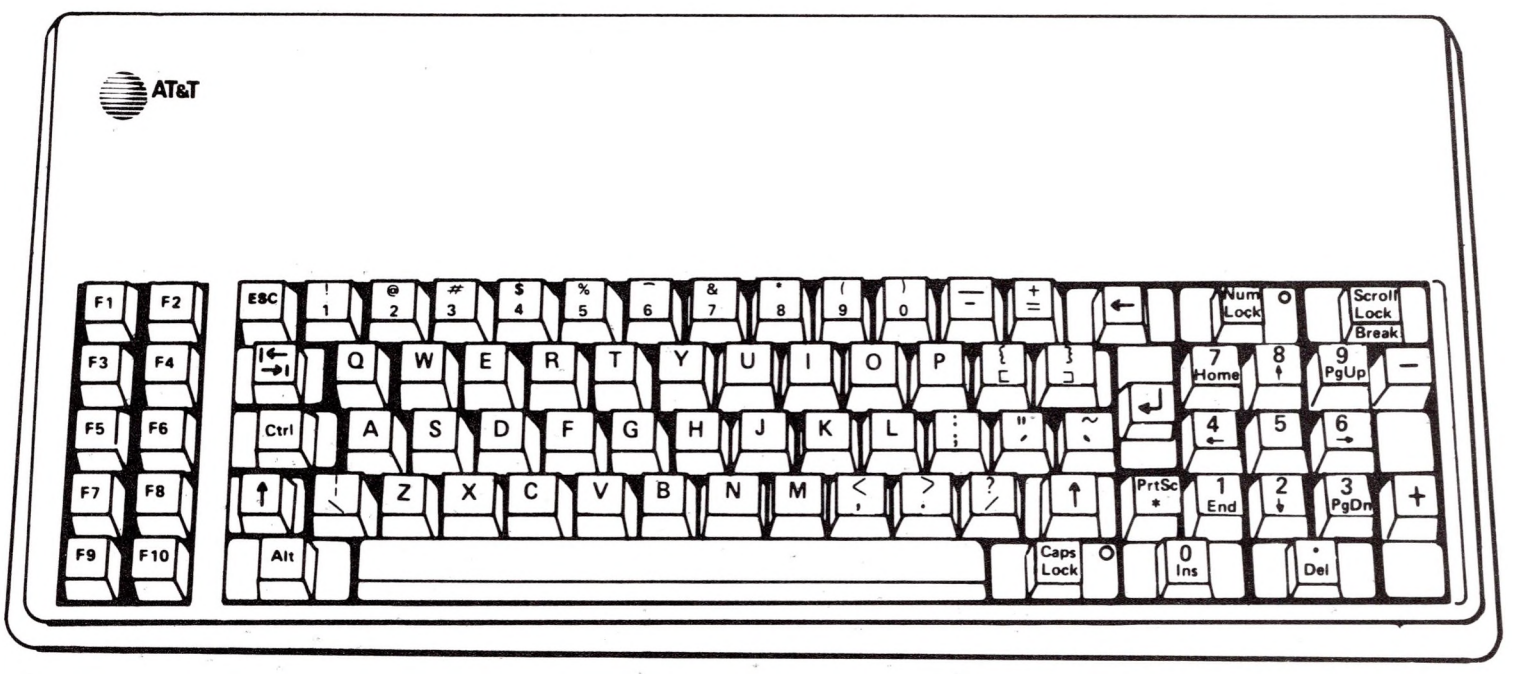


Model 301 and Model 302 Keyboard Differences

The placement of keys on the Model 301 keyboard differs slightly from the Model 302 keyboard.

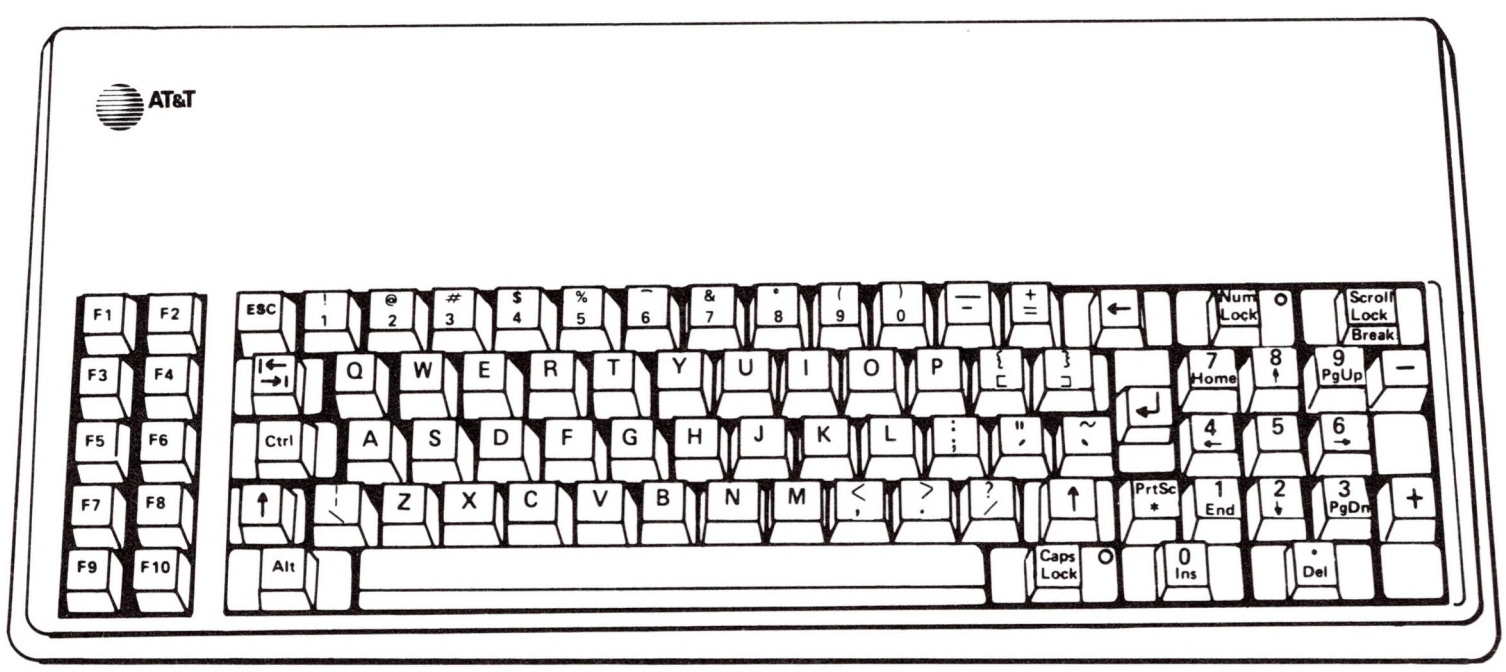
Most keys on the two keyboards are in the same place. However, the Ctrl, Caps Lock, \ |, ` ~, and the ten function keys F1 through F10 are all in different places on the Model 301 keyboard (see illustration below).

In addition, the Model 301 keyboard doesn't have a Msg Wndw key, the key used to switch back and forth between the UNIX System and MS-DOS. To switch back and forth using the Model 301 Keyboard, press Ctrl, Alt, and Back Space simultaneously. If you wish, you can select another key to use with Ctrl and Alt. Refer to the chapter "Using MS-DOS With the UNIX System" in the *UNIX System V Release 2.0 Operations Guide—AT&T Personal Computer 6300 PLUS* to redefine the set of keys that switch you back and forth between the UNIX System and MS-DOS.



The keys shown below on the Model 302 keyboard work the same as keys on the Model 301 keyboard, but they're labeled differently.

Model 302 Key	Model 301 Key
Return	↵
Shift	↑
Back Space	←
Tab	⇤⇥



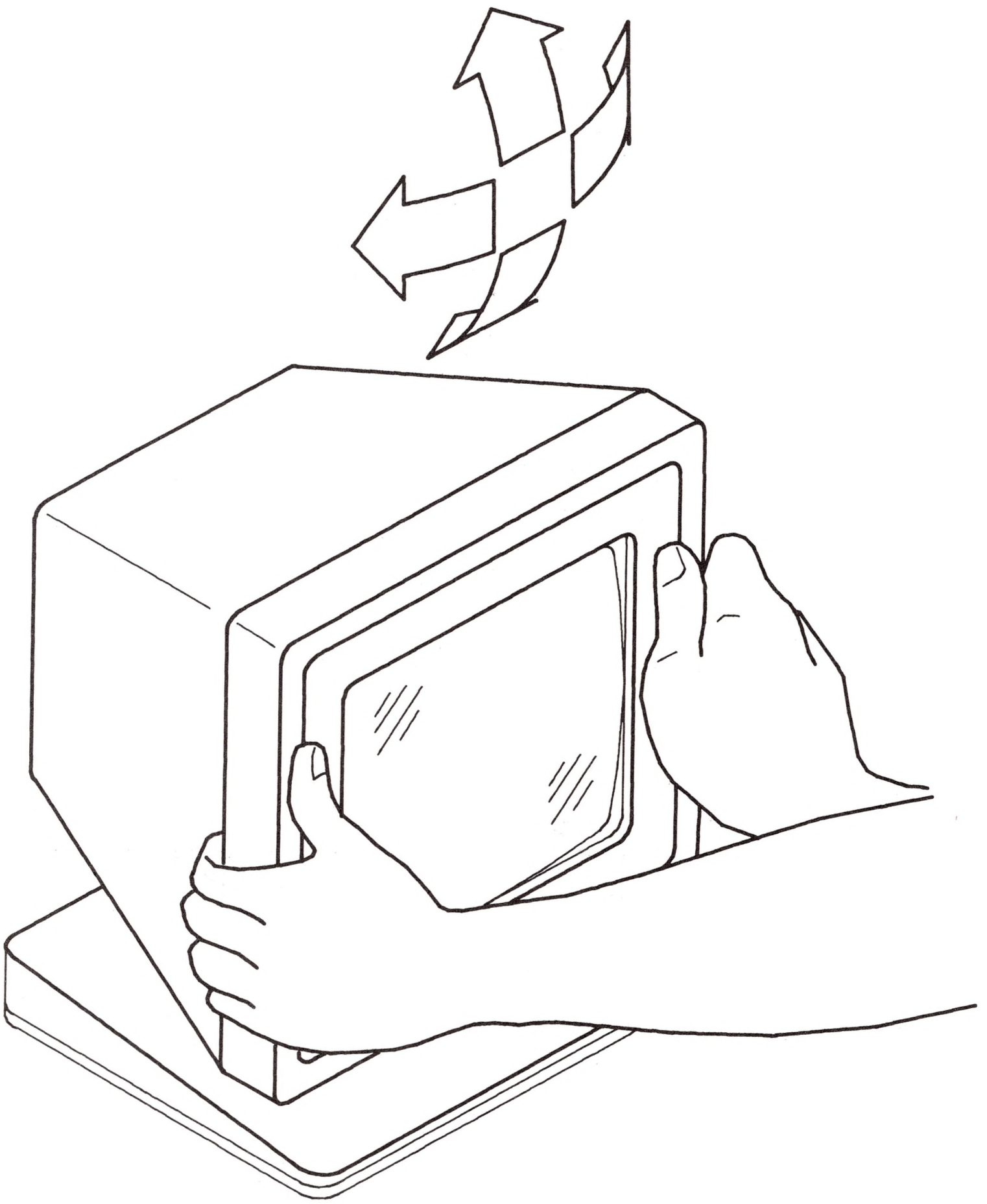
The Display

The high-resolution display that comes with your computer has an antiglare screen on which you can view both text and graphics. And, the display can be adjusted to suit your own viewing preferences for:

- Viewing angle
- Brightness
- Contrast.

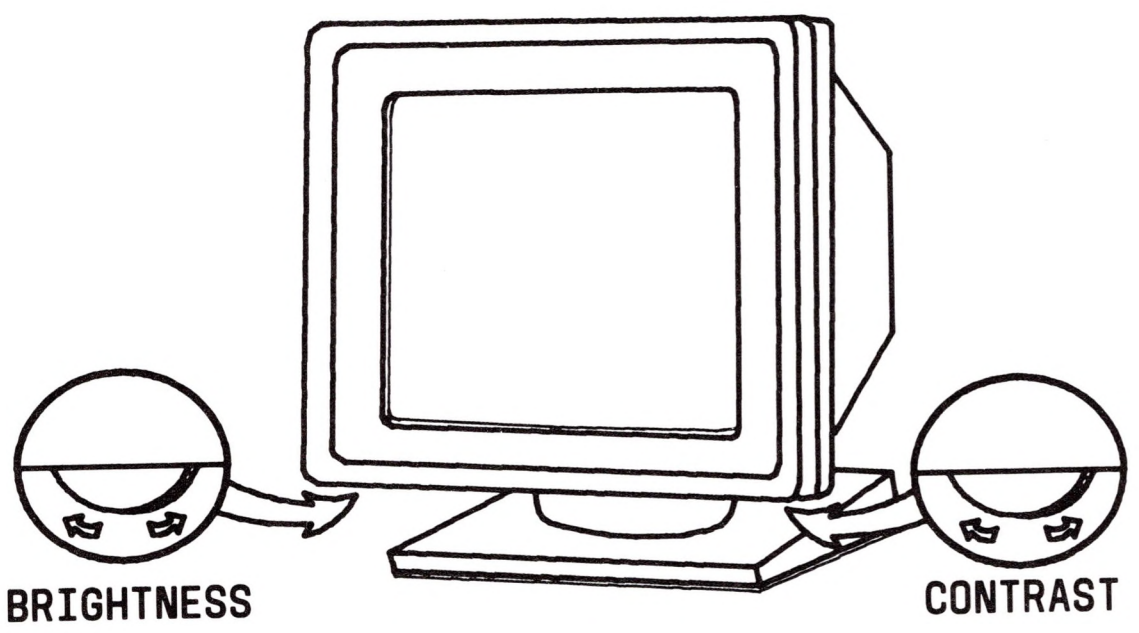
Adjusting the Display Screen

Adjusting the viewing angle is very simple. Just hold the display on both sides, tilt it up or down, and swivel it left or right until you are comfortable with the angle.



On the monochrome display, the brightness control knob is just below the left edge of the screen. To increase the brightness, turn the knob toward the front of the display. To decrease the brightness, turn the knob toward the back.

The monochrome display's contrast control knob is just below the right edge of the screen. To increase the contrast (mainly for highlighted text), turn the knob toward the front of the display. To decrease it, turn the knob toward the back.



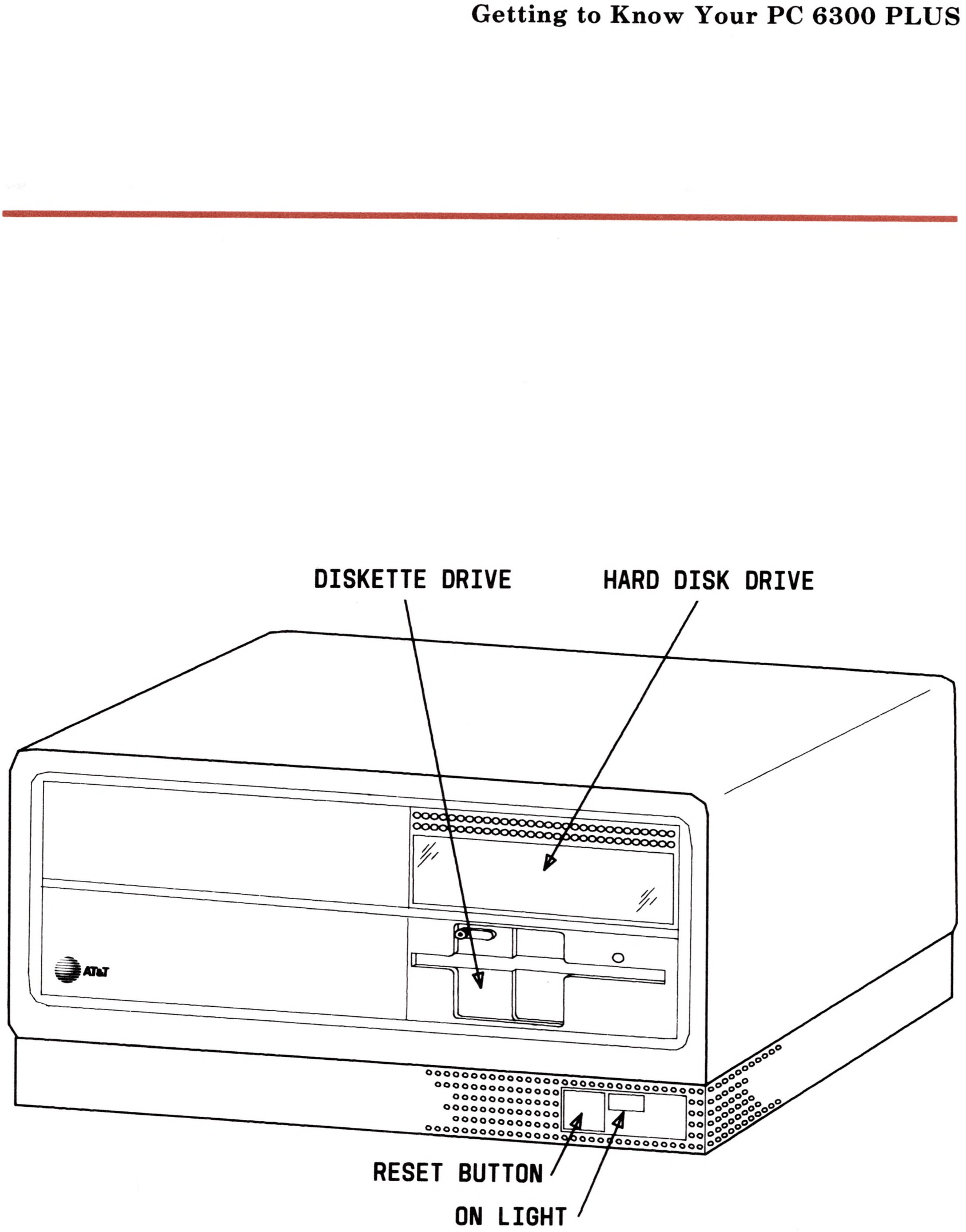
If you have a color display, the brightness and contrast controls are located on the top of the display along with an ON/OFF switch. To increase brightness or contrast, turn the appropriate knob to the right.

The Main Unit

The main unit, often called the Central Processing Unit (CPU), is the heart of your computer. In addition to housing the computer's disk drives, it also contains the computer's memory and the electronic circuits that process your data.

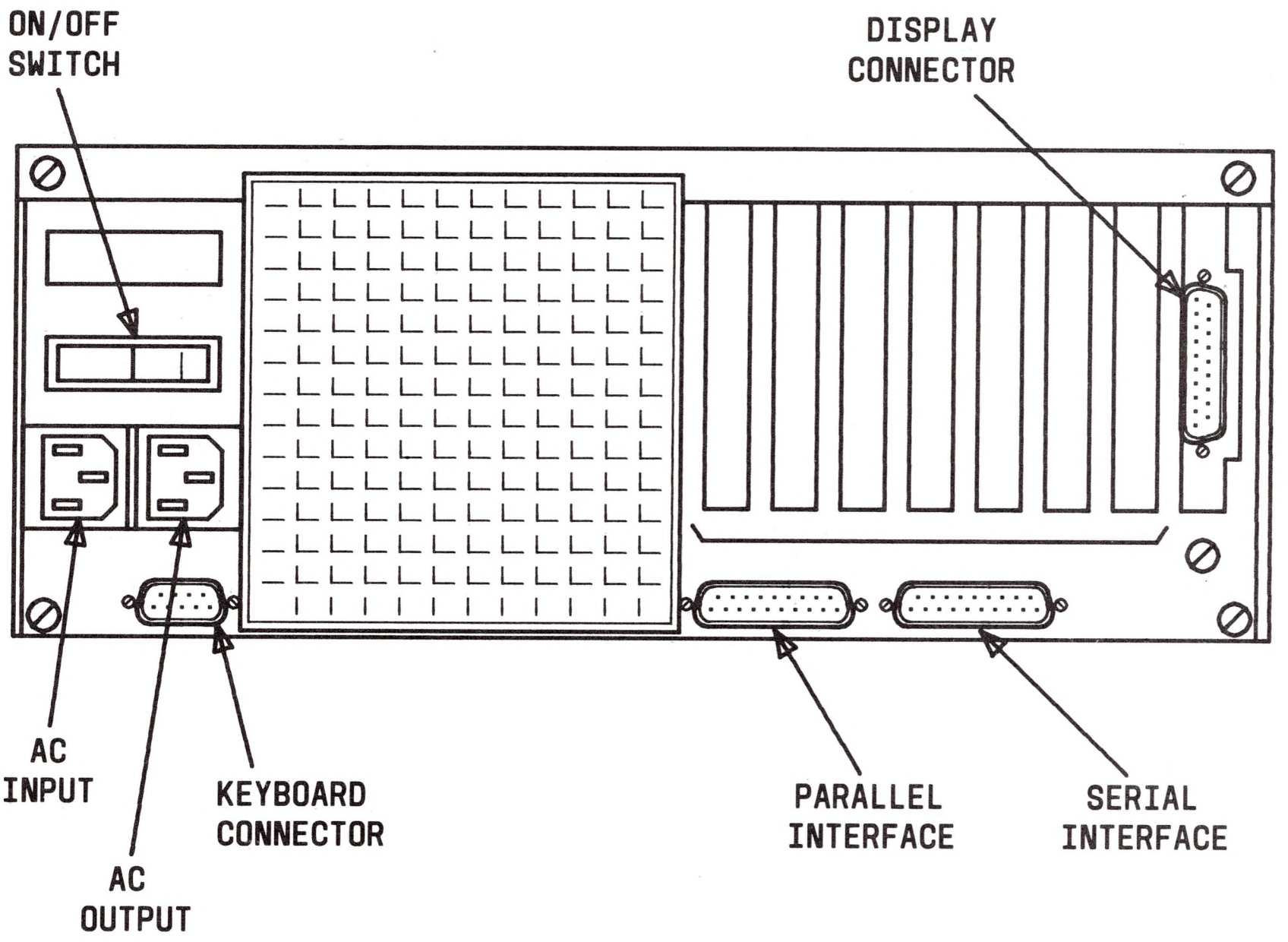
On the front of the main unit, you'll find the:

- Diskette drive(s)
- Hard disk drive (if present)
- System's "ON" light
- RESET button.


DISKETTE DRIVE
HARD DISK DRIVE
AT&T
RESET BUTTON
ON LIGHT

On the back panel of the main unit, you'll find:

- ON/OFF switch
- AC input
- AC output for a color display
- Keyboard connector
- Display connector
- Serial interface (port)
- Parallel interface (port).



IMPORTANT: To ensure proper cooling, maintain at least 3 inches of open space behind the main unit.

Disk Drives

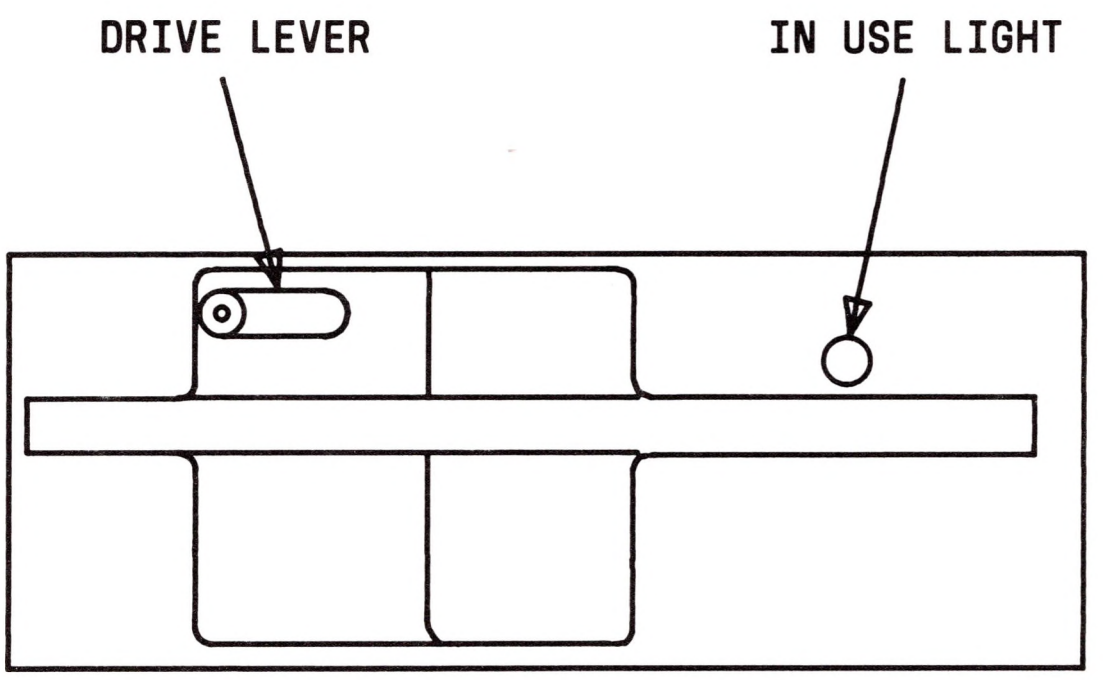
The disk drives on your computer give you a means of permanently storing your data. You may say to yourself, "Doesn't my computer have its own memory?" Yes, in fact it does. But as a computer buff would say, a computer's memory is *volatile*. That is, the memory is not permanent. When you turn off the computer, the memory's contents are lost. Therefore, you must copy the memory's contents to a diskette or hard disk to store it permanently.

Most personal computers can have two types of disk drives:

- Diskette drives, and
- Hard disk drives.

Diskette Drives

Diskette drives store information on removable disks called *diskettes* or *floppy disks.* The section in this chapter entitled "Diskettes" describes these disks in detail.



The horizontal opening on a diskette drive is where you insert a diskette. When inserting a diskette, the end opposite the label must be inserted first and the label must be facing up.

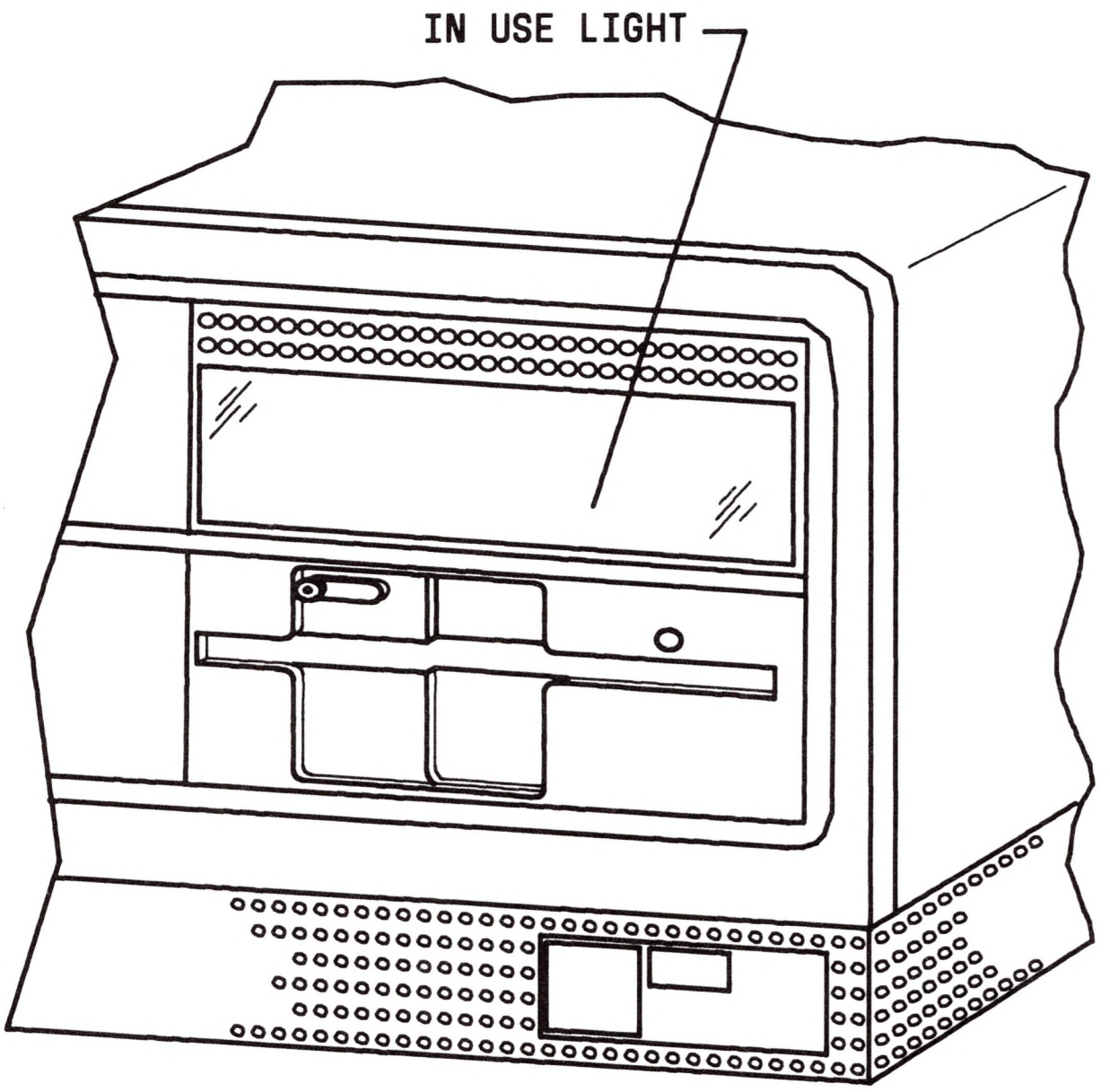
After inserting a diskette into the drive, you must lock the diskette into place. To lock a diskette into place, you simply turn the drive lever downward. The computer will read from or write to a diskette only if the diskette has been locked into place.

Another important part of the drive that you need to know about is the "in use" light. This light is on any time the computer is reading from or writing to the diskette. Do not remove a diskette from the drive while the "in use" light is on. If you do, you could destroy data on the diskette.

Hard Disk Drive

A hard disk drive works similar to a diskette drive except that the hard disk drive is faster and has more storage capacity. Because it is a very high-precision device, the hard disk is sealed to protect it from dust and other small particles. In addition, the disks on which you store information cannot be removed from a hard disk. For this reason, hard disks are often called "fixed" disks.

The only part of the hard disk you'll be able to see from the front of the main unit is the "in use" light. This light is on any time the computer is accessing the hard disk. Do not turn off the computer while this light is on. If you do, you could damage the hard disk or its data.



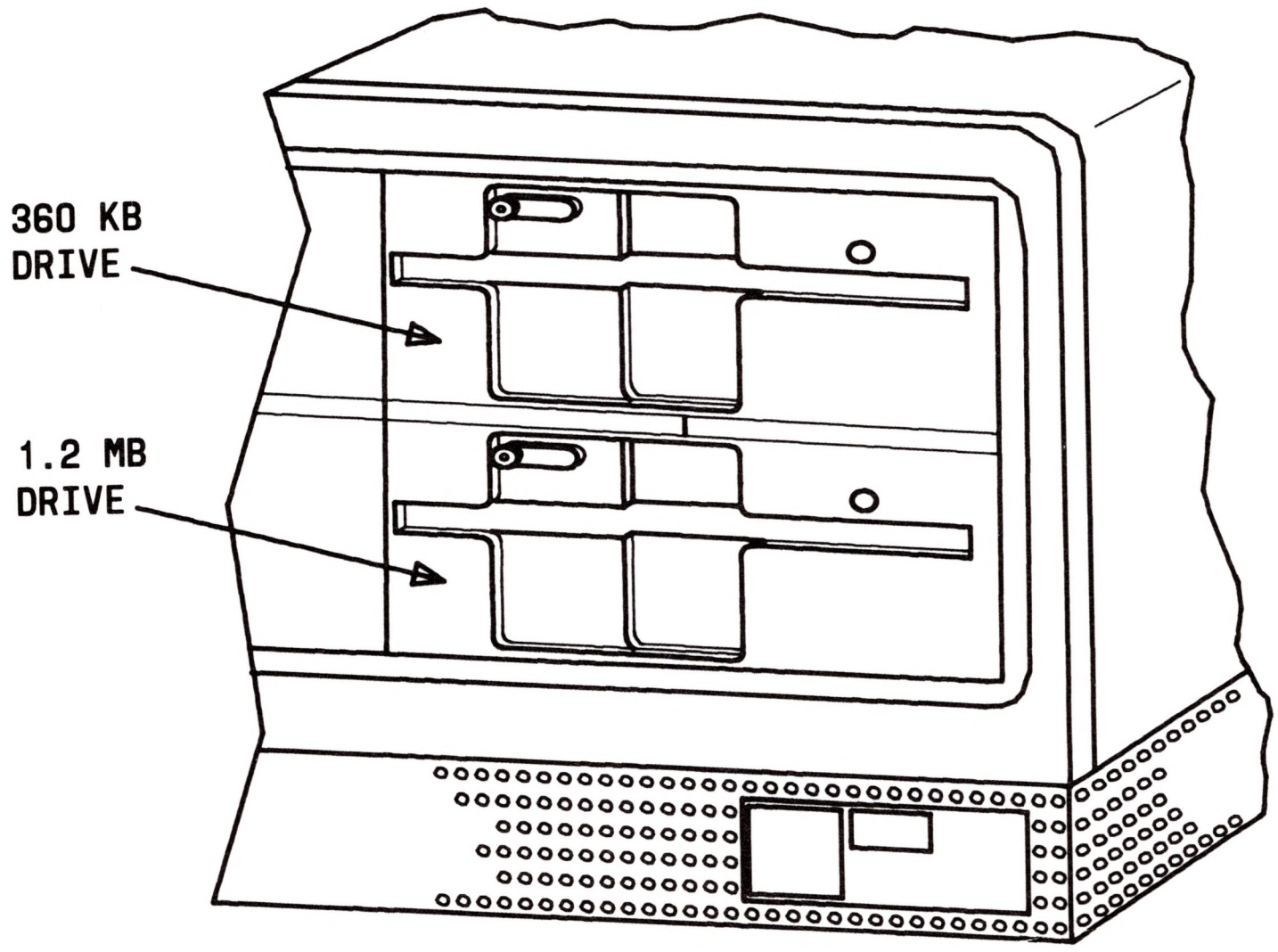
Disk Drive Configurations

The PC 6300 PLUS is available in three different disk drive configurations:

- Two diskette drives (360 KB and 1.2 MB)
- Hard disk drive and a 360-KB diskette drive
- Hard disk drive and a 1.2-MB diskette drive.

Two Diskette Drives

A PC 6300 PLUS with two diskette drives has a 1.2-MB diskette drive in the lower-drive location and a 360-KB diskette drive in the upper-drive location. The 1.2-MB drive uses *high-density* diskettes and the 360-KB drive uses *double-density* diskettes.



High-density diskettes can store approximately 850 pages of text and double-density diskettes can store approximately 250 pages of text—quite a difference. These diskettes share some of the same characteristics, but they are not totally compatible with one another.

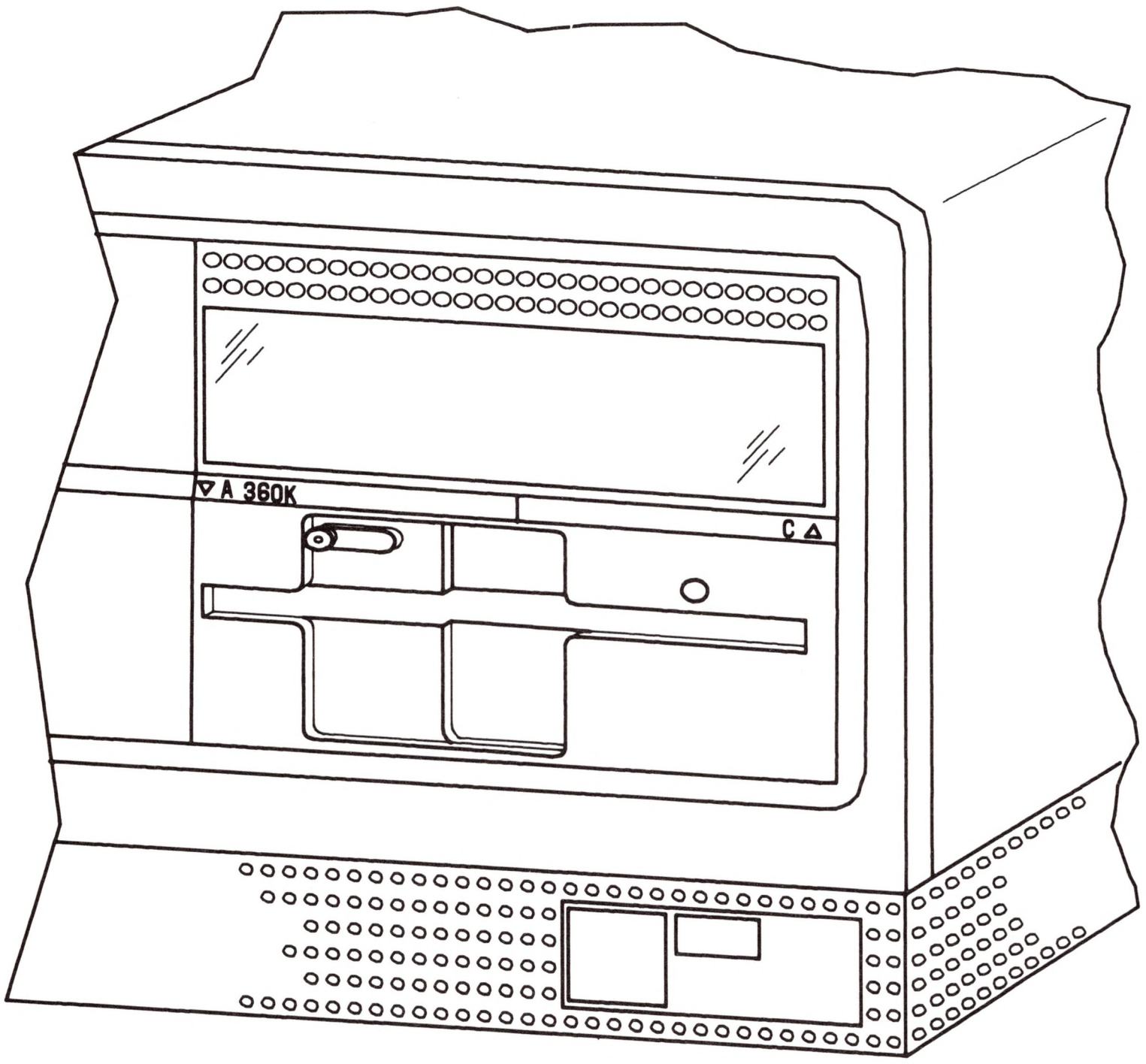
For information on how you should use these two drives and their diskettes, see the section "Diskettes, Drives, and Compatibility."

A PC 6300 PLUS of this particular configuration is limited to running the MS-DOS Operating System. To run the UNIX System on your PC 6300 PLUS, you need a hard disk drive and a 1.2-MB diskette drive.

Hard Disk Drive and a 360-KB Diskette Drive

A PC 6300 PLUS of this configuration has a 20-MB hard disk drive in the upper-drive location and a 360-KB diskette drive in the lower-drive location. With this configuration, you can run only the MS-DOS Operating System. A 1.2-MB diskette drive is required to install the UNIX System.

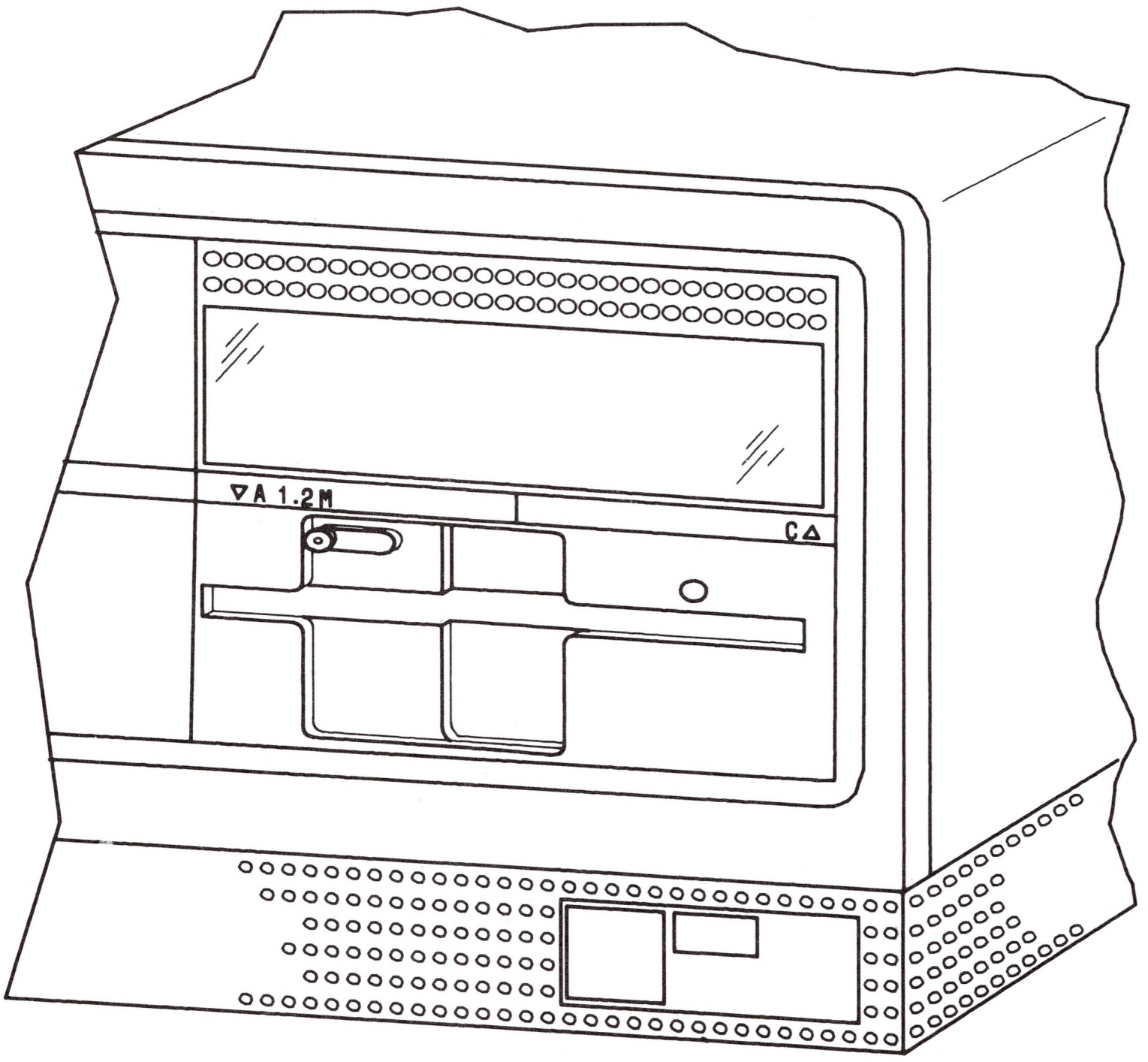
The 360-KB diskette drive uses standard *double-density* diskettes on which you can store about 250 pages of text. With this configuration, you will not need high-density diskettes. High-density diskettes are for use in 1.2-MB diskette drives *only*.



Hard Disk Drive and a 1.2-MB Diskette Drive

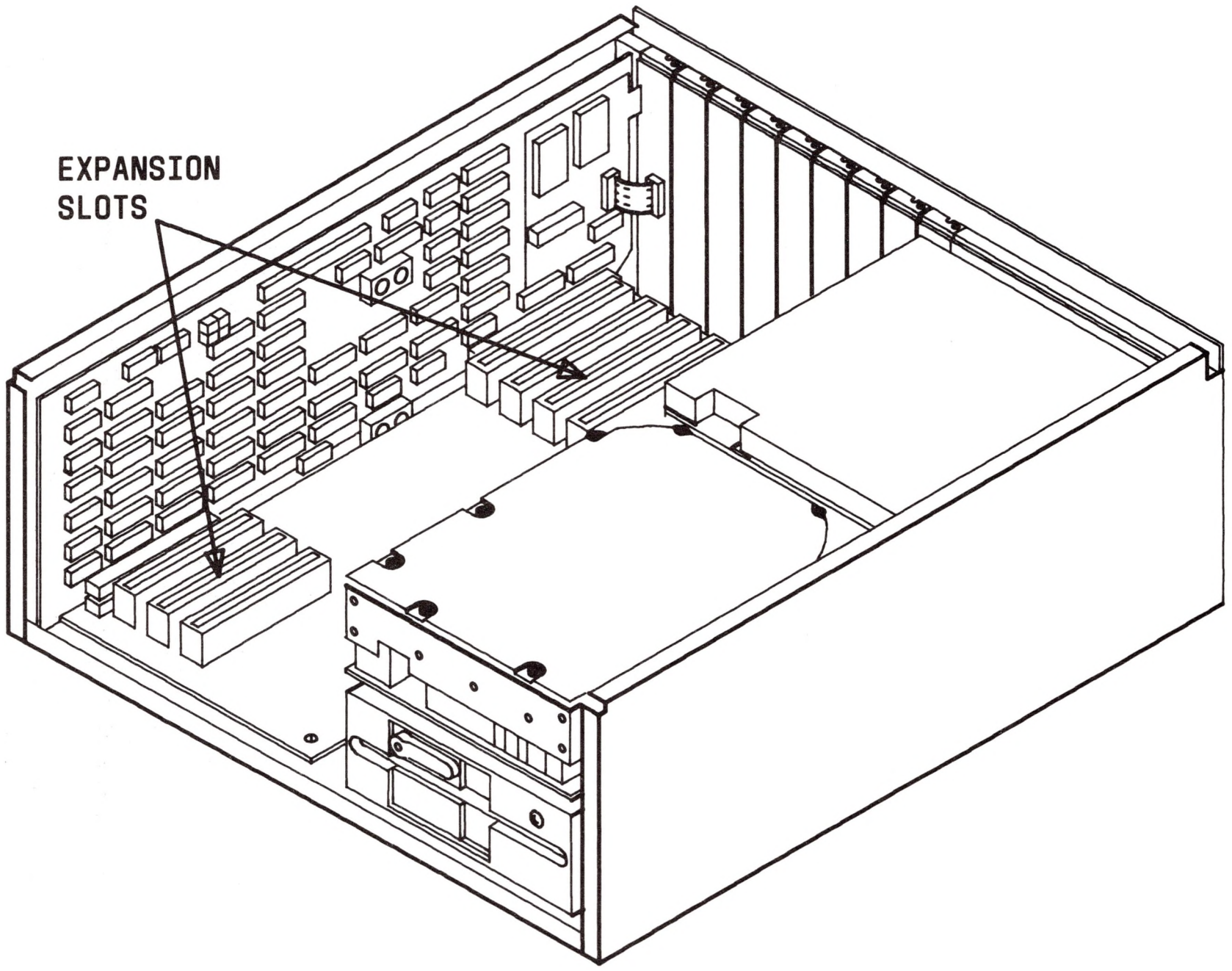
A PC 6300 PLUS of this configuration has a 20-MB hard disk drive in the upper-drive location and a 1.2-MB diskette drive in the lower-drive location. With this configuration, you can run both the MS-DOS and UNIX Operating Systems.

The 1.2-MB diskette drive uses *high-density* (1.2-MB) diskettes on which you can store approximately 850 pages of text. The 1.2-MB diskette drive can also use standard double-density (360-KB) diskettes, but their use is limited. See the section "Diskettes, Drives, and Compatibility" for more detailed information.



Expansion Slots

If you were to remove the upper cover from your main unit, you would find seven expansion slots. These slots allow you to add electronic expansion boards to your computer and, thus, give you the flexibility to expand your computer to suit your own needs.



To install expansion boards within your main unit, refer to Appendix B, "Removing the Main Unit Covers" and Appendix C, "Installing Expansion Boards." Some boards may require that you set switches on the computer's main board to tell the computer what type of equipment you're installing. The system's DIP switch settings are discussed in Appendix D, "Setting System DIP Switches."

Software

In addition to its hardware, a computer needs special instructions or programs to guide and coordinate all of its activities. These instructions are called software and can be separated into two main categories:

- Operating Systems
- Utilities and Applications.

Operating Systems

In many ways, operating systems are like very discrete, very efficient butlers. They work quietly (and for the most part, unseen) to coordinate the inner workings of a computer.

In keeping with their roles as housekeepers, operating systems take rather simple instructions (or commands) from you and translate them into the more complex instructions needed by a computer.

While most computers are limited to only one operating system, the AT&T PC 6300 PLUS offers you two of the leading operating systems—MS-DOS and the UNIX System. You can choose to work with only one of these operating systems, or you can use both of them at the same time.

Utilities and Applications

If an operating system can be thought of as helping a computer do its job, then utilities and applications can be thought of as helping you do your job.

Utilities

Utilities are simply programs that come with an operating system to help you perform individual tasks.

The utilities available with MS-DOS are fairly simple. But, with them, you can do many routine tasks such as copying and deleting files, or sorting a list of addresses alphabetically or by zip code.

The utilities available with the UNIX System are, by comparison, much more powerful and plentiful. In fact, one of the reasons for the UNIX System's popularity is its large number of powerful utilities, including several text editors and electronic communications (mail).

The UNIX System that's offered with your PC 6300 PLUS comes with a bonus. The Simul-Task Operating System (OS) Merge Feature is what the PC 6300 PLUS is all about.

With the Simul-Task OS Merge feature, your computer can switch directly from the UNIX System to an MS-DOS environment. Once in the MS-DOS environment, your computer acts like an ordinary MS-DOS computer. When you're ready to go back to the UNIX System, simply press a key and you're there.

Since the UNIX System is a multitasking operating system, you can start a UNIX program and not disturb it when you switch to MS-DOS. Then from MS-DOS, you can start an application program and switch back to the UNIX System while the application program continues to run.

To run the UNIX and MS-DOS Operating Systems simultaneously through the Simul-Task OS Merge feature, your PC 6300 PLUS must be configured with at least 1 Megabyte (MB) of main memory. However, if you typically use MS-DOS applications that require more than 256 KB of main memory, your PC 6300 PLUS should have at least 1.5 MB of main memory.

With the UNIX System's ability to let you work on many tasks at the same time and the abundance of MS-DOS applications, the Simul-Task OS Merge feature puts a whole new world of computing at your fingertips.

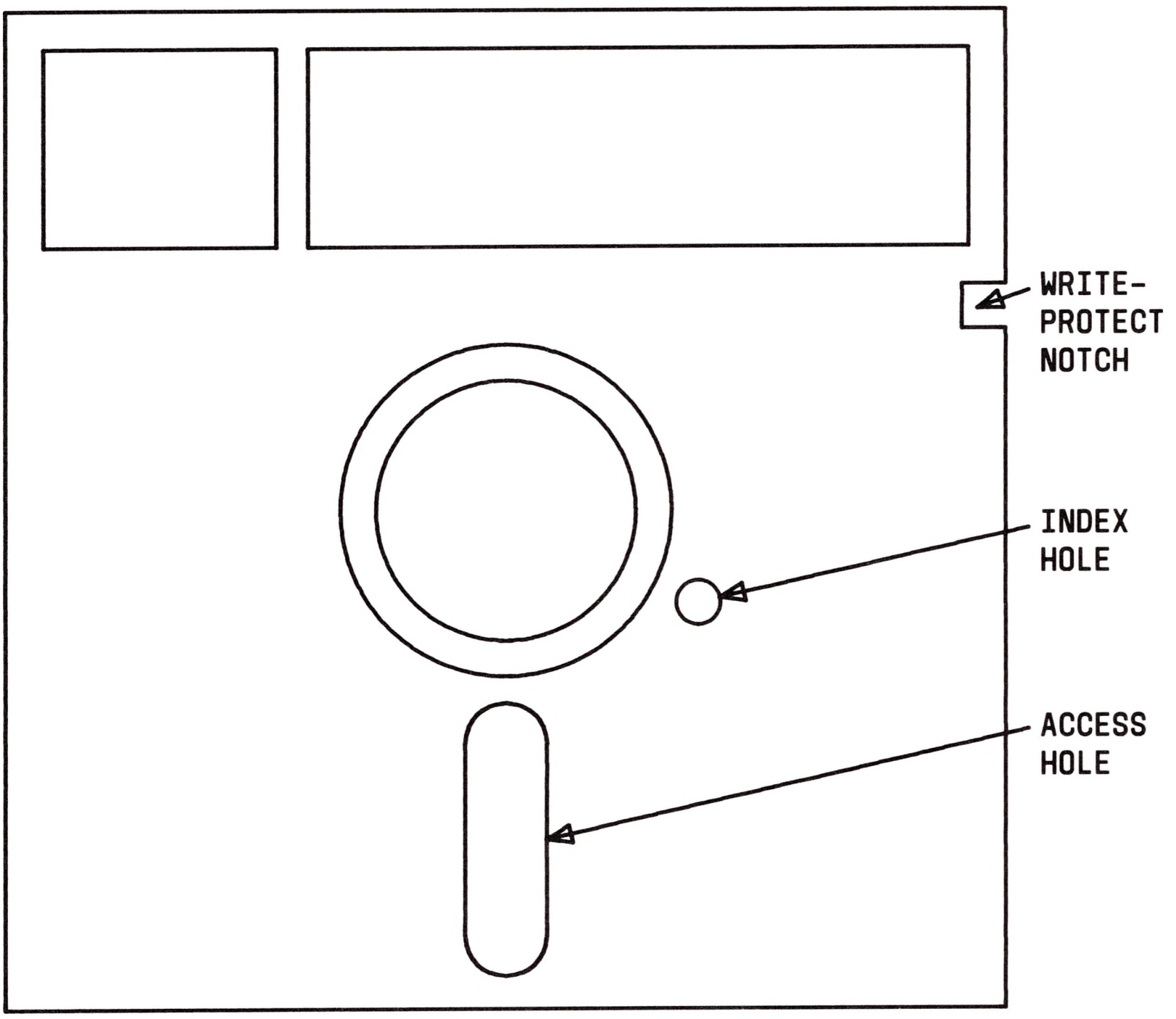
Applications

Applications are software packages written to help you with highly specialized tasks. These packages help you do these jobs more efficiently than you can do them with utilities. Even though applications are written to work with a specific operating system, you usually purchase them separately.

Application packages can help you with complicated tasks such as managing payroll and accounting, controlling large inventories, compiling statistics, printing reports, or preparing graphics for a presentation.

Diskettes

Diskettes are flexible magnetic disks that store your data. Because diskettes are flexible, they're often called floppy disks or floppies.



The Parts of a Diskette

Looking at a diskette, you can see that the 5¼-inch disk is enclosed in a protective (usually black) jacket. The inside of the jacket is lined with a felt-like material that traps dust and other small particles as the disk spins in a drive. On the average, a good-quality diskette has a life expectancy of well over 1,000 hours of use. However, some diskettes do fail unexpectedly. For this reason, it's a good idea to have some insurance—an extra copy of any diskette that contains data important to you.

In the center of both the disk and its jacket is a large hole through which the disk drive is able to spin your diskette.

Just below this large hole are smaller, oblong holes on both sides of the jacket. It's through these access holes that the disk drive reads from or writes to the diskette.

The much smaller hole to the right of the large middle hole is the index or timing hole. The disk drive uses this hole as a reference or starting point as it looks for data stored on the diskette.

Most diskettes have in the upper right-hand edge of the jacket a notch called the write-protect notch. When this notch is not covered, the disk drive can change the contents of the diskette. When you cover the notch with a write-protect tab (a supply usually comes with the diskettes), the disk drive cannot alter the contents of the diskette.

Without such a notch, your computer can't change a diskette's contents. For this reason, those diskettes that should never be altered (such as the operating system diskettes that came with your computer) have no write-protect notches.

Caring for Your Diskettes

Here are a few suggestions for helping you care for your diskettes and their contents. If you follow these suggestions, you'll help ensure a long life for your diskettes and their contents.

Do's for Diskettes

- Buy quality diskettes. Your files are too important to trust to "cheap" diskettes.

- Store diskettes upright in a protective box.

- Allow your diskettes to warm to room temperature before using them.

- Label your diskettes with a felt-tip pen. If you write on a label that's already on a diskette using a ball-point pen or a pencil, you'll damage the diskette.

- Copy diskettes often so you'll have an extra copy of the diskette in case the original is damaged.

- Always put diskettes back into their paper envelopes when you're finished with them. This protects them from dust and dirt, and prevents you from accidentally touching the exposed surface of the diskette.

Don'ts for Diskettes

- Don't touch the exposed (shiny) surface of the diskette.
- Don't expose diskettes to dust, dirt, or excessive smoke.
- Don't place heavy objects, such as books, on diskettes.
- Don't use paper clips or rubber bands to attach things to diskettes.
- Don't write on a diskette's label using a ball-point pen or pencil.
- Don't bend diskettes. If bent too far, a diskette's surface can crease permanently.
- Don't place diskettes where you can spill anything on them.
- Don't expose your diskettes to heat or direct sunlight.
- Don't expose your diskettes to magnetic fields.

A variety of appliances and devices such as fans, electric pencil sharpeners, copying machines, computer plotters, and even conventional telephones can generate magnetic fields. Such fields can erase your diskettes if placed too close to one of these devices.

Since diskettes are "portable" storage devices, you may often find it convenient to take them with you on trips. But beware! Airport metal detectors may erase diskettes. Play it safe and ask security personnel at airports to hand-inspect your diskettes.

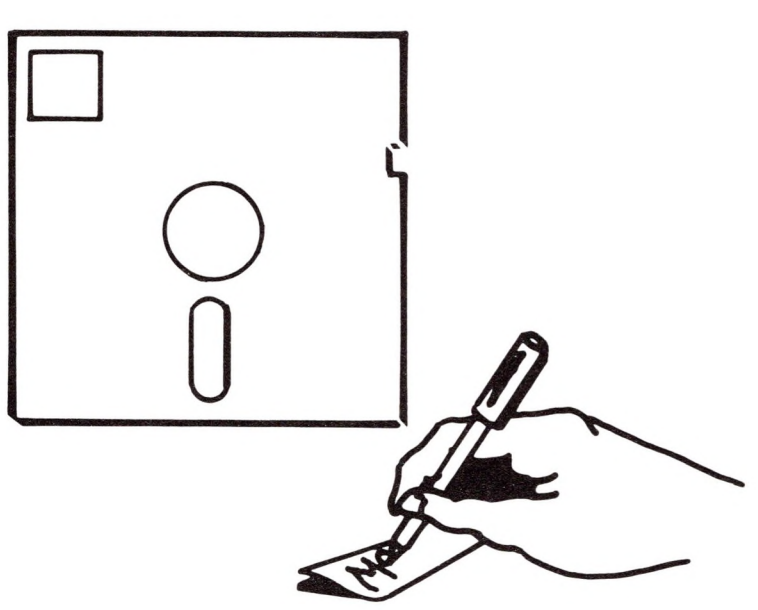
Labeling Diskettes

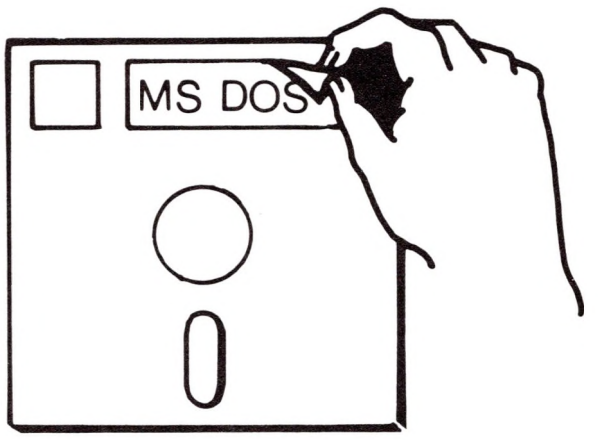
All unlabeled diskettes look alike. Therefore, it's important that you label your diskettes so you (and anyone else) will know their exact contents. Here are a few hints for labeling your diskettes:

- Avoid writing on a label already attached to a diskette. If you must do so, use a felt-tip pen. The sharp point of a pen or pencil could damage a diskette.

- Include the current date on a diskette's label. The date tells you how current the data on your diskette is. This information is especially useful when making copies of diskettes.

- Don't put new labels on top of old ones because they could come loose inside the drive. Peel off the old label before applying a new one. Before peeling off an old label, be sure the diskette is in its paper envelope. With this arrangement, you won't accidentally touch the surface of the diskette.

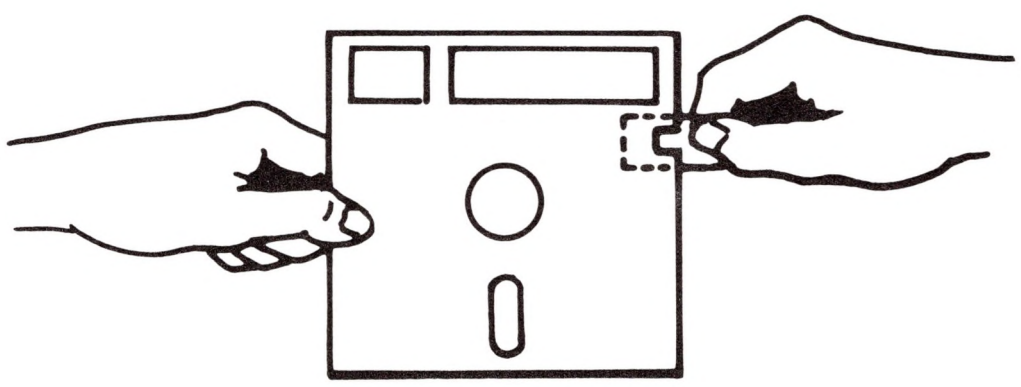




Write Protecting Diskettes

When you have data on a diskette that you don't want changed or erased, you'll want to write protect the diskette. The computer can only read from a write-protected diskette and cannot alter its contents in any way.

To write protect a diskette, peel a write-protect tab off the sheet supplied with each new carton of diskettes. Then fold the tab over the write-protect notch on the edge of the diskette.



To add or change some data on a write-protected diskette, just peel off the write-protect tab. After you've finished writing on the diskette, you can usually use the same tab again to write protect the diskette.

Diskettes, Drives, and Compatibility

If your PC 6300 PLUS has a 1.2-MB diskette drive, you'll probably be using both high-density and double-density diskettes. The high-density diskettes are for use only in 1.2-MB diskette drives, while double-density diskettes can be used both in 360-KB and 1.2-MB diskette drives.

Because these drives and their diskettes are not totally compatible, be sure you use the appropriate diskettes. MAXELL MD2-HD and DYSAN UHR II are two brands of high-density diskettes.

The main difference between these two diskette drives is the way they store information. The 1.2-MB drive stores data at a higher density than the 360-KB drive. Because of this, each disk drive has its own unique format for reading and writing to diskettes. A diskette's type and the drive in which it will be used determines how it should be formatted.

When formatting a high-density diskette, make sure you format it in a 1.2-MB diskette drive.

When formatting a double-density diskette, you can format it in either a 360-KB or a 1.2-MB diskette drive. But, if you format it in a 1.2-MB drive, you will not be able to use the diskette in a 360-KB drive. It will only be usable in a 1.2-MB drive.

Most commercial application programs are supplied on 360-KB formatted diskettes. For this reason, the 1.2-MB drive is designed to reliably *read* data from 360-KB formatted diskettes. This way, you will be able to load your application programs from your 1.2-MB drive.

The table below shows how the drives and diskettes should be used together.

	1.2-MB Diskette High-Density Format	**360-KB Diskette Double-Density Format**
1.2-MB Drive	Read or Write	**Read Only ***
360-KB Drive	**Do Not Use**	Read or Write

* If you use the 1.2-MB drive to *write* on a 360-KB formatted diskette, the information on the diskette will become unreadable by a 360-KB diskette drive. But, you can continue using the diskette in the 1.2-MB drive.

If you want, you can write protect your 360-KB diskettes so you don't accidentally write on them.

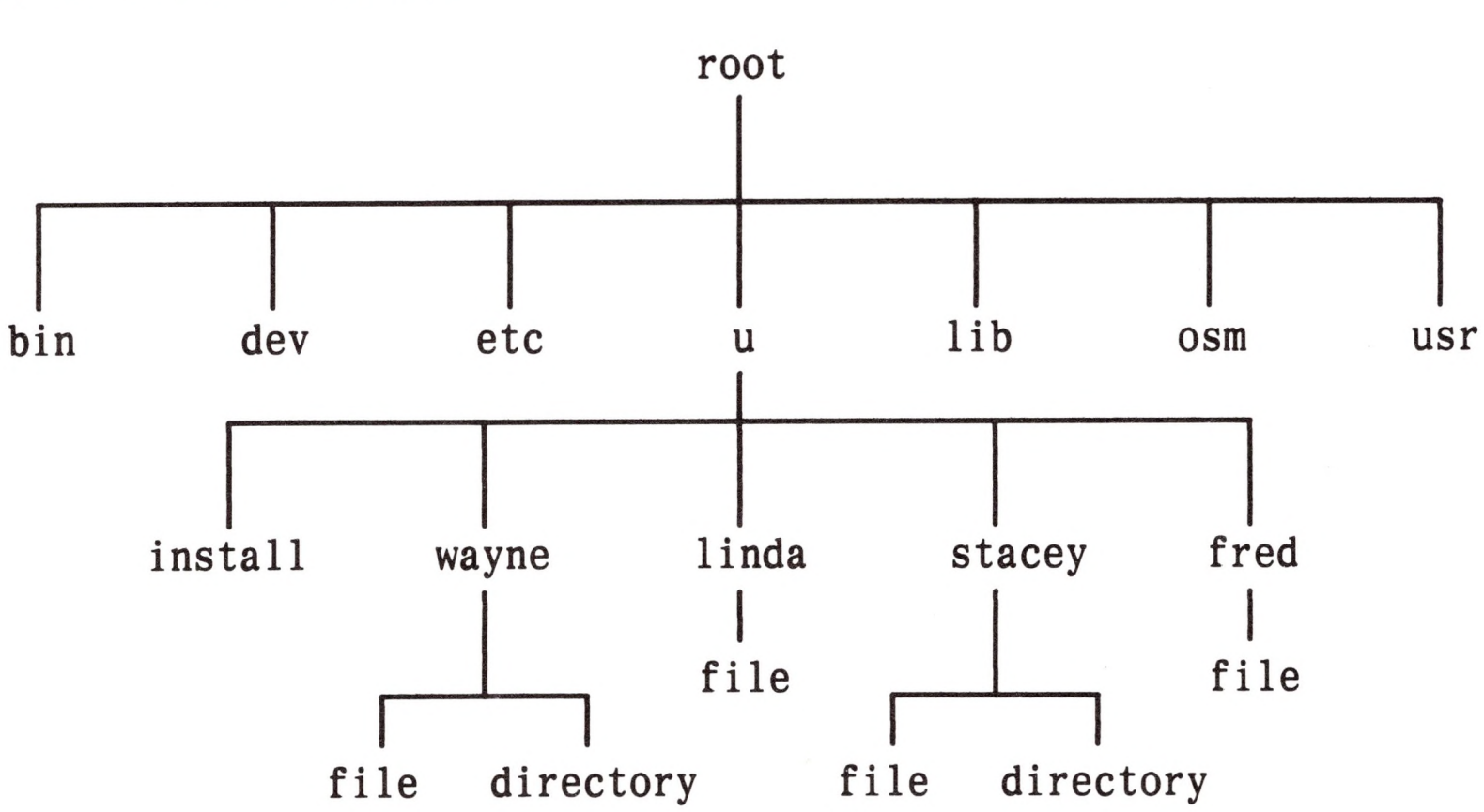
Directories

Imagine for a moment what your file cabinets would look like if you didn't organize them with file folders and drawers. Instead, you just piled paper into a drawer until it was full and then began filling up another one. Needless to say, you could never find anything.

The same is true for storage devices on computers. If you do not organize the information you store on a computer's disk, you'll waste a lot of time looking for files instead of working on them.

File cabinets are organized with drawers and file folders. The drawers and folders are given special names to help you organize your material so you can find information quickly. The same concept is used on computer disks, except computer disks use *directories* to organize your files. This means of organizing disk storage is used by both the MS-DOS and UNIX Operating Systems. And, it can be used on diskettes and hard disks.

The starting directory of a disk is called the **root** directory. The root directory can contain both files and other directories called *subdirectories.* And, these subdirectories can hold other files and other subdirectories.



This is really a very easy concept to learn. You can compare the structure with that of a family tree. The root directory can be thought of as the top of the family tree. Just as the founding parent can have several children, the root directory can have several subdirectories.

As the family tree grows, you could have several generations that could all be traced back to the founding parent. Again, the same is true for directories. Each child directory (subdirectory) has only one parent directory and, therefore, has only one given path all the way back to the top of the directory tree or root.

Getting Started
MS-DOS Only

L-244157-42

Two Diskettes

L-244157-42

3 Getting Started With MS-DOS—Two Diskette Drives

Getting Ready

The first thing you need to do before getting started with MS-DOS is to make sure your PC 6300 PLUS (with two diskette drives) is set up according to the directions in the *Installation Guide—AT&T Personal Computer 6300 PLUS.* Then you'll need:

- The "MS-DOS/GWBASIC System Diskette" and the "MS-DOS Supplemental Programs Diskette." You'll find these diskettes in a pocket at the rear of the *MS-DOS User's Guide.*

  The MS-DOS/GWBASIC System Diskette contains the MS-DOS Operating System and its utility programs. It also contains GWBASIC, an extensive implementation of the BASIC programming language.

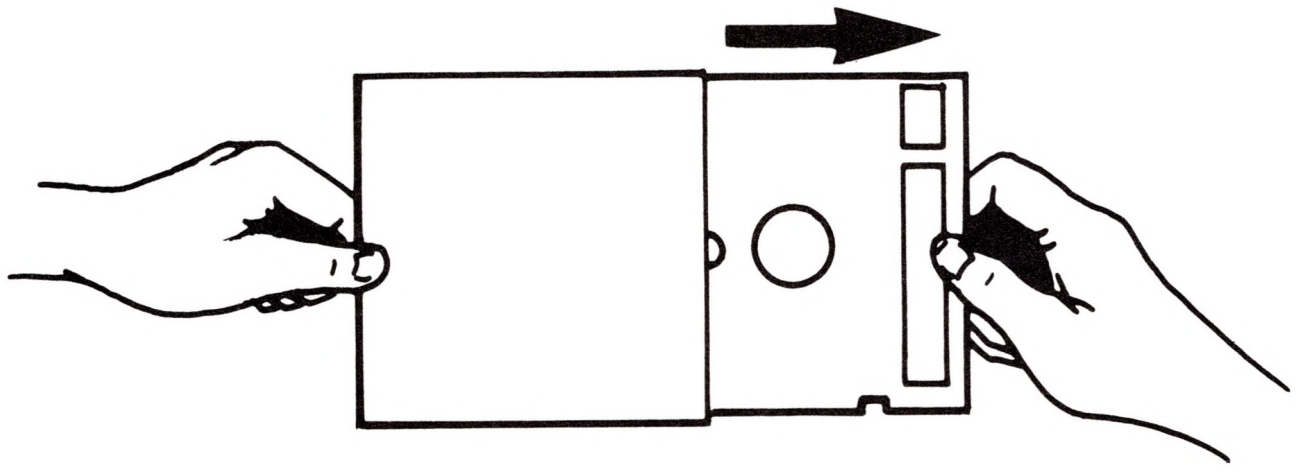
  The MS-DOS Supplemental Programs Diskette contains extra utility programs to help you perform specialized tasks.

- Two blank double-density (360-KB) diskettes.

- A felt-tip pen.

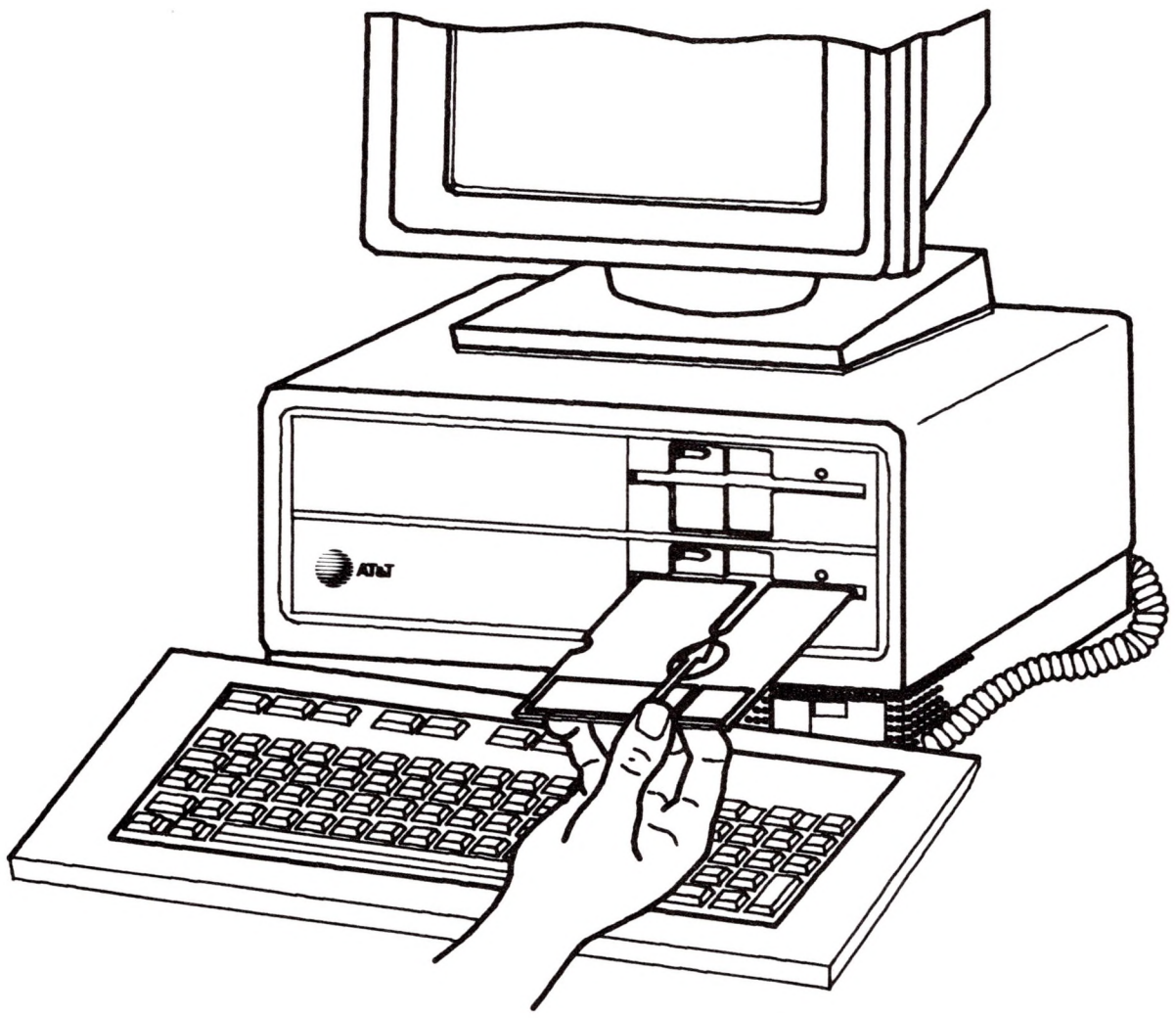
Inserting a Diskette

1 Remove the MS-DOS System Diskette from its paper envelope, holding it as shown below.

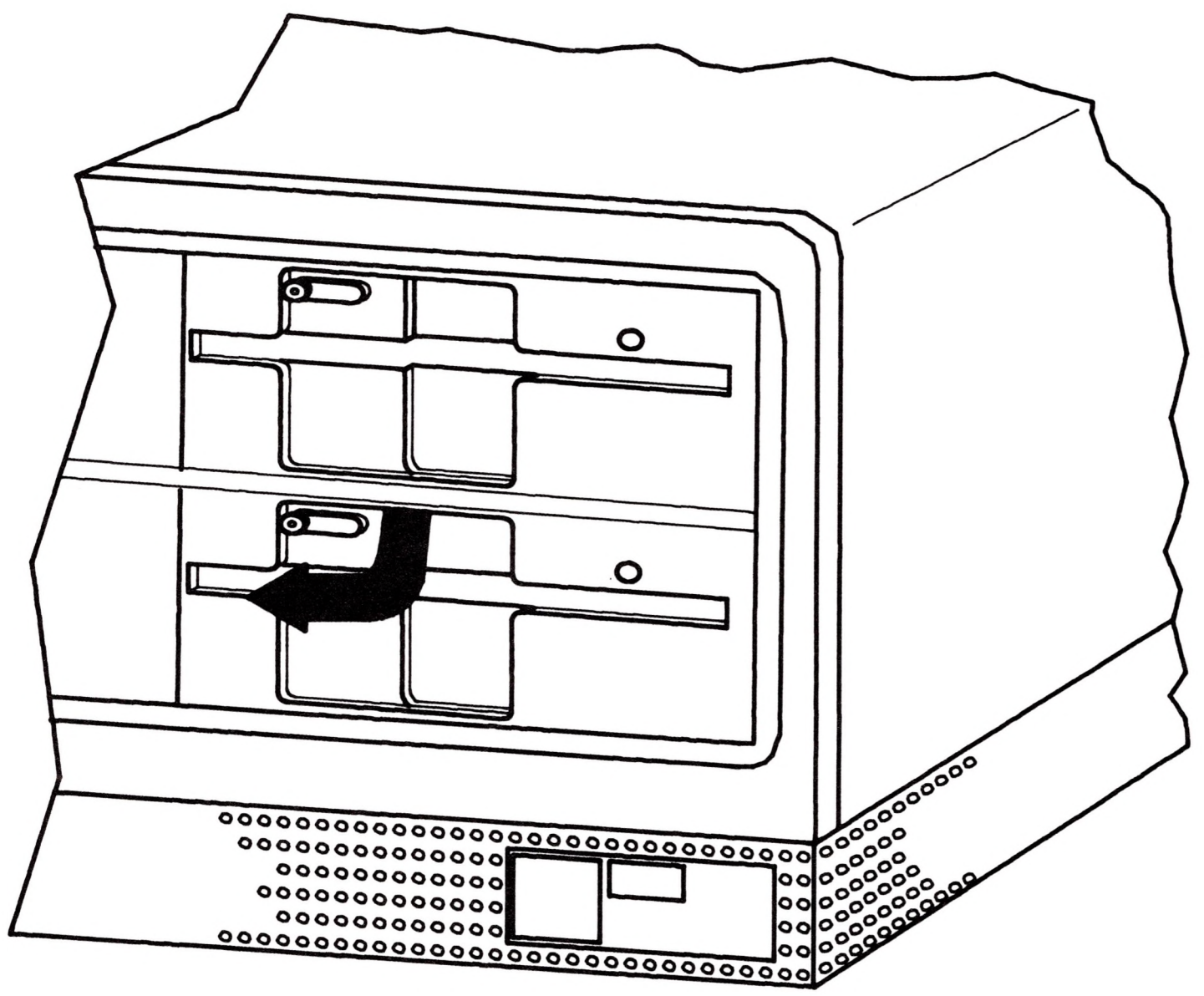


Note: Keep the paper envelope nearby. After you've finished using the diskette, you'll want to put it back in the envelope to protect it from dust and dirt.

2 Carefully insert the MS-DOS System Diskette (with the label facing up) all the way into drive A (lower drive).

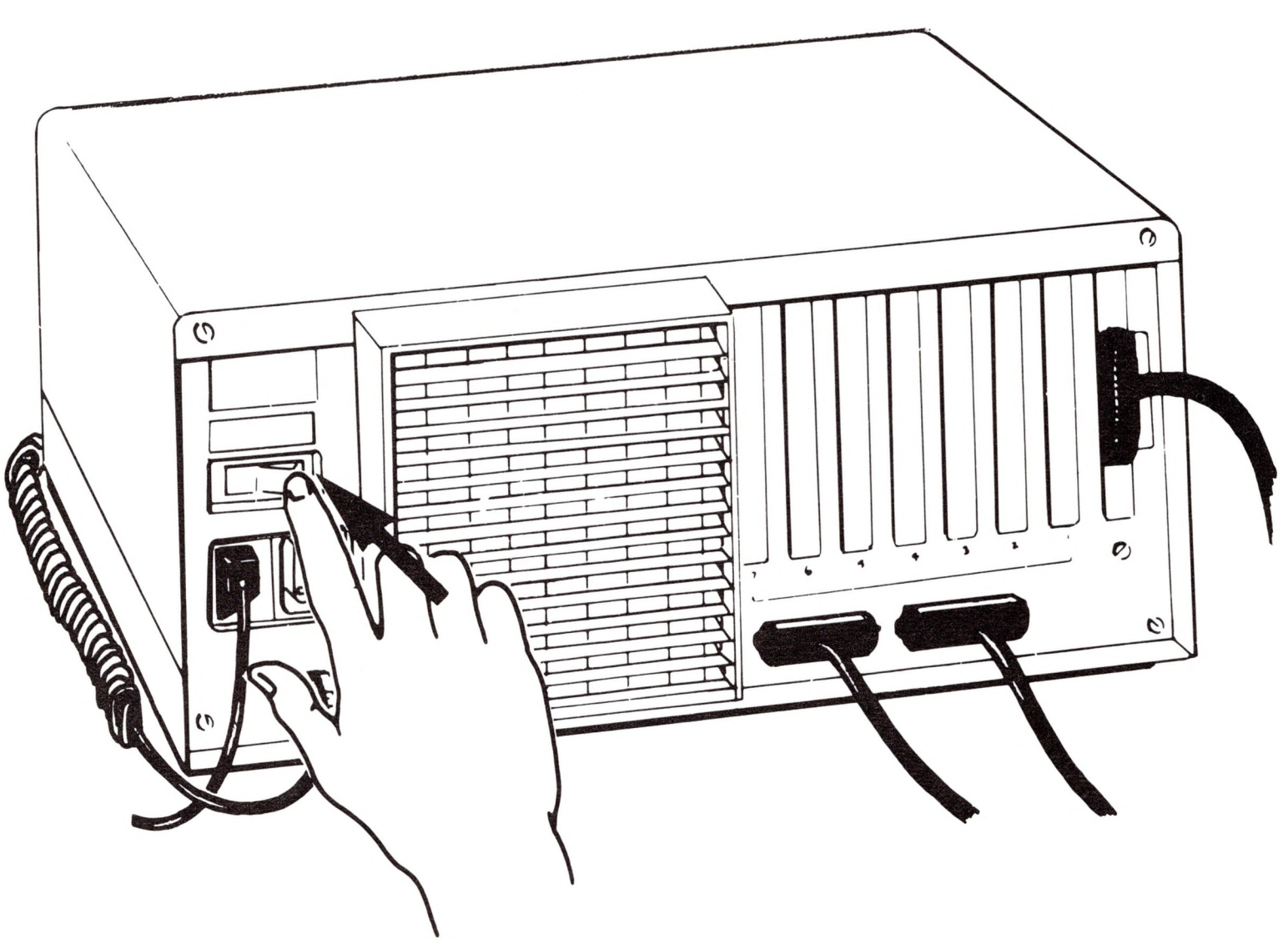


3 Lock the diskette in place by turning the lever on drive A downward.



Turning On Your Computer

1 Press the ON/OFF switch to turn on your computer. (If it's already on, press the RESET button on the front of the main unit.)



For several seconds after you turn on your computer, automatic tests are performed to make sure the computer's major components are working properly.

As the tests are completed, you'll see results similar to those shown below.

```
Resident Diagnostics
Vers x.x

CPU (i286)          Pass
ROM Module          Pass
DMA Timer           Pass
DMA Control         Pass
Interrupts          Pass
512 kb RAM          Pass
RT Clock            Pass
```

If any of the tests fail, contact your AT&T Personal Computer dealer or the AT&T Service Center.

The computer also checks the disk drives to see if they're ready for operation. When these checks have been completed, you'll see:

```
Fixed Disk          Not Present
Floppy (A:)         Ready
```

Note: **Do not** remove a diskette from the diskette drive while its red light is on. If you do, you could destroy data on the diskette. The light is on any time the computer is accessing the diskette drive.

After the computer reads the diskette and loads the MS-DOS Operating System into its memory, your screen should look like this:

```
AT&T Personal Computer MS-DOS 3.1, Release 1.0
Copyright (c) 1984 by AT&T, all rights reserved

Compatibility Software
Copyright (c) 1984 by Phoenix Software Associates Ltd.

A>
```

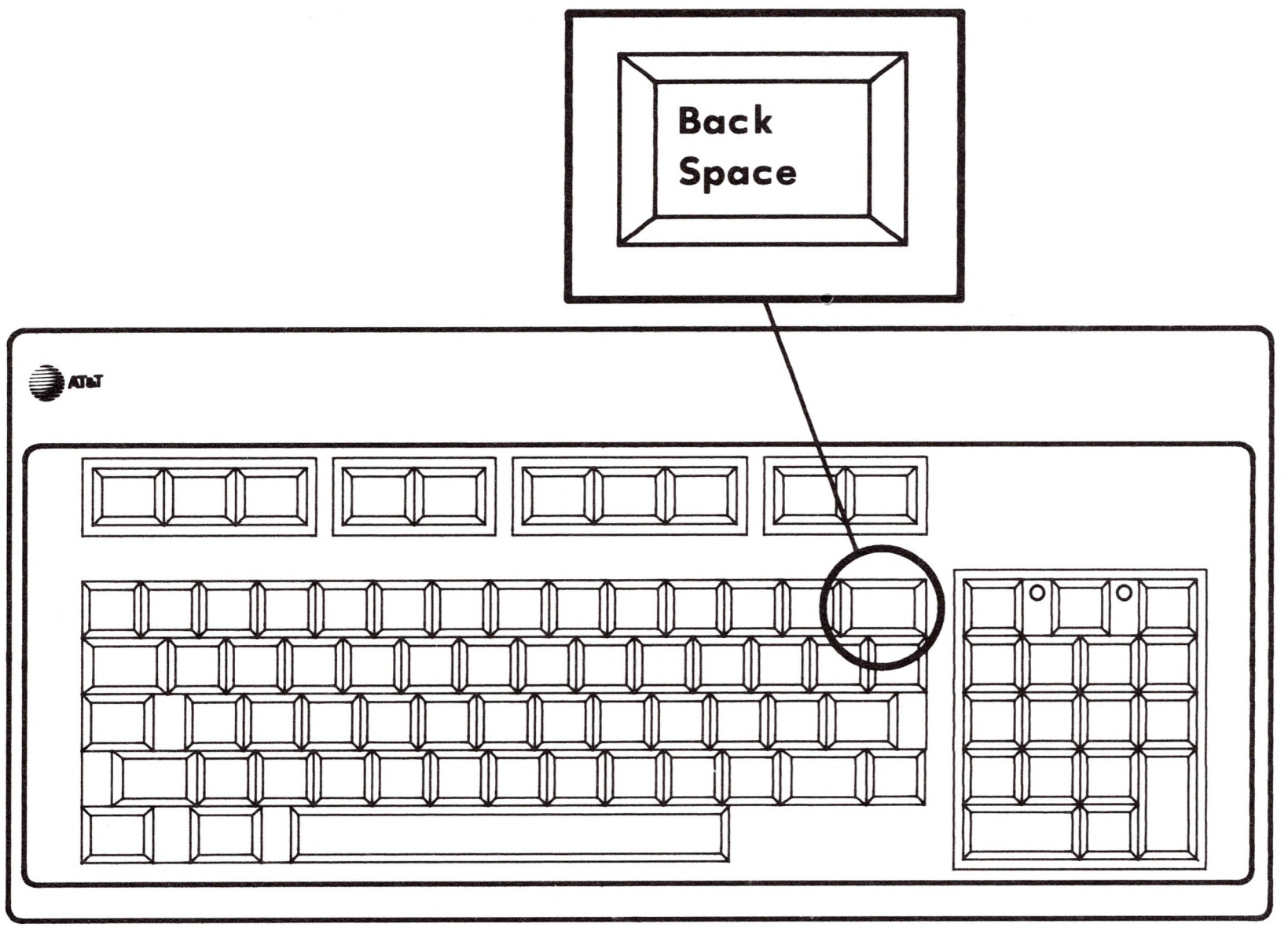
If your screen does not look like this or very similar to it, contact your AT&T Personal Computer dealer or your AT&T Service Center.

The **A>** on your display screen is an MS-DOS prompt. This prompt tells you that the computer is all set to receive your command. It also tells you from which drive the computer is currently working. This drive is known as the current or default drive. The **A>** means the computer is working from drive A, the lower drive.

The small blinking line to the right of the prompt is the cursor. The cursor shows where on the screen the next character you type will appear.

Correcting Typing Mistakes

In many instances, you'll be using your keyboard as you would a typewriter. And, you'll probably make typing mistakes from time to time. As long as you haven't pressed Return, you can easily correct the mistakes by pressing Back Space. Each time you press this key, you erase the character or space just to the left of the cursor. When you've finished erasing, type the correct character(s).



This brief exercise will help you understand how Back Space erases characters you've typed on the keyboard.

1 Type **dri**, but don't press Return. You'll see:

```
A>dri
```

2 Press Back Space three times. As you do, you'll see `i`, `r`, and `d` disappear from the screen.

If you had pressed Return without correcting the typing mistake, you would have seen:

```
A>dri
Bad command or file name

A>
```

This is MS-DOS's way of saying that it doesn't understand what you're telling it to do. After MS-DOS displays an error message, it gives you another chance to enter the command correctly.

Seeing What Is on the MS-DOS System Diskette

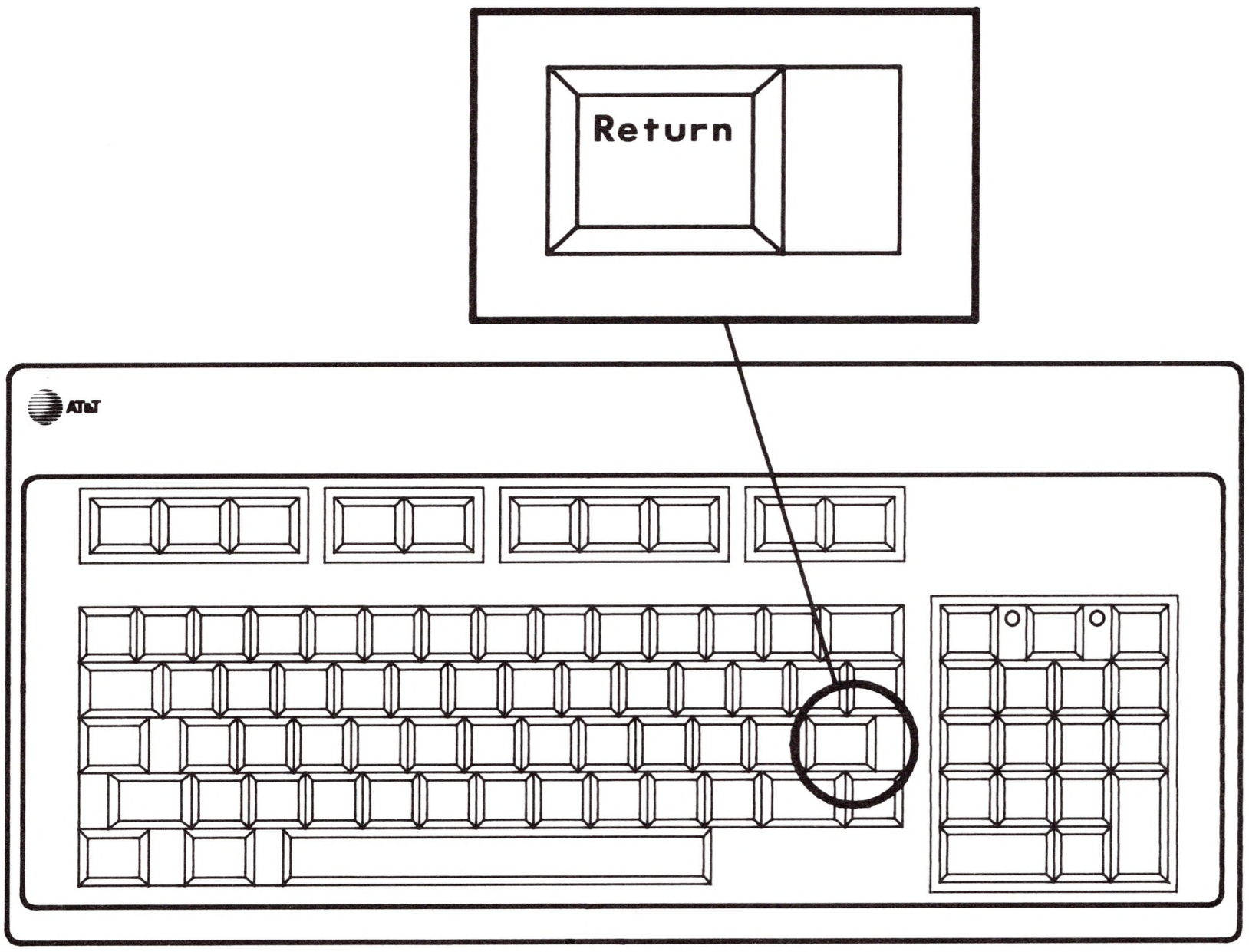
One of the most commonly used MS-DOS commands is the **dir** command. This command displays a "directory" of a diskette's contents.

1 Type **dir**.

On your screen, you'll see:

```
A>dir
```

2 Press Return.



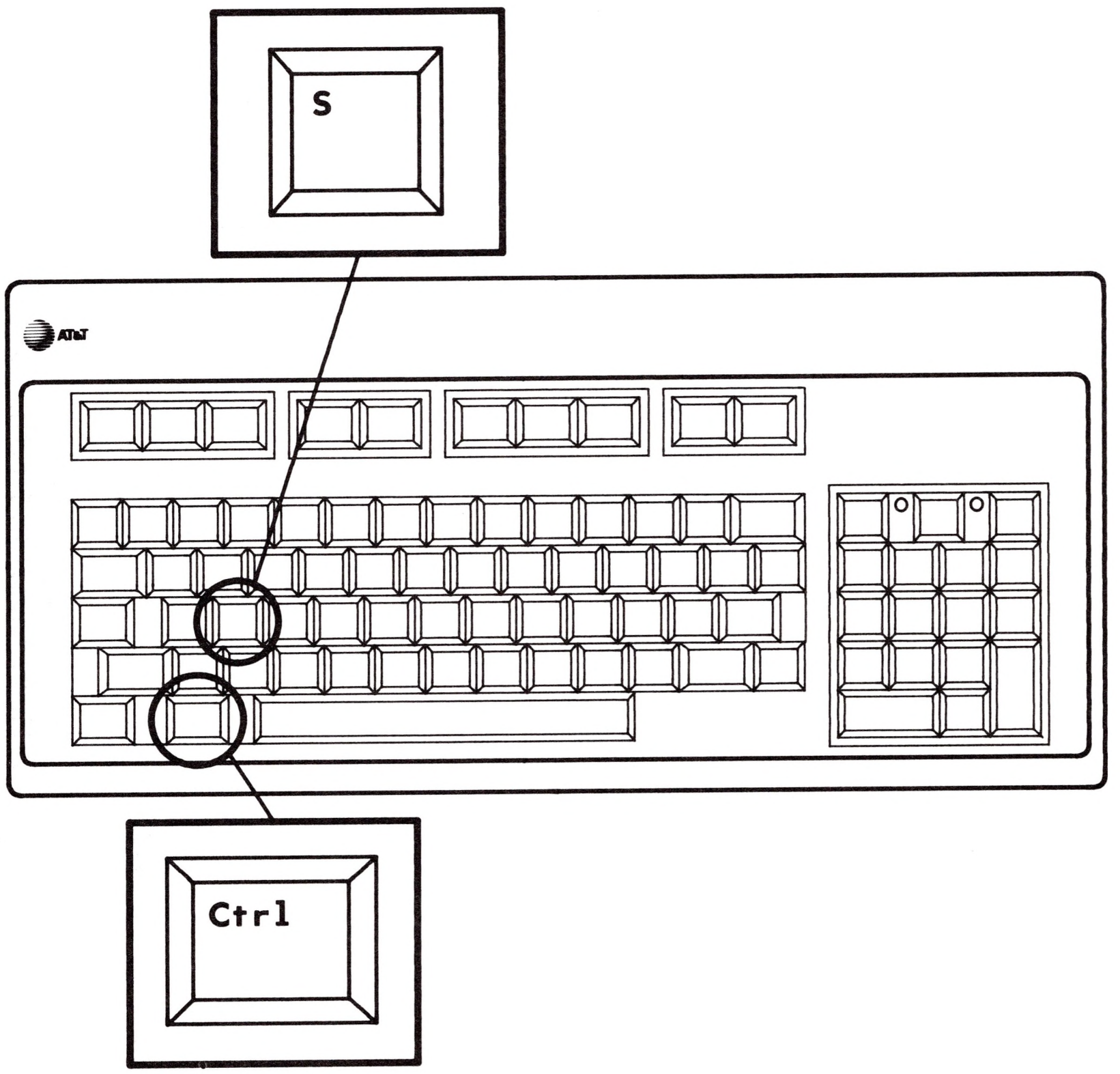
3 Watch your screen. The output of the **dir** command goes by quickly, so be ready.

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

COMMAND  COM    23210    7-01-85   12:00p
FORMAT   COM     9468    7-01-85   12:00p
SYS      COM     3008    7-01-85   12:00p
COMP     COM     2845    7-01-85   12:00p
.
.
.
BASIC    EXE     1201    7-01-85   12:00p
ANSI     SYS     2501    7-01-85   12:00p
RAMDISK  DEV      768    7-01-85   12:00p

      31 File(s)       52224 bytes free

A>
```

Some of the names and numbers on your screen may differ slightly from the above sample. But, you should see the same five columns, the line showing the number of files, and the prompt.

Stopping Information From Scrolling

Often when you enter a command such as **dir**, the information displayed on the screen goes by so fast that you can't read it. This movement of information down the screen is called scrolling. If information scrolls by before you can read it, you can temporarily stop the scrolling by pressing Ctrl and S at the same time. To start the scrolling again, just press any key such as Return or Space Bar.



Note: The computer won't do anything if you press Ctrl without pressing another key. Therefore, you can press and hold Ctrl before pressing the other key.

Let's try to stop the scrolling of the **dir** command. Be ready to perform Steps 1 through 3 quickly.

1 Type **dir** and press Return.

2 Press and hold Ctrl.

3 Press S when you want to stop the scrolling.

The scrolling should stop the instant Ctrl and S are pressed.

4 Press any key to start the information scrolling again.

The scrolling continues until the **dir** command has finished and the A> prompt appears.

You can stop and restart scrolling any number of times.

Setting the Date and Time

Your computer has both a calendar and a clock to keep track of the date and time. Certain programs use the calendar and the clock regularly, so it is important that they be kept up to date.

When you turn on your computer for the first time, you need to set the date and time. After this, a battery maintains the date and time so you don't have to reset them each time you turn on your computer. If your computer starts losing time, you can recharge the battery by leaving the computer turned on for a couple of days.

By the way, your computer's time is kept by a 24-hour (military) clock. This means that the afternoon (p.m.) hours are shown as 13 through 23. For example, what may be 2:00 p.m. to you is 14:00 (12+2=14) to your computer.

There are two different programs used to set the computer's date and time. These commands are appropriately named **date** and **time**.

Setting the Date

1 Type **date** and press Return.

```
A>date
Current date is Tue  9-18-1978
Enter new date (mm-dd-yy):
```

Here, the computer waits for you to enter the correct date.

The date is entered like this:

mm-dd-yy

Where:

mm	Month (1 - 12)
dd	Day (1 - 31)
yy	Year (80 - 99 or 1980 - 2099).

2 Type the correct date (don't forget the hyphens) and press Return.

3 Verify that the computer's date is correct by typing **date** again and pressing Return.

The date you entered in Step 2 should appear as the current date. If it doesn't, repeat Step 2.

4 Press Return to save the date shown on your screen.

Setting the Time

1 Type **time** and press Return.

```
A>time
Current time is 15:23:12.42
Enter new time:
```

Even though the time is displayed:

hours:minutes:seconds.tenth-seconds

the correct time is entered in hours and minutes like this:

HH:MM

Where:

HH Hour (0 - 23, add 12 to hour if p.m.)
MM Minute (0 - 59).

The seconds and tenth-seconds are reset to zero whenever a new date is entered.

2 Type the correct time (don't forget the colon) and press Return.

3 Verify that the computer's time is correct by typing **time** again and pressing Return.

The time you entered in Step 2 should appear as the current time. If it doesn't, repeat Step 2.

4 Press Return to save the time shown on your screen.

Selecting a Different Disk Drive

Quite often in your work, you'll need to switch from one disk drive to another. When switching disk drives, you can keep track of your current drive by looking at the prompt. The letter portion of the prompt indicates which disk drive is the current drive.

When you turn on your computer, drive A automatically becomes your computer's current drive. That's why you always put the MS-DOS System Diskette in drive A when you turn on your computer.

When you entered the **dir** command a few moments ago, the computer automatically looked at the diskette in drive A because drive A was the current drive. You could have checked the contents of a diskette in drive B by typing **b:** after the **dir** command (**dir b:**).

Similarly, you can change the current drive.

1 Type **b:** (don't forget the colon).

2 Press Return.

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

Notice the prompt changed to **B>** which means drive B, the upper drive, is now the current drive.

3 Type **a:** and press Return to change the current drive back to drive A.

Making Spare Copies of Diskettes

Whenever you have important data stored on a diskette, make a copy of the diskette in case the original diskette is damaged. This way, you can keep your original diskette for a spare and use the copy as your "working" diskette.

Before a diskette can store information, it must be formatted. The **diskcopy** command formats a diskette as it copies information from one diskette to another. **Diskcopy** is the simplest method of copying diskettes.

When copying a diskette with **diskcopy**, your new diskette must be the same type (double-density or high-density) as the original. In other words, if you're copying a double-density diskette, you must copy it to another double-density diskette. When copying a high-density diskette, copy to another high-density diskette.

Let's use **diskcopy** to make copies of your MS-DOS System Diskette and the MS-DOS Supplemental Programs diskette. Both of these diskettes are double-density (360-KB) diskettes.

1 Make sure the MS-DOS System Diskette is in drive A.

2 Type **diskcopy a: b:** and press Return.

```
A>diskcopy a: b:

Insert source diskette in drive A:
Insert target diskette in drive B:

Strike any key when ready . . .
```

3 Insert one of your blank, double-density diskettes into drive B (upper drive). This is your target diskette.

Your source diskette (MS-DOS System Diskette) is already in drive A.

4 Press Return to start copying the diskette.

Even though the computer told you to strike *any* key, you should always use Return or Space Bar because certain keys (such as Ctrl, Shift, Esc) are not recognized by the computer when pressed by themselves.

The following message appears:

```
Copying 40 tracks
9 Sectors/Track, 2 Sides
```

After the copy is completed, you'll see:

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

5 Type **y** (for Yes) if you want to make a copy of the MS-DOS Supplemental Programs Diskette.

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

Insert source diskette in drive A:
Insert target diskette in drive B:

Strike any key when ready . . .
```

6 Remove the original MS-DOS System Diskette from drive A and place it in its envelope. Since you now have a working copy of this diskette, return the original diskette to the rear of the *MS-DOS User's Guide* for safekeeping.

7 Remove the "working" copy of the MS-DOS System Diskette from drive B and place it in its envelope.

8 Prepare a label using a felt-tip pen. Your label should look something like this:

Working MS-DOS System Diskette
Version 3.1
Date

9 Attach the new label to your working diskette.

10 Take the MS-DOS Supplemental Programs Diskette from the rear of the *MS-DOS User's Guide* and insert it into drive A (lower drive). This is the source diskette.

11 Insert your other blank double-density diskette into drive B (upper drive). This is the target diskette.

12 Press Return to start copying the diskette.

The following message is displayed:

```
Copying 40 tracks
9 Sectors/Track, 2 Sides
```

After the copy is complete, this message appears:

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

13 Type **n** (for No).

The A> prompt appears.

14 Remove the original MS-DOS Supplemental Programs Diskette from drive A and place it in its envelope. Since you now have a working copy of this diskette, return the original diskette to the rear of the *MS-DOS User's Guide* for safekeeping.

15 Remove your "working" copy of the MS-DOS Supplemental Programs Diskette from drive B and place it in its envelope.

16 Prepare a label using a felt-tip pen. Your label should look something like this:

Working MS-DOS Supplemental Programs
Version 3.1
Date

17 Attach the new label to your working diskette.

You can also copy a diskette using the **format** and **copy** commands. These commands are discussed later in this chapter.

Starting the Computer With the Working Diskette

1 Turn off the computer.

2 Insert the working MS-DOS System Diskette into drive A.

3 Wait a few seconds and turn the computer on again.

When the `A>` prompt appears, you've successfully loaded MS-DOS from the working diskette. Your screen should look the same as it did when you started your computer with the original MS-DOS System Diskette.

If the working diskette doesn't give you the same responses as the original diskette, restart the computer using the original diskette. Then, attempt to make another working copy using a different blank double-density diskette.

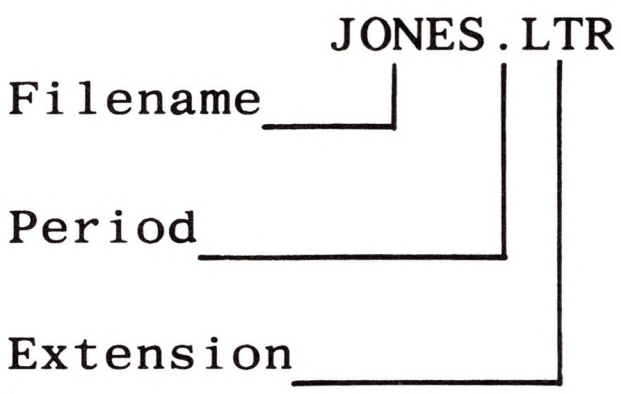
Naming MS-DOS Files

Each file on a diskette must have a unique filename so it can be identified by both you and the computer. When naming a file, use a name that will describe the contents of the file.

In MS-DOS, filenames are composed of one to eight characters with no spaces between the characters. If desired, a filename can also have an extension of one to three characters. Extensions must be separated from the main filename with a period (.). Valid characters for filenames and extensions are:

- Letters A to Z
- Numbers 0 to 9
- Characters ! @ # $ % ^ & ( ) - { } '

A typical filename is shown below:



There are two basic types of files:

- Program files
- Data files.

Program files contain instructions that tell the computer how to perform a certain task. Data files contain the information (data) used by program files.

For example, a file that contains a list of names and addresses is a data file. A file that can sort through this list and put it in alphabetical order is a program file.

Program files usually have a COM, EXE, or BAT extension. These three filename extensions are reserved exclusively for program files. Data files are not required to have extensions, but you can add them if you wish to further identify the contents of a data file.

For more information on the types of MS-DOS files and filenames, refer to the *MS-DOS User's Guide.*

Formatting a Diskette

Before you can use a new diskette, it must be prepared to accept data. This process is called formatting.

For the computer to be able to start from an MS-DOS diskette, it must contain special files called MS-DOS system files (these files are hidden from your view). You can put these files on a diskette by using the **/s** option with the **format** command or by using the **sys** command.

Typically, if a diskette is going to contain a program of any type, you should copy the MS-DOS system files to it. On the other hand, if you plan to use the diskette only to store data, leave the system files off and take advantage of the extra storage space.

> ***Note:*** You can always reformat old diskettes; but in so doing, you'll erase all the files on the diskette.

Formatting a Double-Density (360-KB) Diskette

1 Insert your MS-DOS System Diskette into drive A.

2 Type **format b: /s**. This command tells the computer to:

- Format the diskette in drive B (**b:**).
- Copy the system files to the diskette after it's formatted (**/s**). If you do not want the system files copied, leave the **/s** option off.

3 Press Return.

Your screen looks like this:

```
A> format b: /s

Insert new diskette for drive B:
and strike ENTER when ready
```

4 Insert a new double-density diskette into drive B and press Return.

As the diskette is being formatted, your screen displays:

```
Formatting...
```

After formatting is complete, the lights on the drives go out and your screen displays a message similar to this:

```
Formatting...Format Complete
System transferred
     362496 bytes total disk space
      60416 bytes used by system
     302080 bytes available on disk

Format another (Y/N)?
```

The screen above shows that 60416 bytes were used by the system files. If you didn't use the **/s** option, your screen will not look exactly like this.

5 Indicate if you want to format another diskette by typing **y** or **n**.

If you need to format a double-density (360-KB) diskette in drive A (1.2-MB drive), you must use the **/4** option with the **format** command (**format a: /4** or **format a: /4 /s**).
This tells the computer that the diskette in drive A should be formatted as a 360-KB diskette instead of a 1.2-MB diskette.

Formatting a High-Density (1.2-MB) Diskette

1 Insert your MS-DOS System Diskette into drive A.

2 Type **format a: /s**. This command tells your computer to:

- Format the diskette in drive A (**a:**).
- Copy the system files to the diskette after it's formatted (**/s**). If you do not want the system files copied, leave the **/s** option off.

3 Press Return.

Your screen looks like this:

```
A> format a: /s

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

4 Remove the MS-DOS System Diskette from drive A.

5 Insert a new high-density diskette into drive A and press Return.

As the diskette is being formatted, your screen displays:

```
Formatting...
```

After formatting is complete, the light on drive A goes out and your screen displays a message similar to this:

```
Formatting...Format Complete
System transferred
     1213952 bytes total disk space
       60416 bytes used by system
     1153036 bytes available on disk

Format another (Y/N)?
```

The screen above shows that 60416 bytes were used by the system files. If you didn't use the **/s** option, your screen will not look exactly like this.

6 Indicate if you want to format another diskette by typing **y** or **n**.

Copying Files

As you begin creating your own work on your computer, you'll occasionally need to make copies of your files.

In the following exercises, **oldfile**, **newfile**, and **filename** are only sample filenames. They do not exist on your diskettes.

Copying Files on the Same Diskette

To make a copy of a file on the same diskette, use a different filename for the new file. You might do this when you want to experiment on a file and you don't want to chance damaging the original.

1. Place the diskette in either diskette drive.

2. Make the diskette drive you choose in Step 1 your current drive.

3. Type **copy oldfile newfile** and press Return.

   The above **copy** command copies the file **oldfile** over to a file called **newfile**.

Copying Files From One Diskette to Another

Most of the time, you'll use the **copy** command to copy files from one diskette to another. You can copy individual files or all of the files to another diskette.

When copying from one diskette to another, the *source* diskette is the one you are copying from and the *target* diskette is the one you are copying to.

REMEMBER: You *cannot* use a 1.2-MB diskette in the 360-KB drive (drive B). In addition, if you must use a 360-KB diskette in the 1.2-MB drive (drive A), use it only for reading information. After using the 1.2-MB drive to write on a 360-KB diskette, the diskette can only be used in 1.2-MB drives.

The following table will help you decide which drive to use for your source and target diskettes when copying from one diskette to another.

Type of Copy	Source	Target
360 KB to 360 KB	Drive A	Drive B
360 KB to 1.2 MB	Drive B	Drive A
1.2 MB to 360 KB	Drive A	Drive B
1.2 MB to 1.2 MB	*	*

* To copy a file from one 1.2-MB diskette to another, you must first copy the file to a 360-KB diskette. Then copy the file from the 360-KB diskette to the other 1.2-MB diskette.

The following instructions show you how to copy from one 360-KB diskette to another.

To copy a file from one 360-KB diskette to another:

1 Insert the source diskette into drive A.

2 Insert the target diskette into drive B.

3 Type **copy a:filename b:** and press Return.

When the prompt appears, a copy of **filename** is present on the diskette in drive B. This new file has the same name as the original one because a new file name wasn't specified.

To copy all files from one 360-KB diskette to another:

1 Place the source 360-KB diskette into drive A.

2 Place the target diskette into drive B.

3 Type **copy a:*.* b:** and press Return.

The * is called a wild-card character. When the **copy** command is used with *.*, all files on the diskette are copied because the two asterisks match all filenames and extensions.

When the prompt appears, all of the files on the source diskette (drive A) have been copied to the target diskette (drive B).

The Difference Between Copy and Diskcopy

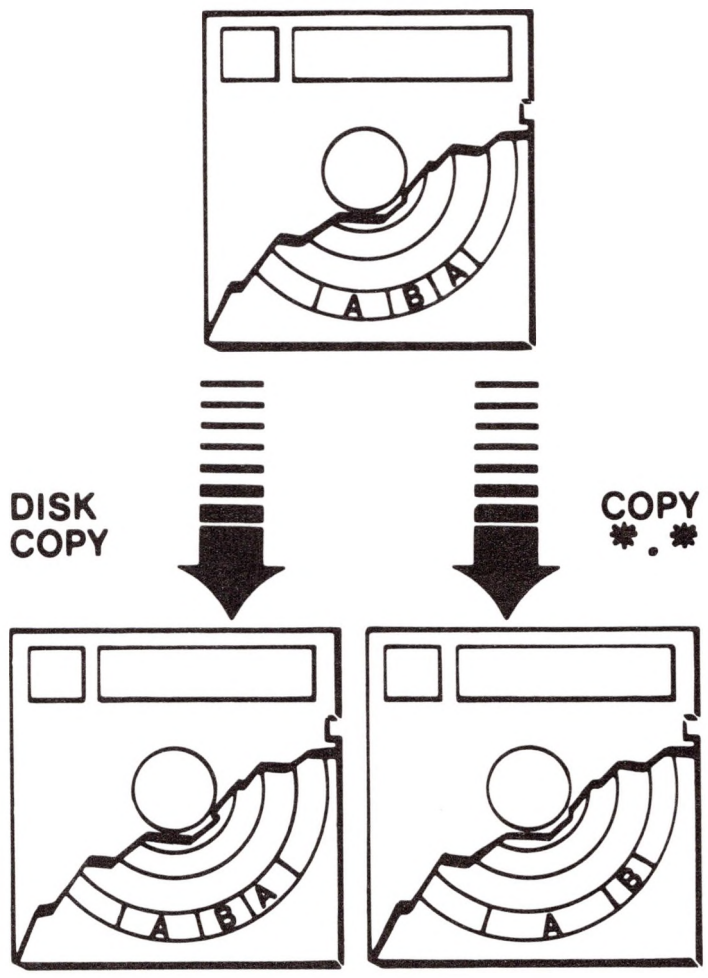
Although you can use both **diskcopy** and **copy** to make copies of your diskettes, there is an important difference. **Diskcopy** duplicates a diskette from beginning to end without regard to what is on the diskette. It produces an exact duplicate of the original diskette.

Copy, when used with *.*, copies all the files on a diskette, file by file, so that the contents of the diskette are the same, but the diskette is not an exact duplicate.

When you create a new file and put information into it, your computer allots enough space on the diskette for that file. Later, as you add information to the file, it becomes larger and may no longer fit into its allotted space. When the allotted space is full, the remaining part of the file is written into the next available space.

As you can see, after a while parts of your files can be spread over the entire diskette. It's similar to having a lot of papers from a report you're working on strewn all over your desk.

Diskcopy transfers the files to the new diskette just as broken up as they are on the original diskette. **Copy**, on the other hand, copies each file individually. It locates all of the separate parts of each file and then writes them as one continuous file.



Thus, your disk is reorganized for you automatically when you use **copy** to reproduce your diskettes and is, therefore, the procedure most experienced MS-DOS users prefer.

Deleting Files

Eventually you'll want to erase old, unwanted files to free up space for new files on a diskette.

It's a good idea to periodically review your diskettes for old or duplicate files. A diskette with many versions of a file can be confusing. You can delete individual files, or you can delete all the files on a diskette.

To delete an individual file from a diskette:

1. Insert the diskette that contains the file to be deleted into drive A. (Make sure it is not write protected.)

2. Make sure that drive A is the current drive (`A>` prompt).

3. Type **`del filename`** and press Return to delete the file **`filename`**.

   When the prompt reappears, **`filename`** has been deleted from the diskette in drive A.

To delete all files from a diskette, you can use *.* just as you would when copying all files from one diskette to another. But beware! If you have any files on the diskette that you want to keep, you can't restore them once they've been deleted.

1 Insert the diskette containing the files to be deleted into drive A. (Make sure it is not write protected.)

2 Make sure that drive A is the current drive (A>).

3 Type **del *.*** and press Return.

Since this is a potentially dangerous command, you're asked if you really want to do this:

```
A>del *.*

Are you sure (Y/N)?
```

4 Type **y** and press Return if you're sure this is what you want to do.

When the prompt reappears, the diskette in drive A is empty and all the information that was on it is gone.

Running Application Programs

Application programs are written by individuals or software vendors to provide software packages that help you with specific jobs. These jobs can range from simple word processing to controlling a complex inventory. With thousands of MS-DOS application programs available, you'll probably find many that can help you do your job more efficiently.

To run an MS-DOS application program on your computer, you must load MS-DOS. There are several different ways to do this.

One alternative is to insert your MS-DOS System Diskette into drive A and turn on the computer. This loads MS-DOS. Then remove the DOS diskette from drive A and insert your application diskette. Using this method limits your use of MS-DOS utilities with your application.

A second alternative is to load MS-DOS as above, but leave the MS-DOS System Diskette in drive A. You could then insert the application diskette in drive B. If you do this, change your current drive from A to B by typing **b:** and pressing **Return**. Using this method gives you full access to the MS-DOS utilities in drive A.

A third way to run an MS-DOS application program is to format a diskette using the MS-DOS format command with the **/s** option. (This copies the MS-DOS system files over to the diskette after the diskette is formatted.) Then copy the application software and any other programs you'll need to this diskette. (The **format** and **copy** commands were described in earlier sections.) After doing this, you could insert this diskette into drive A, turn on the computer to load MS-DOS, and then load the application from the same diskette. Using this method is convenient, but it will limit your use of the MS-DOS utilities.

Consult the documentation that comes with the application software for specific loading and operating instructions.

Where Do You Go From Here?

Now that you've completed this tutorial on Getting Started With MS-DOS, you're ready to explore new horizons.

To learn more about the MS-DOS Operating System, go to the *MS-DOS User's Guide.* This guide gives you an in-depth look at the operating system, its commands, and its error messages.

If you want to write your own programs, refer to the *GWBASIC Programmer's Guide.* This guide tells you how to write simple BASIC programs, and then teaches you the more advanced concepts of BASIC programming.

In addition, there are application programs. Remember that most application software comes on 360-KB diskettes. And, if you write on these diskettes with your 1.2-MB drive, you'll only be able to use the diskettes in a 1.2-MB drive. If desired, you can write protect your diskettes to keep you from accidentally writing on them.

Hard Disk

L-244157-42

4 Getting Started With MS-DOS—Hard Disk Drive

Getting Ready

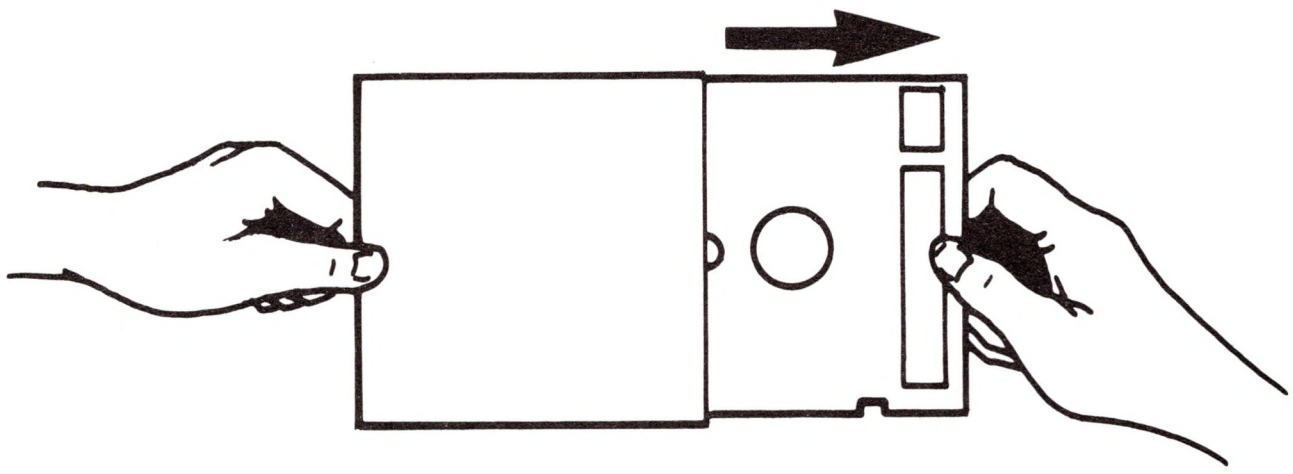
The first thing you need to do before getting started with MS-DOS is to make sure your PC 6300 PLUS (with a diskette drive and a hard disk drive) is set up according to the directions in the *Installation Guide—AT&T Personal Computer 6300 PLUS.* Then you'll need the "MS-DOS/GWBASIC System Diskette." You'll find this diskette in a pocket at the rear of the *MS-DOS User's Guide.*

The MS-DOS/GWBASIC System Diskette contains the MS-DOS Operating System and its utility programs. It also contains GWBASIC, an extensive implementation of the BASIC programming language.

> ***Note:*** If your PC 6300 PLUS has a 1.2-MB diskette drive, make sure you understand how the 1.2-MB diskette drive can be used with both high-density (1.2-MB) and double-density (360-KB) diskettes. If you have any doubts, read the section "Diskettes, Drives, and Compatibility" in the chapter "Getting to Know Your PC 6300 PLUS."

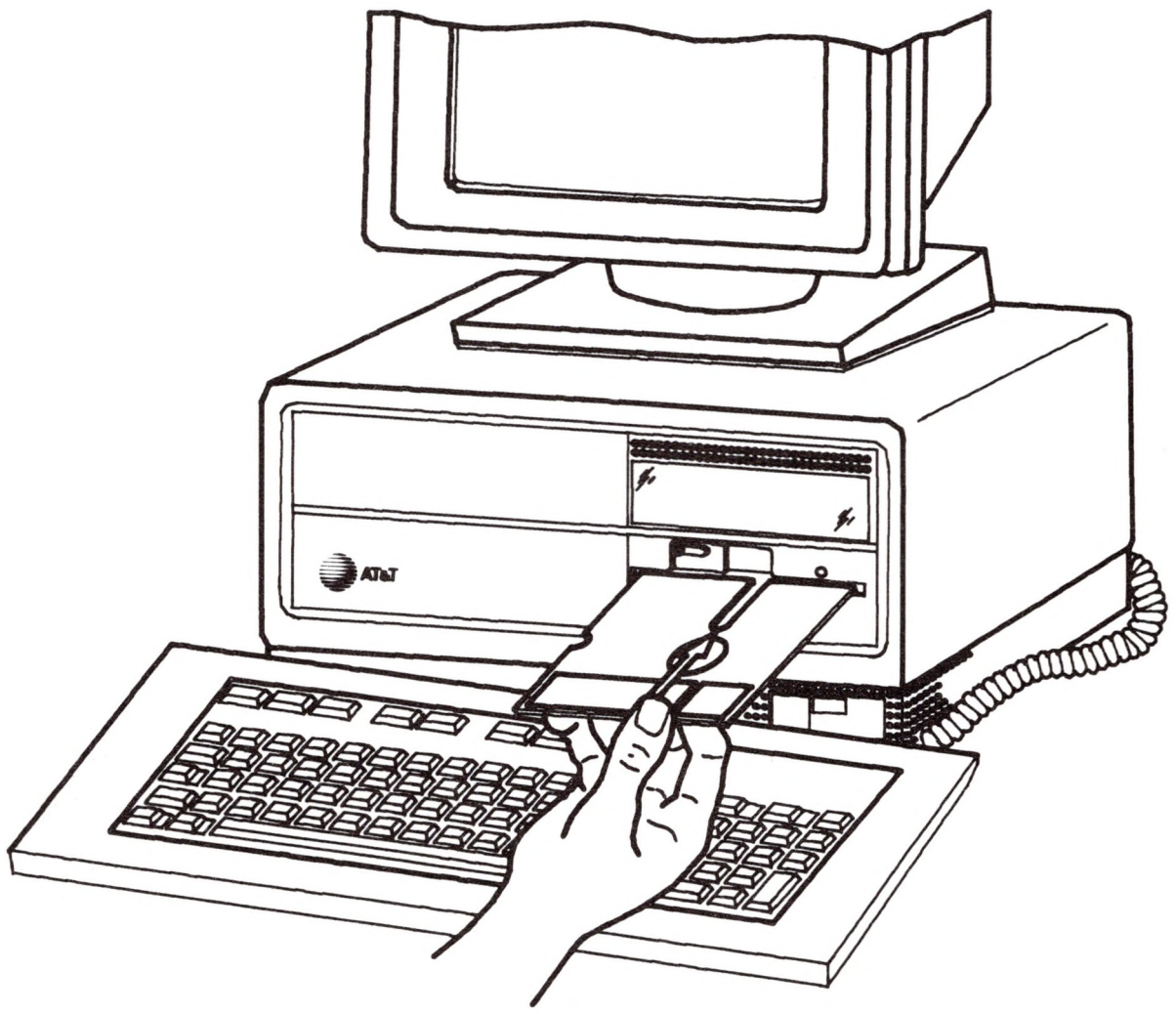
Inserting a Diskette

1 Remove the MS-DOS System Diskette from its paper envelope, holding it as shown below.

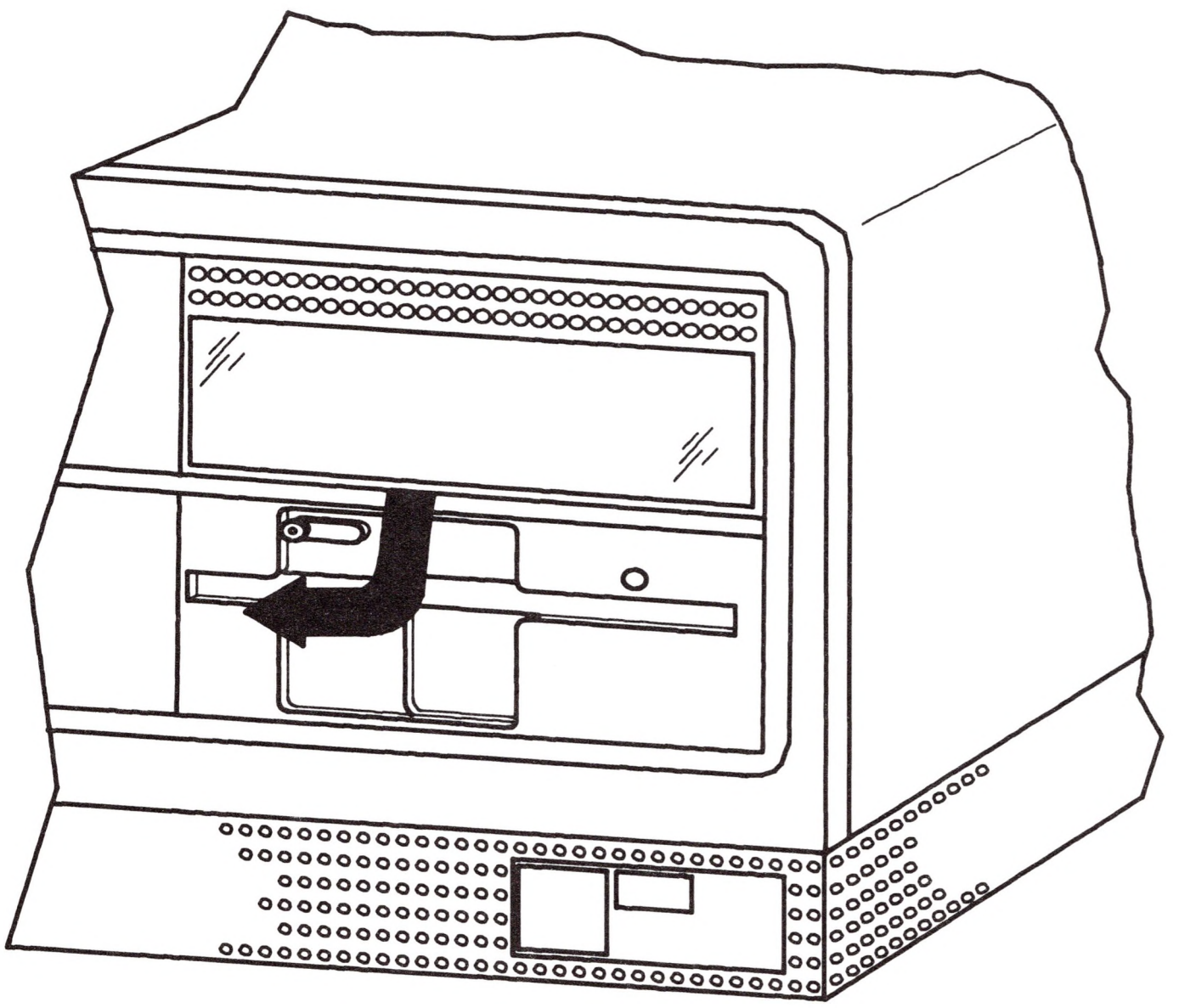


Note: Keep the paper envelope nearby. After you've finished using the diskette, you'll want to put it back in the envelope to protect it from dust and dirt.

2 Carefully insert the MS-DOS System Diskette (with the label facing up) all the way into the diskette drive.

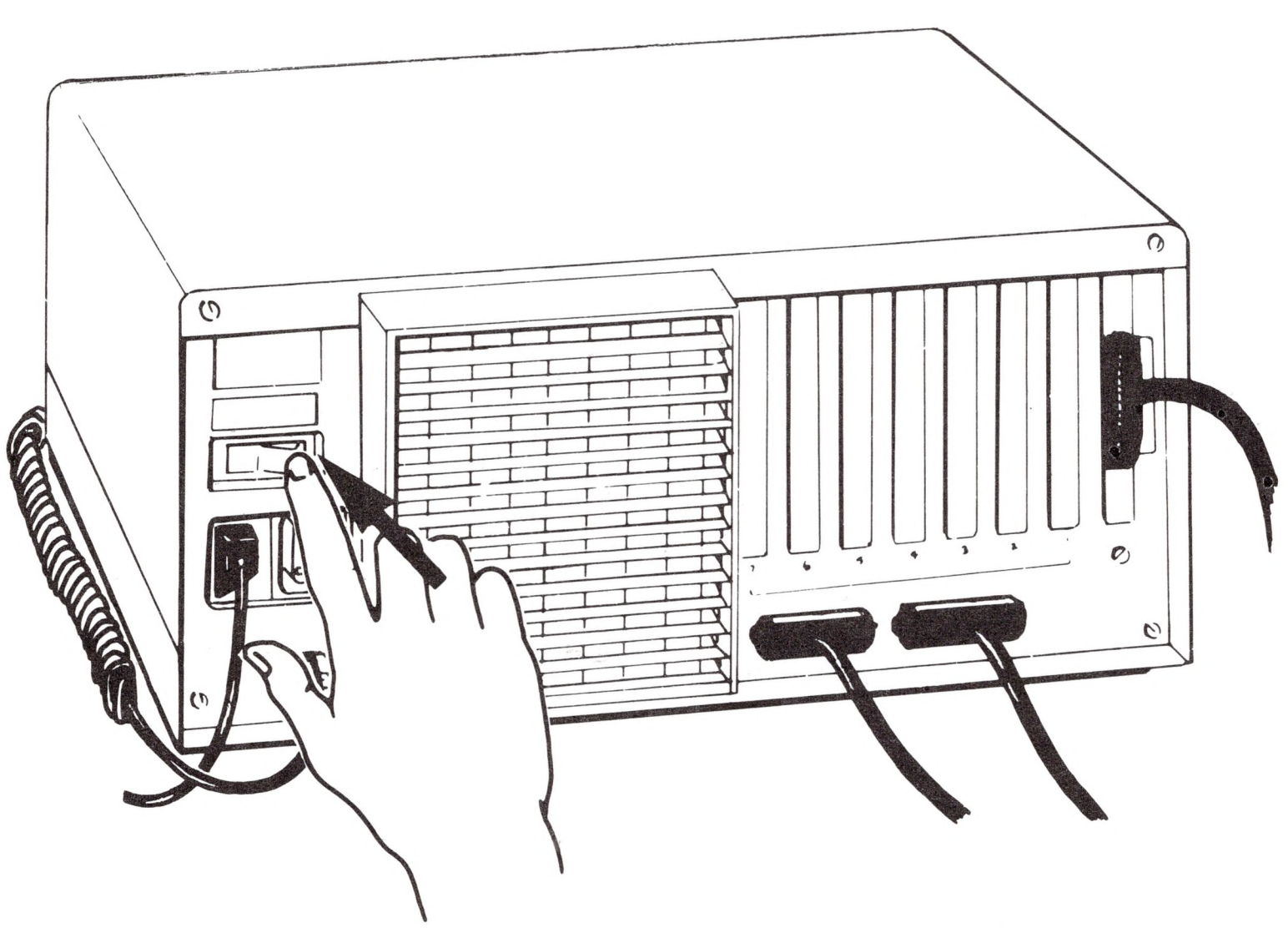


3 Lock the diskette in place by turning the lever on the diskette drive downward.



Turning On Your Computer

1 Press the ON/OFF switch to turn on your computer. (If it's already on, press the RESET button on the front of the main unit.)



For several seconds after you turn on your computer, automatic tests are performed to make sure the computer's major components are working properly.

As the tests are completed, you'll see results similar to those shown below.

```
Resident Diagnostics
Vers x.x

CPU (i286)          Pass
ROM Module          Pass
DMA Timer           Pass
DMA Control         Pass
Interrupts          Pass
512 kb RAM          Pass
RT Clock            Pass
```

If any of the tests fail, contact your AT&T Personal Computer dealer or the AT&T Service Center.

When the tests have been completed, the red light on the hard disk drive comes on followed by the red light on the floppy disk drive. This indicates that the computer is checking to see if the drives are ready for operation.

When the disk drive checks have been completed, you'll see:

```
Fixed Disk      1 Ready
Floppy (A:)      Ready
```

Note 1: **Do not** remove a diskette from the diskette drive while its red light is on. If you do, you could destroy data on the diskette. The light is on any time the computer is accessing the diskette drive.

Note 2: **Do not** turn the computer off if the hard disk drive's red light is on. If you do, you could damage data on the hard disk. This light is on any time the computer is accessing the hard disk.

After the computer reads the diskette and loads the MS-DOS Operating System into its memory, your screen should look like this:

```
AT&T Personal Computer MS-DOS 3.1 Release 1.00
Copyright (c) 1985 by AT&T, all rights reserved

Compatibility Software
Copyright (c) 1985 by Phoenix Software Associates Ltd.

A>
```

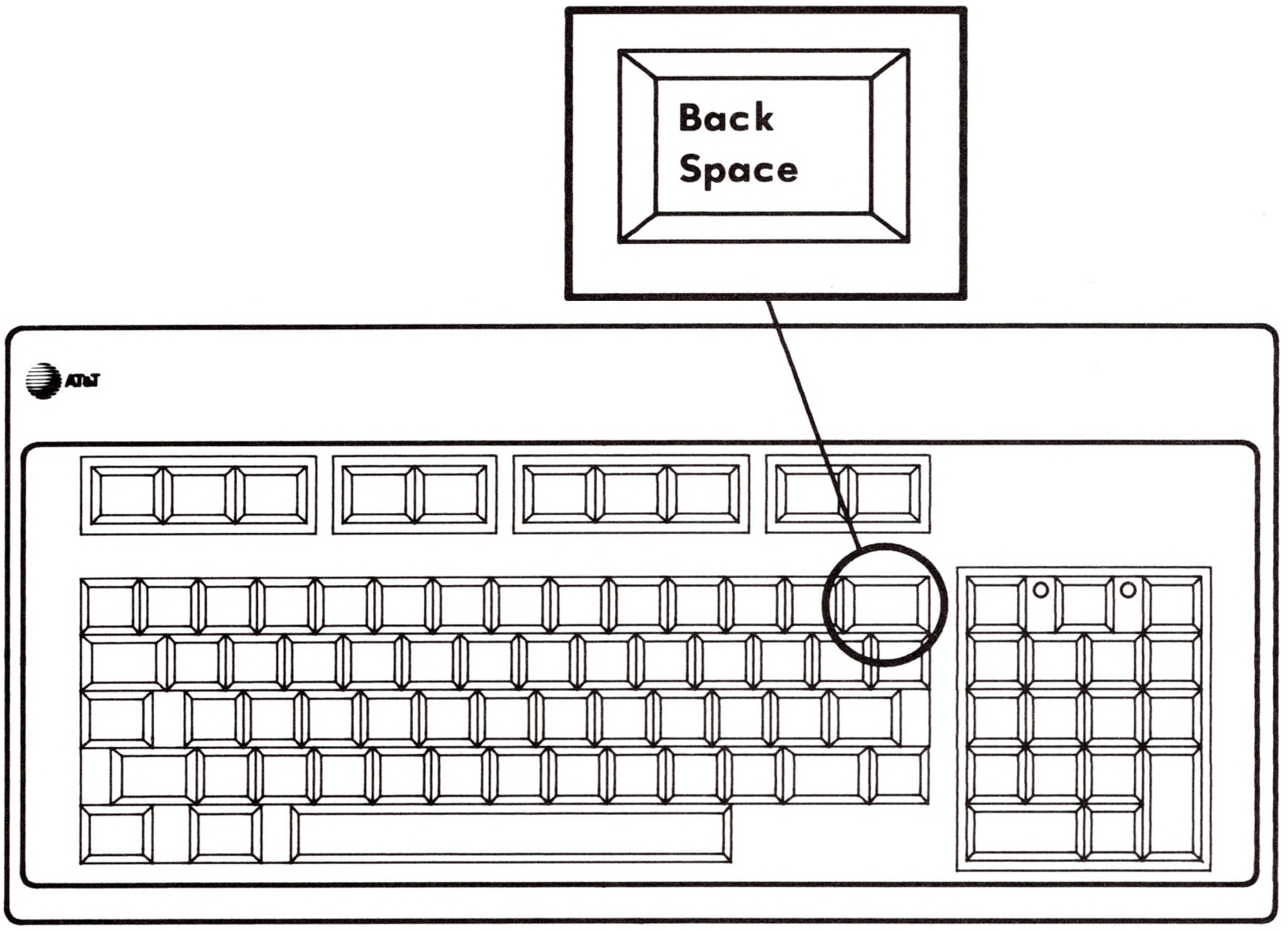
If your screen does not look like this or very similar to it, contact your AT&T Personal Computer dealer or your AT&T Service Center.

The `A>` on your display screen is an MS-DOS prompt. This prompt tells you that the computer is all set to receive your command. It also tells you from which drive the computer is currently working. This drive is known as the current or default drive. The `A>` means the computer is working from drive A, the lower drive.

The small blinking line to the right of the prompt is the cursor. The cursor shows where on the screen the next character you type will appear.

Correcting Typing Mistakes

In many instances, you'll be using your keyboard as you would a typewriter. And, you'll probably make typing mistakes from time to time. As long as you haven't pressed Return, you can easily correct the mistakes by pressing Back Space. Each time you press this key, you erase the character or space just to the left of the cursor. When you've finished erasing, type the correct character(s).



This brief exercise will help you understand how [Back Space] erases characters you've typed on the keyboard.

1 Type **dri**, but don't press [Return]. You'll see:

```
A>dri
```

2 Press [Back Space] three times. As you do, you'll see `i`, `r`, and `d` disappear from the screen.

If you had pressed [Return] without correcting the typing mistake, you would have seen:

```
A>dri
Bad command or file name

A>
```

This is MS-DOS's way of saying that it doesn't understand what you're telling it to do. After MS-DOS displays an error message, it gives you another chance to enter the command correctly.

Seeing What Is on the MS-DOS System Diskette

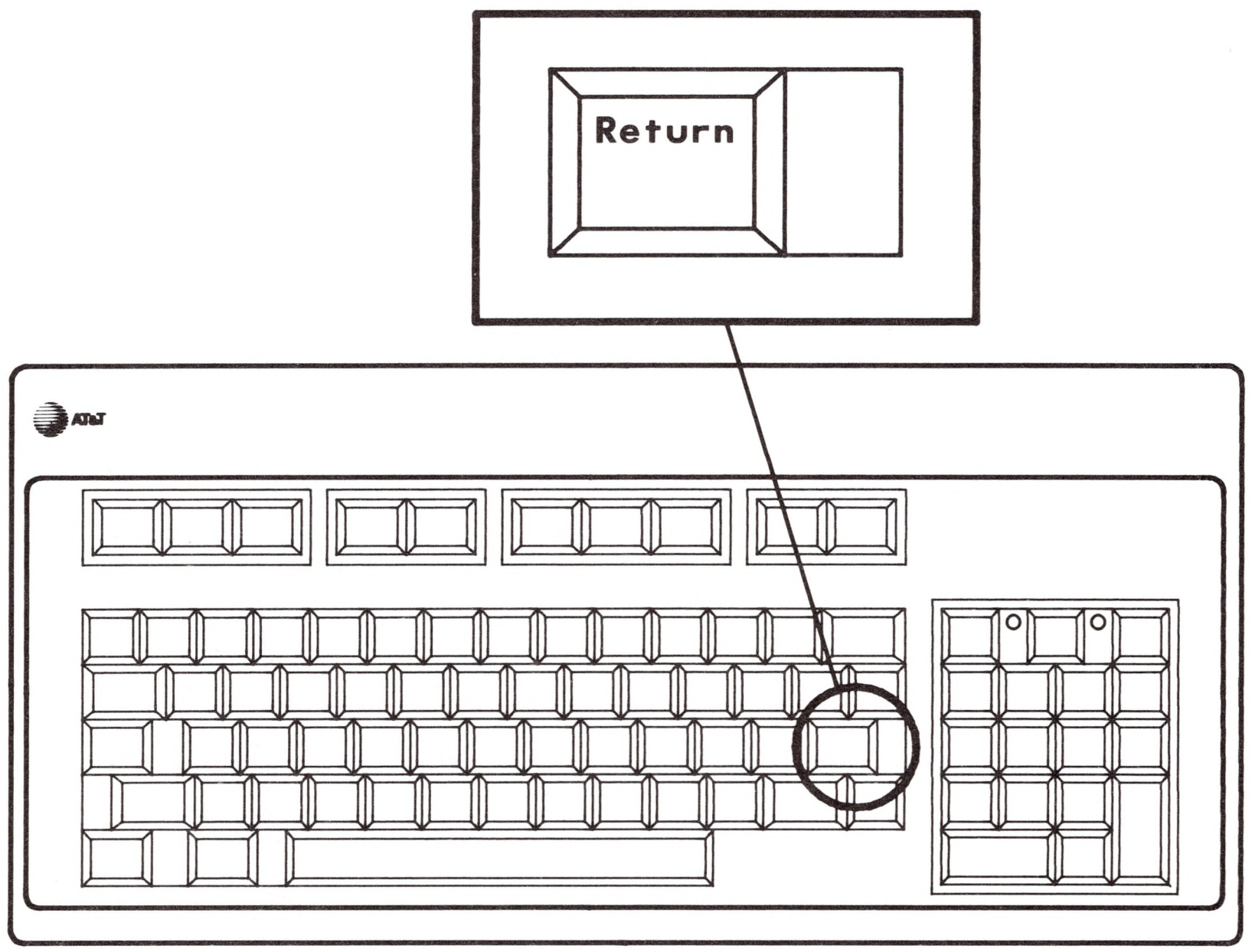
One of the most commonly used MS-DOS commands is the **dir** command. This command displays a "directory" of a diskette's or hard disk's contents.

1 Type **dir**.

On your screen, you'll see:

```
A>dir
```

2 Press Return.



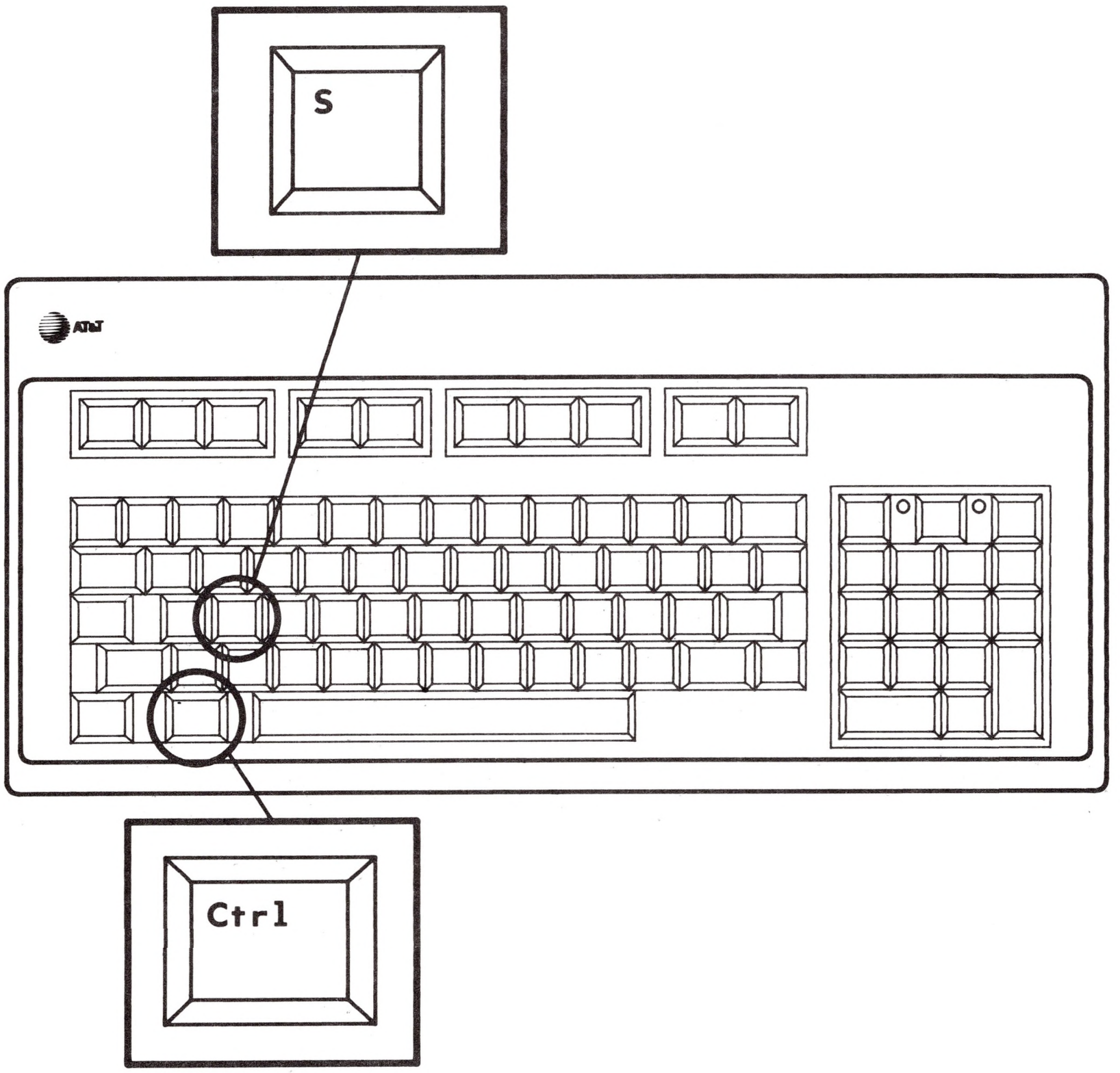
3 Watch your screen. The output of the **dir** command goes by quickly, so be ready.

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

COMMAND  COM    23210    8-09-85   12:00p
MODE     COM     5386    8-09-85   12:00p
GWBASIC  COM    70704    8-09-85   12:00p
BASIC    COM      686    8-09-85   12:00p
.
.
.
JOIN     EXE    15971    8-09-85   12:00p
SHARE    EXE     8304    8-09-85   12:00p
LABEL    COM     2889    8-09-85   12:00p
      31 File(s)       54272 bytes free

A>
```

Some of the names and numbers on your screen may differ slightly from the above sample. But, you should see the same five columns, the line showing the number of files, and the prompt.

Stopping Information From Scrolling

Often when you enter a command such as **dir**, the information displayed on the screen goes by so fast that you can't read it. The movement of information down the screen is called scrolling. If information scrolls by before you can read it, you can temporarily stop the scrolling by pressing Ctrl and S at the same time. To start the scrolling again, just press any key such as Return or Space Bar.



Note: The computer won't do anything if you press Ctrl without pressing another key. Therefore, you can press and hold Ctrl before pressing the other key.

Let's try to stop the scrolling of the **dir** command. Be ready to perform Steps 1 through 3 quickly.

1. Type **dir** and press Return.

2. Press and hold Ctrl.

3. Press S when you want to stop the scrolling.

   The scrolling should stop the instant Ctrl and S are pressed.

4. Press any key to start scrolling again.

   The scrolling continues until the **dir** command has finished and you receive the A> prompt.

You can stop and restart scrolling any number of times.

Setting the Date and Time

Your computer has both a calendar and a clock to keep track of the date and time. Certain programs use the calendar and the clock regularly, so it is important that they be kept up to date.

When you turn on your computer for the first time, you need to set the date and time. After this, a battery maintains the date and time so you don't have to reset them each time you turn on your computer. If your computer starts losing time, you can recharge the battery by leaving the computer turned on for a couple of days.

By the way, your computer's time is kept by a 24-hour (military) clock. This means that the afternoon (p.m.) hours are shown as 13 through 23. For example, what may be 2:00 p.m. to you is 14:00 (12+2=14) to your computer.

There are two different programs used to set the computer's date and time. These commands are appropriately named **date** and **time**.

Setting the Date

1 Type **date** and press Return.

```
A>date
Current date is Tue  9-18-1978
Enter new date (mm-dd-yy):
```

Here, the computer waits for you to enter the correct date.

The date is entered like this:

mm-dd-yy

Where:

mm	Month (1 - 12)
dd	Day (1 - 31)
yy	Year (80 - 99 or 1980 - 2099).

2 Type the correct date (don't forget the hyphens) and press Return.

3 Verify that the computer's date is correct by typing **date** again and pressing Return.

The date you entered in Step 2 should appear as the current date. If it doesn't, repeat Step 2.

4 Press Return to save the date shown on your screen.

Setting the Time

1 Type **time** and press Return.

```
A>time
Current time is 15:23:12.42
Enter new time:
```

Even though the time is displayed:

hours:minutes:seconds.tenth-seconds

the correct time is entered in hours and minutes like this:

HH:**MM**

Where:

HH Hour (0 - 23, add 12 to hour if p.m.)
MM Minute (0 - 59).

The seconds and tenth-seconds are reset to zero whenever a new date is entered.

2 Type the correct time (don't forget the colon) and press Return.

3 Verify that the computer's time is correct by typing **time** again and pressing Return.

The time you entered in Step 2 should appear as the current time. If it doesn't, repeat Step 2.

4 Press Return to save the time shown on your screen.

Preparing Your Hard Disk for Use

Partitioning Your Hard Disk

Allotting storage space is the first step in setting up your hard disk for use with the MS-DOS Operating System. That is, you must determine how much space to set aside for programs and files stored under MS-DOS.

If you purchased only the MS-DOS Operating System with your PC 6300 PLUS, and do *not* plan on using the UNIX Operating System, you can allocate 100 percent of the hard disk for MS-DOS use. See the procedure "Creating an MS-DOS Partition Using the Entire Disk" on the next page.

Even if you'll be using the UNIX System in the future, you can still allocate 100 percent of the hard disk to MS-DOS. But, when it is time to install the UNIX System, you'll have to copy all of your MS-DOS files to one or more diskettes because the MS-DOS partition will be erased when you install the UNIX System.

To avoid copying your MS-DOS files to a diskette before installing the UNIX System, you can allocate between 15 and 20 percent of the hard disk for MS-DOS use at this time. This will leave enough room on the hard disk so you can later install the UNIX System. To do this, see the procedure "Creating an MS-DOS Partition Using a Portion of the Disk" on Page 4-25.

Creating an MS-DOS Partition Using the Entire Disk

The following steps tell you how to create an MS-DOS partition that uses 100 percent of the hard disk. If you install the UNIX System at a later date, you will have to copy the contents of this partition to one or more diskettes or it will be lost.

1 Type **fdisk** and press Return. You'll see:

```
Fixed Disk Setup Program

FDISK Options

Choose one of the following:

      1. Create DOS Partition
      2. Change Active Partition
      3. Delete DOS Partition
      4. Display Partition Data

Enter choice [1]

Press Esc to return to DOS.
```

2 Select `Create DOS Partition` by pressing Return. You'll see:

```
Do you want to use the entire fixed disk
for DOS (Y/N).....................................[Y]
```

Note: Your fixed disk might already have an MS-DOS partition. If so, you'll see the message:

```
Fixed disk already has a DOS partition.
```

To use this partition, make sure its status is Active. (Your screen should look similar to the one shown below in Step 3.) After verifying that the partition is active, press Esc twice. After the A> prompt appears, see Page 4-30 for instructions on reformatting the partition.

3 Press Return to indicate that you *do* want to use the entire disk for an MS-DOS partition.

Your screen now looks like this:

```
Partition    Status    Type    Start    End    Size
    1           A      DOS         0    610     611

Total disk space is  611 cylinders
The current active partition is 1

Press Esc to return to FDISK options
```

Notice that the status of the partition is A (Active). The computer can now load the MS-DOS Operating System from this partition instead of from the MS-DOS System Diskette.

4 Press Esc *twice* and you'll see:

```
System will now reboot

Insert DOS diskette in drive A:
Press any key when ready . . .
```

5 Press Return or Space Bar.

The system will reload the MS-DOS Operating System and the A> prompt will appear.

You've successfully created an MS-DOS partition using the entire hard disk. You're now ready to format your hard disk. See "Formatting the MS-DOS Partition" on Page 4-30.

Creating an MS-DOS Partition Using a Portion of the Disk

The following steps tell you how to create an MS-DOS partition that uses between 15 percent (3 MB) and 20 percent (4 MB) of the hard disk. This leaves enough room on the hard disk for you to later install the UNIX System.

1 Type **fdisk** and press Return. You'll see:

```
Fixed Disk Setup Program

FDISK Options

Choose one of the following:

     1. Create DOS Partition
     2. Change Active Partition
     3. Delete DOS Partition
     4. Display Partition Data

Enter choice [1]

Press Esc to return to DOS.
```

2 Select `Create DOS Partition` by pressing Return.

You'll see the message:

```
Do you want to use the entire fixed disk
for DOS (Y/N).....................................[Y]
```

Note: Your fixed disk may already have an MS-DOS partition. If so, you'll see the message:

```
Fixed disk already has a DOS partition.
```

You must delete this partition before continuing. To do this, press Esc to return to the main menu and then select `Delete DOS Partition` by typing 3 and pressing Return. You're warned that the information in the partition could be lost. Indicate that you want to continue by typing **y** and pressing Return. Now press Esc to return to the main menu and repeat Step 2.

3 Type **n** and press Return.

You'll see:

```
Enter partition size.............:[xxx]
```

where **xxx** is the number of cylinders available for use. Since you want to use between 15 and 20 percent of the total disk space, you need to specify between **90** and **122** cylinders if you have a 20-MB hard disk drive.

4 Type a number between **90** and **122** and press Return.

You'll see:

```
Enter partition size.............: xxx
Enter starting cylinder number..:[   0]
```

This tells you that cylinder **0** is the default starting cylinder. It's recommended that you start this partition at cylinder **1**.

5 Type **1** and press Return. Your screen now looks something like this:

```
Partition    Status    Type    Start    End    Size
    1           N      DOS        1     90      90

Total disk space is 611 cylinders
Maximum available space is 521
cylinders at cylinder  91

Enter partition size.............:   90
Enter starting cylinder number..:[   1]

Press Esc to return to the FDISK Options
```

In the sample screen above, the MS-DOS partition starts at cylinder 1 and ends at cylinder 90. Its size, 90 cylinders, is 15 percent of the total disk space.

Note that the `Status` of the partition you just created is `N` (not active). If you want to load the MS-DOS Operating System from the hard disk when you turn on your computer, you'll need to make this partition active.

6 Press Esc to return to the FDISK options.

7 Type **2** and press Return to select option 2, `Change Active Partition`. You'll see:

```
Enter the number of the partition you want
to make active ..................: [1]
```

8 Type the number of the DOS partition and press Return.

Note that the `Status` of the partition is now `A` (Active). The computer can now load the MS-DOS Operating System from this partition instead of from the MS-DOS System Diskette.

9 Press Esc *twice* and you'll see:

```
System will now reboot

Insert DOS diskette in drive A:
Press any key when ready . . .
```

10 Press Return or Space Bar.

The system will reload the MS-DOS Operating System and the A> prompt will appear.

You've successfully created an MS-DOS partition using between 15 and 20 percent of the hard disk. You're now ready to format your hard disk. See "Formatting the MS-DOS Partition" on the next page.

Formatting the MS-DOS Partition

Formatting is the second and final step in preparing your hard disk. Formatting is like putting empty file folders into a new filing cabinet. It gives the hard disk the framework needed to store your programs and files.

For the computer to be able to load the MS-DOS Operating System from the hard disk, the MS-DOS partition must contain files called MS-DOS system files. The steps that follow tell you how to format the MS-DOS partition so that it will contain the MS-DOS system files.

Warning: Formatting the hard disk with the MS-DOS format command destroys all data in the MS-DOS partition. If you have any information in this partition that you want to save, copy it to a diskette before formatting.

1 Type **format c: /s**. This command tells the computer to:

- Format the MS-DOS partition on drive C (**c:**).
- Copy the MS-DOS system files to the MS-DOS partition after it's formatted (**/s**).

2 Press Return.

Your screen should now look like this:

```
A>format c: /s

*****************************
*                           *
*      !!! WARNING !!!      *
*                           *
*****************************

You are formatting the hard disk

THIS WILL DESTROY ALL DATA ON THE HARD DISK

Enter Y to continue, any other key
will cancel the request to format.

Do you wish to format the hard disk?
```

Note: Even though this message indicates that this procedure will destroy "all data on the hard disk," you will only destroy the data that's stored in the MS-DOS partition.

3 Press [y]. You'll see another warning message like this:

```
WARNING, ALL DATA ON NON-REMOVABLE DISK
DRIVE C: WILL BE LOST!
Proceed with Format (Y/N)?
```

4 Type **y** and press [Return].

While the hard disk is formatting, this message is displayed:

```
Formatting...
```

When formatting is complete, you'll see messages similar to this:

```
Formatting...Format Complete
System transferred

20592256 bytes total disk space
   60416 bytes used by system
20549760 bytes available on disk

A>
```

The numbers on your screen may not match the numbers shown above, especially if your MS-DOS partition only uses a portion of the hard disk. In addition, the **format** program may tell you about some bad tracks on your hard disk. Don't be concerned, because the computer will not use these tracks to store your data.

Selecting a Different Disk Drive

Quite often in your work, you'll need to switch from one disk drive to another. When switching disk drives, you can keep track of your current drive by looking at the prompt. The letter portion of the MS-DOS prompt indicates the disk drive that is the current or default drive.

When you entered the **dir** command a few moments ago, the computer automatically looked at the diskette in drive A because drive A was the current drive. You can check the contents of the hard disk by typing **c:** after the **dir** command (**dir c:**).

Similarly, you can change the current drive as follows:

1. Type **c:** (don't forget the colon).

2. Press Return.

```
A>c:
C>
```

   Notice the prompt changed to **C>** which means drive C, the hard disk drive, is now the current drive.

3. Type **a:** and press Return to change the current drive back to drive A.

Copying MS-DOS Programs to the Hard Disk

Since you'll be operating your computer from the hard disk, you'll need to copy the MS-DOS programs from the MS-DOS System Diskette in drive A to drive C. This will let you work directly from the hard disk. For safekeeping, store the original MS-DOS System Diskette in the rear of the *MS-DOS User's Guide.*

1 Make sure the MS-DOS System Diskette is in drive A and drive A is your current drive (**A>** prompt).

2 Type **copy *.* c:** and press **Return**.

The ***.*** tells the computer to copy *all files* from the MS-DOS System Diskette in drive A to drive C.

As each file is copied from the diskette to the hard disk, the name of the file will be displayed on your screen.

```
A>copy *.* c:
A:COMMAND.COM
A:MODE.COM
A:GWBASIC.COM
.
.
.
A:SHARE.EXE
A:LABEL.COM
       31 File(s)

A>
```

After all the files have been copied, the **A>** prompt appears and the red light on drive A goes out.

3 Wait until all files have been copied. Then turn the lever of drive A upward and remove the MS-DOS System Diskette from the drive.

4 For safekeeping, place the DOS Diskette in its envelope and return it to the rear of the *MS-DOS User's Guide*.

Starting Your Computer From the Hard Disk

When you turn on your computer, it automatically looks for a diskette in drive A from which it can load an operating system. If it doesn't find a diskette in drive A, the computer then checks the hard disk for an "active" partition. Upon finding this partition, it loads whatever operating system is stored there.

Because your MS-DOS partition is active and because it has been formatted with the **/s** option, you can start your computer directly from the hard disk. To verify this fact:

1. Turn off the computer.

2. Make sure there is no diskette in drive A.

3. Wait a few seconds and turn the computer on again.

   When the `C>` prompt appears, you've successfully loaded MS-DOS from the hard disk. Your screen looks the same as it did when you first turned it on, except that the prompt is now `C>`. The computer has made drive C the current drive because it didn't find a diskette in drive A.

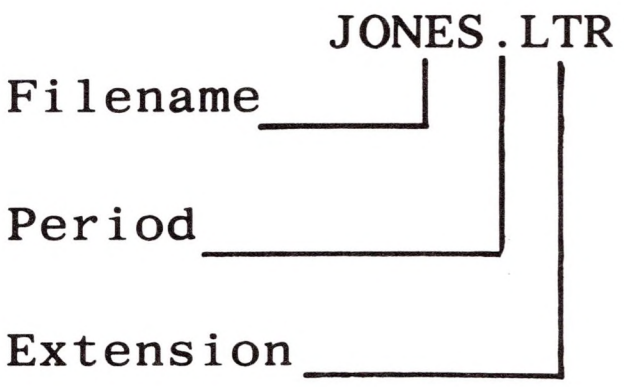
Naming MS-DOS Files

Each file on a diskette must have a unique filename so it can be identified by both you and the computer. When naming a file, use a name that will describe the contents of the file.

In MS-DOS, filenames are composed of one to eight characters with no spaces between the characters. If desired, a filename can also have an extension of one to three characters. Extensions must be separated from the main filename with a period (.). Valid characters for filenames are:

- Letters A to Z
- Numbers 0 to 9
- Characters ! @ # $ % ^ & ( ) - { } '

A typical filename is shown below:



There are two basic types of files:

- Program files
- Data files.

Program files contain instructions that tell the computer how to perform a certain task. Data files contain the information (data) used by the program files.

For example, a file that contains a list of names and addresses is a data file. A file that can sort through this list and put it in alphabetical order is a program file.

Program files usually have a COM, EXE, or BAT extension. These three filename extensions are reserved exclusively for program files. Data files are not required to have extensions, but you can add them if you wish to further identify the contents of a data file.

For more information on MS-DOS filenames and the types of files, refer to the *MS-DOS User's Guide.*

Formatting a Diskette

Before you can use a new diskette, it must be prepared to accept data. This process is called formatting.

For the computer to be able to start from an MS-DOS diskette, it must contain files called MS-DOS system files (these files are hidden from your view). You can put these files on a diskette by using the **/s** option with the **format** command or by using the **sys** command.

Typically, if a diskette is going to contain a program of any type, you should copy the MS-DOS system files to it. On the other hand, if you plan to use the diskette only to store data, leave the system files off and take advantage of the extra storage space.

If your diskette drive is a 1.2-MB drive, you should be using high-density diskettes. However, if you need to format a double-density diskette, use the **/4** option with the **format** command so your diskette will be formatted as a 360-KB diskette (**format a: /4** or **format a: /4 /s**). Keep in mind that when you format a double-density diskette in a 1.2-MB drive, the diskette can only be used in 1.2-MB drives.

Note: You can always reformat old diskettes; but in so doing, you'll erase all the files on the diskette.

Formatting a Diskette With System Files

1 Type **format a: /s**. This command tells your computer to:

- Format the diskette in drive A (**a:**).
- Copy the system files to the diskette after it's formatted (**/s**).

2 Press Return.

Your screen looks like this:

```
C> format a: /s

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

3 Insert a diskette into drive A and press Return.

As the diskette is being formatted, your screen displays:

```
Formatting...
```

After formatting is complete, the in-use lights on both drives go out and your screen displays a message similar to this:

```
Formatting...Format Complete
System transferred
   362496 bytes total disk space
    60416 bytes used by system
   302080 bytes available on disk

Format another (Y/N)?
```

The message indicates that 60416 bytes were used by the system files.

> ***Note:*** If you have a 1.2-MB diskette drive, the numbers shown on your screen will differ from those shown above if you're formatting a high-density diskette.

4 Indicate if you want to format another diskette by typing **y** or **n**.

Formatting a Diskette Without System Files

1 Type **format a:**. The **a:** tells the computer to format the diskette in drive A.

2 Press Return.

Your screen looks like this:

```
C> format a:

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

3 Insert a diskette into drive A and press Return.

As the diskette is being formatted, your screen displays:

```
Formatting...
```

After formatting is complete, the light on drive A goes out and your screen looks similar to this:

```
Formatting...Format Complete

     362496 bytes total disk space
     362496 bytes available on disk

Format another (Y/N)?
```

Note: If you have a 1.2-MB diskette drive, the numbers shown on your screen will differ from those shown above when you format a high-density diskette.

4 Indicate if you want to format another diskette by typing **y** or **n**.

Copying Files

As you begin creating your own work on your computer, you'll occasionally need to make copies of your files.

If the following exercises, **oldfile**, **newfile**, and **filename** are only sample filenames. They do not exist within your computer.

Copying Files on the Hard Disk

To make a copy of a file on the hard disk, use a different filename for the new file. You might do this when you want to experiment on a file and you don't want to chance damaging the original.

1 Make sure drive C is the current drive (**C>** prompt).

2 Type **copy oldfile newfile** and press Return.

A copy of **oldfile** is made on the hard disk. The new file is called **newfile**.

Copying Files To and From the Hard Disk

Remember: If you have a 1.2-MB drive, you can copy files *from* a 360-KB diskette to the hard disk without affecting the usability of the diskette. But, if you copy a file from the hard disk *to* a 360-KB diskette, from that point on, you'll only be able to use the diskette in a 1.2-MB drive.

To copy a file from a diskette to the hard disk:

1. Insert the diskette with the file you want to copy into drive A.

2. Make drive A your current drive (type **a:** and press Return).

3. Type **copy filename c:** and press Return.

   When the prompt appears, a copy of **filename** is present on the hard disk. This new file has the same name as the original one because a new filename wasn't specified after **c:**. This is all right because the new file exists on the hard disk and the old one exists on the diskette.

You can use the same technique to copy a file from the hard disk to a diskette. Make drive C your current drive and type **copy filename a:** followed by Return.

Deleting Files

Eventually you'll want to erase old, unwanted files to free up space for new files on your hard disk.

It's a good idea to periodically review your hard disk for old or copied files. A hard disk with many versions of a file can be confusing and wastes storage space.

To delete a file from the hard disk:

1. Make sure that drive C is the current drive (`C>` prompt).

2. Type **`del filename`** and press Return.

   When the prompt reappears, **`filename`** has been removed from the hard disk.

Note: If you have a 1.2-MB diskette drive, keep in mind that deleting information from a 360-KB diskette is the same as writing on the diskette. You are actually writing on a diskette anytime you alter its contents.

The Benefit of Copying Your Programs

Copying your MS-DOS diskettes to the hard disk gives you a working copy of the operating system on the hard disk, and lets you save the original diskettes for spares. Always try to have at least one spare copy of your important diskettes. This copy can be on either the hard disk or a diskette.

Having a spare copy of a program gives you a *working* copy of the program. Always use this working copy, and let the original serve as a spare. If your working copy is damaged, make another copy from the original. If possible, DO NOT work from your original diskette.

Working copies can be made on a diskette or on the hard disk. At first, it may not seem practical to work from diskettes when you have a hard disk. But, space on your hard disk is like real estate—it can become very valuable. If you have lots of room on your hard disk, you can store all of your working programs on it. But as time goes on and your hard disk gets crowded, you may want to copy the programs you don't use very often to a diskette, and then remove them from the hard disk.

Remember:

ALWAYS USE WORKING COPIES OF YOUR PROGRAMS.

Making Spare Copies of Diskettes

Whenever you have important data stored on a diskette, make a copy of the diskette in case something happens to the original.

Since you only have one diskette drive, the best way to make a copy of a diskette is with the **diskcopy** command. This command formats a diskette as it copies information to it.

If you have a 1.2-MB diskette drive, be careful because the new diskette must be the same type (double-density or high-density) as the original. In other words, if you're copying a double-density (360-KB) diskette, you must copy it to another double-density diskette.

If you are using high-density diskettes and you need to copy a 360-KB diskette to a 1.2-MB diskette or vice versa, you must use the **copy** command.

To copy a diskette using **diskcopy**:

1 Type **diskcopy a: a:** and press Return.

You'll see:

```
A>diskcopy a: a:

Insert source diskette in drive A:

Strike any key when ready . . .
```

2 Insert the original or source diskette into drive A.

3 Press Return to start copying files into the computer's memory.

Even though the computer told you to strike *any* key, you should always use Return or Space Bar because certain keys (such as Ctrl, Shift, Esc) are not recognized when pressed by themselves.

Your screen should look similar to this:

```
Copying 40 tracks
9 Sectors/Track, 2 Sides
```

Note: If you are copying a 1.2-MB diskette, the message that appears on your screen will differ slightly.

In a moment, you'll see:

```
Insert target diskette in drive A:

Strike any key when ready . . .
```

4 Remove the diskette from drive A.

5 Insert your target diskette into drive A and press Return.

In a moment, you'll see:

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

6 Type a **y** or **n** to indicate whether or not you want to copy another diskette.

Note: Make sure you label and date your new diskette.

Backing Up the Hard Disk

Making backup copies of your programs and files can't be over-emphasized. We've already discussed making copies of your diskettes. What about individual files?

If you work (create and update files) regularly from the hard disk, get into the habit of copying your work (files) to a diskette often (once a week). This may sound like extra work, but it actually takes only a couple of minutes, and it could save you weeks of work.

There are two MS-DOS commands (**backup** and **restore**) that you can use to keep extra copies of your work. The **backup** command copies files from the hard disk to a diskette, and the **restore** command copies them back to the hard disk. When you get ready to backup your files, consult the *MS-DOS User's Guide* for information on using these two commands and for additional information on backups.

Running Application Programs

Application programs are written by individuals or software vendors to provide software packages that help you with specific jobs. These jobs can range from a simple word-processing task to controlling a complex inventory. With thousands of MS-DOS application programs available, you'll probably find many that can help you do your job more efficiently.

To run application programs on your computer, you must first load MS-DOS. Since MS-DOS is already stored on your hard disk, your computer (when it's turned on) will automatically load the MS-DOS Operating System. Once MS-DOS is loaded, consult your application program's documentation for instructions on loading and running the application.

You can run your application program from a working diskette, or you can copy it to the hard disk. Before copying your application programs to the hard disk, consult the *MS-DOS User's Guide* for helpful hints on organizing your hard disk with directories.

Application programs you won't be using often should be stored on a diskette instead of taking up room on your hard disk. And, this reminder once again—make a working copy of the diskette and keep the original for a spare.

Where Do You Go From Here?

Now that you've completed this tutorial on Getting Started With MS-DOS, you're ready to explore new horizons.

To learn more about the MS-DOS Operating System, go to the *MS-DOS User's Guide.* This guide gives you an in-depth look at the operating system, its commands, and its error messages. It will also help you organize your hard disk with directories.

If you want to write your own programs, go to the *GWBASIC Programmer's Guide.* This guide tells you how to write simple BASIC programs, and then teaches you the more advanced concepts of BASIC programming.

In addition, there are application programs. If you have a 1.2-MB diskette drive, remember that most application software comes on 360-KB diskettes. And, if you write on these diskettes with your 1.2-MB drive, you'll only be able to use the diskette in a 1.2-MB drive. If desired, you can write protect your diskettes to prevent you from accidentally writing on them.

Getting Started
the UNIX System

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5 Getting Started With the UNIX System

Getting Ready

The purpose of this chapter is to have you install the UNIX System and possibly the Simul-Task OS Merge feature, and then to quickly get you started using them. If addition detail is desired, you can reference the *UNIX System V, Release 2.0 Operations Guide—AT&T Personal Computer 6300 PLUS.* The last section in this chapter, "Where Do You Go From Here?," instructs you on what to do when you're finished with this chapter.

Before getting started with the UNIX System, make sure your PC 6300 PLUS (with a hard disk drive) is set up according to the directions in the *Installation Guide—AT&T Personal Computer 6300 PLUS.* Then you'll need:

- The UNIX System V Release 2.0 Foundation Set Floppy Disks
- A felt-tip pen.

If you want to run MS-DOS programs at the same time you're running UNIX programs (using Simul-Task OS Merge), you'll also need:

- The AT&T MS-DOS 3.1 System Diskette and the MS-DOS Supplemental Programs Diskette (from the rear of the *MS-DOS User's Guide*)
- The Simul-Task OS Merge Disk (packaged with the Foundation Set floppy disks)
- One blank double-density (360-KB) floppy disk.

The UNIX System V Floppy Disks

Carefully open the package containing the UNIX System V Release 2.0 Foundation Set Floppy Disks. These floppy disks contain the installation programs and the UNIX System Foundation Set software. Each of the seven UNIX System Foundation Set floppy disks is labeled like this:

UNIX System V Release 2.0
Foundation Set - Floppy Disk *n* of 7

You'll also find four additional floppy disks labeled:

- File Encryption - Floppy Disk 1 of 1
- Extended TERMINFO - Floppy Disk 1 of 1
- Simul-Task OS Merge Disk
- NoteWriter - Floppy Disk 1 of 1.

File Encryption - Floppy Disk 1 of 1: This floppy disk contains utilities that provide encoding protection for your files. Versions of the **vi** and **ed** editors and C language library routines that support encryption and decryption of files are included on the File Encryption floppy disk.

Extended TERMINFO - Floppy Disk 1 of 1: This floppy disk contains information that allows your computer to be accessed by remote users using a wide variety of terminal types. As implied by the title, the information on this floppy disk is an extension of what's supplied with the foundation set. Refer to the *UNIX System V, Release 2.0 Operations Guide—AT&T Personal Computer 6300 PLUS* for a complete list of the terminals supported.

Simul-Task OS Merge Disk: This floppy disk contains a feature called Simul-Task OS Merge. Simul-Task OS Merge lets you run MS-DOS programs at the same time you're running UNIX programs. The installation and use of the Simul-Task OS Merge feature is discussed in this chapter.

NoteWriter - Floppy Disk 1 of 1: This floppy disk contains a text editor that's easy to learn and use. The installation and use of NoteWriter is covered in an appendix in the *UNIX System V, Release 2.0 Operations Guide—AT&T Personal Computer 6300 PLUS.*

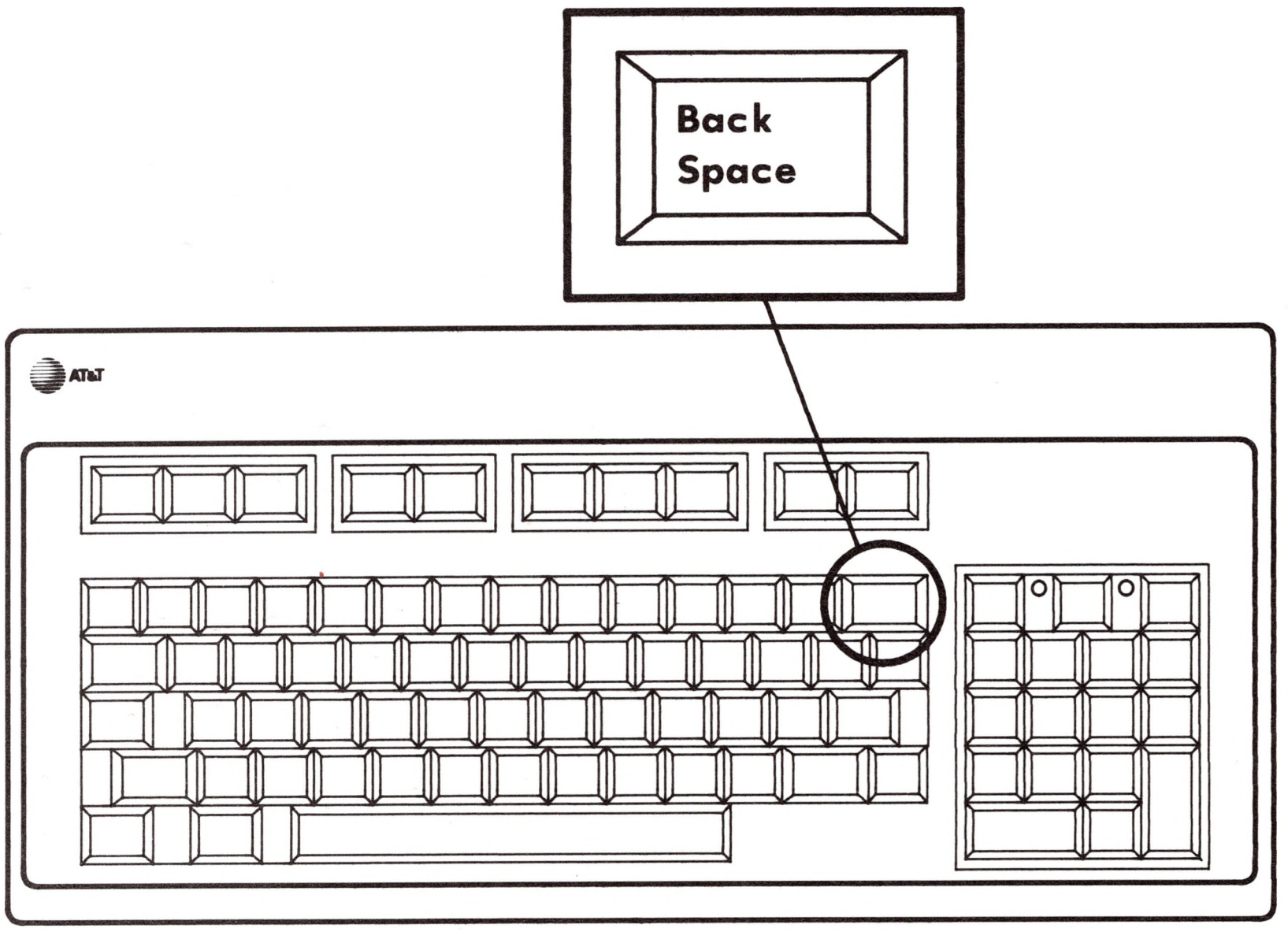
For information on installing the File Encryption, Extended TERMINFO, and NoteWriter packages, refer to the *UNIX System V, Release 2.0 Operations Guide—AT&T Personal Computer 6300 PLUS.*

Correcting Typing Mistakes

In a moment, you'll be typing characters on the keyboard. If you make a typing mistake, you can correct it by pressing Back Space.

Each time you press Back Space, you erase the character or space just to the left of the cursor. In some versions of the UNIX System, the key used to erase a character or space on the screen is the # key. This has been changed to Back Space on the PC 6300 PLUS.

The Back Space key looks like this:



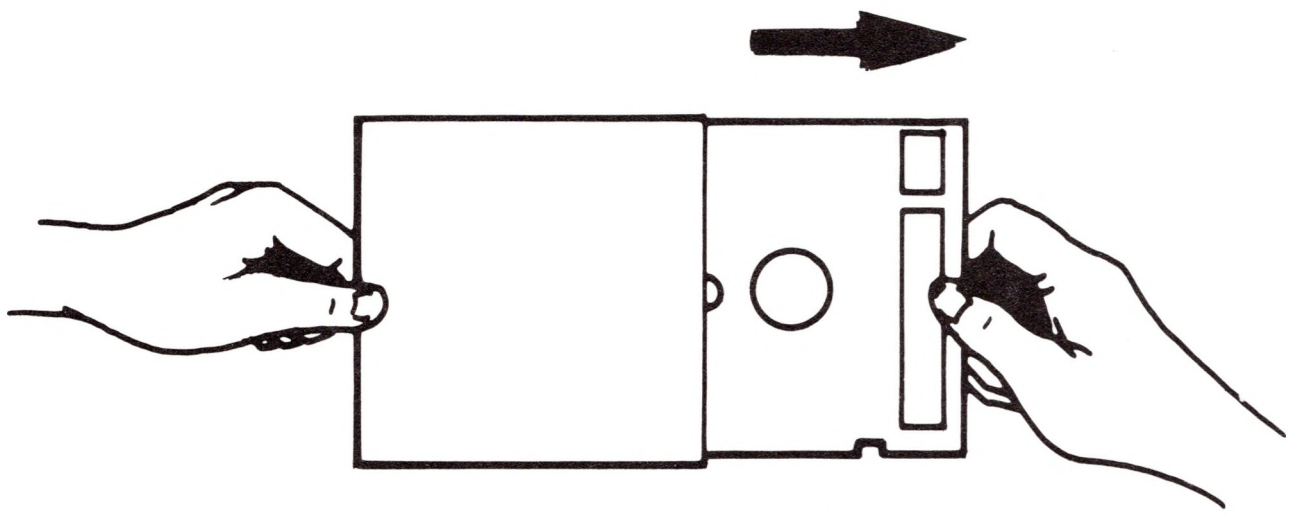
Installing the UNIX System and Simul-Task OS Merge

The installation of the UNIX System and Simul-Task OS Merge will take from one-half hour to one hour. The installation of the seven UNIX System Foundation Set floppy disks should proceed uninterrupted. If power is removed from the computer during this installation, you must restart the installation. After installing the Foundation Set, you're given the option of installing Simul-Task OS Merge. It's recommended that you install Simul-Task OS Merge at that time.

Note: If MS-DOS has been installed on your computer using more than 20 percent of the hard disk, you might want to copy your MS-DOS programs and files to floppy disk(s). Since the UNIX System needs at least 80 percent of a 20-MB hard disk, an MS-DOS partition larger than 20 percent will be destroyed when you install the UNIX System.

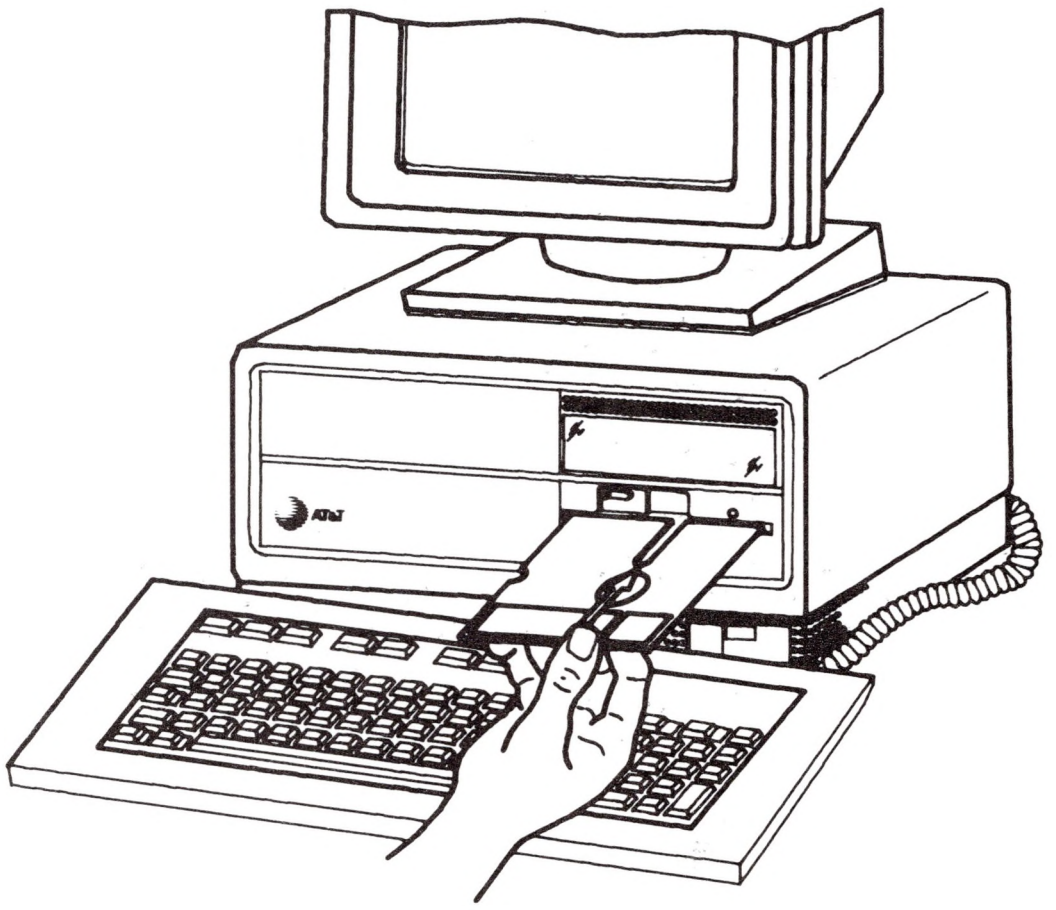
Inserting a Floppy Disk

1 Remove the floppy disk labeled "Foundation Set - Floppy Disk 1 of 7" from its paper envelope, holding it as shown below.

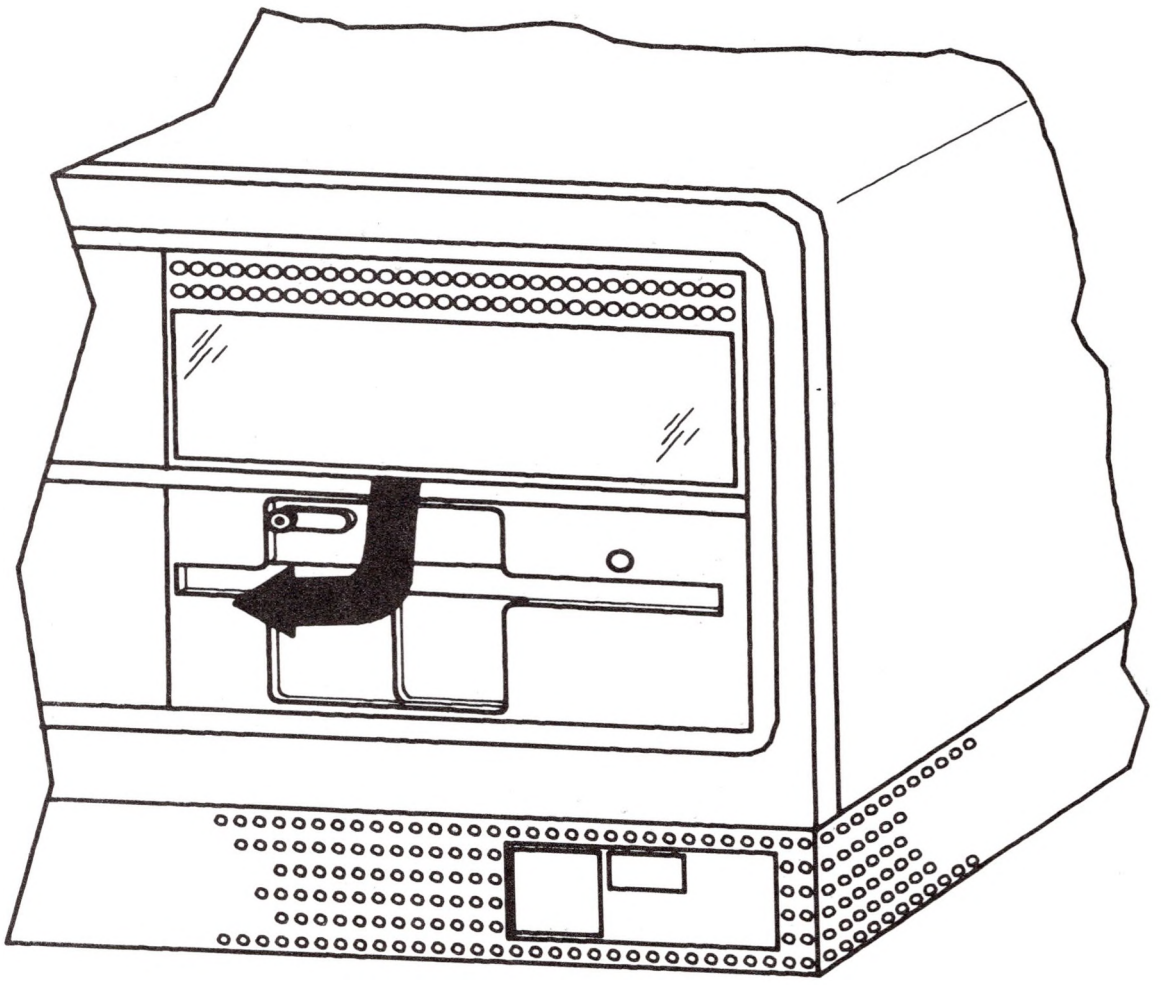


Note: Keep the paper envelope nearby. After you've finished using the floppy disk, you'll want to put it back in the envelope to protect it from dust and dirt.

2 Carefully insert the Foundation Set - Floppy Disk 1 of 7 (with the label facing up) all the way into the floppy disk drive.

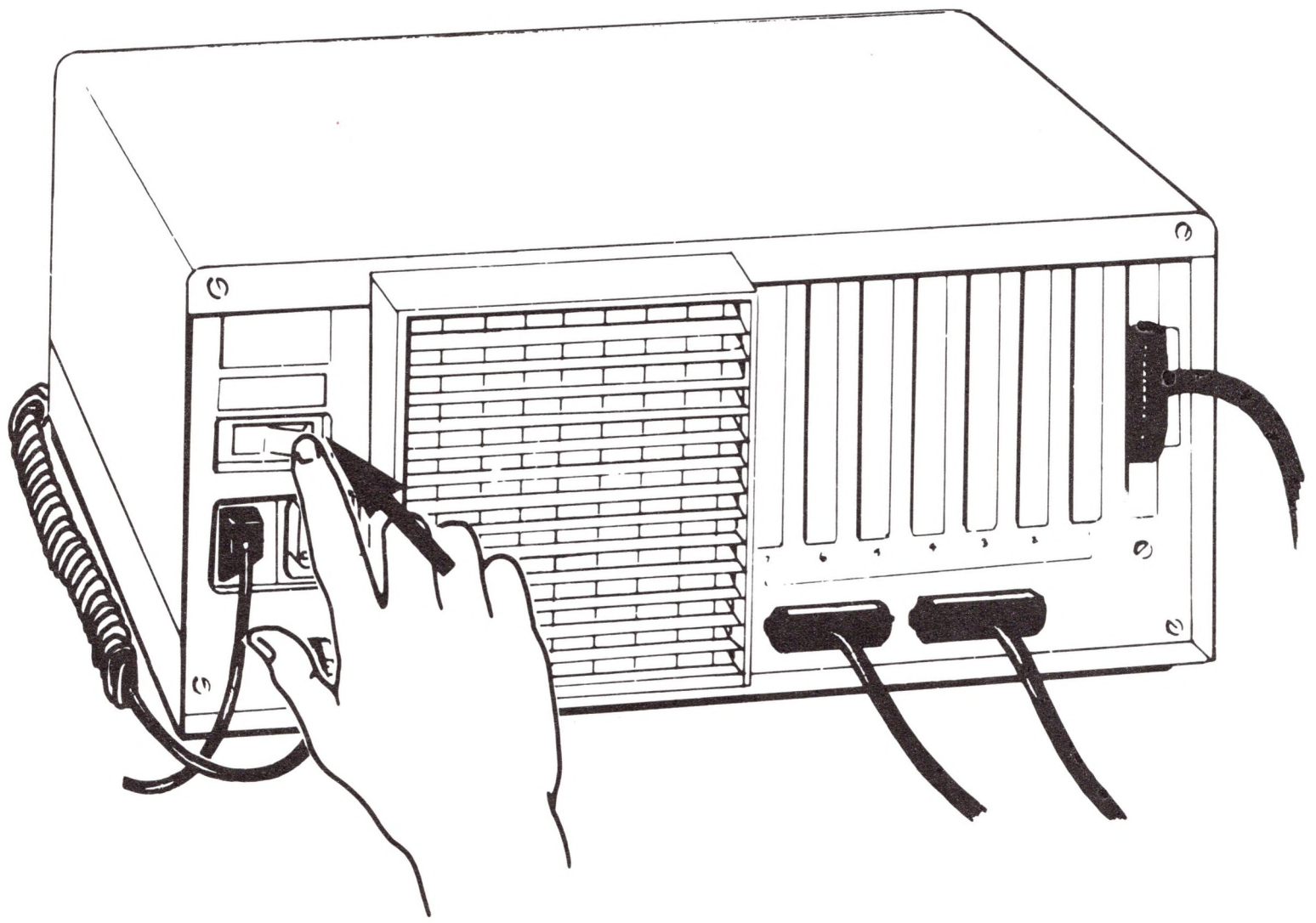


3 Lock the floppy disk in place by turning the floppy disk drive lever downward.



Turning On the Computer

1 Press the ON/OFF switch to turn on the computer. If it's already on, press the RESET button on front of the main unit.



For several seconds after you turn on your computer, tests are performed to make sure the computer's major components are working properly.

As the tests are completed, you'll see results similar to those shown below.

```
Resident Diagnostics
Vers x.x

CPU (i286)          Pass
ROM Module          Pass
DMA Timer           Pass
DMA Control         Pass
Interrupts          Pass
1024 kb RAM         Pass
RT Clock            Pass
```

If any of the tests fail, contact your AT&T Personal Computer dealer or the AT&T Service Representative.

After the tests have been completed, the red light on the hard disk drive comes on followed by the red light on the floppy disk drive. This indicates that the computer is checking the drives to see if they are ready for operation.

When the disk drive checks are complete, you'll see:

```
Fixed Disk          1 Ready
Floppy (A:)          Ready
```

Note 1: **Do not** remove a floppy disk from the drive while the drive's red light is on. If you do, you could destroy data on the floppy disk. This light is on anytime the computer is accessing the floppy disk in the drive.

Note 2: **Do not** turn the computer off if the hard disk drive's red light is on. If you do, you could destroy data on the hard disk. This light is on anytime the computer is accessing the hard disk drive.

2 Look for your screen to display messages similar to the following. The sequence takes approximately 2 minutes.

```
real mem = 1048576
total avail mem = 713728
avail mem = 654848
UNIX System V Release 2.0
Copyright (c) 1985 AT&T
All Rights Reserved

INIT:  SINGLE USER MODE

Please press <RETURN> when ready to install the UNIX
System.
```

Before pressing **Return** to continue, carefully read the next couple of pages. There you'll find important information on how you should set up your hard disk.

Partitioning Your Hard Disk

Allotting storage space is the first step in setting up your hard disk. That is, you must determine how much space on the hard disk to set aside for programs and files stored under the UNIX System. If you'll be using MS-DOS along with the UNIX System, most of your MS-DOS programs and files will be stored under the UNIX System. Certain MS-DOS application programs, however, are copy-protected and cannot be stored in the UNIX file system. These programs must be stored in another area of the hard disk dedicated for MS-DOS only. An area of the disk that you set aside for a particular type of storage is called a *partition.*

If you'll be using only the UNIX Operating System with your PC 6300 PLUS, you'll need one partition called the "UNIX and DOS merged" partition. Do not let the name of this partition confuse you. It is referred to as the "UNIX and DOS merged" partition because it's able to store MS-DOS files along with the UNIX System's files. Since you won't be using MS-DOS, this partition will be used only for UNIX System storage. You should therefore allocate 100 percent of the hard disk storage space for this partition using the procedure "Creating a UNIX Partition Using the Entire Hard Disk" on Page 5-20.

If you'll be using both the MS-DOS and UNIX Operating Systems on your PC 6300 PLUS, we recommend that you create two partitions on your hard disk:

- UNIX and DOS merged (also called simply the UNIX partition)
- DOS only.

The UNIX System that's available for the PC 6300 PLUS allows MS-DOS programs/files and UNIX programs/files to coexist in the UNIX file system. This lets you run MS-DOS programs and UNIX programs simultaneously.

When setting up your hard disk for use with both MS-DOS and the UNIX System, use between 80 and 85 percent of the hard disk for the UNIX and DOS merged partition and the remaining 15 to 20 percent for the DOS only partition. The recommended sizes for these two partitions are:

85% UNIX and DOS merged

15% DOS only.

To allocate 85 percent of the hard disk for the UNIX+DOS merged partition and the other 15 percent for the DOS only partition, see "Creating Both UNIX and MS-DOS Partitions" on Page 5-14. This procedure will prompt you to create these partitions using the recommended sizes.

Your hard disk may already have an MS-DOS partition that uses between 15 and 20 percent of the hard disk. If it does, use the procedure "Creating Both UNIX and MS-DOS Partitions" to dedicate the remaining portion of the hard disk for the UNIX and DOS merged partition. You will not receive a default prompt for setting up your partitions. Instead, you'll be guided through the creation of your UNIX and DOS merged partition using the UNIX **fdisk** command. For additional information on the **fdisk** command, refer to the *UNIX System V, Release 2.0 Operations Guide—AT&T Personal Computer 6300 PLUS.*

Creating Both UNIX and MS-DOS Partitions

1 Your screen should be displaying the message:

```
Please press <RETURN> when ready to install the UNIX
System.
```

2 Press **Return**.

You'll see:

```
Do you want to partition your hard disk as follows?

  85% "UNIX+DOS merged" — lets you run UNIX programs
       and most MS-DOS programs

  15% "DOS only" — lets you run MS-DOS without UNIX

To do this, please type "y".  To partition your hard
disk differently, type "n" and the "fdisk" program will
let you select other partitions.
```

Note: If your screen does not look like this, your hard disk already contains a partition. Turn to Page 5-16 and begin with Step 4.

3 Type **y** and press Return to select these default sizes.

Both partitions are automatically created for you using the default sizes. Then you'll see:

```
Hard disk partitioning is complete.  Your
hard disk is now ready to be formatted.
```

You're automatically moved to the next step of setting up your hard disk—formatting. Go to "Formatting Your UNIX Partition" on Page 5-25.

4 If your hard disk already has a partition, your screen will look similar to this:

```
Total hard disk size is 612 cylinders

                                    Cylinders
Partition   Status   Type   Start   End   Length    %
=========   ======   ====   =====   ===   ======   ===
    1       Active   DOS        1   90       90    15

SELECT ONE OF THE FOLLOWING:

      1.  Create a partition
      2.  Change Active (Boot from) partition
      3.  Delete a partition
      4.  Exit

Enter selection:
```

5 Look at your screen and determine if the MS-DOS partition takes up more than 20 percent of the hard disk (see the last column).

a. If the partition is larger than 20 percent, you must delete the partition before continuing. Type **3** and press Return, then enter the number of the partition you want to delete followed by Return. After the partition has been deleted, press the RESET button on the front of the main unit and wait for the message shown on Page 5-14 in Step 1. After the message is received, continue with Step 2 on the same page.

b. If the partition size is 20 percent or less, go on to Step 6. However, if the partition starts on cylinder 0, follow the instructions in step a above to delete the partition and start over.

6 Type **1** and press Return to select `Create a partition`.

You'll see the message:

```
Indicate the type of partition you want to create
(u=UNIX+DOS merged, d=DOS only, o=Other, x=Exit).
```

7 Type **u** and press Return to select `UNIX+DOS merged`.

You'll see the message:

```
The UNIX partition must use at least 80% of the
hard disk.  Indicate the percentage (80-100) of
the hard disk you want this partition to use
(or enter "c" to specify in cylinders).
```

8 Look at the MS-DOS partition's status line and determine what percentage of the hard disk is being used by that partition. The percentage should range from 15 to 20 percent.

9 Type a number that when added to the MS-DOS partition's percent, adds up to 100 percent and press Return.

You should see the message:

```
Do you want this to become the Active partition?
If so, it will be activated each time you reset
your PC 6300 PLUS or when you turn it on again.
Please type "y" or "n".
```

Note: When your computer is turned on or reset, it looks for a floppy disk in the floppy disk drive. If it doesn't find one, it looks on the hard disk for an active partition from which it can load an operating system. Make the UNIX+DOS merged partition active to boot the UNIX System.

10 Type **y** and press Return to make the UNIX+DOS merged partition your active partition.

At the bottom of your screen, you'll see the message:

```
Partition n is now the Active partition.
```

After the partition is created, your screen should resemble this:

```
Total hard disk size is 612 cylinders

                                    Cylinders
Partition   Status   Type   Start   End   Length    %
=========   ======   ====   =====   ===   ======   ===
    1                DOS        1    90       90    15
    2        Active  UNIX      91   611      520    85


SELECT ONE OF THE FOLLOWING:

      1.  Create a partition
      2.  Change Active (Boot from) Partition
      3.  Delete a partition
      4.  Exit

Enter selection:
```

11 Type **4** and press **Return** to select **Exit**. You'll see the message:

```
Hard disk partitioning is complete.  Your
hard disk is now ready to be formatted.
```

You're automatically moved to the next step of setting up your hard disk—formatting. Now go to "Formatting Your UNIX Partition" on Page 5-25.

Creating a UNIX Partition Using the Entire Hard Disk

Do not use this procedure if you'll be using MS-DOS along with the UNIX System on your PC 6300 PLUS.

1 Your screen should be displaying the message:

```
Please press <RETURN> when ready to install the UNIX
System.
```

2 Press Return.

Your screen should look similar to one of the two following screens shown as Screen A and Screen B.

Screen A

```
Do you want to partition your hard disk as follows?

  85% "UNIX+DOS merged" — lets you run UNIX
       programs and most MS-DOS programs

  15% "DOS only" — lets you run MS-DOS without UNIX

To do this, please type "y".  To partition your hard
disk differently, type "n" and the "fdisk" program will
let you select other partitions.
```

Screen B

```
Total hard disk size is 612 cylinders

                                        Cylinders
Partition   Status   Type   Start   End   Length    %
=========   ======   ====   =====   ===   ======   ===
    1       Active   DOS      0     611     612    100


SELECT ONE OF THE FOLLOWING:

     1.  Create a partition
     2.  Change Active (Boot from) partition
     3.  Delete a partition
     4.  Exit

Enter selection:
```

3 Determine which screen is shown on your display.

Screen A Type **n** and press Return to indicate that you do *not* want to set up your hard disk as indicated in the message. Then go to Step 4.

Screen B Your hard disk currently contains a partition of some type, probably MS-DOS. Before continuing, you need to delete the partition. Type **3** and press Return, then type the number of the partition you want to delete followed by Return. After the partition has been deleted, go to Step 4.

4 Make sure your screen looks like this with no partitions defined:

```
Total hard disk size is 612 cylinders

                                    Cylinders
Partition   Status   Type   Start   End   Length    %
=========   ======   ====   =====   ===   ======   ===

THERE ARE NO PARTITIONS CURRENTLY DEFINED

SELECT ONE OF THE FOLLOWING:

      1.  Create a partition
      2.  Change Active (Boot from) partition
      3.  Delete a partition
      4.  Exit

Enter selection:
```

5 Type **1** and press Return to select `Create a partition`.

You'll see the message:

```
Indicate the type of partition you want to create
(u=UNIX+DOS merged, d=DOS only, o=Other, x=Exit).
```

6 Type **u** and press Return to select UNIX+DOS merged. You'll see the message:

```
The UNIX partition must use at least 80% of the
hard disk.  Indicate the percentage (80-100) of
the hard disk you want this partition to use
(or enter "c" to specify in cylinders).
```

7 Type **100** and press Return. You'll see the message:

```
Do you want this to become the Active partition?
If so, it will be activated each time you reset
your PC 6300 PLUS or when you turn it on again.
Please type "y" or "n".
```

Note: When your computer is turned on or reset, it looks for a floppy disk in the floppy disk drive. If it doesn't find one, it looks on the hard disk for an active partition from which it can load an operating system.

8 Type **y** and press Return to make the UNIX+DOS merged partition your active partition.

At the bottom of your screen, you'll see the message:

```
Partition 1 is now the Active partition.
```

After the partition is created, your screen should resemble this:

```
Total hard disk size is 612 cylinders

                                        Cylinders
Partition   Status   Type   Start   End   Length    %
=========   ======   ====   =====   ===   ======   ===
    1       Active   UNIX       0   611    612     100


SELECT ONE OF THE FOLLOWING:

      1.  Create a partition
      2.  Change Active (Boot from) partition
      3.  Delete a partition
      4.  Exit

Enter selection:
```

9 Type **4** and press Return to select **Exit**.

You'll see the message:

```
Hard disk partitioning is complete.  Your
hard disk is now ready to be formatted.
```

You're automatically moved to the next step of setting up your hard disk—formatting.

Formatting Your UNIX Partition

Formatting is the second and final step in setting up your hard disk. Formatting prepares a disk to accept information. Anytime you format a disk, whether it be a hard disk or floppy disk, you erase whatever was stored on the disk. You are warned of this before being allowed to continue.

1 Read the warning message on your screen:

```
WARNING: Format will erase all the files and
programs from the "UNIX+DOS merged" partition.
Are you sure you want to do this?
(Please type "y" or "n".)
```

2 Type **y** and press **Return** since the UNIX+DOS merged partition does not yet contain any information.

As the UNIX+DOS merged partition is being formatted, you'll see:

```
Formatting cylinder:nn
```

Note: The formatting will take approximately 15 minutes. As the cylinders are being formatted, you'll see **nn** change.

After the partition has been formatted, you'll see the message:

```
A UNIX filesystem has been created in your UNIX partition.
A UNIX System will now be installed on your hard disk.
Please stand by ...
```

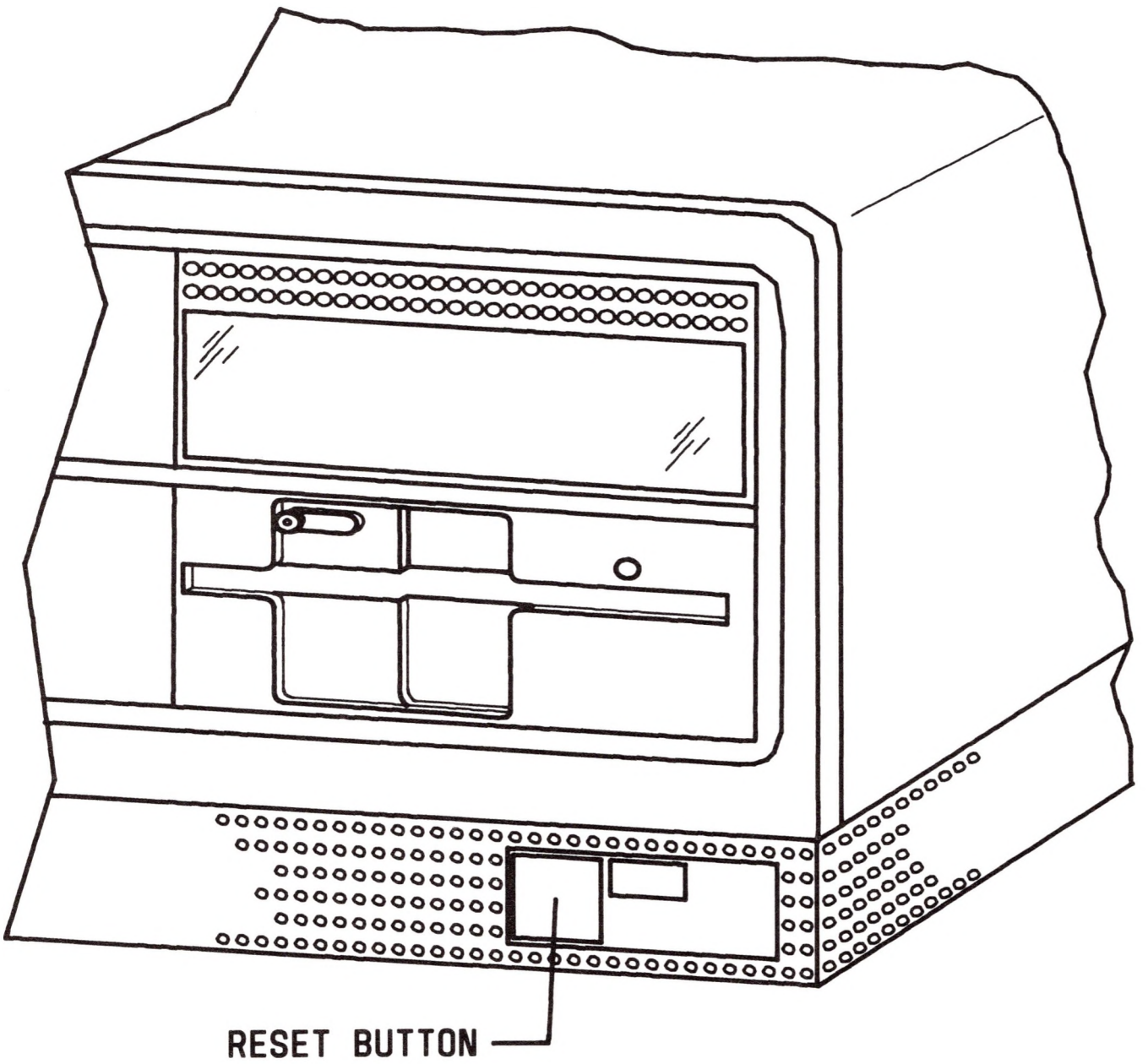
When the UNIX System is successfully copied to the hard disk, you'll see the message:

```
Please remove the floppy disk from the
drive and then press the RESET Button.
```

3 Turn the lever on the disk drive upward.

4 Remove Floppy Disk 1 of 7 from the drive and place it in its paper envelope.

5 Press the RESET button.



After the Resident Diagnostics and UNIX System messages are displayed, you'll see:

```
Please insert the UNIX Foundation Set Floppy Disk 2 of 7
and then press <RETURN>.
```

At this point, you have finished preparing your hard disk and are ready to install the foundation set floppy disks 2 through 7.

Installing the UNIX System Foundation Set

1 Insert the Foundation Set Floppy Disk 2 of 7 into the drive and turn the drive lever downward.

2 Press Return.

As the contents of the floppy disk are being copied to the hard disk, your screen displays the message:

```
Installation is in progress--do not remove
the floppy disk.
```

When the computer has finished copying the floppy disk, you'll see the message:

```
Please insert the UNIX Foundation Set Floppy Disk 3 of 7
and then press <RETURN>.
```

3 Turn the drive lever upward.

4 Remove the Foundation Set Floppy Disk from the drive and place it in its envelope.

5 Insert the Foundation Set Floppy Disk requested on the screen into the drive and turn the drive lever downward.

6 Press Return.

If the computer has problems reading the floppy disk, you'll see:

```
A floppy disk read error has occurred.
Please consult "Getting Started With Your PC 6300 PLUS."

After correcting the error, reinsert the floppy disk
and then press <RETURN> to continue.
```

This error may be caused by one of the following:

- The floppy disk isn't locked into place. Turn the drive lever downward and press Return.
- The floppy disk isn't inserted properly. Remove and reinsert the floppy disk and press Return.
- The floppy disk is faulty. Remove the floppy disk and call your AT&T Personal Computer dealer or AT&T Service Representative.

Note: After correcting the read error and pressing Return, do not remove the floppy disk until you are prompted to do so.

If you accidentally insert the wrong floppy disk, you'll see the message:

```
The inserted floppy disk is incorrect.  Please
insert the floppy disk labeled n of 7 and
press <RETURN>.
```

7 Load the remaining UNIX System Foundation Set floppy disks as you have the previous two. Wait for the system to prompt you before inserting the next floppy disk.

When the last floppy disk has been copied to the hard disk, you'll see the message:

```
The UNIX installation process has been completed.
It is now safe to remove the floppy disk.
Stored files are being checked. Please stand by...
```

8 Remove the floppy disk from the drive and place it in its envelope.

After the UNIX System files are checked, you'll see the following message:

```
When you start the PC 6300 PLUS for the first time,
you must set the date and time.  Please press <RETURN>
and the system will prompt you for this information.
```

9 Press Return.

Your screen should now look similar to this:

```
Enter changes to system date and time

                Set Date and Time

Date              June  27, 1985

Time                    :

AM or PM              PM

Time Zone          eastern

Is Daylight Savings Time EVER used?  YES

                Menu Only Mode
```

10 Select an entry for the month field by pressing the SELECT key (F7) repeatedly until the correct month appears. Press Return to move to the next field. Do not use the arrow keys.

11 Fill out each field in the form as you did the previous one. When filling in the time field, you can simply type the correct hour and minutes. Use Return or Tab to move between fields. When the entire form has been filled out, press SAVE (F6).

You'll see a message similar to this:

```
The date has been set to:
        June 27, 1985 2:00 PM.

Press Return to continue.
```

12 Press **Return**.

You'll see:

```
Do you want to install Simul-Task at this time?
Simul-Task will let you run MS-DOS and the UNIX
System simultaneously.

Please type "y" or "n".
```

The UNIX System installation is now complete. If you purchased AT&T MS-DOS 3.1 along with the UNIX System, you should install the Simul-Task OS Merge feature at this time. However, if you don't have AT&T MS-DOS 3.1, you can install it later using the instructions in the *UNIX System V, Release 2.0 Operations Guide—AT&T Personal Computer 6300 PLUS.*

Remember: To use Simul-Task OS Merge, your PC 6300 PLUS must have at least 1 MB of main memory. And, if you typically use MS-DOS programs that require more than 256 KB of memory, it's recommended that your computer have at least 1.5 MB of main memory.

13 Type **y** or **n** and press Return to indicate whether or not you want to install Simul-Task OS Merge at this time.

If you entered **n**, your screen will look like this:

```
INIT: New run level: 2

Welcome to the AT&T PC 6300 PLUS UNIX System

Please login:
```

Your PC 6300 PLUS is now ready for you to use the UNIX System. Go to Page 5-42, "Logging Into the UNIX System."

If you entered **y** and chose to install Simul-Task OS Merge at this time, go to the next page.

Installing Simul-Task OS Merge

Note: Installing Simul-Task OS Merge can be thought of as installing MS-DOS in such a way that it can run simultaneously with the UNIX System.

1 Make sure that your screen looks like this:

```
Simul-Task Operating System Merge Installation

This procedure installs the "Simul-Task" feature so
you can run MS-DOS and UNIX programs at the same time.
You must have at least 1 MB of memory to install
Simul-Task.  You will need 4 floppy disks:
   - AT&T Simul-Task Disk
   - A spare 360 KB floppy disk
   - AT&T MS-DOS 3.1 System Diskette
   - AT&T MS-DOS 3.1 Supplemental Programs Diskette
       (optional)

Label the spare floppy disk "Temporary Disk" and
insert it before you continue.

Press Return to continue
or CANCEL to stop.
```

2 Obtain the three (or four) items listed on the screen. The spare 360-KB (double-density) floppy disk can be formatted or even have data on it. However, the data will be lost.

3 Label the spare floppy disk "Temporary Disk" as instructed using a felt-tip pen.

4 Insert the Temporary Disk and turn the drive lever downward.

5 Press Return. You'll see:

```
Installation in progress.
Do not remove the floppy disk.
```

After a few moments, you'll see:

```
Leave the Temporary Disk in the floppy disk drive.
Your system will now be shut down and rebooted from
the Temporary Disk.

Press Return to continue
or CANCEL to stop.
```

6 Press Return. After the system is shutdown and rebooted, you'll see the following message:

```
Please insert the Simul-Task Disk, and then press
the Reset Button.
```

7 Turn the drive lever upward.

8 Remove the Temporary Disk from the drive and place it in its envelope.

9 Insert the Simul-Task OS Merge Disk and turn the drive lever downward.

10 Press the RESET button on the front of the main unit.

After the RESET button is pressed, the system checks the hard disk for an unformatted MS-DOS partition and one of two things will happen:

a. If an unformatted MS-DOS partition is found, you'll see the following message:

```
The MS-DOS partition on your hard disk will now be
formatted.  This step will not damage any files.
Formatting will take several minutes.  Press the
F1 key if you do not want to do this.

Press Return to continue or F1 to stop.
```

To format the MS-DOS partition, press Return and your screen will display:

```
Hard disk MS-DOS partition is being formatted.
Please wait.
```

After the partition is formatted, you'll see the message shown in item "b" on the next page.

b. If the system didn't find an unformatted MS-DOS partition, the following message is displayed:

```
Please remove the Simul-Task Operating System
Merge Disk, and then press the Reset Button.
```

11 Turn the drive lever upward.

12 Remove the Simul-Task OS Merge Disk and place it in its envelope.

13 Press the RESET button.

The computer will again reboot the UNIX System but this time from the hard disk instead of a floppy disk. You'll see the following message:

```
Please re-insert the Temporary Disk before you continue.

Press Return to continue
or CANCEL to stop.
```

14 Insert the Temporary Disk and turn the drive lever downward.

15 Press Return and look for the following message to appear:

```
Installation in progress.
Do not remove the floppy disk.
```

When the installation is complete, you'll see:

```
Please insert the Simul-Task Disk before you continue.

Press Return to continue or CANCEL to stop.
```

16 Turn the drive lever upward.

17 Remove the Temporary Disk and place it in its envelope.

18 Insert the Simul-Task OS Merge Disk and turn the drive lever downward.

19 Press Return and you'll see:

```
Installation in progress.
Do not remove the floppy disk.
```

When the installation is complete, you'll see:

```
Please insert the AT&T MS-DOS 3.1 System Diskette
before you continue.

Press Return to continue
or CANCEL to stop.
```

20 Turn the drive lever upward.

21 Remove the Simul-Task OS Merge Disk and place it in its envelope.

22 Insert the AT&T MS-DOS 3.1 System Diskette and turn the drive lever downward.

23 Press **Return** and you'll see:

```
Installation in progress.
Do not remove the floppy disk.
```

When the installation is complete, you'll see:

```
Please insert the MS-DOS 3.1 Supplemental Programs
Diskette before you continue.  If you do not have
this diskette, you may press CANCEL instead.

Press Return to continue
or CANCEL to stop.
```

24 Turn the drive lever upward.

25 Remove the AT&T MS-DOS 3.1 System Diskette from the drive and place it in its envelope.

26 Insert the MS-DOS 3.1 Supplemental Programs Diskette if it is available and turn the drive lever downward.

If the MS-DOS 3.1 Supplemental Programs Diskette is not available, press CANCEL (F1) and go to Step 28. If this diskette *is* available, you should follow the instructions on the screen to install the diskette.

27 Press Return to begin installing the supplemental programs and you'll see:

```
Installation in progress.
Do not remove the floppy disk.
```

28 Look for the following message to appear:

```
Simul-Task Operating System Merge has been installed.
"MS-DOS" will appear in the Office menu after you login.

To install MS-DOS application programs from the "Software
Setup" menu, select "Install MS-DOS Software From Floppy
Disk".

Press Return to continue.
```

29 Turn the drive lever upward.

30 Remove the AT&T MS-DOS 3.1 Supplemental Programs Diskette (if it was inserted into the drive) and place it in its envelope.

31 Press **Return** and you'll see:

```
Welcome to the AT&T PC 6300 PLUS UNIX System

Please login:
```

32 Make sure you store all of your diskettes in a safe place. If desired, you can reformat and reuse the Temporary Disk.

Logging Into the UNIX System

To access and use the UNIX System, you must first "log in." The login process simply lets the UNIX System know who you are and that you are an authorized user of that particular system. This prevents unauthorized persons from using your computer.

To log in, you must have a *login ID*. Initially, you'll use the login ID **install** to access the UNIX System. A little later, you'll set up your own personal login ID that you'll use while doing your work.

Each login ID has what is called a "HOME" directory. When you use a login to access the UNIX System, you're placed into a specific area of the filesystem known as the login's HOME directory. It is from this point in the filesystem that you begin your work. The HOME directory for the **install** login is **/u/install**. Refer to Chapter 2, "Getting to Know Your Computer" for information on directories.

1 Make sure your screen displays:

```
INIT: New run level: 2

Welcome to the AT&T PC 6300 PLUS UNIX System

Please login:
```

2 Type **install** and press Return.

In a moment, you'll see:

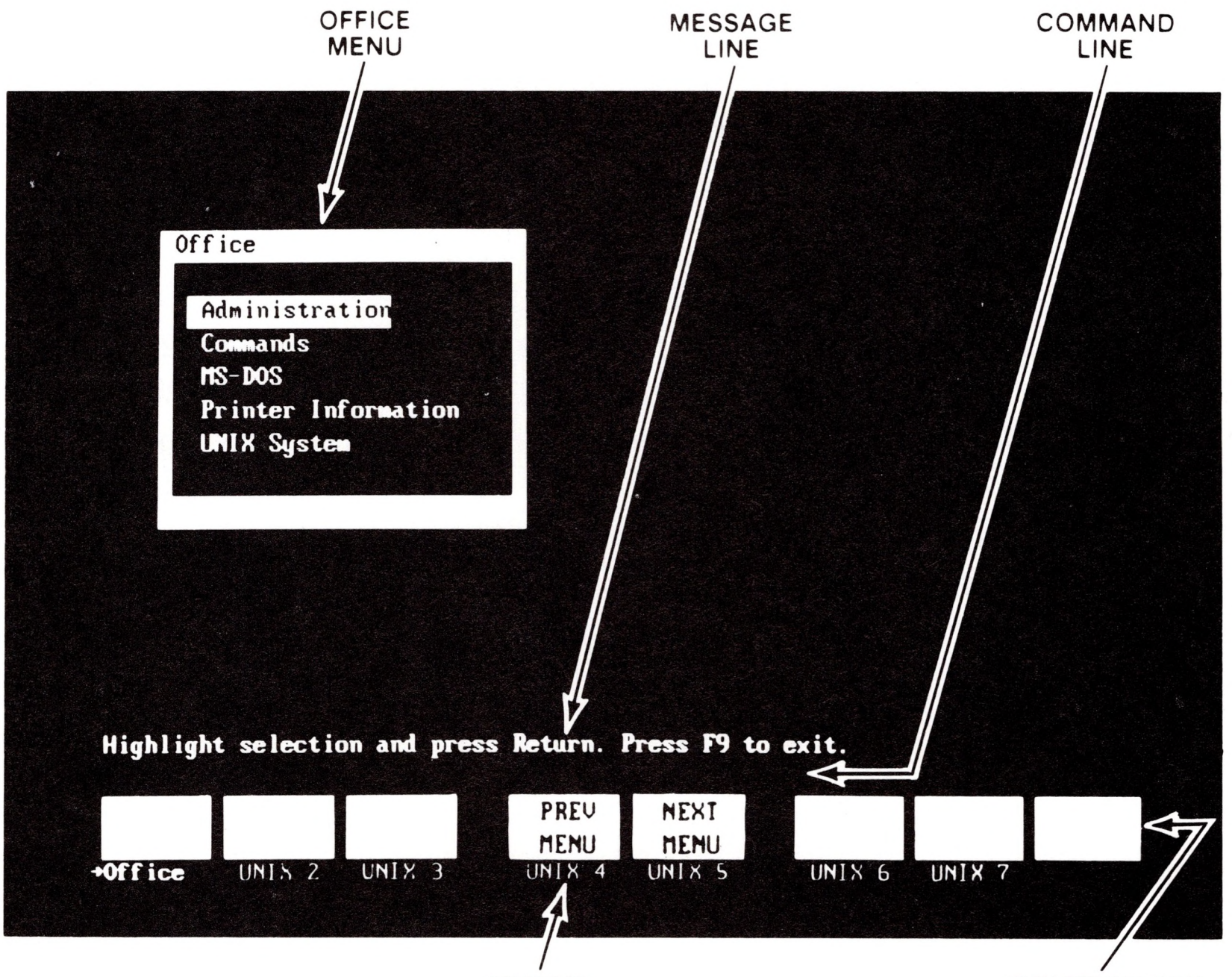
```
UNIX System V Release 2.0

Copyright (c) AT&T 1985
  All Rights Reserved

Disk space: nn.nn MB of nn.nn MB available (nn.nn%).
```

The total disk space available may be less than 20 MB because your UNIX partition may not use the entire hard disk. Even if it did, certain parts of the UNIX partition are reserved for special purposes and cannot be used for storage.

After the above messages appear, your screen clears and you're taken to the PC 6300 PLUS "Office."

The PC 6300 PLUS Office

The PC 6300 PLUS Office is an interface to the UNIX System that allows you to perform administrative tasks with ease or work directly with the MS-DOS and UNIX Operating Systems. Each time you log in to the UNIX System to begin work, you start off in the Office. The Office has five main parts.



The Parts of the Office

The following paragraphs discuss the parts of the Office.

The Office Menus

The Office organizes work through menus that appear on your screen. Each menu contains a choice of items from which you select what it is you want to do. The menu now on your screen is called the "Office" menu. The name of the menu appears in the border surrounding the menu.

The Office menu is used to select the type of task you want to perform. After selecting a task, another menu appears from which you may further specify what you want to do. Once the final selection is made, you're prompted for information needed by the computer to perform the task.

The Office menu is normally the starting point of all work done on your PC 6300 PLUS. From this menu, you can select administrative tasks or commands, check the status of the printer, and run application programs. In addition, you can choose to work directly with the UNIX Operating System and/or the MS-DOS Operating System if it's installed.

After reviewing the other parts of the Office, we'll come back to the Office menu and look at the items listed there.

The Message Line

The message line is just below the area of the screen where the menus appear. This line displays messages to help guide you through certain tasks. The message line currently displays:

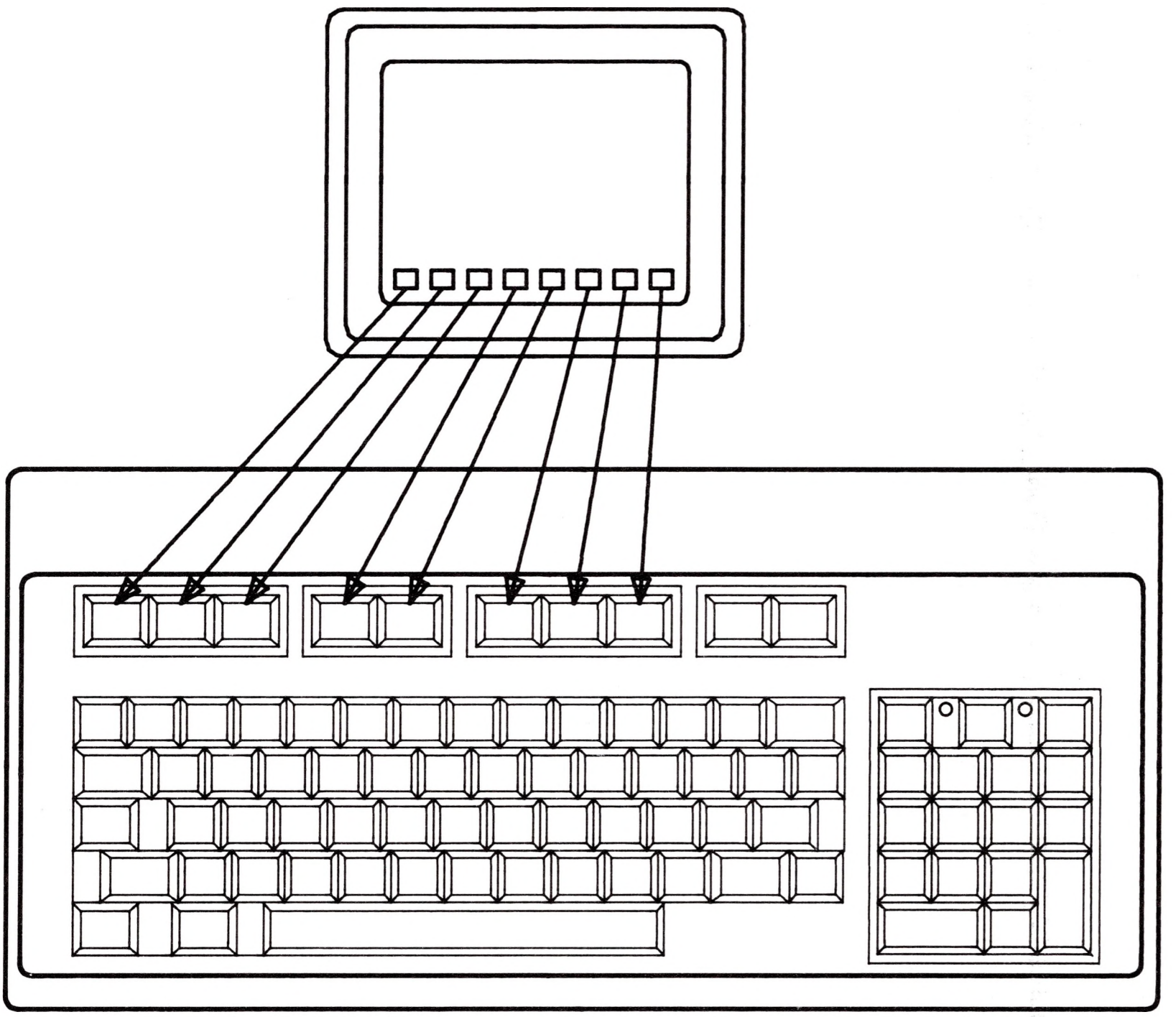
```
Highlight selection and press Return. Press F9 to exit.
```

The Command Line

The command line is just below the message line. It displays commands or whatever you type on the keyboard. The command line is currently blank, but you'll see how it's used in a later section.

The Function-Key Labels

The eight function-key labels define how the keyboard's function keys can be used in the Office. These keys are often called "screen-labeled" keys. A label and the use of its corresponding function key may change as you move from one menu to another.



The Office Status Line

The UNIX Office has seven independent UNIX windows that you can use to process your work. The Office Status Line, located below the function-key labels, informs you of each window's status. The status line currently has a small arrow pointing to "Office." This arrow identifies the window that's currently displayed on your screen. You'll learn more about the Office windows when we begin using them in a later section.

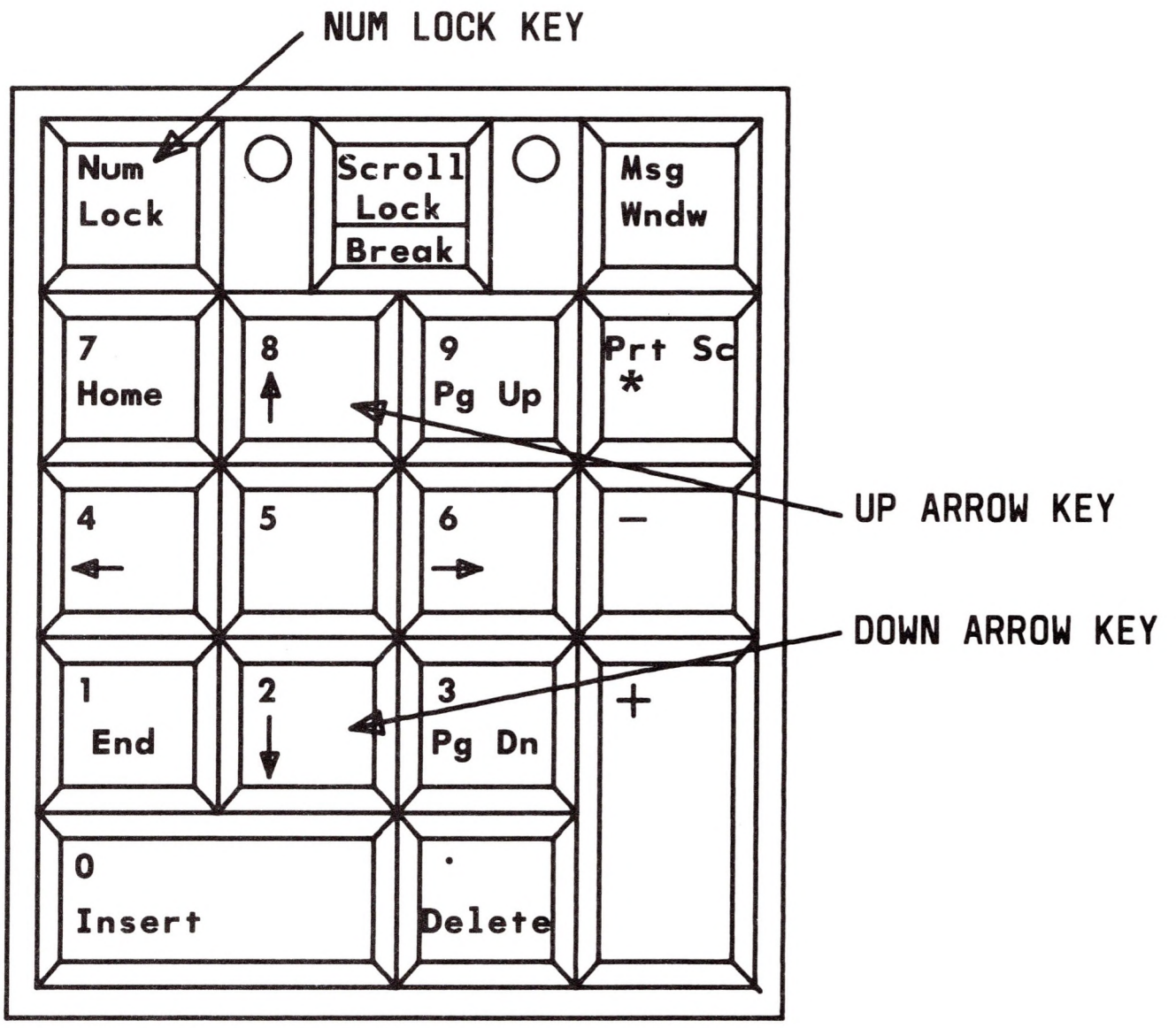
The Status Line can also report the status of your computer's communication facilities. When operating in this mode, the status line informs you when you receive electronic mail. And, if the Telephone Manager option is installed, the status line displays the status of the computer's telephone lines. You can toggle between the two modes of the Status Line by pressing Alt and F10 simultaneously. If you do this now, the Communication Status Line will be blank because your communication facilities are not yet in operation.

Selecting an Item From an Office Menu

Each menu that appears on your screen contains a cursor. The cursor is a horizontal bar that highlights a single item in the menu. By moving the cursor to an item and pressing Return, you can select any item in the menu.

The most direct way to move the cursor is with the up- and down-arrow keys (cursor movement keys). These keys are located on the numeric keypad portion of the keyboard. Try moving the cursor using these keys.

> ***Note:*** Make sure that the NUM LOCK key is not activated.



An alternative to using the arrow (cursor movement) keys is to type the first few letters of an item. As you type, you'll see the letters appear on the Command Line. Try this by typing **p** and notice that the cursor moves to `Printer Information` and `p` appears on the Command Line. You need only to type enough characters for the computer to distinguish the item you want from others in the menu. Since there are no other items in the menu that begin with the letter p, the cursor moved directly to `Printer Information`.

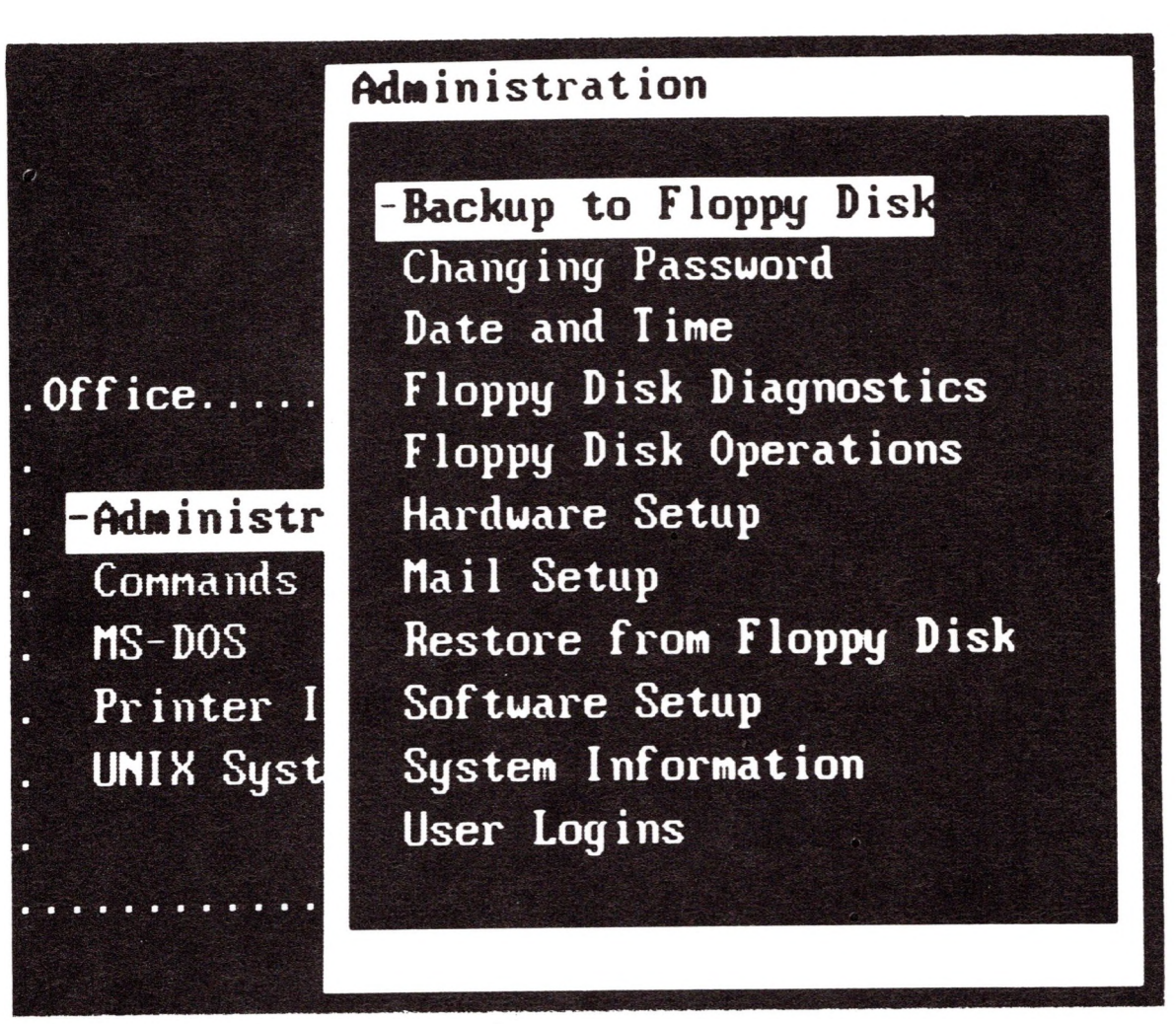
> ***Note:*** You can use Back Space to erase characters from the Command Line.

The Administration Menu

Now let's see what happens when you move the cursor to an item and press Return.

1. Move the cursor to `Administration` if it's not already there.
2. Press Return.

Notice that a new menu appears in front of the Office menu. This new menu is the Administration menu. The highlighted border of the menu indicates that this is your current menu, or the one in which you're currently working.



Listed in the Administration menu are various administrative tasks that have been simplified for your convenience. Instead of entering complicated commands, all you have to do is select a task and you'll be prompted for the information the computer needs.

Switching Between Menus

When working in the Office and you have more than one menu on your screen, you can go from one menu to another without removing a menu from the screen. You do this with the two screen-labeled keys PREV MENU (F4) and NEXT MENU (F5).

1 Note that the border around the Administration menu is highlighted. This means that the Administration menu is your current menu.

2 Press the function key associated with PREV MENU (F4).

The Office menu is now your current menu and the Administration menu is suspended (put aside) until you need it again.

3 Return to the Administration menu by pressing either PREV MENU (F4) or NEXT MENU (F5). If you press PREV MENU (F4), you can loop around to the Administration menu.

Exiting a Menu

After completing an administrative task, you'll need to exit the Administration menu and remove it from the screen. If you look at the screen-labeled keys at the bottom of your screen, you'll see that key F1 is the CANCEL key. This key is used to exit and remove a menu from the screen. When the menu has been removed, the previous menu becomes your current menu.

1 Press CANCEL (F1).

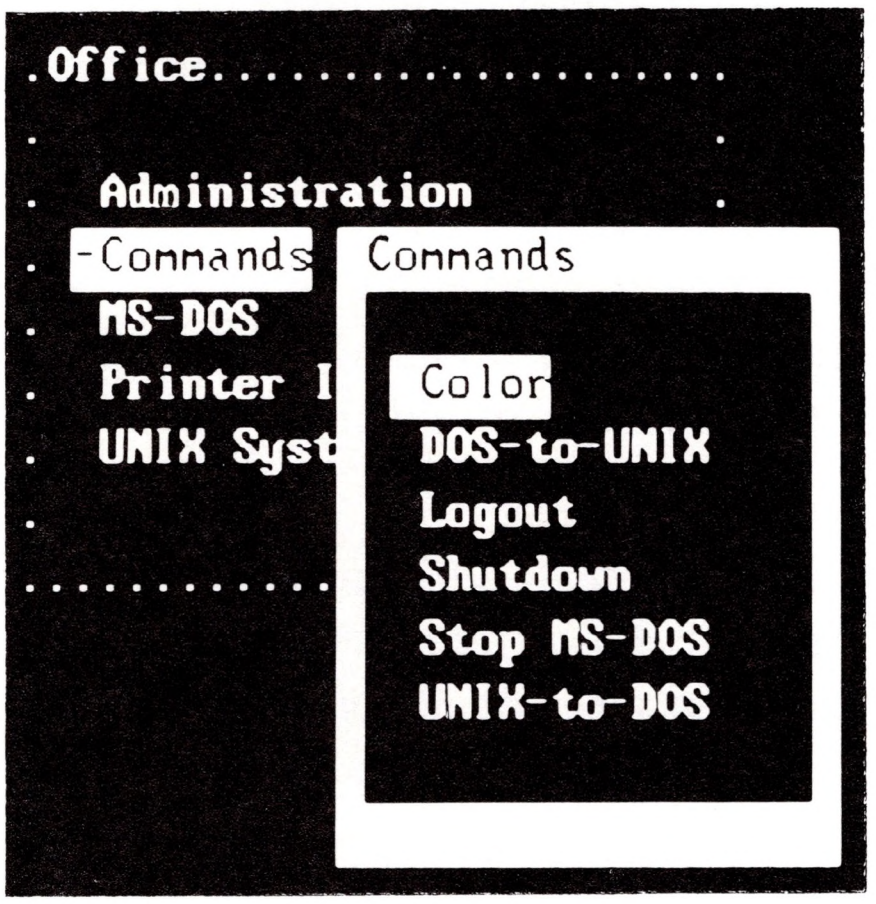
The Administration menu is removed from the screen and the Office menu again becomes your current menu.

2 Look at the screen label for the F1 function key. You'll notice that F1 doesn't have the CANCEL label when the Office menu is your current menu. But, if you look at the message line, it tells you to press F9 to exit. Pressing the F9 function key tells the computer that you've finished working and wish to log out (opposite of logging in). Don't press F9 to exit at this time because we're not ready to log out just yet.

The Commands Menu

1 Move the cursor to `Commands` in the Office menu.

2 Press Return.



The menu that you now see on your screen is the Commands menu. From this menu, you can:

- Select from several different color combinations for your color monitor.

- Perform DOS-to-UNIX file conversions on text files. If you create a file with an MS-DOS program and later wish to use the file with a UNIX program, you need to convert the file to UNIX System format. You can easily do this by selecting `DOS-to-UNIX`.

- Log out of the UNIX System. This is the same as pressing the F9 key when in the Office window. It tells the computer that you are finished working.

- Shut down the computer. With the UNIX System, your PC 6300 PLUS is designed to run continuously, even if no one is logged in. This is so the UNIX System can perform all of its "housekeeping" activities. But, if you want to turn the computer off, you should first select `Shutdown` from the Commands menu.

- Stop MS-DOS from running. This command is especially useful in stopping MS-DOS from running when an MS-DOS application program locks up your computer.

- Perform UNIX-to-DOS file conversions on text files. If you create a file with a UNIX program and later wish to use the file with an MS-DOS program, you need to convert the file to MS-DOS format. You can easily do this by selecting `UNIX-to-DOS` from the menu.

3 Select the Color command if you have a color monitor. A new menu appears from which you can choose a color combination for your screen.

4 Press the CANCEL (F1) key twice to return to the Office menu.

The Printer Information Menu

1 Move the cursor to `Printer Information` in the Office menu.

2 Press Return.

You'll see your screen go blank for a moment and then the Printer Information menu appears. This menu contains three items:

Printer Queue: In the UNIX System, one printer may be serving several users that are all working at the same time. For this reason, files to be printed are queued and printed in the order they are received. Selecting `Printer Queue` lists all of the files in the queue.

Printer Status: The selection of this item will report the current status of the printer, whether the printer is in use or idle, and if it is accepting requests.

Administrative Information: The information obtained by selecting this item is useful in determining the printer setup and operation.

3 Press the CANCEL (F1) key to return to the Office menu.

The Programs Menu

The Programs menu is not available until you've installed MS-DOS or UNIX application programs. Once an application program has been installed, `Programs` appears in the Office menu. If you select this item, a menu appears with a list of the MS-DOS and UNIX System application programs installed on your computer. You can run application programs directly from this menu instead of going through the MS-DOS or UNIX Operating Systems.

If a filename is required to run the application program, you'll be prompted for the filename before the program is executed.

Accessing MS-DOS and the UNIX System From the Office

Not only does the Office menu give you a means of administering your UNIX System, it also provides easy access to the MS-DOS and UNIX Operating Systems.

If you have installed Simul-Task OS Merge and the MS-DOS Operating System, the item "MS-DOS" will appear in the Office menu. Selecting this item tells your computer that you want to work with MS-DOS. Your computer will then present you with a standard MS-DOS prompt and you can begin using MS-DOS commands. You'll learn more about using MS-DOS in the section, "Introduction to Simul-Task OS Merge."

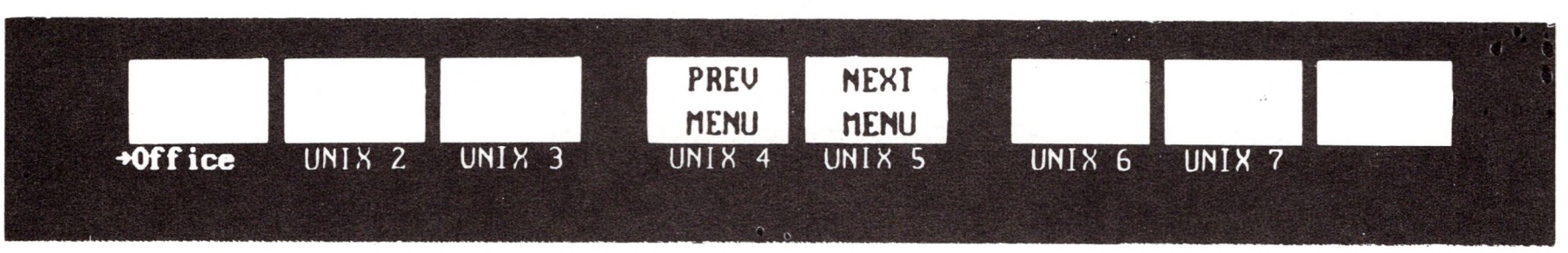
You can also run the UNIX Operating System from the Office menu by selecting the UNIX System item. The Office menu will be removed from the screen and you're taken to one of the six remaining UNIX windows. A UNIX prompt will then appear.

The Office Windows

Today's businesses place a lot of emphasis on productivity and efficiency. With computers in an office, these demands can be easily met. But even computers can be inefficient when you have to wait for one process to finish before you can start another one.

With the PC 6300 PLUS and the UNIX System, you'll never have this problem. You have seven different UNIX System screens or windows in which to work. The first window is the one you've been working in thus far. This window always contains the Office and its associated parts (other menus, Command and Message Lines, and Function-key Labels).

Looking at the status line, you can see six other labels; UNIX 2 through UNIX 7. These labels represent the six other UNIX System windows that are available to you. You can tell which of these windows is currently on your screen by looking for a small arrow on the status line. This arrow points to the window in which you're currently working. If you're in the first window (Office window), the arrow will be pointing to the `Office` label.

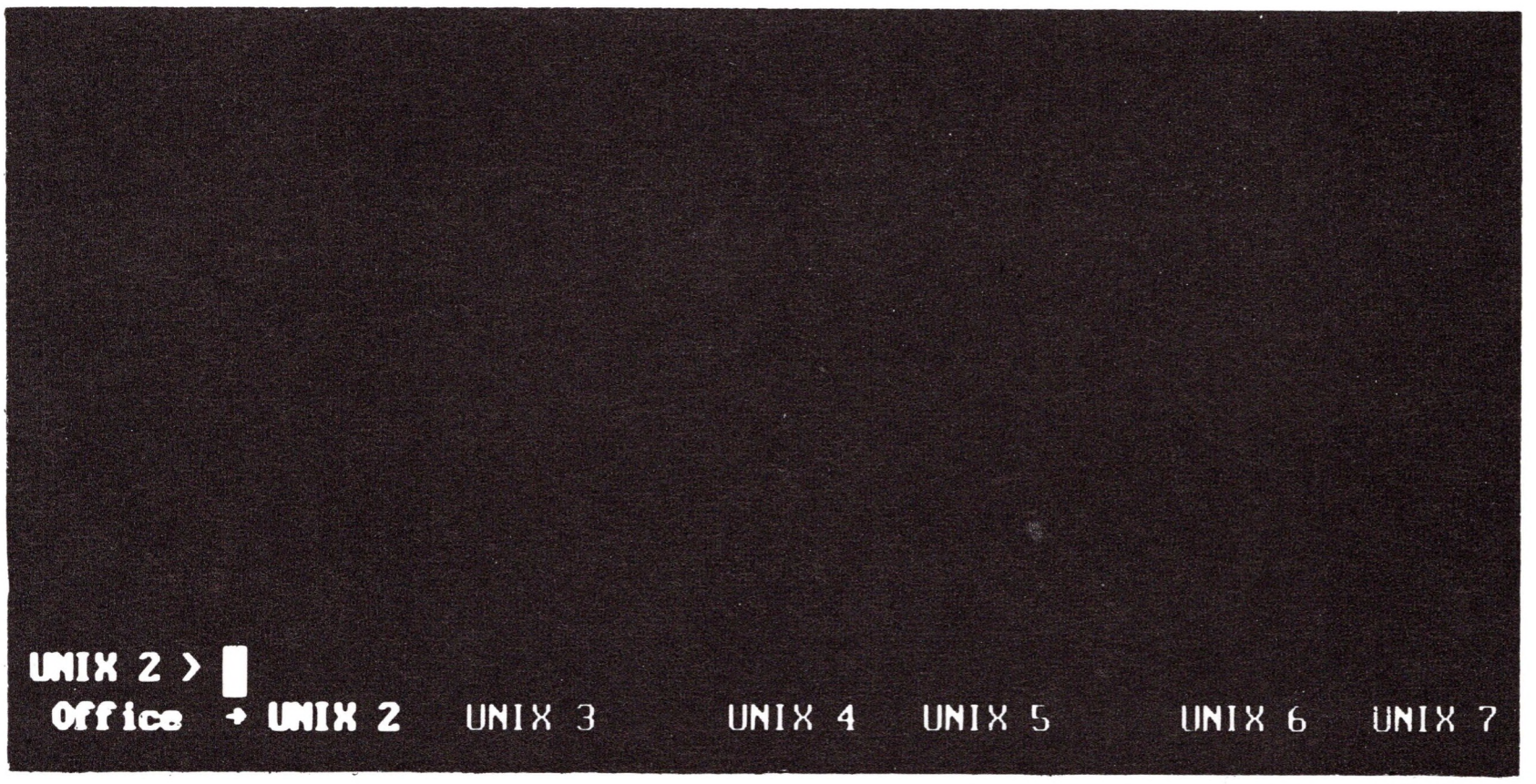


Opening a Window

Let's open the second window, and you'll see how easy a window is to open.

1 Hold Alt and then press F2 at the same time.

The Office window is removed from the screen and replaced with the second window. The UNIX 2 > on your screen is the prompt for the second UNIX System window. This prompt tells you that the UNIX System is ready to receive your UNIX command. Also, notice that the small arrow on the status line is pointing to UNIX 2.



2 Note that UNIX 2 and Office are both highlighted on the status line. The highlight does not tell you which window is displayed on the screen. Remember, that's the purpose of the arrow. The highlight tells you if a window is active. To illustrate what active means, go to the next section, "Moving From Window to Window."

Moving From Window to Window

1 Return to the Office window by pressing Alt and F1 at the same time.

The second window is removed from the screen. Even though you cannot see this window, it is still active and running whatever program you started before removing it from the screen. This is why UNIX 2 is still highlighted on the status line. The arrow indicates that the Office window is your current window.

2 Press Alt and F2 at the same time to return to the second window.

Closing a Window

Closing a window is much like "logging out" of the UNIX System, that is, you're telling the UNIX System that you've finished working with the operating system. But in this case, you're telling the UNIX System that you've finished with a particular window.

Caution: When you close a window, any process running in that window is automatically terminated. But when you simply display another window, the process in the previous window continues running.

Let's close the second window.

1 Make sure that the window you want to close is displayed on the screen. You can only close a window if it's displayed on the screen.

2 Press Ctrl and d at the same time or type `exit` and press Return.

Notice that UNIX 2 is no longer highlighted on the status line and that the Office is now on the screen. Anytime you close a window, you are taken to the Office window.

Accessing the UNIX System From the Office

As we briefly discussed in an earlier section, you can access the UNIX Operating System from the Office menu. You've just learned how to access the UNIX System by pressing Alt and one of the function keys F2 through F7. Now let's learn how to access the UNIX System from the Office menu.

1 Move the cursor to `UNIX System` in the Office menu.

2 Press Return.

The Office is removed from the screen and the next available window is opened. The UNIX prompt looks the same as it did when you opened the second window by pressing Alt and F2. You can now enter your UNIX System commands.

3 Close this UNIX window by pressing Ctrl and d.

The Office reappears on the screen after the window is closed.

Setting Up a Printer

With the UNIX System, you can easily share one printer with a number of users. When you enter the command to print a file, the file is not sent directly to the printer. Instead, it is copied to a waiting area (temporary storage) of the disk until the printer is available. This "first-come, first-serve" method of printing files is referred to as queuing or spooling.

When the printer is available to print your file, the temporary file is sent to the printer. After the file has been printed, it's removed from the temporary storage area on the disk.

The following steps set up your UNIX System software so you can use your printer in the manner described above.

1 Display the Office menu.

2 Move the cursor to `Administration` and press Return.

The Administration menu appears.

3 Move the cursor to `Hardware Setup` and press Return.

The Hardware Setup menu appears.

4 Move the cursor to `Printer Setup` and press Return.

The Printer Setup menu appears. As you can see from this menu, some printers can be connected to the parallel interface, some to the serial interface, and certain printers can be connected to either interface. If your printer can be used with either type of interface, the parallel interface is preferred. You can then use the serial interface for other purposes.

5 Move the cursor to `Parallel Setup` or `Serial Setup` and press Return.

A printer set up form appears on the screen.

6 Press OPTIONS (F8) to display a list of printers that are known to work with your PC 6300 PLUS.

7 Move the cursor to the name of the printer that's connected to your computer.

Note: All of the printer names in this list are not visible in the menu. To see the remaining printer names, you must scroll the list using the up-arrow and down-arrow keys.

If the name of your printer doesn't appear in this list, do one of the following:

- Select the name of another printer that's known to be compatible with your printer.

- Select `Other`. This will allow you to use your printer for text files, but you may not be able to take advantage of special features such as boldface type, underlining, etc., without your own specialized software.

8 Press Return.

The name of the printer you selected appears on the first line.

9 Press Return to move the cursor to the second line.

It is recommended that you select NO in response to the question about using your printer in the RAW mode. Selecting NO ensures predictable results when printing UNIX text files. However, if you want to print a UNIX file that requires special printer functions (underlining, compressed mode, etc.), you will have to convert that file to MS-DOS format using the UNIX-to-DOS command in the commands menu. For additional information, refer to Chapter 2 of the *UNIX System V, Release 2.0 Operations Guide—AT&T Personal Computer 6300 PLUS.*

10 Press SELECT (F7) to indicate whether or not you want to use your printer in the raw mode.

11 Press SAVE (F6) to indicate that you've completed the form.

A confirm message appears warning you that the printer setup will stop printing on all other printers.

12 Press Return to continue.

After a few seconds, the Office window reappears with the Hardware Setup menu displayed.

13 Press CANCEL (F1) repeatedly until you return to the Office menu.

You can now select the Printer Information item from the Office menu and review the status of your printer.

For information on configuring your printer's cables and DIP Switches, refer to Appendix E, "Printer Cables and DIP Switches."

Introduction to Simul-Task OS Merge

With the Simul-Task OS Merge feature, you'll be able to use both the MS-DOS and UNIX Operating Systems simultaneously. The ability to use both of these popular operating systems on one computer gives you the flexibility to process your work on either operating system. You can also combine MS-DOS and UNIX System programs to perform certain tasks more efficiently.

This section teaches you the fundamentals of Simul-Task OS Merge so you can begin using MS-DOS and the UNIX System at the same time. The following topics are discussed:

- Accessing MS-DOS
- Using MS-DOS Through Simul-Task OS Merge
- Switching Between MS-DOS and the UNIX System
- Stopping MS-DOS
- Installing MS-DOS Applications.

Accessing MS-DOS

There is more than one way to access MS-DOS from the UNIX System. The most direct way is from the Office menu. Once Simul-Task OS Merge is installed, you'll see "MS-DOS" appear as an item in the Office menu. Moving the cursor to this item and pressing Return causes the PC 6300 PLUS to begin operating as an MS-DOS computer.

1 Make sure the Office menu is displayed on your screen.

2 Move the cursor to MS-DOS and press Return.

Your screen clears and after a brief pause, the MS-DOS prompt appears:

```
C>
```

Once the MS-DOS **C>** prompt appears on your screen, you're ready to begin working with MS-DOS. Your computer responds to MS-DOS commands in a normal fashion and produces normal MS-DOS results.

Using MS-DOS Through Simul-Task OS Merge

After accessing MS-DOS through Simul-Task OS Merge, you're presented with a standard MS-DOS prompt (`C>`). If you're familiar with the MS-DOS Operating System, you know that the MS-DOS prompt indicates the drive from which you're working (current drive).

With the PC 6300 PLUS, you can have two floppy disk drives known by MS-DOS as drive A and drive B. If your prompt is `A>` or `B>`, you're working from one of the computer's floppy disk drives.

With a hard disk drive, you can have three additional prompts; `C>`, `D>`, and `E>`. The `C>` prompt is the normal designation for the hard disk drive (known by MS-DOS as drive C). On your computer, drive C contains the entire UNIX file system. And with Simul-Task OS Merge, this file system also contains MS-DOS programs and files. This means that MS-DOS and UNIX System programs and files are stored together on drive C.

In special cases, Simul-Task OS Merge treats the hard disk drive as multiple disk drives instead of one physical disk drive. The result is two additional drives known as drive D and drive E. These drives are called virtual drives and are discussed in detail in the *UNIX System V, Release 2.0 Operations Guide—AT&T Personal Computer 6300 PLUS.*

Upon seeing the MS-DOS prompt, you can type almost any MS-DOS command. For example, you can rename a file called *report* to *report.old* by typing:

```
C> ren report report.old
```

To copy a file called *names* from the hard disk to a floppy disk, you would type:

```
C> copy names a:names
```

If you have an off-the-shelf application program on a floppy disk, you can run it from drive A just as you would normally. For example, with a WORDSTAR floppy disk in drive A, you can invoke WORDSTAR by typing:

```
C> a:ws
```

and pressing Return.

When using MS-DOS, there are two ways to print your files. The first way prints only the part of a file that's shown on your screen. Simply press Prt Sc and the information on your screen will be sent to the printer.

The second way to use your printer from MS-DOS is with the **print** command. This is just like normal MS-DOS with one exception. After entering the **print** command, your file is not sent directly to the printer. Instead, it's sent to the UNIX System's printer spooling system. This method of printing allows you to continue working while a file is being printed.

You can see from the previous examples that using MS-DOS through Simul-Task OS Merge is very much like using MS-DOS on a stand-alone MS-DOS computer.

Switching Between MS-DOS and the UNIX System

You have already seen that when you access MS-DOS from the UNIX System, your computer begins operating as a stand-alone MS-DOS computer. This is true only to a certain extent. While you're working in MS-DOS, your computer continues to run the UNIX System, but you can only see one operating system on your screen at a time.

When MS-DOS work is shown on the screen, you're seeing the "MS-DOS window." And, when your UNIX System work is on the screen, you're seeing the "UNIX window." You can easily switch back and forth between the MS-DOS window and the UNIX window using your keyboard. The key(s) you press will depend on the type of keyboard you have.

Model 302 The Model 302 keyboard has a [Msg Wndw] key in the upper right corner. Pressing this key switches windows from one operating system window to another.

Model 301 The Model 301 keyboard doesn't have a [Msg Wndw] key. Therefore, to switch between operating system windows, press [Ctrl], [Alt], and [Back Space] at the same time.

Now let's try switching between MS-DOS and the UNIX System.

1 Type **dir** from the **C>** prompt and press Return. What you'll see on your screen is an MS-DOS listing of the files and directories for the **/u/install** directory. This is the HOME directory for the **install** login that you used to access the UNIX System. This directory doesn't have any files in it at this time.

2 Switch to the UNIX window by pressing the appropriate key(s) as previously described.

Your MS-DOS window disappears instantly and the UNIX window appears. The UNIX window that you return to will be the same one that you were in before you switched to MS-DOS.

3 Press the appropriate key(s) to switch back to the MS-DOS window.

The MS-DOS window reappears on the screen and looks exactly as it did before you switched to the UNIX window.

Using these two windows, you can run an MS-DOS program and several UNIX programs at the same time (don't forget that you have access to six additional UNIX windows). For example, you can work on a spreadsheet while in MS-DOS, and switch over to the UNIX System to prepare the text that goes along with the spreadsheet at the same time.

Ending an MS-DOS Session

When you are finished working with MS-DOS, you can stop MS-DOS and return to the UNIX System by typing:

```
C> quit
```

and pressing [Return]. Notice that **quit** is entered from the MS-DOS prompt.

Once the **quit** command is entered, a UNIX window reappears on your screen. After entering **quit** and returning to the UNIX System, you cannot switch to the MS-DOS window and work because MS-DOS will not be available. If you switch to the MS-DOS window, you'll see the last MS-DOS window, but anything entered on the keyboard will be ignored since MS-DOS is not running.

If you have problems with an MS-DOS program and you are not able to enter the **quit** command, there is another way of stopping MS-DOS and returning to the UNIX environment. This combination of keys is easy to remember because it's the normal combination used to reboot MS-DOS. When pressed at the same time, [Ctrl], [Alt], and [Del] will stop MS-DOS from running.

There may be times when an MS-DOS application program has your computer so confused that even this method of stopping MS-DOS will not work. If this happens, switch back to the UNIX System and from the Commands menu, execute the `Stop MS-DOS` command. This is the most certain way to stop MS-DOS.

Installing MS-DOS Application Programs

In most cases, it is much more convenient to run your application programs from the hard disk drive instead of a floppy disk. In order to do this, you must copy the application program from floppy disk(s) over to the hard disk drive.

Installing an MS-DOS application program to run under Simul-Task OS Merge is very similar to installing the program to run under normal MS-DOS. The installation is performed through the Office. Upon completion, the name of the program will appear under the Office's "Programs" menu and you can run the program directly from the Office without first accessing MS-DOS.

The following steps demonstrate how an MS-DOS application is installed. Additional information on installing MS-DOS applications can be found in the *UNIX System V, Release 2.0 Operations Guide—AT&T Personal Computer 6300 PLUS.*

> ***Note:*** Prior to beginning the installation, make sure that MS-DOS is not running. Refer to the previous section to stop MS-DOS.

1 Move the cursor to `Administration` in the Office menu and press **Return**.

The Administration menu appears on your screen.

2 Move the cursor to `Software Setup` and press Return.

The Software Setup menu appears on your screen.

3 Move the cursor to `Install MS-DOS Software from Floppy Disk` and press Return.

The Install MS-DOS Software from Floppy Disk menu appears.

4 Move the cursor to `Other Program` and press Return.

The following appears on your screen:

```
Install MS-DOS Program From Floppy Disk

Program name:
```

5 Type the name of the program you wish to install (this can be any name that you wish to appear in the Programs menu up to 30 characters).

6 Press SAVE (F6). After a brief pause, you'll see:

```
Now, copy the program onto your hard disk.  To do this,
follow the installation instructions that came with the
program. (Do NOT, however, reset your computer -- see
your PC 6300 PLUS documentation for further assistance.)

You are now in the directory C:\program.
It is suggested that you install the program in this
directory.

When you are finished, type ''quit'' followed by Return.
The special C~ prompt below reminds you to do this.

C~\tmp\autoexec.bat

C~
C~
```

7 Obtain the documentation that came with your application program and install the program according to the instructions given there. When installing the application, keep in mind the following important items:

- **DO NOT** press the RESET button or turn the power off during the installation, even if the instructions tell you to do so.

- If the instructions tell you to make changes to **config.sys** or **autoexec.bat**, these files are located in the **root** (\) directory. To get to this directory, type **cd** \ and press Return.

- If the application requires that you install any drivers, you must install them in the **root** (\) directory.

8 Type **quit** and press Return after you have finished the installation as instructed in the application program's documentation. You'll see the following message:

```
You will now be asked some questions about using this
program.  If installation was not successful, you may
stop now by pressing CANCEL.

Press Return to continue
or CANCEL to stop.
```

9 Press Return. The following form appears on your screen.

```
                              Program name: <program>
      Command you type to run program: <command>
Can you enter a file with the command? NO
Full pathname of directory             <directory>
               where program is stored:
   Should program be in Programs menu? YES
             Memory requirements (KB): 256
               Use UNIX printer queue: YES
   Allow "Break" to interrupt program: NO
```

10 Complete each blank field in the form moving from one field to another using Return and Tab. Where responses are shown, you don't have to change them if they're correct. Pay attention to the Message Line for instructions on completing the current field.

The UNIX printer queue should be set to YES unless the program requires direct access to the printer, or if there are problems using your printer with Simul-Task OS Merge. Refer to the *UNIX System V, Release 2.0 Operations Guide—AT&T Personal Computer 6300 PLUS* if you need additional information on any of the other fields.

11 Press SAVE (F6) when all fields have been completed.

You're now asked if hardware was added to the computer.

12 Indicate if hardware was added by pressing SELECT (F7) for a YES or NO response.

13 Press SAVE (F6).

If you did not add hardware to your computer, go to Step 19.

If you did add hardware to your computer, you'll see:

```
Installation is complete.
The MS-DOS configuration will now be updated.

Press Return to continue.
```

14 Press Return.

Your screen will now list various types of hardware that can be added to your computer.

15 Move the cursor to the type of hardware that was added. If the added hardware doesn't appear in the list or you aren't sure which to select, move the cursor to `Other` and press Return.

16 Press Return.

You'll see messages indicating that your MS-DOS configuration will now be updated.

Throughout the MS-DOS configuration update, instructions and messages will be displayed on your screen. Follow these instructions carefully.

When the update is complete, you'll see:

```
Update MS-DOS Configuration is now complete.
You may remove the Simul-Task Disk.

Press Return to continue.
```

17 Press Return.

After several seconds, your computer will be shut down, and you'll see:

```
Welcome to the AT&T PC 6300 PLUS UNIX System

Please login:
```

18 Type **install** and press Return to log back into the UNIX System.

After a few seconds, the Office appears on your screen. You have completed the installation of your application program and the MS-DOS configuration update. Go to the next page to learn how you can run your MS-DOS application programs.

19 If you responded NO when the computer asked if you installed any hardware, you'll see the following message when the installation is complete:

```
Installation is complete.

Press Return to continue.
```

20 Press Return and you are returned to the "Software Setup" menu.

21 Press CANCEL (F1) twice and return to the Office menu.

If you wish to later change any field in the program form, refer to the discussion on "Program Administration" in the *UNIX System V, Release 2.0 Operations Guide—AT&T Personal Computer 6300 PLUS.*

Running MS-DOS Application Programs

There are two ways to run MS-DOS application programs and still have access to the UNIX System.

- The first, and probably the easiest, way to run an MS-DOS application program is to run it from the Programs menu. To do this:

1 Display the Office menu.

2 Move the cursor to `Programs` and press Return.

The Programs menu appears with a list of the application programs that you've installed on the computer.

3 Move the cursor to the application program that you wish to run and press Return.

This automatically starts both MS-DOS and your application program. Once the program is running, you can switch to the UNIX System without disturbing your MS-DOS program. When the MS-DOS program is terminated, MS-DOS will stop automatically, and you'll return to the Programs menu.

- The second way to run an MS-DOS application program is more like using normal MS-DOS.

  1 Display the Office menu.

  2 Move the cursor to `MS-DOS` in the Office menu and press **Return**.

  After a few seconds, you'll see a normal MS-DOS `C>` prompt.

  3 Use the **cd** command to go to the directory where the application program resides. Refer to your *MS-DOS User's Guide* for details.

  4 Run the application program according to the instructions given in the program's documentation. Once the program is running, you can switch to the UNIX System without disturbing your MS-DOS program. When the MS-DOS program is terminated, you'll return to the MS-DOS `C>` prompt.

Turning Off Your Computer

It's a good idea to leave your computer on when it's running the UNIX Operating System. This allows the UNIX System to perform its housekeeping chores and maintain its file system. It also allows remote users or computers to log in and work or send you electronic mail.

If you need to turn off your computer, you first need to halt all of the UNIX System's processes. This is referred to as **shutdown**. Shutdown stops all processes and cleans up the file system.

To shut down your computer:

1 Move the cursor to `Commands` in the Office menu and press Return.

The Commands menu appears on the screen.

2 Move the cursor to `Shutdown` and press Return.

After a brief pause, the following appears:

```
Your system will now be shutdown.

Press Return to continue
or CANCEL to stop.
```

3 Press Return.

During the shutdown, your computer displays messages similar to those shown below.

```
Shutdown started.  Mon Jan 27 14:40:11 EST 1986

System Shutdown will begin shortly.
Please wait for completion message before pressingRESET.

INIT: New run level: 5
The System is coming down. Please wait.
```

When the "shutdown" has been completed, you'll see the message:

```
The system is down.
Press RESET to reboot.
```

You can now turn off the computer; or, if you wish, press the RESET button to reboot the UNIX System.

Where Do You Go From Here?

The first thing you should do is go to the *UNIX System V, Release 2.0 Operations Guide—AT&T Personal Computer 6300 PLUS* and perform the tasks listed below:

- Assign yourself a personal user login ID. Once this login is assigned, you should always use it when working instead of **install**.

- Assign a password for your personal login ID.

- Assign a password for the **install** and **root** login IDs. The **root** login gives a user special privileges that could lead to system damage. To prevent unintentional system damage, assign **root** a password and limit its use. If you won't be using these logins often, write the assigned passwords down and keep them in a secure place in case you forget them.

- Make spare copies of your UNIX System floppy disks in case any of the floppy disks are damaged.

- Install UNIX applications from floppy disks.

The UNIX System installed on your computer comes with menus to help you perform these and other basic administrative tasks. The chapter called "System Administration" tells you how to access these menus and perform administrative tasks.

The *UNIX System V, Release 2.0 Operations Guide—AT&T Personal Computer 6300 PLUS* also tells you about:

- Using MS-DOS and the UNIX System in other ways, and installing additional hardware (such as expansion boards) for use with MS-DOS
- Customizing your PC 6300 PLUS working environment with special commands, security precautions, and multiple users
- Backing up, restoring, and maintaining your UNIX file system
- Using multiple disk partitions (MS-DOS and multiple UNIX partitions)
- Using the PC 6300 PLUS Administration menu
- Setting up and using the Line-Printer Spooling feature
- Setting up and using electronic mail and other communication facilities.

For a complete listing and explanation of the UNIX System commands, refer to the *UNIX System V, Release 2.0 User Reference Manual/System Maintenance Manual—AT&T Personal Computer 6300 PLUS.*

For a complete listing and explanation of the MS-DOS commands, refer to the *MS-DOS User's Guide.*

Using Diagnostics

L-244157-42

6 Using Diagnostics

Introduction

Your computer is engineered to work trouble free. However, if you should suspect trouble with your computer's operation, use your diagnostic diskette to determine what part of your computer isn't working properly.

If you suspect a problem with your computer, run diagnostic tests before calling your AT&T Service Representative. The information you receive from the diagnostics will give your service representative an idea of what's wrong with your computer before seeing it. Thus, your computer can be repaired faster.

This chapter provides an overview of the PC 6300 PLUS diagnostic tests.

What Are "Diagnostics"?

Diagnostics are tests used to help you isolate problems with your computer's components. The diagnostic program is supplied on the Customer Diagnostic Diskette that's stored in the rear of this guide. It contains tests for the following components:

- Main Board
- Computer's Memory
- Keyboard
- Display
- Parallel Interface
- Serial Interface
- Diskette (Floppy Disk) Drive
- Hard (Fixed) Disk Drive.

After each test is run, a TEST RESULTS summary screen is displayed.

To help you run these tests, instructions are displayed on the screen and all tests are selected from a menu.

How to Use Diagnostics

Diagnostics should be used whenever a faulty component is suspected. The messages issued by diagnostics are self-explanatory and should be passed along to the repair organization to help reduce repair time.

All of the tests follow similar procedures. Once you've learned to run one test, you can run them all. The following sections are a guide for using diagnostics. They do not cover every test, but instead provide instructions for a sample test that will enable you to choose and run any test you wish.

In order to run these tests, you'll need to know the following information about your computer:

- The amount of main memory in your computer
- Whether you have one or two diskette drives
- If you have a hard disk
- If a printer is connected to the computer's parallel port
- If a printer is connected to the computer's serial port
- Whether you have a monochrome or color video display.

To start the diagnostic program:

1 Insert the Customer Diskette into drive A (lower drive).

2 Lock the diskette in place by turning the lever on the drive downward.

3 Turn on the computer or press the RESET button.

The following appears after the Resident Diagnostics have been completed:

```
CUSTOMER TEST DIAGNOSTICS

Type CUSTOMER to run diagnostics

Type SHIP to ship the hard disk unit

CUSTOMER_TEST_DIAGNOSTICS:
```

4 Type **customer** and press Return.

When the diagnostics are loaded, your screen looks like this:

```
*** CUSTOMER TEST PROGRAM ***
VERSION x.x

==>  TO EXIT CUSTOMER TEST PROGRAM DURING TEST,
     PRESS 'ctrl break' KEYS TO EXIT TEST PROGRAM

DO YOU WISH TO RUN THE TESTS IN AUTOMATIC MODE?
  (y = YES, n = NO)

_
```

Automatic Versus Manual Mode

The automatic mode checks your computer's parts one at a time, according to a prearranged checklist. Any errors detected are displayed on the screen.

In the manual mode, you can either test a specific component or any combination of your computer's components. Detected errors are displayed on the screen.

If you are concerned only about the functioning of a specific component, select the manual mode and run the appropriate test.

You select a mode by typing **y** for the automatic mode or **n** for the manual mode. Then press **Return**.

Testing Options

If you type **n** and press Return, the diagnostics will be placed into the manual mode and your screen will display this:

```
TESTING OPTIONS

   0 - EXECUTE TESTS ONCE
   1 - FORMAT SCRATCH DISKETTE
   2 - EXIT DIAGNOSTICS PROGRAM

ENTER DESIRED ACTION - _
```

If you type **0** and press Return, you'll see a list of the hardware installed on your computer.

If you type **1** and press Return, you'll be taken to the Format Scratch Diskette menu that is described later in this chapter.

If you type **2** and press Return, you'll see the prompt CUSTOMER_TEST_DIAGNOSTICS:. To reenter the diagnostics, you'll have to type **customer** and press Return or press the RESET button.

To run test(s):

1 Type **0** and press **Return**.

You'll momentarily see the message:

```
CHECKING SYSTEM CONFIGURATION-
```

followed by information on the computer's memory and hard disk unit (if present). After pressing **Return** to continue, you'll see a list of the computer's hardware:

```
THE INSTALLED HARDWARE IS:

 1 - MAIN BOARD
 3 - 512 KB MEMORY
 4 - KEYBOARD
 5 - MONOCHROME VIDEO SYSTEM
 6 - PARALLEL PORT(S)
 7 - SERIAL PORT(S) (USING 8250)
 8 - 48/96 TPI FLOPPY DISK DRIVE(S)
 9 - 20 HDU DRIVE AND CONTROLLER

IS THE LIST OF HARDWARE CORRECT? (y=YES, n=NO)
- _
```

2 Check the list to verify that it matches your computer system. The list will vary depending on your computer setup. For example, the amount of memory indicated in option 3 should correspond to the amount of memory in your computer.

3 If the list is incorrect, type **n** and press **Return**.

You'll see:

```
ERROR - HARDWARE DOES NOT AGREE WITH CONFIGURATION TESTS
=> Record any difference(s) between the list of the hardware
on the screen and the hardware that should be present.
PROGRAM TERMINATED!!!

CUSTOMER_TEST_DIAGNOSTICS:
```

Write down any differences and contact your AT&T Personal Computer dealer or your AT&T Service Center.

4 If the list is correct, type **y** and press **Return**.

You'll see:

```
1 - MAIN BOARD
3 - 512 KB MEMORY
4 - KEYBOARD
5 - MONOCHROME VIDEO SYSTEM
6 - PARALLEL PORT(S)
7 - SERIAL PORT(S) (USING 8250)
8 - 48/96 TPI FLOPPY DISK DRIVE(S)
9 - 20 HDU DRIVE AND CONTROLLER

To test all listed hardware, press the 'ENTER' key only.
To test individual hardware functions, enter the desired
test number(s), with spaces between the numbers, and then
press the 'ENTER' key.
_
```

You can select the hardware to be tested by entering the corresponding numbers, separated by spaces. To select all the hardware, press **Return**. (The ENTER key is the same as **Return**.)

What Each Test Does

1 — MAIN BOARD Test

The main board (Motherboard) is the largest electronic board inside your computer. This test verifies that the computer's main circuit board is working correctly.

3 — 512-KB MEMORY Test

This test checks your computer's memory. The number indicating the amount of memory in your computer may be different than the amount shown above. The number on your screen should correspond to the amount of memory in your computer.

4 — KEYBOARD Test

The Keyboard Test, using a facsimile of the keyboard drawn on the display screen, enables you to verify the proper functioning of each key.

5 — VIDEO SYSTEM Test

The Video System Test runs through a complete check of the video display. It tests graphic and text characters, as well as 40- and 80-column modes.

6 — PARALLEL PORT Test

The Parallel Port Test verifies that the parallel port is working correctly.

7 — SERIAL PORT Test

The Serial Port Test verifies that the serial port is working correctly.

8 — 48/96 TPI FLOPPY DISK DRIVES Test

The Disk Drives Test verifies that your computer's floppy disk drive(s) is functioning correctly. It takes about 15 minutes for each drive to be tested.

To perform this test, you'll need a formatted blank diskette for each drive to be tested. If you are testing the 1.2-MB drive, the type of formatted diskette (360 KB or 1.2 MB) inserted into the drive will determine the format of the tests being run.

9 — 20-MB DRIVE AND CONTROLLER Test

This test verifies that your computer's hard disk drive is functioning correctly.

The hard disk does not have to be newly formatted, nor does it need to be blank. On the hard disk, the test routines use a reserved area of the disk; no programs or data files will be damaged. This test can run for 24 minutes or longer depending on your hard disk configuration.

Selecting a Test

Now look back at the menu on your screen:

```
 1 - MAIN BOARD
 3 - 512 KB MEMORY
 4 - KEYBOARD
 5 - MONOCHROME VIDEO SYSTEM
 6 - PARALLEL PORT(S)
 7 - SERIAL PORT(S) (USING 8250)
 8 - 48/96 TPI FLOPPY DISK DRIVE(S)
 9 - 20 HDU DRIVE AND CONTROLLER

To test all listed hardware, press the ENTER key only.
To test individual hardware functions, enter the desired
test number(s), with spaces between the numbers, and then
press the ENTER key.
_
```

You can select individual hardware to be tested by entering the corresponding numbers, separated by spaces. To select all the hardware, press only Return.

Although there are some differences in the way each test is performed, they're all very similar. An example of testing the main board is shown on the next few pages.

Sample test procedure:

1 After the menu is shown, type **1** and press **Return** to select the main board test.

If you want to run more than one test, enter the numbers of each test separated by a space.
For example: 1 4 6 7

The following message is displayed prior to performing the tests:

```
PAUSE ON ERROR?     (y = YES, n = NO)
- _
```

2 Type **n** and press **Return**.

If you want the test to stop when an error is detected, type a **y** and press **Return**. By typing **n**, the test(s) will proceed uninterrupted. In either case, all errors detected by diagnostics are indicated on the TEST RESULTS screen.

As the test is running, additional messages or instructions may appear on your screen. Just follow the instructions.

Upon completion of the main board test, the computer beeps and the message below flashes briefly on your screen:

```
0 ERRORS IN MAIN BOARD TESTS (LOOP #1)
```

Then the following message appears on your screen:

```
Tests completed.  Number of test loops = 1
Total errors during testing = 0

PRESS 'ENTER' KEY TO CONTINUE -
```

3 Press Return.

Remember that the ENTER key and the Return key are the same.

A test results summary appears on the screen:

```
TESTING RESULTS

TEST #    ERRORS   PASSES   TEST TITLE
|_________|________|________|____________________
|         |        |        |
100       0        1        MAIN BOARD

PRESS 'ENTER' KEY TO CONTINUE-
```

4 Press Return to go back to the initial diagnostics screen.

Note: If an error occurs, run the test(s) a second time. If the error occurs again, write it down and contact your AT&T Personal Computer dealer or your AT&T Service Center.

If you want to test another component, repeat the previous steps substituting the appropriate test number when the test menu is displayed.

Format Scratch Diskette

This procedure is supplied with the diagnostics programs so you'll have a means of formatting a diskette to use in the floppy disk drive tests.

After typing **1** and pressing Return at the end of the TESTING OPTIONS menu, the following is displayed:

```
SELECT DISKETTE DRIVE:

   0 - drive 'A'
   1 - drive 'B'
ENTER DESIRED ACTION - _
```

If you type **0** and press Return to select drive A, the following is displayed:

```
INSERT DISKETTE DRIVE  A:

PRESS 'ENTER' KEY TO CONTINUE - _
```

After inserting the diskette and pressing Return, you'll see:

```
0 - 48 TPI (low-density floppy)
1 - 96 TPI (high   "        "  )

ENTER DESIRED ACTION - _
```

Type either a **0** or a **1** to indicate the type of format that should be used and press Return.

After pressing Return, the following appears:

```
FORMATTING.... FORMAT COMPLETE

PRESS 'ENTER' KEY TO CONTINUE - _
```

If you type **1** and press Return to select drive B, the following is displayed:

```
INSERT DISKETTE DRIVE  B:

PRESS 'ENTER' KEY TO CONTINUE - _
```

After you press Return, the following appears:

```
FORMATTING.... FORMAT COMPLETE

PRESS 'ENTER' KEY TO CONTINUE - _
```

Appendices

A

Appendix A

Moving Your Computer

Anytime you move your computer, whether it be across the room or across the country, you need to prepare it for moving.

On short moves (across the room or down the hall), don't attempt to carry all three parts of the computer at the same time. If you do, you increase the chance of damaging or dropping your computer. Disconnect the keyboard and display from the main unit and carry each piece separately.

On long moves (from one location to another), the ideal way to transport your computer is to place the keyboard, the display, and the main unit in their original shipping containers.

Preparing the Computer's Disk Drives

Moving your computer can be particularly rough on the disk drives. Both the diskette drive(s) and the hard disk drive can be damaged by dropping the main unit or bumping it against something. The damage usually occurs to the heads. And, in the case of the hard disk, it can also damage the platters.

Preparing the Diskette Drives

When your computer was shipped from the factory, the diskette drive(s) had a sheet of cardboard inserted into it to keep the heads from bouncing together. Before moving your computer, insert the head protector sheet back into the diskette drive(s) and turn the drive lever downward. If you didn't save the head protector sheet after unpacking your computer, use an old or blank diskette.

Preparing the Hard Disk Drive

If your computer has a hard disk drive, you need to prepare it for moving so you will not damage heads and platters on the hard disk. When power is removed from a hard disk, the heads lock down on the platters to reduce the chance of their bouncing. While this is a good way to protect the heads, the platters can take a beating if the heads should lock down in the middle of a platter where your data is stored.

To guard against damaging the platters, you can move the heads to the outside edge of the platters where no information is stored. There are two ways to do this:

- Use the program **ship.exe** that's supplied on the MS-DOS Supplemental Programs Diskette, or

- Use the Customer Test Diagnostics Diskette.

The following steps tell you how to prepare the hard disk for moving by using the Customer Test Diagnostics Diskette.

1. Insert the Customer Test Diagnostics Diskette into drive A.

2. Turn on the computer or press the RESET button.

After Resident Diagnostics, your screen will look like this:

```
CUSTOMER TEST DIAGNOSTICS

Type CUSTOMER to run diagnostics

Type SHIP to ship the hard disk unit

CUSTOMER_TEST_DIAGNOSTICS:
```

3 Type **SHIP** and press Return.

In a moment, you'll see:

```
HDU IS READY FOR SHIPPING

==>TURN SYSTEM OFF IMMEDIATELY SO THAT THE HDU     <==
==>HEADS ARE NOT MOVED FROM THE SHIPPING POSITION <==
```

4 Remove the Customer Test Diagnostics Diskette from drive A.

5 Turn off the computer.

6 Insert a cardboard head protector sheet (or an old/blank diskette) into drive A. Don't forget to turn the drive lever downward.

B

Appendix B

Removing the Main Unit Covers

The main unit of the PC 6300 PLUS has two covers: an upper and a lower cover. These covers can be removed easily so you can install expansion boards or check the system DIP switch settings.

The removal of the upper cover will expose the expansion slots, the diskette drive(s), the hard disk drive (if present), the power supply, and the display controller board. You must remove this cover to install an expansion board.

The removal of the lower cover will expose the computer's main board, often called the "Motherboard." On the Motherboard, you'll find the system DIP switches and several chip sockets that can provide further expansion of your computer. You must remove this cover to expand the memory on your motherboard, install an 80287 expansion processor, and/or set the system's DIP switches.

To remove either of these covers, all you need is a medium-sized, flat blade screwdriver.

Caution: To prevent any damage to the system circuitry by static electricity, be sure to touch the metal chassis of the main unit just before you handle any IC chips or system boards.

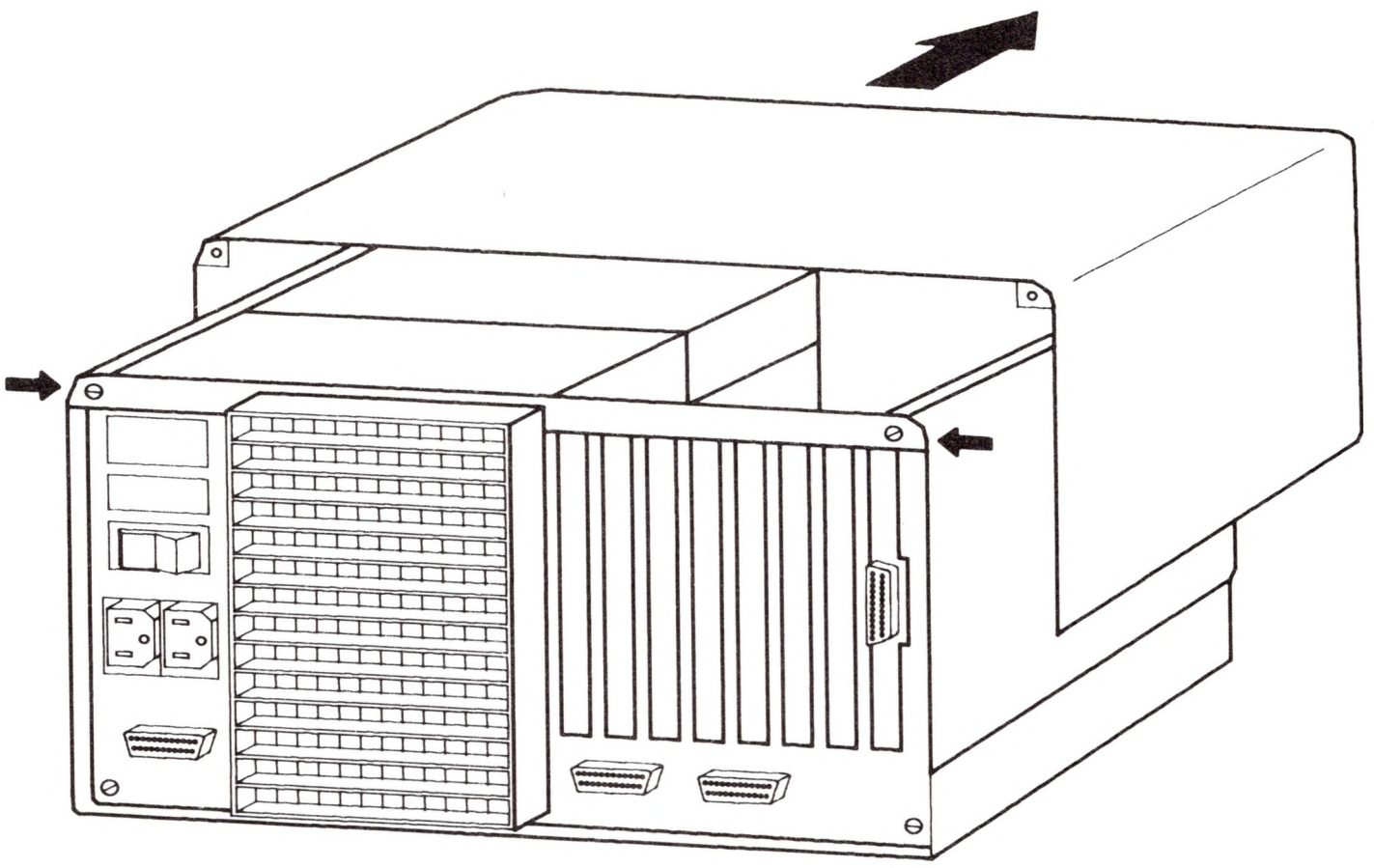
Removing the Upper Main Unit Cover

1 Turn off the main unit and all external devices.

2 Unplug, at the wall outlet, all ac power cables from the computer and external devices.

3 Loosen the two screws that secure the upper cover. They're located on the top right and top left corners on the back of the main unit (see illustration below).

4 Slide the upper cover forward approximately half an inch and lift it from the main unit.



Removing the Lower Main Unit Cover

1 Turn off the main unit and all external devices.

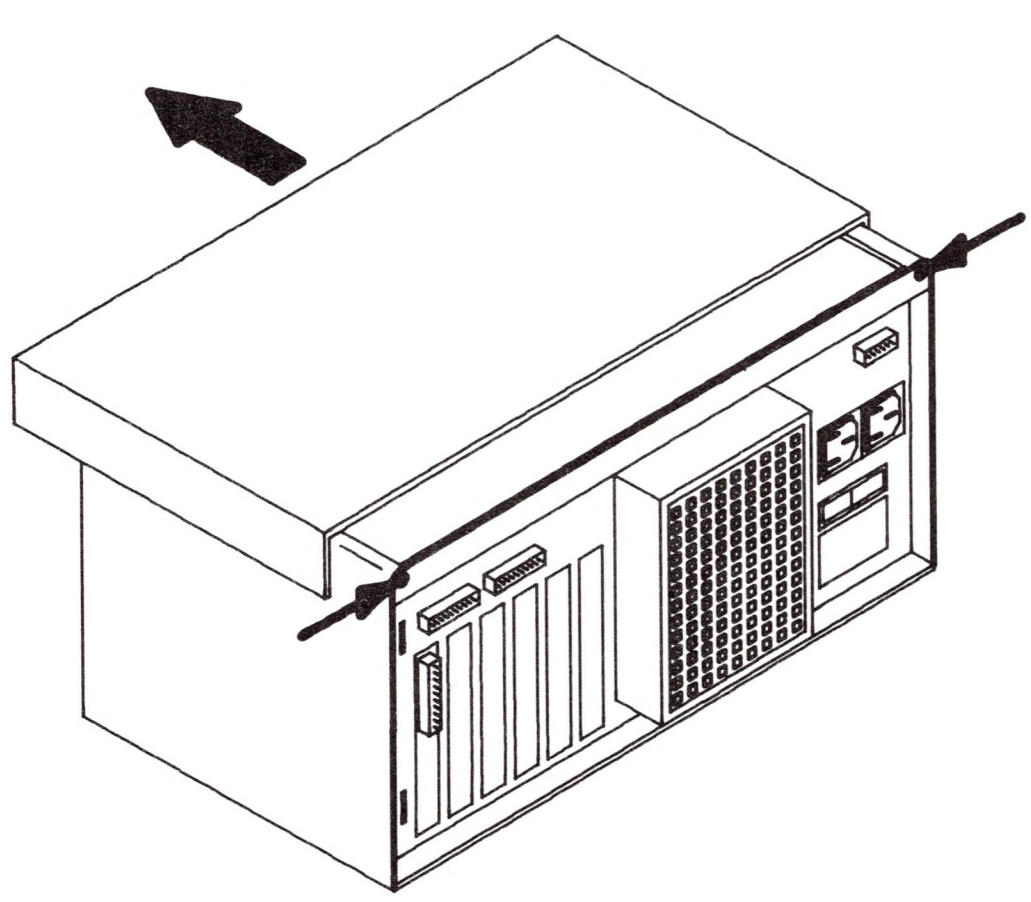
2 Unplug, at the wall outlet, all ac power cables from the computer and external devices.

3 Disconnect all cables (display, keyboard, printer, etc.) from the rear panel.

4 Invert the main unit so that the lower cover is on top.

5 Loosen the two screws that secure the lower cover. They're located on the bottom right and left corners on the back of the main unit (see illustration below).

6 Slide the lower cover forward approximately half an inch and lift it from the main unit.



C

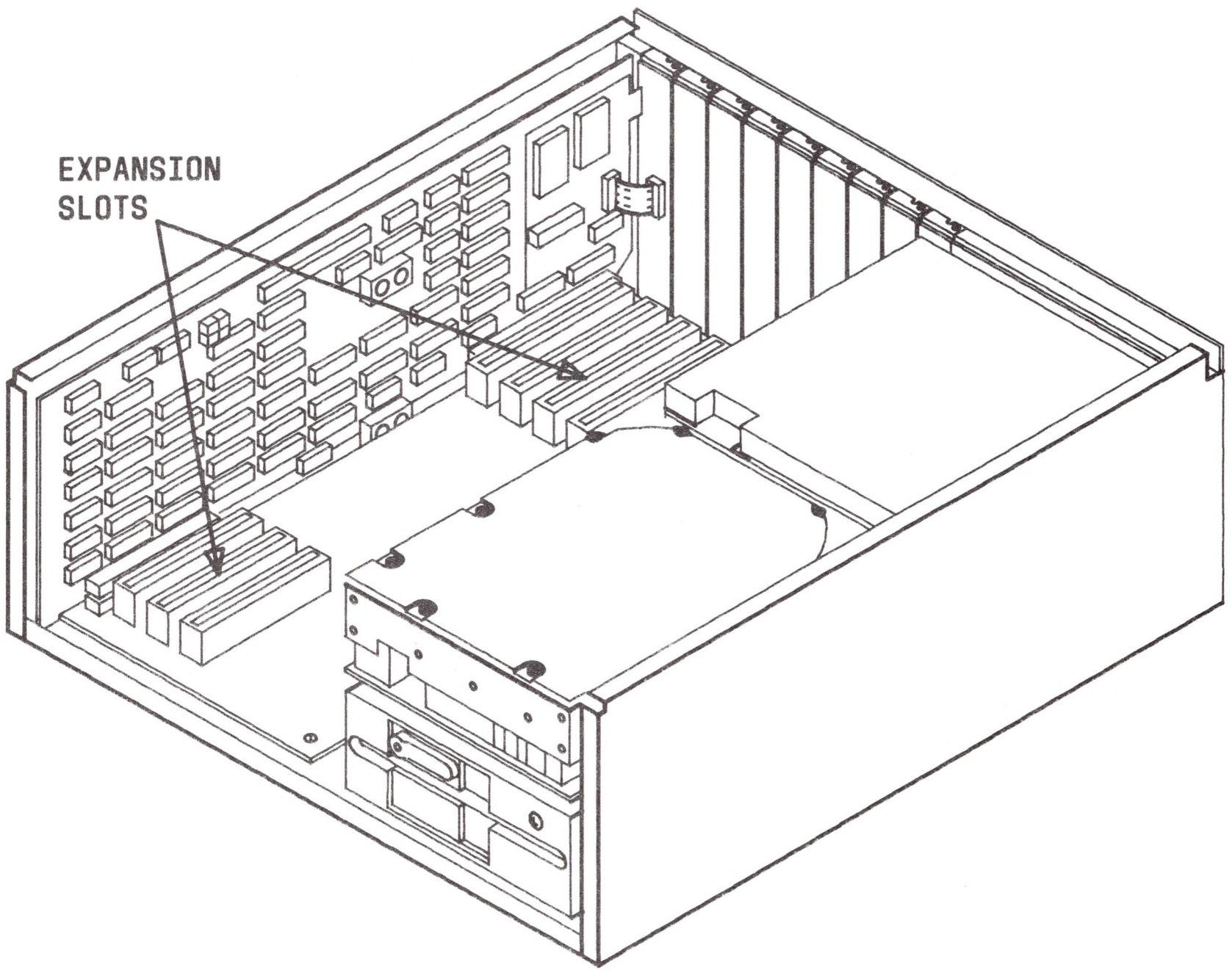
Appendix C

Installing Expansion Boards

Expansion boards are optional circuit boards designed to expand the capabilities of your computer. For example, expansion boards can increase the memory of your computer or help you communicate with other computers.

To install an expansion board in your PC 6300 PLUS, you must remove the main unit's upper cover (see Appendix B, "Removing the Main Unit Covers").

Your PC 6300 PLUS contains three dual (16-bit) expansion slots and four single (8-bit) expansion slots. Consult the documentation that came with your expansion board to determine the type of slot in which your board should be installed.



How to Install an Expansion Board

Caution: To prevent any damage to the system circuitry by static charges, be sure to touch the metal chassis of the system just before you handle any IC chips or system boards.

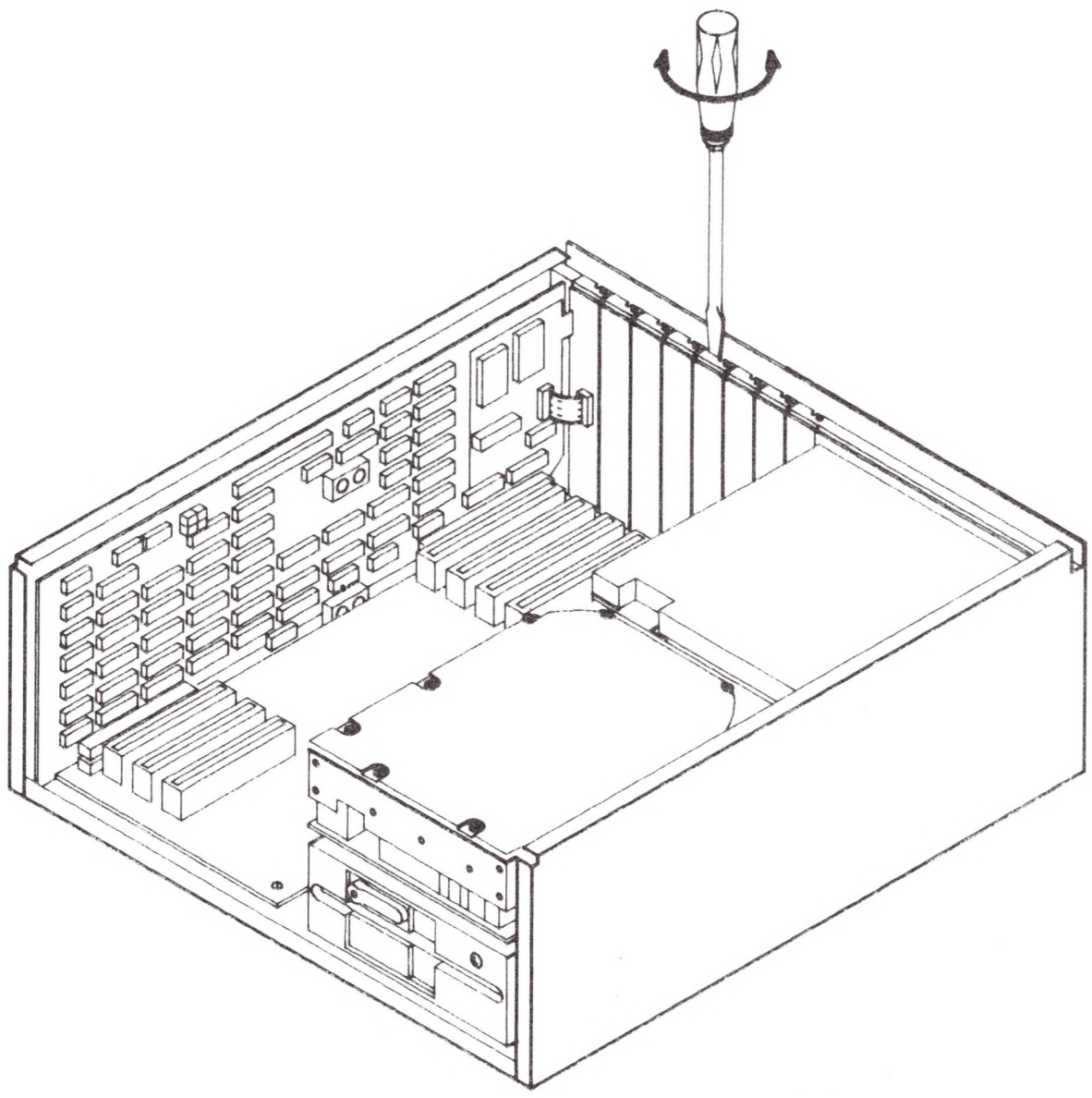
After you have removed the upper cover of the main unit, you can install an expansion board as follows:

1. Consult the expansion board documentation for specific installation instructions. The documentation should indicate whether or not you have to set options, jumpers, or switches before installing the board.

2. Choose an expansion slot for your expansion board.

   Note: Most expansion boards are 8-bit. The documentation that comes with the expansion board will indicate if the board is a 16-bit board. The 16-bit boards must be inserted into an expansion slot with two sockets. Eight-bit boards can be inserted into either type (8-bit or 16-bit) of expansion slot.

3 Remove the screw that secures the expansion slot's cover to the rear panel. Be sure you remove the correct screw, because it is very easy to remove the wrong one.

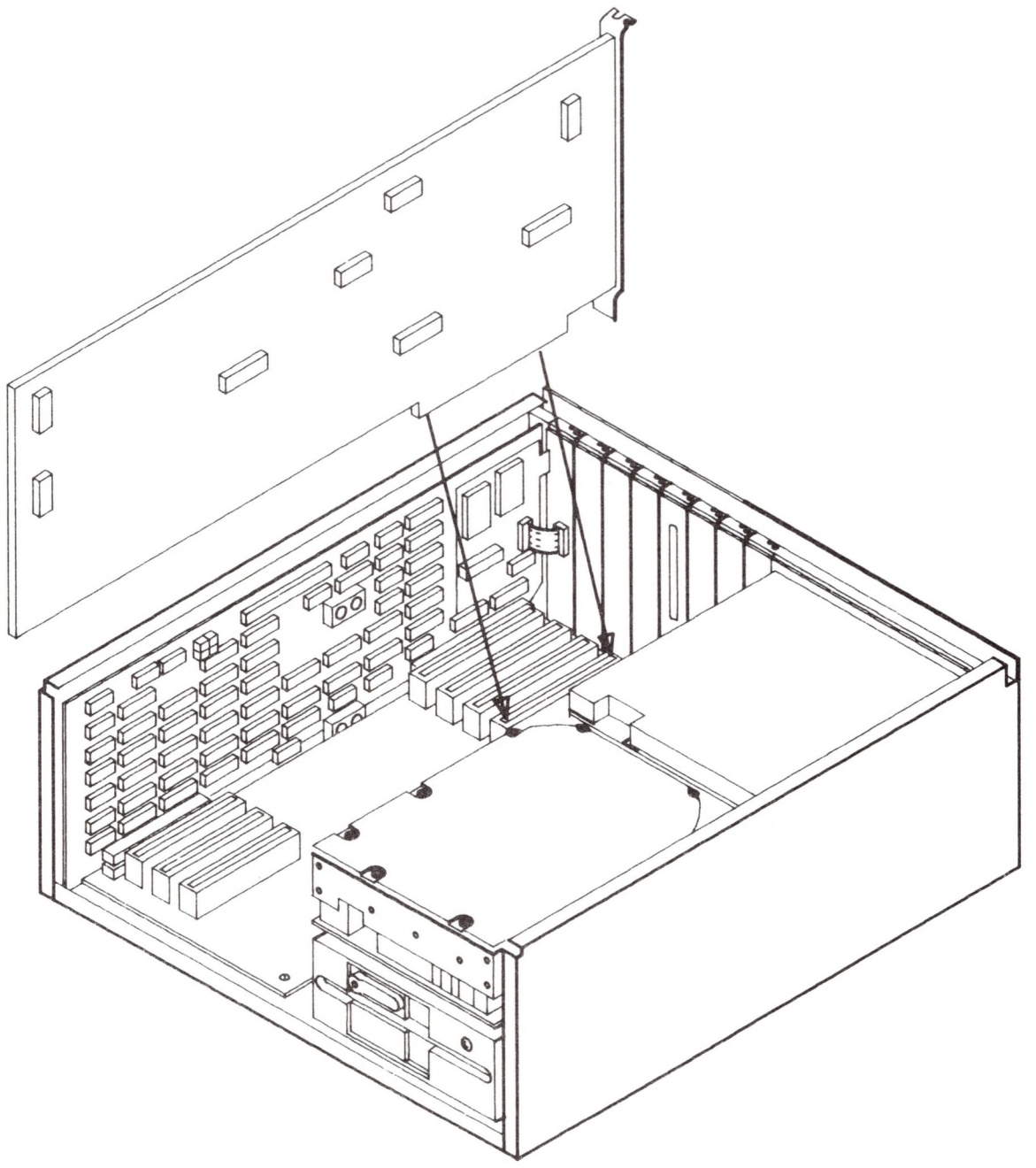


You will use the screw again to secure the expansion board to the main unit, so don't lose it.

4 Lift the expansion slot cover from the unit.

5 Touch the side of your computer's chassis to release any static charges from your hand.

6 Hold the expansion board by the top corners and insert it into the chosen expansion slot.



7 Fasten the expansion board to the main unit with the same screw that you removed earlier.

8 Consult your expansion board documentation for more specific installation instructions.

When the installation is complete, reinstall the upper cover and reconnect all cables, including ac power cables, to the rear of the main unit and devices. Save the expansion slot cover.

D

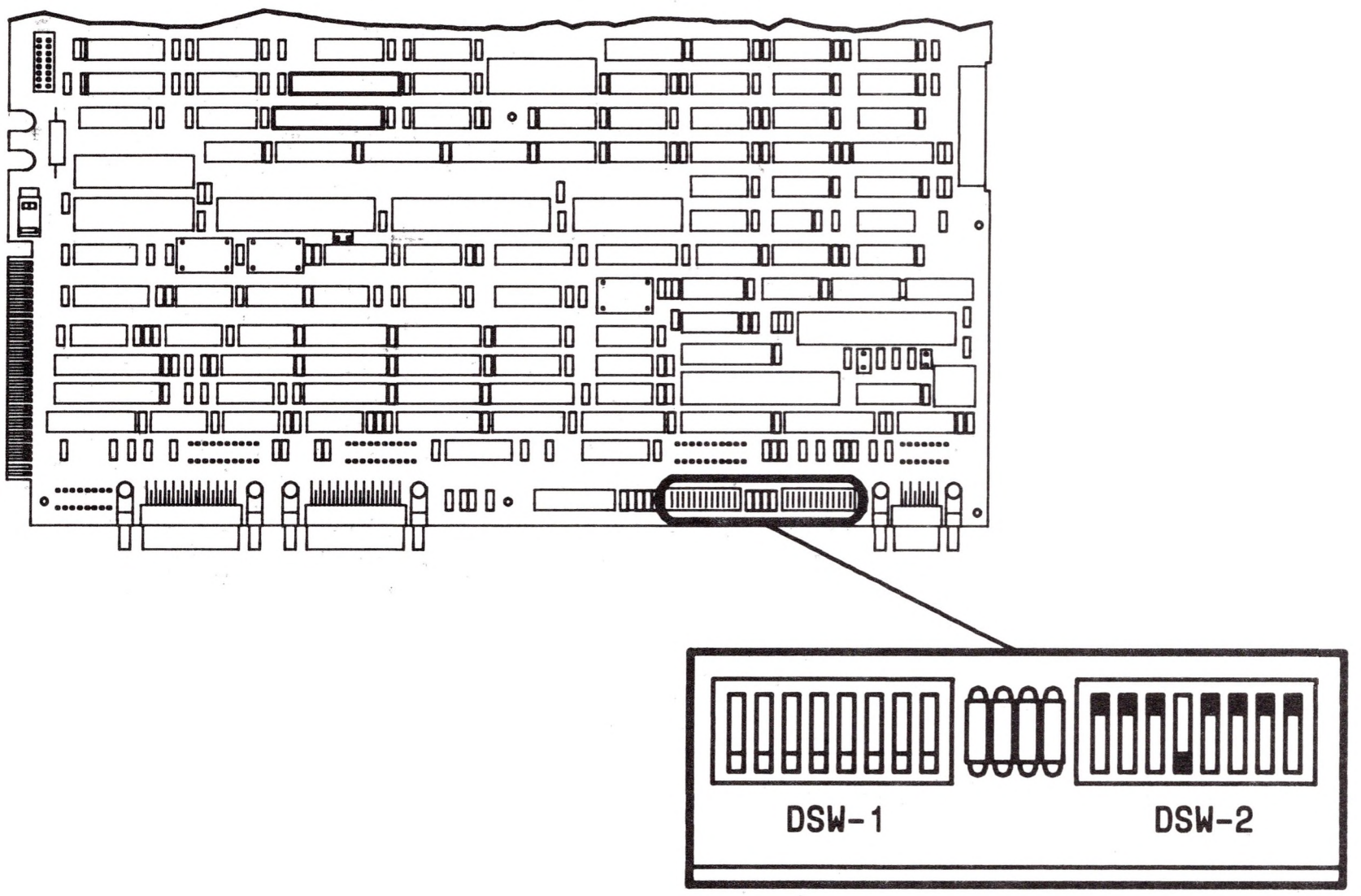
Appendix D

Setting System DIP Switches

The AT&T Personal Computer 6300 PLUS has two DIP switches located on the Motherboard in the main unit. These two DIP switches are called DSW-1 and DSW-2.

To expose these DIP switches, you must remove the lower cover of the main unit (see Appendix B, "Removing the Main Unit Covers").

Each set of switches should be marked to indicate which way to push the switches for ON operation. Normally, a switch is ON when positioned away from the switch number.



DSW-1 Settings

Switches SW1 through SW8 of DSW-1 are used to reflect options associated with the mini-floppy disk (MFD) drives, hard disk unit (HDU), and the display. The various switch settings for DSW-1 are shown on the next page.

The 360-KB diskette drives have 48 tracks per inch (TPI) and the 1.2-MB diskette drives have 96 TPI.

If your PC 6300 PLUS doesn't have a hard disk, SW3 and SW4 are "don't cares." A don't care condition is shown as "X."

DSW-1 Settings								
SW1	**SW2**	**SW3**	**SW4**	**SW5**	**SW6**	**SW7**	**SW8**	**FUNCTION**
OFF	X	X	X	X	X	X	X	96-TPI MFD(s) installed (Drive B)
ON	X	X	X	X	X	X	X	48-TPI MFD(s) installed (Drive B)
X	OFF	X	X	X	X	X	X	96-TPI MFD(s) installed (Drive A)
X	ON	X	X	X	X	X	X	48-TPI MFD(s) installed (Drive A)
X	X	OFF	OFF	X	X	X	X	In combination with switches on the HDC determines the HDU type.
X	X	X	X	ON	OFF	X	X	AT&T Color or Monochrome Display 80 x 25 Line—Setting with Display Controller Board (standard)
X	X	X	X	OFF	ON	X	X	40 x 25 Line—Setting with display Controller Board
X	X	X	X	OFF	OFF	X	X	IBM Monochrome Display
X	X	X	X	ON	ON	X	X	IBM EGA video card (ROM vs. 2.0 and higher)
X	X	X	X	X	X	ON	ON	1 MFD
X	X	X	X	X	X	OFF	ON	2 MFDs
X	X	X	X	X	X	ON	OFF	3 MFDs

DSW-2 Settings

Switches SW1 through SW4 of DSW-2 are used to define the total amount of memory present on the Motherboard and the type of memory chips used. The remaining switches are used as follows:

- SW5—Reflects the presence of 80287 Numeric Processor Extension.

- SW6—Reserved. Leave on.

- SW7—Denotes whether the Hard Disk Controller (HDC) BIOS software to be used is on the Motherboard or on the HDC Board.

- SW8—Defines type of PROM chip used (27128 or 27256).

The various settings for DSW-2 are shown on the next page.

DSW-2 Settings								
SW1	**SW2**	**SW3**	**SW4**	**SW5**	**SW6**	**SW7**	**SW8**	**FUNCTION**
OFF	ON	ON	ON	X	X	X	X	128 KB—memory Bank 1—64 Kbit chips
ON	OFF	ON	ON	X	X	X	X	256 KB—memory Bank 1—64 Kbit chips Bank 2—64 Kbit chips
ON	ON	OFF	ON	X	X	X	X	256 KB—memory Bank 1—64 Kbit chips Bank 2—64 Kbit chips
ON	ON	ON	OFF	X	X	X	X	512 KB—memory Bank 1—256 Kbit chips
OFF	ON	ON	OFF	X	X	X	X	640 KB—memory Bank 1—64 Kbit chips Bank 2—256 Kbit chips
ON	ON	OFF	OFF	X	X	X	X	640 KB—memory Bank 1—256 Kbit chips Bank 2—64 Kbit chips
ON	OFF	ON	OFF	X	X	X	X	640 KB—memory Bank 1—256 Kbit chips Bank 2—64 Kbit chips
OFF	OFF	ON	OFF	X	X	X	X	1 MB—memory Bank 1—256 Kbit chips Bank 2—256 Kbit chips
X	X	X	X	ON	X	X	X	80287 installed
X	X	X	X	OFF	X	X	X	80287 not installed
X	X	X	X	X	X	ON	X	HDC BIOS ROM on Motherboard being used (standard)
X	X	X	X	X	X	OFF	X	HDC BIOS ROM on HDC board being used
X	X	X	X	X	X	X	ON	27256 ROMS installed 64-KB total (standard)
X	X	X	X	X	X	X	OFF	27128 ROMS installed 32-KB total
X	X	X	X	X	ON	X	X	Reserved—leave in ON position

E

Appendix E

Printer Cables and DIP Switches

This appendix contains information to help you configure your printer for use with your PC 6300 PLUS. Specifically, it discusses the type of interface cable to use and recommends how to set your printer's DIP switches.

In addition to configuring your printer cables and DIP switches, you'll need to set up your computer's software before you can begin using your printer. If you are using only the UNIX System, *or* if you're using MS-DOS and the UNIX System together, refer to the section "Setting Up a Printer" in Chapter 5, "Getting Started With the UNIX System." If you're using only MS-DOS, refer to the command description of the **mode** command in the *MS-DOS User's Guide.*

Interface Cables

Typically, there are two types of interface cables used to connect a printer to your AT&T PC 6300 PLUS:

- Standard Centronics to DB25
- Null Modem—Serial.

Standard Centronics to DB25

The Standard Centronics to DB25 cable has a standard 36-pin centronics connector on one end (for your printer), and a DB25 (25-pin male) connector on the other end for your PC 6300 PLUS. The following two tables show the pin assignments for both ends of this cable.

DB25 Connector Pin Assignments

Pin #	Signal	Pin #	Signal
1	-STROBE	14	-AUTOFDX
2	DATA 1	15	-ERROR
3	DATA 2	16	-INIT
4	DATA 3	17	-SLCTIN
5	DATA 4	18	GND
6	DATA 5	19	GND
7	DATA 6	20	GND
8	DATA 7	21	GND
9	DATA 8	22	GND
10	-ACK	23	GND
11	BUSY	24	GND
12	PE	25	GND
13	SLCT		

Centronics Connector Pin Assignments			
Pin #	**Signal**	**Pin #**	**Signal**
1	STROBE	19	GND
2	DATA 1	20	GND
3	DATA 2	21	GND
4	DATA 3	22	GND
5	DATA 4	23	GND
6	DATA 5	24	GND
7	DATA 6	25	GND
8	DATA 7	26	GND
9	DATA 8	27	GND
10	-ACKNLG	28	GND
11	BUSY	29	GND
12	PE	30	GND
13	SLCT	31	-INT
14	AUTO FEED XT	32	-ERROR
15	NC	33	GND
16	OV	34	NC
17	CHASSIS GND	35	NC
18	NC (+5V)	36	SLCT IN

Null Modem Cable (Serial)

The null modem cable uses a 25-pin male connector on one end of the cable and a 25-pin female connector on the other end. The pin assignments for the null-modem cable are shown below.

Pin 1 to Pin 1
Pin 2 to Pin 3
Pin 3 to Pin 2
Strap pin 4 to pin 5 in the same connector
Pin 6 to Pin 20
Pin 7 to Pin 7
Pin 8 to Pin 20
Pin 20 to Pin 6
Pin 20 to Pin 8.

Recommended Cables and DIP Switch Settings

This section, organized by printer name, tells you the type of cable to use with your printer and how to set your printer's DIP switches. The printers listed have been tested and are known to work with the PC 6300 PLUS. If your printer's name doesn't appear in this section, you might be able to obtain the recommended DIP switch settings by calling the AT&T Information Systems Services HOTLINE (1-800-922-0354).

AT&T 455 Parallel Printer

Cable: Supplied with printer

AT&T 455 Parallel Printer DIP Switch Settings										
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
SW1	open	close	open	open	open	open	open	close	close	close
SW2	open	open	open	open	open	close	open	open		

AT&T 455 Serial Printer

Cable: Supplied with printer *and* null modem

AT&T 455 Serial Printer DIP Switch Settings										
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
SW1	open	close	open	open	close	*	*	open	close	open
SW2	open	open	open	open	open	close	open	open		

*

	6	7
XON/XOFF	close	open
RDY/BSY	open	close

AT&T 457 Parallel Printer

Cable: Standard Centronics to DB25 Connector

AT&T 457 Printer DIP Switch Settings								
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
SW1	open	close	close	close				
SW2	close	open	open	open	open	open	open	open

Note: open=up, close=down.

AT&T 458 Serial Printer

Cable: Supplied with printer

AT&T 458 Printer DIP Switch Settings								
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
SW1	open	close	close	close				
SW2	close	open	open	open	close	close	open	open
SW3	close	close	open	close	close	open	open	close
SW4	open	close	open	close	close	close	close	open

Note: open=up, close=down.

AT&T 470 or AT&T 471 Parallel Printer

Cable: Standard Centronics to DB25 Connector

AT&T 470 or AT&T 471 Printer DIP Switch Settings								
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
SW1	open	close	open	open	open	close	close	open
SW2	open	open	open	open	open	close	close	open
SW3	close	open	close	open				

AT&T 473 or AT&T 474 Parallel Printer

Cable: Standard Centronics to DB25 Connector

AT&T 473 or AT&T 474 Printer DIP Switch Settings								
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
SW1	close	close	open	close	close	open	open	close
SW2	open	open	open	open	open	open	open	open
SW3	open	close	open	close				

AT&T 475 or AT&T 476 Serial Printer

Cable: Supplied with printer

AT&T 475 or AT&T 476 Printer DIP Switch Settings								
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
SW1	open	close	open	open	close	open	close	open
SW2	open	open	open	open	open	close	close	open
SW21	open	open	open	open	close	close	open	close (XON/XOFF) open (RDY/BSY)
SW22	open	close	close	open				
SW23	close	open	open	open	close	open		
SW24	open	close	close	open	open	close	open	close

C.ITOH 8510

Cable: Null Modem (standard 25-pin connectors)

C.ITOH 8510 Printer DIP Switch Settings								
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
SW1	open	close	open	open	open	open	close	open
SW2	open	close	open	open	open	close	open	open
SW21	open	close	open	close	open	open	open	close (XON/XOFF) open (RDY/BSY)
SW22	open	close	close	open				
SW23	close	open	open	close	open	close	open	close

EPSON FX-80 Printer

Cable: Standard Centronics to DB25 Connector

EPSON FX-80 Printer DIP Switch Settings								
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
SW1	off	off	off	on	off	on	on	on
SW2	on	off	off	off				

HP LaserJet Printer (Model 2686A)

Cable: Null Modem (standard 25-pin connectors)

HP LaserJet Printer DIP Switch Settings								
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
SW1	off	on	off	on	off	off	off	on

Note: JP2 set to select RS-232.

HP ThinkJet Printer (Model 2225C)

Cable: HP parallel printer cable (Part No. 82957A HP-86A Printer Cable)

HP ThinkJet Printer DIP Switch Settings								
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
SW1	down	up	down	down	up	up	down	down

IBM Graphics Printer

Cable: Standard Centronics to DB25 Connector

NO DIP SWITCHES

TOSHIBA 1340 Parallel Printer

Cable: Standard Centronics to DB25 Connector

TOSHIBA 1340 Printer DIP Switch Settings								
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
SW1	on	on	on	off	off	off	off	off
SW2	on	off	off	off	off	off	off	off

Setting Up Serial Printers

When using a serial printer under the **dos -s** option or under pure MS-DOS, you must redirect and configure the serial communications (com) port. To do this, execute the following MS-DOS **mode** commands:

```
mode lpt1:=com1
mode com1:1200,e,7,1,P
```

These two **mode** command lines are not needed when using the **dos +s** option and may cause unexpected problems if used. Refer to the *MS-DOS User's Guide* for additional information on the **mode** command.

In addition to executing the **mode** command, you must set your printer's protocol to Ready/Busy (RDY/BSY) when using **dos -s** or pure MS-DOS. The XON/XOFF protocol is used for all other modes of printing (UNIX System and **dos +s**). When switching from one print mode to another, you should turn your printer off and reset the printer's DIP switches to reflect the correct protocol.

Note: No mode commands or DIP switch altering is needed for parallel printers.

Printing With Tabs

Since some printers (AT&T 455, AT&T 457, AT&T 458, etc.) are not equipped with default tab settings, you cannot print certain files (those with tabs) until you set the printer's tabs. Refer to the printer's documentation for information on how to set tabs. If desired, you can write a small BASIC program to set tabs for your printer.

F

Appendix F

Switching Operating Systems (Active Partitions)

This appendix tells you how to set up your hard disk so that your PC 6300 PLUS will load either MS-DOS or the UNIX System when you turn it on or reset it.

When you installed the MS-DOS and UNIX Operating Systems on your computer, you should have placed them in two separate partitions on the hard disk: **DOS only** (MS-DOS) and **UNIX and DOS merged** (UNIX System).

Only one of these partitions can be "active" at a time. The active partition is the one from which the computer loads an operating system whenever it's turned on or reset and doesn't find a floppy disk in the floppy disk drive.

If the MS-DOS partition is active, the computer loads the MS-DOS operating system when turned on or reset. If the UNIX partition is active, the computer loads the UNIX Operating System when turned on or reset.

The two procedures in this appendix tell you how to switch the active partition on your hard disk from the MS-DOS partition to the UNIX partition and vice versa.

Making the UNIX Partition Active From MS-DOS

The following steps tell you how to make the UNIX partition active so that when you turn on your computer, it will load the UNIX operating system.

1 Turn on your computer and wait for the MS-DOS prompt.

2 Type **fdisk** and press Return.

The following appears on your screen:

```
Fixed Disk Setup program

FDISK Options

Choose one of the following:

      1. Create DOS Partition
      2. Change Active Partition
      3. Delete DOS Partition
      4. Display Partition Data

Enter choice: [1]

Press Esc to return to DOS.
```

3 Type **2** and press Return.

Your screen now looks similar to this:

```
Fixed Disk Setup program

Change Active Partition

Partition  Status  Type     Start    End    Size
    1          N  non-DOS      0    520     521
    2          A     DOS      521    611      91

Total disk space is 612 cylinders
The current active partition is 2

Enter the number of the partition you want
to make active .....................[1]

Press Esc to return to FDISK Options
```

4 Type the number of your UNIX partition (non-DOS) and press Return.

Your screen now shows the non-DOS partition as active:

```
Fixed Disk Setup program

Change Active Partition

Partition  Status  Type    Start    End    Size
    1          A  non-DOS      0    520     521
    2          N     DOS    521    611      91

Total disk space is 612 cylinders
The current active partition is 1

Partition 1 made active.

Press Esc to return to FDISK Options
```

5 Press Esc *twice* to return to MS-DOS.

The `A>` prompt appears.

To load the UNIX System, you can either turn off the computer and turn it back on again, or press the RESET button on the front of the main unit.

Making the DOS Partition Active From the UNIX System

The following steps tell you how to make the MS-DOS partition active so that when you turn on your computer, it will load the MS-DOS Operating System.

1 Turn on your computer.

2 Log in to the UNIX System as **root** and wait for the # prompt.

3 Type **/etc/fdisk** and press Return.

The following appears on your screen :

```
Total hard disk size is 612 cylinders.

                                   Cylinders
Partition  Status  Type   Start   End   Length    %
=========  ======  ====   =====   ===   ======   ===
    1      Active  UNIX       0   520      521    85
    2              DOS      521   611       91    15

SELECT ONE OF FOLLOWING:

     1. Create a partition
     2. Change Active (Boot from) partition
     3. Delete a partition
     4. Exit

Enter selection:
```

4 Type **2** and press **Return**.

You'll see a screen similar to this:

```
Total hard disk size is 612 cylinders.

                                   Cylinders
Partition  Status  Type   Start   End  Length    %
=========  ======  ====   =====   ===  ======   ===
    1      Active  UNIX       0   520     521    85
    2              DOS      521   611      91    15

SELECT ONE OF FOLLOWING:

    1. Create a partition
    2. Change Active (Boot from) partition
    3. Delete a partition
    4. Exit

Enter the number of the partition you want to boot from
(or enter 0 for none):
```

5 Type the number of your DOS partition and press **Return**.

Note that the DOS partition is now Active.

6 Type **4** to Exit and press Return.

The **#** prompt appears.

7 Perform the UNIX System shutdown procedure from the **root** prompt. To do this, type **shutdown -g0 -y** (**0** is the number 0, not the letter O) and press Return.

8 Wait for the screen to display the message:

```
The system is down.
Press RESET to reboot.
```

When you see this message, the **shutdown** procedure is complete.

To boot the MS-DOS operating system, you can either turn off the computer and turn it on again, or press the RESET button on the front of the main unit.

Appendix G

Servicing, Parts, and Documentation G-3

Servicing, Parts, and Documentation

In Case of Trouble

The following information is designed to help you if you have any problems with your PC 6300 PLUS.

If you have purchased your PC 6300 PLUS from an authorized AT&T Personal Computer dealer, return to the place of purchase for service or repair. If you have moved and it is inconvenient for you to visit the original dealer, call 1-800-247-1212 for a list of the authorized AT&T Personal Computer dealers in your new area, and contact them for service.

AT&T Information Systems offers five Equipment Maintenance Agreement/Plans:

- **Business Day Service**: Contracted; 5 days a week (M-F), 8 a.m. to 5 p.m., Systems Technician dispatched to customer location, if required, for equipment repair. Time charges apply outside coverage period.

- **Around-the-Clock Service**: Contracted; 24 hours a day, 7 days a week on major failures with Systems Technician dispatched to customer location, if required, for equipment repair.

- **Dedicated Service**: Technician dedicated to specific location in 1-, 2-, or 3-shift coverage, for 5-, 6-, or 7-days a week.

- **Per Occurrence**: Noncontracted. Technician dispatched to customer location and charged on time-and-material basis. Time only is charged for contracted customers who want service out of contracted hours.

- **Mail-In**: Replacement part(s) will be mailed to the customer. Upon receipt of the replacement part(s), the customer repackages and returns the defective part(s) to AT&T in accordance with the instructions provided by the AT&T Information Systems Services HOTLINE (1-800-922-0354).

Parts Catalog

AT&T Information Systems offers an AT&T Personal Computer 6300 PLUS parts catalog which can be ordered, at no charge, by placing a toll-free call to the National Parts Sales Center (1-800-222-PART). This catalog details the major customer replaceable modules of the AT&T Personal Computer 6300 PLUS. It also tells you how to order any documentation that you may need.

General Documentation—
AT&T Personal Computer 6300 PLUS

Getting Started With Your
AT&T Personal Computer 6300 PLUS
(Doc. No. 999-300-220IS)

This guide introduces the major parts of the PC 6300 PLUS, shows how to load and start using the MS-DOS and UNIX Operating Systems, and describes tests that help to isolate any problems with the computer. Included with this guide are reference cards that briefly describe the PC 6300 PLUS Keyboard and general operating procedures.

Installation Guide
AT&T Personal Computer 6300 PLUS
(Doc. No. 999-300-221IS)

This guide contains procedures for unpacking and installing the PC 6300 PLUS. Instructions are provided for connecting a printer to the PC 6300 PLUS.

MS-DOS 3.10 Operating System Documentation

MS-DOS User's Guide (Doc. No. 999-802-211IS)

This guide introduces the basic concepts of MS-DOS, explains the most commonly used MS-DOS commands, and provides an alphabetical listing of each of these MS-DOS commands. Included with this guide are quick reference cards that briefly describe the most commonly used MS-DOS 3.10 procedures and commands.

GWBASIC Programmer's Guide (Doc. No. 999-802-000IS)

This guide is a reference for programmers wishing to use the GW Basic programming language.

UNIX System V Release 2.0 Foundation Set Documentation

UNIX System V, Release 2.0 Operations Guide AT&T Personal Computer 6300 PLUS (Doc. No. 999-801-321IS)

This guide describes the UNIX System shell and other UNIX System features used to administer, configure, and maintain the UNIX System on the PC 6300 PLUS. Procedures are also given for running MS-DOS from the UNIX System and using Simul-Task OS Merge. Included with this guide are reference cards that briefly describe the most commonly used UNIX System, Simul-Task OS Merge, and Office procedures and commands.

Simul-Task Software Guide for MS-DOS Applications (Doc. No. 999-801-062IS)

This guide is to be used as an aid for installing, using, and removing MS-DOS application programs under Simul-Task OS Merge. "Application Notes" are included for some of the most popular MS-DOS applications.

UNIX System V Release 2.0 User Reference Manual/System Maintenance Manual AT&T Personal Computer 6300 PLUS (Doc. No. 999-300-231IS)

This manual describes the features of the UNIX System and is divided into two sub-sections: a User Manual and a System Maintenance Manual. The user Manual sections cover system commands and application programs, file formats, and miscellaneous facilities. The System Maintenance Manual contains system maintenance programs and special files.

UNIX System V Release 2.0 User Guide (Doc. No. 307-118)

This document contains an introduction to the UNIX System and tutorials for the UNIX text editors and communication facilities.

UNIX System Software Development Documentation

UNIX System V Release 2.0
Software Development Guide
AT&T Personal Computer 6300 PLUS
(Doc. No. 999-802-212IS)
This guide describes the installation and use of the Software Development Package for the PC 6300 PLUS. It provides a guide to developing software to take advantage of the special user interface and MS-DOS compatibility features offered by the PC 6300 PLUS.

UNIX System V Release 2.0
Programmer Reference Manual
AT&T Personal Computer 6300 PLUS
(Doc. No. 999-802-213IS)
This manual describes in detail the system calls, libraries, subroutines, and file formats of the UNIX System on the PC 6300 PLUS.

Technical Documentation—
AT&T Personal Computer 6300 PLUS

Service Manual
AT&T Personal Computer 6300 PLUS
(Doc. No. 254-475-105IS)
This document supports field service technicians in the installation, diagnostic, and maintenance of the PC 6300 PLUS. Appendixes in the Service Manual discuss DIP switch and jumper settings in addition to information on field replaceable modules.

Hardware Reference Manual
AT&T Personal Computer 6300 PLUS
(Doc. No. 999-300-194IS)
This manual is a complete reference guide to the hardware of the PC 6300 PLUS. Major components and options available for the PC 6300 PLUS are described as well as their interfaces. Detailed information is provided on the internal architecture, buses, and components of the system unit.

System Programmer's Guide
AT&T Personal Computer 6300 PLUS
(Doc. No. 999-802-214IS)
This document provides in-depth information on the PC 6300 PLUS program development tools that allow a sophisticated programmer to write application programs.

H

Appendix H

Environment and Safety Specifications

The AT&T Personal Computer 6300 PLUS meets the following environmental and safety specifications:

Physical Characteristics		
	Size	**Weight**
System Module	15" x14½" x6"	30.8 lbs.
Monochrome Display	13" x12⅓" x10⅓"	19.8 lbs.
Color Display	14" x14" x14½"	27 lbs.
Model 302 Keyboard	16" x8½" x1¼"	4½ lbs.
Model 301 Keyboard	17½" x7½" x1"	4½ lbs.

Electrical

100-120 (standard); 200-240 volts maximum (selectable by an internal power supply jumper)
50-60 Hertz
Power usage - 162 watts

Ambient Temperature

Operating:	+10 to +40 degrees Centigrade (+50 to +104 degrees Fahrenheit)
Storage:	-40 to +60 degrees Centigrade (-40 to +140 degrees Fahrenheit)

Relative Humidity

Operating:	10% to 95% RH, non-condensing
Storage:	5% to 95% RH, non-condensing

Altitude

Operating:	Sea Level to 10,000 feet
Storage:	Sea Level to 30,000 feet

Standards

UL	478 and 114
CSA	154 and 143
FCC	Part 15, Subpart J, Class B

Acoustic Noise Level

48 dBA maximum

Glossary and Index

L-244157-42

Glossary

Application Software: Programs commercially distributed on diskettes. Word Processing is an example of application software.

Backup: The process of copying files from your fixed disk to a diskette to protect them from accidental erasure. Loosely used to refer to making an extra copy of a diskette.

Boot: The operation that loads the operating system into a computer (shortened from "bootstrap load").

Break: To stop processing.

Byte: Used to specify the size of a file or a computer's memory size. Each character of information is stored as one byte.

Commands: Entries from the keyboard that tell the computer what to do.

Computer Program: A set of instructions that tell a computer how to perform tasks such as calculations, print reports, etc.

CPU: Abbreviation for Central Processing Unit. Refers to the one electronic chip that is the "brain" of all a computer's activities. This term is often used to refer to the electronic circuits of a computer that process your data.

Cursor: The symbol, often an illuminated box or blinking underline, that indicates where the next data entry will appear on the screen.

Cylinder: A set of tracks on the platters of a hard disk drive that can be accessed without repositioning the heads. The storage area of a hard disk drive is often defined by the number of cylinders that the drive has.

Data: Items of information.

Data File: A file in which information is kept. An alternate file type is a program file in which instructions, rather than data, are stored.

Default: The value or option used by a command unless another one is specifically identified. The default drive is the one that the computer automatically goes to when you enter a command.

Directory: Storage bin for files, programs, or other directories. Similar to a file folder in a file cabinet.

Diagnostics: A collection of tests used to help you isolate problems with your computer.

Diskette: A flexible, magnetic media used for storing information. Also called a floppy disk.

Display Screen: An electronic picture tube, such as a television picture tube, that can be used to display text and graphic images.

DOS: Disk Operating System (see MS-DOS).

Drive Letters: In MS-DOS, the letters assigned to each drive to enable the computer to identify them. You can tell the computer to use a specific drive by specifying its drive letter.

Electronic Mail: The feature of an operating system that allows computer users to exchange written messages via the computer.

Encryption: The translation of identifiable information into a coded form that cannot be readily identified.

File: A collection of information stored on disk under a specific name. This may be a program or a data file.

File Maintenance: The "housekeeping" tasks associated with caring for or organizing files. For example, deleting unnecessary files.

Filename: A specific name given to a file in order to uniquely identify it.

File Type Extension: On MS-DOS files, the 3-character suffix added to a filename to identify the type of file. For example, command files are given the extension .COM in DOS.

Floppy: Another name for a diskette.

Format: The procedure for preparing a diskette or the hard disk for use. Formatting arranges the storage space in a form that allows an operating system to use the disk.

Function Keys: Special keys that can be set up to perform, with only one keystroke, tasks that would normally require several keystrokes.

Hard Disk: A high-capacity storage device on which data can be stored and retrieved. The storage area is a stack of revolving record-like disks that have been coated with magnetic material.

Indicator Light: A light that comes on when a particular condition occurs in the system. For example, an indicator light is illuminated when the CAPS LOCK key is set for all caps.

Interface: The parts of a computer that provide connection between other parts of the computer. An interface may consist of ports, cables, connectors, etc., or the software that operates the hardware, or both.

Log In: The procedure used to gain access to the UNIX Operating System.

Login Name: A string of characters used to identify a user. Your login name is different from other login names.

Log Off: The procedure used to exit from the UNIX Operating System.

Main Unit: The central unit of the computer. It houses the drives, memory, and electronic processing board.

Memory: The internal "working" memory of the computer. It is not the hard disk or floppy diskettes, but an internal storage area where programs and data are processed. Information remains in memory only as long as the computer is turned on.

Menu: A list of options or functions displayed in a form similar to a restaurant menu from which the user chooses a task for the computer to perform.

Mode: Refers to how a function can be set up several different ways. For example, diagnostics can operate in an automatic or nonautomatic mode.

MS-DOS: A program (operating system) that provides the routines for performing basic tasks on the computer.

Multitasking: The ability of an operating system to execute more than one program at a time.

Multiuser: The ability of an operating system to support more than one user on the system at the same time.

Office: An interface to the UNIX System that allows you to easily administrate the UNIX System, run application programs, and access the MS-DOS and UNIX Operating Systems.

Operating System: The software system on a computer under which all other software runs. The UNIX System and MS-DOS are both operating systems.

Output: Information processed in some fashion by a computer and delivered by way of a printer, a terminal, or a similar device.

Parallel Port: A port on the back of the computer used to connect a parallel printer.

Partition the Hard Disk: The procedure that defines how the hard disk will be used by the computer. Most partitions store a particular operating system and its files. It is the first of two steps used to prepare a hard disk. Formatting is the second.

Password: A code word, known only to you, that is called for in the login process. The computer uses the password to verify that you may indeed use the system.

Port: The connection by which a computer communicates with another device, such as a printer or communications device.

Process: Generally a program that is at some stage of execution.

Program: A set of instructions that tells the computer how to perform a useful task. Programs, collectively, are called software.

Program Files: Files that contain "program" instructions as opposed to data files that contain "raw" information.

Prompt: The symbol displayed on the screen that indicates that the computer is ready to receive an instruction.

Reset: The procedure of restarting the computer without turning the power switch off and on again. There is a RESET button on the front of your computer.

Root: The top directory in a directory tree (filesystem) from which all other directories and files originate. Designated by a slash character (\).

Screen: (See Display Screen.)

Sector: Part of a track on a diskette or hard disk. MS-DOS divides each track into nine sectors.

Self-Check: The initial test that the computer runs on itself to verify that the computer is working properly.

Serial Port: The connector used to send and receive data by a serial communications method.

Software: The programs that instruct or control computer operations. Most personal computer software is supplied on diskettes.

Storage Capacity: The total amount of data that can be stored on a diskette or hard disk. Usually measured in Kilobytes (1 KB=1,000 bytes) or Megabytes (1 MB=1,000,000 bytes).

TERMINFO: A file containing information needed by your computer so it can communicate with various types of input devices (terminals). Most terminals have unique ways of communicating with a computer. The TERMINFO file enables your computer to translate the instructions sent to it from a local or remote terminal.

Toggle: A function that is switched either on or off depending on its current status. The Caps Lock key on the keyboard is a toggle.

Track: The path on floppy or hard disk along which information is recorded. Tracks are divided into sectors.

UNIX System: A general-purpose operating system developed by AT&T Bell Laboratories. The UNIX System allows limited computer resources to be shared by more than one user and each user to work on several jobs at a time.

User: Anyone who uses a computer or an operating system.

Utility: Programs used to carry out routine functions or to assist users in performing routine tasks.

Windows: On the AT&T PC 6300 PLUS UNIX System, a group of seven independent screens on which you can work using UNIX System commands. This multitasking feature of the UNIX System allows you to work on seven different jobs simultaneously.

Working Copy: A copy of the diskette that is used instead of the original. This prevents the original from being accidentally damaged.

Write Protect: Protecting the information on a diskette from accidental erasure by placing a write-protect tab over the write-protect notch on the side of the diskette.

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