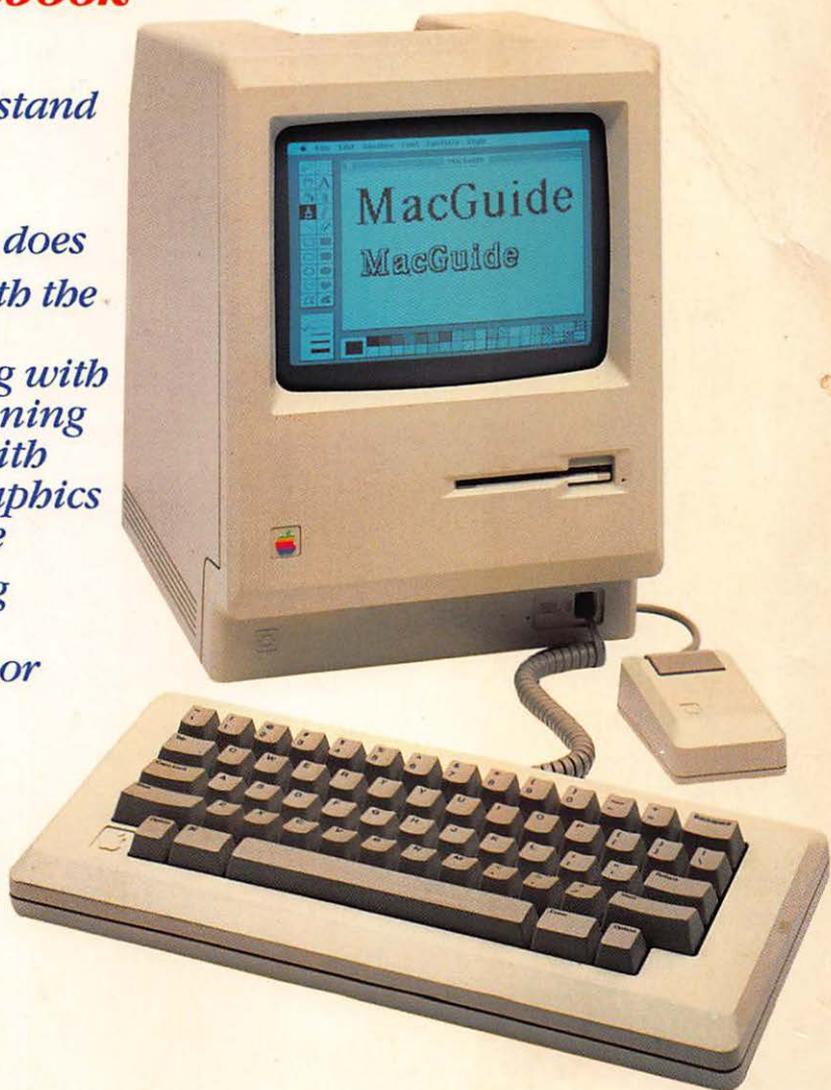


MacGuide

The Complete Handbook to the Macintosh™

- *As easy to read and understand as the Macintosh is to use*
- *Tells you more about the Macintosh than Apple does*
- *Everything you can do with the major available software, including word processing with MacWrite,™ financial planning and number crunching with Microsoft® Multiplan,™ graphics with MacPaint,™ and more*
- *Shows you the astonishing computing power of the Mac's 32-bit microprocessor and the capabilities of the windows*

Leslie S. Smith



THE MOUSE, ICONS, AND WINDOWS

5 pgs da

Since the introduction of the revolutionary Apple Macintosh, these terms have been on every computer user's mind.

Quite simply, they are the amazingly simple-to-use yet extraordinarily sophisticated devices that let you command the Macintosh with an ease never before approached in computer use . . . whether that is word processing, financial planning, record keeping, graphics, or a host of other applications.

These devices are but a few of the many Macintosh breakthroughs thoroughly explained in this guide. It is *the* guide for everyone who wants to find out all they can do with the Macintosh and all the Macintosh can do for them.

MacGuide The Complete Handbook to the Macintosh™

LESLIE S. SMITH, president of Slawson Communications and publisher of Microtrend, has twenty years of experience in the publishing industry, and has recently focused on microcomputer books.

MacGuide

The Complete Handbook to the Macintosh®

by

Leslie S. Smith



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Preface

The Apple Macintosh is more than just another computer. It was created out of a genuine need—a need for simpler and easier-to-understand computers.

It all started in the late 1970s, when Apple engineers began examining the then current crop of personal computers. What they found didn't please them. Immediately, they saw three inherent limitations in all computers.

First, to run the typical personal computer, the user has to learn a complex web of commands and instructions, both for the machine itself and for the programs that are run on it.

For instance, to delete a line of text in WordStar, a popular word processing program that's available for a variety of "older-fashioned" computers, it's necessary to press certain keys in a strictly prescribed sequence. The sequence follows no logical order, and there's no way to retrieve accidentally lost text should you take out too much.

Cutting a line of text is but one of *over a hundred different instructions* you must learn in order to use WordStar—after you've learned how to get WordStar working with your particular computer. This commitment to learning is more than many potential computer users are willing to invest.

Second, for many, computers seem impossibly hard to comprehend, and often their first encounter with a personal computer tends to reinforce that perception. So, it's easy to see why potential computer owners continue to be afraid of the "technology of the 80s" (and why the use of computers isn't more widespread). After all, who wants to try to learn about computers only to give up, feeling stupid for failing to grasp the simplest concepts?

Third, most would-be buyers have correctly perceived that it takes a considerable investment of time to learn and master the typical computer system. In fact, recent studies have shown that it takes from 20 to 30 hours to learn the basics (the *basics*, mind you) about the average personal computer. And from 20 to 30 hours to learn *each* software package that's run on it.

For someone who buys a computer to write and balance the books for a small business, for example, the investment in learning time could be as much as 100 hours—almost two full weeks!

APPLE'S SOLUTION

The first task for Apple was to rethink the role that the computer plays in the life of the computer user. The turning point came when the people at Apple conceived of computers as nothing more than amplifiers: amplifiers for the mind—to stretch insights into reality. From that point on, in the minds of the Apple engineers, the user came first; the technology within the inanimate body of the computer second.

Apple's first attempt at an easy-to-use computer, after three years and more than \$50 million in research and development, wasn't the Mac. It was the Lisa.

As Apple envisioned, the Lisa made things much easier. The Lisa and its special programs were designed to be intuitive, not complex. What's more, all the Lisa programs were designed around one model. So, with a handle on one Lisa program, it was a snap to learn to use all the others.

And instead of 20 or 30 hours to learn the basics about the Lisa, it took less than one. For a Lisa program, depending on its complexity, it took from one to four hours. With the Lisa, the simple job of learning how to put a business's books on computer was reduced from 100 hours to less than five.

Alas, though the Lisa was easy to use, its original \$10,000 price wasn't easy to swallow. Though that \$10,000 included a series of business programs, and good ones at that, the steep price proved much too high for most buyers.

A year later, in January, 1984, Apple unveiled the Mac. In reality, the Mac is a slightly trimmed version of the Lisa, with the same easy-to-learn and easy-to-use features. Though the Mac shares much of the Lisa's personality and power, it doesn't share its high price. When the Mac was unveiled, it was priced at a quarter of the Lisa's \$10,000. (Since the Lisa's initial showing, its price has been lowered, too, and it's been redesigned. But the Mac continues to be the less expensive of the two.)

While the Mac may be a redressed and toned-down version of the Lisa, it has a distinct personality all its own. Few personal computers can claim the versatility, speed, and power of the Apple Macintosh. And fewer still are fun to use. In fact, once you sit down behind a Mac, you'll be enjoying yourself so much, you'll wonder why Apple didn't come out with this ultimate adult toy sooner.

See for yourself. Turn the page and begin learning all about the Apple Macintosh. Happy computing!

Leslie S. Smith
San Diego, Calif. 1984

Introduction

W_elcome.

Welcome to the exciting world of personal computers. Welcome to the charged excitement of the new and growing computing industry. Welcome to the gateway to the future. But most importantly, welcome to the Apple Macintosh.

You hold in your hand a book that can unlock the power and potential within the Macintosh, one of the newest personal computers and one of the most revolutionary to come along in years. Use this book well: Read it to learn how to use the Macintosh in your everyday endeavors, and then return to it for timely reference as you grow with the Mac.

From the beginning, the Macintosh (also playfully known as “Mac”) was designed to be easy to use, to be a computer that works just as well for the novice as for the seasoned pro. The Mac doesn’t care how much you know about computers—all the techno-babble about bits and bytes is, for the most part, unimportant. After all, you don’t need to know how the internal combustion engine works to drive a car; likewise, there’s no need to know what happens to information inside a computer to use a Macintosh.

With this in mind, we’ve written *MacGuide* as an easy-to-follow and completely nontechnical guide to using the Apple Macintosh. To help you better understand the Mac and get the most out of it, there are plenty of clear and concise illustrations, as

well as a wide assortment of “MacTips” scattered throughout the chapters. Refer to the illustrations to better visualize how the Mac does its magic, to the MacTips to learn how to better use the Macintosh.

MacTip I-1

This is a sample MacTip. The purpose of a MacTip is to provide supplemental or timely information.

What’s a Macintosh? Good question. It’s just one of many that are answered in this book. Others are how to get the Macintosh up and running, how to use the Macintosh, and how to apply two popular Mac programs—MacWrite and MacPaint—to your daily routine. Here’s a brief rundown of what you’ll find in this book:

In Chapter 1, “The Magic of the Macintosh,” you’ll be introduced to what makes up the basic Mac and the unique way Mac goes about its job. The Mac isn’t a typical computer. This chapter explains how and why.

So much for quick introductions; it’s time to get down to business. That’s the purpose of “Bringing Home the Macintosh,” Chapter 2. Here you’ll learn about how to hook up the Mac and how to turn it on and make sure everything works. In addition, the chapter provides an introduction to the Mac’s *electronic desktop* as well as the Mac’s *Finder*, the built-in program that makes using the Mac so easy.

A mechanical device called a *mouse* is used as one of the communications links between you and the Mac. Chapter 3, “Mousing Around,” goes into great detail on using this strange contraption. Read this chapter carefully. The Mac relies on its mouse heavily, and you’ll need to be completely familiar with it to do anything constructive.

Not content with just a mouse, the Mac uses other and even more bizarre elements—thumbnail sketches called *icons* and portholes in the screen called *windows*. Both are the subject of Chapter 4, “About Icons and Windows.”

Chapter 5, “Advanced Topics: More About Icons, Windows, and Commands” picks up where Chapter 4 leaves off and provides lucid detail on getting the most out of windows and icons and using the Mac’s readily accessible commands.

Finishing off the in-depth discussion of using the Macintosh is Chapter 6, “Desktop Accessories and How to Use Them.” The Mac is shipped from Apple with several handy tools—*desktop accessories*—to make computing even easier. Two such accessories are the four-function calculator and the eight-page note pad. This chapter details all of the accessories currently available—what they are and how to use them.

Computers are useless without good programs to run on them (programs are otherwise known as software). The Mac has plenty to choose from. One program is MacPaint, offered as an option by Apple. Chapter 7, “An Introduction to MacPaint,” reveals how to use this amazing program to create computer-assisted drawings.

If you think the Mac works well with pictures, wait until you read Chapter 8, “An Introduction to MacWrite.” Words are second nature to the Mac, and Apple’s

optional word processing program, MacWrite, is one of the best ways to get your thoughts down on paper.

Chapter 9, "An Introduction to Multiplan," shows you what the Macintosh can do in the way of handling spreadsheet functions. Read this chapter to get started organizing and manipulating numbers.

Though this book is aimed at the nontechnical Mac user, some readers may want the inside scoop on how the Macintosh performs its magic. In Chapter 10, "The Macintosh Unveiled," these readers get their wish. The chapter introduces the Mac's 16/32-bit Motorola MC68000 microprocessor, its internal memory, and more. If this kind of thing bores you, skip it.

For a complete and easy-to-follow rundown of the Macintosh, see Appendix A, "Macintosh Quick Reference Guide." Refer to the reference guide whenever you need to refresh your memory. It's organized in a logical, functional order, to help you find what you want fast.

Appendix B, "Alert Boxes," includes pictures and explanations of some of the more cryptic warnings the Mac provides when you do (or are about to do) something with potentially undesirable consequences.

The Macintosh can produce, on screen and on paper, many different type styles (called fonts). The currently available fonts are listed in Appendix C, "Fonts."

Appendix D, "Macintosh Specifications," offers a quick glimpse of the Mac, including its size, weight, and electrical specifications.

The Macintosh is probably the least technical computer you can buy. Still, there may be words associated with the Mac that seem alien to you. The "Glossary," located at the end of the book, lists all the words you'll need to know in your endeavors with the Macintosh.

The Magic of the Macintosh

There it sits, an Apple Macintosh, resting peacefully on a desk in front of you. You pull out a ruler to measure its small and unimposing body: Only 13 by 9 by 11 inches. Disappointing, right? After all, how powerful could this little computer be? It's no larger than a toaster oven. Just wait!

Turn the Macintosh on, and you're suddenly swept into a completely new world of computing. The Mac offers a whole new way of using a computer. Instead of sitting behind a bland video screen, communicating with a mindless machine by way of a string of confusing code words, you interact with the Mac in English, using easy-to-understand symbols and plain and simple commands.

This chapter introduces the Mac's component pieces, its unique brand of visual "what you see is what you get" computing, and its electronic desktop. You'll also see how using a Macintosh can be fun, not frustrating.

MAC: OUT OF THE BOX

Pull a Mac out of its shipping box and you'll find three major components, shown in Figure 1-1.

The first and most obvious is the main cabinet. It houses all the Mac's computing electronics, connectors to attach the Mac to various accessories

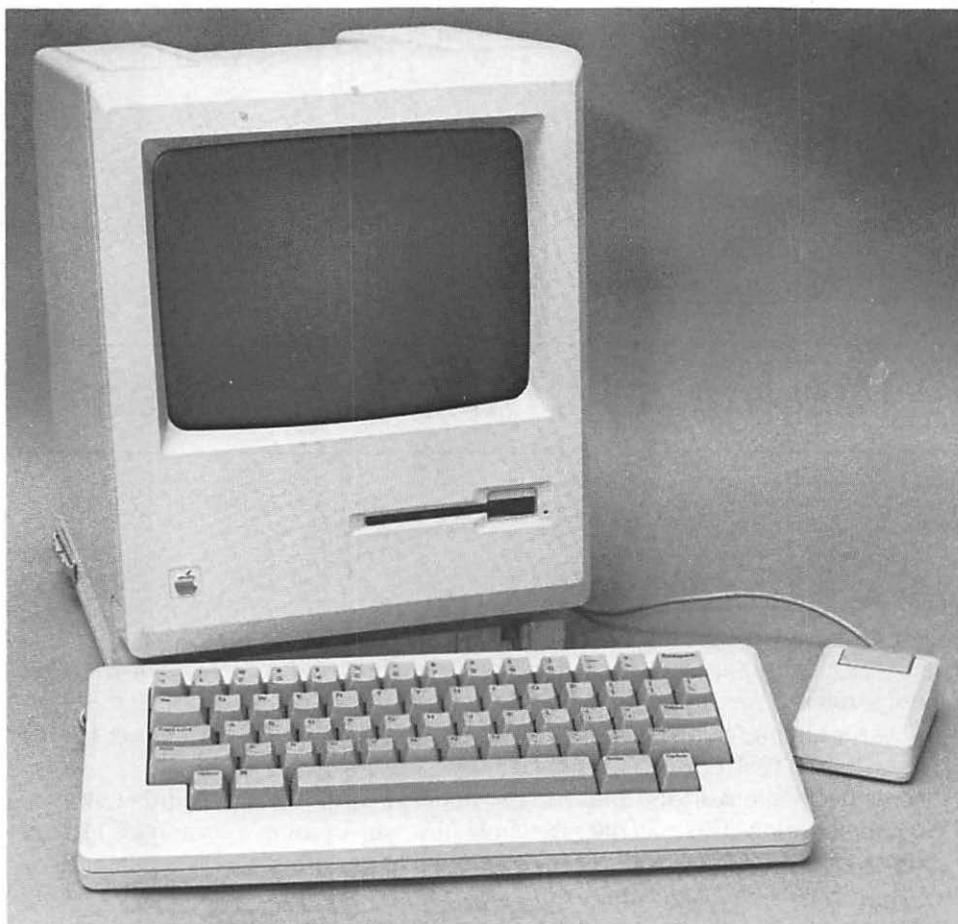


Fig. 1-1. The three major components of the Macintosh: main cabinet, keyboard, and mouse.

(also called peripherals, or add-ons), and the 9-inch video display tube, that shows sharp, clear black and white text and graphics.

Also in the main cabinet is the Mac's single disk drive mechanism (another disk drive can be attached to the Mac via one of the connectors on the back). The disk drive (Figure 1-2), stores and plays back programs and data on small magnetic disks.

Unlike many other personal computers that use disks $5\frac{1}{4}$ inches in diameter, the Macintosh uses disks that are $3\frac{1}{2}$ inches in size. The disk, housed within a protective case (Figure 1-3), is coated with a magnetic film, which captures the electrical pulses that combine to create the programs and data the Macintosh uses.

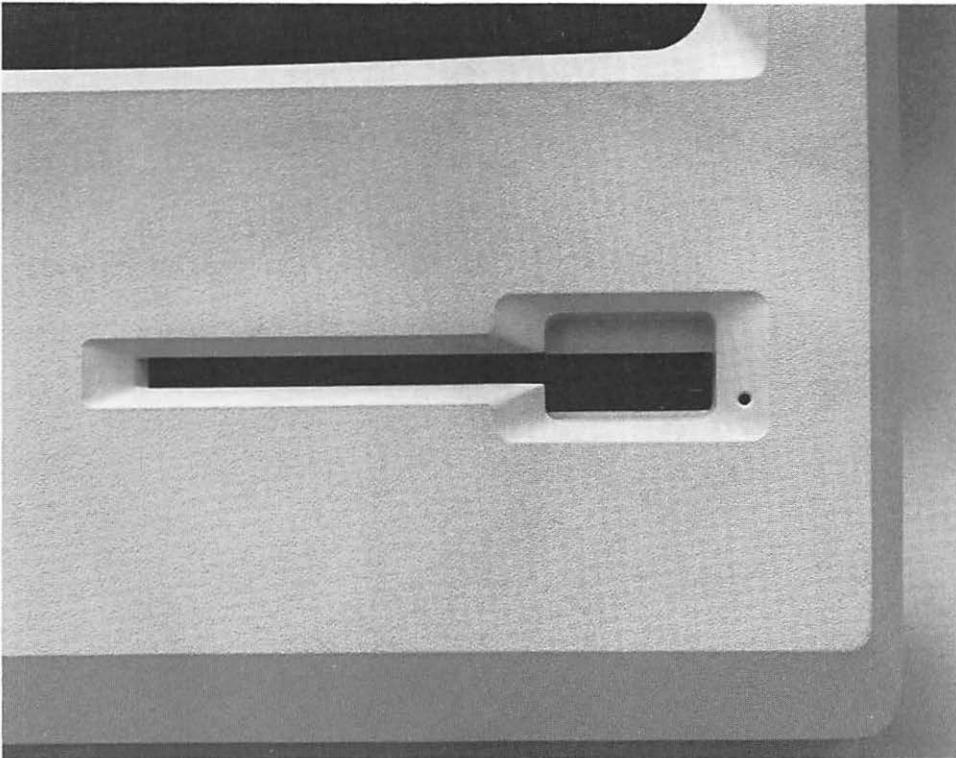


Fig. 1-2. Close-up of the Macintosh internal disk drive, which accepts 3½-inch microfloppy disks.

MacTip 1-1

More and more computers are being made to accept 3½-inch disks. Though the disks themselves can be used in any of these computers, the contents recorded on the disk can't be shared among computers. For example, the Macintosh can't use a word processing disk meant for computer brand XYZ. The two computers speak different languages and record data on the disk in different ways.

Because of the added protection provided by their hard shell, the Mac's 3½-inch disks (also called microdisks) are hardy enough to be mailed in a standard business envelope or carried in a shirt pocket without worry of damaging the disk and losing precious data.



Fig. 1-3. Standard 5¼-inch and new 3½-inch computer disks. Note that with the 3½-inch version, a metal shutter protects the magnetic disk itself.

A SPECIAL KIND OF KEYBOARD

An integral part of the Mac, but a separate component, is the 58-key detached keyboard, shown in Figure 1-4. The keyboard connects to the cabinet by means of a coiled cord. The cord plugs into the front of the Mac, using the same kind of connector found on the latest modular telephones. **Note:** Do not hook up a telephone to the Mac, or the keyboard to the telephone line, as some early Mac users have done. You run the risk of shorting some circuits and causing considerable damage to the Macintosh or the keyboard.

Like the Mac's main cabinet, the keyboard looks a bit small for the job. Don't be fooled: The keys are spaced the standard 3/4 inch apart, and all the important keys are there. The keys on the Mac keyboard feel solid. The positive feel of the keys aids considerably in touch typing.

Incidentally, if you're something less than a superfast and superaccurate typist, don't be concerned. The Mac can be adjusted to suit your needs. For example, you



Fig. 1-4. Fifty-eight keys make up the Macintosh keyboard. Cursor control keys found on most other computers have been replaced by the Mac's mouse.

can adjust the sensitivity of the keys as well as the repeat rate (how long it takes the keys to go into repeat mode when they are held down).

These options and more are set by using a handy Mac accessory called the control panel. Read more about the control panel, along with the Mac's other built-in goodies, in Chapter 6, "Desktop Accessories."

MacTip 1-2

The Mac's keyboard lacks a separate numeric keypad, which comes in handy if you work with numbers a lot. But an optional keypad can be added to the Mac. The keypad attaches in line with the regular keyboard.

For the most part, the Mac's keyboard has the same keys found on a standard electric typewriter. There are a few extras: the Option, Enter, and the funny-shaped ⌘, or Command, key. You'll get to know precisely what these keys do soon enough, but here's a quick rundown.

The **Enter** key is very much like the Mac's Return key, which in itself, does the same job (more or less) as the Return, or carriage return, key on a typewriter. That is, you press it to say "I have finished" (with this line, this command, or whatever).

The Return and Enter keys can often be used interchangeably. There may be some instances, however, when a program requires that the two keys *not* be the same. The manual that accompanies the program will provide the details. Read it to be sure.

The **Option** Key is used the same way as the Shift key: you hold it down while pressing another key to change the effect of that key. But there is a difference. Holding down the Shift key makes capital letters; holding down the Option key totally changes what the key prints out.

For example, if you press the Option and G keys together, the Mac spits out a 🍏 symbol. The Mac has about five dozen special characters. All are created by pressing either Option or Option and Shift while tapping on another key (see Figures 1-5 and 1-6). As you may have guessed, both Option keys do the same thing.

The Mac has room for several more special characters. Some programs may create their own. In addition, the Option key is sometimes used for more than creating alternate characters. Some programs use the Option key for special effects.

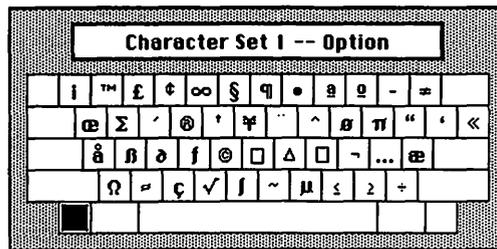


Fig. 1-5. Mac's built-in special characters. Press the Option key to use them.

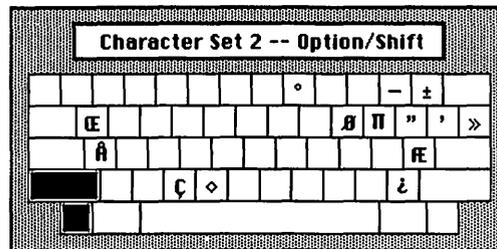


Fig. 1-6. More built-in special characters. Press both the Option and Shift keys to get them.

The **⌘** Key (or **Command** key) is nestled to the left of the Spacebar. The Command key is somewhat like the Option key: you hold it down while pressing another key. But the Command key doesn't print out alternate characters; it does as its name implies. It commands the Macintosh to do something.

In many respects, the Command key is like the Control key found on the typical computer (the control key is usually marked "CTRL"). The control key is often used to talk directly to the computer rather than to type text.

Likewise, the Mac's Command key lets you talk directly to the Mac. If you've

looked closely at Figure 1-2, you may have noticed that the Mac's disk drive lacks any type of door or ejection mechanism. You must ask the Mac to eject the disk for you. This is done with the help of the Command key. (There are several additional ways of doing this; you'll learn them all later.)

MacTip 1-3

The Mac's Shift and Caps Lock keys are much like their typewriter counterparts, but not exactly the same. Holding down the Shift key and pressing another key does one of two things: it prints out a capital letter or it prints out the character on the top of a keyface. For example, if you type Shift-k, the Mac creates a K. Type Shift-7, and the Mac creates an & symbol.

The Caps Lock key, on the other hand, works with the alphabet keys only. Unlike the Shift Lock key found on most typewriters, it does not affect all the keys. When you press the Caps Lock key, it stays down. Then, when you type on the alphabet keys, you get only capital letters, but all other keys are unaffected.

To print the character on the top of a number or symbol key, depress the Shift key. You don't need to release the Caps Lock key first.

THE MOUSE THAT ROAMED

If you're even a little bit familiar with computers, you've probably noticed that the Mac lacks a few of the keys normally found on computer keyboards. Go back and look closely at Figure 1-4.

Where are the cursor control keys? How do you control the Mac's on-screen cursor—that stubby, blinking line that indicates where the computer's attention is focused—without cursor keys? The answer lies in the third part of the Mac, the mouse.

The Mac's *mouse*, shown up close in Figure 1-7, is tethered to the Macintosh via a single, thin cable. On the top of the mouse is a single button; on the bottom is a rubber ball. Inside the mouse are small sensors that are activated when the ball moves.

For example, place the mouse on a table and inch it to the right. Here's what happens:

1. The ball rolls.
2. The internal sensors pick up the motion.
3. The mouse sends the electronic results of the motion to the Mac.

On the screen, the Mac's special cursor imitates the motion of the mouse. Move the mouse to the left; the cursor moves to the left. Move the mouse anywhere in any direction, and the cursor follows.



Fig. 1-7. The Macintosh mouse.

The mouse is used for more than positioning the Mac's cursor—which is more accurately called the "pointer," because of the arrow shape it normally takes on. It's also used to draw intricate designs; to sweep over text to be deleted or modified; to select a series of numbers to be included in a complex mathematical formula; and much more.

The mouse permits you to "point and shoot." It makes telling the Mac what to do as simple as placing the pointer over something on the screen and pressing the mouse button once or twice. Everything on the screen is less than a second away.

With the average computer (which the Macintosh is not), you must press one or more arrow keys to position the cursor. Depending on where the cursor is to

begin with, you could spend four or five seconds just maneuvering it to the spot where you want it.

Apple's choice of a mouse has raised some eyebrows—not to mention a number of objections. One is that you must move your hand off the keyboard to move the mouse. If you're an efficient typist, you may find the Mac's mouse a mild inconvenience in some applications.

Rather than tapping a set of cursor keys with your pinky, you must physically move your right or left hand off the keyboard, push the mouse, then resume typing. Once you get used to the Mac's keyboard/mouse system, however, you'll find this isn't such a problem after all. (Remember that for decades, typists using manual typewriters moved their left hand from the keyboard to whip the carriage back to the left margin, but eventually we all got used to the Return key.)

Another complaint is that, in general, mice take up desk space. It would appear that most computer users have no place on the work surface to put a mouse, let alone push it along to move the on-screen pointer.

Apple foresaw this, fortunately, and designed the Macintosh to take up very little room—mouse included. Most computers are wider than they are tall. The IBM PC, for example, is about 20 inches wide. The Mac itself is less than 10 inches wide; the keyboard is 13 inches wide. Add a seven-inch by seven-inch roaming space for the mouse, and you get 20 inches across. In fact, when all things are considered, the Macintosh takes up *less* space than the typical computer, even the portable variety.

EASY: THE MAC'S MIDDLE NAME

Though it's been said before, it's worth saying again. The Macintosh was designed from the inside out to be an easy-to-use computer, one that can be used by someone with little or no computer knowledge.

Why is the Macintosh so easy to use? You've been introduced to one of the elements already, the mouse. There are four more: icons, windows, pull-down menus, and something called the Finder. Let's see what each of these is.

MORE THAN 1,000 WORDS

From the very start, the Mac was designed around the concept of an electronic desk. The image displayed in the Mac's video tube is a light grey representation of the surface of a desk—you're looking down from the top. Like any desk, the Mac's is used to hold things while you're working.

The Mac's desktop is always present. When you turn the Mac on and insert a disk into the disk drive, the desktop is the first thing you see. You do all the standard computing chores while stationed at the desktop, you start programs from the desktop, and you leave the Mac through the desktop.

When the desktop first appears, as in Figure 1-8, so do two strange-looking

symbols. One looks rather like a Mac disk, the other looks like a trash can. (The Mac makes heavy use of symbols like these—otherwise known as *icons*.)

MacTip 1-4

If you don't like the shade of the desktop, don't worry. There's an easy way to change it. Refer to Chapter 6, "Desktop Accessories," to see how the control panel is used to change the pattern of the desktop surface. Probably, however, like most people, you'll find that the gray tone is the most pleasing.

As you may have guessed, the trash can is used to throw unneeded Mac programs and documents away. The disk icon represents the disk that's been inserted into the Mac disk drive. The disk icon can be "opened" (via a process covered in detail in the next chapter). Opening the disk icon (see Figure 1-9) reveals the files contained on the disk.

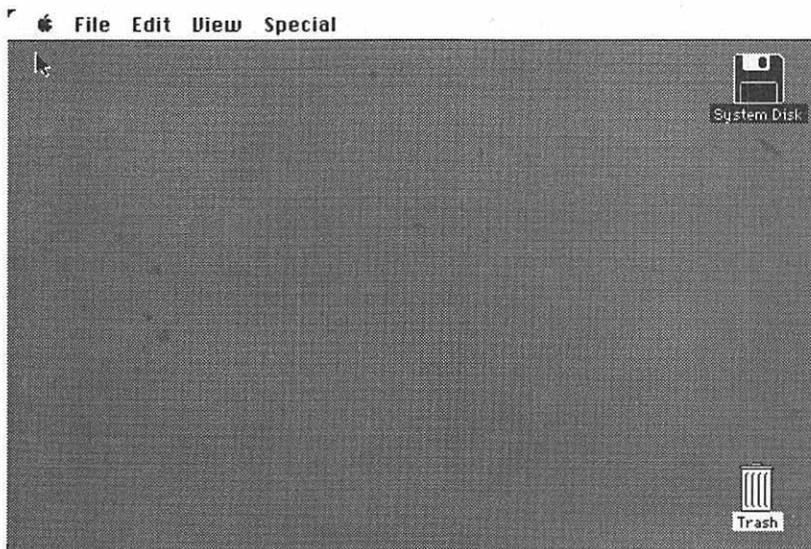


Fig. 1-8. The desktop, complete with trash can and disk icons and pull-down menus.

There are icons for a great many things, all representing either an action (such as throwing away files into a trash bin) or a thing (a disk, for example). Icons are pictures of the actions or items they represent, so it's easy to identify what they mean.

For example, there are icons for documents that are created by programs—these look like pieces of paper. There are icons that represent programs—

their shape varies, but they usually look like a hand drawing or painting on a sheet of paper (Figure 1-10). More about icons in the next two chapters.

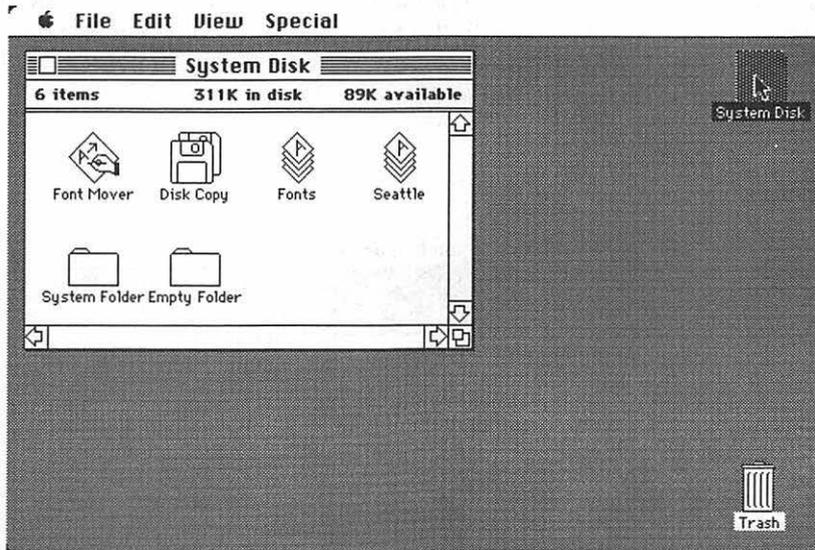
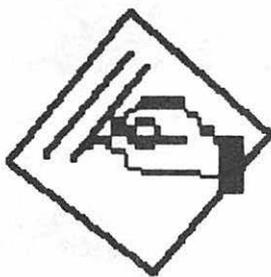
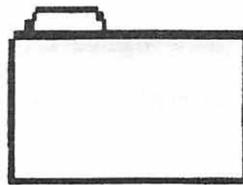


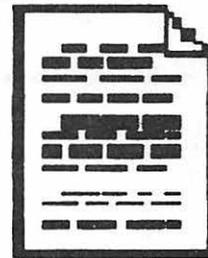
Fig. 1-9. The disk directory window, open for business.



Program



Folder



Document

Fig. 1-10. A sampling of icons: a program, a folder (used to store other icons), and a document (a collection of pictures, words, numbers, or other items).

THE MAC DOES WINDOWS

Another of the elements that contribute to the Mac's ease of use is *windows*. To understand what a Mac window is, take a moment to picture how the average computer displays images on its video monitor. There, staring right at you, is a

complete screenful of information. It could be text, such as a letter to the boss, or even a picture. When you want to look at something else, you must cancel the first image, and replace it with another.

With the Mac, you can view more than one picture or block of text at a time. Each block of text or graphic image is displayed in its own frame, a window. Strictly speaking, a window is a porthole into the Mac—an almost physical partition in the Mac's video screen. Inside any window, text, pictures, icons, or a number of other things can appear. See for yourself in Figure 1-11.

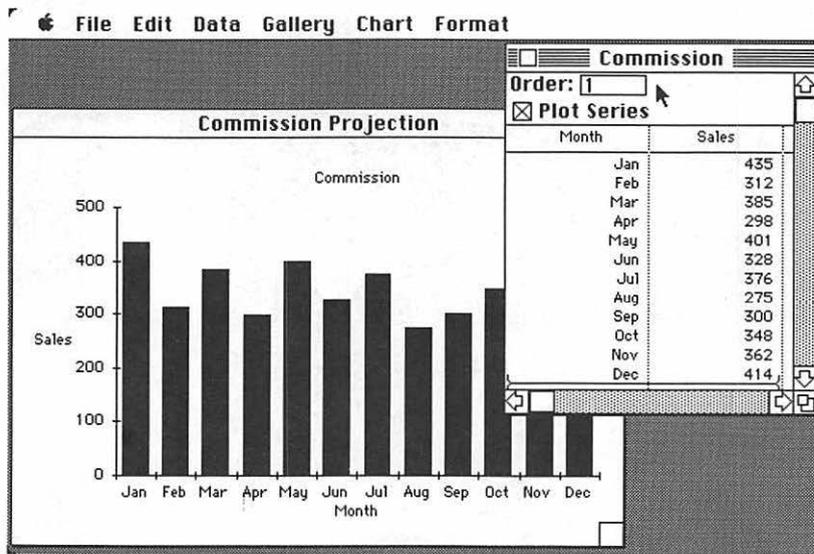


Fig. 1-11. You can use Macintosh windows as you would piles of paper on a desk.

In one window, as shown here, can be a group of numbers. In another might be a chart, based on the numbers in the first window. Both are on the screen at the same time; each is handled independently. This not only makes it easier to see the relationships between the two, but it also helps to speed up the analytical process and makes using the Mac more like working at a desk (where you'd compare numbers and charts side by side, too).

With windows, you can literally bring something out onto the desktop to work with it, and then put it away when you're finished. You can have more than one thing on the desktop at once. In fact, as Figure 1-12 shows, a nearly infinite number of windows can be placed on the Mac's screen. Like icons, windows are more fully discussed in the following chapters; discussions include how to change their size and how to move them around the desktop.

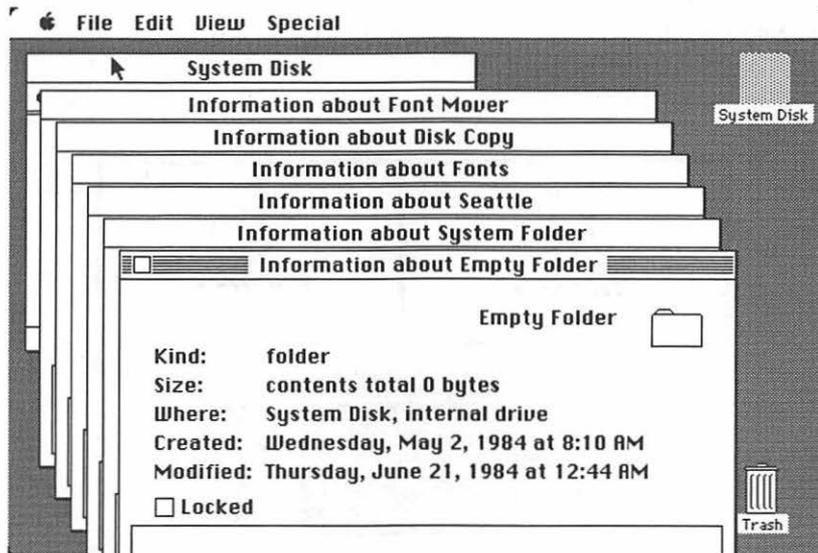


Fig. 1-12. The Mac can display many windows on its screen (shown here stacked one on top of another), though you'll want to limit the number to half a dozen or so to keep things simple.

MacTip 1-5

There's a practical limit to the number of windows that should be on the desktop. For best results, keep the number under six. Get in the habit of closing windows you no longer need.

FINDERS KEEPERS

Now for the *Finder*. If you're familiar with computers, you've probably heard the term "operating system" or "DOS." Both represent an intricate program that the computer uses to help it perform computations, to allow it to make use of its component parts intelligently and efficiently, and to talk to you, its user.

The operating system is usually compared with a fast-thinking traffic cop, given the thankless assignment of directing the flow of cars at a congested intersection. It's an overused analogy, but it serves our purposes well.

The Mac's *Finder* does the same job, but it's more refined than the operating systems found in other computers. At its most basic level, the *Finder* is very much the butler of the Macintosh, ensuring that everything goes smoothly, that the Mac is operating on an even keel, and that all your requests are taken care of. The *Finder* is your English-speaking link to the Macintosh—always attentive and wanting to help out.

Here's a way to visualize what the Finder does. Imagine the Finder as an innkeeper; the Mac's electronic desktop is the lobby (Figure 1-13). You enter the lobby of the inn and are greeted by the Finder, who asks you what you'd like to do.

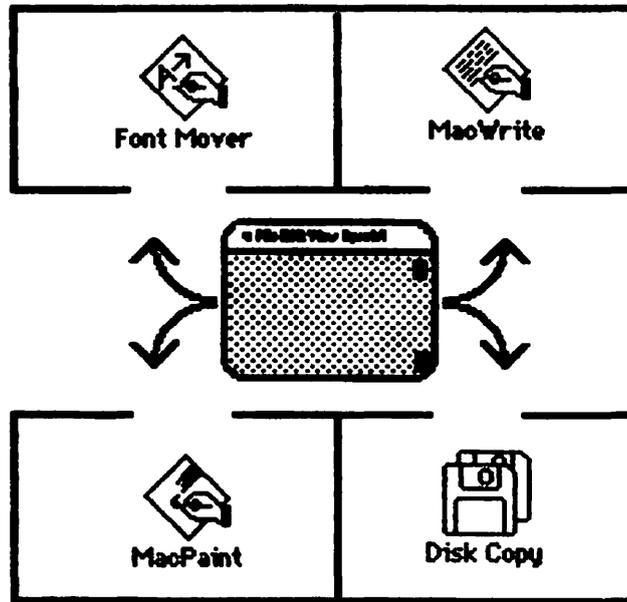


Fig. 1-13. Imagine the Finder as an innkeeper and the Mac's electronic desktop as the lobby inside the inn.

You may, for example, want to use the Mac to write a short memo. For this, you'd use a word processing program, such as MacWrite. Just tell the Finder you want to use MacWrite, and before you know it, you're led to the room that contains MacWrite. There's MacWrite, ready for you to use.

When you've finished with MacWrite, tell the Finder that you're through. On your way out of the MacWrite room, the Finder will ask you to give a name to the document you just created, in case you want to use it again. There, visible on the desktop, as shown in Figure 1-14, is the icon of the MacWrite document you just created. Underneath it (as with all icons) is the name you gave the document. Besides being an accommodating innkeeper, the Finder is an efficient secretary.

The Finder acts as your servant while you use the Mac. It performs many of the menial, housekeeping tasks that most other computers insist you do yourself. It even keeps track of all the documents you create, noting which program they link to. To work on almost any other computer, you need to do all the file keeping yourself. For example, you might call a word processing document REPORT.TXT,

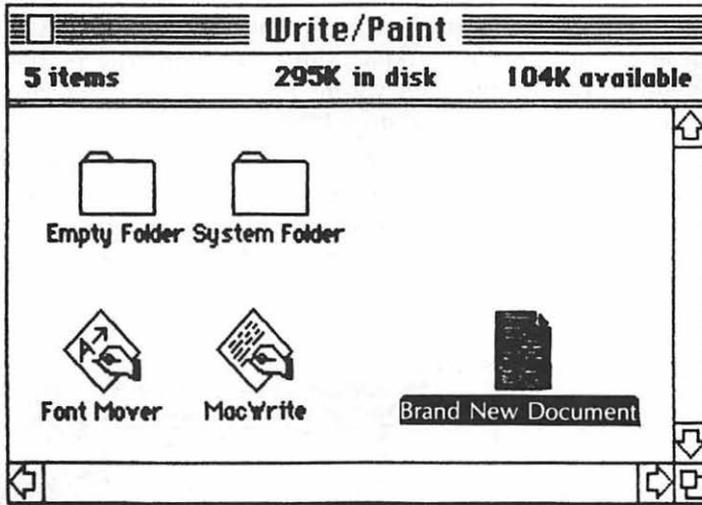


Fig. 1-14. The Finder does most of the mundane and routine computing work for you.

for a document named "Report," which is a text (TXT) file. The TXT code helps you identify the document later as a word processing document (of course, which word processing program it goes with is anyone's guess).

With the Mac, just name the document "Report" and let the Finder discover which program the document requires. The Finder is full of other tricks. Learn about them in the following chapters.

MacTip 1-6

Unlike most other computers, the Mac lets you give the documents you create very descriptive names. There's nothing wrong with naming a document "First Annual Stockholders Report." Just keep the name under 63 characters. You may want to limit names to under 20 characters, however, so they don't clutter up the desktop or overlap onto other icons and names.

ALL IN A MENU

Just as the Macintosh doesn't require that you remember which documents go to which programs, neither does the Mac require you to remember how to use the machine. If you forget the sequence of events to perform a certain function, such

as starting a program, don't worry. Help is no farther away than the pull-down menus of Mac's own video screen.

A vital feature of the Macintosh, and one that contributes greatly to its ease of use, these *pull-down menus* appear not only while you're stationed at the Mac's desktop, but also while you're working with a program. The pull-down menus change, depending on the program you're using, but the way they're used is always the same. The Finder makes sure of that.

The menus are housed in the *menu bar*, which appears at the top of the screen. To choose a menu item, you move the mouse so the pointer is over one of the menus (File, for instance). Press the mouse button and move the pointer down the screen, and a menu rolls down from the top, as shown in Figure 1-15.

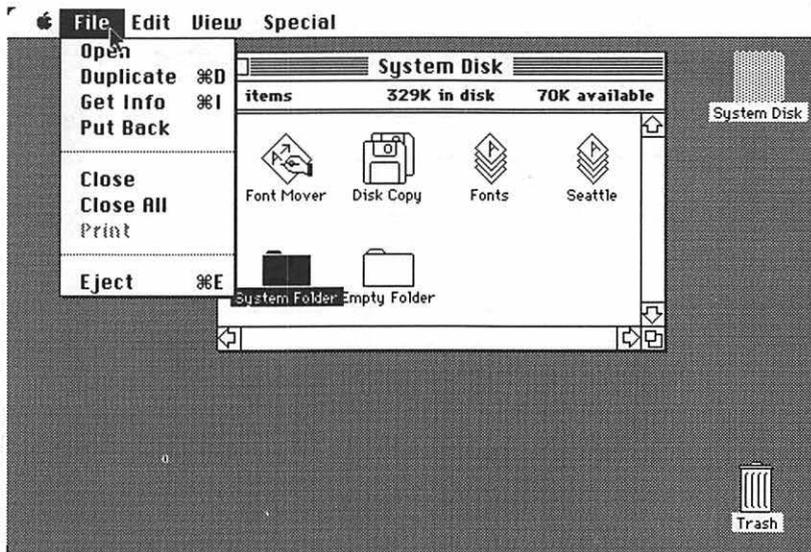


Fig. 1-15. The File pull-down menu, displaying all of its commands.

Once the pull-down menu is in view, a command can be selected, or you can let go of the mouse button without moving the mouse, and the menu rolls back up and disappears, with no command invoked.

Some of the more common menu commands can also be invoked by pressing a letter key along with the Command key. The mouse makes the Mac easy to learn and use, but it can sometimes slow things down; the Command-key-equivalent feature can come in handy.

Just remember, if you should ever forget a Command key sequence, just pull the menu down—the keys to push are always displayed alongside the command itself (for example, the Eject command, found in the File menu, has a ⌘ E alongside

it. Pressing the Command key and E does the same thing as using the mouse to choose Eject from the File menu.)

MacTip 1-7

From now on in this book, we'll use a kind of shorthand to indicate commands. When you see something like File//Eject, it means "the Eject command, found in the File menu."

POWER TO BURN

Any computer can be easy to use. But ease of use can mean a weak-muscled computer. The Mac is anything but weak!

Put a program disk in the Mac and you're off preparing financial reports, figuring next year's budget, or writing the Great American Novel (for a semitechnical discussion of the insides of the Mac, and why it's a powerful computer, see Chapter 9, "The Macintosh Unveiled"). The rest of this chapter describes some jobs the Mac is particularly good at.

Writing

Slip a word processing program such as MacWrite into the disk drive, and the Mac becomes a supersophisticated electronic typewriter. Write, edit, and print documents—all with an ease that makes you wonder if you'll ever be able to use a pen and paper again.

The Mac is the ideal computer for word processing. Using a Mac to write a memo or report is not very different from writing with a typewriter, and it's about as easy. Word processing with the average computer means learning a complex set of commands, and a whole new way of writing. The Mac uses a combination of pull-down menus, icons, and simple mouse movements to accomplish the same results with less strain on the brain.

At any rate, word processing programs let you make easy changes to already written text. The program automatically takes care of the appearance of the written page. There's no need to worry if you need to take out a word or two: the program will adjust the paragraph as necessary (see Figure 1-16).

With the Macintosh, what you see on the screen is what you get on paper (of course, you must have a printer hooked up to the Mac to get a printed copy). What's more, the Mac can create not only plain, dull typewriter-looking text, but fancy print in myriad sizes.

Let's say you want to write a flyer for a neighborhood-wide garage sale. You could write the details in a straight, no-nonsense typestyle. Then, for emphasis, add the words "Garage" and "Sale" in large, bold, italic type, as shown in Figure 1-17.

You could go way out, creating a "ransom note" flyer (Figure 1-18), by using the San Francisco typestyle, one of the Mac's other built-in fonts. Let your imagination wander. The Mac will do the rest.

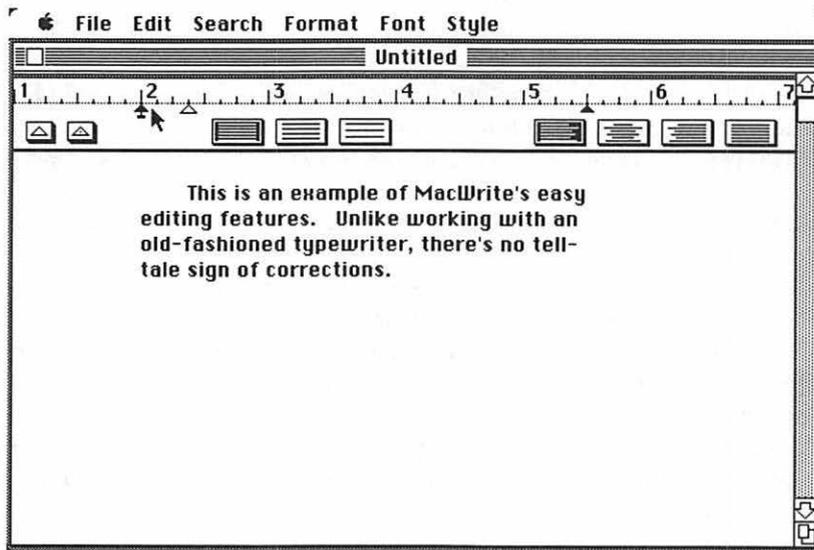
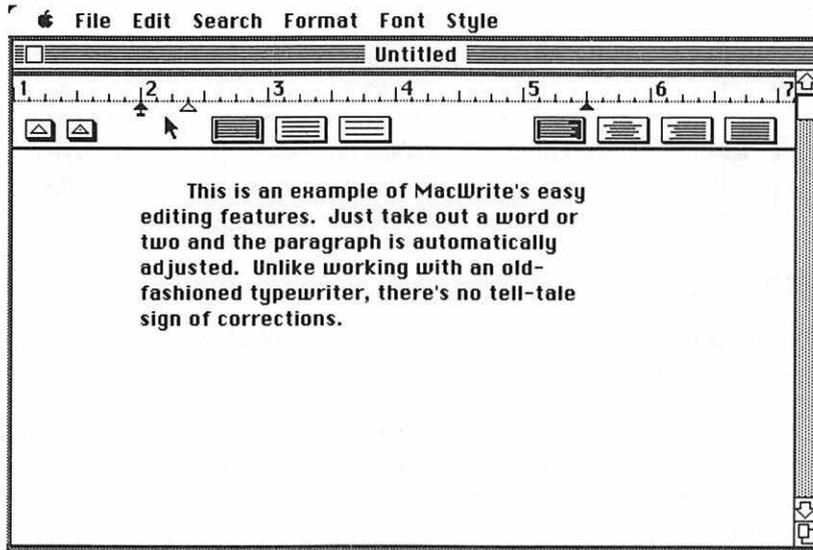


Fig. 1-16. Word processors make the process of writing (and rewriting) almost automatic. Delete words or even complete sentences; the appearance of the page is adjusted for you.

GARAGE SALE!!

**Neighborhood garage sale.
Everything goes --
bikes, dishwasher, typewriter, clothes, lawn
mower, IBM PC (will trade for an Apple
Macintosh), China, and much more.**

Fig. 1-17. Use a word processor such as MacWrite to create garage sale flyers, for example.

**Be at the corner of Elm and
First this Saturday and Sunday
for a giant**

GARAGE SALE !!

**Bring all your money, because
you'll want to spend it on the
bikes, dishwashers, TV's clothes,
and other goodies you'll find.**

Fig. 1-18. For added emphasis, use one or more of the Mac's built-in special fonts.

Drawing

The Mac is as comfortable with pictures as it is with words. Slip the MacPaint program from Apple into the Mac, for example, and you can draw simple sketches, complex interweaving designs, and just about anything in between. MacPaint provides several "tools" for drawing and creating shapes, 38 preprogrammed patterns, and an assortment of paintbrush tips (see Figure 1-19). If you've got a knack for art, or just like doodling, the Mac and MacPaint are perfect companions.

The Mac is equally creative with sedate and conservative business graphics, too. Microsoft's Chart program is what's known as a "presentation graphics" program. It creates charts—such as pie, bar, and line graphs—from numerical data. A typical chart might show the sales of a business for the past eight months (see Figure 1-20).

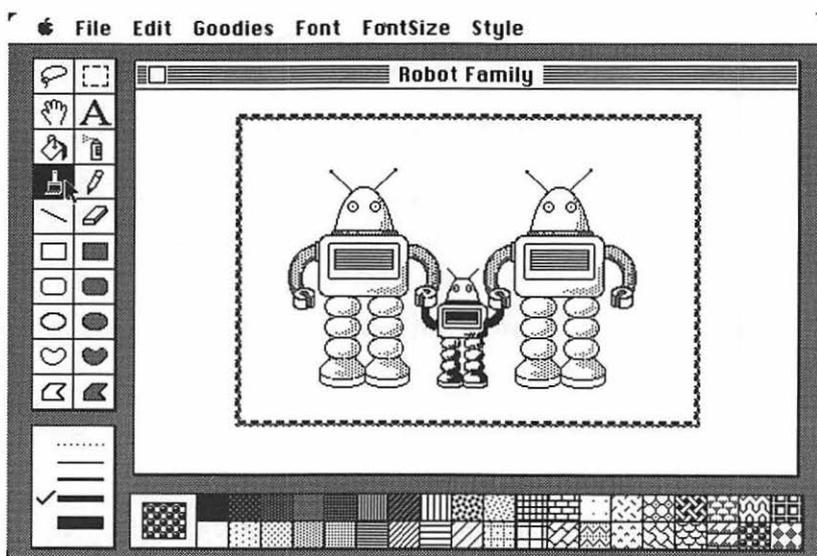


Fig. 1-19. Pictures or words, the Macintosh doesn't care. It does both equally well. Here, Apple's MacPaint.

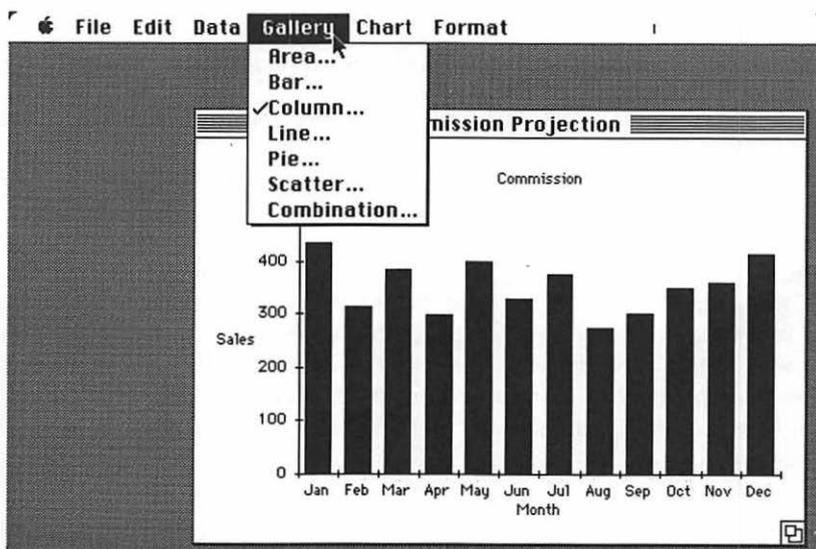


Fig. 1-20. Microsoft Chart lets you create your own business graphs.

The Mac can integrate pictures and text into the same document and print it all out together. For example, you could produce a chart detailing a forecast for clamshell jewelry for the next three years. Then, you could write a memo expressing your thoughts about clamshells with a word processing program like MacWrite, pull the chart into the MacWrite document, and print it out as a whole (Figure 1-21). There. No cutting or pasting required. And the results look sharp and professional.

Numbers

The Mac needs a lot of power to create its fancy fonts and pictures. In fact, the Mac was designed to have over twice the raw computing power of the IBM Personal Computer, and over four times that of some weaker-bodied computers. This makes it a natural for crunching numbers using electronic spreadsheet software such as Microsoft's Multiplan, for example.

Multiplan is very much a computerized version of a bookkeeper's ledger (see Figure 1-22). The intersections of a series of rows and columns make up cells, which are discrete bins that hold numbers or formulas.

You might, for instance, have a single column of numbers. The cell immediately below the stack contains a formula indicating what you want to do with the numbers. You can add them up, average them, find the standard deviation, and so on.

Electronic spreadsheet programs permit rapid and easy changes to both formulas and numbers. Instead of manually recalculating a whole set of figures, you need only key in the change—such as a higher or lower interest rate—and the program automatically recalculates all the figures that are affected by the change.

Communications

Though the Macintosh is complete by itself, you may someday want to connect it to another computer. Through the phone lines, you can connect to another Mac, or to any other computer for that matter, and converse electronically. You can also tap into the computers of a service bureau, such as CompuServe, Dow Jones News/Retrieval, or The Source, and have access to millions of bits of useful information.

For example, you could call up CompuServe and connect with its electronic news service. From there, you could flip through reports on the latest world developments, reading each article. Or you could query for specific information, such as grain embargoes, or the hottest sports reports.

The price for such information at your fingertips? In many areas, the phone call to the CompuServe computers (which are located in Ohio) is free. CompuServe bills for its service by the hour at about \$6 an hour, so if you take 15 minutes pulling out the latest scoop on world events, it'll cost all of \$1.50. More than a newspaper would cost, yes, but lots more fun and with a lot more information.

As it does when it's working with words, pictures, and numbers, the Mac needs a special program to communicate with other computers. Apple MacTerminal is one example.

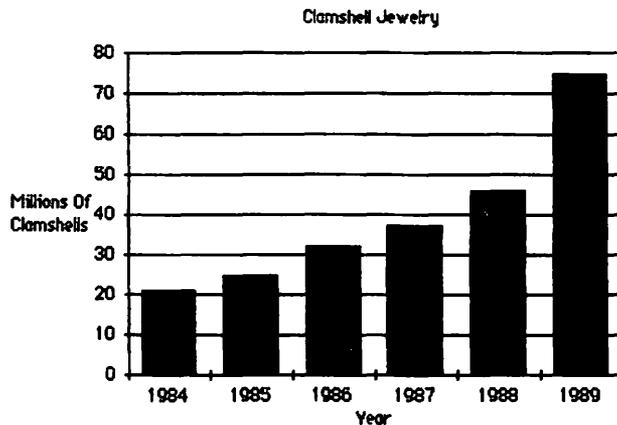
Interoffice Memo

Date: January 21

To: John

From: Fred

As you suggested, I looked into the future of clamshell jewelry. You got a good tip! I see an incredible future in this. Thought you'd like to see my figures...



As you can see, the market for clamshell jewelry is expected to be 75 million pieces by 1989. At \$1 a piece, clamshells look very good. We might be able to tie it into our restaurant chains (we'll definitely have to charge a deposit for steamed clams, or patrons might take the empty shells home and go into business for themselves).

Let me know your thoughts.

Fred

Fig. 1-21. The Macintosh lets you integrate words and pictures for added dramatic emphasis.

The screenshot shows a spreadsheet window titled "Untitled" with a menu bar containing "File", "Edit", "Select", "Format", "Options", and "Calculate". The active cell is R7C2, containing the formula `=SUM(R[-6]C:R[-1]C)`. The spreadsheet data is as follows:

	1	2	3	4	5	6
1	Rent	450				
2	Food	275				
3	Insurance	170				
4	Gas	80				
5	Visa	35				
6	School	75.5				
7		1085.5				
8						
9						
10						
11						
12						
13						
14						
15						

Fig. 1-22. Do “what-if” projections and calculations with an electronic spreadsheet program such as Microsoft’s Multiplan.

Information

Computers are perfect for storing loads of information. And since the Macintosh can process data much faster than most computers, it’s perfect for a variety of data management tasks.

Data management is simply the process of recording and retrieving blocks of information. A pocket address book is a sample of manual data management. Each name, address, and phone number is placed on a line. To help you find the right numbers, the information is organized in alphabetical order. When it comes time to drop someone a line, just look them up in the book — all the information is there.

The Mac does things a little differently than the little black book, but the end result isn’t much different. You might collect the names of all your clients, and enter them into a data management program such as Haba’s Habadex (shown in Figure 1-23). With many data management programs, you can create a “template” for easy data entry. The job is complete when all the blanks have been filled in.

How the Mac stores all the names and addresses is of no concern to you, but how you can retrieve the data is. You can ask a program such as PFS:File to search for a particular name, or for a specific group; for example, all those clients living in Los Angeles. If you’d like, you can get very specific, and indicate several searching priorities; for example, all clients who live in Los Angeles AND whose names begin with B.

TIME FOR WORK

So much for the 10-cent tour of the Macintosh. You've learned about the components of the basic Mac, its electronic desktop (including the mouse, icons, windows, Finder, and pull-down menus), and some of the jobs the Mac can do.

Now, on to bigger and better things: how to get the Mac up and running and on its way to doing something worthwhile.

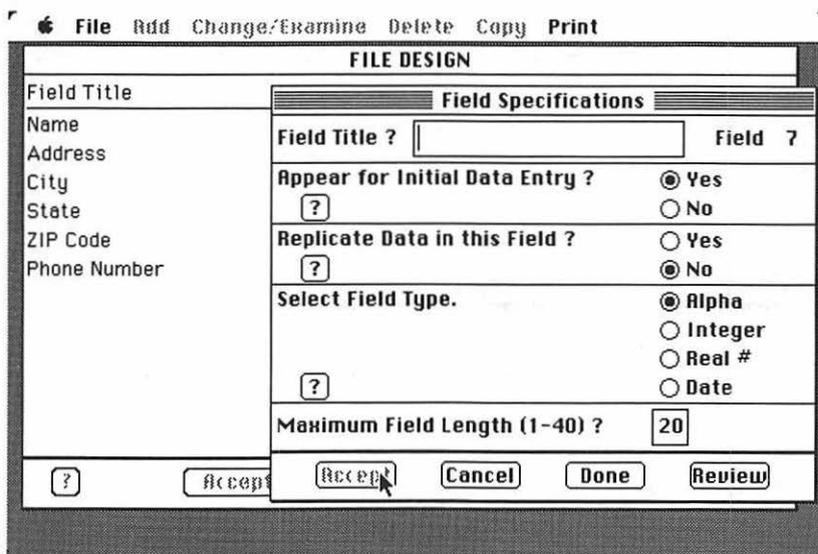


Fig. 1-23. Habadex, from Haba Systems, is a fancified version of the popular Roladex file (hence its catchy name). Use it, or any other data management program, to help you track information such as phone numbers, appointments, magazine articles, and many other kinds of information.

Bringing Home the Macintosh

You're excited: you bring the Mac home from the dealer's and the first thing you want to do is tear open the box, put the pieces together, and get started. No one would blame you for being impatient, for wanting to start playing with the Mac as soon as possible. But take fair warning: the Mac isn't indestructible. You could conceivably damage it — either in trying to put the pieces together or by putting it in the wrong place in your home or office.

In this chapter you'll learn how to safely assemble the Mac, where best to put it, and how to make sure it works the way it should.

UNPACKING

Every Macintosh from Apple comes with the following:

- Macintosh main unit
- Keyboard
- Keyboard cable
- Mouse (the cable is already attached)
- Power cord

- User's manual
- Blank disk
- System disk (marked System)
- Guided Tour disk
- Guided Tour cassette tape
- Programmer's switch

It's a good idea to check your Mac before you take it home from the store to be sure you're getting a complete system. You need everything but the blank disk, the programmer's switch, and the Guided Tour materials to get you through—the Mac won't function without the other elements. If you're short, get replacements while you're at the store.

The Macintosh can plug into any standard electrical outlet, but it should be plugged into an outlet that has a third (grounding) prong on the plug. The ground plug helps maintain the Macintosh's built-in shock prevention features and shouldn't be bypassed.

If your electrical outlet is the older, two-prong type, don't cut the round ground plug off the Mac's power cord. Rather, buy a three-to-two-prong adapter, available at most hardware stores. To use the adapter correctly, follow the directions packed with it.

The Mac's power cord is only seven feet long, which means that you'll have to place the Mac near an outlet—or use an extension cord. Apple suggests that you don't use an extension cord, but there's nothing wrong with doing so if you follow these "rules."

- Use a three-prong grounded extension cord only; don't use a cheap two-prong lamp extension cord.
- Use an extension cord rated for at least 15 amps. Look for the rating on the tag or label when you buy it (or if it's not new, look for the rating stamped somewhere along its length).
- Stash the extension and Mac power cords out of the way so they won't be walked on or tripped over.

Because the Mac is so small, it fits comfortably on just about any desk or table. But you'll want to place the Mac on a surface that allows enough space for the mouse. A 7-by-7-inch square area will do—either on the left or right side of the keyboard (Figure 2-1).

The rolling surface for the mouse should be as smooth as possible. The rougher the table, the less accurate the mouse will be. Avoid the use of desk blotters, particularly the felt kind. The blotter doesn't make a very good rolling surface for the mouse, and individual cloth fibers can get caught in the mouse's mechanism.

Finally, if you're going to be putting the Mac in an enclosed workstation, give some thought to the Mac's breathing space. Apple designed the Macintosh with few electronic parts; so few in fact, that the Mac doesn't need a fan to cool the in-

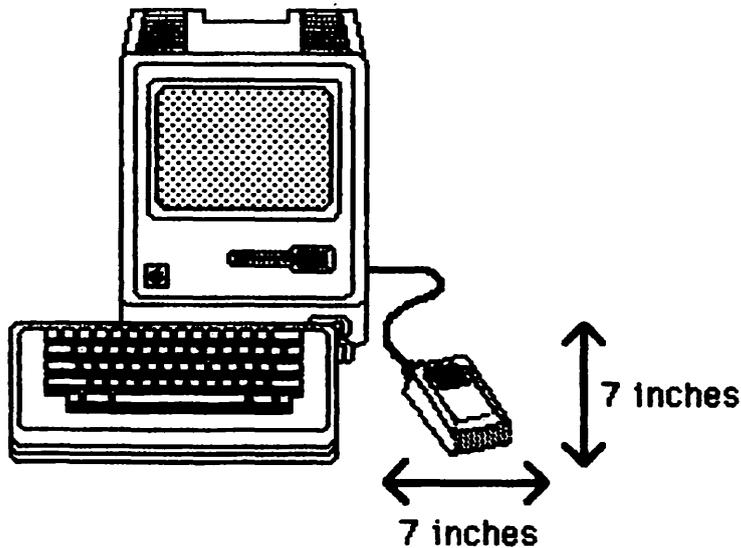


Fig. 2-1. Give the mouse at least a 7-by-7-inch area for movement.

sides. Instead, the Mac's electronic circuitry is cooled by convection. Air is brought in through ventilation slots on the bottom and passed out through slots on the top.

MacTip 2-1

For the best results, purchase a plastic mouse pad, available at most computer stores. Or you can make your own pad. Cut a 1-foot-square piece of acrylic plastic. For feet, use rubber pads (available at electronic specialty stores) or pieces of felt.

Some enclosed workstation designs can inhibit the free flow of air around the Mac, essentially suffocating it. The Mac won't turn blue when it runs out of air, but it will overheat and stop working. (Overheating the Mac is to be avoided, because excessive heat can destroy electronic components.)

The same rules hold for placing objects—such as books, papers, or accessories—beside or on top of the Mac, where they could cover up the vent slots. For peace of mind, keep at least one inch of clearance all around the Mac.

If you've ever used a computer before, you know how light can wash out the video screen. Before setting up your new Macintosh, give some thought to the light that may fall on the face of the machine.

Sunlight causes the most problems. It not only completely washes out the

screen, but can heat up (and even melt) the Mac's plastic cabinet. Overhead lights—from fluorescent fixtures and standard desk lamps—can be as annoying.

MacTip 2-2

Most Mac users put the disk drive on the right side. Though there's nothing wrong with putting the drive on the left side, take care to keep the drive away from the Mac. The left side of the Mac gets the hottest, so the vents on that side should have an extra measure of breathing room.

Experiment by moving the Mac, without its keyboard and other attachments, around the room. If you have windows that face south, east, or west, be sure to think about how sunlight may stream through at certain times of the day.

HOOKING UP THE PIECES

With a space ready for the Mac and a power outlet nearby, it's time to hook everything together and test it for proper operation.

Begin by placing the main Mac cabinet, with the back facing you, on the desk or table. Find the battery compartment, which is located on the upper right corner of the back. Pop it open with your finger, as shown in Figure 2-2. The battery cover comes completely off, so don't lose it.

For starters, be sure that a battery is there (it should be: Apple places a battery in every Mac before it leaves the factory). A Mac will work without a battery, but the built-in clock/calendar won't keep time when the Mac is turned off.

To get everything in working order, place an Eveready number 528 battery (or equivalent) into the compartment, positive (+) end down. The 528 battery is about the same size as a standard AA battery, but only a number 528 will do (for one thing, an AA delivers 1.5 volts, whereas the 528 delivers 4.5 volts). After inserting the battery, or if the battery is already in place, finish this step by replacing the compartment cover.

Plug the female end of the power cord into the receptacle on the Mac. The cord fits only one way. Don't plug the Mac into the wall socket just yet.

Unwrap the mouse from its special box and plug the cable into the mouse connector on the back of the Mac, as shown in Figure 2-3. The mouse connector is the one on the far left (back facing you), and is marked with a symbol (icon) of a mouse (a Mac mouse; not a real mouse).

The mouse-to-Mac connection should be a tight one (the same goes for every accessory added to the Mac). Press the plug into the connector until it's seated snugly. Finish by twisting the thumb-screw knobs until they are finger tight. Don't overtighten—you may break something.

Turn the Mac around so the front is facing you. If you're right-handed, you'll probably want to place the mouse to the right of the Mac. Place it on the left if you're a lefty. You are, of course, free to change the position of the mouse at any

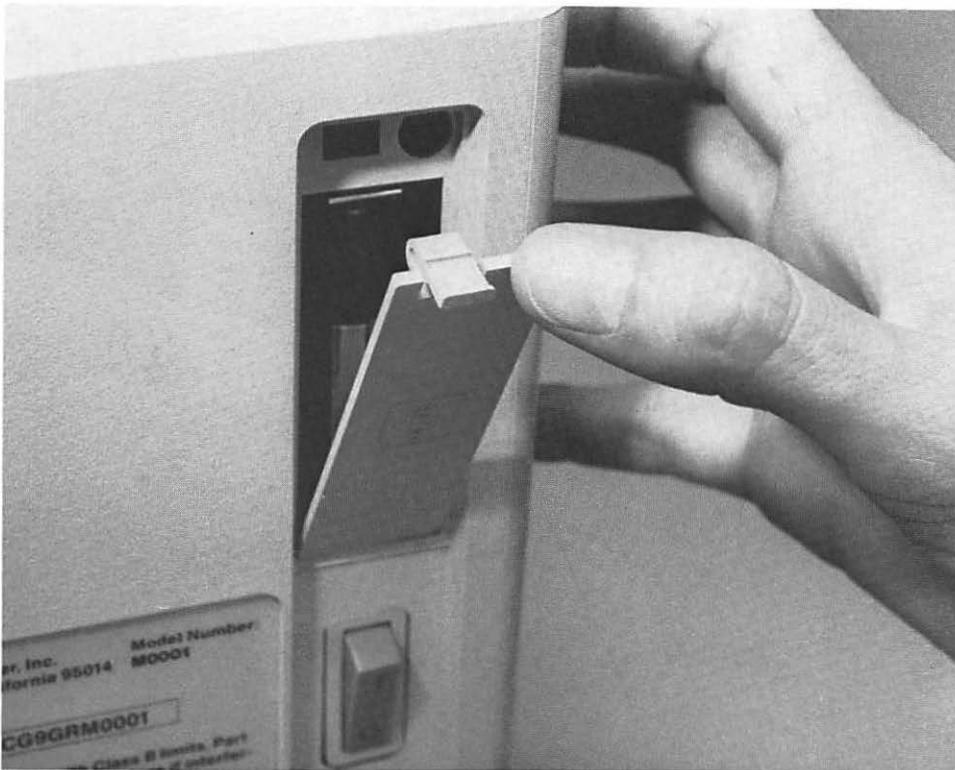


Fig. 2-2. Check inside the battery compartment to make sure the battery is correctly installed.

time. The proper orientation of the mouse is with the cable (tail) leading away from you.

Now it's time to plug in the keyboard. Open up the separate keyboard shipping box and you'll find one keyboard and one coiled keyboard cable. Before attaching the keyboard to the Mac, inspect it for damage and loose keys. Push loose keys back into position by lightly pressing down on them. Snap one end of the coiled cord into the keyboard; the other end into the Mac (Figure 2-4). Although the keyboard cable looks the same as that used for telephones, phone cords usually don't work because of connector size and wire incompatibilities.

Never hook the keyboard into a telephone line and *never* plug a telephone line into the Macintosh. For one thing, phone lines carry more than 50 volts of electricity, which can seriously injure your Mac. And for another thing, the telephone line does absolutely nothing for your Mac, and vice versa.

With the battery, power cable, mouse, and keyboard in place, it's time to plug the Mac into the wall and try it out. Make sure the on/off switch is in the off (or "0") position, and plug the Mac in. Then flip the power switch up (to the "1" position).

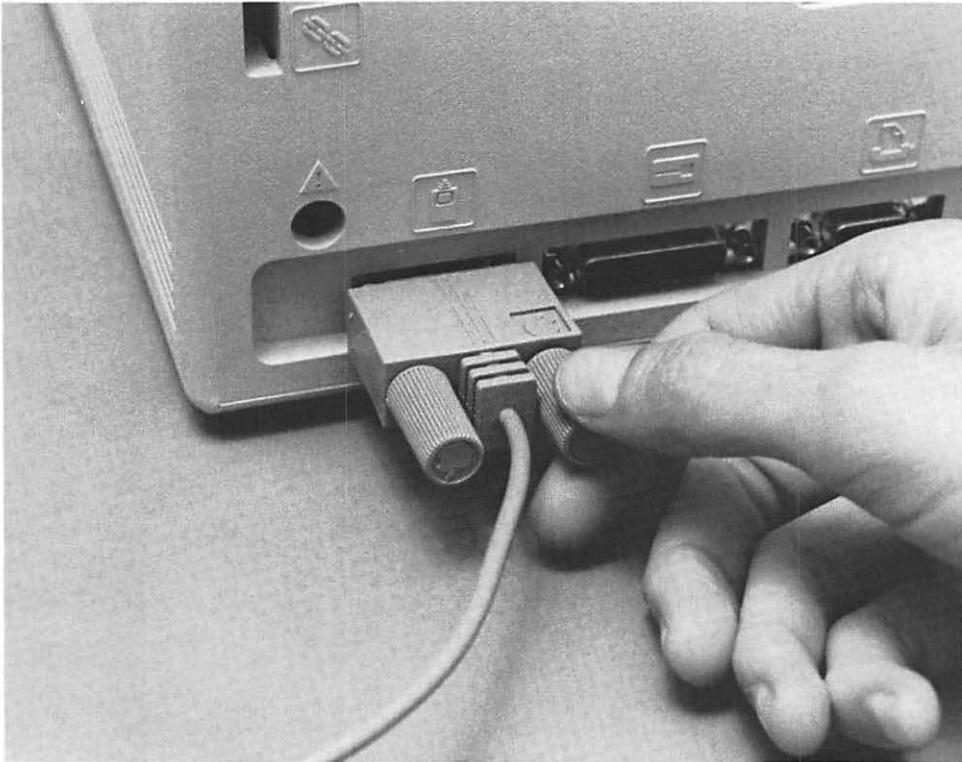


Fig. 2-3. Plug the mouse cable into the mouse connector, and then tighten the thumb screws for a sure fit.

MacTip 2-3

If you ever need to remove the keyboard cord, press down on the plastic tab located on the top of the cord's connector, and pull the connector loose.

If all is well with your Mac (which it should be), you'll hear a long but pleasant "beep." In a few seconds, the screen will light up, displaying a small picture of a disk with a question mark inside it.

If your Mac doesn't beep when you turn it on, or does beep but the screen doesn't light up, it probably doesn't mean your Mac is defective. Probably things just aren't hooked up or adjusted properly. If the Mac doesn't seem to work, the most likely fault is that it isn't getting power. Double check the power cord by making sure it's snugly in place—both in the Mac and in the wall outlet. If you've plug-

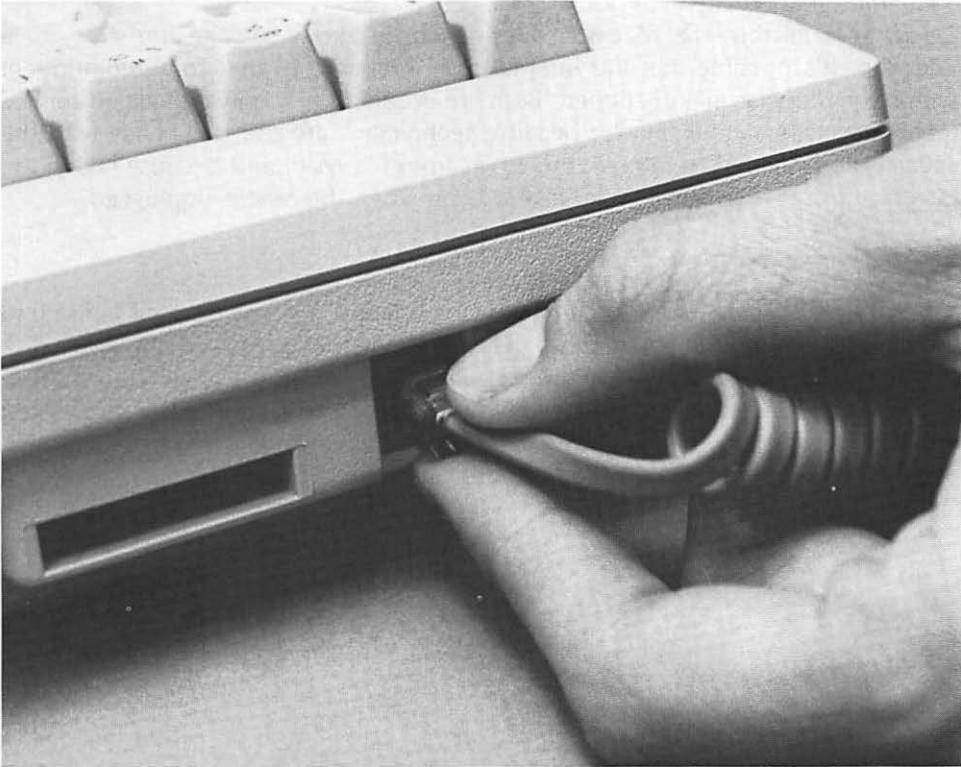


Fig. 2-4. The keyboard uses a telephone-like cord. Fit one end into the back of the keyboard unit, the other into the keyboard connector on the Mac (lower right corner, front facing you).

ged the Mac in via an extension cord, try plugging it directly into an outlet (you may have to move it to do this).

If the outlet is the kind that's controlled by a separate wall switch, make sure the outlet is switched on.

MacTip 2-4

It's a good idea to find an unswitched outlet for the Mac. Otherwise, there will be a time when you're diligently working with the Mac and someone will accidentally hit the switch, cutting off power to the Mac, and erasing all of your hard work.

If the Mac beeps but the screen remains blank, check the brightness control that's located on the lower left panel (under the front lip). Turn it clockwise to

increase brightness, the other way to decrease brightness (Figure 2-5). There is no user-adjustable contrast control.

If, after all this, the Mac still doesn't work, take it back to the store for a checkup. It's possible that the internal fuse is blown, or that some component within the Mac has malfunctioned. Both are problems that only a qualified service technician can handle (mostly because technicians are the only ones with the special tools needed to remove the cover from the Mac, and because taking the cover off poses a serious shock hazard, even when the Mac is unplugged).

STARTING UP

With the Mac on and the screen glowing brightly, it's time to insert a disk into the disk drive and put the Mac through its paces. All that's required is to pop a disk into the drive—the Mac will do the rest.

While there's no science involved when inserting disks, they can't be plugged into the drive just any old way. Disk can only be inserted metal end first, label side up (the disk's hub will be on the bottom), as shown in Figure 2-7.

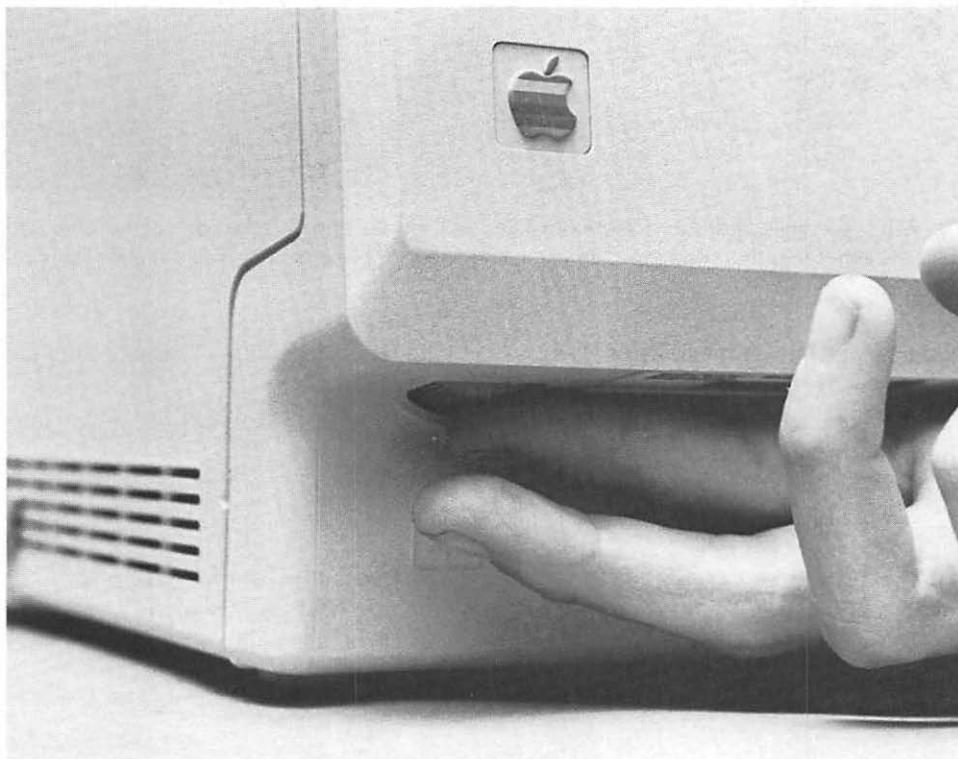


Fig. 2-5. Adjust the brightness control, if necessary, for the best picture.

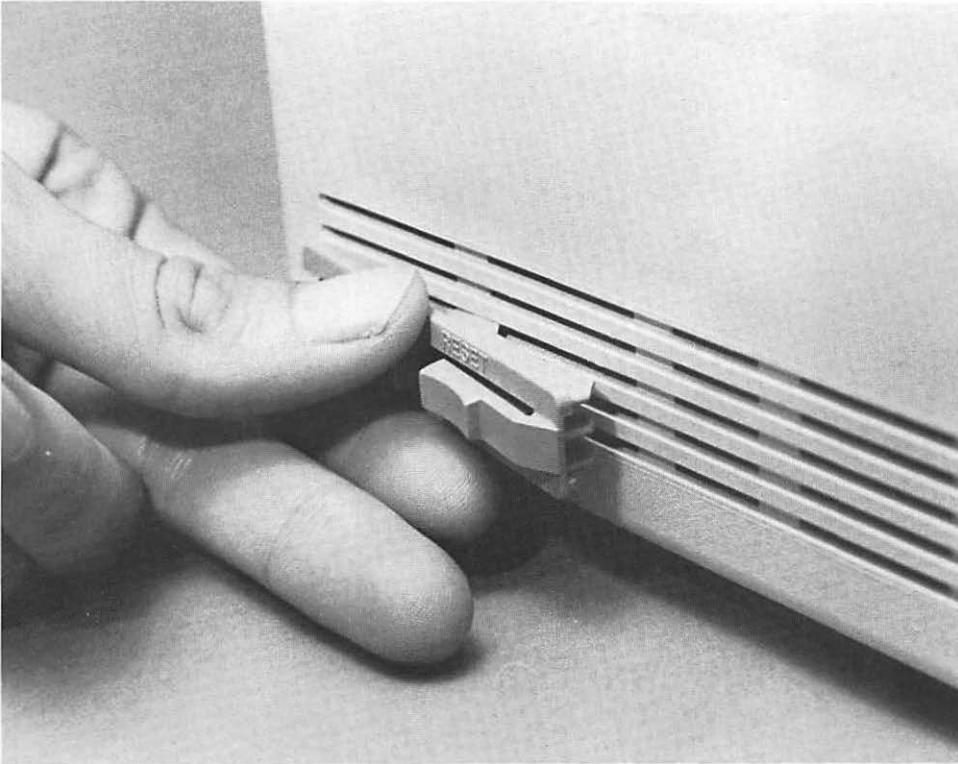


Fig. 2-6. If you want to install the programmer's switch, plug it into the bottom three ventilation slots at the rear of the far left side of the Macintosh.

MacTip 2-5

You don't have to use the Programmer's Switch, but it's included in case you want it (at the very least, it provides a way to turn the Mac on and off without reaching around to the back of the machine to find the power switch). Insert the Programmer's Switch, lettering side up, into the bottom three slots at the rear of the left vent, as shown in Figure 2-6.

Use only the side of the switch that says Reset. Press it to reset the Mac—that is, to cycle it off and on. Be careful with this button and don't press it accidentally. Doing so will erase whatever you have in the computer's memory (the contents of the disk will remain intact, of course).

Don't bother with the button that says Interrupt. It doesn't do anything worthwhile for you.

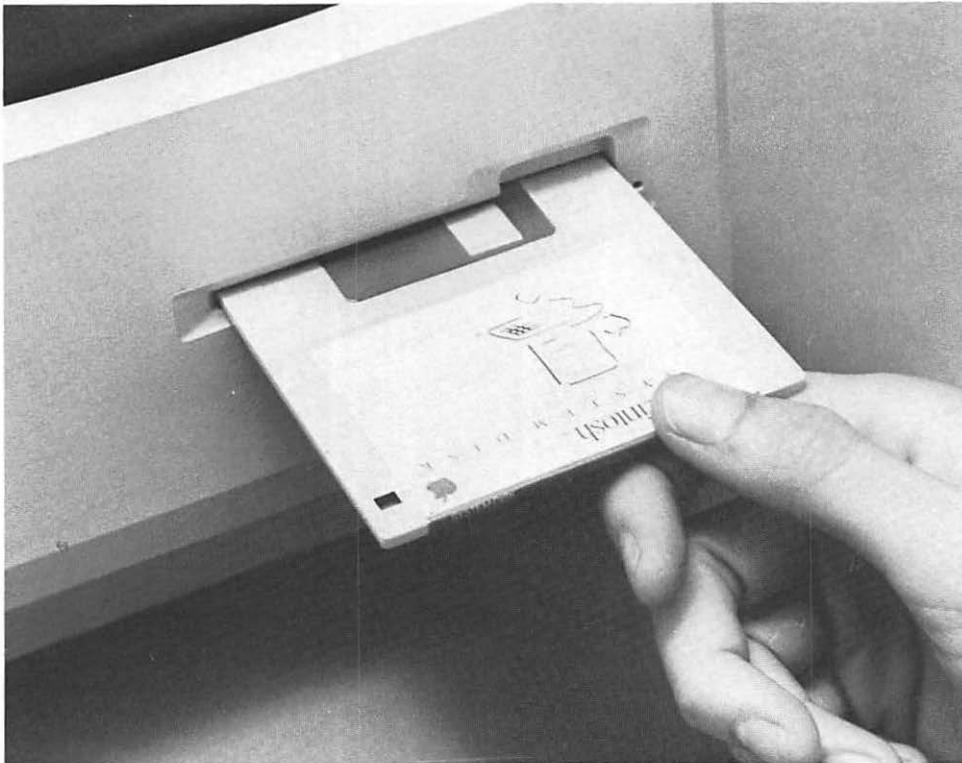


Fig. 2-7. Insert disks label side up, metal end first.

It should also be noted that only disks that have the Mac's operating system on them can be used to start (or "boot") the computer. The disk marked "System" can be used to start the Mac; so can most program disks (the ones for MacWrite and MacPaint, for example). For our examples, you'll use the Startup disk named "System."

Once the System disk has been inserted, the Mac retrieves the programs it needs to start, and you're off and running. You'll know everything is going fine when you see an icon of a smiling Mac in the center of the screen.

Once the drive has accepted the disk and the Mac has read the operating system from it, the Mac's unique electronic desktop will appear. It may take up to a half minute for the Mac to read the operating system. A small watch icon will appear — Mac's way of saying "wait a minute, please" — while the program is being loaded (see Figure 2-8). If the disk hasn't been used by someone else already, the desktop should look like the one in Figure 2-9.

A gray desktop, a disk icon, a trash icon, and a pointer make up the Mac's basic desk. If the desktop doesn't appear this way, there's no cause for alarm. The Mac

MacTip 2-6

If a disk that lacks the operating system is used to start the Mac, the drive will spit the disk out, the screen will usually turn black, and the icon in the center will turn from a disk with a question mark to a frowning Mac. At this point, the only way to rectify matters is to turn the Mac off and then on and try again.

If the Mac can't properly read the disk for one reason or another, the disk icon will appear X'ed. In this case there's no need to cycle the Mac off to retry, but you will have to use another disk to get the Mac up and running.



Fig. 2-8. The watch icon tells you to "wait a minute, please."

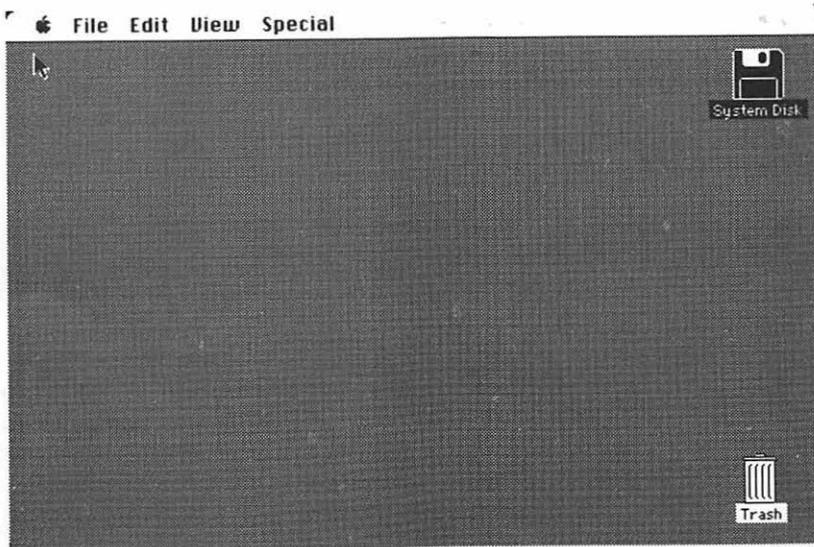


Fig. 2-9. The opening desktop consists of several main elements: a disk icon, a trash icon, a pointer (upper left corner), and a menu bar.

works the same no matter how the desktop looks. We'll show you how to get the desktop back into its original shape in the following chapters.

The gray *desktop* is the Mac's working surface. The Mac's desk is colored a medium gray, to make it less distracting and easier on the eyes than black or white would be. You can change the desk to any shade you want by using one of the Mac's desk accessories, covered in Chapter 6, "Desktop Accessories."

The *disk icon* represents the disk currently loaded into the disk drive (Figure 2-10). "Hidden" inside this icon are the contents of the disk. Shortly, you'll learn how to open this icon to see what the disk holds.

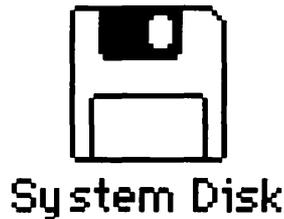


Fig. 2-10. A disk icon. This one is named "System Disk."

The *trash icon* is the Mac's means of throwing away unneeded files (programs and program documents) see Figure 2-11. Since the Macintosh is icon-oriented, there's no need to type in a code such as "ERA REPORT.TXT" to delete a file. Just drop the icon that represents the unneeded "REPORT" document into the trash. You'll learn more about this in the following chapters.

The *pointer* indicates where the Mac's mouse is currently positioned (Figure 2-12). When the mouse is rolled, the pointer moves.

CHECK-OUT TIME

Perform the following tests to make sure everything on the Mac is working properly. We'll be using several of the Mac's shortcuts during the tests. Don't worry about remembering them — all the shortcuts will be reintroduced in the following chapters.

To begin, push the mouse around the desk (don't touch the mouse button yet). The pointer should move in all directions, following the movement of the mouse. You'll notice that the pointer won't move completely off the electronic desktop. If you run out of rolling room for the mouse before the pointer reaches the place you want it to be, simply lift the mouse off the surface and move it to a new position. As long as the mouse is not in contact with the surface, the pointer stays stationary.

So far so good. Finish checking the mouse by placing the pointer (actually, the tip of the arrow) over the trash can icon. Tap the mouse button once (don't move the mouse while pressing on the button). The icon will turn black, like the one in

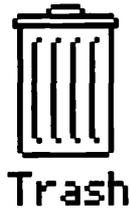


Fig. 2-11. A trash icon. Use it to throw things away.



Fig. 2-12. The pointer. It comes in many shapes, but the arrowhead is the most common pointer shape.

Figure 2-13. This indicates that the icon is “selected.” If you give a command now, it will act on the trash icon.



Fig. 2-13. When you select the trash icon, it turns black.

With your finger off the mouse button, move the pointer from the trash icon by pushing the mouse. With the pointer resting on any portion of the gray surface of the desktop, tap the mouse button once again. The trash icon will turn white, indicating that it has been “de-selected”.

Now, to open the disk icon, move the pointer over the icon of the disk. Be sure the tip of the arrow rests on the body of the icon, as shown in Figure 2-13, not on the name underneath (tapping on the mouse button when the pointer rests on the name does something special, covered in “About Icons and Windows,” Chapter 4).



Fig. 2-14. When you select the disk icon, it, too, turns black. (Make sure you position the pointer over the body of the icon before you tap on the mouse buttons.)

Instead of tapping on the button once, tap twice in rapid succession. Again, take care not to move the mouse while you're pressing on the mouse button. If you've done it right, the icon will zoom out and form a box, otherwise known as a window (Figure 2-15). Notice that the disk icon is no longer a solid white or black.

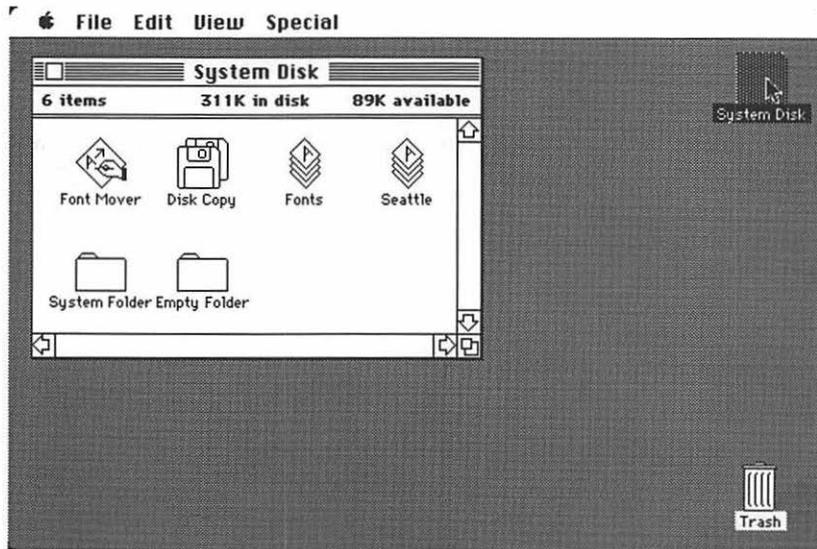


Fig. 2-15. Opening the disk icon reveals the disk directory window.

You may need to try this mouse button maneuver several times before you master it. The secret is making sure you hit the button twice, as quickly as possible, with a minimum amount of time between taps. Incidentally, opening the disk icon this way is the shortcut method, used here for simplicity. Another way is covered in Chapters 3 and 4.

Inside this window—properly called the *disk directory window*—are even more icons. These represent what's on the disk.

On the System disk, the one that's been loaded into the drive, there are icons marked "Empty Folder," used to create file folders to hold other icons; "System Folder," containing computer-readable files that contribute to the Mac's operating system; and "Font Mover," a "utility" program used with certain other programs.

Depending on when you bought your Mac, there may be other icons, too. One may be called "Disk Copy" and another "Fonts." You'll learn how to use these as well later in the book.

CHECKING OUT THE KEYBOARD

It's time to check out the keyboard. To do it, you'll have to write some text. We'll use one of the Mac's special features, the *information window*, to write the text.

Make sure the opened disk icon is still selected (black). If it isn't, place the pointer inside the disk directory window (but not on an icon) and tap the mouse button once (or, place the pointer on the "opened" disk icon and tap the button).

Press the Command key down and keep it down. Without releasing the Command key, press the I key (don't worry about whether it's uppercase or lowercase; just hit the key).

Within a few seconds, another window should appear on the screen. This is an information window, shown in Figure 2-16. It provides details about the icon that's currently selected (and since the icon of the disk is selected, the information window is about the disk icon).

On the bottom of the window is a large rectangular box, used for comments about the icon. A stubby flashing line appears in the box. This is the insertion point, sometimes called a cursor, which indicates where text will be placed when typed from the keyboard.

Without moving the mouse or pressing the mouse button, type a line or two of text into the comment box in the bottom of the information window. Type anything—"Now is the time for all good Macs to come to the aid of their country."—is a nice start. When you get to the right edge of the box, don't press the Return key; the Mac will drop to the next line automatically (see Figure 2-17).

If you make a mistake, press the Backspace key. The insertion point will move over the character immediately to the left and erase it.

Now hit each key on the keyboard; the characters should print out in the comments box. If the box fills up and you run out of space, press the Backspace key a few times to erase some characters. If all the characters print in the comment box, the keyboard is working properly.

While we're here, let's take a look at something very important. Use the mouse to move the pointer into the comment box. While inside the box, the pointer appears as a strange "I-beam" rather than an arrow, as shown (in Figure 2-18). The pointer will take on this shape whenever it lies over an area where text can be entered. The pointer has many personalities—the arrow and the I-beam are just two of them.

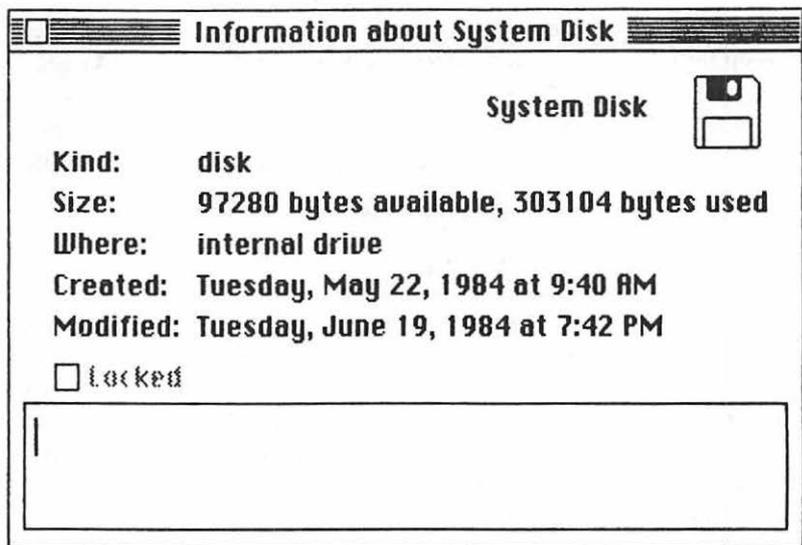


Fig. 2-16. The information window for the System disk.

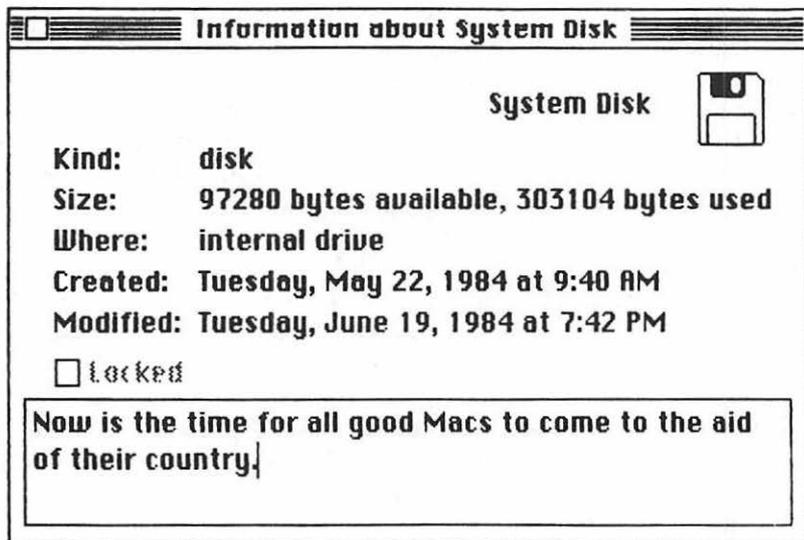


Fig. 2-17. The words you type appear in the comments box.

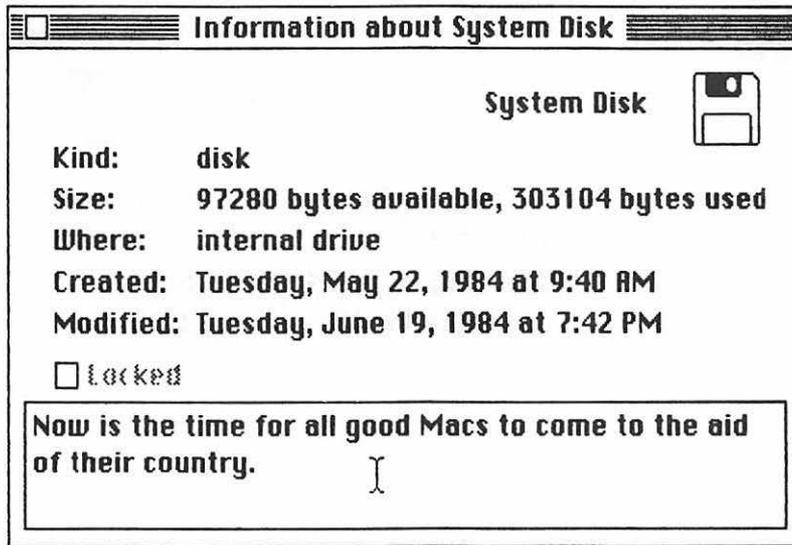


Fig. 2-18. When the pointer is resting over a place where text can be entered, it takes on an “I-beam” shape.

Notice also that the pointer (whatever its shape) and the flashing insertion point are separate. Move the mouse: the pointer moves, not the insertion point. More about this in later chapters.

Enough playing around. We’ve got work to do. Erase what’s been written by pressing down and holding the Backspace key. Before long, all the text will be erased. (There’s a shortcut method to erase lots of text, of course. You’ll learn about it in Chapter 5, “Advanced Topics.”)

To get rid of the information window, place the tip of the arrow in the small “close” box located in the window’s upper left corner, as shown in Figure 2-19. Hit the mouse button once. The window will disappear.

Do the same on the disk directory window. The disk window disappears by zooming back into the icon of the disk. The Mac’s desktop should look as it did when you first started the system: just two icons and an arrow-shaped pointer.

FINISHING UP

So much for your first test drive of the Macintosh. But you still have to remove the disk and turn the Mac off. If you haven’t noticed it already, you soon will—there’s no eject button and no door to open to remove the disk. The Mac doesn’t need either one; the Mac takes care of ejecting disks. As with the rest of the Mac’s operations, there are a couple of ways to get the Mac to release the disk. For now, we’ll use the shortcut method.

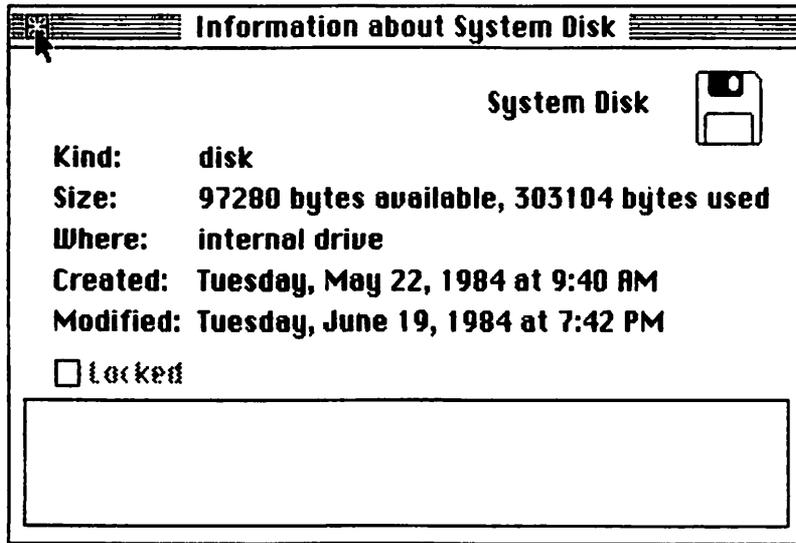


Fig. 2-19. Place the pointer in the close box (upper left corner) and tap on the mouse button to put the information window away.

Press the Command key. While you hold it down, depress the “E” key. The Mac’s disk drive will then whir into action, and within a few seconds the disk will come popping out. Remove the disk, and reach behind the Mac and turn it off.

MacTip 2-7

System disks shipped with the very first Macs had a different version of the Finder, which required you to select the disk icon before you could eject the disk from the drive.

If the drive doesn’t relinquish the disk when you give the eject command, move the pointer over the disk icon, tap the mouse button once (the icon will turn black), and try ejecting again.

JUST THE BASICS

We’ve covered only the basics in this chapter; there’s still plenty to learn. Surprisingly, however, the concepts in this chapter comprise more than 50 percent of the Mac’s operation. What lies ahead is refining the ways you interact with the Mac—learning all the tricks.

Mousing Around

The Macintosh mouse is used for many things: to move the on-screen pointer, to invoke commands, to select text, to draw pictures, and much more. Apple designed the Mac with a mouse to make it an easier computer to use. The mouse has its very own lingo, its own special way of working, and its own do's and don'ts.

This chapter details how to use the mouse and defines its five basic actions—moving, clicking, double-clicking, dragging, and pressing. There's also a brief introduction on how to use the mouse to give commands to the Mac, and how to care for it and clean it.

WHY THE MOUSE?

Any complete discussion of the Mac's mouse must include a few words about why Apple chose to use a mouse for the Macintosh. There are three basic reasons:

1. To make the Mac an easier-to-use computer.
2. To enable the Mac to draw complex pictures without relying on cursor control keys or another input device.
3. To provide some means for the user to interact with the computer's windows and icons.

The Mac's mouse does the job of four cursor control keys, which allows the Macintosh keyboard to be simpler not only in appearance, but also in use. Even in its appearance the Mac seems friendlier than the average computer with 80 to 120 keys on its keyboard.

More than making it easier to move a cursor or pointer around the screen, the mouse allows pointing at icons. Icons are objects, and it's easier to refer to them by pointing than by name.

Pointing is natural for everyone. For example, we might point to indicate the kind of donut we want in a bakery—it's far easier to point and say "that one" than to explain "I want the medium-size, sugar-glazed, raspberry-filled raised donut."

Moving the Mac's windows is another job that's well suited to the mouse. A typed command to move a window across the screen would have to be complex, perhaps something like "WIN104;150,200" for "move window number 104 to coordinate 150 by 200."

The Mac is a graphics-intensive computer, able to produce ultrahigh-resolution pictures, charts, and drawings. Creating a picture is as simple as moving the mouse. For example, you can move the mouse as you would a paintbrush to draw a line on the screen, or use the mouse to drag pictures of office furniture around a scaled floor diagram (Figure 3-1).

The mouse isn't the only device in the computer world that can be used to move a pointer, point at objects on the screen, or draw intricate designs. There are touchscreens, light pens, and graphics tablets that do more or less the same thing. All of these involve more complex circuitry than the mouse, however, which

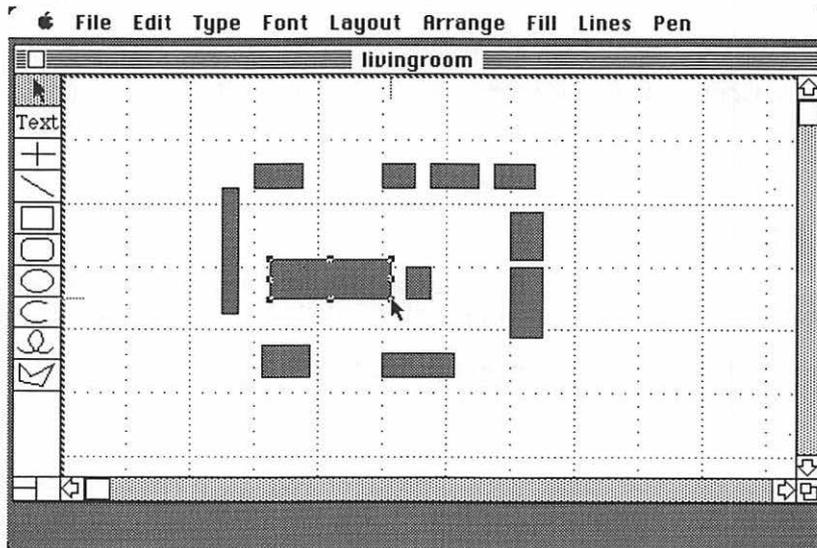


Fig. 3-1. The mouse is used for more than working with icons. Among other things, it can be used to move furniture around an electronic floorplan provided by MacDraw, from Apple.

would make the Mac more expensive. What's more, devices such as light pens and graphics tablets require you to grasp and lift a stylus, which can be cumbersome and time consuming. And touch screens don't allow very precise resolution of the point touched.

It takes some time to get used to the mouse, not only because it's different, but because linking the motion of your hand guiding the mouse to the motion of the on-screen pointer is not intuitive. But as with most activities, practice makes perfect. Within 30 to 45 minutes you should be wielding the mouse like a seasoned pro.

MacTip 3-1

Hardware manufacturers may soon introduce alternative input devices for the Macintosh, including graphics tablets and light pens. A graphics tablet add-on would be particularly helpful for artists, for example, who need more control than the mouse can provide. Consult your dealer for information about Macintosh accessories—present and future.

MOUSE—USE AND CARE

There are right and wrong ways to handle the mouse. For starters, go easy on moving the mouse around the desk or table. It's no delicate piece of china, but it doesn't like abuse either. Don't press down on the mouse when you move it. Just slide it along, allowing the ball mounted in its underbelly to roll without undue pressure (Figure 3-2).

The same caveat holds for the mouse button. You don't need much more than a slight tap to activate the button. When pressing on the button, use a gentle, easy stroke, almost a dabbing action.

As mentioned in the last chapter, use the mouse only on a smooth surface, preferably formica or finished wood (but not heavily waxed wood) or even a piece of plastic. The mouse will respond more accurately than on a rougher surface, and you won't run the risk of rolling the mouse over a surface (such as cloth) that could contaminate its delicate innards.

You'll want to clean the mouse every now and then, not only to keep it in good working order, but to maintain its spunky personality.

MacTip 3-2

Cleaning is easy: just turn the mouse over and twist the dark-colored baseplate counterclockwise, as shown in Figure 3-3. Rotate the baseplate so the small nub aligns with "O," for Open.

Using your other hand to catch the baseplate and roller ball as they fall, turn the mouse over again (bottom down). Blow out the inside of the mouse with your breath, or use a

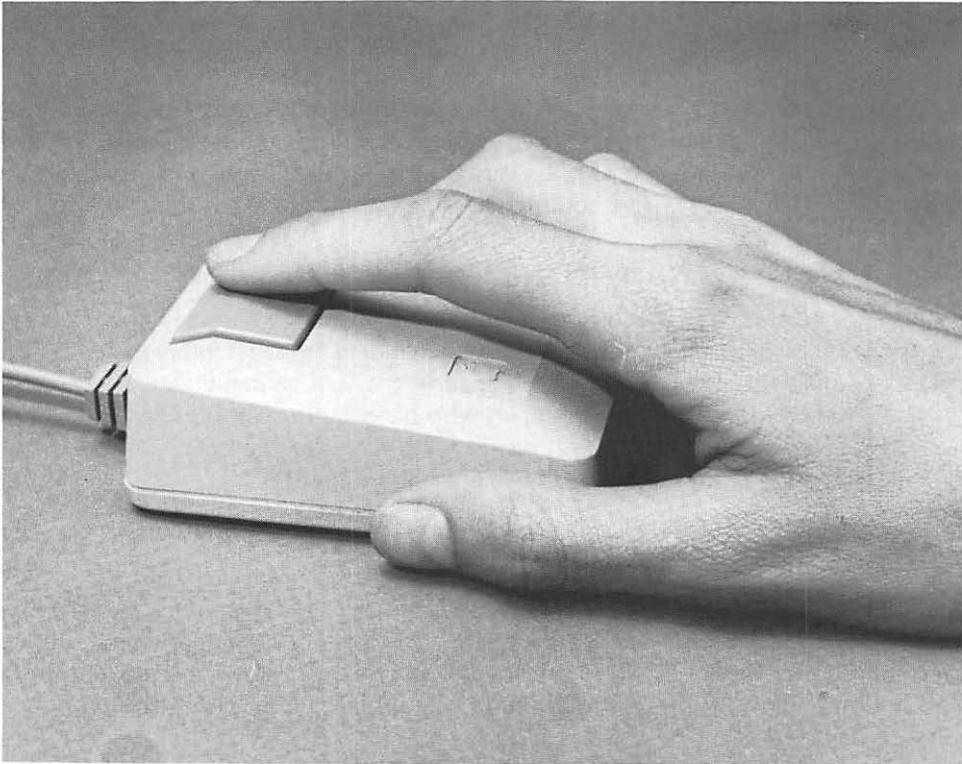


Fig. 3-2. Slide the mouse around the desk; don't push or shove.

can of compressed air for better results (compressed air is available at most photographic and computer stores).

Follow by wiping off the roller ball with a clean, lint-free cloth (again, an item often found at photo stores). Do not use any kind of cleaner on the ball, even the "mild" household types. Cleaning solutions tend to harden the rubber.

If there is a lot of wax or oil built up on the internal rollers, purchase some commercial audio cassette tape head cleaning solution, and use it to wipe the rollers clean. Use a cotton swab to apply the solution, but be sure that no lint from the swab gets tangled with the roller (see Figure 3-4).

Reassemble the mouse by popping the rubber ball back in and replacing the baseplate. To get the baseplate back on, align the nub with the "Q" and then twist it clockwise until it locks (the nub will line up with the "L").

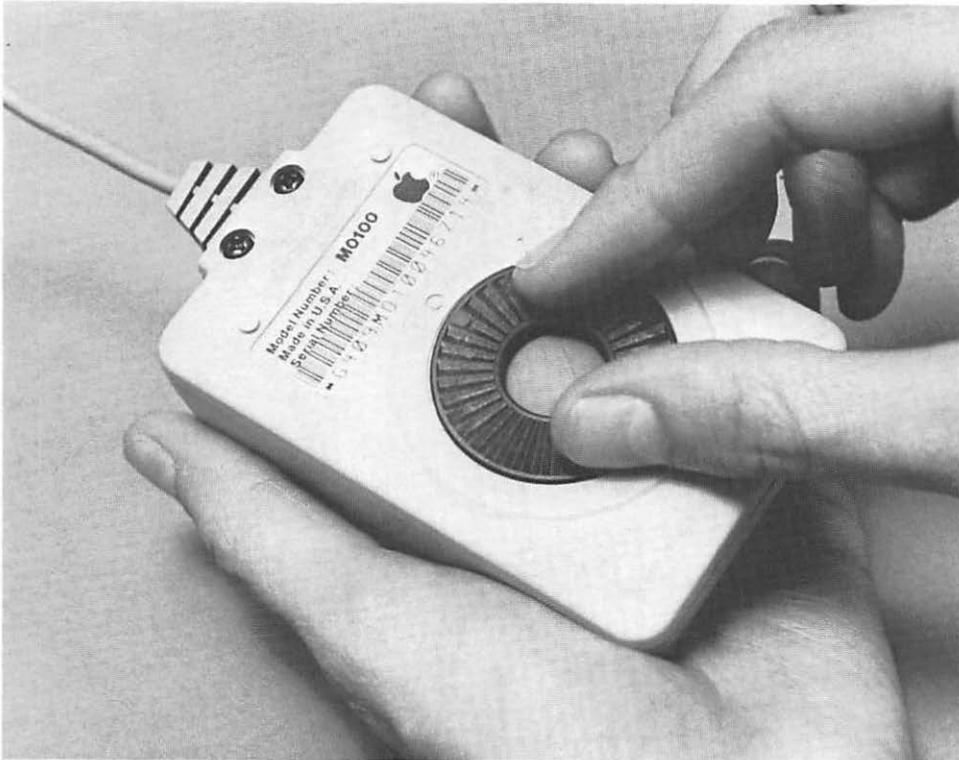


Fig. 3-3. To clean the mouse, start by removing the baseplate. To do this, turn the baseplate so the small nub lines up with the “O.”

THE MOUSE AND THE MAC

You'll be doing five things with the mouse: moving, clicking, double-clicking, dragging, and pressing. Several of these were already briefly introduced in Chapter 2, “Bringing Home the Macintosh.” But it's worth covering them again.

To follow along, start the Mac as described in the last chapter: Turn the Mac on, insert the disk marked “System,” and wait as the Mac does the rest. Before long, the Mac's electronic desktop will appear on the screen.

Now, here are the five mouse-actions: moving, clicking, double-clicking, dragging, and pressing.

Moving

Moving the mouse is the simple process of pushing it along the surface of the desk, as you did in the last chapter. Moving only relocates the pointer; it doesn't invoke any commands or cause the Mac to behave in any particular way. When moving, you must not press the mouse button down.

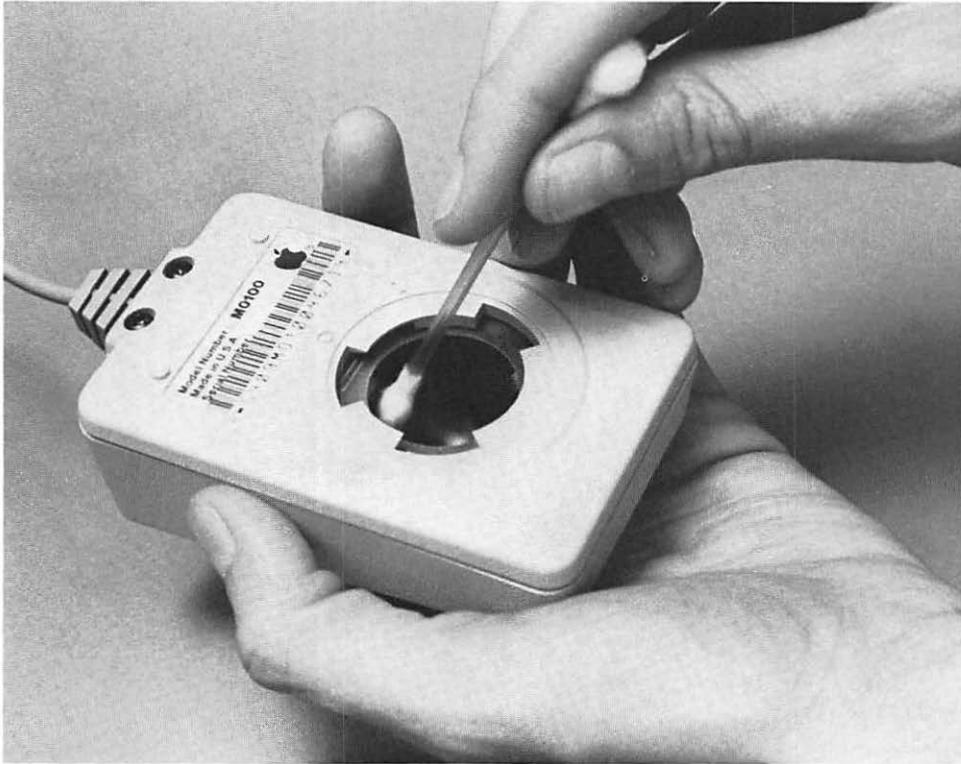


Fig. 3-4. Use a swab moistened with rubbing alcohol or tape-head cleaner to clean the inside of the mouse. Be sure the sensor rollers are located at the top and left edges of the cavity before you reclose the mouse.

An example of moving the mouse would be to reposition the pointer from the trash can icon to the disk icon. The instruction, if you were to read it in the manual for a program, might be something like "Move the pointer over the disk icon."

To do just this, slide the mouse up the table or desk without pressing the button. The pointer will move up. Stop when the pointer rests over the icon of the disk. As you can see, there's nothing much to mouse moving.

If you're moving the mouse around the desk and suddenly run out of room, don't be afraid to pick the mouse up and move it to a spot where you have more space. When the mouse is lifted, the pointer will stop moving until you set it down again.

Clicking

Pushing on the mouse button makes things happen. **Clicking** is tapping quickly on the button once (press and release).

Usually, clicking the mouse button selects or activates something. As an example, select the trash icon: move the pointer over the icon of the trash can and click the mouse button. When the trash can icon is clicked, it turns black. An icon is usually selected to prepare it for a command. We'll cover this in more detail before the end of this chapter.

It's important not to move the mouse while clicking. That could cause some unwanted confusion. Moving the mouse while pressing the mouse button is a legitimate mouse action, however, called dragging. It's covered later in this chapter.

Double-Clicking

Double-clicking is similar to plain clicking, but instead of tapping on the mouse button once, you depress it twice in rapid succession. "Rapid" means that the clicks must occur no more than about $\frac{3}{4}$ of a second apart. Double-clicking takes some practice, but you'll soon get the idea.

You'll often use double-clicking to "open" an icon into a window, as you did in Chapter 2. Let's do it again. Move the pointer over the disk icon. Without moving the mouse, press and release the mouse button twice quickly (the instruction for this group of actions would be "double-click the disk icon").

If you've done it right, a window will zoom out of the icon, as shown in Figure 3-5. Practice some more. Move the pointer over to the trash icon. Double-click the

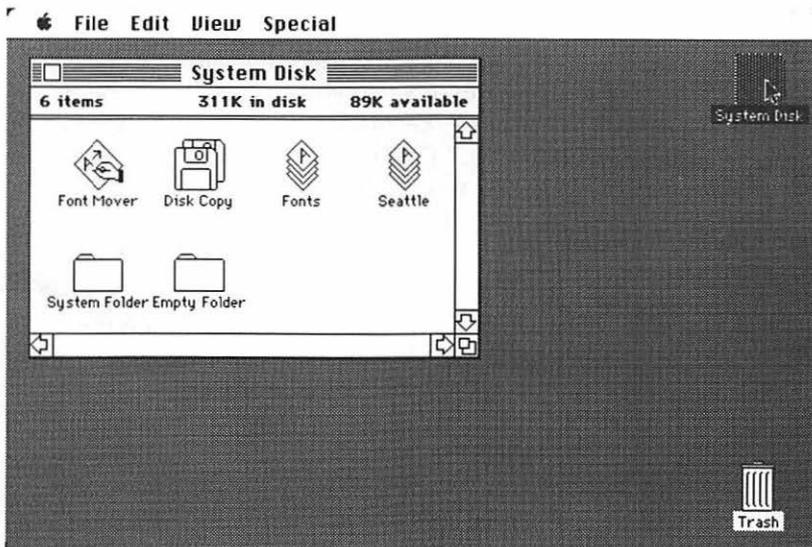


Fig. 3-5. When you double-click, you open icons. If you double-click on the disk icon, the disk directory appears.

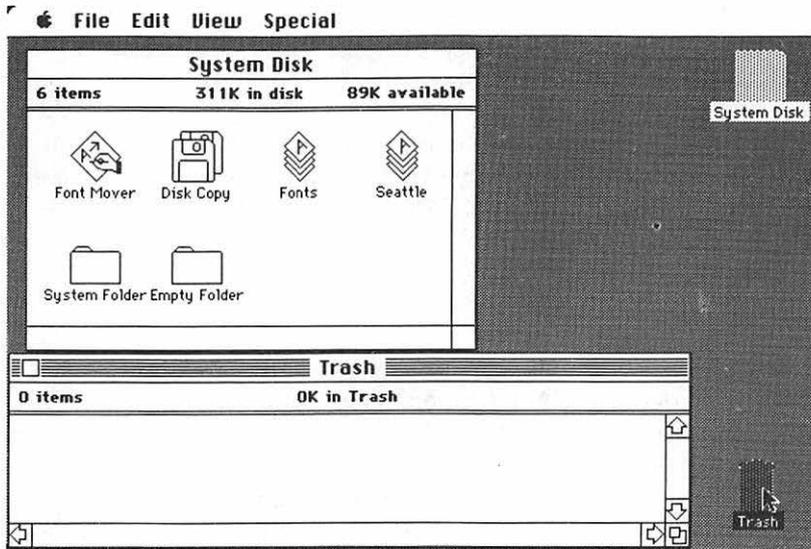


Fig. 3-6. If you double-click on the trash icon, the trash window appears.

trash icon. A window will zoom out. The trash window (Figure 3-6) should be empty, since you haven't placed anything in it yet.

MacTip 3-3

If you're having trouble getting used to double-clicking, keep trying. If your best efforts fail, you can use the control panel to increase the time the Macintosh expects between clicks. Refer to Chapter 6, "Desktop Accessories," for more information on changing the double-click speed.

Dragging

The mouse provides a way to move objects, such as icons, on the Mac's electronic desktop. Moving objects on the desktop is called **dragging**, which means holding down the mouse button while moving the mouse.

Dragging is both easy and fun. To try dragging, move the pointer over the icon labelled "Empty Folder" (it's inside the disk directory window). Press the mouse button and keep it pressed.

With the mouse button still held down, move the mouse. As shown in Figure 3-7, moving along with the pointer will be an outline of the Empty Folder icon (the original icon stays put for the time being).

Drag the outline of the Empty Folder outside the disk directory window and out

onto the gray desktop. Release the mouse button. The icon of the Empty Folder will appear where you release the button (Figure 3-8).

Practice dragging by taking each icon out of the disk directory and putting it back in when you've finished (just don't stack them on top of one another or place them in the trash window.) Don't worry if the arrangement of the icons looks a bit messed up when you get them back in the window. In Chapter 5, "Advanced Topics," you'll learn how to neaten up the arrangement of icons within windows.

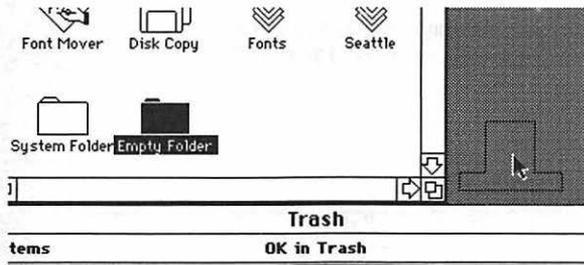


Fig. 3-7. You can drag icons onto the gray portion of the desktop to help you better work with them, or drag them into other windows. When an icon is dragged, only its outline moves.

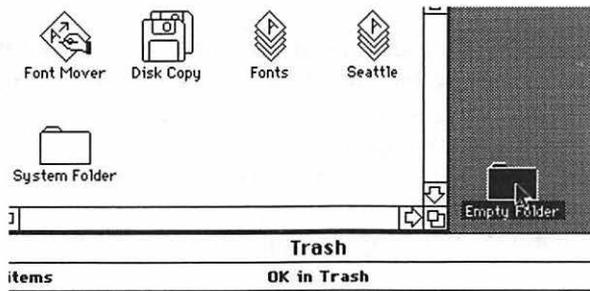


Fig. 3-8. When dragging is complete and you release the mouse button, the whole icon snaps into its new place.

Icons aren't the only things that can be dragged about the desktop. Let's move a window. We'll use the information window, unveiled in the last chapter, to see how this is done (we could use one of the two windows already open, but let's not disturb their placement just yet).

Look at the Empty Folder icon. If it's not already black, select it by clicking it. Follow this by pressing the Command key and the I key together (press the Command key, hold it down, and press I). Within a second or two a new window will appear on the desktop. It will be a window offering information about the Empty Folder icon (see Figure 3-9).

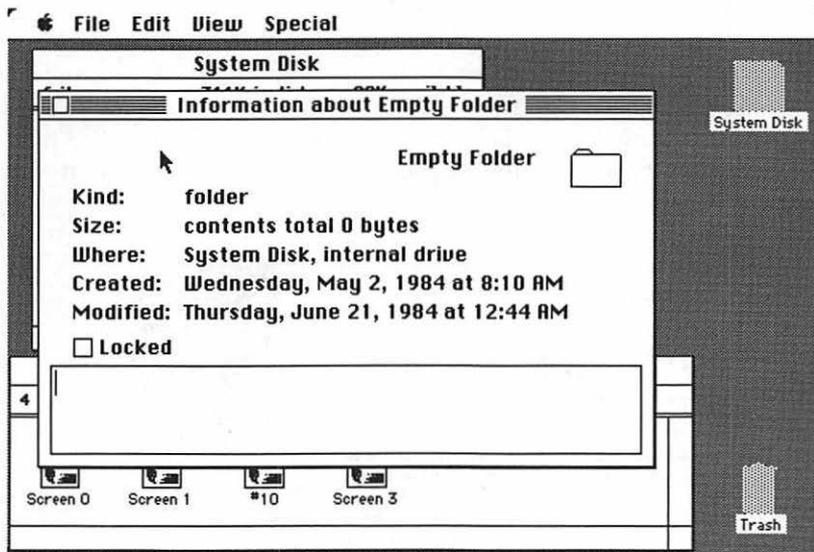


Fig. 3-9. The information window for the Empty Folder icon.
(Don't worry if the data in the window shown here does not match yours exactly.)

The lined bar at the top of the window, the one that contains the title "Information about Empty Folder," is the title bar. You'll use it to move the information window.

Place the pointer over any area of the title bar (except the box on the left). Press the mouse button and move the mouse to drag the window. An outline of the window will follow (see Figure 3-10). When the mouse button is released, the window will snap to its new position.

Close the information window by clicking within the square on the left edge of the title bar.

Pressing

If you hold down the mouse button but don't move the mouse, you're **pressing**. Most often, you'll press to tell the Mac that you want to continue an action—the type of action depends on what the pointer is resting on.

You'll also press to invoke a command by means of the Mac's pull-down menus. So far, we've commanded the Mac using shortcuts. Just about everything we've practiced can also be done with a pull-down menu command.

We'll take a look at one of those menus now, and practice pressing at the same time. Move the pointer to the top of the screen, over the word "File" (the tip of the arrow should be somewhere on the word). Press the mouse button and keep it pressed.

The File menu, shown in Figure 3-11, will appear. As long as the button is held down, the menu will stay. If you release the button, the menu will spring shut.

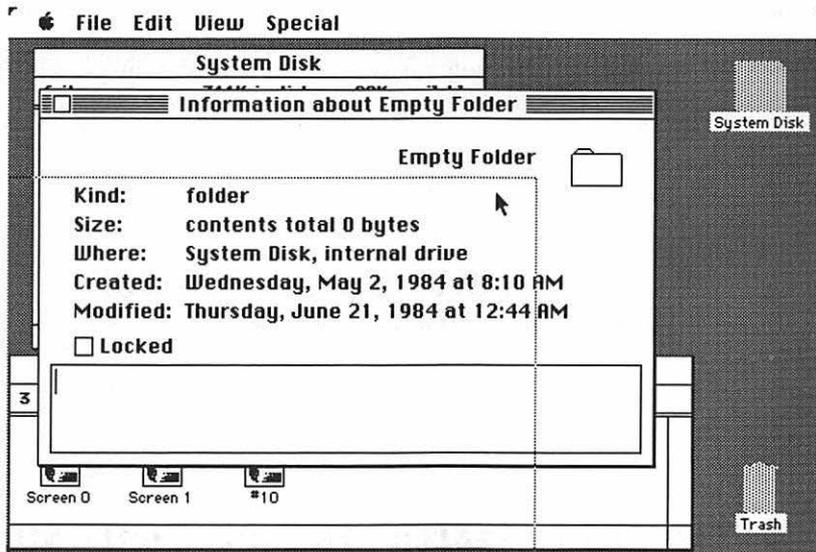


Fig. 3-10. You also drag a window to move it.

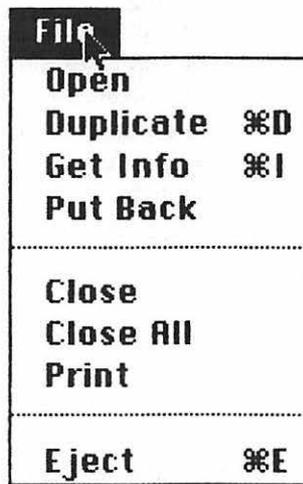


Fig. 3-11. Pull menus down by pressing on the title of the menu.

The Mouse and the Menu Bar

As we've just seen, the Mac holds its various menus in the menu bar, located in the top portion of the screen. The mouse is used to gain access to these menus and

the commands contained in them. There will be a menu bar involved in just about everything you do, whether you're working at the desktop, as you are now, or using a program such as MacPaint or MacWrite.

The menus may change from program to program — look at the ones in Figures 3-12 and 3-13, for example — but the way the menus are used remains the same.



Fig. 3-12. Here's the menu bar for the desktop.



Fig. 3-13. The menu bar for MacWrite.

This is what makes learning new programs on the Mac a snap. Once you master using pull-down menus, you're half way to learning to use any Mac program. And while you're learning, if you're unsure how to do something, just start pulling down menus and looking at each available command.

With other computers there are no unifying command conventions. Each program is different and therefore it's a lot harder to learn to use several programs.

To use any Mac menu, do the following:

1. Position the pointer over the name of the menu.
2. Press and hold the mouse button.
3. Select the desired command by dragging the pointer down to the name of the command.
4. Let the mouse button go.

Practice this using the File menu. Place the pointer over File and press the mouse button. Hold the button down and drag the pointer down the items in the menu. Stop when the pointer is over Close All, as shown in Figure 3-14 (Close All will appear highlighted).

Now let the button go. The Close All command will automatically close the two open windows (disk directory and trash). Only the icons of the disk and trash can should be on the screen.

Reposition the pointer over File once again and press the mouse button (see Figure 3-15).

Look closely. You'll notice that some of the menu items appear in bold print; some others are dimmed. The Mac is a smart enough computer to know what it

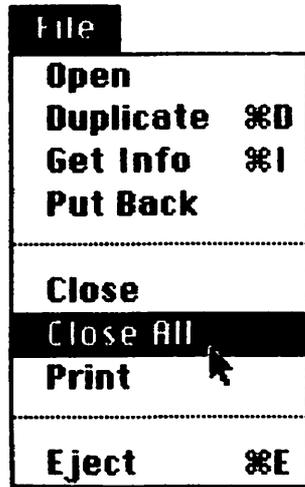


Fig. 3-14. Choose a menu item (command) by holding down the mouse button and dragging down the menu. When the command you want is shown highlighted (black background), let the mouse button go.

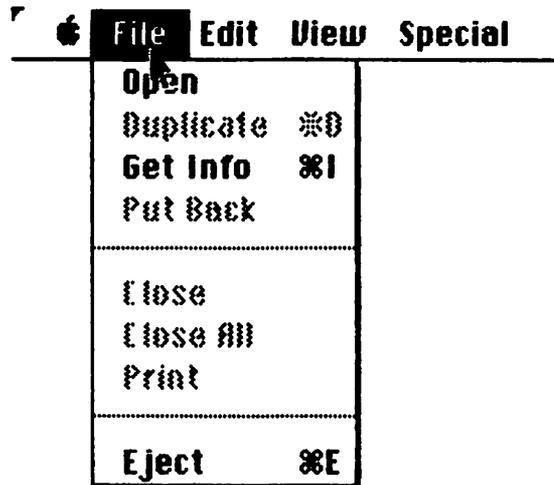


Fig. 3-15. When there are no windows to close, the Close and Close All commands are dimmed, showing you that they aren't active. Other currently inactive commands in the File menu are Duplicate, Put Back, and Print.

can and can't do at any particular moment. At this time, for example, there are no windows to close, so Close and Close All are dimmed. If you drag the pointer down over them, they won't be highlighted—they aren't available commands.

This system of dimmed and bold menu items prevents you from becoming frustrated trying commands that aren't possible.

MacTip 3-4

To release a pull-down menu without choosing a command, slide the mouse off the menu before releasing the button. You can also move the pointer back to the menu title and then release the button.

If you want to view the contents of all the menus, place the pointer in the menu bar and drag the mouse back and forth. Each menu will pull down in turn.

SHORTCUTS, TOO

You'll also notice that some of the items in the File menu have a strange notation beside them. The item called Get Info has a  I symbol next to it. This indicates that the Get Info command (or more correctly, the File//Get Info command) has a shortcut. It's one that we've used twice in this book already. Selecting the Get Info command from the File menu by using the mouse is the same as pressing the Command and I keys together.

To prove it, we'll try it the menu way. Click the disk icon to select it (it should now be black). Place the pointer on File in the menu bar and drag down to the Get Info command. Let the mouse button go and within a second or two, the information window detailing the disk icon appears on the screen.

Instead of closing the information window by clicking in the square box, use the Close command from the File menu. Once again, place the pointer over File, but this time drag down to the Close command. The information window will disappear.

ALL THE REST

You're probably wondering what the other menus contain. We'll cover all the desktop commands from each of the menus in the following chapters, but here's a quick rundown.

The  (Apple) menu, shown in Figure 3-16, contains the Mac's built-in desktop accessories, which include a four-function calculator, an eight-page note pad, a scrapbook for saving pictures and text, and an alarm clock. Each accessory is called up as any other command would be, and each is contained in its own window. Desktop accessories are covered in Chapter 6.

The **File** menu, as you've already seen, provides the means to close windows and to get information about icons. It's also used to open icons into windows (or to

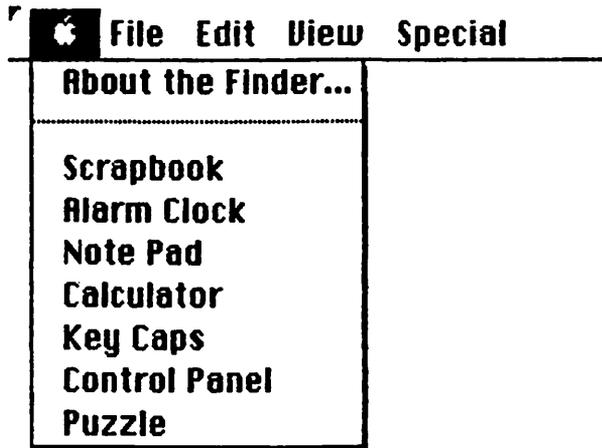


Fig. 3-16. The Apple menu.

start programs if the icon represents a program), to make copies of files, to print files, and to eject the disk (in the previous chapter, we used the Command-E short-cut method).

The main purpose of the **Edit** menu is to give you a way to cut and copy text and place it anywhere, even in programs (see Figure 3-17). The Edit menu is one that's nearly the same for every program you'll use, so it's important to learn how to use it. Look for all you need to know about the Edit menu in Chapter 5, "Advanced Topics."

The **View** menu, seen in Figure 3-18, is used to change the listing of files from icons to straight text. As you can see in Figure 3-19, the View menu gives you the

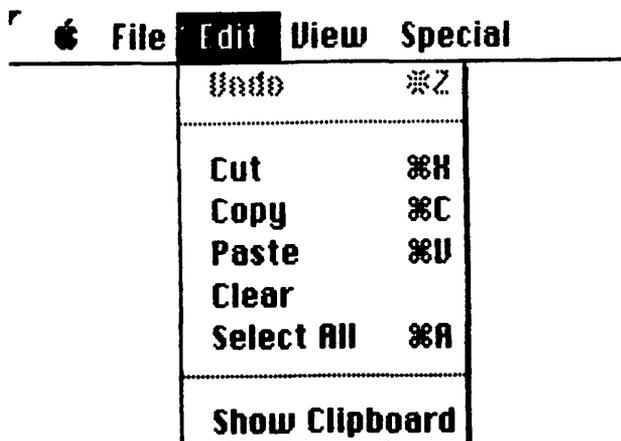


Fig. 3-17. The Edit menu.

choice of organizing the files by icons or as text. There's more on the View menu in Chapter 5, "Advanced Topics."

The **Special** menu, shown in Figure 3-20, contains four miscellaneous, but nevertheless important, commands: Clean Up, Empty Trash, Erase Disk, and Set Startup. Once more, Chapter 5, "Advanced Topics" gives all the details.

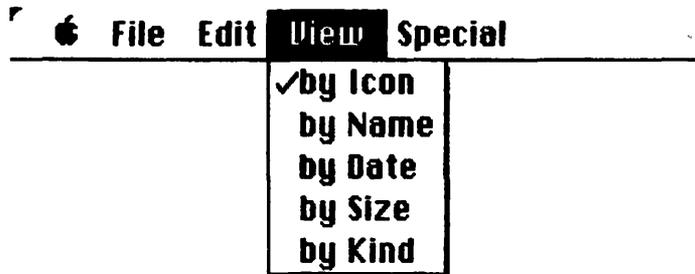


Fig. 3-18. The View menu.

The image shows a window titled 'System Disk' containing a table of files and folders. The table has four columns: Size, Name, Kind, and Last Modified. The data is as follows:

Size	Name	Kind	Last Modified
6K	Disk Copy	application	Wed, May 2, 1984
0K	Empty Folder	folder	Wed, May 2, 1984
13K	Font Mover	application	Wed, May 2, 1984
56K	Fonts	Font Mover document	Wed, May 2, 1984
9K	Seattle	Font Mover document	Wed, Apr 25, 1984
215K	System Folder	folder	Sat, May 26, 1984

Fig. 3-19. Names only; no icons.

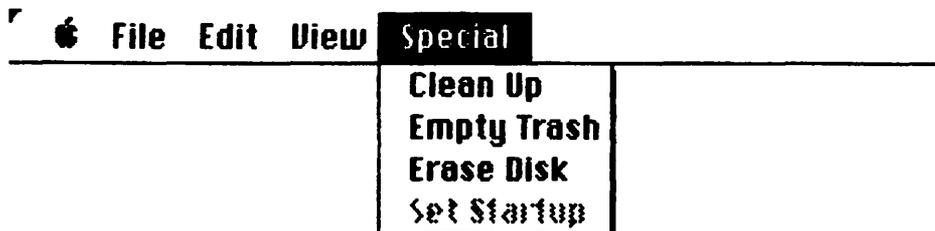


Fig. 3-20. The Special menu.

THE MOUSE IS THE LINK

We've seen the importance of the Mac mouse, and how it's used to select things, move things, and invoke commands. The mouse is the centerpiece of the Mac; nothing can be done without it. In the following two chapters, "About Icons and Windows" and "Advanced Topics," you'll learn how to apply the mouse to get full power out of the Mac.

CHAPTER 4

About Icons and Windows

Icons and windows are to a Mac what the surf and sun are to Southern California: There's a certain luring attraction to icons and windows, besides an undeniable usefulness about them. The Macintosh is a "visual" computer. Icons and windows are important contributors to this feature.

There are certain tricks to using both icons and windows. Here in this chapter you'll learn exactly what icons and windows are and how to use them to their best advantage. You'll also learn the details about giving new names to icons and how to start a Macintosh program from the desktop.

THE SECRET BEHIND ICONS

In case you missed it the first time, let's re-examine what icons are and the role they play. Simply put, icons are symbols for ideas and things. An icon can represent a specific thing, such as a stack of papers. The stack of papers would be a complete document, one created by a word processing program such as MacWrite, for example. The papers of the icon are actually computer data—you don't see them as characters on sheets of paper.

Likewise, an icon can represent a concept. The trash can always present on the Mac's electronic desktop represents a concept. A literal trash bin doesn't exist

inside the Macintosh, but because of the way computers work, documents and programs no longer needed on a disk can be “thrown away,” simply by recording over them. Putting a document or program in Mac’s trash can tell the machine that the space occupied by that document or program is now available for recording.

MacTip 4-1

Documents and programs are collectively called *files*. A file is anything the computer can make sense of, so just about every icon on the Macintosh desktop can represent a file. The exceptions are folders (discussed below), which hold other files. Even so, for the sake of simplicity, we’ll consider folders as files, too.

To you, it doesn’t matter whether an icon represents a thing or an idea. The end result is the same. The Mac’s Finder allows you to work with icons as you do concrete objects: pens, pads of paper, disks, file folders, and so forth. Icons are simply tools at your disposal.

To be sure, the Mac doesn’t have a corner on the icon market. You’ve probably noticed that icons are playing an increasingly prominent role in road signs. Gone are the signs that say “Gas, Food, Lodging Ahead.” In their stead are picture signs. One shows a gas pump, another a place setting, and the third a comfortable bed.

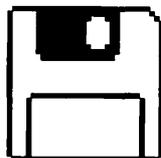
Icons help if you don’t know the language, but their real benefit lies in a proven scientific phenomenon: it takes much less time for the brain to interpret a picture than to read and interpret a word.

You can test this yourself. Flip through a catalog that lacks pictures and then one that makes heavy use of illustrations. It’s far easier to spot the product you need simply by looking for a picture of it (which is one reason few catalogs lack pictures!).

SEVERAL TYPES

The Macintosh uses several kinds of icons. Because icons usually picture what they stand for, they’re easy to identify.

The first and most important icon is the **disk icon**, shown in Figure 4-1, which represents the disk currently loaded into the Mac’s drive.



System Disk

Fig. 4-1. An icon of a disk.

The disk icon is much like a file drawer. If you open the disk icon, you'll see the contents of the disk (drawer), which invariably include documents, folders, and programs. The disk icon is easy to spot, it looks just like a Mac 3½-inch disk.

The **program** (or application) **icon**, represents programs that run on the Macintosh. Two examples of programs are MacWrite and MacPaint, whose icons are shown in Figure 4-2. MacWrite, represented by the icon on the left, is a word processor, used to write, edit, and print all types of written documents. MacPaint is much like MacWrite, but it deals with picture documents instead of word documents.



Fig. 4-2. Two program icons.

Most programs look like a hand drawing on a piece of paper. But programs can take any form—their shape is controlled by the software programmer. If you see a strange-looking icon on the screen, odds are it represents a program.

Document icons are the third major type of icon; they are distinguishable by their dog-eared paper appearance (see Figure 4-3). With the aid of the right program, the Mac can create any kind of document: text, picture, number, you name it.

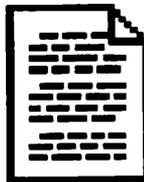


Fig. 4-3. A document icon.

MacTip 4-2

Documents can't usually be shared among programs. For example, a MacWrite document can't be used by MacPaint. If you try to use a document with the wrong program, the Mac will tell you that an application can't be found to open that document.

A bunch of icons scattered around the Mac's desktop would look untidy and make the Mac harder to use. To the rescue: **file folder** icons. As you may have guessed, file folder icons are used to hold other icons—documents or programs. In fact, they can even hold other file folders. You could conceivably have file folder within file folder within file folder.

File folder icons are more effective, however, if you use them as you would real file folders. That is, put like items together within a file folder for easier handling (see Figure 4-4).

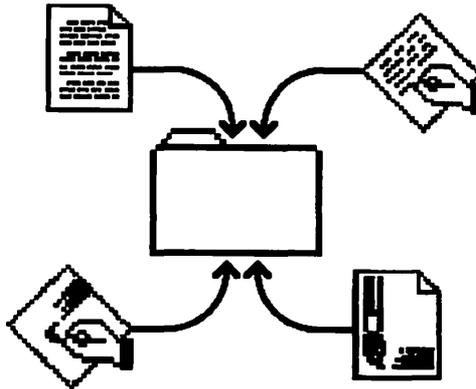


Fig. 4-4. Use folders to store other icons.

The Mac can create an unlimited number of file folders, all from the one named "Empty Folder." You'll learn the details in the Chapter 5.

There are plenty of miscellaneous icon types, most of which are self-explanatory by their appearance alone. For example, there's the trash can (there's only one per Mac), and the system files, shown in Figure 4-5, most of which look like tiny Macs.

Unless you do some programming, you won't have cause to work with a Mac **system file icon**. System files are housed in the System Folder, and needn't ever be bothered with. (There is one instance in which you may have contact with them, however—when making a Startup disk. Look for details in Chapter 5, "Advanced Topics.")

ANATOMY OF AN ICON

Icons have different appearances, but all icons are made up of the same two ingredients: body and name. The body of an icon is the actual graphic picture—file folder, disk, or piece of paper, for example. The name is the title that always appears underneath, identifying the icon, such as "System Disk" or "MacWrite" (see Figure 4-6).



Fig. 4-5. A system file used by the Macintosh.

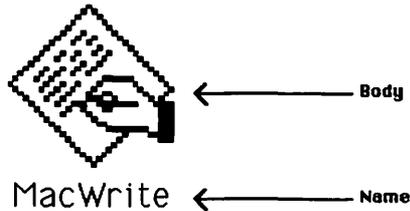


Fig. 4-6. Icons have two parts: body and name.

MacTip 4-3

Whenever you discover a strange icon, you can easily tell what it is (document, application, or whatever) by selecting it and calling up its information window.

It's important to think of icons as having two discrete components, because it's possible not only to provide new names for icons, but to delete the graphic portion altogether and leave only the name.

Changing icons into names only is a job for the View menu, covered in detail in the next chapter. Here we'll discuss how to change icon names.

Unlike most other computers, which require you to use a confusing command to change the name of a file, changing the name of a Mac file is a simple matter of selecting the icon that represents the file and typing in a new name. All you need to do is to select the icon to be renamed by clicking it and to type any character from the keyboard. The original name will immediately disappear, and the typed character will take its place (see Figure 4-7). For disks, you can type any name up to 27 characters long.

Feel free to use any character you like in the name, even blank spaces ("This is my first Mac disk," is an acceptable, if somewhat long, name for a disk). There is one character the Mac's Finder won't let you use, however—the colon. The Finder reserves that character as a code to differentiate between disks in its drives. It's also a good idea to avoid periods at the start of the name.

The same naming rules hold for file icons, except you're given up to 63 characters for each file name. Realistically, you'll want to keep file names as short

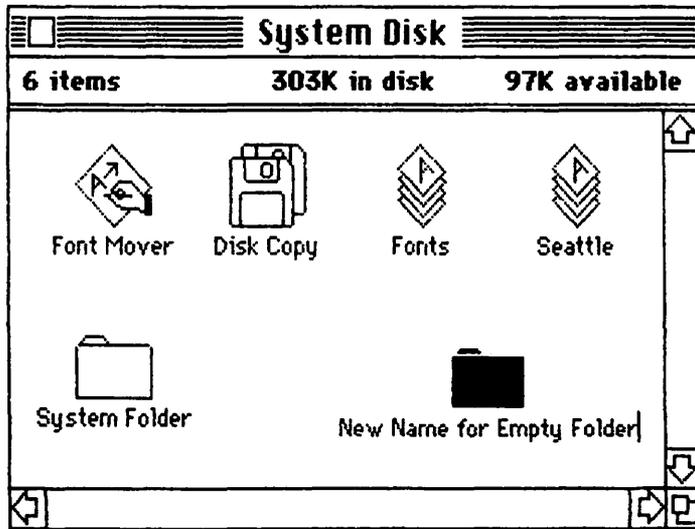


Fig. 4-7. To rename an icon, select the icon and start typing.

as possible, since they have a tendency to overlap one another on the Mac's screen if they get too long (see Figure 4-8 for an example). It's conceivable that an overly long icon name could completely obscure the name of an icon next to it.

MacTip 4-4

Because of the way the Mac works, it's important not to touch the keyboard while a desktop icon has been selected. Exceptions are when you're issuing commands with the Command key. Should you accidentally strike a key when an icon is selected, you'll erase the name of the icon, and you'll have to type it back in.

MacTip 4-5

The Mac won't let you give two icons the same name. The reason for this is obvious: the Mac must be able to sort through its files without confusion. Give all icons—disks, documents, programs, and folders—different and meaningful names.

By the way, there are more elaborate ways to edit icon names by means of the Mac's built-in text-editing features. Editing is covered in depth in Chapter 5, "Advanced Topics."

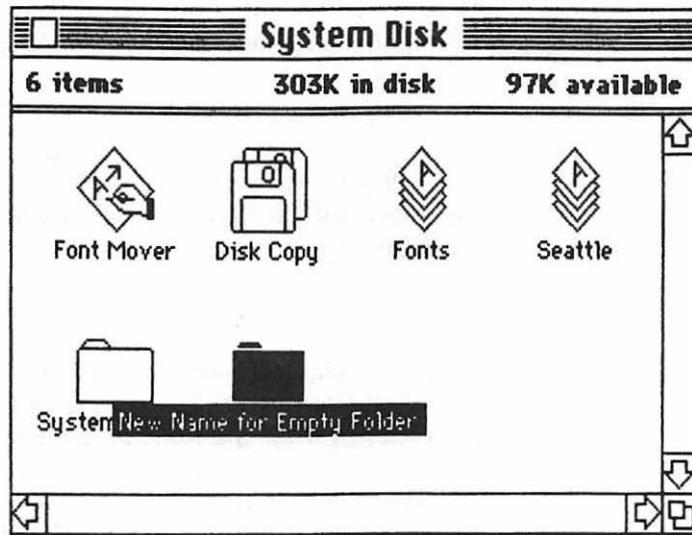


Fig. 4-8. Avoid using long names; they can overlap onto other icons.

OPENING NIGHT

We've already discovered how the disk and trash icons can be opened into windows by double-clicking on them. You can also open icons by selecting them and then choosing the File//Open command.

What happens when one of the other types of icons is opened depends on the kind of icon it is. If the icon is of a file folder, it, too, will open into a window. Inside the window, as shown in Figure 4-9, will be the icons of files contained in the folder.

If the icon is of a program or document, however, something different happens. Double-clicking a program document icon such as MacWrite, for instance, starts MacWrite. After a few moments, staring back at you is MacWrite, complete with an empty page, ready for you to start writing.

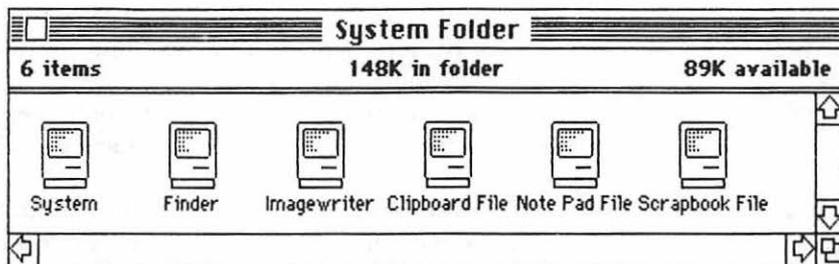


Fig. 4-9. Inside the System Folder are more icons.

Opening a document icon does essentially the same thing, but with a slight difference. When you open a MacWrite document icon, the Finder starts MacWrite and then automatically puts the document on the writing page. It's ready for you to edit.

MacTip 4-6

With single-disk-drive Macs, document and program must be on the same disk. If you have a two-disk Macintosh, however, it's perfectly acceptable to have the program in one drive and the document in the other.

WINDOW MAGIC

Any real desk lets you scatter papers about. There's probably scientific proof around somewhere that shows it's healthy to spread your work around. For some of us, at least, it seems to make it easier to work and to be productive.

With the help of the Finder and its multiple-window capability, the Mac lets you spread work over its electronic desktop, too. You can fit an infinite number of windows on the Mac's screen. Actually, infinite may be an overstatement. Almost infinite is better. Nevertheless, you can place so many windows on the Mac's electronic desktop that you'll overcrowd the screen and lose your way.

The Mac is capable of creating several kinds of windows. Some are completely adjustable: you can alter their size, move them around the screen, open and close them at will, and more. These are the windows you'll encounter when working with desktop icons such as the trash, disk, and file folders. We'll call these, for the lack of a better term, full-featured windows. More about these in a second.

Others are more limited, perhaps allowing you to move them around the desk, but not to change their size. Windows that fall into this category include the Mac's desktop accessories, covered in detail in Chapter 6, "Desktop Accessories."

Finally, there's the kind of window that you have no real control over. You can't move or resize these windows, and their presence is controlled more by the Mac than by you. These are called alert and dialog boxes, and they are discussed at the end of this chapter.

MOVING AROUND

Most full-featured windows are made up of the same "parts" (we say *most* because there are always exceptions). The typical full-featured window is shown in Figure 4-10. This one was created by opening the disk icon.

You've already been introduced to some of the more important components of the window. It wouldn't hurt to take a more serious look and to practice working with windows in the process.

If you read the last chapter, you know that windows can be moved around the desktop by dragging them by their title bar—placing the pointer anywhere within the title bar (except in the square box at the left), and then dragging the mouse (see Figure 4-11).

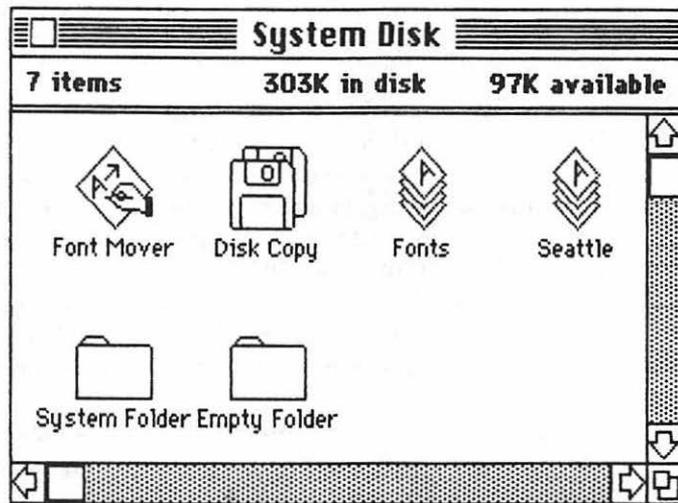


Fig. 4-10. The typical Macintosh window.

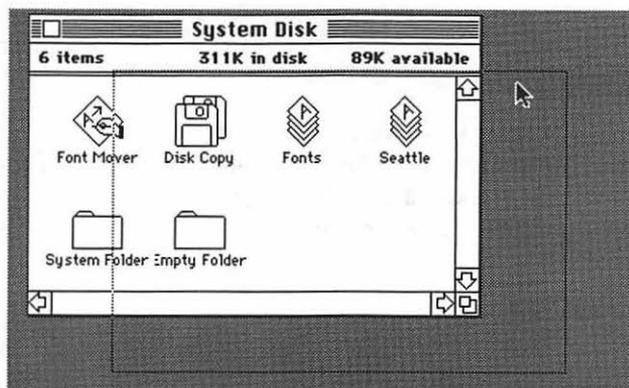


Fig. 4-11. Drag a window by tugging at its title bar. Place the pointer anywhere except inside the close box.

As is true for icons, the window itself doesn't move. What you see trailing the pointer is an outline of the window. When the mouse button is released, the window will jump to the position of the outline.

Practice dragging the disk directory window all over the desktop. Don't worry about covering up either the disk or trash icons. Nothing will happen to them under the window.

You'll notice that it's impossible to move a window completely off the desktop. At least some portion of its title bar will remain visible. Try pushing the window all

the way off the left edge. A tiny strip of the title bar will still peek through, enough so that you can grab it with the mouse and pull the window back into view.

SIZE COUNTS

There may be times when you don't want the entire contents of a window displayed. (The contents will still lie behind the window, but the viewport will be smaller, so you won't be able to see everything at one time.) Or the window may be too large for its contents and may waste precious desktop space. In either case, you'll want to shrink the window to make a better fit.

On the other hand, there may be times when the window is too small to do much good. You'll want to enlarge it as required. Resizing—both shrinking and enlarging—is done with the aid of the size box, located in the lower right corner of the window (Figure 4-12).

Windows can take just about any shape you can think of: tall and thin, short and fat, and everything between. This flexibility can come in handy; you can resize windows to best fit their contents. ⌘

To resize a window, drag the size box; an outline of the window will appear as its size box is dragged (see Figure 4-13). When the window is the right size and shape, let the mouse button go. The window will spring into the shape provided by the outline.

MacTip 4-7

In most cases, window size and placement on the desktop are remembered by the Macintosh and recorded onto the disk. If you make a change, the next time you open the window it will be as you arranged it.

PANORAMIC VIEWS

If some part of a window's contents is blocked from view, and you want to see the whole picture, you must either resize the window to reveal everything that lies behind it, or use the scroll bars to move the contents back and forth.

Most windows have both horizontal and vertical scroll bars. With a horizontal scroll bar, located at the bottom of the window, you can move the contents of the window right and left. With a vertical scroll bar, located at the right of the window, you can move the contents up and down. Notice that in both cases, the *contents* are moved, not the window itself.

Scroll bars usually don't appear unless there's something more to see. When the window has more to offer, one or both of the scroll bars will appear shaded. Within the shading will be a box.

There are several ways to use the scroll bars. The easiest is by using the mouse to press the scroll arrows, located at the ends of the bars. The contents of the window scroll one text line at a time in the direction of the arrow.

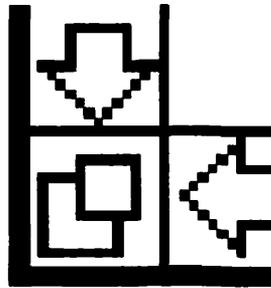


Fig. 4-12. Close-up of the size box.

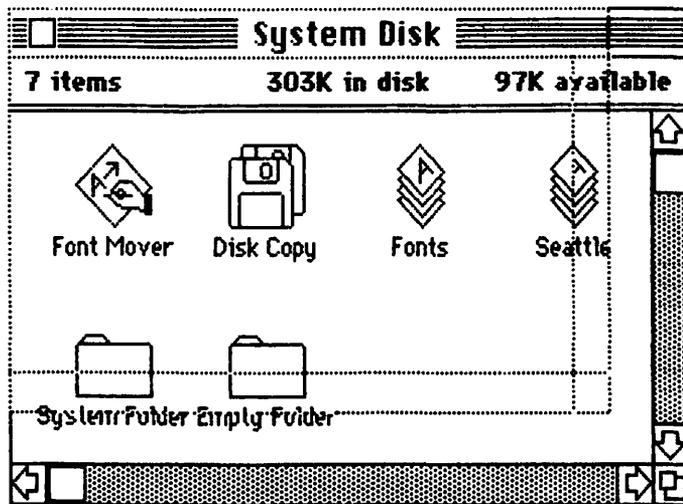


Fig. 4-13. Drag the size box to alter the size and shape of the window.

Try this out. If necessary, resize the directory window so that at least the horizontal (bottom) scroll bar becomes shaded.

Place the pointer on the right scroll arrow as shown in Figure 4-14 and press the mouse button. Keep it pressed. Quickly, the window will scroll to the left, revealing any icons that may be to the right of the window's field of vision.

Press the left scroll arrow. The window will scroll back to its original position. As you're scrolling, the box within the scroll bar scuttles back and forth. This box is called the elevator (with the Mac, elevators go up and down and side to side). The scroll arrows are used to move the contents of the window one line at a time. The elevator scrolls large blocks at a time.

To use the elevator, drag it along the length of the scroll bar. The position of the elevator indicates the view of the window (see Figure 4-15). For example, an

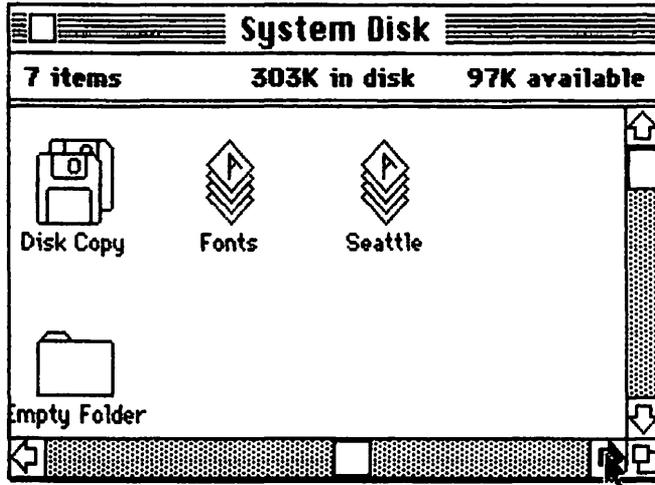


Fig. 4-14. Press inside one of the scroll arrows to pan the contents of the window.

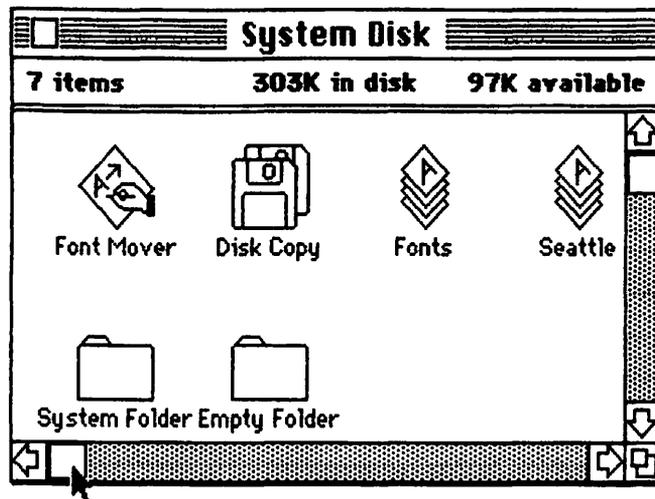


Fig. 4-15. Pressing an elevator does the same thing as pressing a scroll arrow.

elevator on the left side of the horizontal scroll bar indicates that you're looking at the leftmost portion of the window's contents.

MacTip 4-8

To scroll by the windowful, click within the shaded portion of the scroll bar. Each time you click, the window will scroll forward or backward.

OPEN (AND CLOSE) SESAME

In the previous chapters, we've opened and closed windows using a variety of techniques. Let's cover these techniques one last time to make sure we understand.

Since most windows are created from icons, they are opened either by double-clicking the icon or by clicking (selecting) the icon and choosing the Open command from the File menu. Windows that enclose desktop accessories aren't opened this way. Rather, you call up desktop accessories by selecting them from the  menu.

Once a window is displayed and on screen, it can be closed in either of two ways. The easier way is to click in the small box—the close box—located in the upper left corner of the window (Figure 4-16).

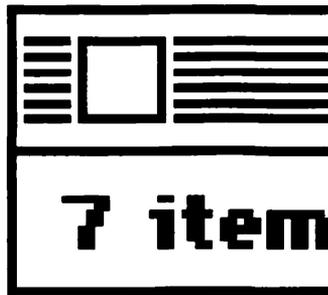


Fig. 4-16. Close-up of the close box.

The other way, as you've already seen, is to choose the Close command from the file menu.

ACTIVE SERVICE

The Mac can display several windows at any time, yet only one at a time can be "active." Any window can be active; you choose which one simply by clicking anywhere within it.

Test this. Open the trash window by double-clicking the trash icon. As in Figure 4-17, on the bottom of the desktop will be a wide, squat window, with nothing inside.

Look at the directory window. It's changed. The title bar no longer has stripes in it, and the close box is missing. This indicates that the directory window is no longer active. Active status has gone to the trash window, which *does* have stripes in its title bar, as well as a close box.

Move the pointer anywhere within the directory window and click the mouse button. Automatically, the trash window goes dormant (but is still visible, of course), and the directory window is reactivated.

Let's open up another icon, the one marked System Folder. Double-click the System Folder icon, and yet another window appears on the desktop. (Its placement may not be exactly like that pictured in Figure 4-18, but that doesn't matter.)

Since the System Folder was just opened, it becomes the active window. Both the trash and disk directory windows go dormant. Click in each window in turn and watch how easy it is to make another window active.

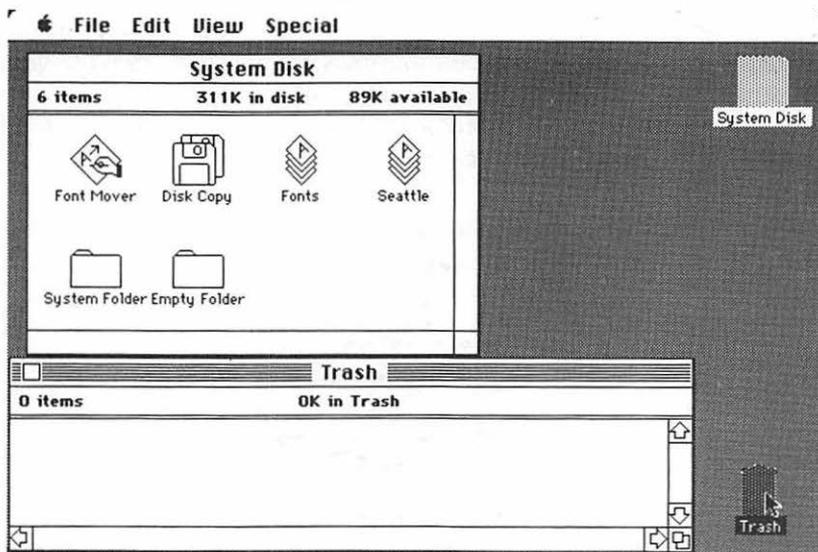


Fig. 4-17. One active and one inactive window.

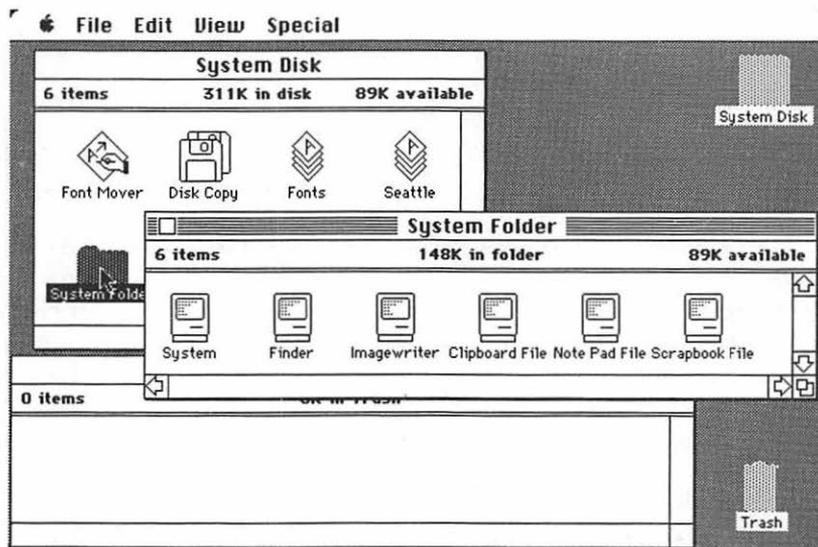


Fig. 4-18. When you add another window, it becomes the active one.

Deactivated windows lack a close box, and choosing the File//Close command closes only the active window. To close a dormant window, you must either activate it and then close it, or choose the Close All command from the File menu.

Selecting File//Close All closes every window on the desktop, so make sure this is what you want to do. File//Close All is handy when you have lots of windows on the desktop, and don't want to have to close each one in turn.

MacTip 4-9

Normally, moving a dormant window activates it. If you don't want to activate a window when you move it, press the Command key while dragging the window. It will remain inactive.

MILE-HIGH WINDOWS

As shown in the figures above, Mac's windows needn't be placed side by side. There's nothing wrong with stacking windows on top of one another. In fact, you can stack window on top of window on top of window.

Stacking is helpful when you don't need to see the contents of the window, yet you want to keep it handy for quick reference. Stack up three or four windows in the upper left corner of the desktop, for example, and go back to them only when necessary.

The active window always appears on the top of the stack. You can activate another window and bring it to the top of the heap if at least some part of it can be clicked with the mouse. The previously active window slips down one level, right under the newly activated one.

If the window you want isn't visible—that is, the windows on top are just too big—you'll have to drag windows around to uncover the one you want.

MacTip 4-10

You can bring a window to the top of the stack by finding its icon and double-clicking it. If you're looking for a desktop accessory, reselect it from the Apple menu. That will bring it back to the top.

THE MAC'S OTHER WINDOWS

Just about everything the Mac does is centered around some type of window. Even the messages the Macintosh relays to you appear in windows. The Mac has two main types of messages: the alert box and the dialog box.

Alert boxes are just what their name implies. The Mac is warning you something terrible has just happened, or more likely, is about to happen if you don't take corrective measures.

A typical alert box is the one you get after using one of the Mac's programs,

such as MacWrite. If you try leaving MacWrite without first saving a copy of your document on the disk, an alert box appears asking you if you'd like to save the document before quitting the program (Figure 4-19).

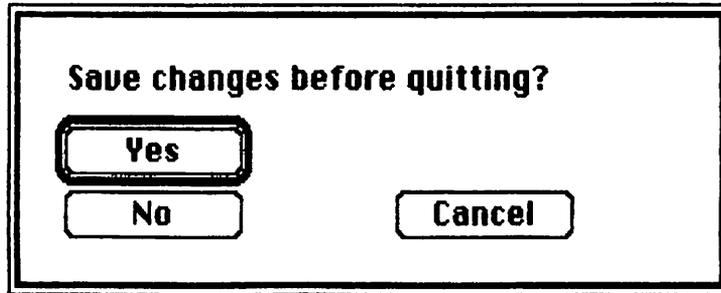


Fig. 4-19. A typical alert box (a kind of window).

To get your attention, most alert boxes appear on the screen accompanied by a beep or two.

As in the MacWrite example, you can "answer" most alert boxes by clicking one of the buttons that appear within the window. The meaning of each button is usually self-explanatory—"Yes," "No," "OK," "Cancel," and so forth. Just remember that with alert boxes, you'll have to answer the question before you proceed. If you try to proceed without answering the box, the Mac will beep to remind you.

Occasionally, whenever the software programmer thought of it, you'll spot a button that's been double-outlined (see Figure 4-20). This is the "default" button, the choice that will be selected if you merely press the Return key. In addition, when there's only one button, pressing the Return key does the same as clicking the button with the mouse.

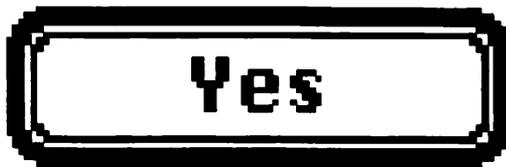


Fig. 4-20. A double-outlined button. Press the Enter or Return key to choose the outlined option, or click on the button.

Dialog boxes are little different from alert boxes, but they come in many more shapes and sizes. Their purpose is to ask for supplementary information about an action or command.

For example, MacWrite's Print dialog box, seen in Figure 4-21, asks which pages you want printed, what print quality (high, standard, or draft) you would like, and how many copies you want. To select an option, just click in the round pushbutton. When all's done, click the OK button to begin printing.

Like alert boxes, some dialog boxes have a button with a double outline. To choose the outlined option, press Return. Sometimes, but not always, you can temporarily ignore a dialog box and merrily continue computing.

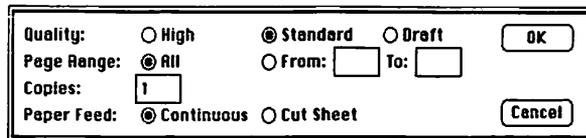


Fig. 4-21. A dialog box that offers you several "settings" options. Select a setting by clicking within a circle.

ALL IN A DAY'S WORK

Congratulations! You've learned more about the Mac in this past chapter than most people learn about the "average" computer after reading an entire book. What's left? You have yet to hone your skills. Turn the page to Chapter 5, "Advanced Topics."

Advanced Topics

More About Icons, Windows, and Commands

The test of any computer is how flexible it is. With the Macintosh, flexibility is provided by the Finder, a computer program always present but hidden from view.

The Finder does many things—it makes copies of files, moves files from one disk to another, edits text, and more. You'll make use of the Finder the most while working at the Mac's electronic desktop.

In this chapter you'll learn the finer points of using the Mac and its Finder—in short, how to become an expert on the Macintosh electronic desktop.

DOING BUSINESS WITH ICONS

You've already seen how icons can be dragged on the desktop with the aid of the mouse. Pushing icons around the desktop is fun, for a while at least. But the real magic is what moving icons can do for you. Specifically, icons can be moved between windows to deposit files in a folder, for instance, to transfer files between disks, or even to throw a file away.

If you haven't already, turn on your Mac and insert the disk marked "System." After a moment, the Mac's electronic desktop will appear, as shown in Figure 5-1, and it should display an icon of a disk and an icon of the trash can.

Open both trash and disk icons by double-clicking them (alternatively, select each one in turn and open it with the File // Open command). When you've finished, your Mac desktop should look something like Figure 5-2.

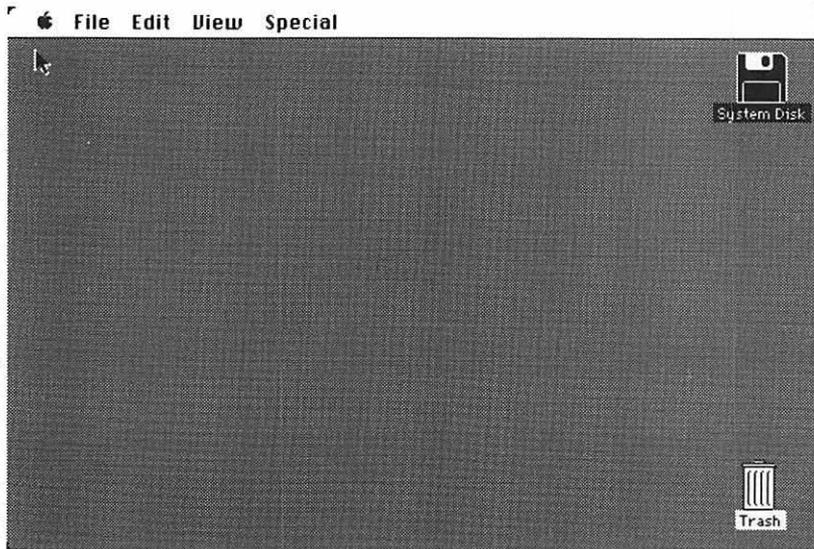


Fig. 5-1. Once again, the familiar Macintosh opening desktop.

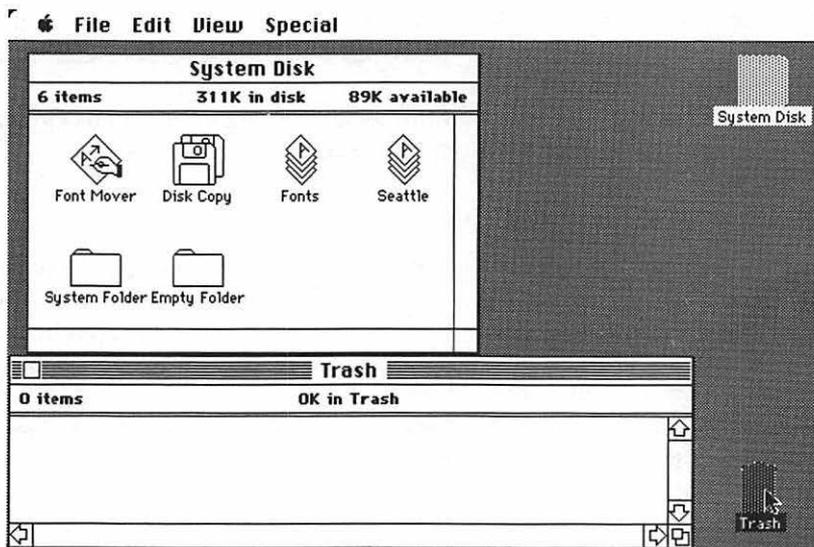


Fig. 5-2. The trash and disk windows opened and ready for work.

The most basic window-to-window icon operation is throwing unneeded files away. We'll use the one marked Empty Folder for practice.

Drag the Empty Folder icon out of the disk directory window and into the trash window. Remember that when you drag an icon, only its outline appears to move. When the mouse button is released, the icon will zip into its new place (see Figure 5-3).

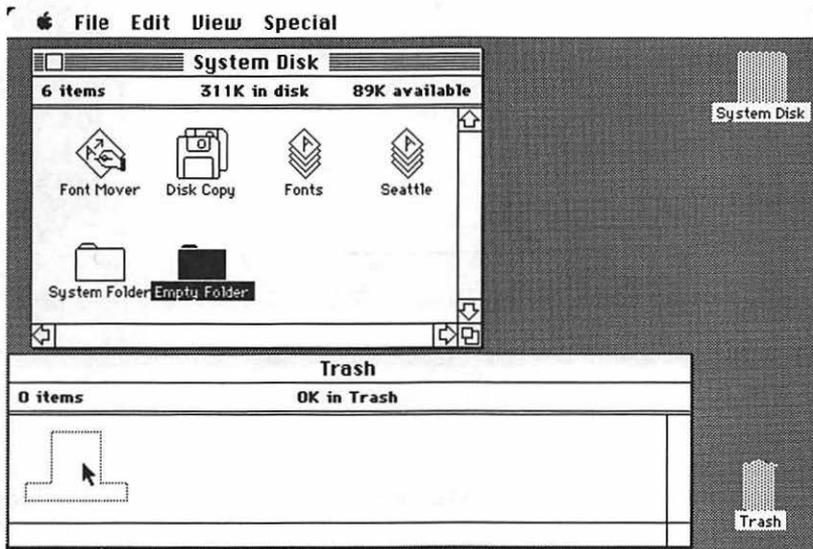


Fig. 5-3. Dragging the Empty Folder icon into the trash window.

What's been done? The Empty Folder icon has been transferred from the disk to the Mac's trash bin, in preparation for deleting it—all that by simply moving the Empty Folder icon from one window to another.

As it stands, the Empty Folder icon can still be retrieved, because the trash hasn't been "emptied" yet. We don't want to get rid of the Empty Folder icon (because it's needed to make other folders), so let's move it out of the trash window. Just do the reverse of the exercise above. Drag the icon out of the trash window and into the disk directory window. By the way, you'll see how to empty the contents of the trash later in this chapter.

Practice some more to see how easy it is to put icons into folders. First, close the trash window (click its close box), and then open the icon marked System Folder. For more practice, open the Empty Folder icon (see Figure 5-4).

Displayed within the newly opened System Folder are several system files used exclusively by the Mac. If any window blocks the others, drag it out of the way (see Chapter 4, "About Icons and Windows" if you're unsure how to do this).

Drag the system icon marked "Scrapbook" from the System Folder window and place it in the Empty Folder window. Take a few more system file icons of your

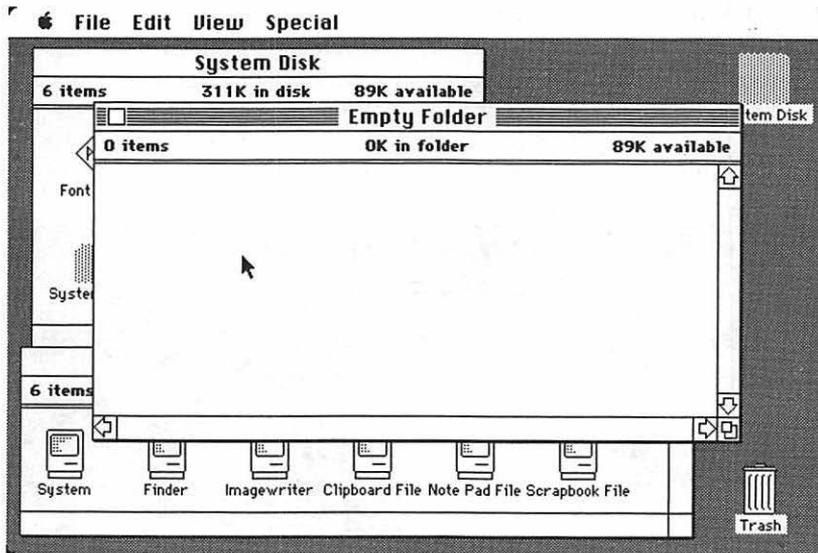


Fig. 5-4. For more practice: open the Empty Folder icon.

choosing into the Empty Folder. The Mac desktop should now look something like Figure 5-5.

At this point, the windows could be closed in the usual manner, and the icons would become a part of their respective folders. But let's not do that here. Pull the icons back out.

TRICKS OF THE TRADE

Folders needn't be open, as they were in the previous exercise, to accept icons. They can be closed—still in their icon shape.

To see how icons can be put into closed folders, make sure all the system icons are back in the System Folder, and close the Empty Folder window (you may have to reactivate the Empty Folder window—by clicking anywhere within it—to close it).

Drag the Scrapbook icon from the System Folder window over to the icon of the Empty Folder. Place it right over the Empty Folder icon, as shown in Figure 5-6.

When the Empty folder icon turns black, you know it's ready to accept the Scrapbook file. Let the mouse button go, and the Scrapbook icon will disappear. It's been included in the Empty Folder icon. Prove it to yourself by opening the Empty Folder icon. Move the Scrapbook file back to the System Folder.

Do the same when throwing unneeded files in the trash. Instead of opening the trash icon into a window, keep it closed and simply pop the icon over the can. When the trash turns black it's ready to take the icon.

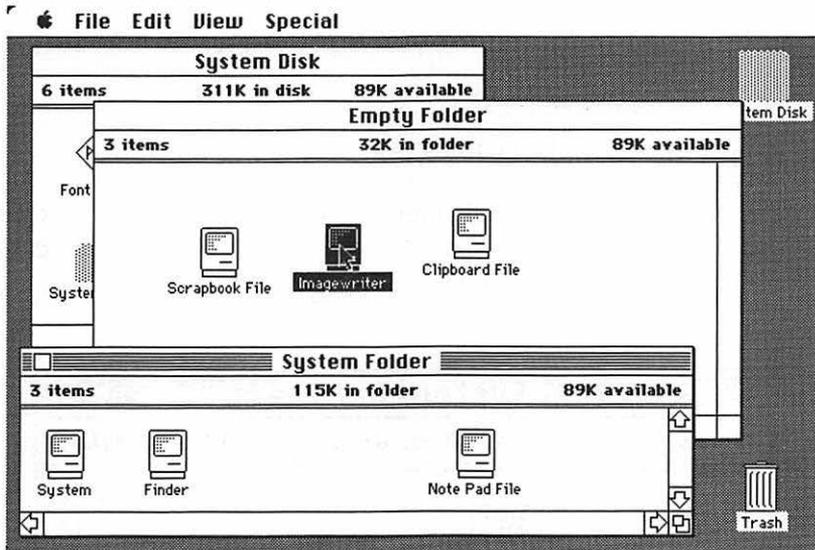


Fig. 5-5. The Scrapbook File (and other files), in the Empty Folder window.

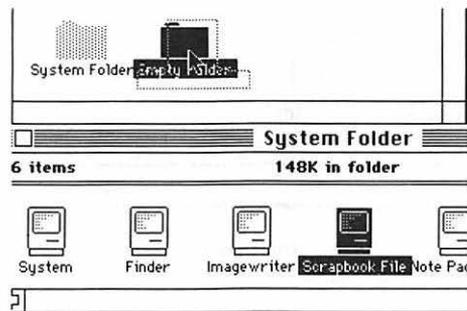


Fig. 5-6. Lay an icon over a folder and let the mouse button go. You drop that icon (and the file it represents) into the folder.

MacTip 5-1

If you place an icon on a closed disk, folder, or trash icon that doesn't turn black, take the icon off and try again. The "receiving" icon must turn black before it will accept anything.

DISK TO DISK

Dragging icons from window to window is only part of the picture. The real fun comes when you transfer files from one disk to another.

Placing a copy of a file on another disk is much the same as moving icons from window to window on the desktop. The procedure differs slightly, however, depending on the number of disk drives your Mac has. Even so, the basics are the same for both operations.

Transferring with a Single-Drive Mac

1. Start by making sure the icon that represents the file you want moved is visible on the desktop, either resting within the disk directory window or out on the open desktop (see Figure 5-7).

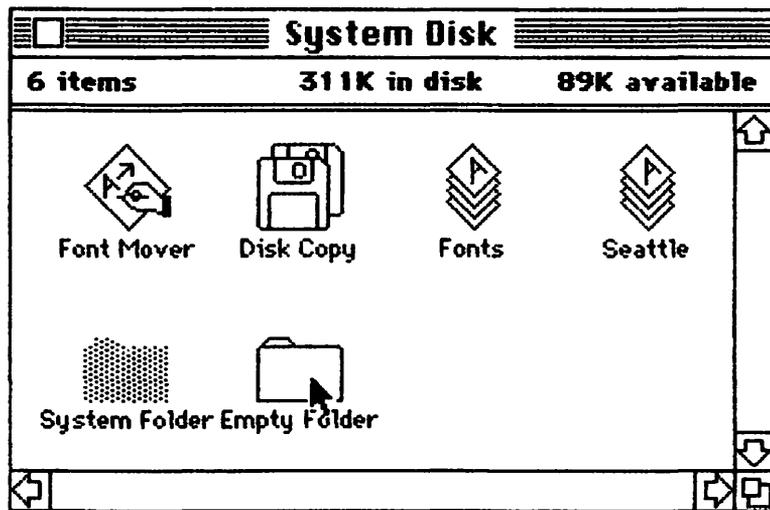


Fig. 5-7. Pick out the icon to copy to the other disk. In this case, it's the Empty Folder.

2. Eject the disk by giving the File//Eject command, or by pressing the Command and E keys (you may need to check the disk icon before you can eject the disk) (see Figure 5-8).
3. Insert the second disk—the one that will receive the copy—into the drive. This can be either a brand-new disk, or one that you have used before. After a short time, the icon of the second disk will appear on the desktop (see Figure 5-9).
4. Drag the icon to be transferred on top of the icon of the new disk. When the disk icon turns black, let the button go. The transfer process will now begin.
5. As the Mac is transferring the file, the Finder will prompt you as to which disk it needs. You may have to “swap” the disks up to a dozen times to copy a file from one disk to the other.

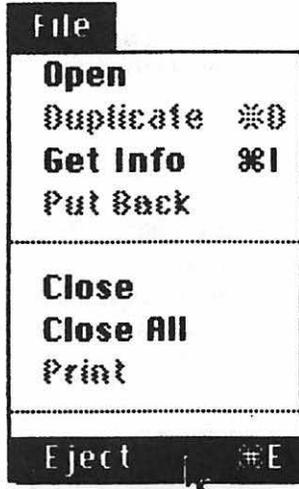


Fig. 5-8. Choose the File//Eject command to get the disk out of the drive.



Fig. 5-9. Put the new disk in the drive. Note that the System Disk icons are shown dimmed. This means that the files the icons represent are not on the disk currently in the drive.

Transferring with a Two-Drive Mac

1. Put the two disks (the one with the file to be copied, and the one that will receive the copy) in the drives.
2. Slide the icon to be copied over the icon of the other disk. The rest is handled for you. There's no need to swap disks.

MacTip 5-2

Any disk with the System Folder is a Startup disk. To make a Startup disk, copy the System Folder. You can use the disk named System; in addition, most disks with applications have the System Folder on them.

When the transfer is complete, a copy of the file will be on both the first and second disks. If you don't plan to keep the original, you'll have to throw it away by depositing it in the trash (followed by "emptying" the trash, covered at the end of this chapter).

COPYING ICONS

Transferring icons from disk to disk automatically makes copies. You can make copies of any file on a disk yourself. Just use the File//Duplicate command.

Start by clicking the icon of the file to be copied. Create the duplicate either by pressing the Command and D keys together, or by choosing the Duplicate command from the File menu (Figure 5-10).

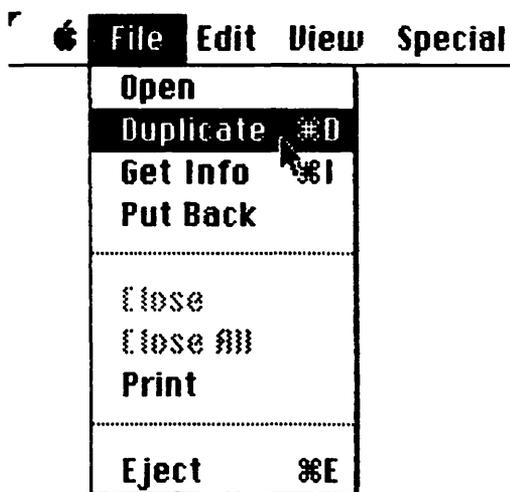


Fig. 5-10. The File// Duplicate command.

MacTip 5-3

To copy the entire disk, lay the icon of the disk you want to copy over the icon of the disk that is to receive the copy (old over new). Answer the alert box and swap the disks as requested (obviously, you won't need to swap disks if you have an external drive hooked up to the Mac).

For faster single-drive copies, use the Disk Copy utility program provided by Apple. For details on this program, see Appendix D, "Disk Copy."

If there's enough room on the disk for the new addition, the Finder will duplicate the selected file and give it the prefix "Copy of." So, if you're copying the

Empty Folder icon (which you'll do often to make new folders), the clone will be named "Copy of Empty Folder" (see Figure 5-11).

Complete the copy by giving a new name to the icon. Use the system of renaming icons that you learned in the last chapter. As you'll probably learn sooner or later, the Finder won't allow you to choose a name already in use.

For example, if you already have a folder named "Documents," you can't have another with the same name. You'll have to differentiate between the two by giving the second one a name such as "Documents-1" or "Very Special Documents." Of course, the choice is up to you.

MacTip 5-4

Programs and files that have been copy-protected can't be duplicated or moved. If you try to move a protected file from one window into another, or duplicate it, the Mac will tell you you're up to no good (see Figure 5-12).

But a funny thing happens: You may not be able to manually move a protected icon back into its original window once it's been taken out! If this happens, choose the File//Put Back command, as described later in this chapter.

A copied file will be the exact duplicate of the original (with the exception of the name, of course) and can be handled separately. Once a file has been copied, it can be moved into other windows, onto another disk, and so forth.

If, by chance, there's not enough room on the disk for the copy, the Finder will

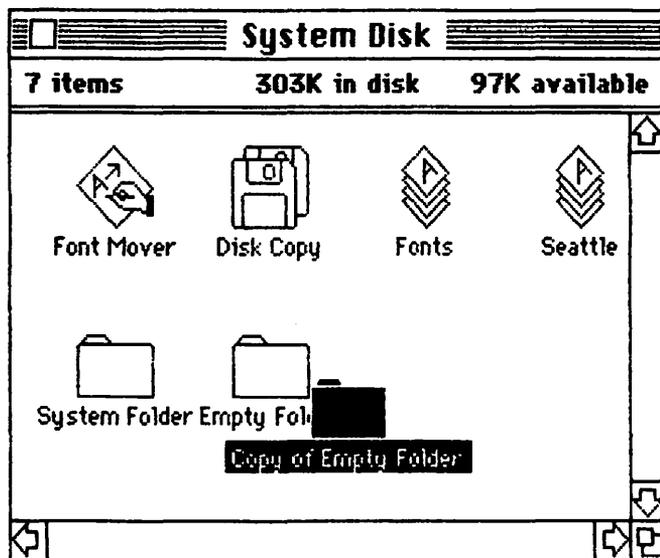


Fig. 5-11. The new addition: Copy of Empty Folder.

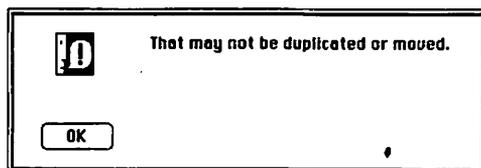


Fig. 5-12. This alert box appears when a program can't be copied.

tell you so in no uncertain terms (see Figure 5-13). The disk simply hasn't the space to accept the new addition. You'll have to copy the file to another disk or delete some other files to make room.

As with many Mac commands, you can use the Duplicate command on several files at a time, using the multiselect skills covered in MacTip 5-5. As shown in Figure 5-14, if the disk has enough space, the Finder will copy all the selected icons. Each will have the prefix "Copy of."

MacTip 5-5

There are several ways to select more than one icon at a time for copying files, for example. One is to use the Edit//Select All command, used to select all the icons in the active window. To select all, choose the Select All command from the Edit menu (Figure 5-15) or press the Command and A keys together.

Other, more flexible, methods are Shift-clicking icons and dragging over icons. To select several icons by Shift-clicking, hold down the Shift key and click the icons in turn. Each one will turn black. The icons can now be handled together. If you do something to one, you do it to them all. For example, if you place one in the trash, you put them all there.

Dragging over icons to multiselect them works when the icons are grouped together. To select, place the pointer outside one corner of the group (but not on an icon) and drag over the group. A dotted box will form as you drag over the icons. Release the button to select the icons. Once again, the icons can now be handled as a group.

INFORMATION, PLEASE

You've already been introduced to the information window in past chapters. But because of the importance of info windows, they deserve a close, hard look.

As you'll recall, info windows are brought onto the Mac's electronic desktop by selecting an icon, then choosing the File//Get Info command (either by pressing

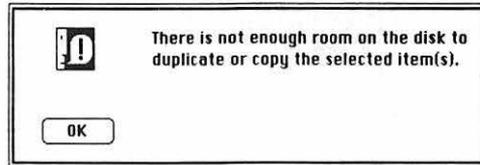


Fig. 5-13. When there's not enough room on the disk for another copy, the Finder tells you so.

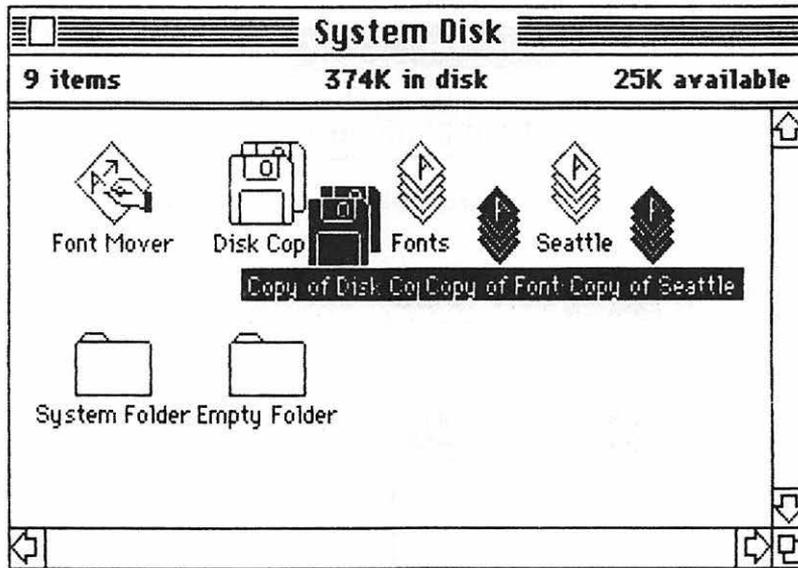


Fig. 5-14. Copying three files at once. Select all three and give the File//Duplicate command.

the Command and I keys together or by selecting Get Info from the File menu) (see Figure 5-16).

Here's what every information window tells you:

- The name of the file.
- The kind of file (folder, application, and so forth).
- The size of the file, in bytes (one byte is equal to one letter, number, or other character—so a file 6,587 bytes long has 6,587 characters in it).
- The amount of disk space the file takes up (usually more than the size of the file).
- The location of the file, whether in the internal drive or the external drive.
- The name of the disk where the file resides.
- The date and time the file was first created.

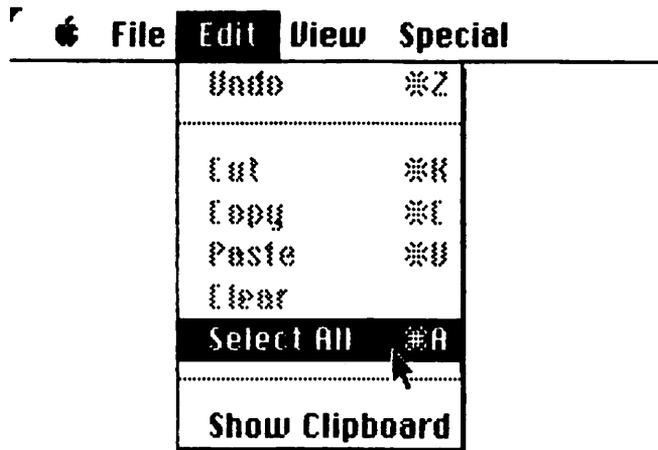


Fig. 5-15. The Edit//Select All command.

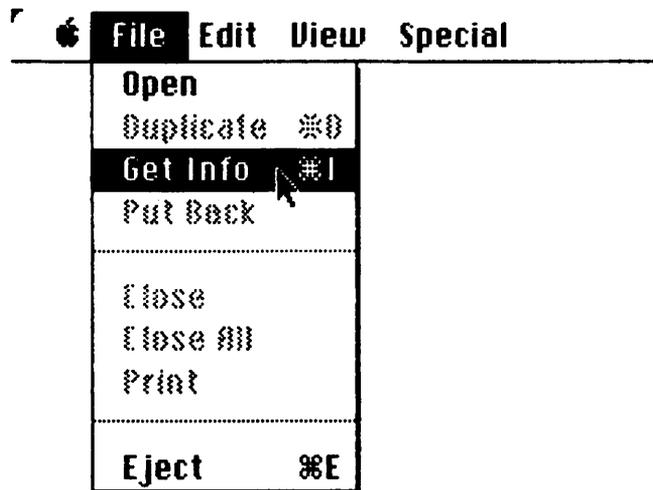


Fig. 5-16. The File//Get Info command.

- The date and time the file was last modified.
- Whether the file is “locked” or unlocked (more about this in a bit).
- A brief comment about the file, usually written by you, but sometimes by software programmers.

As you can see, there’s a lot to an information window. Some of the info you may never care about, but it’s nice to know it’s there if you need it.

The purpose of information windows is two-fold:

1. They provide more data about a file than can be conveyed in a title or an icon.
2. They remind you of what the files are a month, two months, even a year after you create them. Whenever you need more data about a particular file, just call up its information window. It will all be there.

THE LOCK BOX

The “Locked” box, found in the lower left portion of the information window, is like a light switch. An unmarked box means the file is free to be changed or deleted.

Click inside the box (an “X” will appear) and the Finder locks the file against erasure or alteration (Figure 5-17). You’ll be able to see the file while you work at the desktop; and if it’s a document, you’ll be able to view its contents with the program that created it. But you won’t be able to alter the file.

To unlock the file (in order to change it or delete it), just click the box once more. The X-mark will disappear. Incidentally, the information windows for the disk and trash icons display a dimmed “Locked” option. As you may have guessed, there’s no way to lock these in the normal way. But that doesn’t mean you can’t lock an entire disk from accidental erasure or alteration. Check the following Mac-Tip for details.

YOUR COMMENTS WELCOME

The comments box at the bottom of the information window is large enough to hold a sentence or two about the file. When the info window is brought out onto the desktop, the insertion point (the flashing line) is placed at the start of the comments box, indicating that text can be typed from the keyboard. Anything written will be placed in the box, as in Figure 5-18. Keep reading this chapter for more details about writing and editing text.

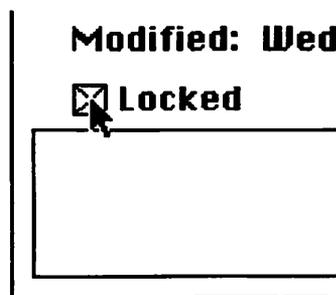


Fig. 5-17. Click the Locked box to prevent accidental erasure or alteration of a file.

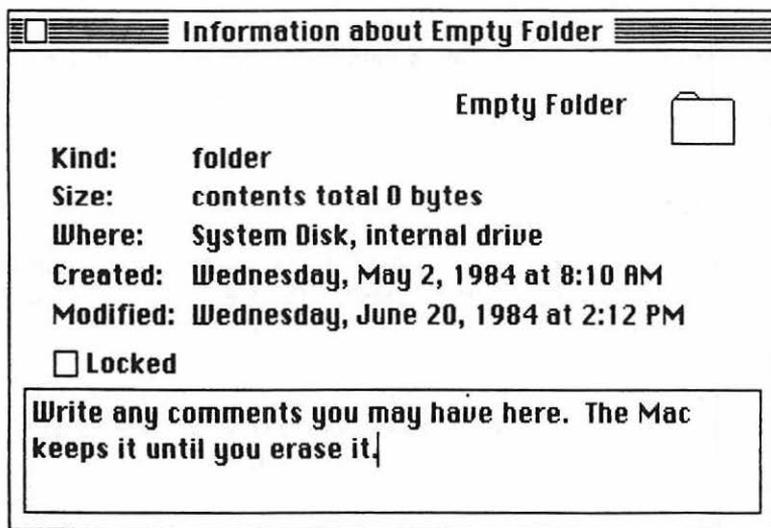


Fig. 5-18. The comment box in an information window holds about 30 words, more than enough for an accurate description of the file.

COMPLETING THE WINDOW

Changes made to the information window—locking, unlocking, and comments—are saved with the file. In fact, the information window is part of the file. When you make copies of the file, the information window, comments, and lock status are copied, too.

AUTOMATIC PUT BACK

In past chapters, we've talked about all the File menu items except the Put Back and Print commands. It's not that these aren't important. On the contrary, they serve important purposes and are used quite often.

MacTip 5-6

To lock an entire disk against erasure or alteration, slide the tab (located on the underside of the disk) away from the hub. To unlock the disk, slide the tab back toward the hub.

Though it's usually a good practice to lock (also called "write protect") disks, some Macintosh programs and facilities won't work properly with disks that are locked (MacPaint won't work properly with a locked disk, for example). It's better to lock the individual files on the disk than to lock the disk itself.

Mac's Finder is an intelligent rascal—smarter than you may think at first. The Finder knows, at all times, where files belong—which folders they fit into, which disks they belong to, and so on.

Suppose you've pulled out four or five icons on the desktop from different folders, and now it's time to replace them in their respective folders. There's no need to drag the icons back into the folders manually (and possibly place them in the wrong ones). Instead, give the File//Put Back command, as shown in Figure 5-19.

When the File//Put Back command is given, all icons return to their rightful folders. If you've used some icons from another disk, the Finder will replace them in the proper disk directory (you may need to swap disks in and out of Mac's drive as the Finder closes up shop; even so, it's only a slight inconvenience).

In operation, the Mac marks where files belong—in which folders and on which disks. When you move files around, you change the marks, so the Mac always has a handle on where things belong. When you put a file into a folder or disk window, and close the window, you automatically relocate that file. The same holds true when you put a file into a closed folder or disk.

MacTip 5-7

The File//Put Back command is particularly helpful when you've accidentally thrown icons away (no icons call the trash their home, so even though you may have put files into the closed trash icon, the Finder remembers where they originally came from).

To get a file out of the trash and put it back where it belongs, open the trash icon, select the file, and then issue the File//Put Back command.

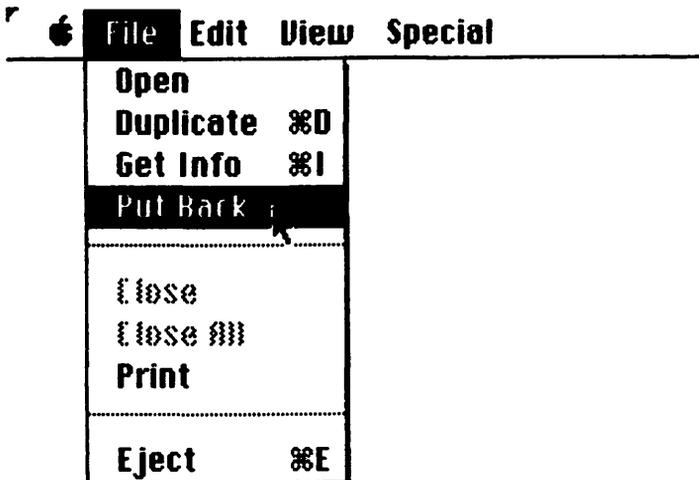


Fig. 5-19. The File//Put Back command.

PRINT: THE LAST OF THE FILE COMMANDS

The last important File command, Print, is used whenever you want to make a paper copy of a document, whether that document is a letter, a picture, a group of numbers, or any of the other myriad images the Mac creates.

To print, select a document icon, and then choose the Print command from the File menu (see Figure 5-20). After a moment, printing will begin (of course, a printer—such as the Apple Imagewriter—must be properly connected to the Mac for this operation).

To print out any document, the program that created it must be present on the disk. Otherwise, the Finder won't know how to print the document and will give you a message like the one shown in Figure 5-21.

If the program, such as MacWrite or MacPaint, is on one disk and the document is on another, there are still ways to get a printout.

Here, as an example, is how you'd get a printout of a document on another disk with MacWrite (other programs may be slightly different):

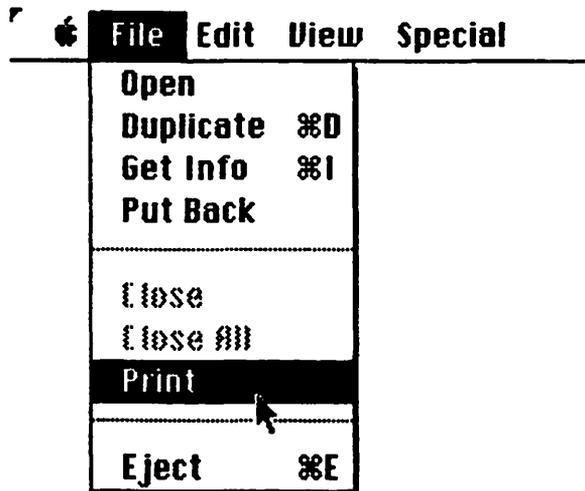


Fig. 5-20. Use the File//Print command to print documents.

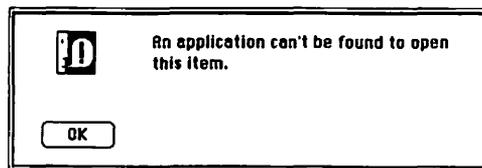


Fig. 5-21. You'll be greeted by this message if there's no program on the disk that matches the document you've selected.

1. Begin by starting MacWrite.
2. Once MacWrite is started, choose the File//Close command (this closes the MacWrite writing window, but doesn't turn off the program) (see Figure 5-22).
3. From here, choose the File//Open command. A dialog box will appear, asking you which document you want to open. Since the document you want isn't on the current disk, click the Eject button (see Figure 5-23).
4. After the Mac spits the disk out, replace it with the one that holds the document you want to print. Once again, the dialog box will ask which document to print.
5. Position the pointer over the correct one and click it (see Figure 5-24). If many documents are listed, and you don't see the one you want, scroll down the list by pressing the down arrow box.

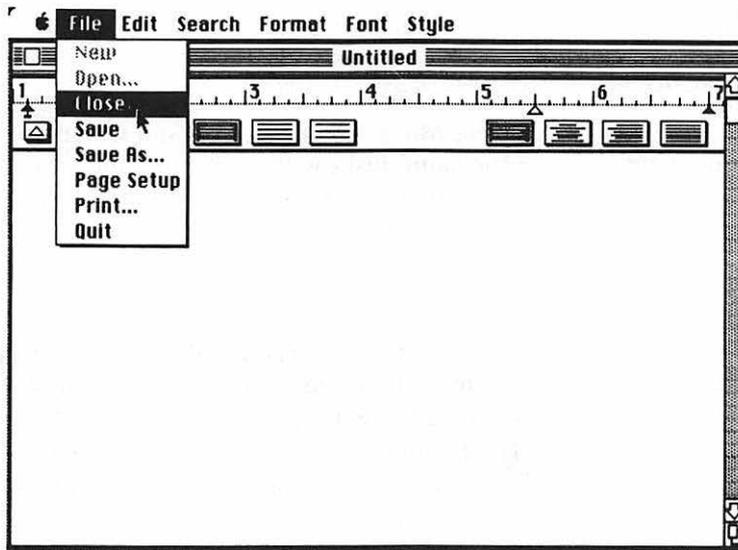


Fig. 5-22. Once in the program, choose the File//Close command.

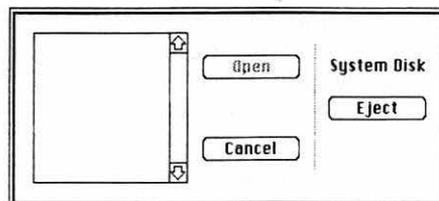


Fig. 5-23. Click the Eject button to eject the current disk.

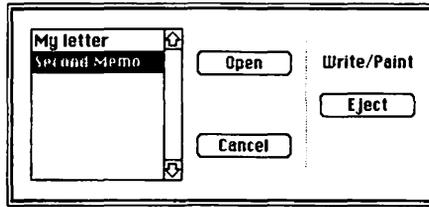


Fig. 5-24. Select the document you want by clicking it. Then click the Open button.

6. Finish by pressing the Open button.
7. The document (in this case, "Second Memo") will then be loaded into MacWrite. Once it's there, choose the File//Print command.

When printing has been completed, the Finder will instruct you to replace the disk with the one that contains the MacWrite program.

MacTip 5-8

Owners of two-drive Macs needn't worry about whether documents are on the same disks with their programs. It's acceptable to have the document in one drive and the program that created it in the other.

IT'S ALL IN THE EDIT

It's a well-known fact that most great works of art aren't the outcome of a single brilliant flash of inspiration, but instead are the result of painstaking study, care, and work. Whether the medium is shapes, words, or color, true artistry is the ability to refine, to improve upon a great concept and to make it even greater.

The Macintosh lets you do exactly this. But unlike most other forms of art, the Mac makes change easy.

You can write a report for school or office, for example, and then edit it for clarity, style, and content. Keep editing until you've said exactly what's on your mind. When you've finished, print the result. You may have gone through as many as 20 iterations—20 drafts—without realizing it. Editing is no longer a chore, but a pleasure, because the Mac makes refining your work painless and easy.

Unlike most computers, the Mac has editing capabilities built in. All are accessible while you're working on the Mac desktop, so they're important to learn if you want to become a true Mac expert. What's more, many programs build upon these innate editing features and add more of their own. Once you learn how to edit on the Mac's desktop, you're on the road to knowing how to edit with other, more sophisticated programs—even the heavy-duty ones such as Microsoft's Word and Apple's MacWrite.

There are two types of editing you can do with the Mac: keyboard editing and

command editing. You've learned some of the keyboard editing tricks already, such as using the Backspace key.

The other type, command editing, is performed with commands found in the Edit menu, which include Cut, Copy, Clear, and Paste. If you're like most Mac users, you'll use a combination of both keyboard and command editing.

While working on the desktop, you'll have a chance to edit only text. In programs that deal with pictures instead of words, you'll be using some of the same skills. For the sake of clarity, we'll talk about editing text only.

The most basic editing procedure, as you've already seen, is the use of the Backspace key. If you type a wrong character, you can simply erase it by tapping Backspace. When the Backspace key is pressed, it moves the insertion point—that flashing line that tells you where the Mac's attention is focused—back one character. Any character that may be standing in its way is erased, leaving a blank spot. Hold the Backspace key down to erase several characters.

The second basic keyboard editing maneuver is erasing text that's not located at the blinking insertion point. You could back up over text to get to it, but you'll erase everything between. The better way is to move the insertion point. Here's how. We'll use the Empty Folder icon to practice with.

With the mouse, move the pointer onto the letter "y" in "Empty." Click the mouse button. The insertion point will move to where the pointer was clicked—in this case, immediately to the left of the "y" (see Figure 5-25).

From here, you could type in new text, or press Backspace, to erase characters to the left of the insertion point. Go ahead and change the name if you'd like. But

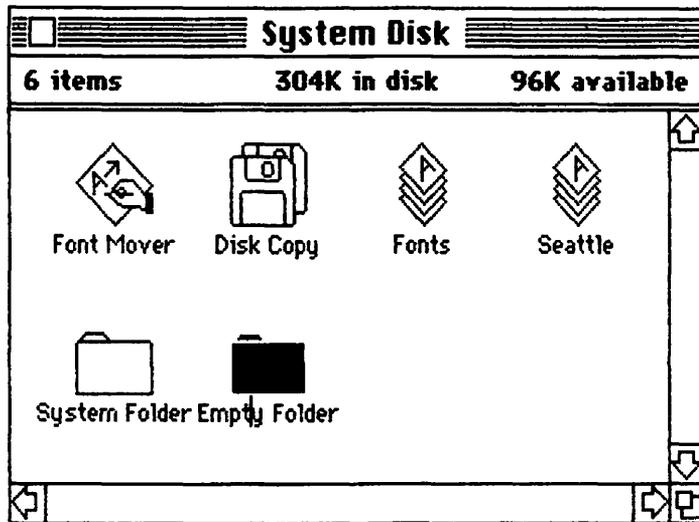


Fig. 5-25. Click within the name of an icon to set the insertion point. The place you click in the name determines where the insertion point will be placed.

before you're through, be sure that you change the name back to "Empty Folder" (the world won't end if you don't, but doing so will save you some confusion).

INTERMEDIATE EDITING

So far, you've learned how to edit text just one character at a time. The Macintosh is versatile enough that you can also work with blocks of text. It doesn't matter how long the blocks are—two characters or two thousand characters—it's all handled the same way.

A good way to practice editing is to use the comments box inside an information window. The information window for Empty Folder is a good choice. Call it up in the normal way by selecting the Empty Folder icon and then choosing the File//Get Info command, or by pressing the Command and I keys together. With the information window displayed on the screen, it's time to begin.

Write some text to edit: For starters, type "The slow cow hopped over the lazy bull." Figure 5-26 shows what you should have. If this sentence were longer, the text would automatically continue on the next line when space in the first line had been filled. With the Mac you don't have to press the Return key when you reach the end of a line.

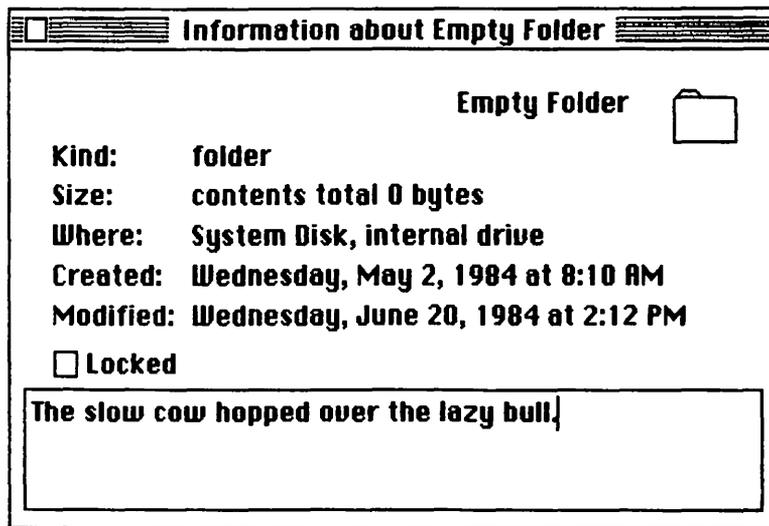


Fig. 5-26. This is how the sample text should look.

Now let's take out a whole word. That's easy. With the mouse, maneuver the pointer over the "c" in the word "cow." Click there. Now, drag the pointer over the entire word "cow." (Remember, hold the mouse button down while moving the pointer.)

When the whole word is highlighted, release the mouse button. The word “cow” should stay highlighted, as shown in Figure 5-27.

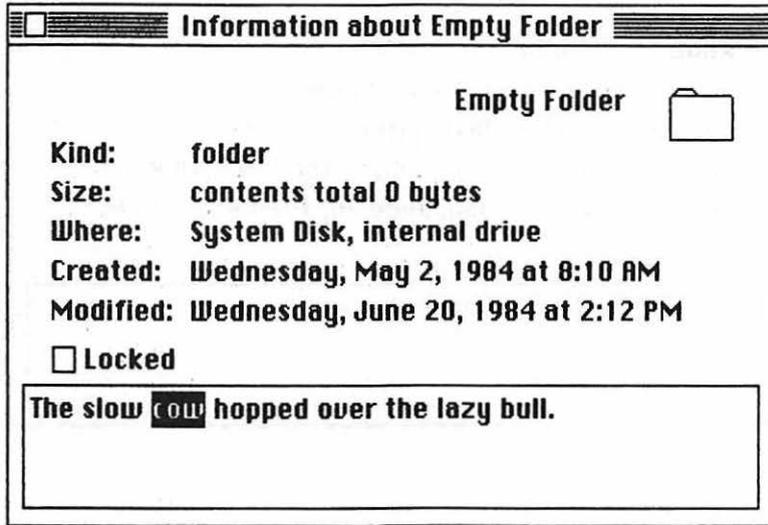


Fig. 5-27. Drag over “cow” to select it.

Delete the whole word by pressing the Backspace key. You’ll notice that when the word is deleted, the Mac reformats the sentence to fit the margins. Since the insertion point is left conveniently where the word “cow” used to be, we can enter an entirely new word there. Type “fox.” The sentence should now appear as it does in Figure 5-28.

MacTip 5-9

Pressing the Backspace key when something is selected, even a picture, erases it. Depending on what you’re doing with the Mac, you may or may not be able to get it back. Sometimes, but not always, you can retrieve an accidentally erased block of text or a picture by using the Edit//Undo command, covered later in this chapter.

When you know you’ll be deleting text and replacing it with something else, take this shortcut: Highlight the text to be deleted by dragging over it. Instead of pressing the Backspace key, just start typing the new text. The moment you press the first key, the highlighted text will be deleted.

Try this with the word “slow”: Select it as you did with “cow.” Type in “quick.” “Slow” will be obliterated; “quick” will take its place.

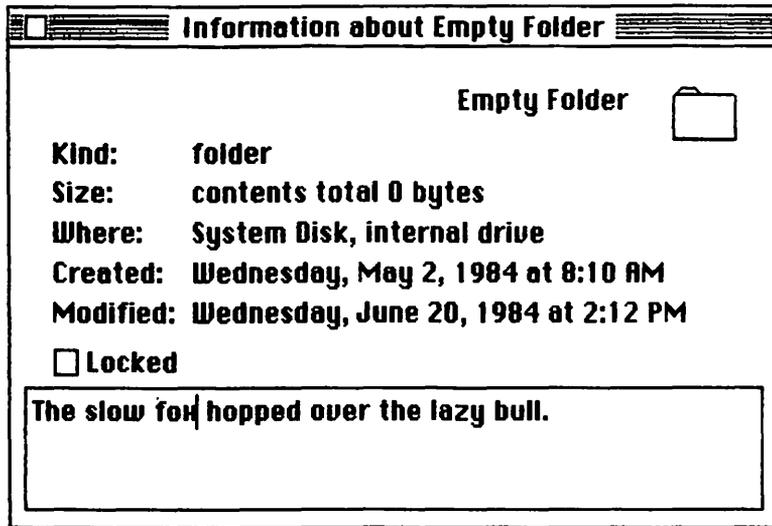


Fig. 5-28. Press the Backspace key and type in "fox."

MORE INTERMEDIATE EDITING

Most of the time, you'll be highlighting whole words for deletion. Instead of dragging over words to be highlighted, double-click on them.

Try it. Move the pointer over the word "bull." Double-click with the mouse button. The entire word "bull" (plus the blank spaces to the right) will appear highlighted, as shown in Figure 5-29.

If there's more than one word to be selected at once and the words are next to each other, double-click the first word (you've already done that with "bull.") Follow by holding down the Shift key and double-clicking the remaining word or words. Try this with the word "lazy."

You can now delete the two words at once. Do it by pressing the Backspace key. Now type in the following new text: "sleeping dog." The sentence should now look like the one in Figure 5-30.

COMMAND EDITING

So much for editing with the keyboard only. It's time to use the commands hidden in the Edit menu. Before we start, drag the pointer over the entire sentence. Start by lining up the pointer over the "T" at the start of the sentence, and drag to the "." at the end of the sentence.

Incidentally, if there are several lines of text you want to delete, you can take the shortest route—diagonally—between the beginning and end of the text. The Mac will do the rest. You should end up with something like Figure 5-31.

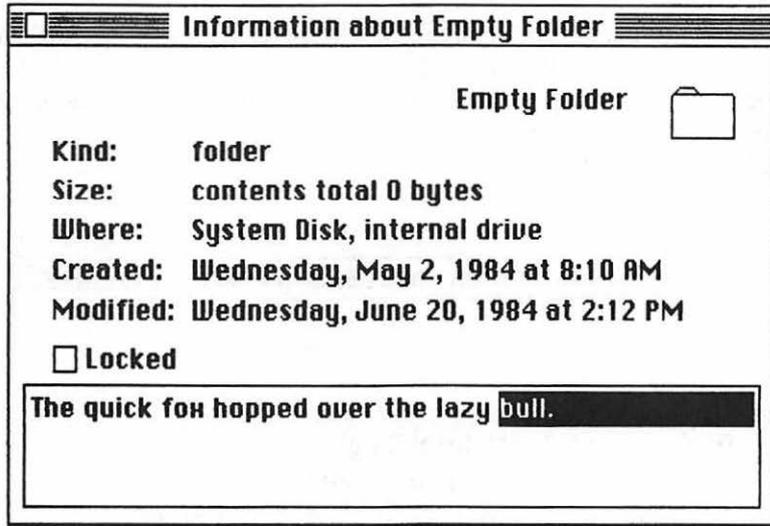


Fig. 5-29. Double-click anywhere on a word (such as "bull") to select the whole word.

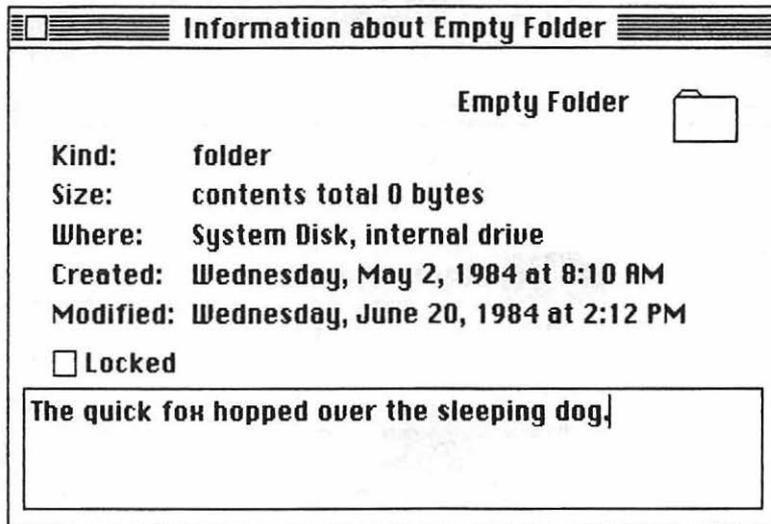


Fig. 5-30. The rewritten sentence.

Pull the Edit menu down, but don't select anything yet. The desktop's Edit menu offers seven choices: Undo, Copy, Cut, Paste, Clear, Show Clipboard and Select All, which we already discussed. We'll start with the Copy command.

Drag the pointer down to Copy and release the button. The highlighted text

will be copied (Figure 5-32) and temporarily stored in a place called the Clipboard, a spot that the Mac uses to store pieces of text and pictures.

The copied text can now be placed elsewhere. For our purposes, it's enough to place the copy right after the original. Move the pointer to the end of the sentence —right after the period is fine. Pull the Edit menu down and select the Paste command (Figure 5-33). It won't take long: the copy will be placed right after the original (see Figure 5-34).

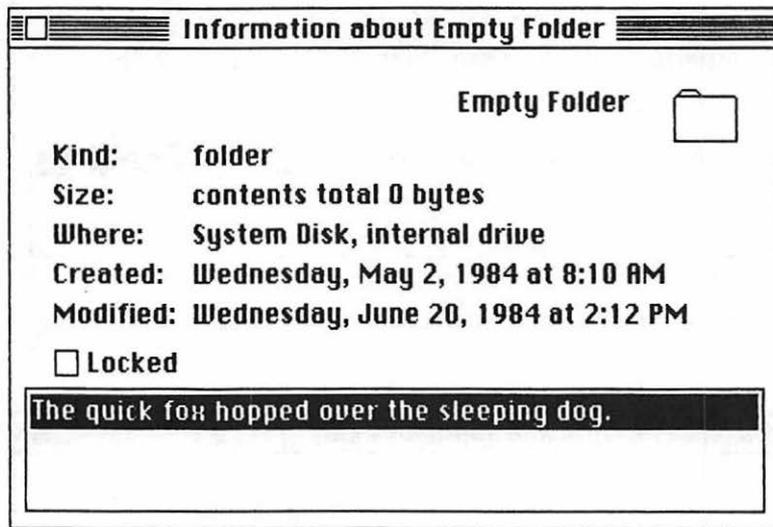


Fig. 5-31. Drag over the entire text to select all of it.

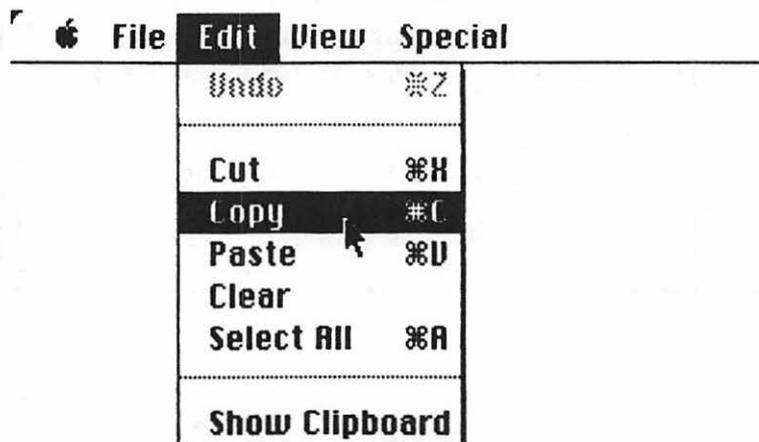


Fig. 5-32. Use the Edit/Copy command to send a copy of the selected text to the Clipboard.

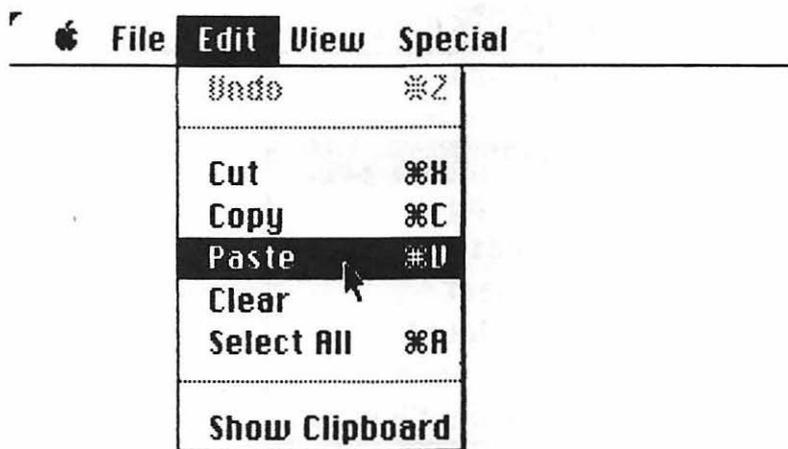


Fig. 5-33. Use the Edit//Paste command to finish the editing job.

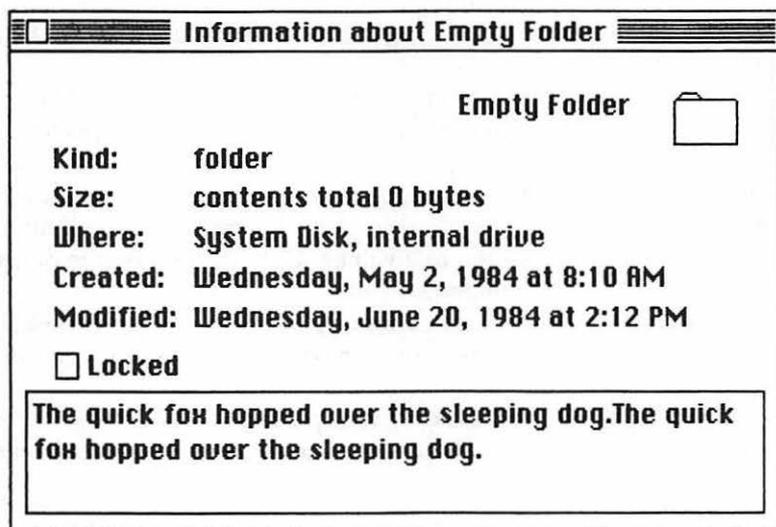


Fig. 5-34. The added copy.

The Cut command is similar to the Copy command, but instead of leaving the original, it takes it out. To try this, start by erasing the second sentence (the easiest way is to select the whole text of the sentence and hit the Backspace key).

Select the lesson sentence once again. Instead of choosing the Edit//Copy command, choose Cut from the Edit menu (Figure 5-35). The entire sentence will disappear.

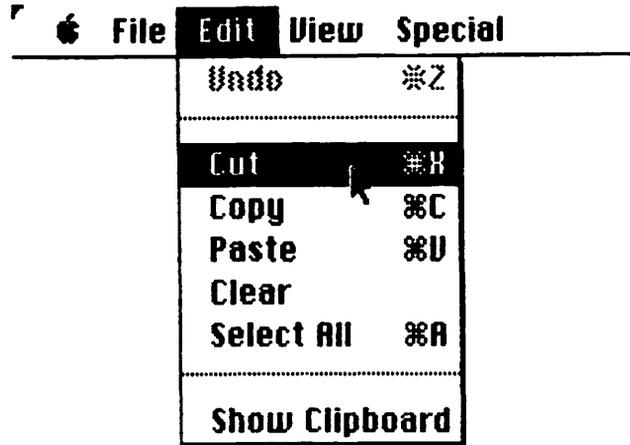


Fig. 5-35. The Edit/Cut command.

Just as with the Edit//Copy command, the selected text is placed in the Clipboard. It, too, can be recalled by choosing the Paste command from the Edit menu. Try it. The sentence should reappear.

Edit//Cut and Edit//Copy both save text to the Clipboard; Edit//Clear cuts selected text but doesn't save it to the Clipboard. Use Edit//Clear in place of tapping the Backspace key.

The Undo command in the Edit menu does what its name implies: It reverses the last edit or action. Let's say you're busy erasing lines of text. Oops! You've gone too far. You've erased one too many lines. To bring the lost line of text back, just choose the Edit//Undo command.

Keep in mind that the Edit//Undo command works to reverse the *last* action or command only. If you've erased text and then written some more, you can't recall the erased text.

Unfortunately, Edit//Undo works only with programs and desktop accessories, so mistakes you make with naming icons or writing comments in information windows can't be reversed.

THE CLIPBOARD

Text that is Cut or Copied using the Edit//Cut or Edit//Copy command is temporarily placed in the Mac's Clipboard. Once in the Clipboard, text can be placed anywhere using the Edit//Paste command. The Clipboard can hold only one picture or block of text at a time. If you Cut or Copy something to the Clipboard and then Cut or Copy something else, the original Clipboard contents will be replaced with the new entry.

The Clipboard retains its memory while you're working with the Macintosh, so you can conceivably cut something from one program and place it in another.

(Some programs can't accept outside material—the manual that accompanies the software will provide more details.)

MacTip 5-10

The Copy, Cut, and Paste commands in the Edit menu are important because you can use them to move text and pictures between documents (even documents created by different programs). You'll also use them when working with the scrapbook, detailed in the next chapter.

The Edit//Show Clipboard command lets you see the current contents of the Clipboard, all neatly placed in the Clipboard window. You'll be able to see the first five lines of text or the topmost portion of a picture.

Call up the Clipboard by giving the Edit//Show Clipboard command. The window normally appears in the lower portion of the desktop. Move it somewhere else if you want to. If you haven't done any additional doodling, your Clipboard window should look like Figure 5-36.

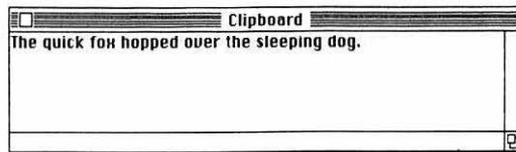


Fig. 5-36. The current contents of the Clipboard.

To see the contents change, first close the Clipboard window (by clicking in its close box) and then Cut something from the example text. Double-click on the word "quick." Choose Cut from the Edit menu. In a matter of a second or two, the original Clipboard entry is erased (the window will stay), and is replaced by "quick," as shown in Figure 5-37.

The contents of the Clipboard can be pasted as many times as you'd like. The current text or graphic element remains in the Clipboard until you turn the Mac off or use the Edit//Cut or Edit//Copy command again.

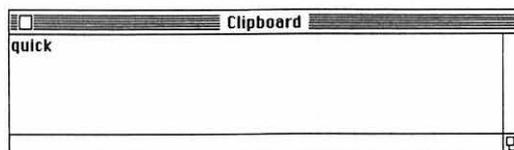


Fig. 5-37. If you Cut or Copy more text, the contents of the Clipboard changes.

As with any other window, close the Clipboard window by clicking in its close box (or by using the File//Close command, of course).

MacTip 5-11

If you've saved something to the Clipboard that you want to keep for the time being, but you need to cut out more text, use the Backspace key or the Edit//Clear command. Neither one saves text to the Clipboard, so you won't inadvertently change the Clipboard's contents.

SO YOU DON'T LIKE ICONS

For some, icons are hard to get used to. The Mac gives you another choice. All but a very few desktop icons can be changed into old-fashioned text. It's all done with the View menu.

Pull the View menu down. You'll see five choices: By Icon, By Name, By Date, By Size, and By Kind (see Figure 5-38). The Mac automatically chooses the View//By Icon selection when starting with the desktop; choosing any of the other commands converts the icons to plain text.

All of the view-as-text commands display the same information. The only thing that changes is the way the files are sorted (you may have to resize the window to see all the text).

View//By Icon

When you select View//By Icon, the files appear as icons. The name of each file appears at the bottom of its icon (see Figure 5-39).

View//By Name

View//By Name displays the files organized alphabetically—A through Z (see Figure 5-40). Files that begin with numbers come first.

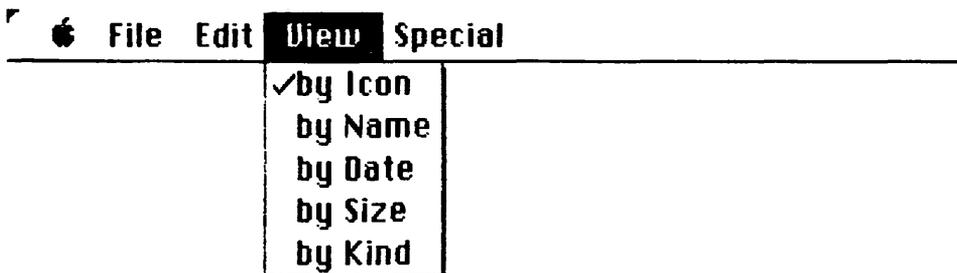


Fig. 5-38. The View menu, used to change the display from icons to text and back again.

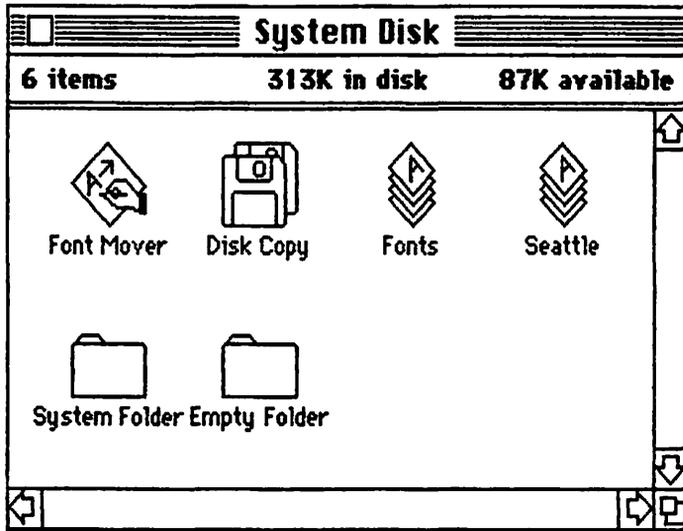


Fig. 5-39. The disk directory window, showing files displayed as icons.

The screenshot shows a window titled "System Disk" displaying a list of files in a table format. The table has four columns: "Size", "Name", "Kind", and "Last Modified". The files are listed in alphabetical order by name.

Size	Name	Kind	Last Modified
6K	Disk Copy	application	Wed, May 2, 1984
0K	Empty Folder	folder	Wed, Jun 20, 1984
13K	Font Mover	application	Wed, May 2, 1984
56K	Fonts	Font Mover document	Wed, May 2, 1984
9K	Seattle	Font Mover document	Wed, Apr 25, 1984
216K	System Folder	folder	Wed, Jun 20, 1984

Fig. 5-40. The disk directory window, showing files displayed as text. File names are organized alphabetically.

View//By Date

With View//By Date the files are organized in the order in which they were last modified, with the most recently modified file listed first (see Figure 5-41).

View//By Size

View//By Size organizes the files by size in bytes, with the largest first (see Figure 5-42).

Size	Name	Kind	Last Modified
0K	Empty Folder	folder	Wed, Jun 20, 1984
216K	System Folder	folder	Wed, Jun 20, 1984
6K	Disk Copy	application	Wed, May 2, 1984
13K	Font Mover	application	Wed, May 2, 1984
56K	Fonts	Font Mover document	Wed, May 2, 1984
9K	Seattle	Font Mover document	Wed, Apr 25, 1984

Fig. 5-41. The disk directory window, showing files displayed as text and organized by the date they were last modified (the most recently modified files are listed first).

View//By Kind

View//By Kind groups the files together by type, such as application (program), document, and folder (see Figure 5-43).

It's important to remember that the View commands change the listing of files in the active window only. All other windows, open or closed, are unaffected. To make the change universal, you'll need to reselect the View command for each window. You'll need to reissue the desired command each time you create a new folder, or the files placed into it will be icons.

MacTip 5-12

If you want to select several icons of the same type (all documents, for example), use the View//By Kind command to change the files to text, organized by kind. Select the files you want by dragging down the list (they will all be grouped together, making the selection process easier).

Immediately choose the View//By Icon command. The files, now as icons, will still be selected. Copy them, delete them, or whatever, as a group.

CLEANING UP

Much of the time, you'll be rearranging icons all over the desktop, moving them from window to window, creating new ones, making copies, and so forth. There's a way to keep the appearance of the desktop tidy — with icons placed neatly one by one — without painstakingly moving them yourself. Just use the Clean Up command, one of four unique entries in the Special menu.

Special//Clean Up works only for the active window (or if no window is

Size	Name	Kind	Last Modified
216K	System Folder	folder	Wed, Jun 20, 1984
56K	Fonts	Font Mover document	Wed, May 2, 1984
13K	Font Mover	application	Wed, May 2, 1984
9K	Seattle	Font Mover document	Wed, Apr 25, 1984
6K	Disk Copy	application	Wed, May 2, 1984
0K	Empty Folder	folder	Wed, Jun 20, 1984

Fig. 5-42. The disk directory window, showing files displayed as text and organized by size. The largest is listed first.

present, for the icons on the open desktop), so you'll need to use the command several times if several windows are open.

Using the Special//Clean Up command is easy. Just pick the window you want cleaned up by activating it (if it isn't active already), and then choose Clean Up from the Special menu (Figure 5-44). The Mac automatically rearranges the icons into neat rows and columns.

You may get large gaps between icons. This is normal. If you don't want the gaps, place the distant icons closer together, and give the Special//Clean Up command once again.

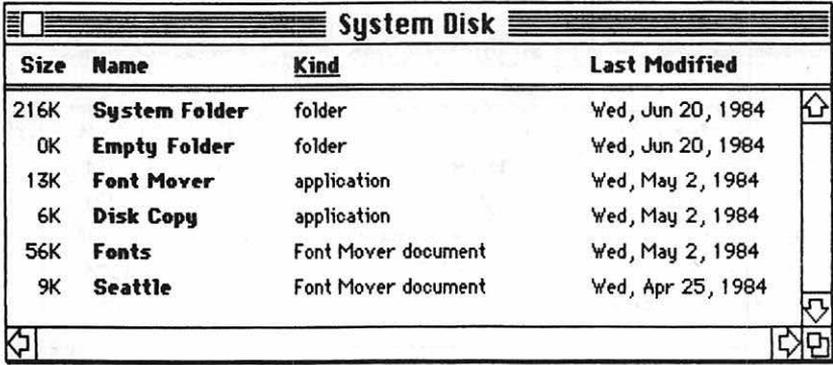
EMPTYING THE TRASH

Earlier in this chapter, you learned how to drop files and folders into the trash can icon for quick disposal. But as we mentioned earlier, simply placing files in the trash doesn't automatically eliminate them. The trash must be emptied, through a simple process made possible with the Special//Empty Trash command.

After placing whatever files and folders you're *absolutely* sure you no longer need in the trash, select Empty Trash from the Special menu, as shown in Figure 5-45. Mac's disk will whirl a second or two, and the files will be permanently destroyed.

Trying to delete a program? The Finder will double-check by asking you if you're sure you want to delete the program. You'll have to click the OK button in the alert box to continue. If the file happens to be locked or is on a locked disk, it cannot be erased. You'll have to unlock the file or disk to proceed.

By the way, the Finder automatically empties the contents of the trash when a program is started or when a disk is ejected.



Size	Name	Kind	Last Modified
216K	System Folder	folder	Wed, Jun 20, 1984
0K	Empty Folder	folder	Wed, Jun 20, 1984
13K	Font Mover	application	Wed, May 2, 1984
6K	Disk Copy	application	Wed, May 2, 1984
56K	Fonts	Font Mover document	Wed, May 2, 1984
9K	Seattle	Font Mover document	Wed, Apr 25, 1984

Fig. 5-43. The disk directory window, showing files displayed as text and grouped together by kind.



Fig. 5-44. The Special//Clean Up command.

ERASING THE DISK

Every once in a while, you'll want to erase the entire contents of a disk. You could delete all the files and folders by throwing each one into the trash. But a better and faster way is to use the Special//Erase Disk command (Figure 5-46).

The Finder won't erase the disk if one or more of these conditions exists:

- *The disk is the Startup disk.* The Finder won't allow you to erase the disk you used to start the Mac (Figure 5-47). You start with another Startup disk, and then insert the disk to be erased.
- *The disk is write protected.* Most Mac disks have a write-protect tab on them. When the tab is slid toward the center of the cartridge, the disk can be erased; when the tab is slid toward the outside edge of the cartridge, the disk cannot be erased.

If the disk you want to erase passes these above tests, the Finder will still provide one last chance for you to change your mind (which is nice, since it's possible to select the Special//Erase Disk command by accident). If you really do want to erase the disk, click the OK button in the alert box (see Figure 5-48).

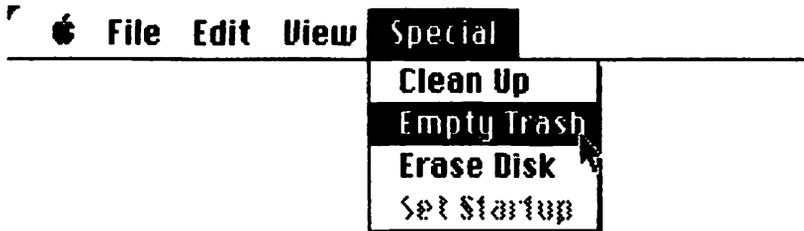


Fig. 5-45. The Special//Empty Trash command.

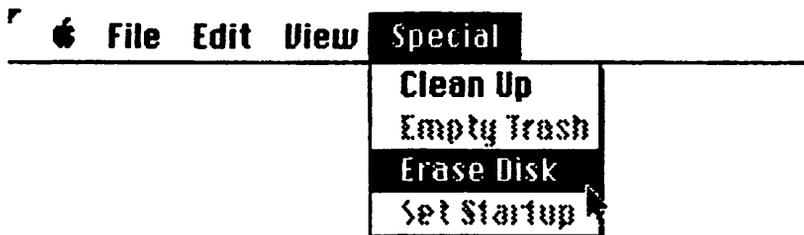


Fig. 5-46. The Special//Erase Disk command.

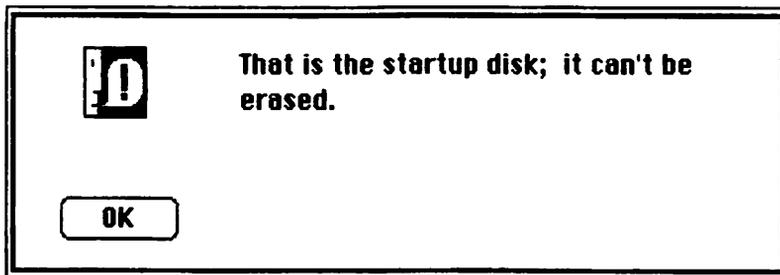


Fig. 5-47. You can't erase the Startup disk, and the Mac tells you so.

AUTO MAC

The Macintosh makes just about every computing chore a breeze. There is a way to make things even easier. If you want a certain program to run automatically when you turn the Mac on and insert a disk, use the Set Startup command found in the Special menu (Figure 5-49). You may want to do this if your Mac will be used by persons with no computer or Mac know-how, or if you don't want to bother having to start a program from the desktop.

To set a program to be run automatically, select it, then choose the Special//Set Startup command. A dialog box, shown in Figure 5-50, will appear, asking you if

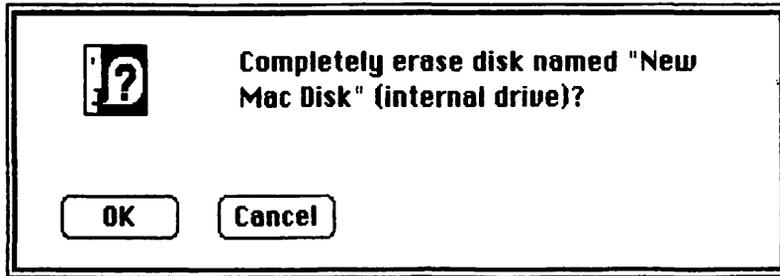


Fig. 5-48. You're given one last chance to decide whether or not you want to erase the disk. Click OK if you do, Cancel if you don't.

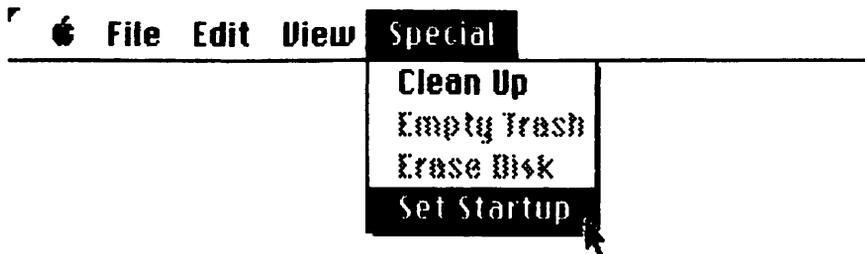


Fig. 5-49. The Special//Set Startup command.

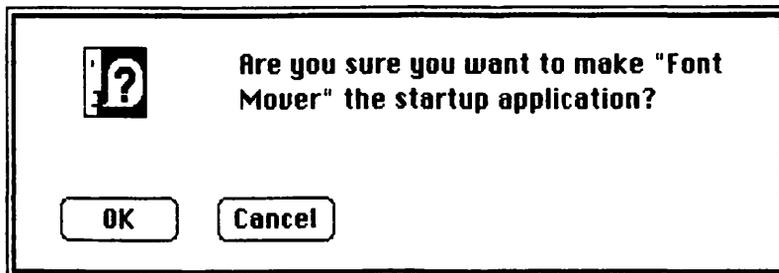


Fig. 5-50. The Macintosh asks for confirmation of your choice of a startup application. Click OK if everything is all right.

you really want to make this program the startup application. Click OK if you do, Cancel if you don't.

The next time the Mac is turned on and that disk is inserted into the drive, the startup program will automatically run. You can return to the desktop by exiting the program, of course.

Should you wish to choose another program for startup, go through the pro-

cess again. Exit the current startup application, select another program, and choose the Special//Set Startup command once more.

MacTip 5-13

If the icons are scattered all over the place, try this: Take all the icons out of the window (use the Edit//Select All command to select them all, and then drag them as a group out of the window). Issue the File//Put Back command. They will fly back into the window and neaten themselves up automatically.

If you want to put the icons back in a particular order, take them out of the window as described above. Deselect the icons by clicking anywhere on the desktop.

Now, Shift-click the icons in the order you want them put back in the window (for example, all programs, then all folders, then all documents). When you give the File//Put Back command, they will reenter the window in the order in which you selected them.

If the time comes to cancel all Set Startup settings, open the System Folder and set the icon named "Finder" as the startup program. Next time, when you use the disk to start the Mac, you'll be greeted by the standard desktop.

MacTip 5-14

You can't set a folder or a document as the startup application, but it is possible to set any of the Mac's "system" files (usually enclosed in the System Folder and shaped like little Macs or blank pieces of paper) as the startup application. However, only the icon labeled "Finder" should be selected as a startup application. Don't choose one of the other system files; because if you do, you won't be able to start the Mac with that disk.

Should you accidentally select a system file other than the one named "Finder," start the Mac with another disk, eject it, put in the disk you messed up, and go through the Special//Set Startup procedure once more. This time, choose the Finder as the startup application.

ONE MORE MENU

This chapter has detailed all the menu choices available for working at Mac's sophisticated desktop—all except the choices found under the  (Apple) logo. These are the "desktop accessories," covered in Chapter 6.

Desktop Accessories and How to Use Them

Though the Mac's desktop may not be made of oak or walnut, it does come complete with a full line of built-in accessories — a four-function calculator, a note pad, an alarm clock, and more. Any desktop accessory can be used with the Mac at any time, even while you're using a program.

It's no trouble, for instance, to call up the note pad while using the MacPaint drawing program, and write yourself some friendly reminders. Put the note pad away and continue with MacPaint.

An hour, a day, a week goes by — it doesn't matter. Bring the note pad desk accessory back on the screen and read off your notes. The notes stay until you erase them.

This chapter acquaints you with the six major desktop accessories. Some of these, such as the calculator, are handy tools. Others offer ways to make using the Mac even easier. These include the key caps and the control panel.

Incidentally, there's no limit to the number and kinds of desktop accessories for the Mac — what comes with the computer when you buy it is just the beginning. Already, both Apple and independent software developers are coming out with new tools for the Macintosh desktop.

THE SCRAPBOOK

There will be many times when you'll want to transfer words or pictures from one program document to another. For example, you might create a letterhead using MacPaint (a graphics program described in Chapter 7) and then use it with MacWrite. The MacPaint graphic element is transferred to MacWrite before you begin writing. Once the letterhead is in place on the MacWrite screen, you can compose your letter (Figure 6-1).

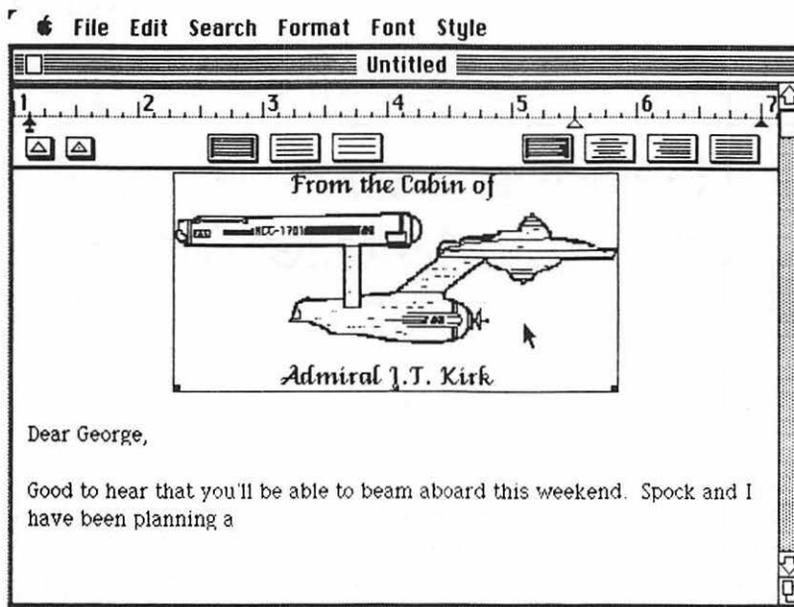


Fig. 6-1. A picture from MacPaint inserted into MacWrite.

The question is: How do you get the MacPaint graphic element into a MacWrite document? Here's one way:

1. Start up MacPaint.
2. Call up the saved letterhead graphic element.
3. Copy it to the Clipboard.
4. Exit MacPaint.
5. Start MacWrite.
6. Paste the letterhead stored in the Clipboard onto the page.

A lot of trouble for one little letterhead.

The better way is to use the scrapbook desktop accessory. With it, you'd paste the graphic element in the scrapbook and then proceed:

1. Start MacWrite.
2. Call out the scrapbook.
3. Copy and paste the letterhead graphic.
4. Start writing.

Unlike the Clipboard, the scrapbook permanently retains material placed in it. What's more, the scrapbook can store more than one piece of information at a time. You could, if you wanted to, have dozens of items in the scrapbook and choose any of them with the same ease as flipping through the pages of a book.

Call up the scrapbook by choosing Scrapbook from the Apple menu. It may take a few seconds to appear, however, because the contents of the scrapbook must be read off the disk.

As seen in Figure 6-2, the scrapbook is enclosed in its own window. Unlike most of the windows you've encountered, the one for the scrapbook can't be adjusted. There's no way to make it larger or smaller, though you can drag the scrapbook window to another part of the desktop. You'll find that all of the desktop accessories are like this. Their windows have only the most basic features.

The contents of the scrapbook can change, of course. The examples in the following pages were pulled from the sample scrapbook that's included with the System disk. If the scrapbook you're working with includes items other than those shown here, don't worry. It works in the same manner in any case.

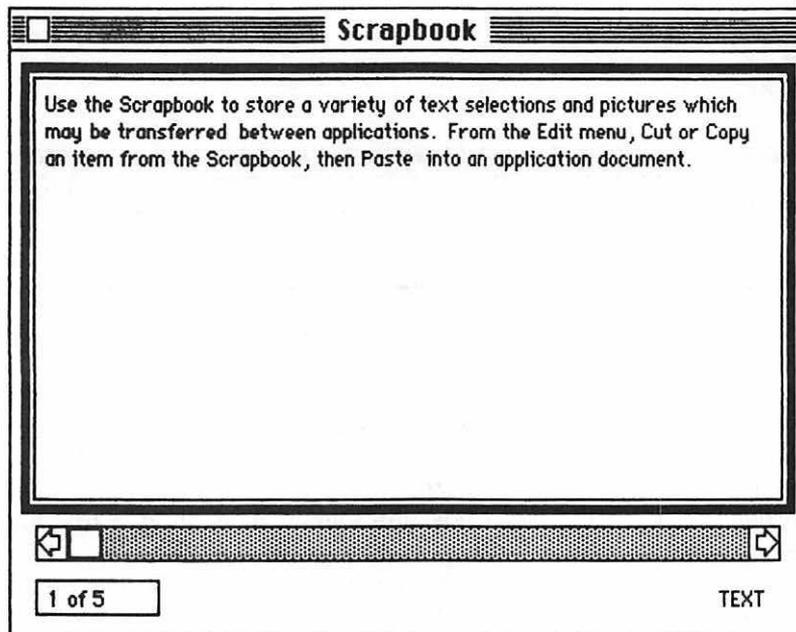


Fig. 6-2. The scrapbook desktop accessory.

MacTip 6-1

There's a different scrapbook for every disk. Pictures you save on a MacPaint disk won't be on a MacWrite disk, because the Macintosh will use the scrapbook from the Start-up disk.

If the scrapbook window displays a "This Space for Rent" or a "Scrapbook Empty" message, shown in Figure 6-3, it means the scrapbook has nothing in it. You'll have to put something in before you can draw anything out. Read ahead to see how this is done.

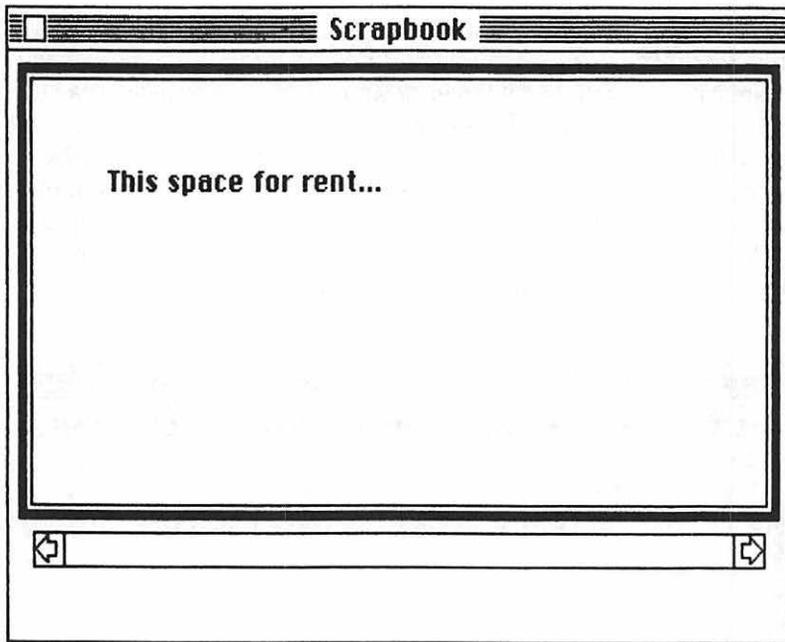


Fig. 6-3. An empty scrapbook.

First, let's see what makes up the scrapbook window. Look at Figure 6-4. On the top is the title bar, complete with close box. As with other windows, you can move the scrapbook around the desktop by dragging the title bar. Try it. When you're through, click in the close box (the long-hand method is to choose the File//Close command).

On the bottom edge of the scrapbook window are several tidbits of information. You can easily see how many items are in the scrapbook, as well as the number of the item currently being displayed. The Number 1 item is always displayed when the scrapbook is first called up.

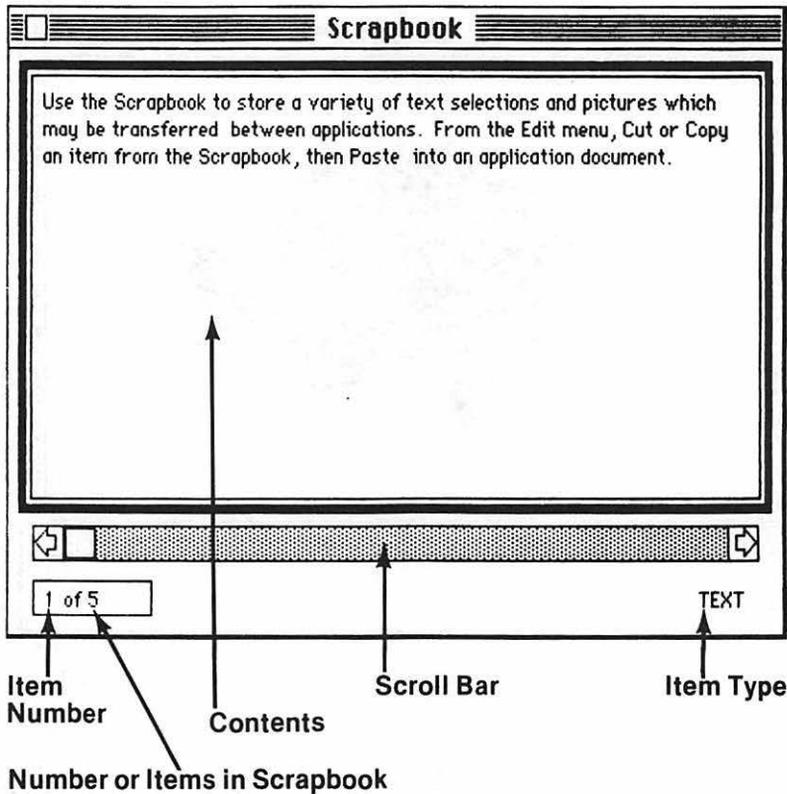


Fig. 6-4. Vital parts of the scrapbook.

Toward the right is the indicator that shows the item type. It can be "Text," "Picture," or just about anything else. This indicator can come in handy when you transfer scrapbook items between different programs.

It should be noted that some programs can't accept scrapbook data from another program. The manual that accompanies the software should detail the limitations.

The scrapbook lets you see only one item at a time. And in some instances, the item will be too large to fit within the display window. There's no need for alarm: you can still use the item.

To see another item, drag the elevator across the scroll bar. Another way: click in the right or left scroll arrow. Try scrolling over to the next item. Place the pointer in the elevator and drag it a half-inch or so to the right. If you've done it correctly, you should see the second item in the display window (Figure 6-5).

If you drag the elevator too far to the right, you'll skip right past the Number 2 item and go to Number 3. If you don't drag the elevator far enough, it will spring back into its original position.

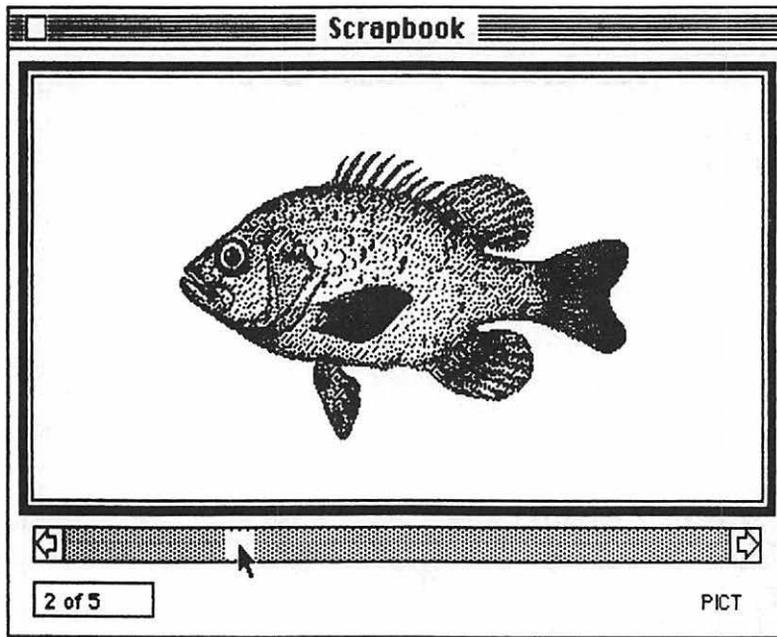


Fig. 6-5. Use the elevator to scroll through the contents of the scrapbook.

A surer way to advance through the scrapbook is to click in the right or left scroll arrow. If you click in the right arrow, as shown in Figure 6-6, the next higher-numbered item is shown. The next lower-numbered item appears if you click in the left arrow.

For best results, use both the elevator and the scroll arrows. Use the elevator to pass several items quickly; use the scroll arrows to home in on your subject. For now, put the scrapbook away by clicking in the close box.

So far so good. Now let's put the scrapbook to work. Since you may not have purchased programs with the Mac, we'll limit ourselves to readily available desktop tools. We'll be using our old friend, the information window. The one for the Empty Folder icon will do. Call it up now.

Here's a rundown of what we'll do:

1. Create the text.
2. Copy it to the Clipboard.
3. Call up the scrapbook.
4. Paste the copied text to the scrapbook.

Type a line or two of text into the comment box inside the information window. If you're strapped for something to say, try "But soft! what light through yonder window breaks! It is the east, and Juliet is the sun!"

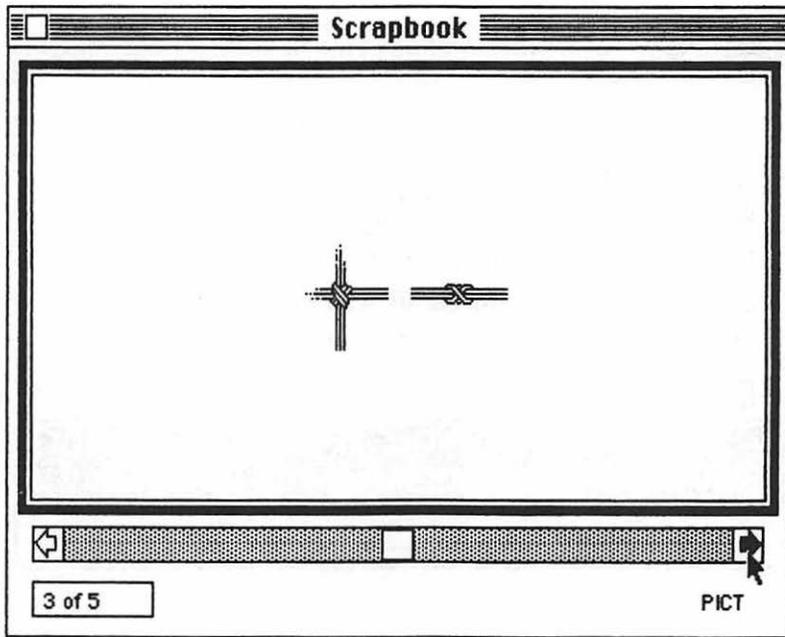


Fig. 6-6. Step through the items in the scrapbook with the aid of the right and left scroll arrows.

When you've finished writing, drag over the text to select all of it. The info window should now look something like this Figure 6-7.

Choose the Edit//Copy command (alternatively, press the Command and C keys together). This will place a copy of the text into the Clipboard (sorry, items can't be copied directly into the scrapbook).

If you'd like, verify that the text is in the Clipboard by selecting Show Clipboard from the Edit menu. Then put the Clipboard away by clicking in its close box.

Bring the scrapbook up once again (by choosing Scrapbook from the Apple menu). Place the snippet of Shakespeare into the scrapbook by choosing the Edit//Paste command (alternatively, press the Command and V keys together). The Mac's disk drive will whir a bit, and before long the quotation will appear in the scrapbook window, as shown in Figure 6-8.

MacTip 6-2

If you want to place the new item somewhere other than at the head of the scrapbook, scroll the contents over to where you want the newcomer to be placed *before* you invoke the Edit//Paste command. That is, if you scroll the scrapbook so it shows "3 of 6," the newly pasted item will become Number 3. The ones thereafter will be renumbered.

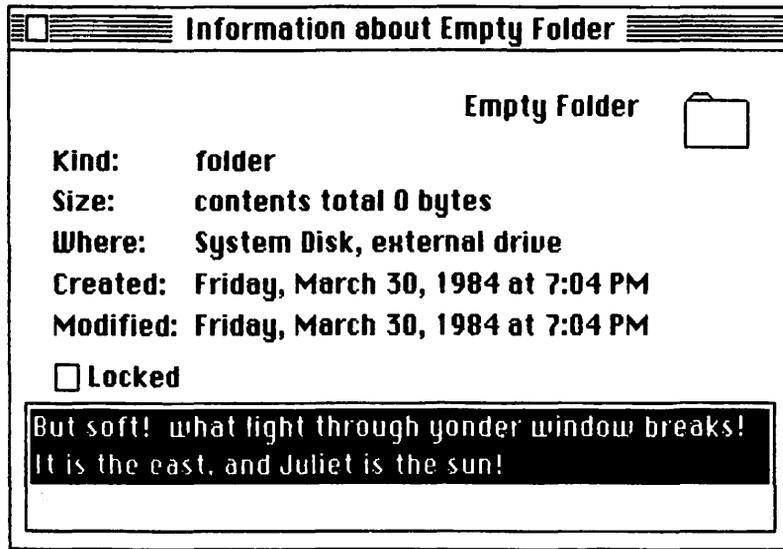


Fig. 6-7. Select the text to copy by dragging over it.

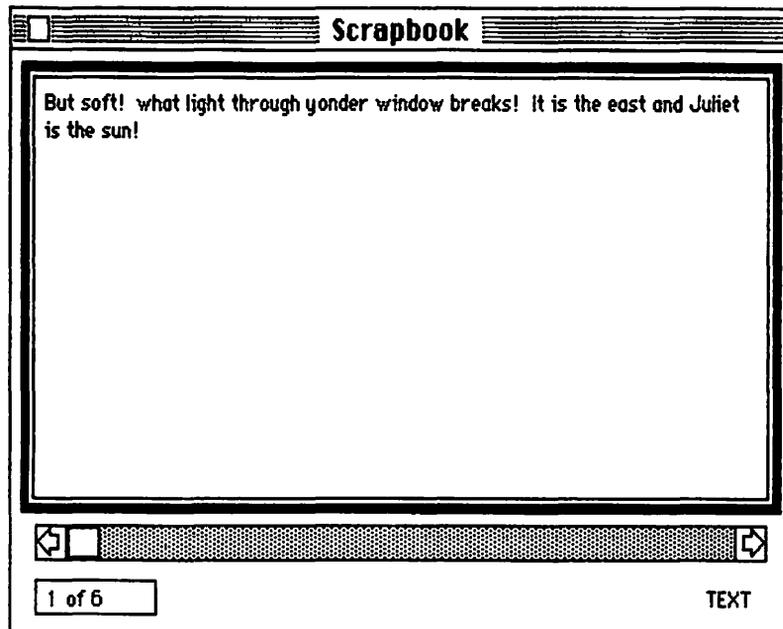


Fig. 6-8. Text from the information window pasted into the scrapbook.

To copy an item from the scrapbook and put it into a document, use exactly the reverse procedure:

1. Call up the scrapbook.
2. Scroll to the item desired.
3. Copy the item.
4. Paste the item into the document.

If you've changed the scrapbook since the last exercise, scroll the contents once again so that the Romeo quote is displayed. Choose the Copy command from the Edit menu (or simply press the Command and C keys). Put the scrapbook away by clicking in its close box.

MacTip 6-3

If you choose Edit//Cut, you'll remove the item from the scrapbook, so be sure this is what you want to do. If you take something out by mistake, paste it back in.

If you accidentally choose the Edit//Clear command, the item will be forever lost, so be careful when using the Edit menu.

The information window should now be in view (and should be active). Look to be sure that the insertion point is placed right after the last "!" at the end of the entry.

Finish up by choosing the Paste command from the Edit menu (or simply press the Command and V keys together). A second copy of the line should appear, as shown in Figure 6-9.

Finish up the use of the scrapbook by closing the information window. (Keep the text in the comments box as it is. We'll use it again later in this chapter.)

THE ALARM CLOCK

The Macintosh has its own internal alarm clock and calendar system, which operates off the small 4.5 volt battery that's installed in the back of the Mac. All told, the alarm clock/calendar enables the Macintosh to continually keep track of the time and the day—from the date your Mac is created.

The calendar automatically compensates for the number of days in each month; it even knows when to add a February 29 each leap year. About the only thing the Mac doesn't handle is daylight savings time. If your state observes this semiannual time change, you'll need to reset the Mac's clock manually.

Why is there an alarm clock built into the Macintosh? One reason is so that the correct time is never far away. Just call the alarm clock up and the current time is displayed for you.

You can also use the Mac to remind you of an important appointment. Set the alarm for 11:45, for example, so you won't run the risk of missing an important lunch date. When 11:45 rolls around, the Mac will give out a short (but pleasant) beep.

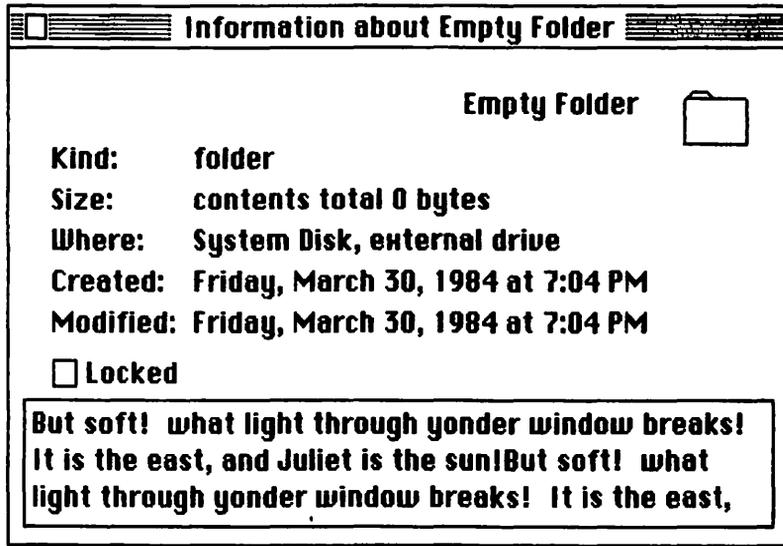


Fig. 6-9. The scrapbook lets you cut and paste text almost anywhere, even back to the same place the text came from.

If you happen to be away when the beep sounds, the Mac gives you another chance. A flashing box, like that in Figure 6-10, appears around the Apple logo in the menu bar.

By far, the best reason is that several Mac programs—Microsoft’s Multiplan and Apple’s MacWrite, for instance— can internally access the alarm clock. This allows the program to automatically determine the current date and time. This can be important, for instance, in some financial calculations or when printing out “timely” memos.

Like using the scrapbook, bringing up the alarm clock is a simple matter. Just select Alarm Clock from the Apple menu. As shown in Figure 6-11, the Mac automatically places the clock in the upper right corner of the desktop.

You can move the clock window around the desktop by placing the pointer anywhere in its small body (anywhere, that is, but in the key-shaped symbol or the close box) and dragging it.



Fig. 6-10. A block will flash around the Apple logo on the menu bar once the alarm goes off.



Fig. 6-11. The alarm clock desktop accessory.

If this is the first time you've used your Mac, the time shown may not be correct. There's no need to worry. Just change it according to the directions that follow. If your Mac doesn't keep time after you turn it off or unplug it, the clock battery may be incorrectly installed or it may be dead. Refer to Chapter 2, "Bringing Home the Macintosh" for details on installing the battery.

If you haven't guessed yet, there's more to the alarm clock than what's shown here. Open the alarm clock completely by clicking the key symbol. The key will flip down and display the rest of the clock, as shown in Figure 6-12.

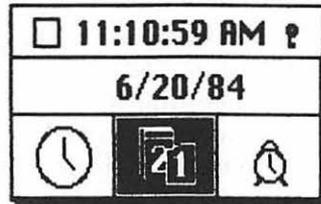


Fig. 6-12. The alarm clock must be opened to set the time or date.

The alarm clock is divided into three main sections.

- The top portion shows the current time.
- The middle portion, used for time/date setting, shows either the time, the alarm time, or the date (depending on what's being set).
- The bottom portion consists of three icons: a clock, calendar pages, and an alarm clock, for setting the current time, the alarm time, and the current date.

In the following exercise, you'll learn how to set the alarm clock. The same procedure is used to set the clock and the calendar, so we won't bother with the details for these.

Start by clicking the alarm clock icon, the one on the lower right corner. As shown in Figure 6-13, when the alarm clock is selected, a switch appears in the middle panel. This switch turns the alarm clock on and off. In other words, clicking the alarm clock icon simply lets you reset the alarm time; it doesn't activate anything.

When the switch is in the down position, the alarm clock is turned off, and it



Fig. 6-13. Click the alarm clock icon to set the alarm time (likewise, click the calendar to set the date, the clock to set the time).

won't bother you. In the up position, the alarm is turned on and will go off each day at the appointed time. You'll be able to tell that the alarm clock is on in a flash by looking at its icon. Cartoon-like lines appear above the little alarm clock when it's on.

To set a new alarm time, select one of the digit groups in the middle band. Click the hour digits, for example, and they appear highlighted. Setting arrows appear, too. Press the up arrow to advance the time forward an hour at a time; press the down arrow to back the time up an hour at a time. For now, press the up arrow to set the hour to "6" (see Figure 6-14).

Go on to the minutes digits. Click on them and they become highlighted. Press the up arrow to advance the number to 15.

If punctuality is your middle name, you could set the exact second the alarm will go off, but we'll ignore it for now. We *will* need to indicate whether the alarm time is 6:15 in the morning or 6:15 in the evening, however. Click the letters AM and they become highlighted. Click either arrow to change from AM to PM.

MacTip 6-4

As a shortcut, click the digits you want to change, and type in the new time from the keyboard. To change the other digits, press the Tab key. This selects the digit group immediately to the right.

When you've finished, click the alarm clock icon once again. This finalizes the new alarm time settings.

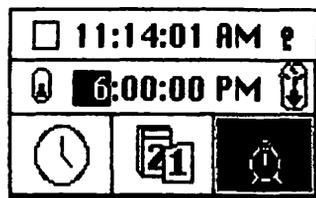


Fig. 6-14. Click the digits you want to change, and then press the up or down arrow as needed.

If you want to turn the alarm on, click the small switch that's located in the middle panel. Click it once to flip the alarm on (switch up) (see Figure 6-15). Click it again to turn the alarm off (switch down).

When the alarm goes off (as it will even when the Mac is off, though you won't get the telltale beep), you'll have to call the alarm clock desk accessory onto the desktop, "open" it up, and flip the switch off. Otherwise, the flashing block around the Apple logo will linger and the alarm will go off at the same time tomorrow.

To set the current time, click the clock and follow the same procedure as outlined above. Likewise, click the calendar pages and select the correct day and date to set the calendar.

When you've finished setting the time, click the key symbol in the top panel again, and the alarm clock folds back up. When you get tired of seeing the alarm clock on the desktop, click in the close box.

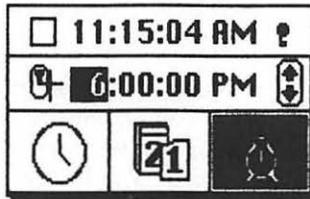


Fig. 6-15. Turn the alarm on by flicking the alarm switch. Flick it again to turn the alarm off.

MacTip 6-5

You can cut and paste the time and data by calling up the clock and choosing the Edit//Copy command. Paste the time and date into the document by marking the insertion point and then choosing Paste from the Edit menu.

THE NOTE PAD

Next is the note pad desktop accessory, handy for recording sudden bursts of literary genius or simply jotting down the grocery list. The note pad includes eight "pieces of paper." You can flip through the pages as you would those of a regular note pad.

To call up the note pad, choose Note Pad from the Apple menu. Because the contents of the note pad are stored on the disk, it takes a while for it to appear on the desktop. When it appears, it looks like Figure 6-16.

As shipped from Apple, the note pad has a short note on its first page. If you see no such note, go ahead and type it in. We're going to use it to investigate how text can be edited with the note pad. Figure 6-16 shows exactly what to write.

Before we start writing, however, let's get to know the note pad a bit better. Look at the lower left corner. You'll easily spot the dog-ear, the upturned part of

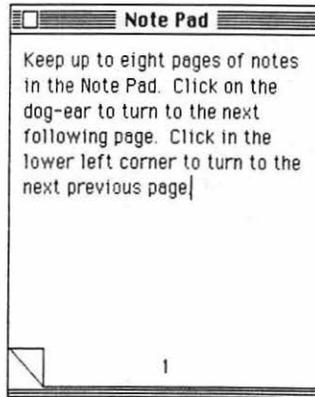


Fig. 6-16. The note pad desktop accessory.

the page. Click within the dog-ear, as shown in Figure 6-17, to advance to the next of the note pad's eight pages. The second page should be blank.

Keep clicking in the dog-ear and you'll whiz through all the pages. When you get to page 8, click once again. Surprise! You're back at page 1.

You can go backward through the pages, too. Instead of clicking in the dog-ear, click in the lower left corner below the dog-ear (see Figure 6-18). Each time you click, you turn back a page.

Return to page 1. With the mouse, drag over the entire first sentence, as shown in Figure 6-19.

Follow by choosing the Edit//Cut command. The sentence will disappear and the rest of the text will be rearranged to fill the void. Bring the text back by choosing the Edit//Paste command.

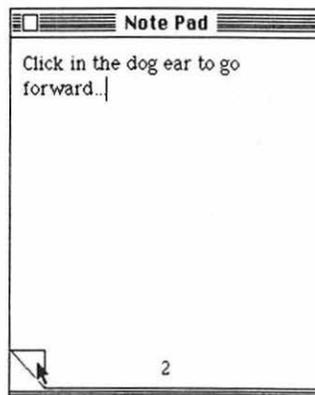


Fig. 6-17. To go forward through the pages, click in the dog ear.

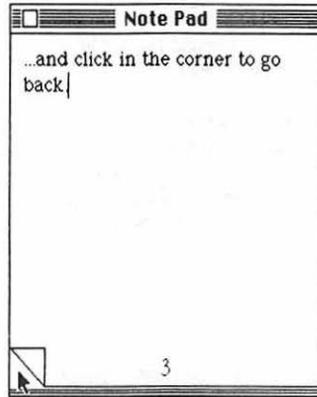


Fig. 6-18. To go backward through the pages, click in the corner.

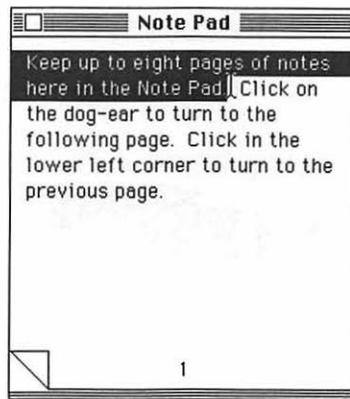


Fig. 6-19. Select text to be copied by dragging over it.

Click to the right of the period in the last sentence. Tap the Spacebar a few times, and add the words “Here we go again . . .” Follow by choosing the Edit//Paste command. The beginning sentence appears, looking like that in Figure 6-20.

Enough of this foolishness. Get rid of the extraneous text and the clone by dragging over it all and pressing the Backspace key (Figure 6-21).

MacTip 6-6

Like the scrapbook, there’s a different note pad for every Startup disk you use. You’ll be able to save different sets of notes on your MacWrite, MacPaint, and System disks.

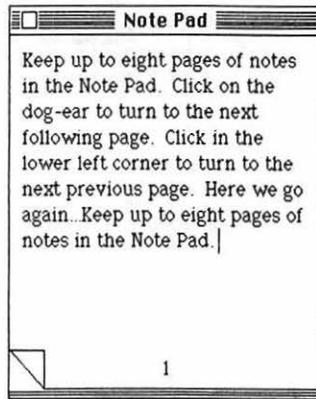


Fig. 6-20. Pasted note pad text. Use the same procedure to paste text from the note pad into other accessories or into documents.

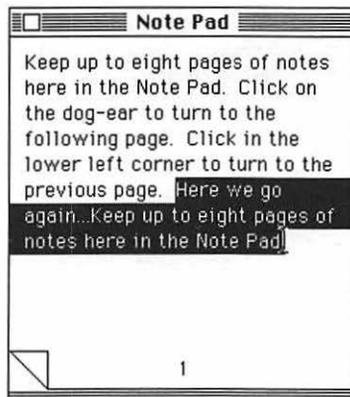


Fig. 6-21. Take the extra text out by selecting it and pressing the Backspace key.

As you can see, the note pad takes advantage of all of the Mac's built-in writing and editing features. In doing so, you can transfer text written with a program such as MacWrite and place it in the note pad. Likewise, you can transfer text from the note pad into just about any program document. Just copy in the normal way, select where the new text is to go, and paste it in.

We can simulate this by using an information window again. Click on the Empty Folder icon once more, and choose the File//Get Info command (or press the Command and I keys together).

If you haven't changed things since our previous info window exercise earlier in this chapter, the comments box should still contain the famous line from *Romeo and Juliet*, shown again in Figure 6-22.

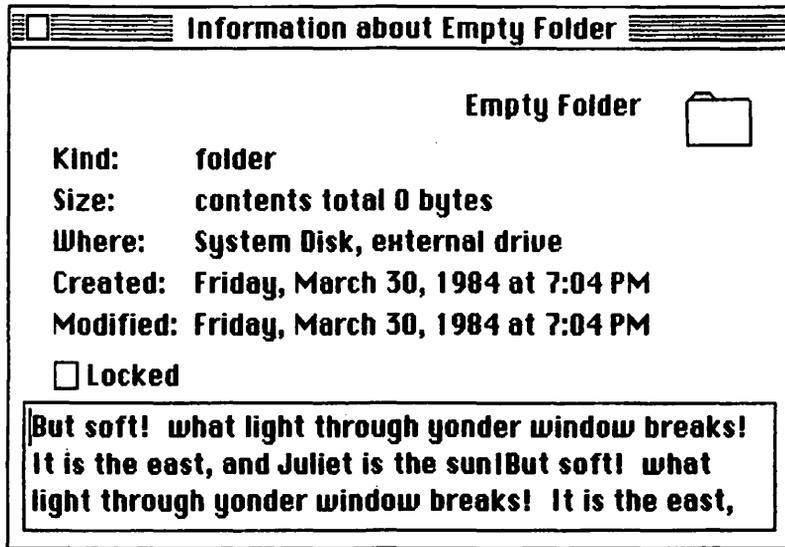


Fig. 6-22. The information window for the Empty Folder should still look like this, unless you've changed it since the last exercise.

Let's suppose this is text from a program document—for instance, a memo you've just written with MacWrite. Drag over all the text in the comments box to select it. Follow by choosing the Edit//Cut command (Figure 6-23). This cuts the text from the comments box and places a copy of it into the Clipboard.

We've finished with the information window (for this chapter, at least), so close it by clicking in its close box.

With the note pad in the forefront once again, click in the dog-ear to advance to page 2. Finish the job by choosing the Edit//Paste command. Figure 6-24 shows what your note pad should look like.

To transfer text from the note pad into a document, just do the reverse. Mark the spot where the text is to go by clicking in the appropriate place in the document.

When the note pad is put away, the notes you've written stay—even after you eject the disk and turn the Mac off. Whenever you call up the note pad, it greets you with page 1.

MacTip 6-7

Some characters from special fonts may not transfer well into the note pad. The note pad cannot accept pictures, even the small thumbnail sketches produced by the Cairo font—a font made up of pictures rather than letters.

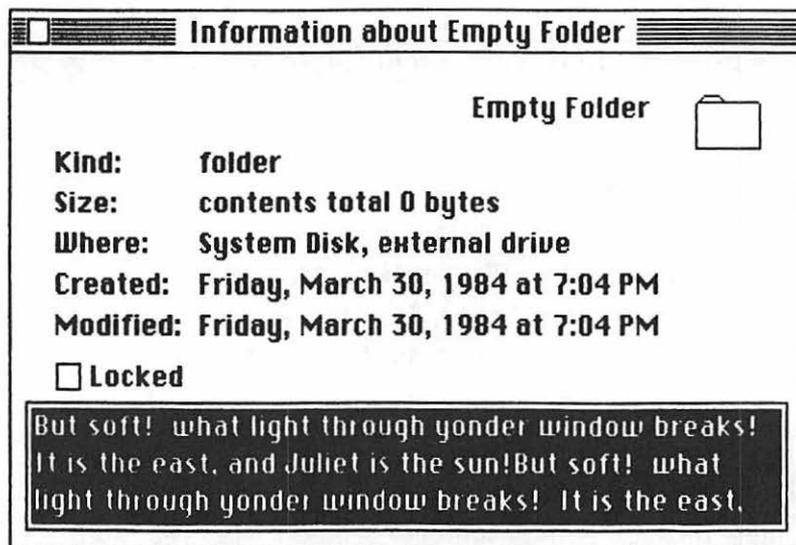


Fig. 6-23. Selecting the text to be Cut by dragging over it.

THE CALCULATOR

How many times have you needed to add a few numbers together, only to fumble around the drawers in your desk hunting for that ever-elusive pocket calculator?

When you're working with a Macintosh, a calculator is no farther than a menu away. Though the Mac's calculator is a simple one, it does handle routine addition, subtraction, multiplication, and division admirably well. And the computed result can be copied into a document.

Bring the calculator to life by choosing Calculator from the Apple menu. The calculator will appear in the center of the screen (Figure 6-25). Like any desktop accessory, it can be moved by dragging it by the title bar.

Like the average battery-operated pocket calculator, the Mac's version has small buttons for entering numbers and formulas, along with a display panel on the top to display the result. You can either click on the buttons with the mouse or press the corresponding keys on the Macintosh keyboard.

Here's a rundown of the buttons of the Macintosh calculator and what they do:

<i>Keys</i>	<i>Function</i>
0-9	0 thru 9, to enter standard numbers
C	Clear, to erase an entry and start over
E	Exponent, to convert the number to scientific notation (for example, 6.5*10E3)

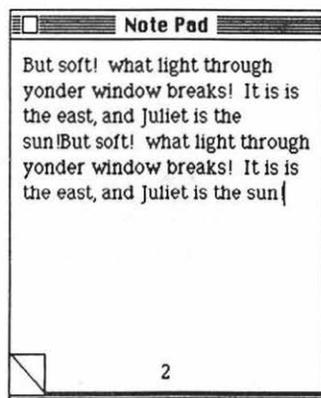


Fig. 6-24. The pasted text from the information window in the note pad. Use the same techniques to get text from other accessories and documents into the note pad.

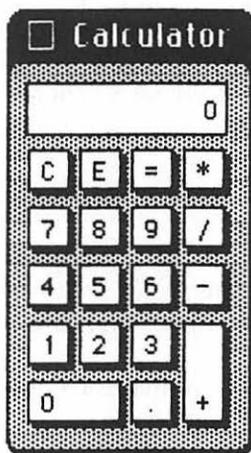


Fig. 6-25. The calculator accessory.

- + Plus, to add
- Minus, to subtract (and to enter negative numbers)
- / Divide
- * Multiply
- = Equals, to finish an equation
- . Point, to add a decimal point

Use the Mac's calculator just as you would any other. To add 10 and 23, for example, you would type (or point & click):

[1] [0]

[+]

[2] [3]

[=]

The result of the computation, 33, will be shown in the readout.

Though the calculator can handle some complex formulas (such as "23 plus 12 divided by 8 minus 17"), it's much more comfortable processing simple equations. The calculator is ideal for adding a row of numbers together, for example, or finding a percentage.

You'll also notice that the Mac's calculator lacks a "Clear Entry" key, so if you make a mistake halfway through an equation, you'll have to press the Clear ("C") key and start all over again.

If you want to use the result of your calculation in a document, choose the Edit//Copy command (or press the Command and C together). There's no need to select the digits in the readout panel. As long as the calculator window is visible and active, the Mac will know what you want to do.

Once you've copied the result, click in the spot where you want the number to appear (this sets the insertion point). Follow by choosing the Edit//Paste command, or by pressing the Command and V keys together.

When you've finished with the calculator, click its close box.

THE KEY CAPS

Unlike the previously discussed desktop accessories, Key Caps doesn't do anything to a Mac document. Rather, it can be used to test the keyboard for proper operation or to help remind you which keys to press to create one of the Mac's special characters.

To begin, choose Key Caps from the Apple menu. The key caps display will appear on the desktop shortly (Figure 6-26).

The key caps display is a picture of the Mac's keyboard. It includes a one-line readout to display characters. When you type on the keyboard (type "r," for example), the characters appear in the readout. When a key on the keyboard is depressed, as in Figure 6-27, the corresponding one in the key caps window turns black. You can also type characters by clicking the key caps keys with the mouse.

Now the fun begins. Press the Option key and hold it down. Almost like magic, the legends on the keys change. Now press the "r" key. Look at Figure 6-28. Instead of an "r," you get a registered trademark symbol.

Nearly all of the standard keys produce different and unique characters when the Option key is held down. You can produce even more special characters by holding down both the Shift and the Option keys (Figure 6-29).

Those keys that have a square in the key caps display don't have special

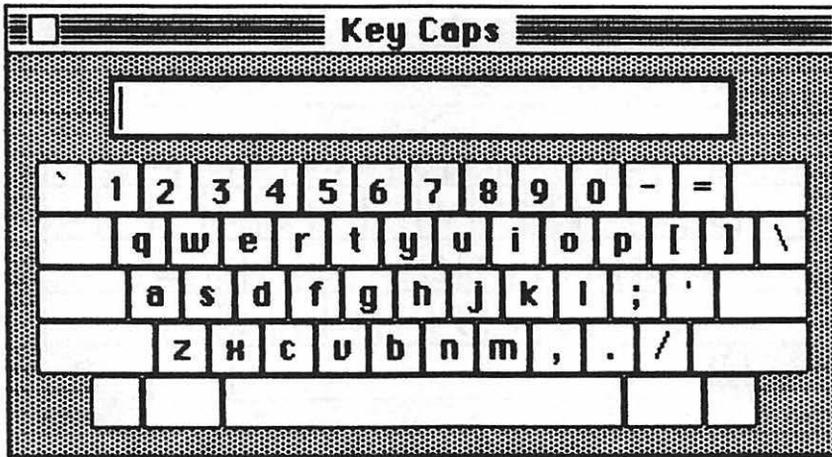


Fig. 6-26. The key caps desktop accessory.

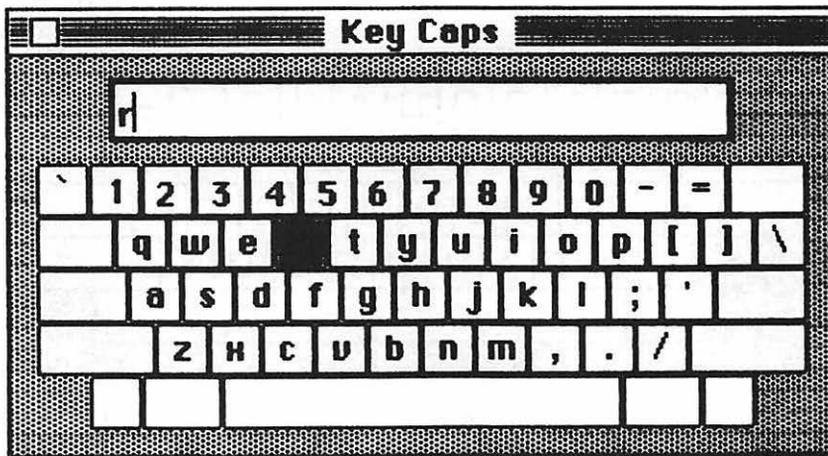


Fig. 6-27. If you press a key on the Macintosh keyboard, its character prints out in the display, and the corresponding key on the key caps accessory turns black.

characters assigned to them yet. Don't be surprised if you encounter programs that make use of these "dormant" keys, using them to create even more unique characters than those already built into the Macintosh.

When you've finished playing, close the key caps window by clicking in its close box. The next time you use the key caps desk accessory, the one-line display will be empty.

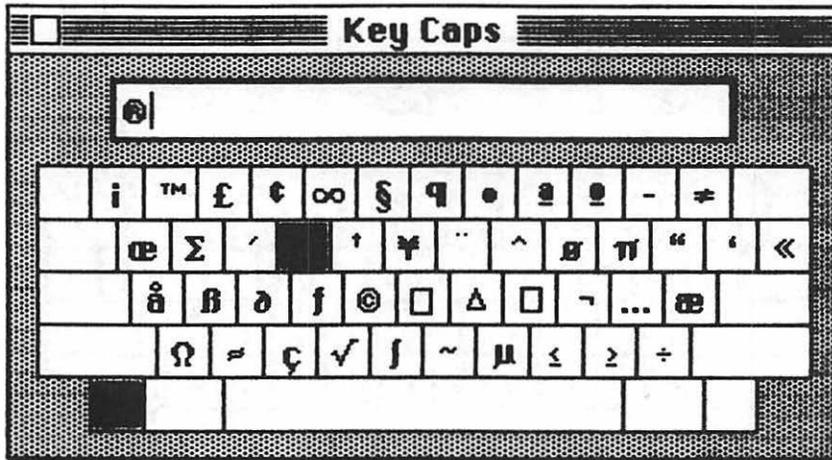


Fig. 6-28. Press the Option key and then another key to get different characters.

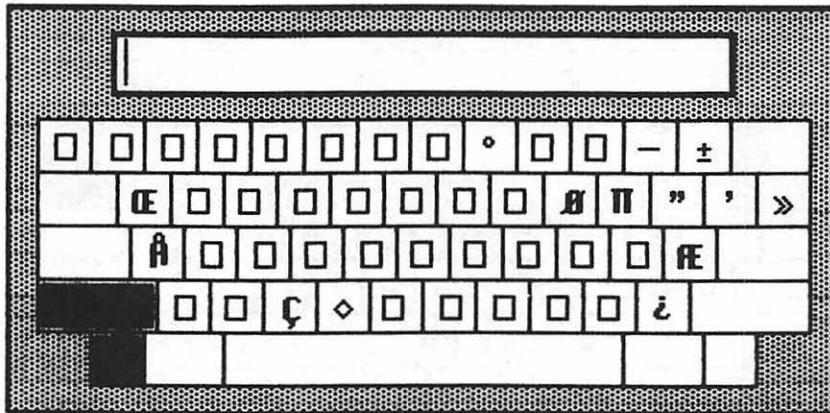


Fig. 6-29. You get still more characters when you press the Option and Shift keys together.

THE CONTROL PANEL

The control panel is one of the handiest desktop accessories that the Mac has. With this stylized version of an electronic dashboard, you can change the volume of the warning beeps, the background pattern of the desktop (from gray to black, white, or nearly anything between), the key repeat speed, and more.

You need never use the control panel if you don't want to—the Macintosh control panel on the System disk is set up for the average user. But it's nice to know that if you don't like things as they are, you're in control.

Place the control panel on the desktop by choosing Control Panel from the

Apple menu (Figure 6-30). Don't be frightened by the seemingly complex appearance of the control panel. It's really quite simple to master.

The panel has control over the following Mac functions:

- Volume level—Decreases and increases the volume of the Mac's built-in amplifier.
- Clock—Sets the Mac's internal clock/calender (setting the time is easier with the alarm clock desktop accessory, and so it won't be covered here).
- Key sensitivity—Sets the "touch" of the keyboard for repeating characters. The higher the setting, the lighter the touch of the keys and the more easily the keys can be made to repeat.
- Key repeat—Sets the speed at which the keys repeat.
- Mouse tracking—Sets how far the pointer travels when the mouse is moved quickly.
- Command blinking—Sets the number of times the background behind commands (such as "Cut" in the Edit menu) flashes when a menu item is selected.
- Insertion point blinking—Sets the speed at which the insertion point flashes.
- Double-click speed—Selects the maximum acceptable duration between taps for double-clicking the mouse button.
- Desktop pattern—Selects any of the 38 "standard" desktop patterns and allows you to create your own custom patterns.

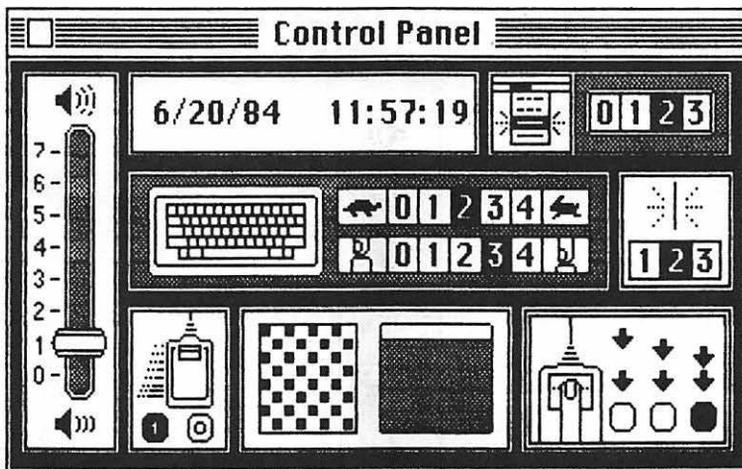


Fig. 6-30. The control panel desktop accessory.

MacTip 6-8

As with most of the other desktop accessories, changes made to the control panel affect the Startup disk that's currently in the drive (as you'll recall, Startup disks are those with the Macintosh System Folder; they can be used to start the Mac). You can make a change on one disk, but the other startup disks won't be so changed.

Alterations made during a computing session are temporarily stored in the Mac's memory. They stay there until you turn the power off.

Setting the Volume Level

The Mac's amplifier is hooked directly to a small internal speaker (the same kind found in transistor radios). The volume control gives you a way to increase or decrease the loudness of the sound coming out of the speaker. Likewise, if you have an external speaker hooked up to the Mac via the audio jack, adjusting the control changes the volume of the sound coming out of it.

To change, drag the lever up or down, as shown in Figure 6-31. When the lever is all the way down ("0"), the volume is turned off completely. No sound will come out of the speaker. Since you can't hear the Mac's warning beeps at this setting, you're alerted in another way—the menu bar flashes black a few times.

Setting the Key Sensitivity

Unlike the keyboards of most other computers, the Mac keyboard is software controllable. That is, it's possible to change the way the keyboard works by using software. There's no need to take the keyboard apart and physically make changes.

With the control panel you can vary the speed at which the keys repeat when

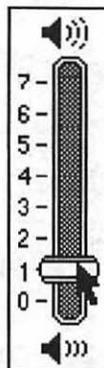


Fig. 6-31. Adjust the volume by dragging the control up and down.

they're held down. You can even turn the repeat feature off if you like. It's all done with the key repeat and key sensitivity selectors, located to the right of the picture of the keyboard (center control panel).

MacTip 6-9

Some application programs can be quite noisy (particularly games). You may want the people around you not to be bothered by the sound. At the same time, you may not always be able to turn the volume down or off because you want to hear what the Mac has to say. The solution? Hook up a set of earphones to the audio connector. The connector accepts the standard mini-phone plug (if the headphones don't have a mini-plug, use an adapter).

One caveat: When using earphones, turn the volume down low, to 1 or 2. The normal setting of 5 or 6 is much too loud for earphone listening. And remember, if you're using stereo headphones, you'll hear sound in one ear (the left one) only. If this bothers you, purchase a stereo-to-mono mini-plug adapter. Most record and tape shops sell them.

The Mac allows you to change the sensitivity, or touch, of the keyboard. If the keyboard touch is too light, for example, and you're getting extra repeated characters, decrease the sensitivity. The lower the sensitivity, the longer the key must be depressed before characters will repeat. If you're a touch typist, on the other hand, you'll probably want to set the keyboard sensitivity up as high as you can.

Setting the keyboard sensitivity is a simple matter. To start, find the picture of the keyboard in the control panel (Figure 6-32).

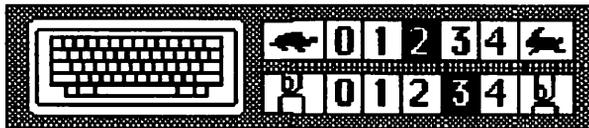


Fig. 6-32. The key repeat and sensitivity controls. Click a higher number to increase the repeat speed or sensitivity.

The first row of numbers sets the key repeat speed. The second row of numbers is for setting the sensitivity. The selections are numbered 0 through 4: The lower the number, the less sensitive the keys.

Normally, the keyboard sensitivity is set to 2 or 3. To change, just click another number. The current setting is shown highlighted. The new selection is recorded onto the disk and stays until you change it again.

Setting the Key Repeat Speed

With the key sensitivity selector, you can adjust the time a key must be held down for the keyboard to go into auto-repeat mode. With the key repeat speed, on the other hand, you can vary the time it takes to produce each repeated character.

The key repeat selector also has a set of numbers from 0 to 4 (the key repeat selector is easy to spot: there's a small icon of a turtle on one end, an icon of a rabbit on the other).

For a normal delay of a quarter of a second or so between repeats, click the number 2 setting. For a longer delay between characters, click the number 1 setting. Likewise, select a much shorter delay by clicking the number 3 or 4 setting. To turn the auto-repeat off, click the 0 setting.

Setting the Mouse Tracking

The mouse lets you move the pointer to any part of the screen in a fraction of a second. In normal operation, when the mouse tracking selector is set to 1, if you move the mouse fast, the pointer moves farther.

To see how this works, move the mouse slowly across your desk. The pointer will move in nearly a 1-to-1 ratio with the mouse. If you move the mouse five inches, the pointer will move about five inches.

Now, move the mouse five inches once more, but whip it across the desk quickly. The mouse may have moved only five inches, but the pointer moved farther.

If you'd rather have the pointer travel the same distance no matter how fast the mouse is moved, set the mouse tracking selector to 0 (as shown in Figure 6-33).

To change the setting, just click in the appropriate number—1 (for variable ratio) or 0 (for constant ratio). The current selection will be shown highlighted. As with the other items in the control panel, the new selection is recorded onto the disk and stays until you change it again.

Setting the Command Blinking

When a command is chosen from one of the Mac's many pull-down menus, it's background flashes black a time or two. This provides a type of visual feedback that lets you know the command has indeed been given. The command blinking selector (upper right corner), controls the number of times a command blinks when they're chosen (Figure 6-34).

Most Mac users set command blinking to 2—each command blinks twice before it's carried out. To make things even more obvious, you can set command blinking to 3, for three blinks. If the blinking is annoying, set it to 1 or turn off the blinks by selecting 0.

Setting the Insertion Point Blinking

The Mac's insertion point (sometimes called a cursor) indicates where new text will be added when it's typed from the keyboard. To accommodate different tastes,

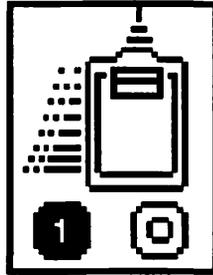


Fig. 6-33. Click “1” for a variable mouse-pointer movement ratio, “0” for a constant mouse-pointer ratio.

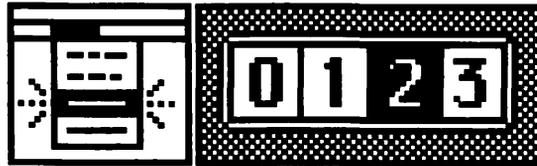


Fig. 6-34. Click the number of times you want the commands to blink when you choose one from a menu.

the control panel lets you change the speed at which the insertion point blinks (see Figure 6-35).

The insertion point blinking selector is located right below the command blinking selector. You have three choices: slow-speed blink, medium-speed blink, and fast-speed blink

To change the speed of the blink, click another number. You’ll probably want to stick with the medium, number 2, setting. The medium speed is not too distracting; yet it’s fast enough for the insertion point to be spotted easily.

Setting the Double-click Speed

As you’ve learned, double-clicking is the action of tapping on the mouse button twice in rapid succession. With the double-click selector you can change the duration the Mac expects between the two clicks of a double-click.

For example, you may want to set a long delay between mouse taps if you’re new to the Mac and are having trouble getting the hang of double-clicking. Once you master the science of double-clicking, you can reset the delay.

Rather than using numbers, the double-click speed selector, located in the bottom right corner of the control panel, has three settings—slow, medium, and fast (see Figure 6-36).

To select one of the double-click speeds, click in the box below the delay you

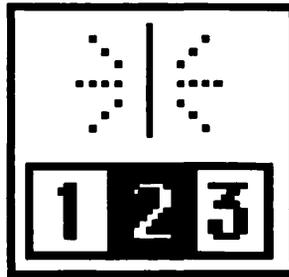


Fig. 6-35. Click a lower number for a slow insertion-point blink.

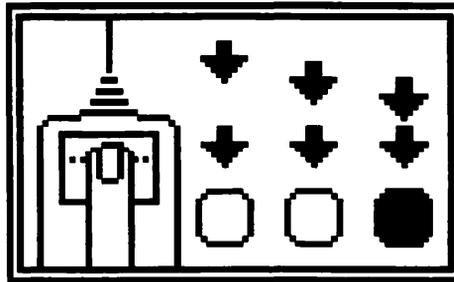


Fig. 6-36. Choose one of the three double-click speeds by clicking in the appropriate box.

want. As usual, the current setting is shown highlighted, and remains in effect until you change it again.

Setting the Desktop Pattern

The two large squares in the bottom portion of the control panel can be used to change the pattern of the Mac's electronic desktop from the usual medium-gray to black, white, checkerboard— in fact, just about anything (see Figure 6-37).

The square on the right represents a miniature version of the Mac desktop. The white stripe at the top is the toy menu bar.

The square on the left is a close-up of the series of dots that make up the pattern of the desktop. This square is there for more than just looks. You can edit the pattern with the aid of the mouse. More about this in a bit.

Built into the Macintosh is a set of 38 different preprogrammed desktop patterns. As indicated in Figure 6-38, you can look at them all, one at a time, by clicking on the right side of the miniature menu bar.

A close-up of the pattern appears in the left square, which is more properly called the *pattern box*. The overall effect is shown in the right square, which is called the *select box*.

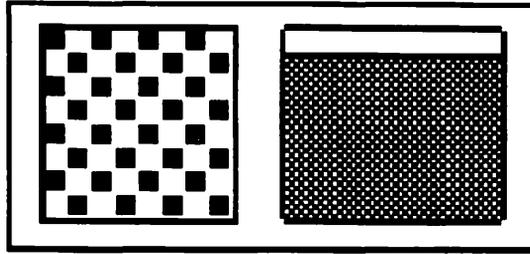


Fig. 6-37. The pattern edit and pattern select boxes.

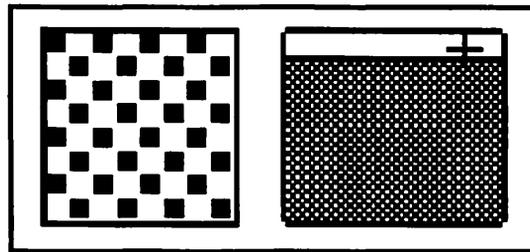


Fig. 6-38. Click on the right of the white strip at the top of the pattern select box to advance through the 38 patterns (or click on the left to go back through the patterns).

To accept the new pattern (put it on the real desktop), click inside the main portion of the select box. If any of the desktop is in view, you'll be able to see the change.

Continue clicking through the rest of the preprogrammed patterns. Eventually, after 37 clicks, you'll wind up with the 50-percent gray screen once again.

If you get a bit overzealous with clicking the menu bar and whip past the pattern you want, you don't have to go through the set of 38 over again. Instead, click in the left side of the toy menu bar. This backs you up through the preprogrammed patterns.

If you spot a pattern you like, but it's not perfect, you can change it. With the pointer placed in the pattern box, like the one in Figure 6-39, click dots to erase them, click any white area to create new dots.

When you get the pattern just right, click in the main portion of the select box. Your new pattern will splash its way all over the Macintosh screen.

Whatever you choose as your desktop pattern will remain until you change it again or start the Mac with another Startup disk.

Incidentally, even though you may have edited an existing pattern, you haven't permanently changed it. To get it back, step one pattern forward, then one back (click on the right side of the mini-menu bar; then click on the left side). Your edited version will disappear; the original preprogrammed one will be as good as new.

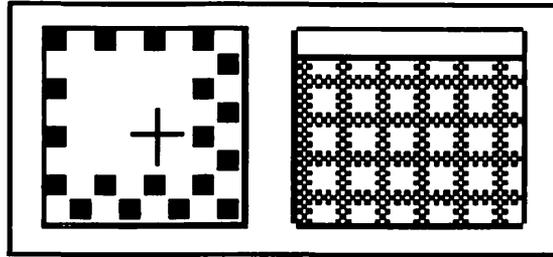


Fig. 6-39. Edit the desktop pattern using the mouse.

While the Mac's multipattern personality may be useful in some cases, most patterns are unusable for desktops because they tend to be extremely distracting. Imagine staring at a mad crisscross of lines all day long, or a desktop that looks like a piece of rattan furniture. For best results, stick with the 50-percent gray pattern.

JUST THE BEGINNING

Congratulations. With this chapter finished, you've learned everything you *really* need to know about the Apple Macintosh to use it effectively. Yet we've only touched upon the true power of the Mac.

To investigate more, let's see how to use the Mac in everyday situations, using application programs. The next three chapters are for this very purpose. They introduce three popular optional programs for the Mac: MacWrite, for word processing, MacPaint, for creating freehand sketches and Multiplan, for manipulating figures in a spreadsheet format.

Ooops! Almost forgot. There's one last desktop accessory that may interest you. It's marked Puzzle. Go ahead. Call it up. Using the "blank" to provide maneuvering space, move the puzzle squares around until you have them arranged in the preselected numerical order of your choice. Remember this one when you need a diversion.

An Introduction to MacPaint

The MacPaint program for the Macintosh provides you with a very versatile set of tools for graphic expression. What's more, MacPaint is easy to learn and use, so art doesn't have to be difficult.

As you become an accomplished MacPainter, you may discover talents you didn't even know you possessed. Remember, Walt Disney started doodling on scraps of paper. For that matter, Pablo Picasso entered the world of art by making little books of line drawings and commentary.

Whether you consider yourself an artist or you just like to play around with a sketch pad, MacPaint is electronic manna from graphics heaven.

The best part is that there are no brushes to clean, no pencils to sharpen, no stencils to cut. And you can integrate text in myriad styles, directly onto or into your graphic creations. The integration of words and pictures is particularly helpful if your drawing needs a label to help the viewer figure out what he or she is viewing — whether it be a horse, your Uncle Jake, a Tahitian sunset, or your latest invention.

Dare to experiment. No matter what you do, you can't ruin anything or waste paper. MacPaint is as indestructible as it is inspirational.

What follows is an introduction to MacPaint, to get you started in your new-found artistic career.

STARTING MACPAINT

The several ways to start MacPaint all share the requirement of turning on the Mac's power and inserting the MacPaint program disk.

To create a new MacPaint document from the desktop, open the MacWrite/MacPaint disk icon (by double-clicking it or selecting it and choosing the File//Open command). The result will look like Figure 7-1.

Now that the disk is opened, start MacPaint by double-clicking the MacPaint icon or select the MacPaint icon and choose the File//Open command. Allow a few seconds for the program to load (and for Bill Atkinson to take credit), and your screen will look like Figure 7-2.

If, instead of starting a new document, you're going to re-edit an existing MacPaint file, open it instead. The MacPaint program will automatically start and the document will be placed in MacPaint, ready for work.

MacTip 7-1

To open a new file after you are already in MacPaint, close the current window by clicking in the close box (or use the File//Close command). Then use the File//New command.

To open an existing file when you're already in MacPaint, close the window by clicking the close box, and use the File//Open command, as shown in Figure 7-3. A dialog box will appear. Scroll until you find the file you want, click it, and then click the Open button.

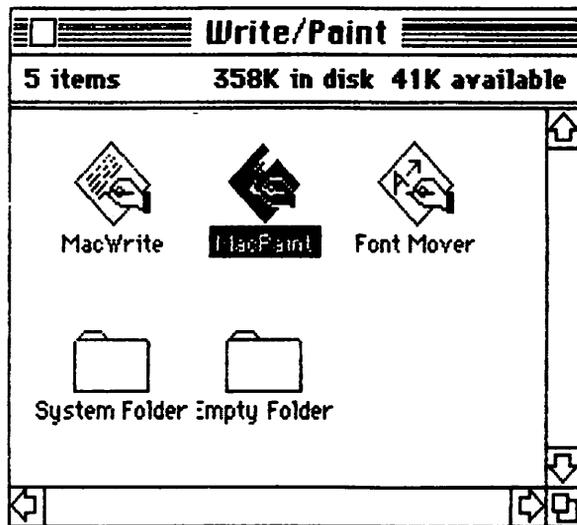


Fig. 7-1. The MacPaint icon. Double-click it to start MacPaint, or click it and then choose the File//Open command.

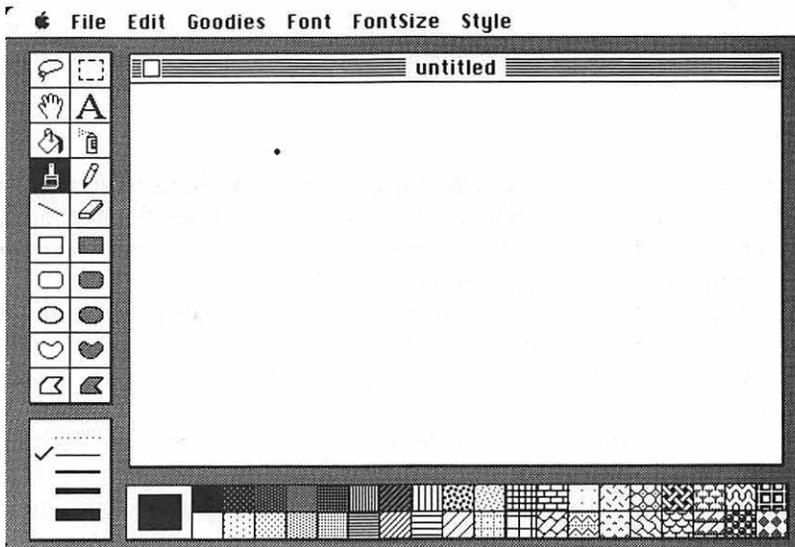


Fig. 7-2. The MacPaint screen. Note the set of patterns on the bottom and the two rows of icons on the left.

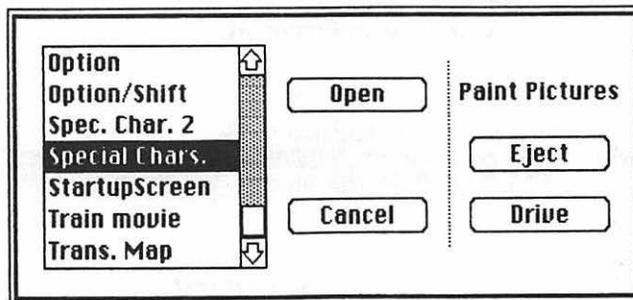


Fig. 7-3. When opening a document after you're already in MacPaint, choose the File//Close command, then select the document you want by clicking its title. Follow up by clicking the Open button.

MACPAINT'S EASEL

The main MacPaint window, shown in Figure 7-2, is the painter's easel, the artist's sketch pad. This large window (3¼-inches by 5½-inches) lets you see that portion of the 8½-inch by 11-inch blank page on which you may work. You can draw lines, write words, sculpt textures, and more on the portion of the page visible through this window.

You can, as explained later, scroll to other parts of the page, or move the view

of the window. As you can see by looking at Figures 7-4 and 7-5, the window lets you see only a part of the page; the working portion that is accessible for graphic creation or alteration. More about this in a bit.

TOOLS OF THE TRADE

On the left side of the MacPaint window is a block of twenty icons representing MacPaint's *tools*. When it's in the drawing window, the mouse pointer can assume the form and function of any of these tools. The Goodies//Introduction command provides the tool summary displayed in Figure 7-6.

Looking at Figure 7-6, you'll see the twenty tools grouped together on the left. In the upper right of this window (and the lower left part of the MacPaint screen) is the line and border-width palette. The third group of MacPaint options is contained in the patterns palette.

At any one time you can use one item (and only one item) from each of these three groups. You'll always have one tool, one line width, and one current pattern selected (however, you don't have to make use of them all every time you use the MacPaint program).

DRAWING AND PAINTING

MacPaint gives the term "mixed media" a whole new meaning in the visual arts. You can mix drawing and painting techniques by switching from one tool to the other. The five tools that let you draw and paint are:

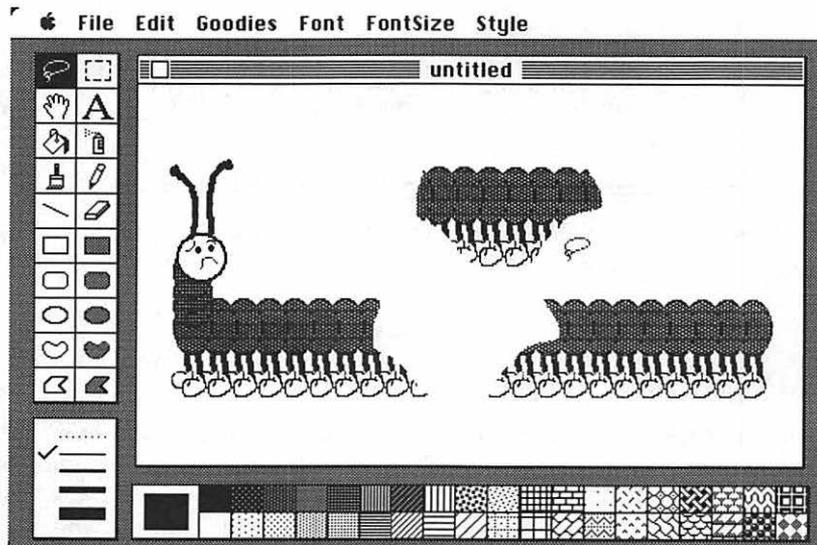


Fig. 7-4. The MacPaint window is only 3¼-inches by 5½-inches.

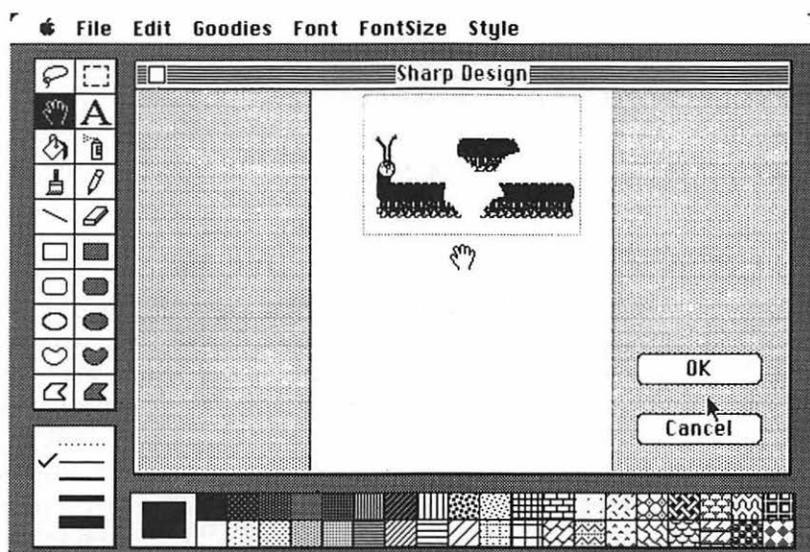


Fig. 7-5. You can move the window (or the drawing) to create a picture up to 8½- by 11-inches in size.

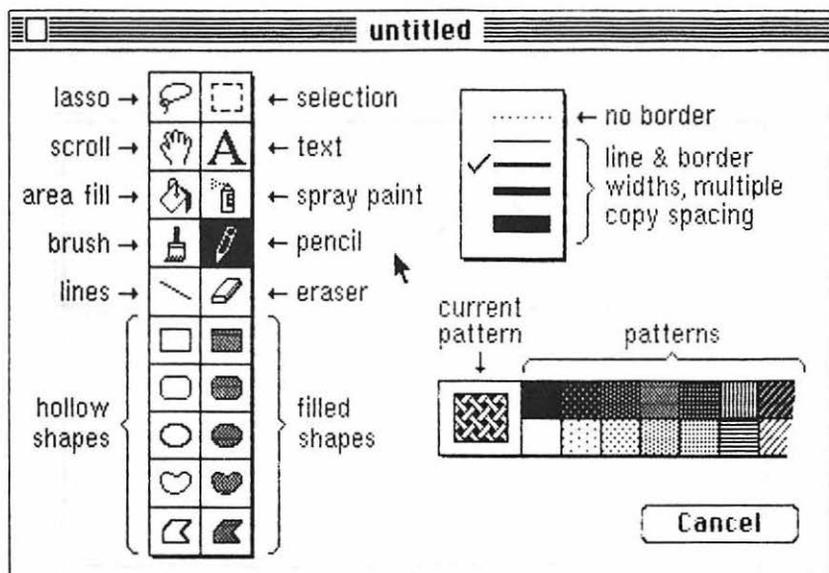


Fig. 7-6. The Goodies//Introduction window.

- The paintbrush, for painting with any of 32 different brush tips and with any of 38 patterns (you can also create your own paint pattern; read more to find out how).
- The pencil, for rough sketches or detailed work.
- The paint bucket, for pouring patterns.
- The spray can, for “touch-up” painting and graffiti artists.
- The straight-line ruler, for drawing perfect computer-controlled lines.

The Paint Brush

The paintbrush tool is provided when MacPaint is first started (you can change it, of course, by clicking one of the other tools). Move the mouse pointer over the easel; the pointer turns into a round dot. Press the mouse button and move the mouse. Paint “flows” from the pointer and onto the easel. Let go of the button, and the paint stops.

If you don’t like the brush you’re using, double-click on the paintbrush icon, or choose the Goodies//Brush Shapes command. You’re greeted with a choice of 32 different brush shapes and widths (Figure 7-7). The currently selected shape has a square around it.

To choose another tip shape, click on it. The brush shape window will disappear. By the way, you must click on a tip to get rid of the window. If you decide you really don’t want to change anything, click within the box that surrounds the current tip.

The paint you apply to the easel comes from the patterns palette. The currently selected pattern is in the large window located on the leftmost edge of the patterns

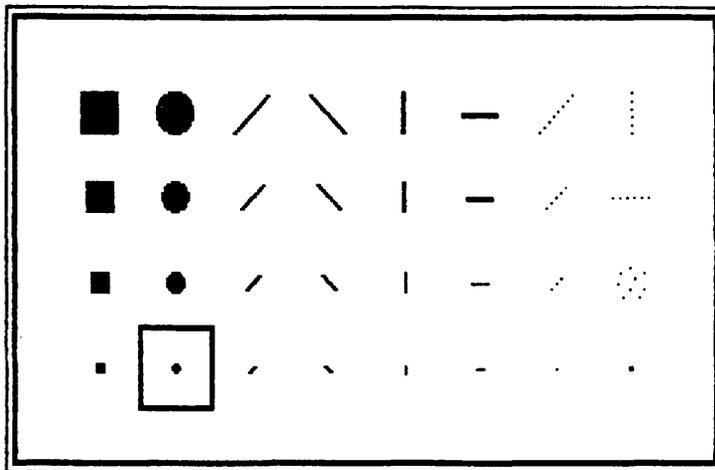


Fig. 7-7. Click on another shape to select a new brush tip.

palette. When MacPaint starts, it thinks you'll want to paint with black. But any of the other patterns will do, too. To choose another pattern, just click in the appropriate pattern box. More about patterns and textures later.

The Pencil

The pencil works much like a common preelectronic #2 lead pencil, producing a line on the MacPaint easel (see Figure 7-8). Against a white background, the pencil produces a black image. When drawing over a black background, the pencil provides a sharp, white line.

Unlike the paintbrush tool, the pencil has only one tip. In addition, the pencil cannot draw with a pattern.

The Paint Bucket

The paint bucket is labelled "area fill" by Apple. It's job is self-explanatory: you use it to fill an area with the currently selected pattern. To fill the entire window with a pattern, or a portion of it that has defined boundaries, follow this simple process:

1. First, click the paint bucket tool.
2. Click the pattern you want (your selection appears in the current pattern box on the left side of the patterns palette).
3. Move the pointer (now shaped like a paint bucket) to the area you want to fill, and click (see Figure 7-9).

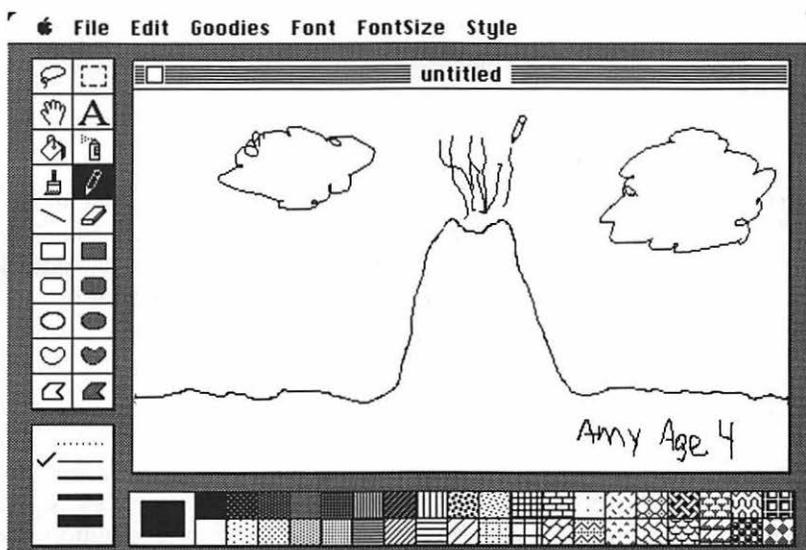


Fig. 7-8. Use the pencil to draw thin lines.

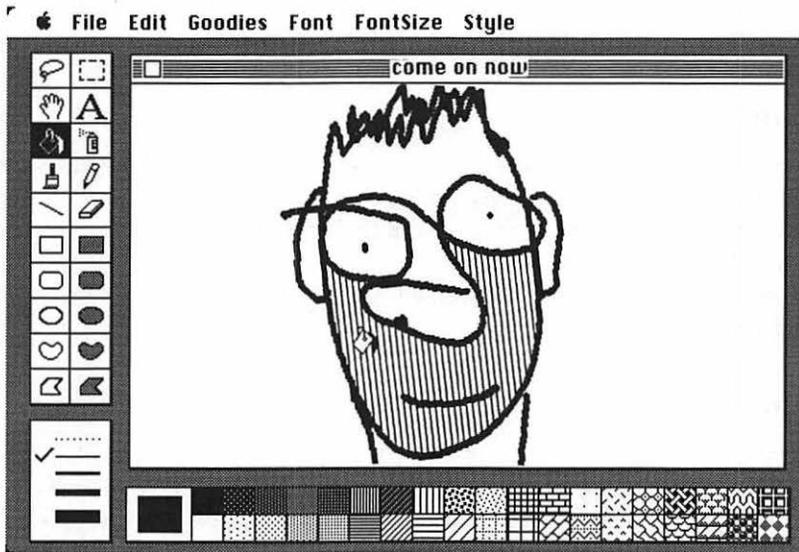


Fig. 7-9. Use the paint bucket to fill any area with the currently selected pattern.

When using the paint bucket tool to fill a shape, be sure that the shape has no gaps in its outline. If there are any gaps, the paint will come oozing out, filling the entire easel. If this happens, immediately choose the Undo command from the Edit menu. Then inspect the shape closely to find its hole(s), and repair them before refilling. (MacPaint has a useful feature called FatBits to make close examination easy. Read about it later in the chapter.)

The Spray Can

The spray can works like an artist's airbrush. Click the spray can, choose a pattern, and point to where you want to paint. Then simply press the mouse button and drag the spray over the area you want painted (see Figure 7-10). A quick pass gives a light touch of paint; holding the sprayer over the same spot or moving it slowly completely covers ("guaranteed one coat; lasts 20 years . . .").

The Straightedge Line

The straightedge line tool works like a straightedge ruler. Click the line icon, then position the crosshair-style pointer where you want the line to begin. Drag the mouse and a straight line follows. When you release the mouse button, the line stays put (Figure 7-11). By the way, until you let up on the mouse button, you can change the line—its length and orientation.

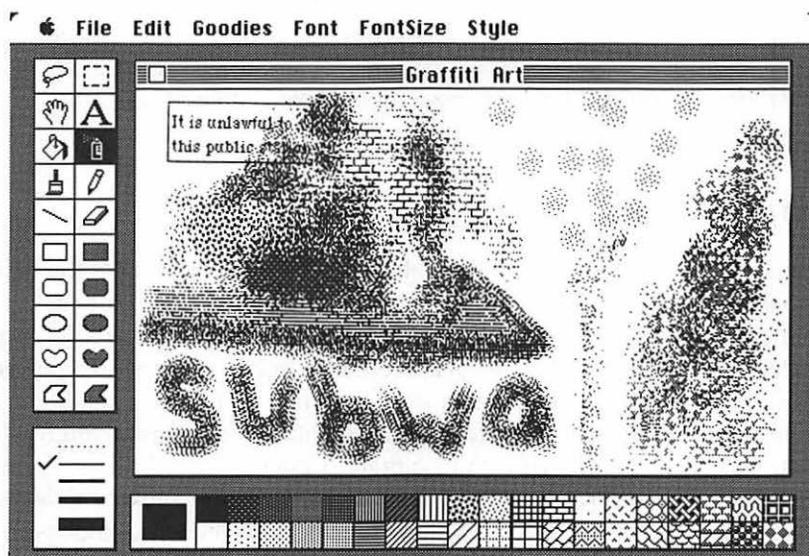


Fig. 7-10. The spray can works much like an airbrush (it's spray can't be adjusted, unfortunately).

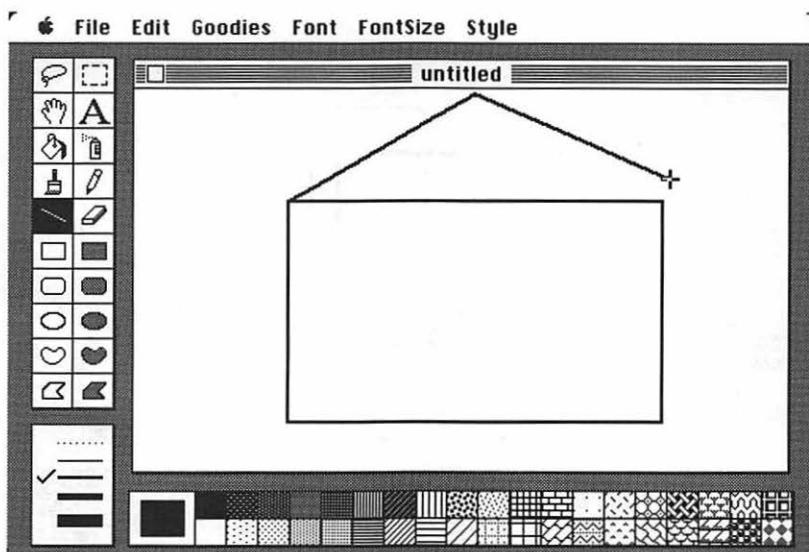


Fig. 7-11. Use the line tool to create straightedge lines. Keep the mouse button pressed down as you drag the pointer until the line is just right.

MacTip 7-2

For mechanical drawings (used in engineering, architecture, and perspective art), use the line tool in conjunction with the Goodies//Grid command and the “constrain” feature (that is, holding down the Shift key while drawing the line).

CREATING SHAPES

Ten shapes are provided in the tool box. When you click any of the hollow or filled shape icons, the pointer becomes a pair of crosshairs—a plus sign.

You can create a square or rectangle, a cut-corner (picture frame) square or rectangle, or a circle or oval. You can also create a freeform shape or a polygon. All of these “hollow” shapes can be generated in any of the four solid-line widths shown in the line and border-width box (lower left corner). And if you hold down the Option key while dragging the pointer to create these hollow shapes, the border will be in the current pattern! Several examples are shown in Figure 7-12.

The filled shapes work like the hollow shapes, but when you draw with them, their insides are automatically filled with the current pattern (Figure 7-13).

In addition to being able to choose one of four border widths, you can select the dotted-line option from the line-width box and your filled shapes will have no borders at all.

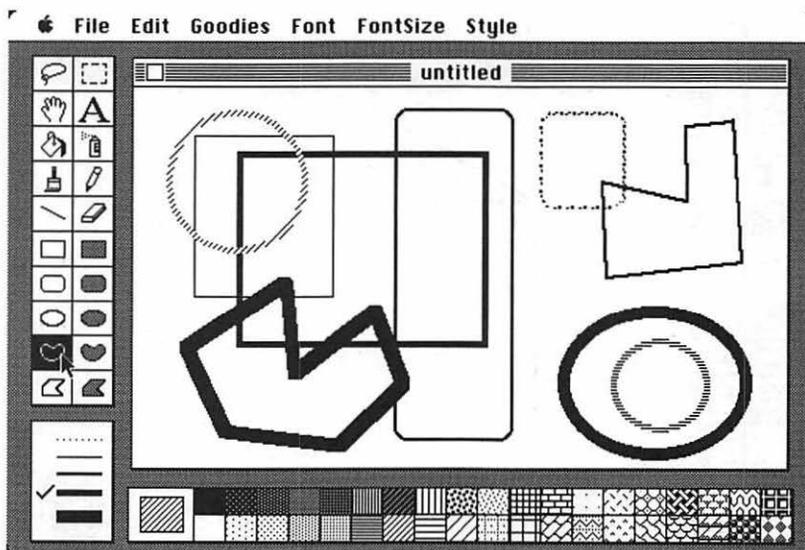


Fig. 7-12. Use any of the five unfilled shapes to create boxes, circles, rectangles, polygons, and freeform designs.

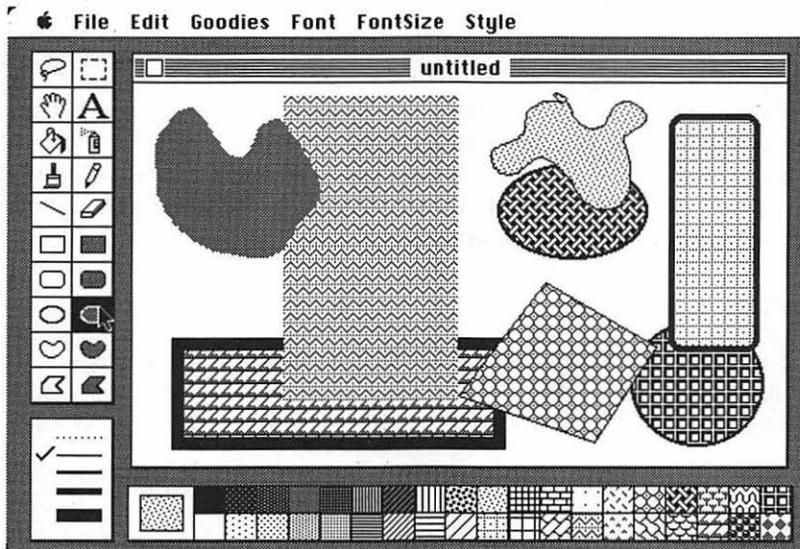


Fig. 7-13. Use any of the five filled shapes to add the current pattern inside the shape.

MacTip 7-3

You'll need some practice in laying down the filled and hollow shapes exactly where you want them. The rectangles are the easiest: as you drag the mouse, the rectangles build from one corner.

The circles and ovals are trickier, in that sometimes the starting point is not even within the finished form. Until you gain skill, it might be easier to draw the circles on a blank part of the easel and then drag them into position using the marquee and lasso tools (both described later in this chapter).

TEXTURES AND PATTERNS

At this point, if you aren't amazed at what MacPaint can do, you haven't been paying attention (or you know all about it already).

There's more: 38 patterns and textures are at your fingertips. As you've seen, you can apply them with the paint bucket, the spray can, the paintbrush, the borders of the hollow shapes, and of course, the centers of the filled shapes. Perhaps the best part about the patterns is that they can be edited. It's all done with the Goodies//Edit Pattern command.

Choosing the Goodies//Edit Pattern command introduces the dialog box

featured in Figure 7-14. The box over the “OK” shows a close-up of the current pattern. The box over the “Cancel” shows how that pattern will appear on the electronic easel.

All patterns are made up of a series of strategically placed dots. For this figure, we started out with the all-black pattern, and clicked on some of the dots (squares). This had the effect of erasing them. Mistakes were corrected—dots added again—by clicking in the white portion (in other words, click on white to make dots; click on black to erase dots). When all was finished, the new pattern was accepted by clicking the “OK” button.

EDITING THE PICTURE

The Edit menu and the several editing tools provided in the tool box add another dimension to the creative power of MacPaint. Used to edit a MacPaint picture are these tools and commands:

- Lasso tool—to move objects around the easel and to select parts of the drawing to be cut or copied.
- Marquee tool—also to move objects around the easel and to select parts of the drawing to be cut or copied.
- Eraser tool—to erase parts of the drawing.
- Edit//Undo command—to reverse the last editing or drawing action.

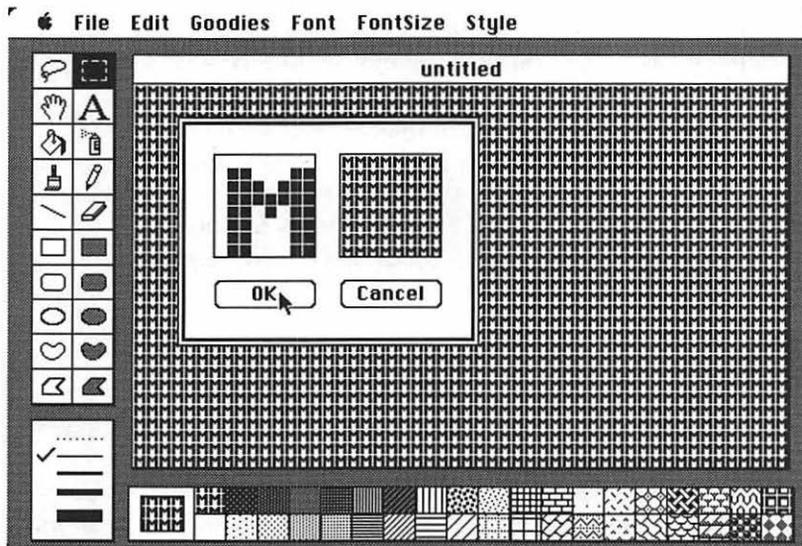


Fig. 7-14. Use the pattern edit box to make changes to the currently selected pattern. Use the mouse in the left square to draw or edit the pattern. A sample of how the pattern will look appears in the right square.

- **Edit//Cut** command—to cut a selected object from the easel and place it in the Clipboard.
- **Edit//Copy** command—to copy a selected object on the easel into the Clipboard.
- **Edit//Paste** command—to place a cut or copied object stored in the Clipboard onto the easel.
- **Edit//Clear** command—to cut a selected object from the easel but not place it in the Clipboard.
- **Edit//Invert** command—to reverse the selected image (black to white; white to black) of an object.
- **Edit//Fill** command, to fill the selected area with the current pattern.
- **Edit//Trace Edges**—to produce an outline around a selected object.
- **Edit//Flip Horizontal** and **Edit//Flip Vertical**—to flip a selected object around a vertical or horizontal axis.
- **Edit//Rotate**—to rotate a selected object in 45 degree intervals.

MacTip 7-4

After you edit the pattern and install it by clicking the OK button, you can edit another one if you wish. When you close the picture document and exit MacPaint, the edited patterns on your drawing and in the pattern palette are stored with the document. The patterns will reappear when you reopen the document.

When you select the eraser tool, the pointer becomes a white square that erases everything in its path (see Figure 7-15). You control its path and action, of course, by moving the mouse. When the button is down, the eraser erases.

MacTip 7-5

There are about 15 ways to erase:

1. “White out” with:
 - White pencil
 - White paintbrush
 - White spray paint
 - White paint bucket
 - Any of the five solid forms, with a white pattern, with or without borders
2. Drag the eraser over the area.
3. Double-click the eraser to erase the entire window.
4. Select an area using the lasso, then strike the Backspace key.
5. Select an area using the lasso, then choose the **Edit//Clear** command.

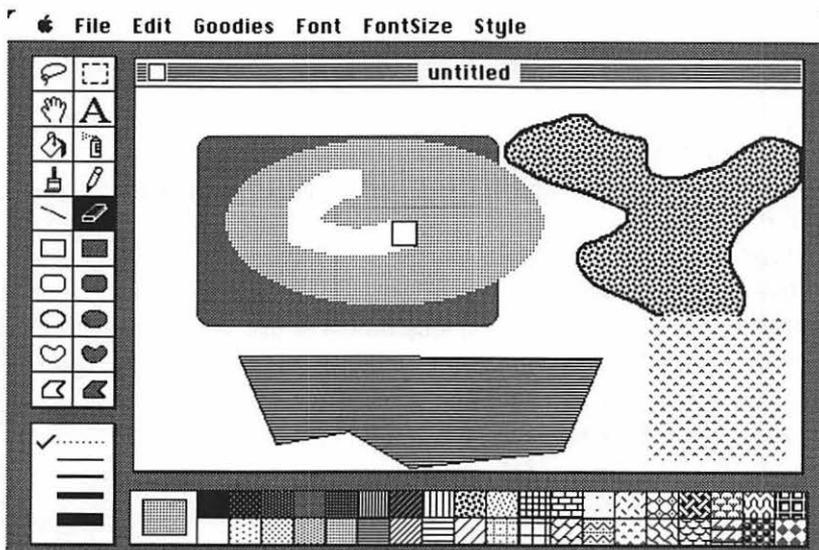


Fig. 7-15. Click the eraser tool and drag it across any part of the drawing you want to delete.

6. Select an area using the marquee, then strike the Backspace key.
7. Select an area using the marquee, then choose the Edit//Clear command.
8. Double-click the marquee to select the entire window, then hit the Backspace key.
9. Double-click the marquee tool, then choose the Edit//Clear command.
10. Backspace to erase a selection.
11. Choose the Edit//Undo command to erase (undo) the last action.
12. Press the tilde (~) key to erase (undo) the last action.
13. Choose the File//Revert command to erase everything since the last save.
14. Double-click the hand tool to show page then drag the image off the page.
15. Choose the Goodies//Show Page command and drag the image off the page.

The lasso tool (in the upper left corner of the toolbox) lets you define an irregularly shaped part of a drawing or painting and then move that part intact,

placing it anywhere you wish within the window. Lassoing part of a drawing also selects it for any of several edit commands: Edit//Cut, Edit//Copy, Edit//Invert, and so forth.

Similarly, the marquee (next to the lasso) lets you define a rectangular or square block on the easel, and then move it to another place. It also selects a part of a drawing for any of several edit commands.

If there is a background in the part of the drawing/painting you select, the marquee includes that background in the defined selection. The lasso, on the other hand, “pulls tight” around the item, excluding the background, so only the item itself is included.

MacTip 7-6

You can use the marquee to stretch or shrink the selection, too (see Figure 7-16). Place the pointer on one side or corner of the marquee (be sure the pointer is arrow shaped or it won't work), hold down the Command key, and drag. If you don't like the way the selection was enlarged or reduced, choose the Edit//Undo command and try again.

As mentioned previously, when part of the picture is enclosed in the lasso or marquee, you can use the Edit menu commands (you can use the Edit//Undo command at just about any time, to undo mistakes).

To make a copy of the enclosed piece of picture, for example, choose the

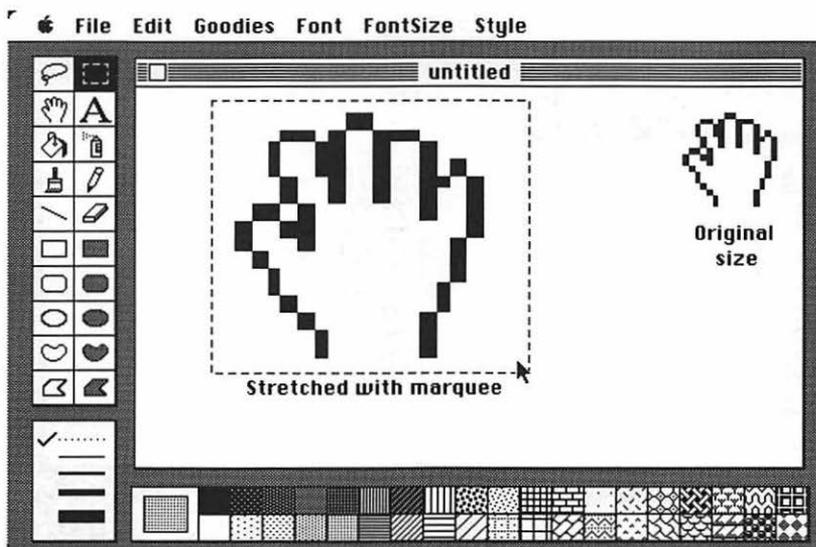


Fig. 7-16. Use the marquee to stretch or shrink a part of the drawing. Keep the mouse button down until you've finished resizing.

Edit//Copy command (Figure 7-17). This places the item enclosed in the lasso or marquee into the Clipboard, where it can be used within the current MacPaint document, in another document, or even in another program, such as MacWrite. (Look for more about the Clipboard in Chapter 5, “Advanced Topics.”)

Likewise, choose the Edit//Cut command to take the item out of the picture, but still save it to the Clipboard. If you want to take an item out, but don’t want to save it to the Clipboard, choose the Edit//Clear command.

With something in the Clipboard, you can use the Edit//Paste command to place it back into the MacPaint easel. Just give the Edit//Paste command. The item will appear in the easel.

If you don’t like where the item is in the window, move it. Place the pointer over the item and drag it (make sure the pointer is in the shape of an arrow before you begin dragging).

If you want a negative version of the image selected in the lasso or marquee, give the Edit//Invert command. As shown in Figure 7-18, the enclosed area turns into a negative image. You can restore it to its original polarity by choosing the Edit//Invert command once again.

The Edit//Trace Edges command comes in handy when you are highlighting the object enclosed within the marquee or lasso. Tracing the edges creates a kind of pop art. Figure 7-19 shows our original robot drawing after one treatment with Edit//Trace Edges. For a wild and way-out look, repeat the Edit//Trace Edges command.

Figure 7-20 shows the result of the Edit//Flip Vertical command, used on our

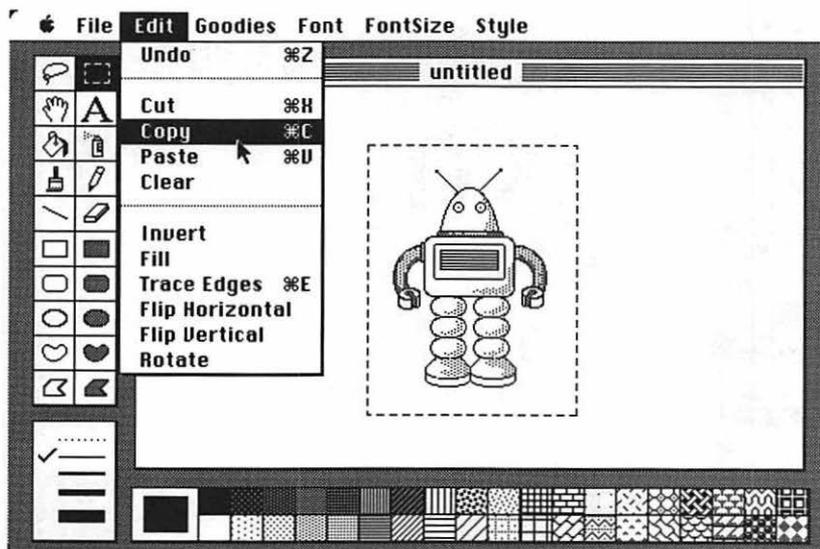


Fig. 7-17. The marquee and lasso let you use Edit//Cut and Edit//Copy, among other commands.

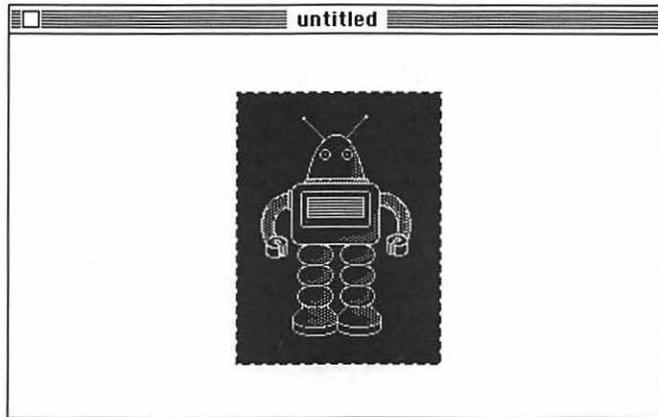


Fig. 7-18. The result of inverting.

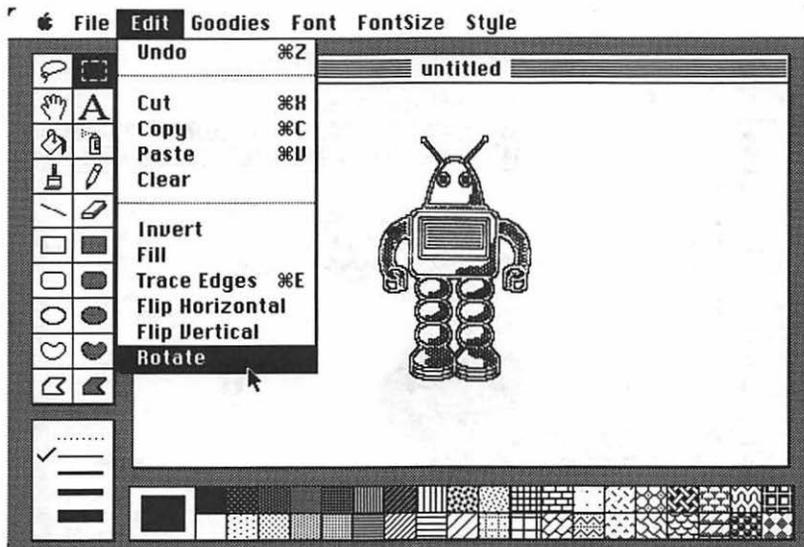


Fig. 7-19. The result of tracing.

original robot. Enclose the object to be flipped top for bottom, and give the command. To turn the image side to side, choose Flip Horizontal from the Edit menu.

After you define a portion of the window with the marquee, you can use Edit// Rotate to turn the selected image on edge, so it is at right angles to its former position (see Figure 7-21). Keep Rotating to return the selection to its original upright position.

By the way, notice that Trace Edges, Flip Horizontal, Flip Vertical, and Rotate are not available when an object is lassoed. These commands can be used only when you enclose the item with the marquee.

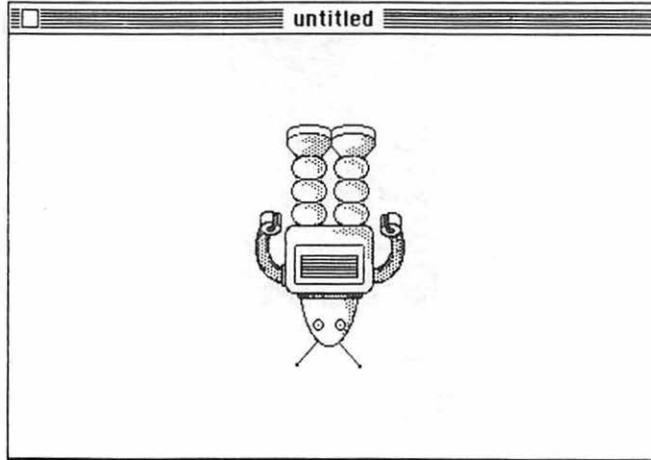


Fig. 7-20. The result of flipping.

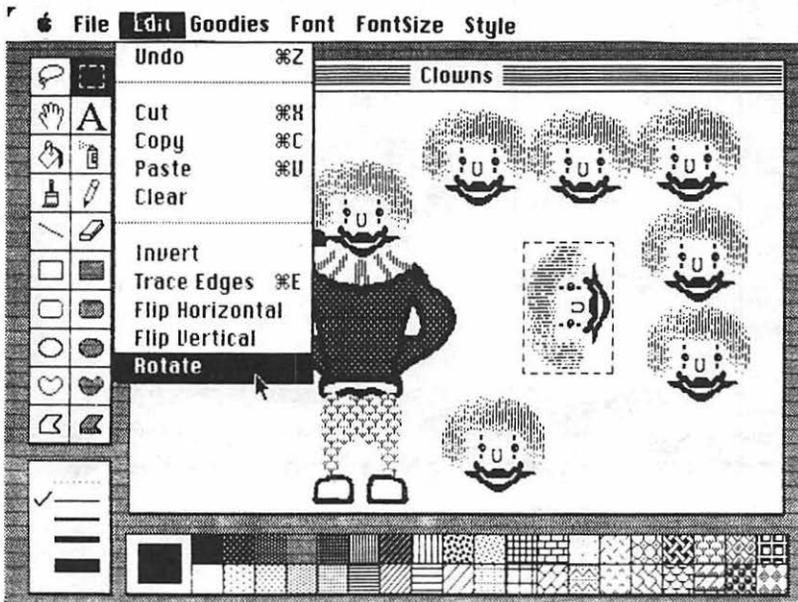


Fig. 7-21. Select the part of the drawing to rotate and give the Edit//Rotate command. Keep giving the command to continue rotating.

MORE THAN WORDS

A picture *may* be worth a thousand words, but some pictures just aren't the same without literary prose. Another tool in the tool box palette is the **A** icon, used for writing text (the **A** probably stands for Alphabet).

Click the **A** icon, and then click anywhere in the easel. An insertion point will appear. Start typing. The text will appear at the insertion point (see Figure 7-22).

MacPaint offers you several different typeface fonts to choose from. These fonts, some of which are illustrated in Figure 7-23, range from the seriousness of “New York” and “Toronto” to the highly stylistic forms of “Venice” and “London,” to the outrageous fun of “San Francisco.”

Each of these fonts can be any of eight sizes, as shown in Figure 7-24. Type sizes are expressed in points, with approximately 72 points equaling one inch.

MacTip 7-7

MacPaint’s text feature is great for captions, callouts, and annotations, but there are limitations:

- There is no “word wrap” feature, so you must manually start each line of text.
- If you type off the page, that text is lost and must be retyped.

Text entered via the **A** icon can be set in regular style (“plain”), or bold, italic, underline, outline, or shadow. All are set by choosing one of the commands in the Style menu (Figure 7-25). You can create combinations of styles, such as bold-italic, or underline-shadow, or bold-italic-underline-shadow. Altogether, there are 27 combinations of styles for each size and font. (When you want to go back to plain text, do so by choosing the Style/Plain command.)

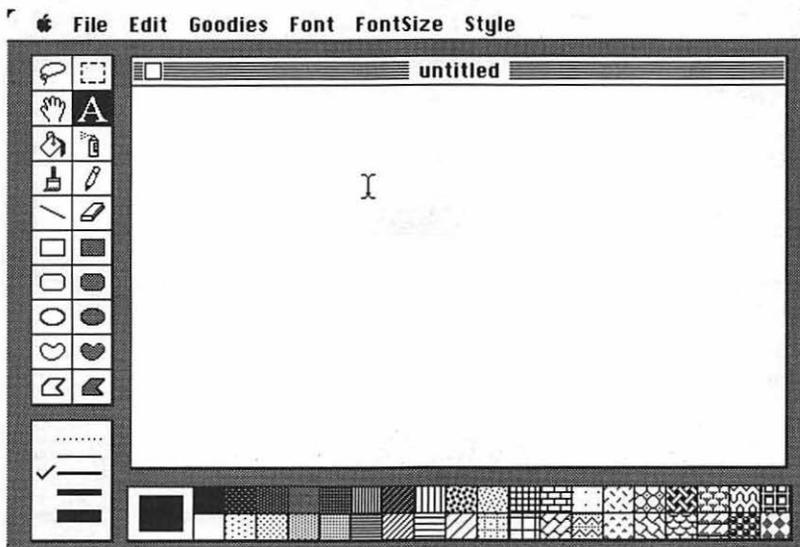


Fig. 7-22. Click the mouse where you want text to be inserted and start typing.



Fig. 7-23. A sampling of fonts available with MacPaint. Choose any of the fonts from the Fonts menu.

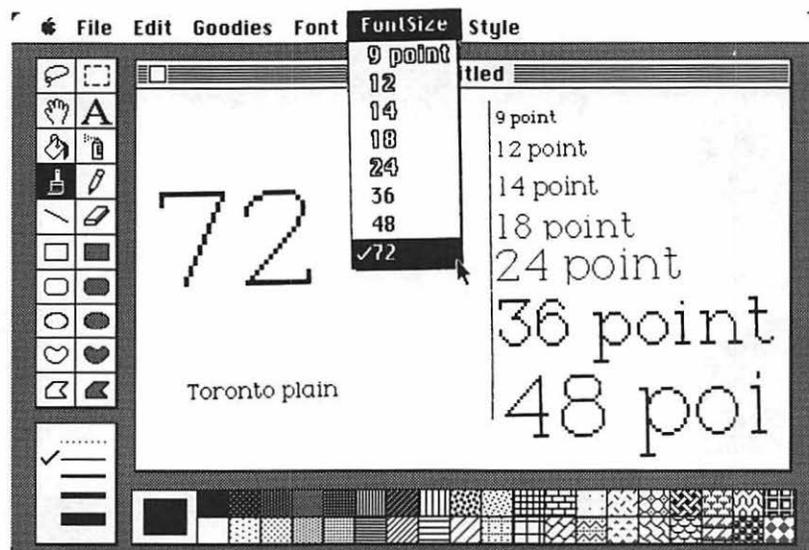


Fig. 7-24. Fonts can be sized between 9 and 72 points (72 points equals about one inch). Choose a size from the FontSize menu. (Actual sizes not shown)

Style	
✓Plain	⌘P
Bold	⌘B
<i>Italic</i>	⌘I
<u>Underline</u>	⌘U
Outline	⌘O
Shadow	⌘S

✓Align Left	⌘L
Align Middle	⌘M
Align Right	⌘R

Fig. 7-25. Add emphasis to any of the fonts with the commands in the Style menu.

As if that were not enough, you can have your text aligned left (also called left justified or flush left), aligned right, or centered. These options, too, are available with the Style menu.

All told, there are over 5,000 possible combinations of type fonts, font sizes, and alignments.

SOME MACPAINT GOODIES

Don't forget to use the many "goodies" offered by MacPaint. Appropriately enough, these are available under the Goodies menu. We've seen some of them already. Let's look at three more.

The Grid

The Grid is a pattern of invisible horizontal and vertical guiding lines. Brought into use by choosing the Goodies//Grid command, this feature is great when you need to add precision to your drawings and paintings.

For example, you can create several lines, all the same length. Just choose the Goodies//Grid command (a checkmark will appear beside it, showing you that it's "on"), and use the line tool to draw some lines. Let the Grid feature be your ruler (see Figure 7-26).

FatBits

FatBits is a supermagnifying glass that magnifies a small portion of the easel to full-screen size, so that the individual dots that make up a picture are clear and

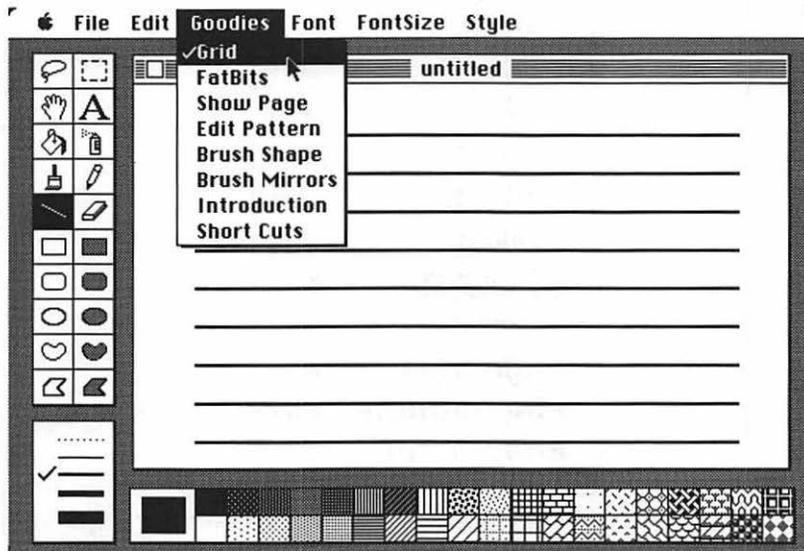


Fig. 7-26. Use the Goodies//Grid command to control many of MacPaint's drawing tools.

easily manipulated. This feature is great for detailed drawings or for "microsurgery" on problem areas in a half-finished painting. Figure 7-27 shows an image before (a) and after (b) magnification with FatBits.

To use FatBits, select the point you want to view at supermagnification (use a nonmarking tool, such as the lasso or marquee). After getting into the FatBits mode, use the pencil (or another drawing tool) to change the individual dots. Click on a dot to erase it; click on white to draw more dots (see Figure 7-28). If you want to change many dots at once, drag the mouse.

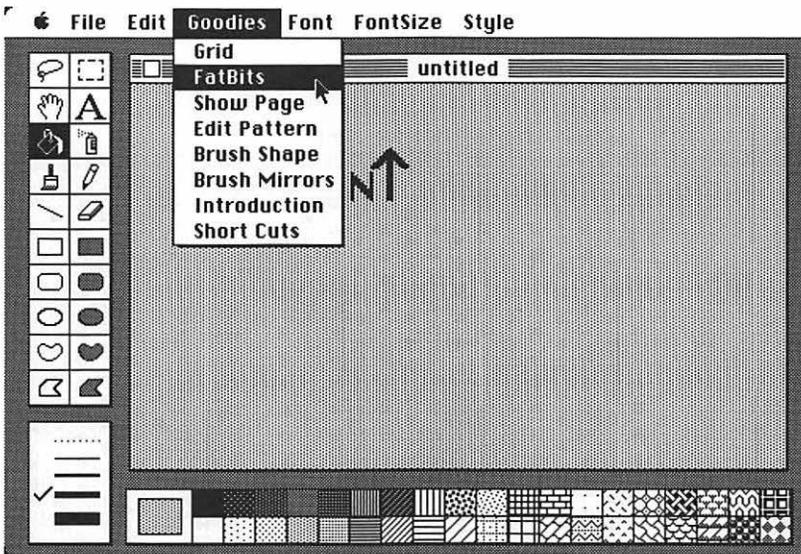
Note that in Figure 7-28, the modified drawing appears at its normal-scale size in the upper left corner of the easel.

In FatBits, you can view approximately 1½ percent of the total window at one time, or approximately ⅓ of 1 percent of the total accessible area on a full-size page. You can scroll the FatBits image up and down, left and right to see more area, as described in "The Hand Tool," later in this section.

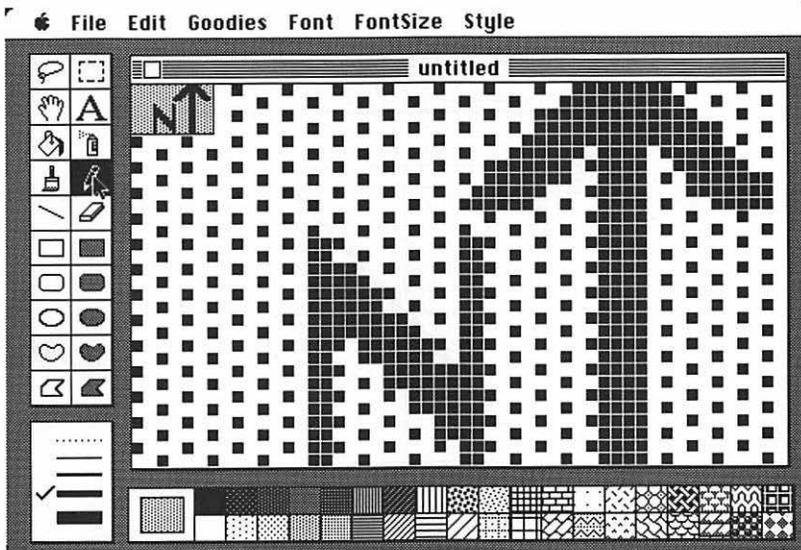
When you've finished with FatBits, click anywhere in the postage stamp-size section in the upper left corner of the easel.

Brush Mirrors

Brush Mirrors lets you create, among other things, your own ink blots. When you choose the Goodies//Brush Mirrors command, you'll see the dialog box shown in Figure 7-29. Select one or more of the four transect lines to give you



(A)



(B)

Fig. 7-27. (A) The screen before Goodies//FatBits.
(B) The picture zoomed in.

single-mirror or multiple-mirror drawing effects. A multiple-mirror effect is shown in Figure 7-30.

A single mirror gives you an equal and opposite copy of whatever you draw

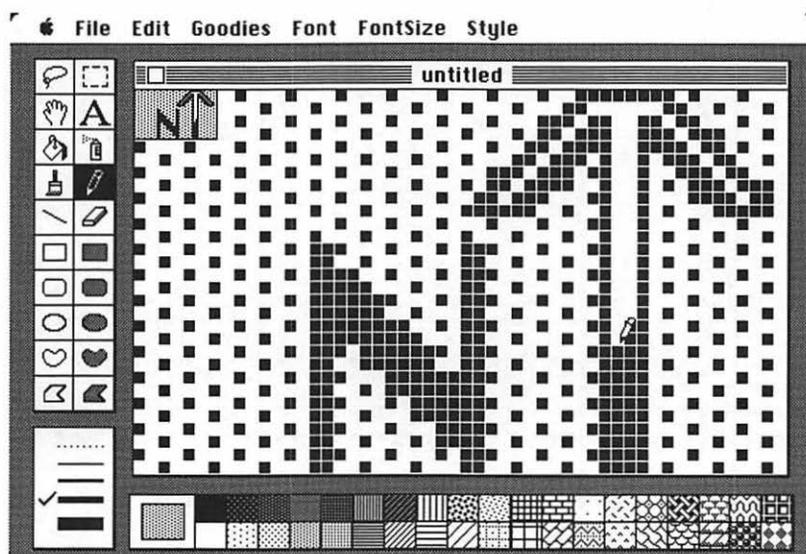


Fig. 7-28. Use the mouse to add or delete individual pinpoints of the picture.

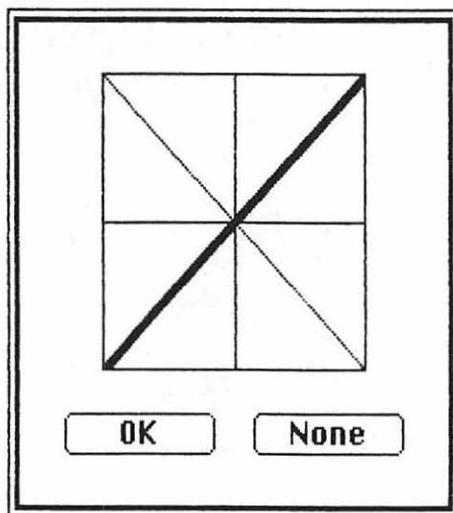


Fig. 7-29. Click one of the four transect lines to create various brush mirror effects. When you've finished selecting, click the OK button. To stop mirroring, click None.

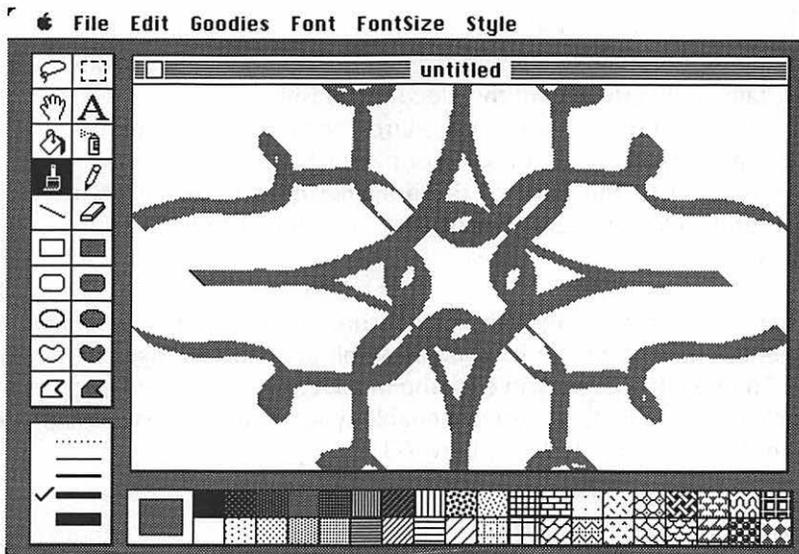


Fig. 7-30. Using Goodies//Brush Mirrors with all four transect lines selected.

with the paintbrush. (Only the paintbrush tool works with mirrors, which is probably why it's called Brush Mirrors.)

When you select all four transect lines, the image appears as eight equal reflections—much as it would in a kaleidoscope.

When you want to stop mirrored painting, choose the Goodies//Brush Mirrors command once again and click in the Cancel button.

MOVING THE PICTURE AROUND

As you know by now, the total page size can be bigger than the MacPaint easel. You can draw on one large 8½ by 11-inch piece of paper, but you can see only one small section of it at a time. The challenge, then, is to move the page beneath the window, or move the window above the page. There are two ways of doing this. One is by using the hand tool; the other is by using the Goodies//Show Page command.

The Hand Tool

The hand tool is a convenient vehicle for moving the drawing paper beneath the main MacPaint window. Imagine, if you will, that MacPaint's electronic easel is a large sheet of paper, upon which you can paint or draw. Also imagine that hovering above it is a glassless frame, such as a picture frame or window frame. Balanced on the edges of the frame are the tools and palettes.

MacTip 7-8

When you use the Brush Mirrors feature, the junction of the mirrored images is approximately the midpoint (horizontally and vertically) of the electronic easel.

If you want to use Brush Mirrors to create a symmetrical element for a larger drawing or painting, it's probably easier to scroll to the edge of the drawing, create the mirrored form, select it (lasso or marquee), and drag it to where you want it.

The hand tool lets you put your "hand" through the open window and effortlessly move the paper beneath it. You can scroll up or down, right or left, in any direction. To move the paper you click the hand icon; the pointer becomes a little hand (Apple calls this the Grabber) that enables you to push the page around, even if you're in the FatBits mode (see Figure 7-31).

The Goodies//Page Command

The Goodies//Show Page command gives you a macroscopic view of the page, the image you've painted, and the window that links the page and the image area. Just as the FatBits feature allows you to get microscopically close, the Goodies//Show Page command lets you take a few steps back and view your efforts from a broader perspective. Look at the familiar MacPaint image in Figure 7-32.

With Show Page, you see the picture you're working with on an 8½ by 11-inch piece of paper. You can move the window or the picture.

To move the window (the dotted box on the screen), position the pointer within the box and drag it (Figure 7-33). To move the image on the page, place the pointer anywhere outside the box and drag (Figure 7-34). Should any of the

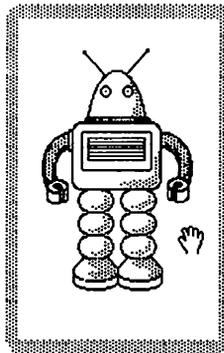


Fig. 7-31. Move the drawing around the window using the hand tool.

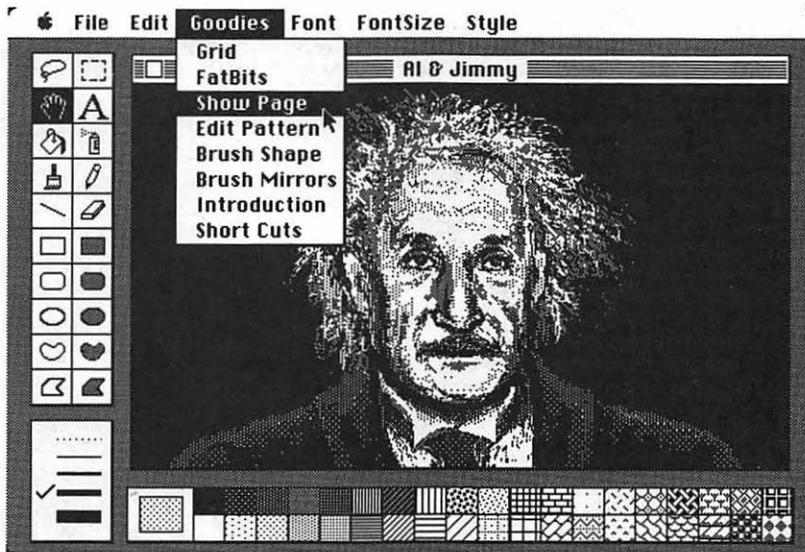


Fig. 7-32. MacPaint window, normal view.

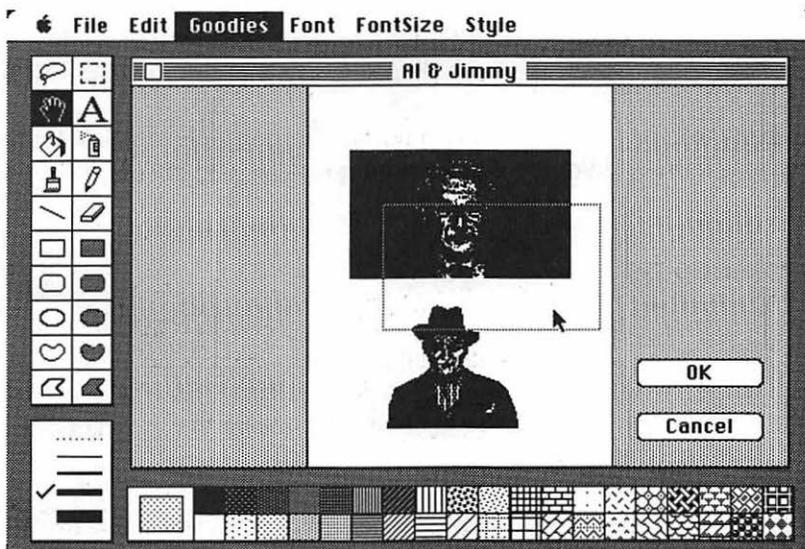


Fig. 7-33. When in the Show Page mode, move the window (to see another part of the picture) by placing the pointer inside the box and dragging.

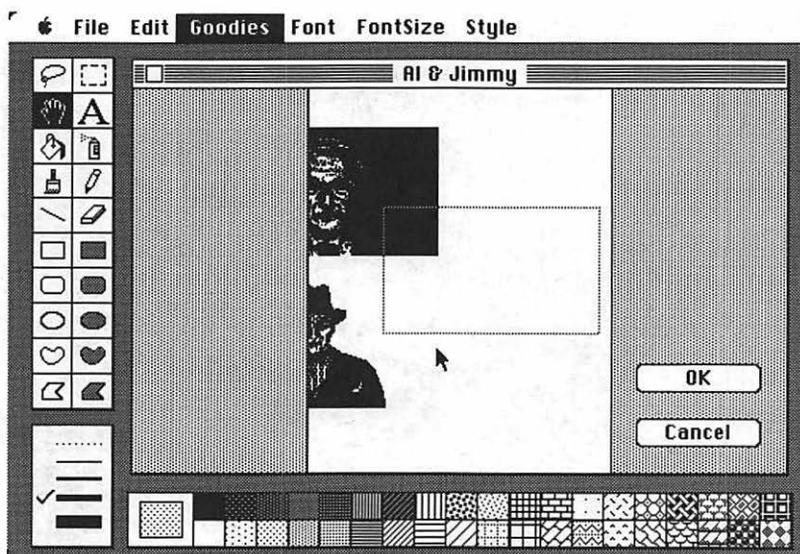


Fig. 7-34. When in the Show Page mode, move the entire picture on the page (to reposition it, for example) by placing the pointer anywhere outside the box and dragging.

drawing go off the page and you don't want it to, get it back now. If you leave Show Page by clicking the OK button, any slipped portion of the drawing will be lost forever.

The ability to move the window is important, for example, if you want to position a drawing at the middle or bottom of a page instead of in the normal top center position.

MacTip 7-9

To eliminate an unwanted drawing, choose Goodies// Show Page, drag the image off the page, and click the OK button. The drawing is gone forever. This is particularly handy when you want to eliminate a drawing that is larger than the window.

Moving the image or the window is necessary if you want to create full-page art. Even though you can work on only part of the picture at a time, you can create parts segmentally, like Michelangelo working on one small part of the Sistine Chapel at a time.

TRICKS AND SHORTCUTS

We've talked about many features, but MacPaint has still more tricks and shortcuts to offer. You don't need to memorize all these shortcuts; in fact, you can refer to MacPaint's shortcuts with the Goodies//Short Cuts command (Figure 7-35).

Double-Click Shortcuts

Double-clicking provides a faster way of getting results than using the menu commands:

- *Double-clicking the hand* takes you to Show Page. It is the same as choosing the Goodies//Show Page command.
- *Double-clicking the paint brush* brings up the brush-shape choice. It is the same as choosing the Goodies//Brush Shapes command.
- *Double-clicking the marquee tool* instantly "selects" the entire MacPaint window. This sets you up for full-window copying, clearing, cutting, or other editing chores.
- *Double-clicking the pencil* puts you into FatBits mode. It is the same as choosing the Goodies//FatBits command. From within FatBits double-click the pencil icon to return to the normal window.
- *Double-clicking the eraser* wipes clean the entire drawing window.
- *Double-clicking any pattern* makes that pattern current and calls up the pattern edit window. It is the same as selecting a pattern and then choosing the Goodies//Edit Pattern command.

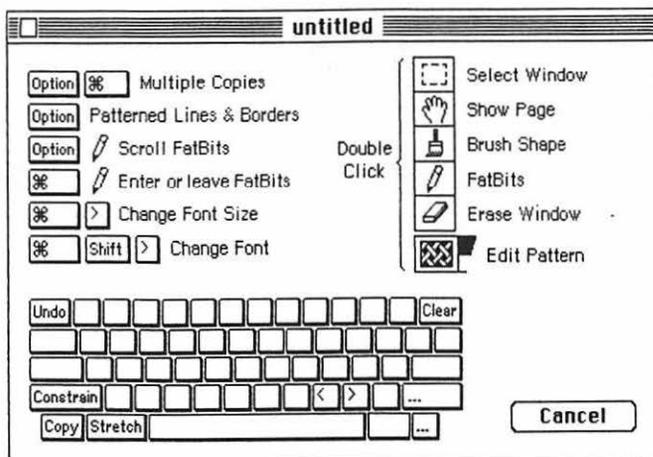


Fig. 7-35. The Goodies//Shortcuts window. Refer to it often.

MacTip 7-10

When you double-click the marquee tool, the entire window is selected with a moving dotted line (like the lights on a theatre marquee). If you press the Backspace key at this point, the entire window will be automatically erased.

Constraining

Constraining is a limiting feature that makes it easier to draw straight lines that are horizontal, vertical, or (sometimes) at 45-degree angles. It also allows you to make perfect squares and circles with the rectangle and circle shape tools.

Here are the basic instructions for constraining:

1. Click the tool you want to use.
2. Hold down the Shift key (and keep it down until you finish drawing).
3. Draw with the tool.

Here is what happens when you constrain the various tools:

- *If you constrain the hand*, you can move the document sheet vertically or horizontally only.
- *When you constrain the paintbrush, pencil, spray can, or eraser*, you can draw only horizontally or vertically.
- *Constraining the line, open polygon, or closed polygon shape* limits the line to positions 45 or 90 degrees from horizontal or vertical.
- *Constraining the hollow and filled rectangles (rounded-corner or plain)* restricts these forms to creating perfect squares.
- *If you constrain the circle (filled or hollow)*, using it will result in perfect circles.
- *Constraining in the Show Page mode* limits the movement to horizontal or vertical only. This applies to the motion of both the window (the dotted box) and the image on the page.

Copying

Copying shortcuts are straightforward. First, select the area to be copied using the lasso or marquee. After selecting, place the pointer inside the now-defined area (the pointer should turn into an arrow). Hold down the Option key while you drag the selection. As the selection moves on, a copy remains behind (Figure 7-36).

Multiple Copying

Multiple copying is a natural extension of the single-copying process described previously. First define the selection with the lasso or marquee. Then move the

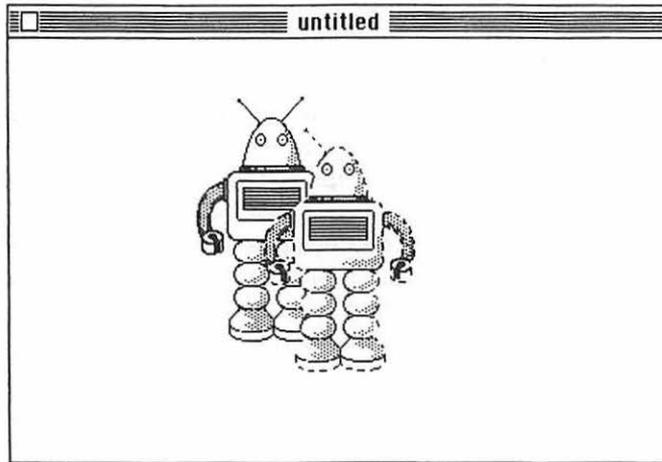


Fig. 7-36. Copy a selection by holding down the Option key while you drag it.

pointer inside the selected area (as before, the pointer should turn into an arrow). Hold down the Option and Command keys and drag.

When making multiple copies, the speed of dragging determines the number and approximate spacing of the copies. If you drag slowly (like dragging your feet while you walk), the images appear tightly grouped. If you drag quickly, the images are spaced farther apart (see Figure 7-37).

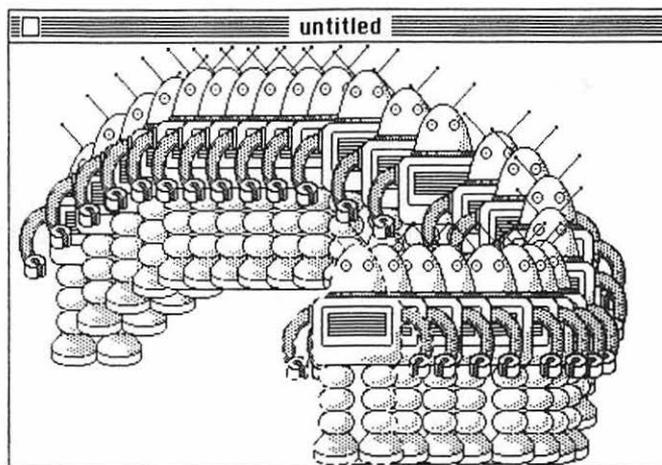


Fig. 7-37. Make multiple, repeating copies by holding down the Option and Command keys while dragging the selection.

You can control the image-to-image spacing somewhat by selecting a thicker border width from the border-width palette.

MacTip 7-11

Stretching or shrinking a selection is constrained by using the Shift key in conjunction with the Command key while dragging a selection. The result is that the image changes size, but maintains its original proportionality.

Copying and multiple copying is constrained by using the Shift key with the Option or the Option and Command keys, respectively, while dragging a selection to make copies on a vertical or horizontal plane only.

If you don't like the way your multiple copies turned out, choose the Edit//Undo command (or strike the / key), and you'll be ready to try again.

DESKTOP ACCESSORIES

The Mac's desktop accessories are fully functional with MacPaint. One you'll use quite often is the scrapbook. To place a drawing of your own design into the scrapbook, select the drawing and Cut or Copy it using the Cut or Copy command from the Edit menu. Then call up the scrapbook and give the Edit//Paste command. Do just the reverse to take something out of the scrapbook and place it in a MacPaint document.

After you've called up one of the other desktop accessories, you'll have to put it away before you can return to MacPaint. Unlike some other Macintosh software (such as MacWrite) MacPaint does not allow you to have a desktop accessory on the screen and continue with the program.

SAVING PICTURES

Saving pictures is a simple task. To save a finished or partially finished drawing, use the File//Save command. If this is the first time you've saved the document, you're asked to give it a name (names of documents can be up to 63 characters long and can include any character except a colon). When you've finished entering the name, click the Save button (see Figure 7-38). Once you've given the document a name, the Macintosh will no longer ask its name if you choose the File//Save command to save it or a modified version of it.

MacTip 7-12

When you are working on a drawing and you are satisfied with progress thus far, be sure to File//Save it. Do it often. It's a simple habit to develop, and it'll save a lot of grief if you botch a promising masterpiece.

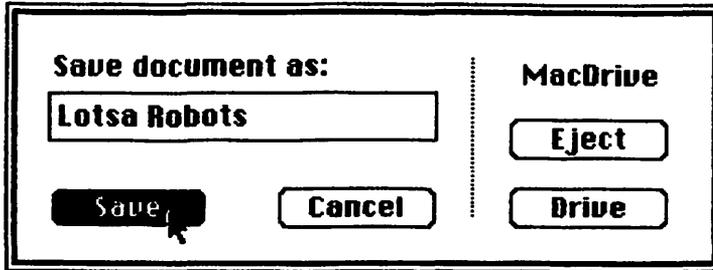


Fig. 7-38. When saving documents, give them meaningful names (meaningful to you, that is).

You might note that the File menu offers both Save and Save As commands. The former is for saving a document, plain and simple. Save As is applicable, on the other hand, when you have already saved a document and want to keep a variation of it under a different name. Keep in mind that using the File//Save As command doesn't rename the original MacPaint document, but creates another one.

PRINTING

There are three print commands in MacPaint; all three are accessed through the File menu.

File//Print Catalog gives you a listing of MacPaint documents on your disk. To help you better keep track of your drawings, you get tiny thumbnail sketches, like that shown in Figure 7-39. Although the images aren't detailed or totally legible, they serve their purpose.

The File//Print Draft and File//Print Final commands both produce a nearly 1:1 paper copy of your MacPaint document (when used with a compatible printer such as the Apple Imagewriter). The difference between the commands is this: When printing with File//Print Draft, the printer's printhead (the part that actually creates the images on paper) makes one pass for each printed line; with File//Print Final (Figure 7-40), the printhead goes over each line twice, making a darker and more "filled-in" picture. Before using any print command, make sure the printer is on and selected (the "Select" or "Ready" light will glow).

BACK AT THE DESKTOP

When you've finished playing with MacPaint, exit the program by choosing the Quit command from the File menu. If you haven't saved the latest version of the picture, MacPaint will prompt you to do so (just click the Yes button to save it). Within a few seconds, you're back at the desktop.

You can, if you wish, eject the disk and turn the Mac's power off, but you can't turn off the creative inspiration of having experienced MacPaint, one of the most powerful, thoughtful, and simplistically beautiful pieces of graphics software available.

MacPaint documents on disk ClickArt

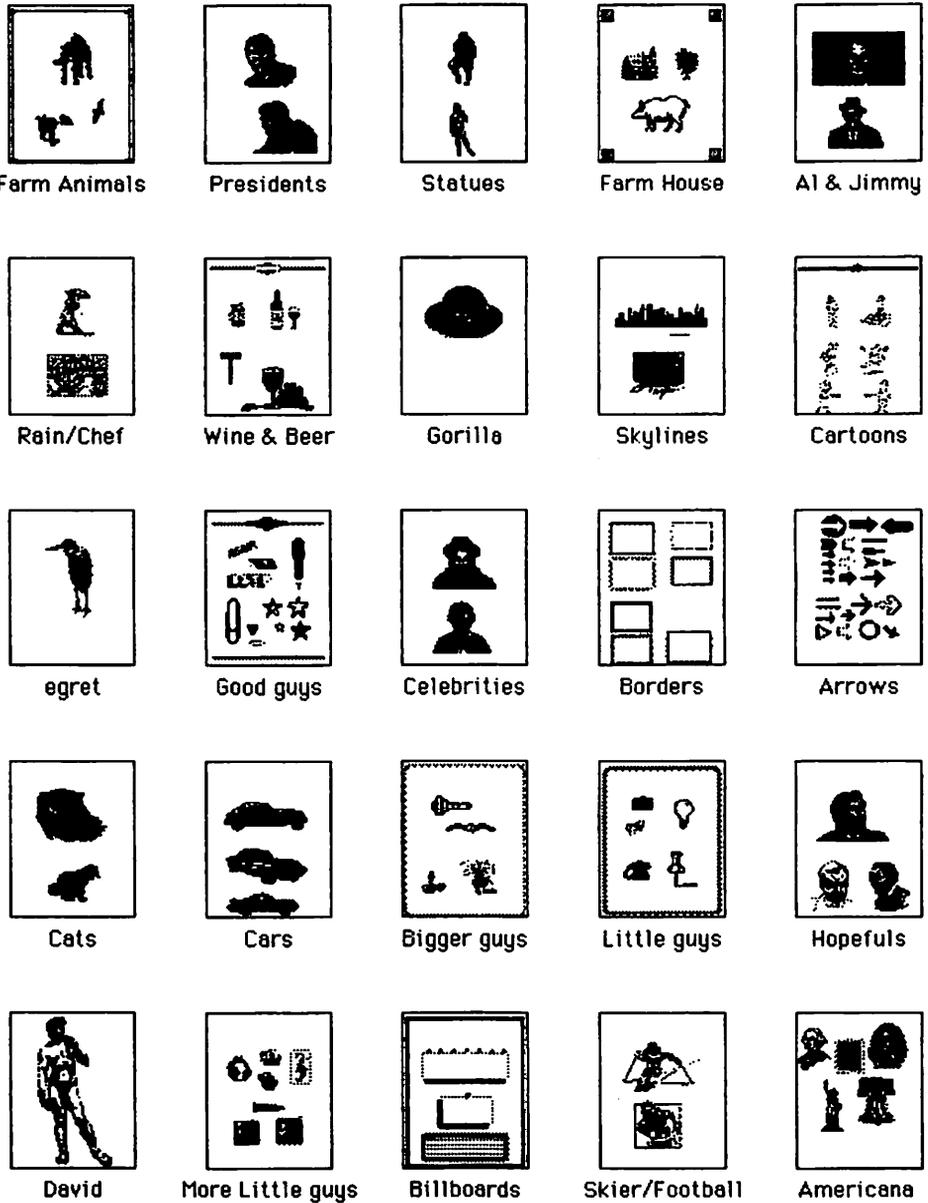


Fig. 7-39. A sample MacPaint catalog.



Fig. 7-40. Use the File//Print command to make a paper copy of your masterpiece.

An Introduction to MacWrite

At one time or another everyone writes, whether it's just a simple memo, a personal letter, or a lengthy dissertation. Typing the document by hand usually requires at least one draft before the final copy. Any changes or corrections cause a messy splotch on the page or require the page to be completely retyped.

Use the Macintosh with a word processor program and it turns the computer into a fancy all-electronic typewriter, making the job of writing much less of a chore and a lot more fun. Changes, right up to the last minute, are easy and quick to perform, and the final copy always looks clean.

This chapter guides you through the basics of MacWrite, the first word processing program written exclusively for the Macintosh.

WHAT MAKES MACWRITE SPECIAL

MacWrite is not the ultimate in complexity among word processing programs. Many other programs are more intricate and therefore more difficult to use.

MacWrite is, however, perfect for the person who writes letters, memos, even full-length novels, and doesn't want to spend a lot of time learning cryptic codes. With MacWrite, you type just as if the Mac were a regular typewriter. When you've finished, go back and make the changes or corrections needed. Then, print out the final version.

It is in making changes that MacWrite proves to be a more than adequate word processing program. Any changes made will be neatly incorporated into the text. MacWrite rearranges the entire text to fit the change onto the page. For example, if a line or word is deleted, the text closes up so that there is no telltale gap remaining. MacWrite is almost automatic in operation.

MacWrite also excels in using simple commands. Other word processing programs use cryptic codes that bear little resemblance to the actual message you are trying to give the computer. MacWrite's pull-down menus let you select the command you want by choosing a simple English word. "Cut" means remove or delete. Changes to the format, the way the page is set up, are equally easy with MacWrite.

MacWrite doesn't have a lot of excess baggage to slow you down. Its simple, easy mode of operation makes it a worthwhile program to learn.

STARTUP

When you want to write a letter, for example, getting started is just as easy as sitting down in front of the Mac, turning it on, and putting the MacWrite disk in.

Once the disk has been loaded and the Macintosh desktop is in view, open the MacWrite/MacPaint disk icon (by double-clicking it or selecting it and choosing the File//Open command). The result will look like Figure 8-1.

Now that the disk is open, start MacWrite by double-clicking the MacWrite icon, or select the MacWrite icon and choose the File//Open command. Allow a few seconds for the program to load. Your screen will look like Figure 8-2. Started this way, MacWrite automatically opens with a blank sheet of paper. The title bar says "Untitled," but you can fix that later.

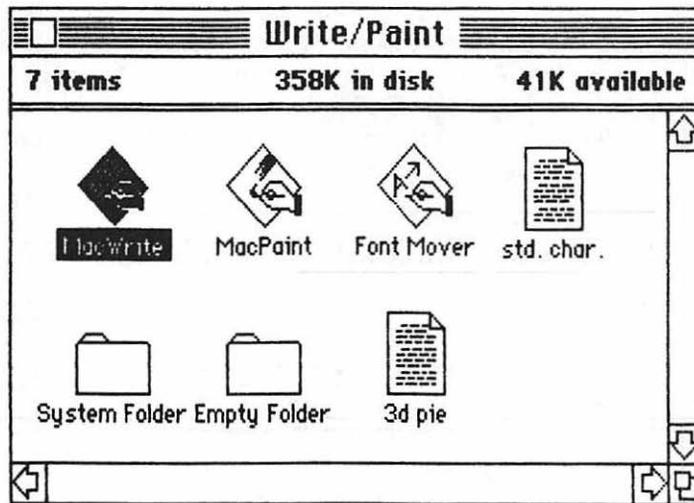


Fig. 8-1. Double-click the MacWrite icon to start MacWrite, or click it and choose the File//Open command.

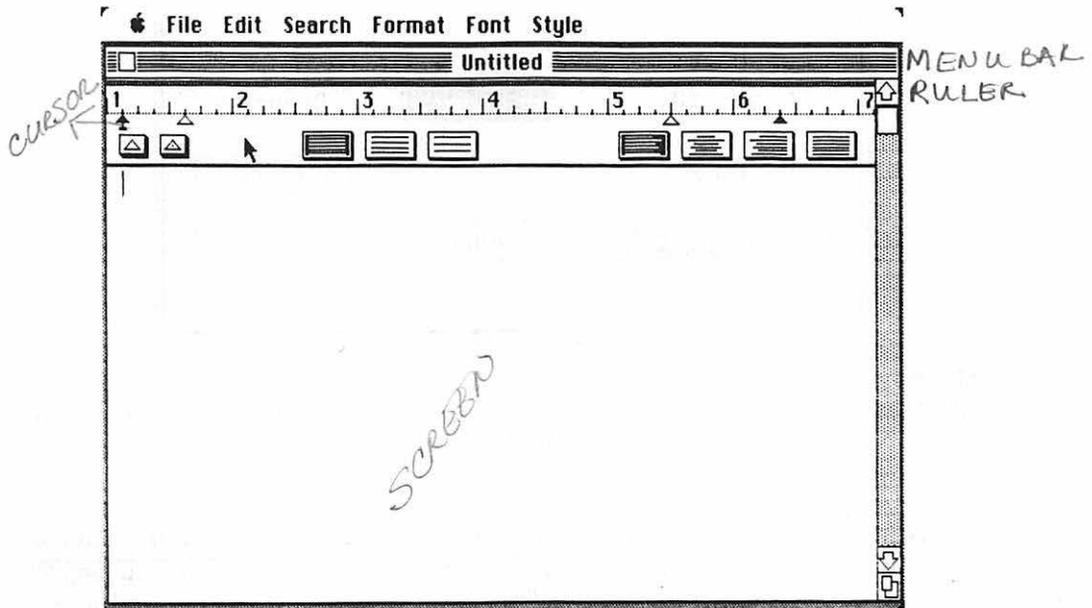


Fig. 8-2. The MacWrite writing pad. Once you see it, just start typing.

If, instead, you're going to re-edit an existing MacWrite document, open that document instead. The MacWrite program will automatically start and the document will be placed on the writing page, ready for work.

MacTip 8-1

To open a new file after you are already in MacWrite, close the current window by clicking in the close box (or use the File//Close command), and use the File//New command.

To open an existing file when you are already in MacWrite, close the window by clicking the close box, and use the File//Open command, as shown in Figure 8-3. The result will be a dialog box; scroll until you find the file you want, click it, and then click the Open button.

At the top of the MacWrite screen, below the menu bar, is a MacWrite ruler. It controls margins, tabs, line spacing, line alignment, and more. We'll get back to the ruler in a bit.

Immediately below the ruler is a blank screen—MacWrite's writing pad. The insertion point (sometimes called the cursor), is in the upper left corner. When you begin typing, the words appear right there.

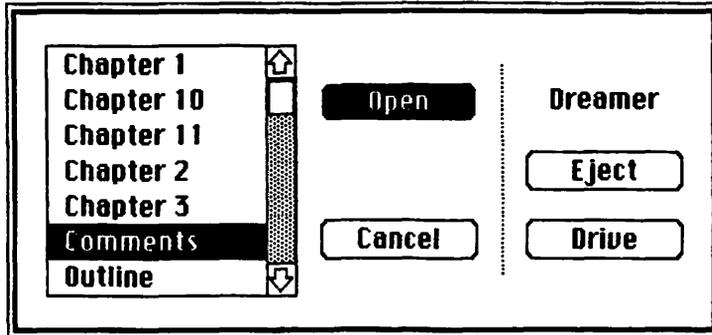


Fig. 8-3. When opening a document after you're already in MacWrite, choose the File//Close command, and then select the document you want by clicking it. Follow up by clicking the Open button.

When you type, there's no need to press the Return key when you reach the end of the line. MacWrite does it for you automatically. Words that are too long to fit will be moved down to the next line. Of course, if you want to end a line yourself— at the end of a paragraph, for example— press Return and MacWrite will oblige. A new paragraph will be formed.

MacTip 8-2

Add a blank line to text by pressing the Return key. Keep pressing the Return key to add more lines.

MOVING AROUND

You get around the MacWrite writing pad the same as you would any other window. As you type, MacWrite will automatically scroll the text upward, so there's always enough room below for more words. When you want to scroll back toward the beginning of the text, use the up scroll arrow or elevator (see Figure 8-4).

You'll notice that while you can scroll to blank parts of the paper below the existing text, you won't be able to place the insertion point there. There's a good reason for this. The insertion point can't be moved into a part of the document where you haven't yet typed.

EDITING

Making changes to your document is characteristically easy with MacWrite. If you know how to edit on Mac's desktop using the Edit menu, you know how to edit with MacWrite. Little is different.

To make any change, including additions and deletions, start by positioning the insertion point where the change needs to be made.

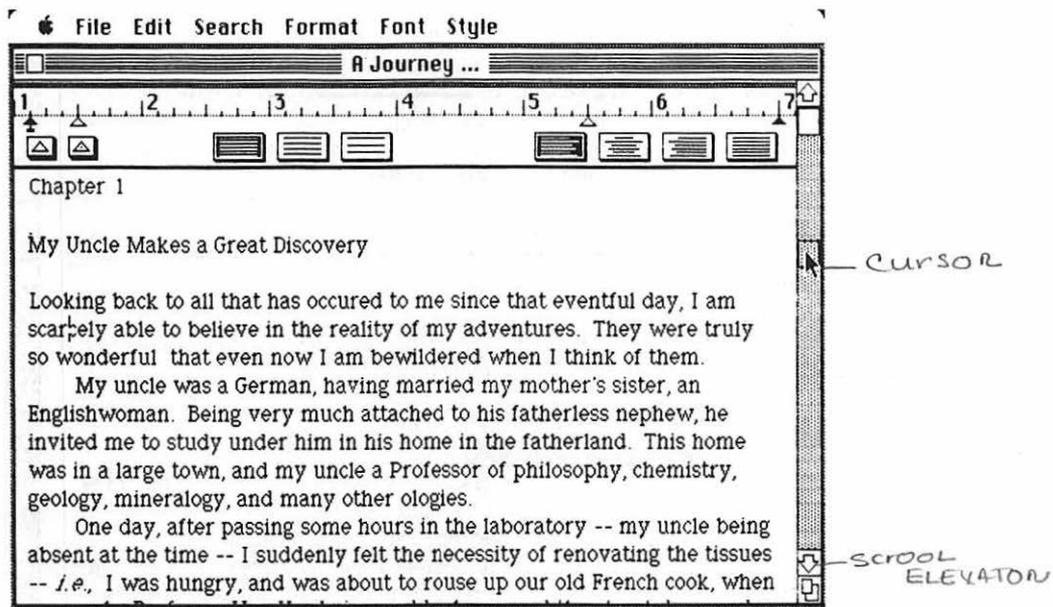


Fig. 8-4. Scroll up and down the document by dragging the elevator. Alternatively, press the up or down scroll arrow.

MacTip 8-3

To scroll up and down by the windowful, click anywhere in the shaded portion of the scroll bar. With each click, you'll jump the contents of the window up or down one complete window.

To add new text, just start typing. MacWrite automatically reformats the paragraph to accommodate the new addition.

Deleting text is a bit different, depending on how much you want to erase. If it's just a character or two, place the insertion point right after the text to be deleted and then press the Backspace key. Keep hitting the Backspace key for each character you want to erase.

If you're going to be getting rid of several words or more, highlight that text by dragging the mouse over it (see Figure 8-5). When the Backspace key is pressed, the highlighted text all disappears.

As a shortcut, if all you want is to delete a single word, don't bother dragging over it. Double-click on the offending word instead. This will highlight the entire word automatically.

To cut and paste or copy and paste text to other parts of your document, use the Edit commands. Neither Cut nor Copy is active unless you highlight some text.

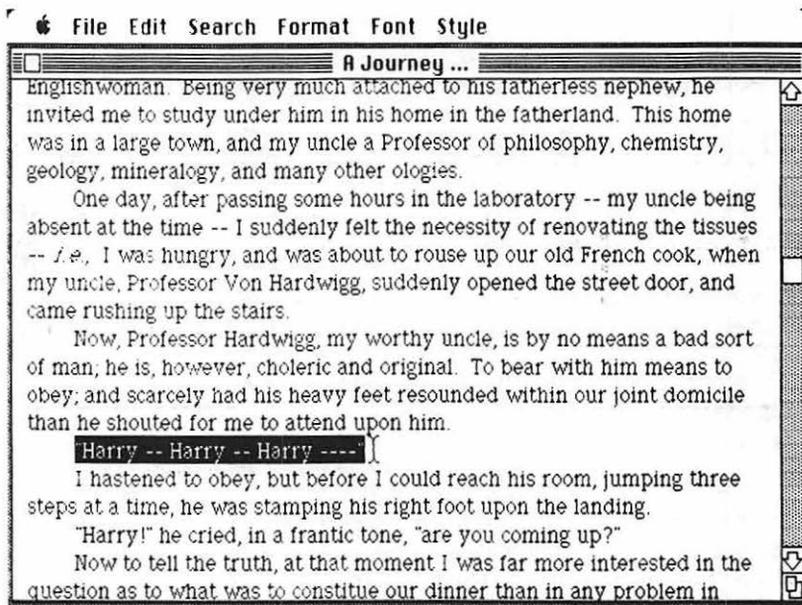


Fig. 8-5. Select text by dragging over it. In addition, you can select a series of words by shift-clicking each one in turn.

MacTip 8-4

To select a large segment of text:

1. Click at the beginning of the text to be selected.
2. Move the mouse to the end of the text to be selected.
3. Press the Shift key and click once again. All the text between will be highlighted.

When you invoke the Edit//Cut command, MacWrite takes the highlighted text out and puts it in the Clipboard. Place the insertion point where you want the text to reappear. Then choose Paste from the Edit menu.

The Edit//Copy command is similar, but the original text does not come out of the document. It remains intact, and a copy of it goes to the Clipboard. Once again, it can be placed anywhere else in the document using Edit//Paste.

At any time, you can see the contents of the Clipboard by choosing the Edit//Show Clipboard command. You'll be able to see the first five lines only, but this should give you a fair idea of what's in there.

Should you make a mistake and take out too much text, for example, feel free to use Edit//Undo. Keep in mind that the Edit//Undo command works to undo only the last action you did.

RULERS

It is a simple matter to set up the page format the way you want it. As mentioned above, along the top of each MacWrite document is a ruler (Figure 8-6). It has all the icons you will need to set up the margins, tab stops, spacing, and text alignment.

Margin markers are shown as black triangles. Using the mouse, select the margin marker on the right side of the ruler and drag it over to the "5" mark. As shown in Figure 8-7, you have just set the right margin of your text at five inches from the left edge of the paper.

The left margin is set the same way. It is easy to change the margin settings at any time, even after the text is written. Just return to the ruler and drag. All the text that follows will realign itself automatically.

Tab stops are similarly set. The tab wells look like boxes with triangles in them. Click in the tab well, as shown in Figure 8-8, and drag one of the triangles to where you want a tab.

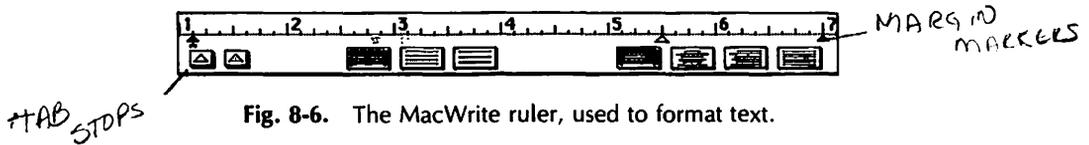


Fig. 8-6. The MacWrite ruler, used to format text.

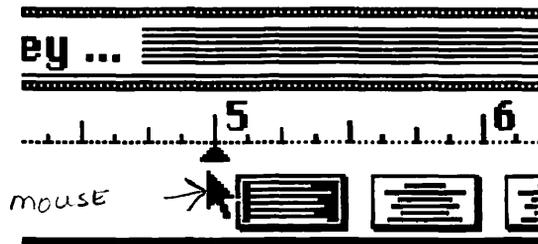


Fig. 8-7. Adjust the margins by dragging the black triangles. This one, the right margin marker, is at the 5-inch mark.

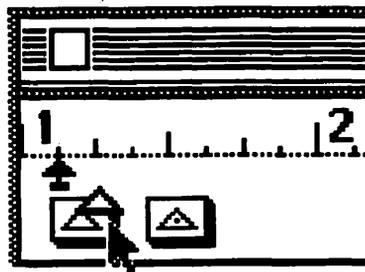


Fig. 8-8. Pull tabs out of the tab well. The clear triangles are standard text tabs; the dotted triangles are decimal tabs.

MacTip 8-5

To delete a tab, drag it away from the scale inside the ruler. When you release the mouse button, the tab will disappear.

There are two types of tab wells: one is for standard tabs; the other is for **decimal align tabs**. Decimal align tabs are triangular in shape, too, but they have a dot inside. All numbers with a decimal (such as dollars and cents), typed at a decimal tab stop will be aligned decimally. This is very useful for financial reports, for example.

Hidden under the left margin marker is a little black cross. This is an **indentation marker** (see Figure 8-9). It serves as an automatic tab. If you place it where the usual paragraph indentation is to be, every time the Return key is pressed, the next line will begin at that point. It is a shortcut to tabbing over for a new paragraph.

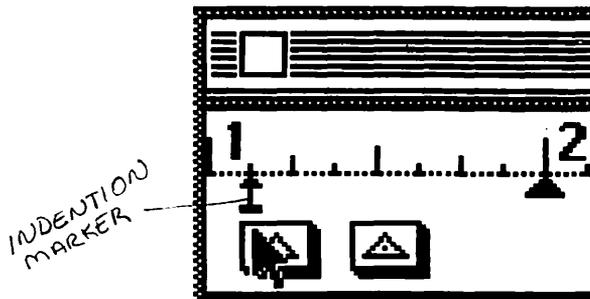


Fig. 8-9. Like setting margins, setting the indent marker (arrow) is done by dragging it.

Another useful feature of the indentation marker shows up when it is placed to the left of the left margin. In a glossary, for example, the main body of text—the definition of the word—is set in, while the word to be defined is flush on the left margin (Figure 8-10). This is more properly called “outdenting.”

The next set of boxes in the ruler are space boxes. They are for single, space-and-a-half, and double spacing the text. Select the spacing you prefer by clicking in the box. The box will then go black. Like the margin markers, the spacing can be changed at any time, and MacWrite will adjust all the text that follows.

The last set of boxes controls the alignment of the text—how the text is spaced on each line of the page. The first one, shown in Figure 8-11, is for left alignment and is the most commonly used. This kind of alignment is known as “flush left,” which means that all lines not indented with a tab will start at the left margin.

The second alignment box is for centering, useful for titles and for making invitations, for example. Click it, and all lines will be centered (Figure 8-12).

As shown in Figure 8-13, the third is for right alignment, also called “flush right.” It sets all lines of text even with the right margin.

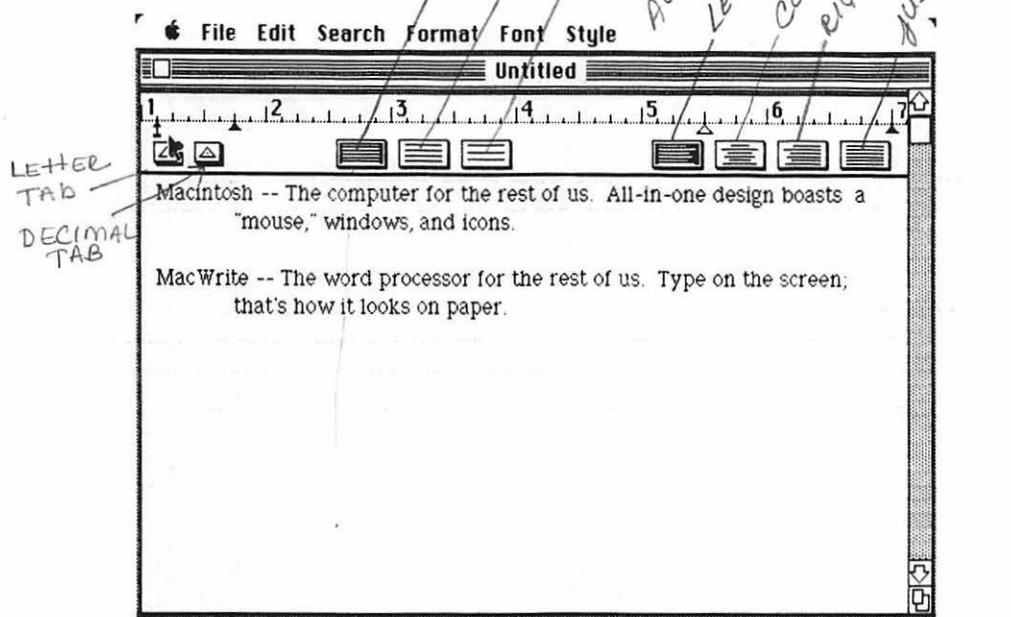


Fig. 8-10. A sample of "outdenting."

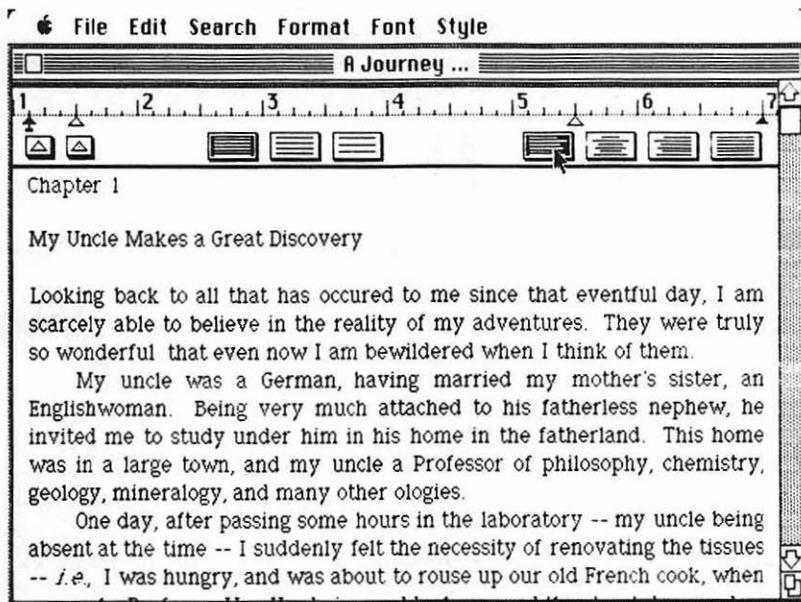


Fig. 8-11. Left-aligned text.

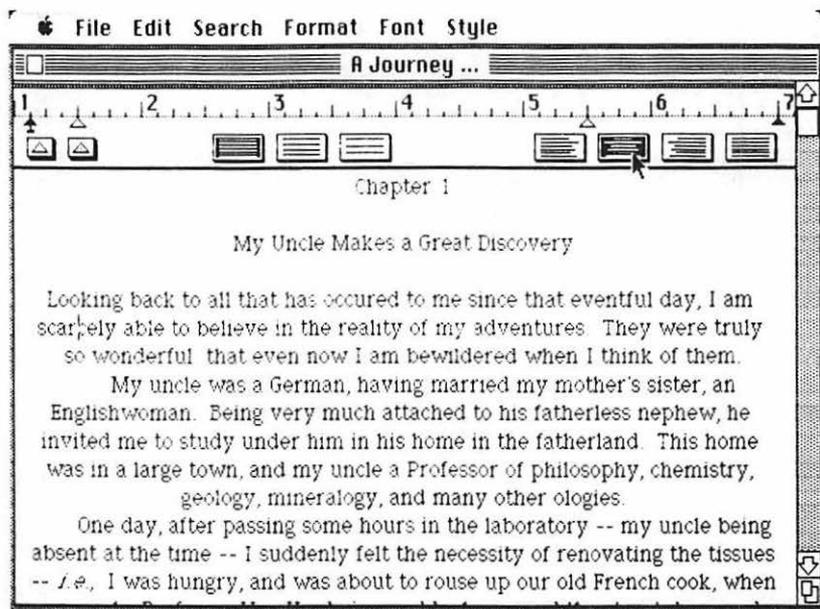


Fig. 8-12. Centered text.

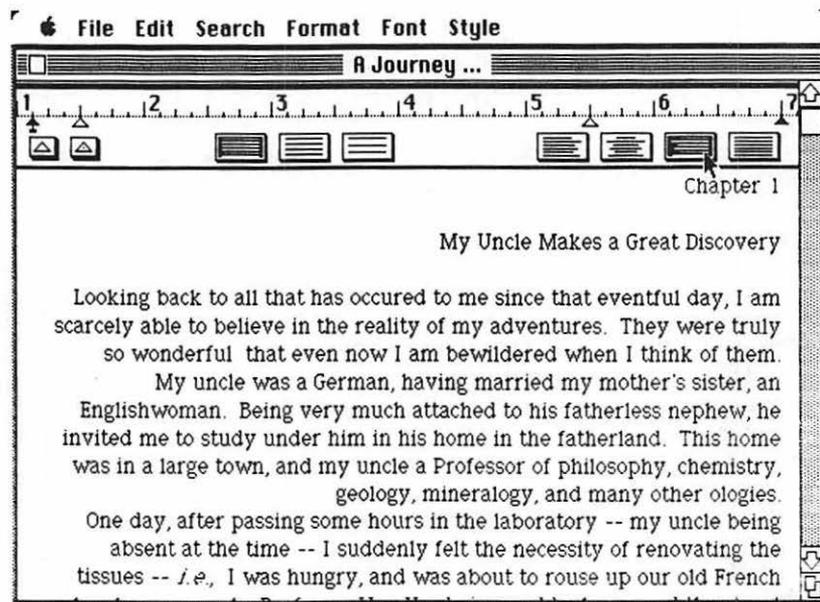


Fig. 8-13. Right-aligned text.

The fourth box is for full justification. It's used to space your text as though it has been typeset. Also called "justified," it alters the spaces between words so that the text is evenly spaced along the line and justified with both the right and left margins (see Figure 8-14).

MULTIPLE RULERS

It is entirely possible to have more than one ruler governing a document. You may have noticed that every time we talk about changing something in the ruler, we say that the change affects all the text following the ruler. You can have any number of rulers in a document; each ruler controls the text that follows immediately after it. When another ruler comes along, the format is again changed.

Suppose you want to center the chapter title on the first page of your latest magnum opus. To begin, select the center alignment box in the ruler. Every line you type following that ruler is centered (see Figure 8-15).

Now, you're ready to start your text. But, no matter what you do, each line is still centered! Remember that all the text following the ruler is governed by that ruler. MacWrite needs to be told to stop centering, so another ruler must be inserted.

To add another ruler, first be sure that the insertion point is flashing where you want the new ruler to appear. In this case, it's below the centered title. Then, choose the Insert Ruler command by pulling down the Format menu. The new ruler will appear at the position of the insertion point.

Make the changes necessary in the new ruler. Change from centering to left alignment, for example, and all the text that follows will conform (Figure 8-16). When you start typing, you will be in the new format. Your neatly centered title won't be changed. It's governed by another ruler.

Rulers can also be copied and used again in the same document. You may need to switch from one ruler to the next, back and forth, as in script writing. The dialogue will have one set of margins, usually indented toward the middle of the page, and the scene directions and actions will have another set, with wider margins.

Select the ruler you want to copy by clicking anywhere on the part with the numbers, and choose the Edit//Copy command. The ruler will be temporarily stored in the Clipboard. Position the insertion point where the copied ruler should appear and choose the Edit//Paste command. The copied ruler will remain in the Clipboard to be used again until you copy something else.

MacTip 8-6

To delete a ruler, select it and then press the Backspace key. You cannot delete the first ruler in the document.

Rulers are a very simple and convenient way to set up your page format. But they can get in the way. Although they will not print out when you have finished with the document, the rulers affect the look of the screen and make it hard to visualize the final product.

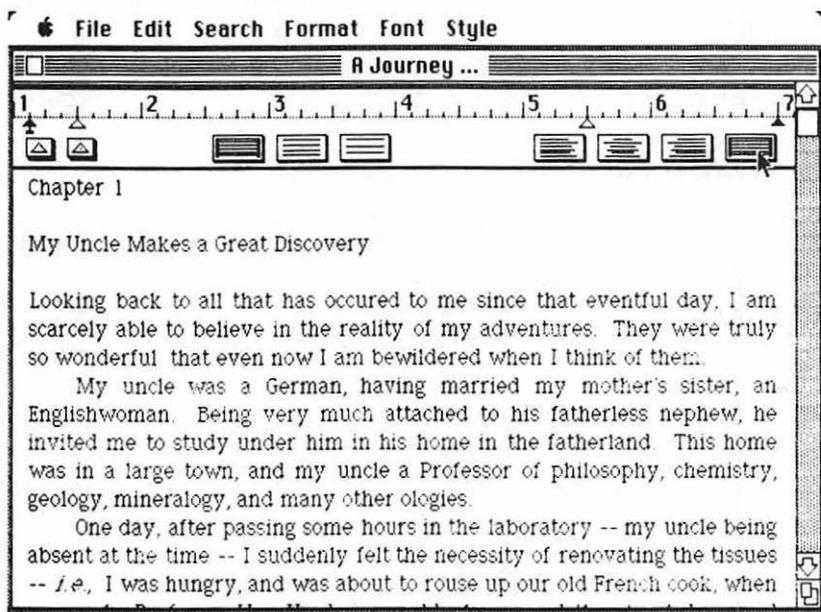


Fig. 8-14. Justified text.

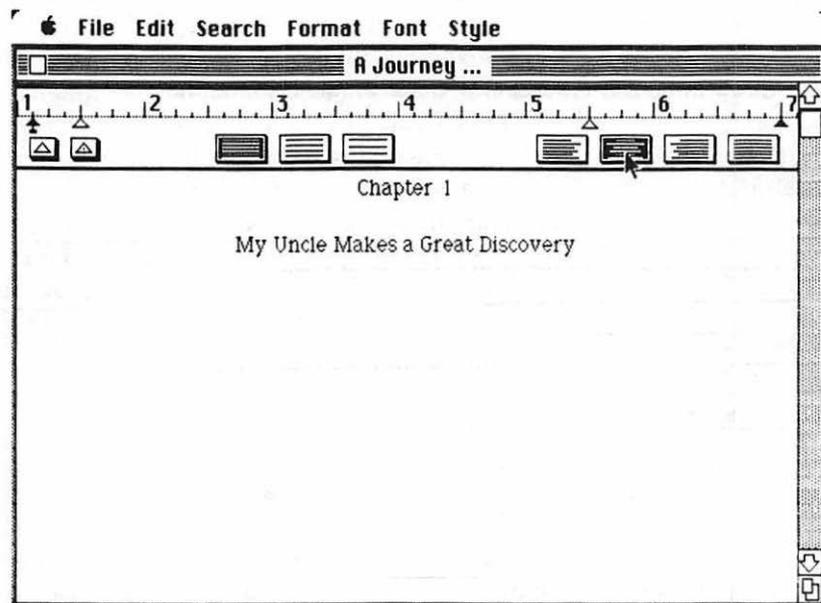


Fig. 8-15. The first ruler set for centered text.

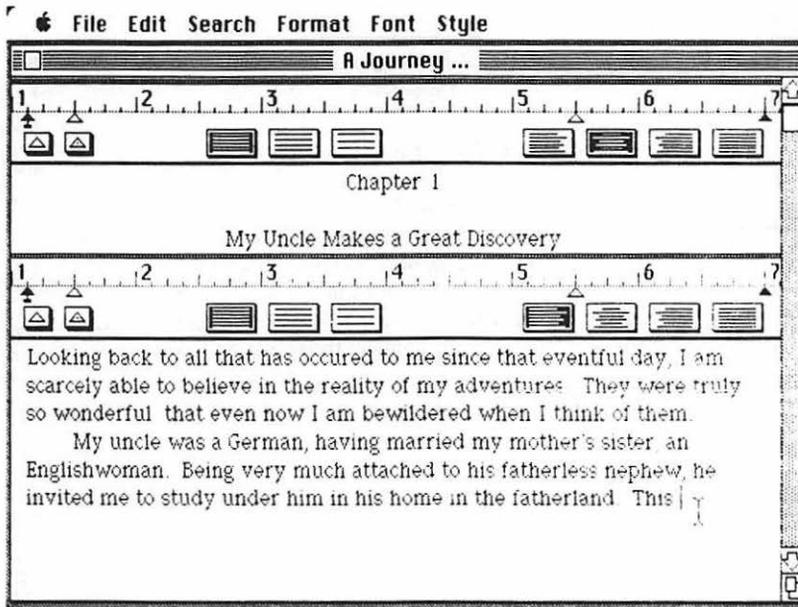


Fig. 8-16. The second ruler, now added, set for left-aligned text.

Luckily, it's easy to hide the rulers. When you want to make them disappear, choose the Format// Hide Rulers command (see Figure 8-17). When you need to see them again (to make changes to them, for example), pull the Format menu down one more time and choose the Show Rulers command.

HEADERS AND FOOTERS

Headers and footers are those lines that appear at the top and bottom of each page. They can be page numbers, the title of the document, or something much more complex, such as page number, document title, name of the author, and date the document was created.

All of this may appear on the top (header) or bottom (footer) of each page. Of course, you may not want to have anything cluttering up the pages of a personal letter, but in many situations headers and footers come in handy.

In the following pages, you'll learn all about headers and footers. For clarity and simplicity, we'll talk about headers only. Footers are created and used exactly the same way.

Choose the Format// Open Header command. A window labeled "Header" pops up in front of the MacWrite writing pad. The header window has three parts, as shown in Figure 8-18. At the top are three icons. Their purpose will be discussed shortly.

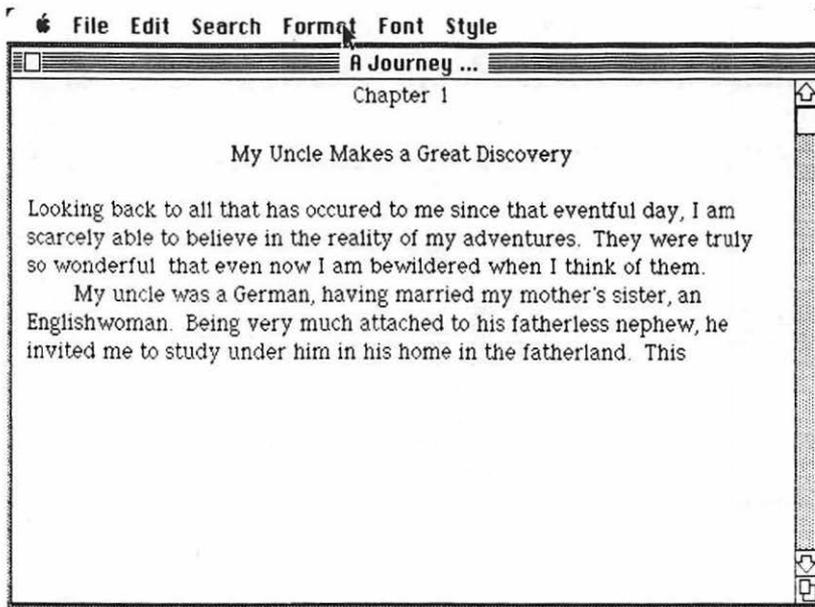


Fig. 8-17. Rulers "bidden" using the Format//Hide Rulers command.

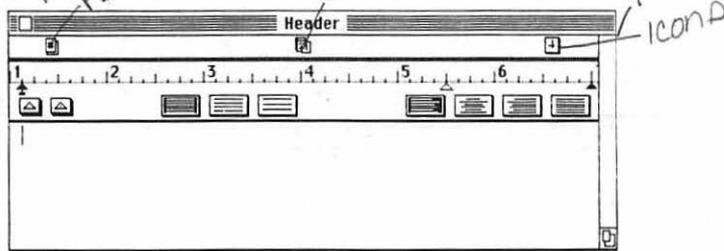


Fig. 8-18. The header window, complete with its own ruler. The three icons, from left to right, are for automatically adding the page number, date and time.

The header has its own ruler, so you can format the text independently from the rest of the document. The space under the ruler is the header text area. If you type something here—up to seven lines' worth—it will appear at the top of each page.

Now for the strange icons. From left to right:

- The icon with the # symbol is for page numbering. Drag the page numbering icon down into the text area (below the ruler) and place it along the top of the page where you want the page number to appear. The correct page number will be placed in the header of each page.

- The icon with the paper symbol is for dating. The current date is automatically pulled from the Mac's built-in clock/calendar. There is no need for you to manually type it in (unless you want to). Just as with the page numbering icon, drag the date icon into the text area and place it along the top of the page where you want the current date to appear.
- The icon with the clock face is for adding the time to the header. The time is automatically pulled from the Mac's built-in clock/calendar. Drag the clock icon into the text area and place it where you want it. Figures 8-19 and 8-20 show how to set.

The header is also used to alter the top margin of every page. MacWrite

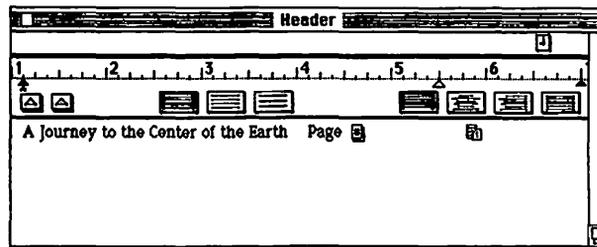


Fig. 8-19. Write text into the header as usual.
Pull down any icons you want to use into the text area. This activates them.

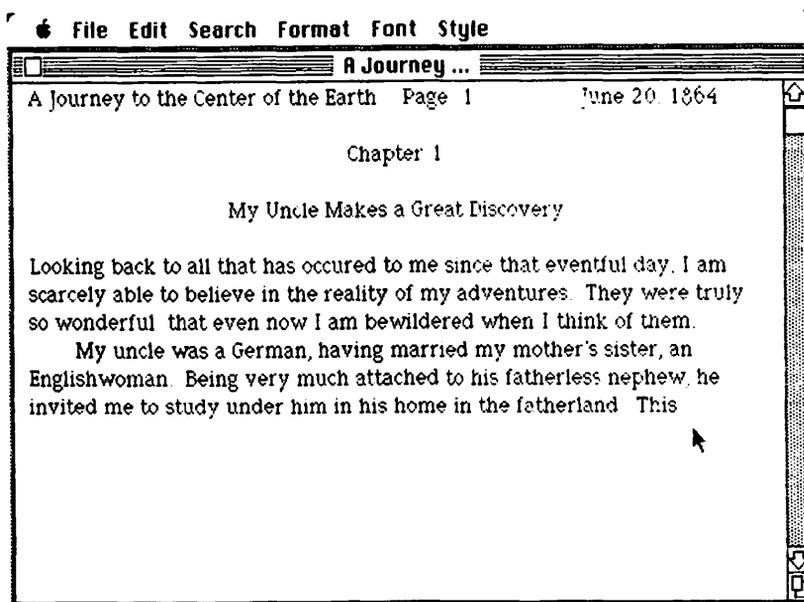


Fig. 8-20. The sample page, header added.

automatically starts each page on the second line from the top of the page. You may need to start each page three lines down to create a larger top margin. This is easily done by pressing the Return key three times while viewing the Header window. Now, three blank lines will be figured into the top of each page (see Figure 8-21).

Any text or page numbers you want to include in the header can go below the blank lines. Or the page number icon, for example, can be left above the blank lines, to provide a wider distance between the number and the text.

When you've finished with the header, click anywhere within the main MacWrite writing pad. The header window will shuffle its way behind the writing pad window. A header will now show up on the top of every page of your document. To bring the header back into view, choose the Format//Open Header command again.

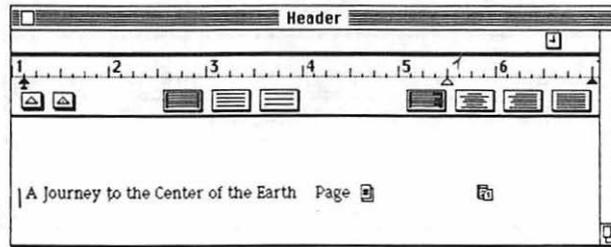


Fig. 8-21. Increase the top margin by adding blank lines to the header. Increase the bottom margin by adding blank lines to the footer.

MacTip 8-7

If you want to cancel the header for some reason, choose the Format//Remove Headers command. The contents of the header will be ignored and nothing will appear at the top of the pages. Likewise, if you want to use the header, choose the Format//Display Headers command.

Headers and footers may be added at any time and will affect the entire text. In other words, if you are on page 6 of your document, and you realize you have forgotten to put in page numbers, it is an easy matter to choose Format//Open Header and pull the page number icon into the text area of the header. Click anywhere on the MacWrite window and the correct page number will appear at the top of every page.

You may not want a number to appear on the first page (or title page), so MacWrite provides a Title Page command in the Format menu. When the Format//Title Page command is chosen, the header will appear on page 2 and thereafter.

There may be times when you want to start page numbering at a point other than 1—for example, to combine parts of a single large document. If you have the 128K Macintosh, each document can only handle 8½ pages of single-spaced text. The 512K version can handle documents of up to 80 pages. By the time you read

this, there may be a new disk-based version of MacWrite that will also allow for longer documents.

In order to logically link these sections together and maintain some continuity after they are printed out, change the starting page number of the second part to follow the final page of the first part.

FONT AND STYLE

Sometimes, you may need to emphasize a word or two. With a regular typewriter, your only option is to underline this text. Of course, you can underline with MacWrite, too, but there are so many more options.

First, you must highlight the word or words to be emphasized. Then pull down the Style menu. All of your options are there: Bold, Italic, Underline, Subscript, Superscript, Outline, and Shadow. Choose a style, such as underlining by dragging down to it and releasing the mouse button (Figure 8-22).

The highlighted word will now be underlined (see Figure 8-23). To remove the highlighting, click anywhere else on the screen.

You can also add emphasis to text as you type it. When you get to a spot you want italicized, for instance, stop and choose the Style//Italic command. Now, what you type is shown italicized. The style that has the check by it in the menu is the one currently in use. Keep in mind that you can choose any combination of special styles. Why not try bold-underline or underline-italic-subscript?

When you want to return to normal text, choose the Style//Plain command. You can also choose Style//Plain to "clear the slate" of all special style selections before choosing a new combination.

You may have noticed that there are various point sizes to choose from in the Style menu. They indicate the size of the text. You might find it handy to have your title in a larger point size than your text to make it stand out. The point size that has a check by it is the one currently in use.

The other set of options, Fonts, provides another way to give your document a personal touch. MacWrite offers several type styles, each named after a city. When you begin a new MacWrite document, you will see that MacWrite automatically chooses New York as the standard font (see Figure 8-24).

Luckily, it's very easy to change to any of the other fonts. Pull down the Font menu and select the font that appeals to you. Pull down the Style Menu and choose another style. Every style and point size is available in every font, in any combination. You may want to use New York or Chicago for your business correspondence and then switch to Venice for personal letters.

Unlike changes to the format, changes in the Style and Font Menus affect only highlighted text or any text typed after you make the change. In order to go back and change the typestyle of an entire document after it has been typed, you must highlight all the text, and then change the font. If the document is several pages long, you may have to highlight and change it in sections.

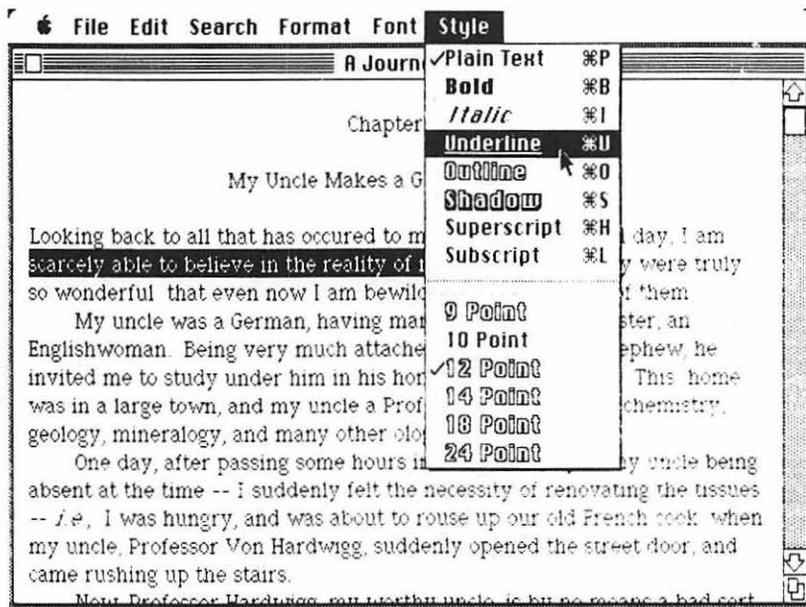


Fig. 8-22. Highlight text to be stylized, then choose one of the Style commands.

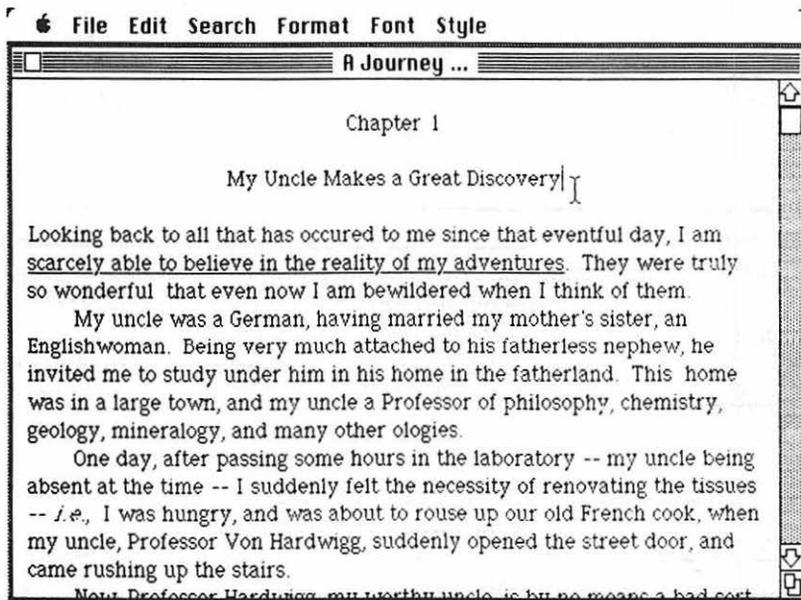


Fig. 8-23. Underlined text. Styles can be combined.

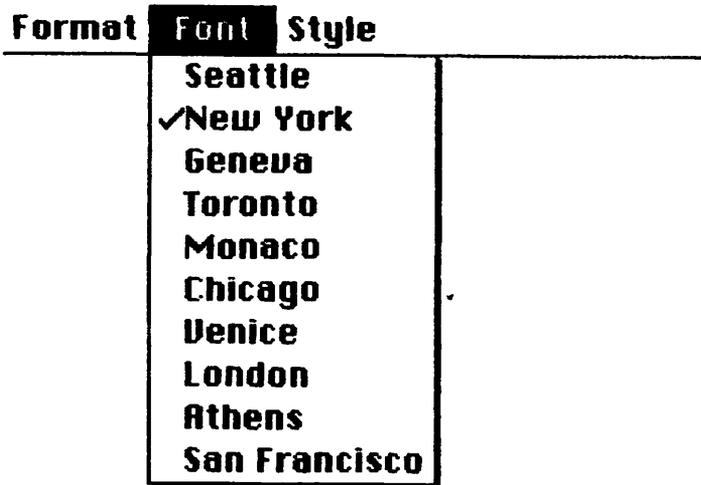


Fig. 8-24. The current font is shown checkmarked. When MacWrite starts, it automatically selects New York. You may change the font at any time, or change the font of previously written text.

MacTip 8-8

When you add text, its font, style, and size is the same as the text that surrounds it, unless you specifically change it. To do that, set the insertion point first, and then change the font, style, or size.

SEARCH

Suppose you have finished a lengthy report on the research done by Johnson and Smith, your esteemed colleagues. You suddenly discover that Johnson is not Johnson, but Jones (no wonder he gives you such odd looks whenever you talk to him). Realizing that you have mentioned the Johnson name at least 50 times, you begin to despair. But since you had the foresight to write your report with MacWrite, the problem is easy to fix. MacWrite has a simple helper called the Search menu, displayed in Figure 8-25, to get you out of such a jam. With it, you can have MacWrite look for words and phrases. You can even have it replace the existing text with something else.

You may not be a person who misspells the names of friends and colleagues, but there will certainly be other times when you'll find a use for the Search menu. Here's how to use it.

Start by moving the insertion point to the beginning of the document. Technically, you can leave the insertion point anywhere, but MacWrite will search only from the position of the insertion point toward the end of the document.

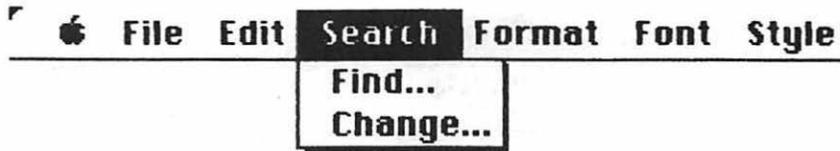


Fig. 8-25. The Find and Change commands, both found under the Search menu.

If all you want to do is look for text, use the Search//Find command. If you want to automatically replace found text with something else, use the Search//Change command. With the Change command, fortunately, you still have the final say on what is and what isn't changed.

To Find Text

Choose the Search//Find command. A window will appear, as shown in Figure 8-26. Type in the text to be found, but don't press the Return key when you've finished.

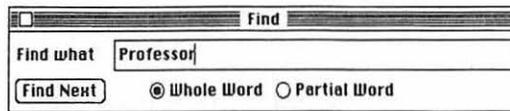


Fig. 8-26. The Find window.

Instead, click the Find Next button. The next occurrence of the text you're searching for will appear highlighted. Keep clicking the Find Next button to locate all the other occurrences. When you reach the end of the document, and MacWrite can't find any more text that matches, the program will provide a message to tell you so.

If you want MacWrite to make an exact match, make sure the Whole Word option is selected. If you want partial matches (for instance, all the words that have "here" in them, such as "here," "there," "heretofore," and so forth), click the Partial Word option button.

To Change Text

Choose the Search//Change command. A window will appear, as shown in Figure 8-27. Type in the text to be found in the Find What box. With that done, press the Tab key or use the mouse to drop the insertion point into the Change To box.

To start the process, click the Find Next button. The first occurrence of the text will be highlighted. If you don't want to change that particular occurrence, simply click the Find Next button again. If you want to change the highlighted text, click

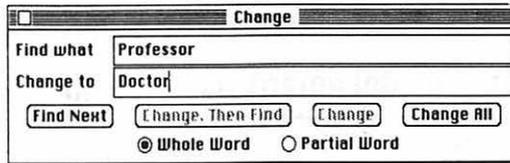


Fig. 8-27. The Change window.

either Change, Then Find or Change (Change, Then Find replaces the text and then goes on to the next occurrence; Change replaces the text and leaves you at that point).

If you're sure you want to change all occurrences of the text, click the Change All button at the start. You'll be warned that Changing All can't be undone. If this is indeed what you want, click the Go Ahead button (or just press Return). The rest is done by MacWrite.

As with finding text, you can instruct MacWrite to look for the exact whole-word match or partial-word matches. Click either the Whole Word or the Partial Word option to make your choice (normally, you'll be looking for whole-word matches, so MacWrite provides this option automatically).

MacTip 8-9

The Search//Find and Search//Change commands aren't case sensitive. That is, though you might want to find a word such as "Fantastic," MacWrite will find "fantastic," "fantastic," and all other variations.

This can be a problem when MacWrite changes words, since the program doesn't know when to consider case and compensate for it. For example, suppose you substitute the word "like" for "love" throughout a document. But several times, "love" starts a sentence. You'll end up with "like," without a capital letter, even when the word begins a sentence.

SAVING

To save your magnum opus for later, you'll have to record it onto a disk. To save a finished or partially finished document, use the File//Save command. If this is the first time you've saved the document, you'll be asked to give it a name (names of documents can be up to 63 characters long and can include any character except the colon). When you've finished entering the name, click the Save button (see Figure 8-28). Once you've given the document a name, the Macintosh will no longer ask its name when you choose the File//Save command.

You might note that the File menu offers both Save and Save As commands. The

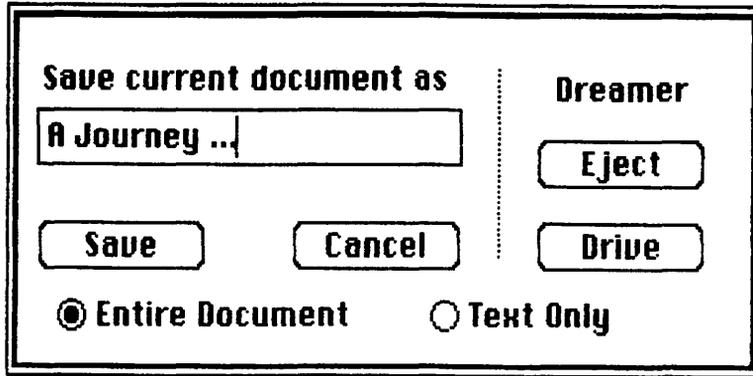


Fig. 8-28. The Save box provides the means to name documents when you've finished writing.

former is for saving a new document. Save As, on the other hand, is used when you've already saved a document and want to save another version of it under a new name. Keep in mind that using the File//Save As command doesn't rename the original MacWrite document, but creates another one.

MacTip 8-10

Make it a habit to File//Save every 15 minutes or so. That way, should something unthinkable happen (a power outage, for example), you'll lose only the last 15 minutes of work.

PRINTING

There are two print commands in MacWrite; both are accessed via the File menu.

File//Print Setup tells MacWrite the size of paper you're using. When you select File//Print Setup, you're given a choice of paper sizes, expressed in letter standards (see Figure 8-29).

Here's how the standards and other options measure up:

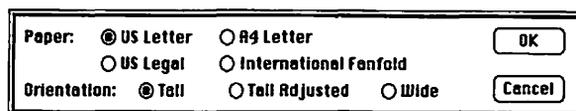


Fig. 8-29. To change the printing dimensions, call up the File//Print Setup command and click the desired Paper and Orientation options.

US Letter	8½-by-11-inches
US Legal	8½-by-14-inches
A4 Letter	8¼-by-11 2/3-inches
Intl. Fanfold	8¼-by-12 inches
Tall	Text printed upright
Tall Adjust	Text printed upright with correctly proportioned pictures.
Wide	Text printed sideways.

There's no need to use File// Print Setup if you're going to be printing standard text on 8½-by-11-inch paper—the US Letter option is chosen automatically (it is the “default” option).

To make a printed copy, choose the File//Print command. Before printing commences, however, a dialog box like that in Figure 8-30 appears. It asks the print quality you want (see Figures 8-31 to 8-33 for examples), the number of copies you want printed, and the start and stop page numbers. After you've set things up the way you want them, click the OK button and printing will begin (make sure your printer is connected and turned on before clicking OK, or nothing will be printed).

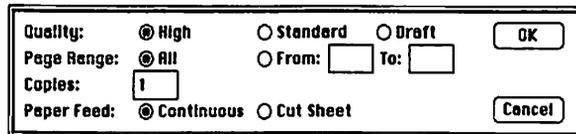


Fig. 8-30. Before printing with MacWrite, you're always given the chance to specify the number of pages to be printed, the print quality, the number of copies required, and whether you're using single-sheet or continuous-feed paper in the printer.

Chapter 1

My Uncle Makes a Great Discovery

Looking back to all that has occurred to me since that eventful day, I am scarcely able to believe in the reality of my adventures. They were truly so wonderful that even now I am bewildered when I think of them.

My uncle was a German, having married my mother's sister, an Englishwoman. Being very much attached to his fatherless nephew, he invited me to study under him in his home in the fatherland. This home

Fig. 8-31. Part of a document printed in High mode.

Chapter 1

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My uncle was a German, having married my mother's sister, an Englishwoman. Being very much attached to his fatherless nephew, he invited me to study under him in his home in the fatherland. This home

Fig. 8-32. Part of a document printed in Standard mode.

Chapter 1

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My uncle was a German, having married my mother's sister, an Englishwoman. Being very much attached to his fatherless nephew, he invited me to study under him in his home in the fatherland. This home

Fig. 8-33. Part of a document printed in Draft mode (no fonts or pictures possible).

BACK AT THE DESKTOP

When you've finished with MacWrite, leave the program by choosing the Quit command from the File menu. If you haven't saved the latest version of your document, MacWrite will prompt you to do so (just click the Yes button to save). Within a few seconds, you'll be back at the desktop and ready for the next job.

An Introduction to Multiplan

Just as pen and paper have been the tools of the writer's trade, accountants and bookkeepers through the ages have relied on ledger pads to record numbers and other financial data. With the age of computers upon us, the ledger pad has bowed to the electronic spreadsheet. Now, crunching numbers will never be the same.

One of the premier electronic spreadsheet programs for the Macintosh is Multiplan, from Seattle-based Microsoft. The overall design of Mac Multiplan is fancy and sophisticated, but that sophistication doesn't become complex when you sit down to use the program.

Thanks to the Macintosh, the full computational power of Multiplan is right at your fingertips in easy-to-use menus. There are no strange and cryptic command codes to memorize. Despite its "user friendliness," however, Multiplan lets you sail through your work quickly and gracefully, with a minimum of pain and effort.

Multiplan makes perfect sense for accountants and bookkeepers. But it can be equally handy for anyone who works with numbers. It's a powerful data processing tool for scientists, engineers, forecasters—anyone with numbers to "crunch."

This chapter introduces you to Macintosh Multiplan. You'll learn the basics of what Multiplan does; how to enter numbers, formulas, and text; how to change or rearrange data once you've entered it; how to print the results; and much more.

STARTING MULTIPLAN

Getting started with Multiplan is easy. Turn the Mac on, slip the Multiplan disk in the drive, and wait until the Multiplan disk icon is displayed. Double-click on the disk icon to open it.

After the disk is opened, simply double-click on the Multiplan icon to start Multiplan. In less than a half minute, a blank Multiplan worksheet will appear (see Figure 9-1).

THE MULTIPLAN WORKSHEET

In case spreadsheet software is new to you, we'll get off to a sound footing by covering what a worksheet is and what it does. Multiplan's worksheet is a two-dimensional grid, with a number of horizontal and vertical lines. The intersection of these lines creates *cells*. Cells can contain:

- Numbers
- Formulas to process those numbers
- Text to explain what all the numbers mean

With electronic spreadsheet programs, the individual cells must be identified in some way. Multiplan identifies cells by their *row* and *column* coordinates. It's a simple procedure. The cell created by the intersection of row 1 and column 1 is named R1C1. The cell created by the intersection of row 5 and column 10 is R5C10. In spreadsheet parlance, R1C1 and R5C10 are *cell addresses*. A cell is the

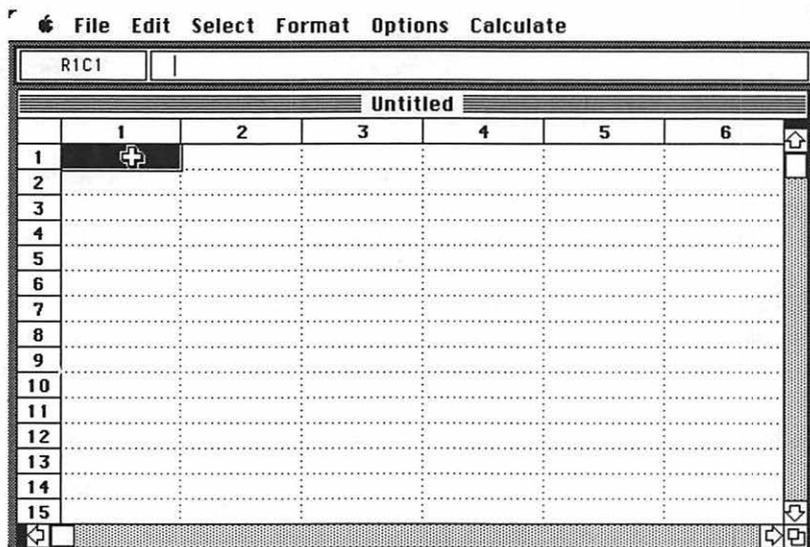


Fig. 9-1. A blank Multiplan worksheet.

smallest component of the worksheet. Multiplan can create a worksheet with up to 63 columns and 255 rows, for a total of 16,065 cells. That's plenty for just about any application.

MacTip 9-1

Multiplan usually displays only six columns and 15 rows at a time. To see a different part of the worksheet, use the scroll bars in the usual manner. For example, to scroll the worksheet over to the right, press the right scroll arrow. Or drag the elevator in the horizontal scroll bar to the right.

Word processing programs such as Apple's MacWrite and Microsoft Word use a blinking insertion point to indicate where text will be entered when something is typed from the keyboard. With electronic spreadsheet programs, you must enter numbers and text into cells, so there must be a way of indicating which cell is to receive the entry.

At any time, one cell, and one cell only, is *current* in the Multiplan worksheet. The current cell is the one Multiplan thinks you're interested in. If you enter a number, for instance, it will be placed in the current cell.

The current cell is always highlighted and shown with a white border. For added feedback, the address of the current cell is shown in the left box of the *formula bar* (the white area immediately above the worksheet window). As shown in Figure 9-2, the cell reference in the formula bar is R2C3, because cell R2C3 is the current cell.

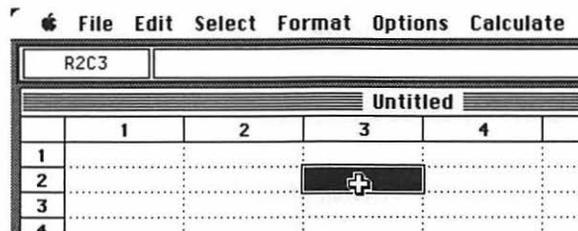


Fig. 9-2. The left part of the formula bar shows which cell is current.

To select a new current cell, move the pointer over to that cell and click the mouse button. The new current cell will become highlighted, and the cell address in the formula bar will change. Once the new cell has been made current, type in your entry. That's all there is to it. There are no cursor keys to press or commands to give.

You may have noticed that when the pointer is positioned over the worksheet area, it turns into a fat plus sign. The pointer will turn into many shapes, depending on where it is on the screen—a hand, double arrows, and more.

A SIMPLE WORKSHEET

A simplified Multiplan worksheet with all three types of cell entries—text, numbers, and formulas—is shown in Figure 9-3. Here, text was entered into the top left cell. This text, “Simple Addition,” explains what the worksheet is doing (in this case, adding 2 and 2). Multiplan doesn’t use this entry for computation. Because the entry is made up of letters, Multiplan recognizes it as explanatory text and ignores it.

The screenshot shows a window titled "Multiplan" with a menu bar containing "File", "Edit", "Select", and "Format". Below the menu bar is a toolbar with a cursor icon and a formula icon. The main area displays a worksheet with the following data:

	1	2
1	Simple Addition	
2	2	
3	2	
4	=R1C1+R2C1	
5		
6		

The formula bar at the top shows "R4C1" and "=R1C1+R2C1".

Fig. 9-3. A very basic Multiplan worksheet.

The next two cells contain numbers—two 2’s. These are the numbers, or values, that Multiplan will add. The last cell contains a formula. We’re adding 2 and 2 here, so the formula says “=R2C1+R3C1,” (indicating that we’re adding the contents of two cells, both of which happen to be filled with 2’s. When Multiplan goes to work, it will add the two numbers and display the result in cell R4C1.

CREATING THE WORKSHEET

Adding two numbers together is a ridiculously simple task for Multiplan. Some things are better left to a simple \$10 calculator. Where Multiplan really shines is in doing “what if” calculations. If you design a worksheet and then plug in a different set of numbers, Multiplan will automatically recalculate the worksheet with your new numbers.

Let’s look at the sophistication of Multiplan by creating a more elaborate worksheet. To start, make sure the Multiplan worksheet is blank. If it is not, choose the File//New command. This will blank out the worksheet for you. (You’ll probably get a dialog box that asks if you want to save the current worksheet before starting a new one. This time, answer “No”.)

Now, to work. Position the pointer over cell R1C1 and click the mouse button. Depress the mouse button once more and drag down to row 5. The first five cells in column 1 should now be highlighted, as shown in Figure 9-4.

Notice that although the first five cells are shown highlighted, cell R1C1 still has

5R x 1C	
	1
1	1
2	
3	
4	
5	
6	
7	

Fig. 9-4. Cells R1C1 through R5C1, highlighted and ready for work.

a white border around it. Cell R1C1 is still the current cell. If you type a number, for instance, it will be placed in cell R1C1.

Cells R2C1 through R5C1, on the other hand, comprise the *selection*. The distinction between current cell and selection is one you should know. The current cell is the one you want to *fill*. It will receive the number, formula, or text when you type it in from the keyboard. It is Multiplan's insertion point.

The selection is the group of cells you want to further manipulate. You might want to delete several cells at once, for instance. Do it by selecting them, then choosing the Edit//Clear command.

If you've used MacWrite, you know that you can select one or more characters by dragging over them with the mouse. For example, you might select a group of words to delete or to copy. Or you might want to change their font or font size. Cell selection in Multiplan is really no different. It allows you to work with a number of cells at once.

Let's start entering text and numbers. Type in the text shown in Figure 9-5. Finish each entry by pressing the Enter key. When you press Enter, Multiplan makes the cell below current.

With all the text entered, select cells R1C2 through R5C2. Enter the bean prices shown in column 2 of Figure 9-6. Repeat this process for the numbers in columns 3, 4, and 5 (keep pressing Enter when you've finished with the Entry; don't press the Return key). When you've entirely finished, your worksheet should look like Figure 9-6.

	1
1	1
2	Butter Bean
3	Garbanzo
4	Green
5	Navy
6	Lima
7	

Fig. 9-5. Type this text as shown.

Untitled					
	1	2	3	4	5
1	Butter Bean	666	570	410	580
2	Garbanzo	237	254	190	245
3	Green	541	583	433	564
4	Navy	594	612	418	608
5	Lima	219	244	100	225
6					

Fig. 9-6. The sample worksheet with all numbers entered.

MacTip 9-2

If you make a mistake, use the Backspace key to back up over the mistyped character. Retype correctly.

If you really mess things up, press the small *stop sign* that appears in the formula bar. This clears whatever you've typed.

If you spot a mistake after you've pressed Enter, there are a couple of ways you can handle the situation.

One is to choose the Edit//Undo command. In most cases, Edit//Undo will reverse the last command or action. If you've already pressed the Enter key, Edit//Undo will delete the entry. You can then retype the entry correctly.

Another way is to ignore the mistake for the time being and type the text into the rest of the cells. When you've finished, press the Enter key repeatedly until the cell with the incorrect entry becomes current again. Retype the entire entry. (Of course, there are ways to selectively edit the contents of a cell, but we're getting ahead of ourselves).

MacTip 9-3

When entering a row or column of text or numbers, it's easier to select the group of cells that will receive the entries, as you've done here, and then press the Enter key to go from one cell to the next.

You can also use the Return, Tab, and Shift keys to move the current cell indicator around the worksheet. When you use these keys, don't select the group of cells as you do when using the Enter key.

- To move down one cell, press the Return key.
- To move up one cell, press the Shift and Return keys.
- To move right one cell, press the Tab key.
- To move left one cell, press the Shift and Tab keys.

Text and numbers are easy to enter into Multiplan. Just type the entry. Formulas are a little more complex and require more attention to detail. Multiplan knows you're entering a formula if the entry starts with an equals (=) sign.

For example, the entry "=R2C1+R3C1" is a formula. As you've seen, this formula instructs Multiplan to add the contents of cell R2C1 and R3C1. The cell that contains the formula will be used to show the result of the calculation.

MacTip 9-4

Multiplan recognizes as a number an entry that includes any combination of these characters only:

1 2 3 4 5 6 7 8 9 0 - + . E or e

If the entry includes any other character, Multiplan treats it as text.

There is one exception to this last rule. If the entry starts with an = sign, Multiplan thinks it's a formula, and will try to work with it as a formula no matter what other characters the entry includes.

If you want to enter text that starts with an equals sign or want to enter a number and have it treated as text, surround the entry with double quotes (""). For example, to enter 1985 as a date rather than a number, type it as "1985." When the entry appears in the cell, it will lack the quotes (if, for some reason, you want quotes to appear, type them double—"""1985""").

Text and numbers are entered into cells by typing them character by character. However, formulas needn't always be typed this way. You don't need to type "=R2C1+R3C1," for example. Rather, it's possible to tell Multiplan which cells are to be included in the formula by pointing at them with the mouse.

Let's demonstrate this by adding the first row of numbers in the example. Make cell R7C2 active by clicking on it (we will use to contain the formula—and thus, the result). Start the formula by typing an =, then click cells R1C2 through R5C2 each in turn. With each click, Multiplan will build the formula for you (it will be shown growing in size in the formula bar, as shown in Figure 9-7). When you've clicked all five cells, press Enter. The result, 2257, will be shown in cell R7C2.

ABSOLUTE AND RELATIVE CELL ADDRESSES

While clicking, you probably glanced at the formula Multiplan was creating. It looked mighty strange, with all sorts of brackets and + and - signs, right? The formula Multiplan dutifully built for you uses *relative* cell addresses.

That is, instead of identifying cell R1C2 as "R1C2," Multiplan referred to it as "R[-6]C." This identifies the cell as the one "six rows up in this same column." "R[-5]C" is the cell five rows up in this column, and so forth. Multiplan figured you

Untitled			
	2	3	4
in	666	570	410
	237	254	190
	541	583	433
	594	612	418
	19	244	100

Fig. 9-7. A close-up of the formula bar.

wanted to add the cells together, so it automatically placed a + sign between the cell addresses.

MacTip 9-5

Multiplan automatically places a + sign between clicked cells, but you can enter another arithmetic operator if your aim is not to add cells together. Multiplan also recognizes subtraction (-), multiplication (*), and division (/).

Conversely, with an *absolute* cell reference, Multiplan looks for a particular cell on the worksheet, regardless of the spatial relationship between the formula and referenced cell.

Why relative and absolute cell addresses? Here's a good example. Let's say you type in a formula using absolute references that adds three cells together: R1C1, R2C1, and R3C1. The formula would read "=R1C1+R2C1+R3C1."

As you continue to create the worksheet, you decide to add an extra number. Wouldn't you know it! The number needs to go in row 2. You'll have to add a row to make room for the new entry (exactly how this is done is discussed a few pages later in this chapter).

When the row is added, the original R2C1 and R3C1 cells are displaced — they both drop down one cell. Since you used absolute cell references, your formula is tied to cells that no longer contain the information you need. You'll have to retype the formula to compensate for the changes. With relative cell addresses, however, you can make physical changes to the worksheet without affecting the integrity of most formulas.

SHORT-SHORTCUTS

Entering formulas is the toughest part of Multiplan and the most time-consuming. Even so, if your worksheet uses the same basic formula in several places, there are several ways to speed up the job.

One way is to make a copy of the formula and place it in another cell. Do this by using the Edit//Copy and Edit//Paste commands. Try it by clicking on cell R7C2. If you haven't changed the worksheet, our original formula that generated the result will be shown in the formula bar (it looks long and confusing, but you needn't worry about it—Multiplan knows what to do with it).

Follow up by choosing Copy from the Edit menu. The formula (not the result) will be copied to the Clipboard. Click in cell R7C3 and choose Paste from the Edit menu. The formula will be copied from the Clipboard and inserted into cell R7C3. The displayed result is the sum of cells R1C3 through R5C3.

MacTip 9-6

You can also use the Edit//Fill Right and Edit//Fill Down commands to copy the contents of cells. In the worksheet example you'll want to use Edit//Fill Right. Click on cell R7C3, then drag across to cell R7C5. Your worksheet should now look like Figure 9-8.

Choose Fill Right from the Edit menu. The formula contents of cell R7C3 will automatically be copied to cells R7C4 and R7C5. Each result in row 7 is the sum of the numbers above it.

ABOUT MULTIPLAN'S FUNCTIONS

Multiplan can add, subtract, multiply, and divide the contents of cells. More complicated formulas can be created using Multiplan's built-in functions. You can think of functions as shortened versions of complex formulas. For example, there is a function built into Multiplan that lets you find the average of a list of numbers. Without the function you'd have to write a formula that adds the numbers together, then divides the sum by the number of cells added.

Using Multiplan's average function, you'd simply type in "=AVG" and say which cells you want included in the formula. Averaging numbers is but one of over 40 functions built in to Multiplan. There are others for finding the absolute

Untitled					
	1	2	3	4	5
1	Butter Bean	666	570	410	580
2	Garbanzo	237	254	190	245
3	Green	541	583	433	564
4	Navy	594	612	418	608
5	Lima	219	244	100	225
6					
7		2257	2263		
8					

Fig. 9-8. Select these cells, and then give the Edit//Fill Right command.

value of a number, determining net present value, calculating arc tangents, cosines, sines, and tangents, and more.

Perhaps the most used function is SUM, which adds a list of numbers. Rather than building a formula by clicking on each cell to be added, use the SUM function instead. Here's how it's done.

Click in cell R1C6. It will become current. Type:

=SUM(

but don't press Enter yet. With the mouse, drag over all the number entries in row 1 (from R1C2 to R1C5). Take a look at the formula bar, as shown in Figure 9-9. Instead of listing each cell, it shows a range of cells—RC[-4]:RC[-1]. Type a right parenthesis:

)

and press Enter. In cell R1C6 will be the sum of the cells in row 1.

The screenshot shows a spreadsheet window titled "Untitled". The formula bar at the top contains the formula `=SUM(RC[-4]:RC[-1])`. Below the formula bar is a table with columns labeled 2, 3, 4, 5, and 6. The first row of data contains the values 666, 570, 410, 580, and 2226. The cell containing 2226 is highlighted in black, indicating it is the active cell. Below the first row of data, there are some faint numbers: 277, 254, 100, and 245.

	2	3	4	5	6
Jan	666	570	410	580	2226
	277	254	100	245	

Fig. 9-9. The SUM function adds several cells together.

There's another, and somewhat easier, way to enter functions. Use the Edit//Paste Function command. Try this by clicking in cell R2C6. Now, choose the Paste Function command from the Edit menu. Within a second or two, you'll be greeted by the Paste Function window. Press the down arrow to scroll the contents of the window. Stop when you come to "SUM()." Click SUM() to select it, and then click the OK button (Figure 9-10).

In the formula bar is "=SUM()." A blinking insertion point appears between the parentheses. The range of cells to be included in the formula will be placed here. Use the mouse once again to drag across the entries in row 2. Finish by pressing the Enter key.

To complete this part of the worksheet, add rows 3, 4, and 5 together, as well. You can go through the SUM function routine again, or you can use Edit//Copy and Edit//Paste or the Edit//Fill Down command. When you have finished, your worksheet should look like Figure 9-11.

CELL EDITING

Few worksheets are perfect when first created. In most cases, the contents of the cells must be adjusted to reflect new data. Or you may want to see how a change in business climate or sales figures would affect your bottom line.

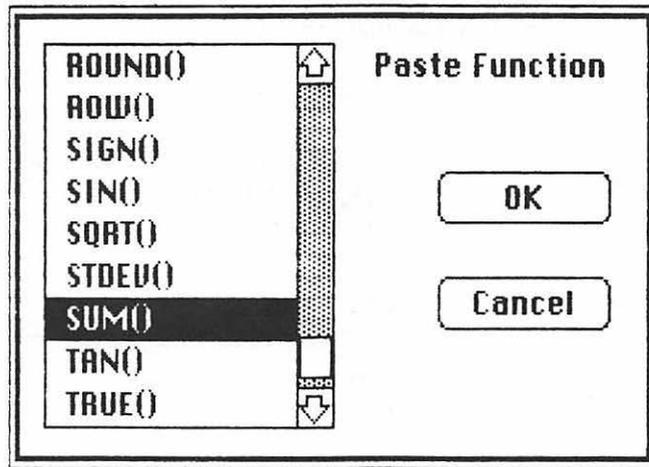


Fig. 9-10. Choose the SUM() command.

File Edit Select Format Options Calculate

R15C1

Untitled

	1	2	3	4	5	6
1	Butter Bean:	666	570	410	580	2226
2	Garbanzo	237	254	190	245	926
3	Green	541	583	433	564	2121
4	Navy	594	612	418	608	2232
5	Lima	219	244	100	225	788
6						
7		2257	2263	1551	2222	
8						
9						
10						
11						
12						
13						
14						
15						

Fig. 9-11. The SUMmed worksheet.

The easiest way to edit the contents of a cell is to click on it and type a new entry. For a number, this is easier done than said. Just click in the cell you want to change, and type the new number. Let's do it with cell R3C2. Click it, then type 441. Press Enter. The worksheet will be automatically recalculated using the new number.

If you're working with a long bit of text or a complex formula, you may not want to re-enter entirely new material. The contents of the cell can be edited character by character.

To edit a cell, click on it. As you know, this tells Multiplan which cell you want to work with. Then move the the pointer to within the formula bar. Clicking the formula bar makes it active. In addition, where you clicked indicates where the insertion point is placed (see Figure 9-12). If you don't get the insertion point exactly where you want it the first time, move the pointer and click again.

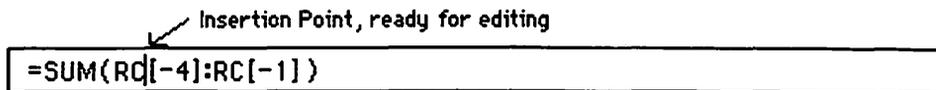


Fig. 9-12. Use the formula bar to edit cell entries.

Edit the text in the formula bar as you would any other text. To insert new characters, start typing. Use the Backspace key to erase characters to the left of the insertion point.

When you have finished editing, press the Enter key. This places the newly edited text, number, or formula into the current cell.

MacTip 9-7

If you overedit an entry, you can easily go back to the original version. Just click the small stop sign that appears in the formula bar. If you spot a mistake after you've pressed Enter, use the Edit// Undo command.

INSERTING ROWS AND COLUMNS

Along with editing the content of cells, you'll probably be fine-tuning the layout of the worksheet. For example, you may need to insert another row or column, to make room for additional data. Our example worksheet lacks column heads, so a new row should be added to accommodate them. Fortunately, the process is a simple one.

Start by placing the pointer along the far left edge of the worksheet window, over the numbered blocks. These blocks are more accurately called *row heads* (likewise, the blocks above the columns are *column heads*). Line up the pointer in the "1" row head. Press the Shift key and keep it pressed. The pointer should turn into a strange down arrow.

Click the mouse button and release the Shift key. In a few seconds, a new row will be added. All the other rows will be shifted down. Of course, adding columns is just as easy. To add a column, line the pointer up where you want the new column, press the Shift key, and click the mouse button.

To make it easier to enter the column headings, click in cell R1C2 and drag over to cell R1C6. Type the text shown in Fig. 9-13, and press Enter after each entry. The current cell indicator will shift from cell to cell along the length of the selected area. Finally, for the sake of clarity, add a big fat "TOTALS" label to cell R8C1.

MacTip 9-8

Deleting rows and columns is done a little differently. To delete an entire row: click on the row head to be deleted, then choose the Edit//Cut command. The rows below will move up to fill the gap created by the removal.

To delete an entire column: click on the column head to be deleted and then choose the Edit//Cut command. The columns to the right will move over to fill the gap.

CELL FORMATTING

There may come a time when you want to display more than raw numbers in the cells of a worksheet. You may want to show that the numbers are dollars or percentages, for instance. Unfortunately, Multiplan will not allow you to enter values with dollar or percent symbols (if you do, Multiplan treats the entries as text).

What's more, Multiplan automatically aligns numbers with the right edges of the cells, and text with the left. You may, for one reason or another, want to alter this alignment convention. Altering the way values and text are displayed in cells, and their alignment, is the job of the Format menu.

The screenshot shows a Multiplan window with the menu bar: File Edit Select Format Options Calculate. The active cell is R8C1, containing the text "TOTALS". The worksheet contains the following data:

First example						
	1	2	3	4	5	6
1		1st QTR	2nd QTR	3rd QTR	4th QTR	Year Total
2	Butter Bean	666	570	410	580	2226
3	Garbanzo	237	254	190	245	926
4	Green	441	583	433	564	2021
5	Navy	594	612	418	608	2232
6	Lima	219	244	100	225	788
7						
8	TOTALS	2157	2263	1551	2222	
9						
10						
11						
12						
13						
14						
15						

Fig. 9-13. The new worksheet, with text.

The Format menu lets you display numbers in seven distinct ways: general, dollar, percent, no decimal, decimal, scientific, and bar graph. You can mix number formats within one worksheet because you can select which cells are to be altered. When first started, Multiplan assumes you want to display numbers in the general format—that is, numbers are displayed pretty much as entered, without commas or other marks.

To change the numbering format, select the cells to be changed, and then choose the desired format command. Let's change the numbers of the example worksheet to dollars. Place the pointer in cell R2C2 and drag diagonally down to the opposite corner, to cell R8C6. All of the cells with numbers should now be highlighted.

Choose the Dollar command from the Format menu. In a few seconds, Multiplan will update the values and place dollar signs in front of each one. It will also add a decimal point and two trailing zeros. We don't want this extra baggage, so let's delete the decimal point and zeros. This time, choose the Number of Decimals command from the Format menu. Type 0 when the dialog box appears and click the OK button. The worksheet will look like Figure 9-14.

Here, in a nutshell, are the seven Multiplan formats available (see Figure 9-15).

General displays all numbers as they were entered, with no dollar or percent sign. Multiplan may automatically change very large or very small numbers into scientific notation so it can display them within the cell (see Scientific).

Dollar places a dollar sign (\$) in front of each number—for example, in Figure 9-15, 1435.645 (the number entered) becomes \$1435.65. The number is rounded to the nearest cent because of the Number of Decimals setting (explained later in this section).

\$666	\$570	\$410	\$580	\$2226
\$237	\$254	\$190	\$245	\$926
\$441	\$583	\$433	\$564	\$2021
\$594	\$612	\$418	\$608	\$2232
\$219	\$244	\$100	\$225	\$788
\$2157	\$2263	\$1551	\$2222	

Fig. 9-14. The same numbers, now as dollars.

	1	2
1	General	1435.645
2	Dollar	\$1435.65
3	Percent	143564.50%
4	No Decimal	1436
5	Decimal (2)	1435.65
6	Scientific	1.44E+03
7	Bar Graph	
R		

Fig. 9-15. Multiplan's number formats.

Percent multiplies the value in the cell by 100 and places a percent (%) symbol after the value. For example, the number 10 in Percent format would be 1000%. Should you want to show the numeral 10 as 10^8 rather than 1000%, enter the value as .10. The number of digits shown to the right of the decimal point is determined by the Number of Decimals setting (explained later in this section).

No Decimal rounds off numbers to the nearest whole and deletes any digits to the right of the decimal point. Use the No Decimal command with caution — it can cause rounding errors in long or complex calculations.

Decimal cancels the No Decimal command and puts the number into decimal notation. The number of digits to the right of the decimal point (from 1 to 15 digits) is determined by the Number of Decimals option (explained later in this section).

Scientific transforms all values into scientific notation or exponential form. The number 5 becomes 5.00E+00, which means “5 times 10 to the 0 power,” or 5×1 . Scientific notation is handy when you’re working with especially large numbers that don’t fit neatly into Multiplan’s standard 10-character-wide cells (Multiplan cells can be enlarged or reduced, as explained later). The number of decimal places displayed in Scientific format depends on the Number of Decimals Setting (explained later in this section).

Bar Graph turns a number into a shaded bar. The length of the bar is determined by the value of the number. Positive and negative numbers are shown as different shading.

There are two commands in the Format menu that allow you to modify the seven formats just described. The Number of Decimals command lets you tell Multiplan how many digits you want (from 0 to 15) to the right of the decimal point. Format//Number of Decimals affects the presentation of numbers in the Dollar, Percent, Decimal and Scientific Format commands. The Commas command does a simple job: it inserts commas in numbers exactly where they belong. The Commas command affects the General, Dollar, Percent, No Decimal, and Decimal formats.

To change the alignment of text and numbers within the cell, choose the Align Left, Align Center, or Align Right commands. Normally, text is displayed aligned left and numbers are displayed aligned right. There may be plenty of times when you want to center text or values or both. Let’s try this in the example by centering the column headings.

Select all the cells in the top row. Drag over them in the usual manner, or try this shortcut: Place the pointer in the “1” row head and click the mouse button. The entire row — all 63 columns across — will be highlighted (this trick also works for the column heads). With either method, finish by choosing the Format//Align Center command. In a flash, the text is shown centered (Figure 9-26).

Multiplan cells can hold up to 255 characters each. But they can only display 10 characters at a time. You may have noticed, if you’ve done some extracurricular playing with Multiplan, that a cell sometimes fills with stars (*). This occurs when the cell includes a number that is too long to fit. Multiplan’s columns can be reduced or enlarged to accommodate just about any size data. The column width can be changed in either of two ways: with the mouse or with the Format//Column Width command.

Untitled						
	1	2	3	4	5	6
1		1st QTR	2nd QTR	3rd QTR	4th QTR	Year Total
2	Butter Bean	\$666	\$570	\$410	\$580	\$2226
3	Garbanzo	\$237	\$254	\$190	\$245	\$926
4	Green	\$441	\$583	\$433	\$564	\$2021

Fig. 9-16. A sample of center-aligned text.

To change the width of a column with the mouse, follow these simple steps. Place the pointer over the right edge of the head of the column you want to enlarge, as it is in Figure 9-17. Make sure the pointer is resting over the dividing line between that column and the next one to the right. Then drag the mouse to the left or right, as desired. If you drag the column divider to the left, the column width will be decreased. If you drag the column divider to the right, the column width will be increased. A column can be as wide as the screen, but no wider.

Untitled						
	1	2	3	4	5	6
1		1st QTR	2nd QTR	3rd QTR	4th QTR	Year Total
2	Butter Bean	\$666	\$570	\$410	\$580	\$2226
3	Garbanzo	\$237	\$254	\$190	\$245	\$926
4	Green	\$441	\$583	\$433	\$564	\$2021
5	Navy	\$594	\$612	\$418	\$608	\$2232
6	Lima	\$219	\$244	\$100	\$225	\$788
7						
8	TOTALS	\$2157	\$2263	\$1551	\$2222	
9						
10						
11						
12						
13						
14						
15						

Fig. 9-17. Use the mouse to increase or decrease the width of the columns.

Here's the other method of changing column width: Set the column width by selecting the column or columns to change (click in the column head), and then choose the Format//Column Width command. A dialog box will appear asking the number of spaces to set. Type in the number and press OK.

ALL ABOUT RANGES

Most of the time you'll be using Multiplan to work with a number of cells at once. As you've already learned in this chapter, you can total a row of numbers by

using the Edit//Paste Function command, scrolling to and clicking the SUM() option, and then using the mouse to indicate the cells to be added together. This group of cells is more commonly called a *range*.

MacTip 9-9

If you want to return all columns to the regular width of 10 spaces, choose the Format//Column Width command, click the Set All Columns to Standard Width box, and then click OK.

Normally, a range is indicated by dragging over the cells, or by typing the range address ("R-5]C:[R-1]C", for example). But dealing with ranges this way can get tedious and confusing. With Multiplan, you can give a name to a range of cells. Then, whenever you want to deal with that range, it's as easy as entering its name.

To see how this is done, click in cell R2C2 and drag across to cell R2C5. This is the range of cells that will be named. Follow by choosing the Select//Define Name command. In a few seconds, a dialog box, like that in Figure 9-18, will appear asking for the name of the range that was selected.

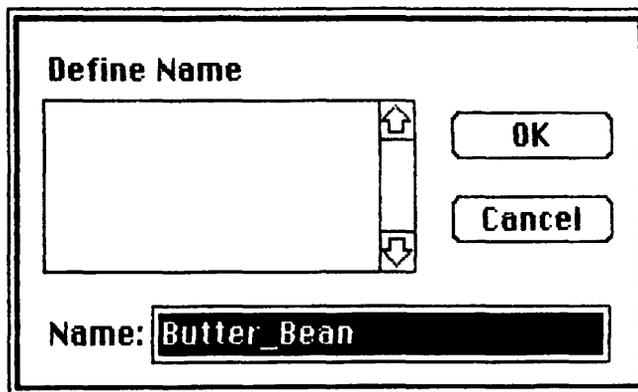


Fig. 9-18. The Define Name box.

Multiplan suggests the name "Butter__Bean." This name is offered because it's the text immediately to the left of the first cell of the range. In this instance, "Butter__Bean" is a perfect choice. Press the OK button to accept the name. (In case you're wondering, if you want a different name, you can simply type it in. As you type, the old name will be erased and replaced by the new one.)

Now, when you want to use the range of cells from R2C2 to R2C5, type "Butter__Bean" into the formula and you'll get the proper result. Try it out. Click in cell R2C6. Type in the formula

=SUM(Butter__Bean)

and press Enter. The answer is the same as before.

Range names can be used to create formulas, too. Repeat the range naming process for each row of beans. When finished, click in cell R8C6. Choose the Edit//Paste Function command and click the SUM() option. Type

Butter__Bean:Lima

(for "Butter__Bean to Lima") and press Enter. Shown in cell R8C6 is the year's total sum of all beans. Compare your results with Figure 9-19.

The screenshot shows a spreadsheet window titled "Untitled". The menu bar includes "File", "Edit", "Select", "Format", "Options", and "Calculate". The active cell is R8C6, containing the formula `=SUM(Butter__Bean:Lima)`. The spreadsheet data is as follows:

	1	2	3	4	5	6
1		1st QTR	2nd QTR	3rd QTR	4th QTR	Year Total
2	Butter Bean	\$666	\$570	\$410	\$580	\$2226
3	Garbanzo	\$237	\$254	\$190	\$245	\$926
4	Green	\$441	\$583	\$433	\$564	\$2021
5	Navy	\$594	\$612	\$418	\$608	\$2232
6	Lima	\$219	\$244	\$100	\$225	\$788
7						
8	TOTALS	\$2157	\$2263	\$1551	\$2222	\$8193
9						
10						
11						
12						
13						
14						
15						

Fig. 9-19. The finished worksheet.

MacTip 9-10

When you create a range name, follow these rules:

The first character in the name must be a letter.

No spaces are allowed in the name, but any character is permitted (you can substitute the underscore character (`_`) for a space, if you like).

Multiplan doesn't regard case in range names. "Garbanzo" is treated the same as "GARBANZO."

The name can't look like a cell or range reference (absolute or relative).

The name can't be more than 31 characters long. (For your ease of use, it should be as short as possible.)

In addition to selecting ranges (for naming or otherwise) by dragging the mouse, you can also select an entire-row or entire-column range by clicking the row or column head.

MacTip 9-11

You can also establish a group of noncontiguous cells (cells that aren't together) as one range by using the mouse in combination with the Command key. This is something that few other electronic spreadsheet programs can do.

1. Drag over the first group of cells to be included in the range.
2. Depress the Command key.
3. Keep the Command key depressed and drag over the next group of cells.

Continue this process until all cell groups are selected for inclusion in the range. Name the range as usual.

MULTIPLE WINDOWS — MULTIPLAN'S SPLIT PERSONALITY

One of the nicest features of Multiplan is that you can simultaneously look at several portions of the worksheet, with Multiplan's 2-in-1 and 4-in-1 windowing feature.

As shown in Figure 9-20, you can split the screen to view several parts of the worksheet at once. You can split the worksheet at any point horizontally or any point vertically.

The control for splitting the window vertically is found in the leftmost area of the horizontal scroll bar. Drag the small black rectangle that's adjacent to the left scroll arrow, to pull the vertical split bar into action (see Figure 9-21). Continue dragging until the window is split the way you want it. When the worksheet is split vertically, you get two horizontal scroll bars. Press the scroll arrows or drag the elevators to independently view different parts of the worksheet.

To split the screen horizontally, drag the horizontal split bar (located above the up scroll arrow). This time, you get two vertical scroll bars. As you probably guessed, you can use the vertical and horizontal splitters separately or together.

PRINTING WORKSHEETS

Once a worksheet is complete, you'll probably want to make a paper copy of it. Just as in other programs for the Mac, printing is accomplished by choosing the File//Print command. But there's a little more to it than this.

Choosing the File//Print command prints the active part of the worksheet (the active part is the area that includes cell entries). However, there will be times when

	1	2	3	7	8	9
1		1st QTR	2nd QTR			
2	Lima	\$219	\$244	\$219	\$244	\$100
3	Garbanzo	\$237	\$254	\$237	\$254	\$190
4	Green	\$441	\$583	\$441	\$583	\$433
3	Garbanzo	\$237	\$254	\$237	\$254	\$190
4	Green	\$441	\$583	\$441	\$583	\$433
5	Butter Bean	\$666	\$570	\$666	\$570	\$410
6	Navy	\$594	\$612	\$594	\$612	\$418
7						
8	TOTALS	\$2157	\$2263			
9						
10						
11						
12						
13						

Fig. 9-20. A four-way split, Multiplan style.

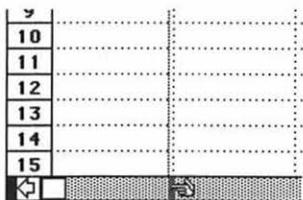


Fig. 9-21. Dragging the vertical split bar.

you'll want to print just a portion of your worksheet. To do this, drag over the cells to be printed. If what you want to print extends beyond the screen, keep dragging. The window will automatically scroll to keep up with you.

Choose the Print command from the File menu. Before printing starts, Multiplan will present a dialog box. To tell Multiplan to print the highlighted cells only, click the Print Selection Only box.

Multiplan offers several formats for printing worksheets. Before printing, choose the Page Setup command from the File menu. Before long, you'll be greeted by a dialog box that offers a variety of valuable printing options (Figure 9-22).

As with most other Macintosh programs, you can set the page size (usually U.S. Letter—8½ by 11 inches). You can also set the printing orientation: Tall, for vertical orientation, or Wide, for horizontal orientation.

In addition, you can instruct Multiplan to leave out the row and column

The screenshot shows a 'Print' dialog box with the following settings:

- Paper:** US Letter, A4 Letter, US Legal, International Fanfold
- Orientation:** Tall, Tall Adjusted, Wide
- Print Row and Column Numbers
- Print Gridlines
- Page Header:** [Empty text field]
- Page Footer:** [Empty text field]
- Margins:**
 - Left Margin: 0.75
 - Right Margin: 0.75
 - Top Margin: 1
 - Bottom Margin: 1

Fig. 9-22. The Print dialog box.

numbers or to print the worksheet without the grid lines. If you like, you can set a page header or footer (a header is a line of text that repeats at the top of every page; a footer is a line of text that repeats at the bottom of every page).

MacTip 9-12

You can select a larger-than-screen area by clicking once in the upper left corner of the area you want to select, scrolling to the lower right corner, and then holding down the Shift key and clicking once more. The cells between the two corners will be selected.

Multiplan allows some flexibility in designing headers and footers. You can have Multiplan automatically add the time, date, or page number to the header or footer. And you can have Multiplan align the header or footer text to the left, right, or center of the page. MacTip 9-13 tells how to enter these formatting codes into a header or footer.

MacTip 9-13

Multiplan can print one line of text on the top (header) or bottom (footer) of every page. To indicate the header, click in the header text window and type the text (see Figure 9-23). To indicate the footer, click in the footer text window, and type the text.

To have Multiplan automatically include the time, date, or page number in the header or footer, use one of these codes:

- &P Prints the page number.
- &D Prints the date.
- &T Prints the time.

Orientation: Tall Tall Adjusted Wide

Print Row and Column Numbers

Print Gridlines

Page Header:

Page Footer:

Left Margin: Right Margin:

Top Margin: Bottom Margin:

Fig. 9-23. Some sample header text.

Page Header:

Page Footer:

(A)

	1	2	3	4	5	6
1		1st QTR	2nd QTR	3rd QTR	4th QTR	Year Total
2	Butter Bean	\$666	\$570	\$410	\$580	\$2226
3	Garbanzo	\$237	\$254	\$190	\$245	\$926
4	Green	\$441	\$593	\$433	\$564	\$2021
5	Navy	\$594	\$612	\$418	\$608	\$2232
6	Lima	\$219	\$244	\$100	\$225	\$788
7						
8	TOTALS	\$2157	\$2263	\$1551	\$2222	\$8193
9						
10						
11						
12						
13						
14						
15						

(B)

Fig. 9-24. Some examples of header and footer formatting:
 (A) as entered.
 (B) as printed.

To have Multiplan align the header or footer text, use these codes:

- &L Aligns the characters that follow to the left margin.
- &C Centers the characters that follow.
- &R Aligns the characters that follow to the right margin.

Multiplan also allows you to set the top, bottom, left, and right printing margins. For example, as shown in Figure 9-25, you can set the top margin to 2 inches, the right and left margins to 1.25 inches, and the bottom margin to .5 inch.

SAVING WORKSHEETS

When you have created the worksheet (and printed it, if you like), you'll probably want to save it.

The File//Save As command saves the worksheet and asks you to name it (as with other Macintosh programs, you name the work after creating it). When you first save a worksheet, your only available option is File//Save As. Choose File//Save As. The Save As dialog box appears, inviting you to provide a name (one such box is shown in Figure 9-26). Just type in a name and press the Save button when you've finished. (Remember to keep the name under 63 characters, and don't use colons. And, by the way, that mysterious SYLK button to the right of Normal is used for transferring Multiplan data into other Microsoft programs.)

If you want to save the worksheet on a different disk, click the Eject button first. Insert the new disk, and then click Save.

Once you've given a name to the worksheet, you can resave it using the File//Save command. Since you've already provided the name, Multiplan won't ask for it again. (As an aside, it's a good idea to use the File//Save command often; otherwise, you stand to lose a lot of work if the Mac should "crash" losing everything in its random access memory for one reason or another.)

Left Margin:	<input type="text" value="1.25"/>	Right Margin:	<input type="text" value="1.25"/>
Top Margin:	<input type="text" value="2"/>	Bottom Margin:	<input type="text" value=".5"/>

Fig. 9-25. Multiplan gives you full control of page margins through the Print dialog box.

Save document as

Normal SYLK

Multiplan ...

Fig. 9-26. The Save dialog box—saving the sample worksheet.

MacTip 9-14

If you want to save another version of the worksheet (and keep the original intact), use the File//Save As command once again. You'll be asked to provide a name for the new file.

BACK AT THE DESKTOP

When you've finished with Multiplan, choose the File//Quit command. You'll be returned to the desktop. If you haven't saved the worksheet (or if you've changed the worksheet since the last save), you'll be asked if you want to save the changes. Once back at the desktop, you're ready to eject the Multiplan disk and turn the Mac off, or to use another program.

The pages you've read in this chapter have been loaded with information on using Microsoft Multiplan. But don't think you've seen it all. What else is in store? You can learn how to use the other functions in the Edit//Paste Function menu, how to protect data from accidental erasure or alteration, how to link several worksheets together, how to use the Calculate functions, and how to control the way Multiplan calculates numbers.

If, while using Multiplan, you need more information than this short chapter provides, refer to the manual that came with the program. Or check Multiplan's built-in "help" feature. You can access the help feature by choosing the  //About Multiplan command.

You can then choose one of several help topics by clicking on it, and then pressing the Help button. For example, you could scroll down the "About Multiplan" selection window to Printing, click it, and learn more about how to print with Multiplan (see Figure 9-27).

LEAVING MULTIPLAN

When you've finished with Multiplan, exit the program by choosing the Quit command from the File menu.

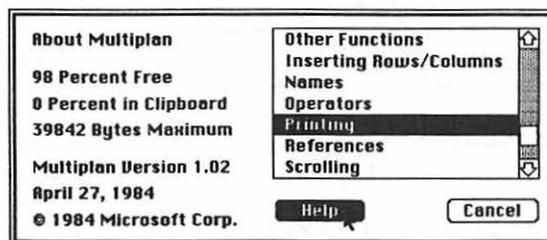


Fig. 9-27. Getting help is easy: Choose a topic and click the Help button.

CHAPTER 10

The Macintosh Unveiled

The Apple Macintosh makes computing so easy that it's hard to remember that behind the cream-colored cabinet is a powerful mix of electronics. To better understand how the Mac does its tricks, read this chapter. It's a basic, semitechnical introduction to the inside workings of the Macintosh.

The Macintosh is made of three distinct pieces, all of which work together. There's the keyboard, the mouse, and the main cabinet, which houses the Mac's internal disk drive, the video display screen, and all of the computing circuitry.

MOUSE

The Macintosh mouse is a relatively simple piece of machinery. It consists of a rubber ball mounted in its underbelly, a small but sensitive switch on the top, and inside, two rotation sensors. When the mouse is rolled on a desktop, the rubber ball rotates.

The two sensors inside the mouse pick up that movement, and relay it—through the mouse's built-in circuitry—to the Mac. The rollers sit 45 degrees apart; one picks up horizontal movement; the other picks up vertical movement.

When the Macintosh is first turned on, the mouse pointer appears in the upper left part of the screen; this is the reference point. As shown in Figure 10-1, if you

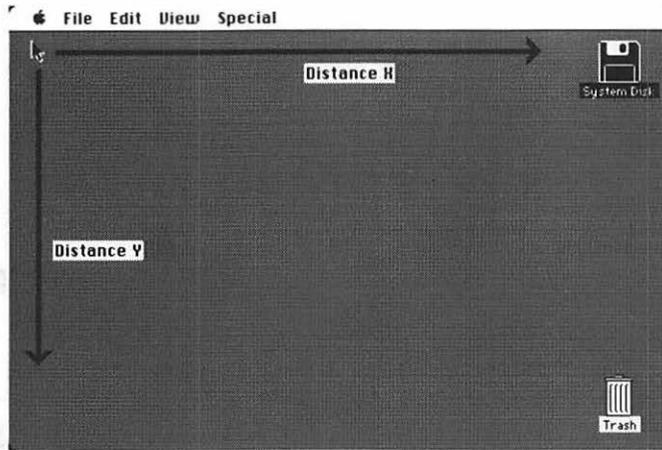


Fig. 10-1. The position of the pointer is determined by horizontal and vertical mouse motion.

move the mouse, the mouse sends electrical pulses to the Mac that correspond to direction and distance from this reference point. The pointer is moved accordingly.

The one switch on the mouse performs many functions. Depending on how you use the switch—press it, click it, double-click it, and so forth—you command the Mac to do different things. The Macintosh senses when the switch is being pressed, and correlates the pressing with the mouse's motion.

KEYBOARD

The Macintosh keyboard is little different from the keyboards found on most other computers. The one thing that does separate the Mac's keyboard from the rest is its low number of keys (it has fewer keys than many home computers, even the Apple IIe and IIc). Most computer keyboards have at least four cursor-positioning keys. The Mac's mouse makes them unnecessary.

When you press one of the Mac's keys, you engage a small microswitch. The keyboard has its own electronics to sense which of the 58 keys was struck, and encodes this information for use by the Mac.

The Mac's keyboard has what is called a two-key rollover. That is, it can interpret the signals when you have one or two keys depressed, but not three or more. This rollover feature is good for touch typists, who tend to push down on one key before completely releasing the previous one.

There are exceptions to the one-key-at-a-time rule: the Option, Shift, Caps Lock, and Command keys. You can press any or all of these while depressing any of the other Mac keys. These multiple-key combinations are helpful for giving a complex command to the Mac via the keyboard (as an alternative to using the mouse and pull-down menus).

For example, you can engage the Caps Lock key and press the Shift, Command, and number 4 keys together to create a printout of the current screen.

MAIN CABINET

The mouse and the keyboard are the Mac's means of communicating with the outside world. But, the Mac's main cabinet is where all the exciting work is done. The main cabinet is the most complex of the three major components.

To make it easier to explain, the contents inside the cabinet can be divided up into several parts: the digital board, the analog board, the cathode ray tube (CRT, or simply, the video tube), and the disk drive. All are shown in Figure 10-2. Let's take them one at a time.

Analog Board

Among other things, the analog board contains the Mac's power supply, which converts the standard 110 volts AC of your home or office to levels more suitable for a computer. Also contained on the analog board is a 1-watt audio amplifier and a small, 3-inch speaker (see Figure 10-3).

Through this amplifier and speaker the Mac can talk to you, play music, provide titillating sound effects, and more. For near concert-hall-quality sound, an external speaker can be hooked up to the Mac's amplifier (thus bypassing the small, built-in speaker), by way of a mini connector on the back of the computer.

The other major job performed by the analog board is powering the Mac's high-resolution black and white video tube. The images you see on the screen aren't created by the analog board, however; that's the job of the digital board, the heart of the Macintosh.

Digital Board

At center ring on the the digital board, shown in Figure 10-4, is the Mac's "brain": the microprocessor that performs all the number crunching and logic functions of the computer. The Mac's brain is Motorola MC68000 and is what's known as a 16/32 bit microprocessor. It connects to the Mac via 16 "data" lines (like water pipelines but for computer data). Inside, it can work with 32 bits— 1's and 0's—at a time.

Most other computers have processors that handle 8 or 16 bits at a time. It doesn't take a wizard to realize how much more innate power a Macintosh holds.

Surrounding the microprocessor is a bank of memory chips, used for temporary storage of data while you work with the Mac. This type of temporary memory is called RAM (random access memory) and is used by both the Mac and you. It can "record data" and "play it back" when it's called for.

RAM is like a water tank: it can hold only so much data before overflowing. In more technical terms, the Mac originally provided 128 kilobytes of RAM, or enough to store about 128,000 characters. (Each character is roughly equal to one

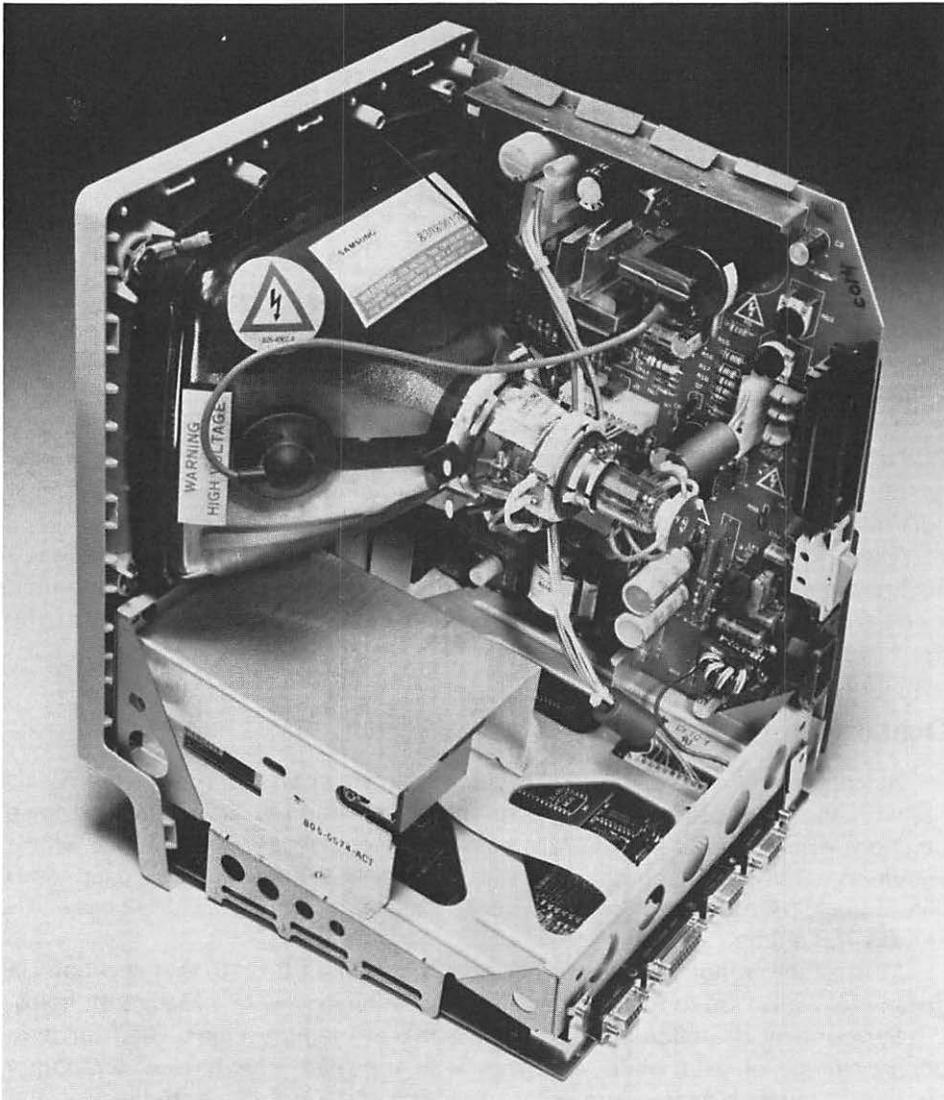


Fig. 10-2. A Macintosh, with cover removed. Note the bare high-voltage TV tube. If you ever manage to get the back cover off (which you shouldn't do, anyway), keep your fingers off this tube and the heavy wire. Touching it can result in serious electrical shock, even when the Mac is turned off and unplugged.

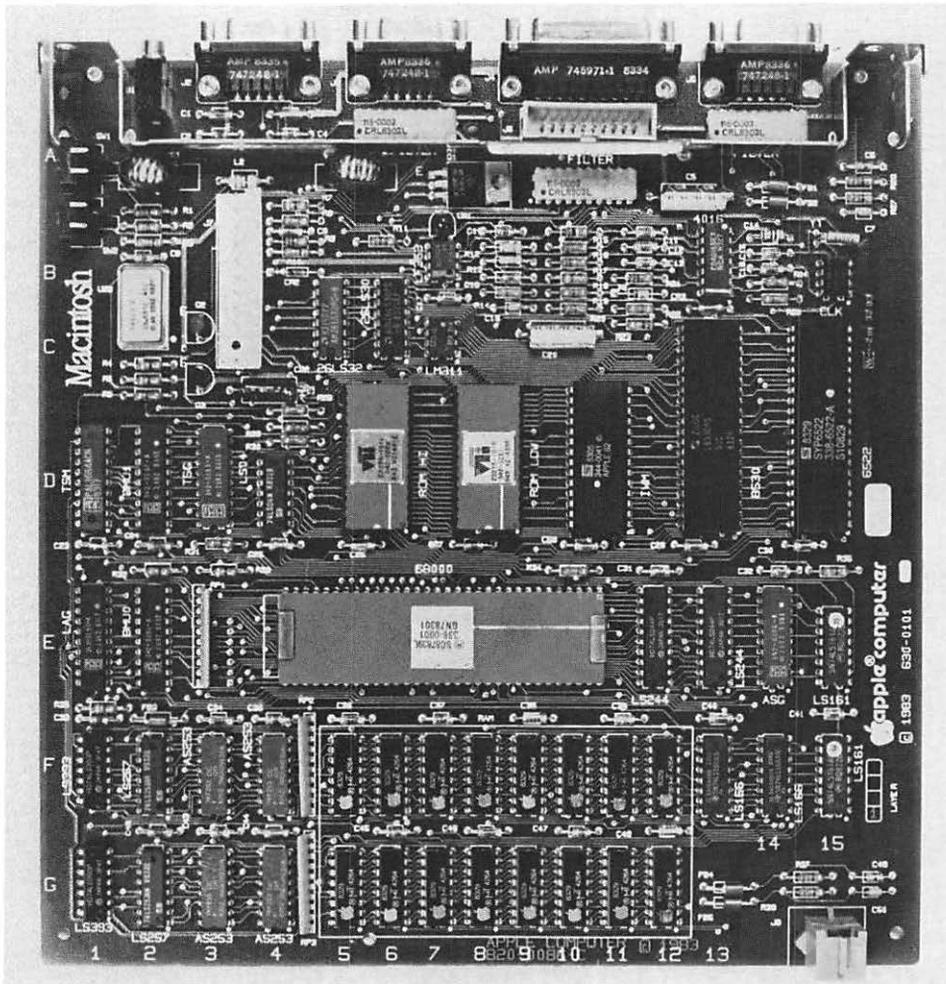


Fig. 10-4. The digital board and its major components.

video game cartridges. With those, you plug the cartridge into the game computer, and you're off. A program or a series of programs encoded in the ROM chip inside the cartridge guides the game computer along. Similarly, the Mac's ROM contains programming instruction that helps the Macintosh operate. In this case, the ROM is permanently encased within the Mac. There are no cartridges to pop in and out.

Attached to the digital board is a series of connectors that enable the Macintosh to better communicate with the outside world. You've already been introduced to the connector used to hook up the mouse. It's the one on the far left side (as seen with the back of the Mac facing you (see Figure 10-5)). It's marked not with a word, such as "mouse" or even "digital input device," but simply a small picture of a Mac mouse.

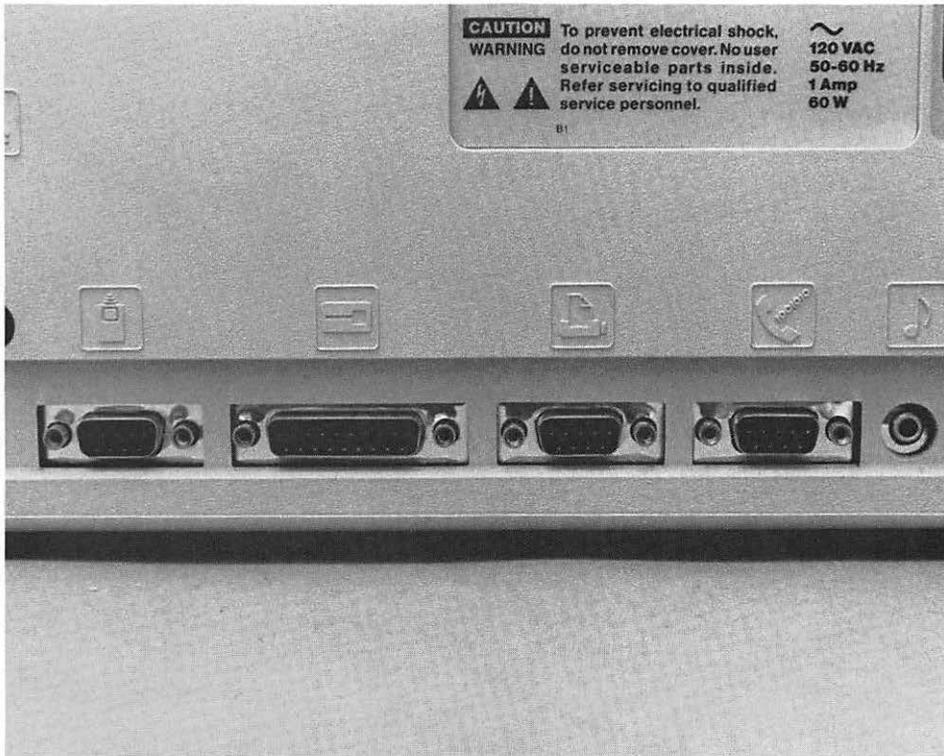


Fig. 10-5. The connectors on the rear of the Mac—mouse, disk, printer, modem, and sound.

Next, to the right, is the external disk drive connector. If you purchase a second disk drive (to make operation of your Mac quicker and easier) you'll hook it up here. Like the mouse, the drive plug is secured to the Mac by tightening the plastic thumb screws. No tools are required (see Figure 10-6). The most time you'll spend hooking up the drive is 30 seconds, and most of that is unpacking the drive from its shipping box. Unlike most other computers, there are no switches to throw or jumpers to cut when adding another drive to the Macintosh.

Next over is the printer connector, marked by an icon of a piece of paper coming out of a printer. You'll use this connector when hooking up the Apple ImageWriter (or another compatible unit).

The next connector over, the one marked with the telephone handset, is for attaching a telephone modem, a device that makes it possible for your Mac to communicate with other computers via telephone lines. You might also use this connector for hooking several Macs together to form a small network, or even to hook up your Mac to another computer.

Both the printer and modem connectors send and receive data serially, or one

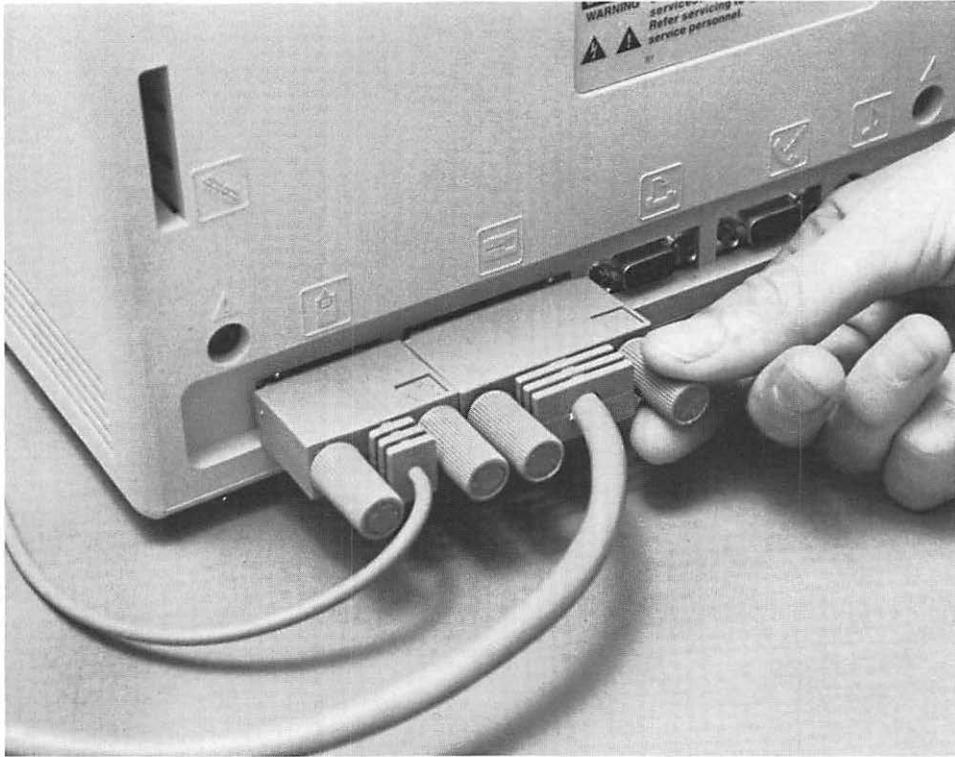


Fig. 10-6. To install the second, external disk drive, just plug it in and tighten the thumb screws.

bit at a time (the other popular type, parallel data transmission, sends eight bits at a time). Serial communications tend to be slow, but the kind used in the Mac operate at transmission speeds of up to 1 million bits per second. Needless to say, that's fast.

It should be noted that the printer and modem connectors are internally hooked up to the same electronics and can often be used interchangeably.

By the way, besides fitting into its own connector, the mouse will also fit into either the printer connector or the modem connector. Though connecting the mouse via printer or modem connector won't hurt anything, the mouse won't work when it's connected this way.

On the far right is the mini-jack for the external speaker. The Mac's own 1-watt amplifier will drive just about any speaker except the very large ones. When you plug another speaker into the jack, the Mac's internal speaker is disconnected.

Finally, there's the disk drive. The disk drive is the self-contained mechanism that reads programs off disks and records new programs and data on disks. In the most basic sense, the Mac's disk drive works much as a standard audio cassette

deck does. The main difference is the recording medium: instead of a long string of tape, the drive inside the Macintosh uses a flat, circular disk.

When a disk is inserted into the Mac, a spring-loaded shutter built onto the disk opens to reveal the delicate magnetic medium that's within. A record/playback head then makes contact with the disk.

To read or record data, the head moves back and forth across the surface of the spinning disk, much the same way as the tone arm of a record player passes from the outside edge toward the center of a record, recording information on the tracks of the disk (see Figure 10-7).

For more information on the makeup of the Macintosh, see Appendix D, "Macintosh Specifications."

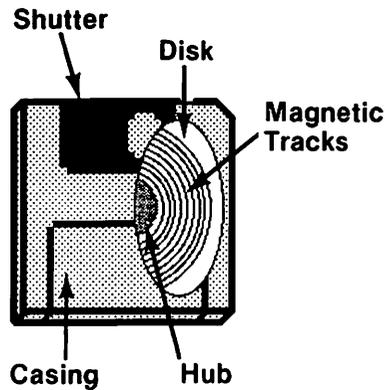


Fig. 10-7. A cutaway view of a 3½-inch microfloppy disk.

APPENDIX **A**

Macintosh Quick Reference Guide

PARTS OF THE MACINTOSH

The Macintosh is made up of three discrete major components: the main cabinet, the keyboard, and the mouse (Figure A-1).

The Main Cabinet

The cabinet houses the video tube for viewing Macintosh images, a 3½-inch microfloppy disk drive for program loading and data recording, a one watt sound amplifier and 3-inch speaker, and all the computing electronics.

Connectors

On the rear of the cabinet are several connectors, all marked with icons. From left to right (back facing you) the connectors are:

Connector



To connect

Mouse



Fig. A-1. The main components of the Macintosh.



Optional external disk drive.



Compatible printer or similar output device; other expansion devices (check with your dealer).



Telephone modem; other expansion devices (check with your dealer).



External speaker; when an external speaker is connected, the Mac's internal speaker is automatically disconnected.

Clock/Calendar

The Macintosh has its own clock calendar, powered by a number 528 (or equivalent) battery. The battery compartment is located in the upper right corner of

the back cabinet. Replace the battery when the clock/calendar no longer functions. Insert the battery as shown on the compartment door, positive (+) side down.

The Keyboard

The keyboard has 58 keys and closely resembles a typewriter keyboard in function and appearance.

	Key	Result
Character keys	Any alphabetic key	Produces the lowercase character
	Shift and any alphabetic key	Produces the uppercase character
	Any numeral or symbol key	Produces the character imprinted on the lower half of the key face
	Shift and any numeral or symbol key	Produces the character imprinted on the upper half of the key face
Option character sets	Option	Produces the key set shown in Figure A-2
	Option and Shift	Produces the key set shown in Figure A-3
Accents and foreign language characters	Option and	Produces a grave accent (̀) over the next character typed
	Option and e	Produces an acute accent (´) over the next character typed
	Option and i	Produces a circumflex (ˆ) over the next character typed
	Option and u	Produces an umlaut (¨) over the next character typed
	Option and n	Produces an tilde (˜) over the next character typed
Other keys	Tab	Moves the insertion point to the next tab stop
	Backspace	Deletes the character immediately left of the insertion point and closes the space; if any text is highlighted, deletes all highlighted text

Command and another key	Issues an instruction, often as an alternative to a menu command
Return	In word processing, terminates the line and drops the insertion point to the next line down; with dialog or alert boxes, confirms the chosen response; with some programs, used interchangeably with the Enter key
Enter	Usually tells the Mac that an entry is finished and it's time to act on the data typed in

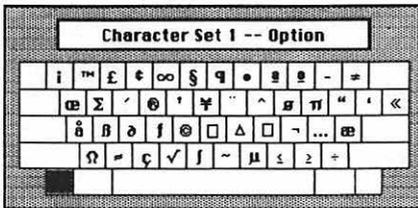


Fig. A-2. Option character set 1.

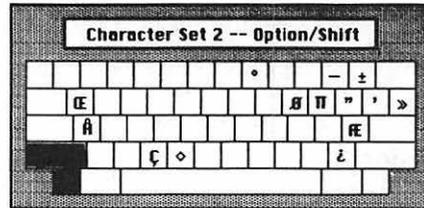


Fig. A-3. Option character set 2.

The Mouse

The mouse is used to move the pointer around the Macintosh screen. The movement of the pointer corresponds to the movement of the mouse.

The button on the top of the mouse is used to signal the Mac that you want to do something. Use combinations of moving the mouse and operating the mouse button to issue commands or to control the Macintosh.

Name	Operation	Function
Moving	Sliding the mouse around any flat surface	Moves the on-screen pointer but doesn't invoke any action
Clicking	Tapping lightly on the mouse button	Usually selects whatever the pointer is resting on
Double-clicking	Tapping lightly on the mouse button twice in rapid succession	Usually opens an icon into a window, starts an application, or highlights an entire word
Shift-clicking	Tapping lightly on the mouse button while hold-	Tells the Mac to select more than one item at once (Shift-

	ing down the Shift key	click on each item to be included in the group.)
Pressing	Depressing the mouse button and keeping it pressed continuously	Issues a continuous command to the Mac
Dragging	Moving the mouse while pressing the mouse button	Does many things—moves icons around the desktop, resizes and moves windows, chooses a command from a pull-down menu, selects large portions of text, and more; releasing the mouse button tells the Mac you've finished dragging

DISKS

The Macintosh accepts Sony (and compatible) 3½-inch microfloppy disks.

Inserting Disks

Make sure the label faces up and that the metal end goes in first. Push the disk in until the drive captures it.

Copying Disks

Making copies of your more important disks and keeping those copies in a safe place protects you against the loss of irreplaceable data. But the basic Macintosh has only one disk drive, and to make a copy of a disk using a basic Macintosh means swapping disks in and out of the drive up to several dozen times. The procedure is time consuming and cumbersome.

To make it easier for owners of single-drive Macs to make copies of disks, Apple provides a utility program called Disk Copy. It comes on the System disk that is provided with the Mac, and you can use it to copy a disk in just four disk swaps.

Using Disk Copy is a snap. Find it on the System disk and double-click its icon. You'll see the "About Disk Copy" window, which explains what Disk Copy will do. Push the OK button to get the first of several prompts that lead you through the copying process.

Ejecting Disks

There are three methods for ejecting the disks. The standard software method is the safest for protecting against loss of data.

Standard software method—Return to the desktop, select the icon of the disk you want to eject, and choose the File\Eject command.

Shortcut method internal drive— Press the Command, Shift, and number 1 keys together; (external drive) press Command, Shift, and 2.

Emergency method— Stick a small, bent-out paper clip into the small hole located on the drive.

Startup Disks

Startup disks are those that have the Macintosh operating system program on them (contained in two files, named Finder and System). Only a Startup disk can be used to start the Mac when it is first powered on. The Macintosh will reject all other disks.

ICONS

Icons are pictorial representations of disks, computer files and concepts. Following is a list of some of the Macintosh icons and their functions.

Icon	Type	What it does
	Disk	Represents the disk currently in the disk drive.
	Concept	Provides a means to throw unneeded files away.
	Computer file	Contains a document of some type, such as a picture or letter.
	Concept	Can contain other icons, even more folders. Use folders to group like icons together.
 MacWrite	Computer file	Represents a program. Program icons can take many forms.
	Computer file	Contains a file used by the Macintosh.
	Computer file	Contains one or more fonts for use by the Macintosh. This file is used by the Font Mover program, contained on the disk named System.
	Concept	Indicates that you must wait while the computer performs internal operations.

Icons can appear on the desktop in three ways:

Form	Appearance
 Standard	Icons without shading represent files and disks currently accessible to the Mac. Disk is currently in the drive.
 Dimmed	Dimmed icons represent disks the Mac is keeping track of, but that are no longer immediately accessible to the Mac. Disk has been removed from the drive.
 Shaded	Shaded icons are opened files. Somewhere on the desktop is a window that belongs to that icon.

PRINTING

Printing text and graphics on the Imagewriter is easy. Following is a list of printing commands.

Menu choice or command	Result
File/Print	Prints the selected document files; program that created the document must be on the disk.
Caps Lock- Command-Shift-4	Prints a "snapshot" of the screen.
Command-Shift-4	Prints a "snapshot" of the active window.

DESKTOP MENUS

The desktop menu bar contains the menus used to command the Macintosh: the , File Edit, View and Special menus.

The Menu (Desktop Accessories)

Menu choice	Function
Scrapbook	Permanently holds text or graphics for use in other documents; each disk has a Scrapbook.
Calculator	Performs as a four-function calculator.
Alarm Clock	Displays the time and date; can function as an alarm clock.

Note Pad	Can save up to eight pages of notes; can be accessed without closing the file being worked on.
Key Caps	Shows diagrams of keys to press to get the Mac's special characters.
Control Panel (see Figure A-4)	Allows adjustment of speaker volume, the number of times a command entry in a menu blinks before it is executed, rate at which key characters repeat when the keys are held down, keyboard sensitivity, rate at which the insertion point blinks, pointer speed relative to mouse movement speed, desktop pattern and time allowed between two clicks to be interpreted as a double click (see Figure A-4).

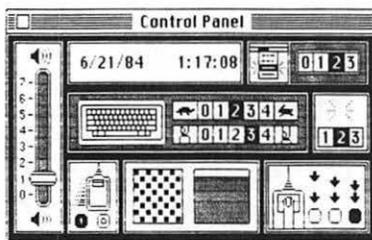


Fig. A-4. The Control Panel

The File Menu

Menu choice	Alternate method	Function
Open		Opens a disk, trash, or folder icon to a window; starts the program represented by a program icon; loads the document represented by a document icon.
Duplicate	Command-D	Makes a copy of the selected icon.
Get Info	Command-I	Displays window with information about the selected icon; allows comments to be recorded; allows file to be "locked" against erasure.
Put Back		Puts selected icons back into the folder or disk from which they most recently came.
Close		Closes the active window.
Close All		Closes all windows on the desktop.
Print	(See "Printing," p.249)	
Eject	(See "Ejecting Disk," p.247)	

The Edit Menu

Menu choice	Alternate method	Function
Undo	Command-Z	Reverses the last command or action.
Cut	Command-X	Removes the selected text and places it in the Clipboard.
Show		Displays a window that shows the top three lines of the contents of the Clipboard.

The View Menu

Menu choice	Function
By Icon	Displays the files in the active window as icons.
By Name	Displays the names of the files alphabetically, with numbers (in ascending order) first.
By Date	Displays the names of the files, in order by the date the file was last modified.
By Size	Displays the names of the files in order by the size of the file, largest first.
By Kind	Displays the names of the files, grouped by type, such as folder, application, or document.

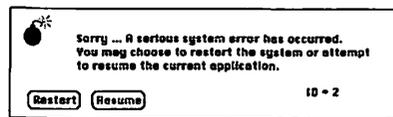
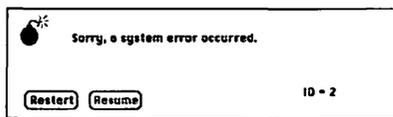
The Special Menu

Menu choice	Function
Clean Up	Rearranges icons in the active window in a neat and orderly way.
Empty Trash	Erases contents of the trash can.
Erase Disk	Erases the selected disk; will not erase Startup disk.
Set Startup	Sets the selected program to start automatically when the disk is inserted.

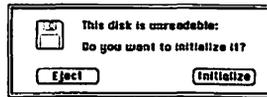
Alert Boxes

The following listing tells about some of the more cryptic alert boxes and how to deal with them.

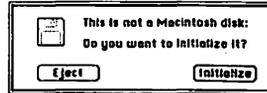
“CRASHES”



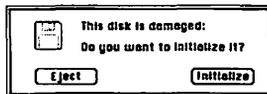
The Mac has “crashed,” or “bombed,” as indicated by the picture in the upper left corner of the box. A hardware or software fault has interrupted the smooth flow of data inside the Macintosh. When a crash occurs, the Mac’s memory is usually wiped clean, and you’ll probably lose the data you’ve been working with (data you have saved onto disk will not be lost). If the Resume button is dimmed, click it to go back to the application; otherwise, click the Restart button. This starts the Mac over again. The ID code that appears in the lower right corner is for programmers to use in figuring out what’s wrong with a program that crashes.



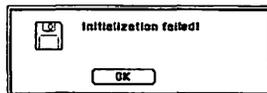
You have inserted a brand-new disk into the drive. The Mac cannot use a new, unused disk until it has “initialized” it, so you are given a chance to do so now.



You have inserted a non-Macintosh disk into the drive, and the Mac cannot read the data off it. You cannot use a disk from another computer on the Mac; you are prompted to Eject the disk or to Initialize it. Initializing erases whatever was previously on the disk.

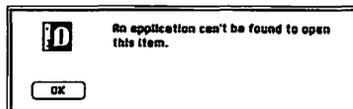


You have inserted a “damaged” disk into the drive—all or portions of it are unreadable. Eject the disk or reinitialize it.

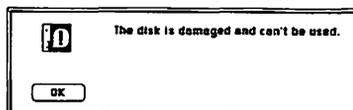


The initialization process didn’t work, either because the disk itself is damaged or because there’s something wrong with the Mac or its disk drive. Click OK to eject the disk, and insert a new disk to start over.

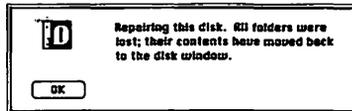
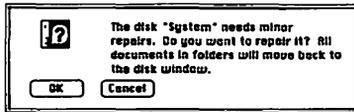
SOFTWARE PROBLEMS AND LOSSES



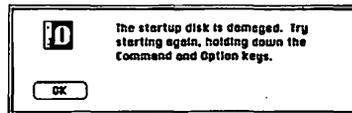
You have tried to open the document of an application program that is neither loaded into the Mac nor on the disk currently in the drive. To open the document, copy the proper program onto the current disk, or copy the document to the disk that contains the program. Alternatively, insert the disk that contains the program, start the program, then insert the document disk and open the document from within the program.



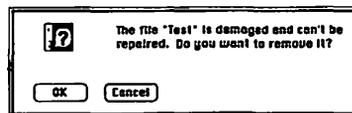
The disk is physically damaged and can't be used. Documents or programs on it are permanently lost.



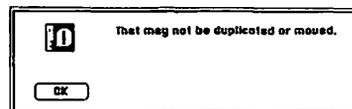
The organization of the Mac's pictorial desktop has been messed up somehow and the Mac must reorganize it. In almost all cases, programs and documents will survive the reorganization, but folders will be lost. After the reorganization is complete, re-create the folders and place the documents and programs back into them.



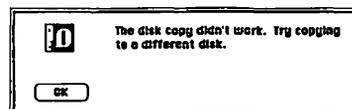
Some of the information on the Startup disk governing the Mac's desktop has been lost or damaged and the Mac can't be started. In most cases, the disk can be recovered by restarting the Mac while holding down the Command and Option keys. Keep depressing the keys until the desktop appears in its entirety.



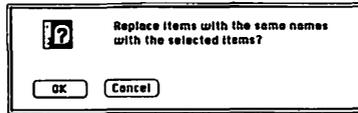
Something has happened to the document or program named in the alert box, and the Mac can no longer use it. If you would like to erase the file from the disk, click OK.



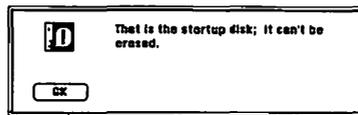
The file you're trying to duplicate or to move from one window to another is copy protected.



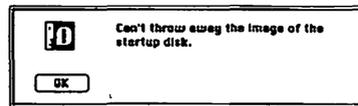
The disk-to-disk copy of files wasn't complete, either because of some software error or because the destination disk was damaged or copy protected. Try using another disk for the copy.



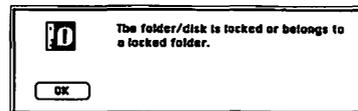
You're trying to copy files to another disk, and that disk already has files with the same names as the ones you're copying. If you don't want the old files to be erased, Select Cancel and rename either the old files or the ones to be copied. Then try the copy operation again.



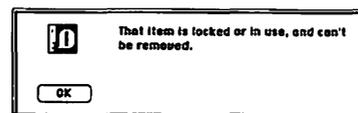
You tried to erase the Startup disk. The Mac must use this disk for its operations, so you can't erase it.



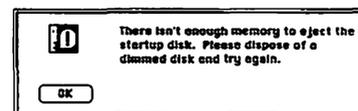
You have tried to deposit the dimmed image of the Startup disk into the trash can (the image is dimmed because the disk has been ejected). The Mac must retain information from this disk for its operations, so it won't let you put the icon in the trash.



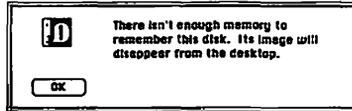
The folder or disk is locked, so files contained in it cannot be deleted. The folder/disk must be unlocked before files can be thrown away. Click on OK and unlock the disk or folder.



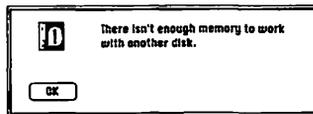
You are trying to throw away (1) A file that the Mac is currently using (such as the System file or (2) A file that is locked. The file must be unlocked before it can be deleted. Click on OK and unlock the file.



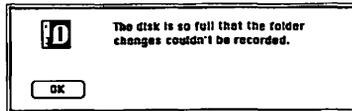
The Mac has run out of memory to keep track of all the disks you have inserted during the current session. It must make more room before it can store the necessary programs from the Startup disk before ejecting it. Click on OK, and then drag one of the dimmed (ejected) disk icons into the trash to make more room in memory.



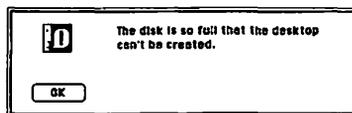
The Mac has run out of memory to keep track of all the disks you have inserted during the current session and can't retain the image of the disk you're ejecting.



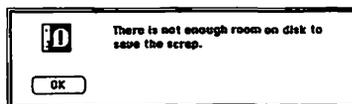
The Mac has no more memory to work with the disk you've just inserted. To get more room, click on OK, dispose of a dimmed disk (if any) by dragging it to the trash can, and reinsert the disk you want to use.



Not enough space exists on the disk to record the things you've done with folders—such as making new folders or placing files into folders. The contents of files on the disk remain unaffected, however. To make more room, click on OK and then dispose of something by deleting or copying to another disk.



Not enough space exists on the disk to record the changes you've made to the desktop—such as rearranging icons or moving windows. All the windows and icons still remain on the disk, however. To make more space on the disk, click OK and then dispose of something by deleting or copying to another disk.



Not enough space exists on the disk to save the contents of the Clipboard (referred to here as "scrap"). To make more room, click on OK and then dispose of something.

Fonts

THE FONTS THEMSELVES

The Macintosh is able to display and print text in a variety of typefaces. It accomplishes this with the aid of its built-in fonts. There are nine basic fonts, plus several more for added flexibility.

The Mac's fonts are accessible in programs that make use of words—word processors such as MacWrite or picture processors such as MacPaint, for example. Fonts are selected from menus; special styles can then be specified to add emphasis. In addition, all fonts can be displayed and printed in varying sizes, expressed in points (72 points is equal to about one inch). In most programs—MacWrite, for example—you can choose from 9-, 10-, 12-, 14-, 18-, or 24-point fonts. Some others, MacPaint included, give you even larger sizes: 36-, 48-, and 72-point.

Fonts are kept in the System file, along with many other small programs vital to the Macintosh. Each font takes up quite a bit of space, which is one reason the System file is so large.

At the end of this appendix you'll find a sampling of the Macintosh fonts in their various styles.

FONT MOVER

Font Mover is a special utility program that allows you to transport fonts in and out of the System file. Use Font Mover to take unneeded fonts out of the System file, thus creating more space on the disk (each font takes a considerable amount of space on the disk). Or use Font Mover to transport fonts into the System file or to replace previously removed fonts.

Font Mover is included on the disk named System and on most other Apple-made application programs. To use it for the fonts on the disk it's on, just start it like any other program. That is, double-click its icon. When the window opens, push the Help button for instructions and hints on using Font Mover.

This is a sample of Athens

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

a b c d e f g h i j k l m n o p q r s t u v w x y z

1 2 3 4 5 6 7 8 9 0 - _ = + [] \ | ! ! ! ~

Athens Plain

Athens Bold

Athens Italic

Athens Underline

Athens Outline

Athens Shadow

This is a sample of Chicago

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

a b c d e f g h i j k l m n o p q r s t u v w x y z

1 2 3 4 5 6 7 8 9 0 -

Chicago Plain

Chicago Bold

Chicago Italic

Chicago Underline

Chicago Outline

Chicago Shadow

This is a sample of Geneva

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

a b c d e f g h i j k l m n o p q r s t u v w x y z

1 2 3 4 5 6 7 8 9 0 - _ = + [] \ | ! ! ! ~

Geneva Plain

Geneva Bold

Geneva Italic

Geneva Underline

Geneva Outline

Geneva Shadow

This is a sample of London

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

a b c d e f g h i j k l m n o p q r s t u v w x y z

1 2 3 4 5 6 7 8 9 0 - _ = + [] \ | ! ! ! ~

London Plain

London Bold

London Italic

London Underline

London Outline

London Shadow

This is a sample of Los Angeles

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

a b c d e f g h i j k l m n o p q r s t u v w x y z

1 2 3 4 5 6 7 8 9 0 - _ = + [] \ () | ' ~

Los Angeles Plain

Los Angeles Bold

Los Angeles Italic

Los Angeles Underline

Los Angeles Outline

Los Angeles Shadow

This is a sample of New York

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

a b c d e f g h i j k l m n o p q r s t u v w x y z

1 2 3 4 5 6 7 8 9 0 - _ = + [] \ () | ' ~

New York Plain

New York Bold

New York Italic

New York Underline

New York Outline

New York Shadow

This is a sample of Seattle

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

a b c d e f g h i j k l m n o p q r s t u v w x y z

1 2 3 4 5 6 7 8 9 0 - _ = + [] \ () | ' ~

Seattle Plain

Seattle Bold

Seattle Italic

Seattle Underline

Seattle Outline

Seattle Shadow

This is a sample of Monaco

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

a b c d e f g h i j k l m n o p q r s t u v w x y z

1 2 3 4 5 6 7 8 9 0 - _ = + [] \ () | ' ~

Monaco Plain

Monaco Bold

Monaco Italic

Monaco Underline

Monaco Outline

Monaco Shadow

This is a sample of San Francisco

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

a b c d e f g h i j k l m n o p q r s t u v w x y z

1 2 3 4 5 6 7 8 9 0 - _ = + [] \ () | ' ~

San Francisco Plain

San Francisco Bold

San Francisco Italic

San Francisco Underline

San Francisco Outline

San Francisco Shadow

This is a sample of Venice

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

a b c d e f g h i j k l m n o p q r s t u v w x y z

1 2 3 4 5 6 7 8 9 0 - _ = + [] \ () | ' ~

Venice Plain

Venice Bold

Venice Italic

Venice Underline

Venice Outline

Venice Shadow

APPENDIX D

Macintosh Specifications

Processor:	Motorola MC68000, 16/32 bit.
Processor speed:	7.8336 MHz.
User memory:	128 kilobytes or 512 kilobytes random access memory (RAM).
Machine memory:	64 kilobytes read only memory (ROM).
Disk type:	Sony 3½-inch; hard shell; single-sided.
Disk capacity:	400 kilobytes per formatted disk.
Screen:	9-inch diagonal; monochrome black and white.
Picture Resolution:	512-pixel (horizontal) by 342-pixel (vertical) bit-mapped display.
Interfaces:	One mouse interface. One external disk drive interface. Two RS-232C/422A serial ports; up to 0.920 megabit per second transfer rate. One keyboard interface.
Keyboard:	58 keys; full size, full travel; 2-key rollover.
Mouse:	Mechanical tracking, optical shaft encoding; 90 pulses per inch resolution.

Sound generator:	Four-voice with 8-bit digital-analog conversion; capable of sound effects, music, and voice.
Power requirements:	105 to 125 VAC line voltage; 50 or 60 Hz; 60 watts power consumption.
Cabinet size and weight:	13.5 by 9.7 by 10.9 inches; 16.5 lbs.
Keyboard size and weight:	2.6 by 13.2 by 5.8 inches; 2.5 lbs.
Mouse size and weight:	1.5 by 2.4 by 4.3 inches; .5 lbs.
Note:	Future generation Macs may come equipped with double-sided disk drives (for 800-kilobyte storage capacity).

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3 WORDS:
da

Glossary

- Active window** An on-screen window that is able to receive user input. Active windows can be identified by the presence of a close box and shading in the window's title bar.
- Acoustic-coupled** A type of modem that couples to the phone through use of cups that fit the mouthpiece and earpiece of the handset; most frequently used for multiline telephones or portable use (see *modem*).
- Alert box** A special box displayed by the Mac to warn you of some problem that might result from a particular command or action. You'll be asked to confirm that you wish to continue with that command.
- Alphanumeric** Information that may consist of letters, numbers, punctuation, other printable characters, or any combination of the above.
- Application program** A piece of software designed to perform a complete and final task, such as word processing, accounting, or database management.
- ASCII** American Standard Code for Information Interchange. A set of codes that matches characters with numbers so they can be universally used by all computers. This means that the internal number that tells a Mac to print "M" will mean the same to an IBM PC or another computer.
- Assembly language** A computer language with "words" that are very close to the basic instructions used by the microprocessor chip.
- Auto-answer** A feature of some modems that allows the modem to answer the telephone when it detects that the phone is ringing; used to access an unattended computer from a distant location.
- Auto-dial** A feature of some modems that allows the modem to electrically "take the phone off the hook" and dial a telephone number.

a

- Backup** A duplicate of a disk or disk file, which may be used to recover lost data if the original is lost or damaged.
- BASIC** Basic All-purpose Symbolic Instruction Code. A high-level programming language that is easy to learn. At present, BASIC is the most widely taught and used programming language for personal computers.
- Baud** The number of individual events per second carried by a stream of data. The baud rate divided by ten will roughly equal the number of characters per second in the transmission. For example, 300 baud equals about 30 characters per second.
- Binary** Base-two arithmetic, using 0 and 1 as its only digits. This is the only type of arithmetic directly understood by today's digital computers.
- Bit** The basic unit of computer binary numbers. Each bit can have only two conditions, known as 1 and 0, on and off, or high and low.
- Board** A flat piece of nonconductive material, covered with conductive metal strips that connect electronic components; a means of mounting and "wiring" such components used in computers as well as other electronic equipment.
- Boot** Derived from "pulling one's self up by one's bootstraps." The process of starting or restarting a computer's operation, which usually requires that a special operating system disk be inserted in the computer's disk drive. Information stored in the computer's RAM is usually lost during a boot (see *startup disk*).
- Buffer** A block of memory used for the temporary storage of information.
- Bug** A problem caused by an error in the design of a program or in the operation of the hardware.
- Bus** 1. A series of connections that act as a computer's "spinal cord" connecting its various parts and carrying signals vital to its operation. 2. A connector that attaches to the above bus, used for system expansion or the connection of peripherals.
- Button** 1. The push-button switch located on top of the Mac's mouse. 2. Small graphic devices used in dialog and alert boxes. When buttons are pointed at with the mouse and "pushed" by clicking the mouse, the action identified by the button's label will be performed.
- Byte** A group of bits, usually eight, used to represent a more complex piece of information (such as a character).
- Card** Same as *board*. Also known as a PC (printed circuit) card.
- Character** Any letter, number, punctuation mark, or space. May also describe nonprintable "control" characters, such as line feeds and carriage returns for use by printers.
- Click** The action of using the mouse to point at a particular location on the screen and then quickly pressing and releasing the mouse button.
- Clipboard** A place where information that has been *cut* from a picture or document is temporarily stored, so that it can be *pasted* elsewhere; considered a type of buffer.
- Close** 1. To remove a window from the Macintosh desktop by clicking that window's close box or choosing the File //Close command. 2. To terminate use of a file, automatically returning all information from the computer to the disk and recording any changes that have been made.
- Close box** A small box located at the upper left corner of almost any open window. When the close box is pointed at with the mouse and clicked, the window is removed from the screen.
- Command** Any user input that instructs the computer to perform a particular action.
- CPU** Central processing unit. In microcomputers this usually refers to the microprocessor chip that is the heart of the computer; less frequently, the box containing the microprocessor and its support circuitry.
- CRT** Cathode ray tube. In computer lingo, any television-type display device, such as the Mac's built-in display.
- Cursor** (see *insertion point*)
- Cut** To remove a section from a document or picture and to store it in the Clipboard. Can be used to delete that section or to move it to another location or document.

Daisy wheel 1. A type of high-quality printer that uses metal or plastic type mounted around the outside of a rotating wheel. 2. The type wheel used in a daisy wheel printer, usually replaceable if the type becomes worn or if the type style needs to be changed.

Data Any type of computer information.

Database Any collection of information organized in a way to make that information easily accessible by computer.

Database manager A computer program designed to find, sort, modify, delete from, or add to the information stored in a database.

Descenders Characters, displayed on a computer screen or printed on paper, having portions that extend below the normal baseline of the text; for example, q y, p, g, and j.

Desk accessories A series of simple tools, such as the calculator, note pad, and alarm clock, that can be used with most Macintosh programs. These tools are always available by selecting the pull down menu.

Desktop The on-screen "work surface" provided by the Mac; may contain numerous windows, desk accessories, menus, and so forth, at any given time.

Dialog box An on-screen box that appears in conjunction with commands that allow the user various options; allows you to specify which options you wish to use and to continue with the operation.

Direct-connect A type of modem that plugs directly into the telephone jack, bypassing the telephone handset.

Directory A listing of the files stored on a disk or some portion of it. (see *Finder*).

Disk A rotating disk coated with a magnetic material; used to store computer information. A "flexible" disk is made of an inexpensive plastic material. A "hard" disk is made of metal and is enclosed in a special dust-free housing. The latter is capable of storing larger amounts of information on a small space.

Disk drive The device that reads information from and writes information onto a disk.

Display 1. The visual output resulting from a program, such as text, numbers, or graphics. 2. A device used to show the output of a computer on a screen.

Document 1. In the Mac, any file containing information to be used by a program, such as text, pictures, or a database file. 2. A text file for use with a word processing program.

DOS Disk operating system. The special software, either built into the machine or stored on a special Startup disk, that connects you, as well as software, to the computer's hardware. The Mac's Finder is part of its DOS.

Double-click Rapidly depressing, then releasing, the mouse button twice in rapid succession.

Dot matrix A type of printer that forms characters and graphics out of a series of small, closely spaced dots. The Apple Imagewriter is a dot matrix printer.

Drag The action of moving the mouse while holding the button down; used to move or manipulate objects on the Mac's screen, as when changing the size of a window.

Electronic mail A system that allows messages to be sent electronically over telephone lines or a computer network. The message may be delivered electronically or printed at or near the recipient's location and delivered by conventional methods.

Elevator Another term for scroll box (see *scroll box*).

Finder The central element of the Mac's operating environment, a program that, among other things, displays and organizes files stored on Macintosh disks.

File Any collection of information stored on a computer disk.

Firmware Computer programs that are permanently stored in a special ROM chip. This chip may be built into a computer or enclosed in a special program cartridge.

Floppy disk 1. A flexible disk that is 8" in diameter. 2. Any flexible disk.

Font The particular typeface to be used by the Mac; within a font there are different sizes and styles.

Footer In word processing, a block of text to be printed at the bottom of each page.

Format 1. The arrangement of text in a printed document, its margins, line spacing, paragraph indents, and so forth. 2. The command that prepares a blank disk to receive computer information (also called initializing). 3. The structure by which information is organized

- within a file. 4. The structure by which information is stored on a computer disk.
- Friction feed** A printer feature that allows single sheets or roll paper to be fed through the printer by a series of rollers, much like those of a conventional typewriter.
- Graphics** Nontext, nonnumeric display of information; for example, charts, graphs, diagrams, pictures, and drawings.
- Hacker** 1. Anyone who is obsessed with or knowledgeable of computers. 2. Anyone who attempts to gain unauthorized access to a computer.
- Hard copy** A paper copy of information produced by a computer printer or plotter.
- Hard disk** (see *disk*)
- Hardware** The solid physical components of a computer, as opposed to software.
- Header** In word processing, a block of text to be printed at the top of each page, such as the document title or the author's name.
- High-level language** A computer programming language in which one high-level command can equal hundreds of simple machine-level commands.
- Highlight** A reverse image of a command or icon (white on black instead of black on white), indicating that the icon has been selected or is active.
- I-beam** The appearance of the mouse pointer when the pointer is over an area used for text entry. The "I-beam" shapes makes it easy to position the insertion point.
- Icon** Literally, an image. On the Mac, a small descriptive picture used to select a program, document, or command function.
- Initialize** 1. To open disk files, input user information, select options, and perform other functions associated with running the program for the first time. 2. To prepare a new disk for use with the Macintosh.
- Input** 1. The process of feeding information into the computer. 2. The information that is fed into the computer.
- Insertion point** The point on the Mac's screen where text will appear when typed; indicated on the screen by a flashing bar.
- Interface** 1. A port, connection, or device used to tie together different pieces of hardware. 2. That portion of a program that handles communication between the user and the computer.
- I/O** Input/output. The flow of information in and out of the computer.
- Keypad** A small keyboard consisting of numbers arranged as on a ten-key pad plus a few other commonly used keys.
- Kilobyte** (Also "K byte" or "K") In computer terms, 1024 bytes of information; for example, a file that is 4K long contains 4096 bytes of information.
- LAN** Local area network. Any of a number of systems that allow numerous computers at the same location to share information and the use of accessories such as printers and hard disks.
- Load** The process of transferring information into a computer's memory from another source, such as a disk.
- Low-level language** A programming language close to the computer's own binary dialect.
- Memory** The portion of a computer that stores information. Most commonly RAM or ROM, but sometimes other types of storage, such as a disk.
- Menu** An on-screen list of options from which the user can make a selection.
- Menu bar** The bar located at the top of the Mac screen from which the user can "pull down" a number of menus.
- Microfloppy** A flexible disk under 4 inches in diameter, such as the one used with the Macintosh.
- Microprocessor** A computer-on-a-chip, which is the heart of most microcomputers. Smaller, less powerful microprocessors are also frequently used to run peripherals and perform simple "housekeeping" functions within a computer.
- Minifloppy** A flexible disk that is 5¼" in diameter. Used on many microcomputers, such as the IBM PC.
- Modem** Short for MOdulator/DEModulator. A device used to transfer computer information

over telephone lines; for example, between a microcomputer and an electronic mail service.

Monitor (see CRT)

Mouse A computer pointing device consisting of a small handheld box, topped with one or more buttons. Sliding the mouse over a flat surface, such as a desk, moves a pointer on the computer screen. Items that have been pointed at on the screen can be manipulated using the mouse's button(s).

Network A system that allows communication between a number of computers (see LAN).

Open 1. To create a window on the Macintosh desktop. 2. To open a disk file so that it can be examined, added to, or changed.

Operating System (see DOS)

Output 1. The flow of information from a computer. 2. The information that results from the operation of the computer.

Parallel port An interface used to connect different pieces of hardware; uses a number of wires to send several bits of information at the same time.

Pascal A popular programming language for microcomputers. Like BASIC, it is reasonably easy to learn, but it is more efficient and makes it easier to avoid programming errors in large, complex programs.

Paste The act of placing the contents of the Clipboard into a document or picture.

Peripherals Any external hardware device connected to a computer; for example, a printer, plotter, disk drive, or modem. Also commonly called accessories or add-ons.

Pixel Picture element. The smallest dot that can be displayed on a computer screen. Arrays of pixels are used to create character and graphic displays.

Plotter A hard-copy device that creates text or graphics using one or more electrically driven pens.

Pointer A graphic representation (usually an arrow) on the screen showing the relative position of the mouse.

Port 1. A device or connection used to move information in or out of a computer. 2. The act of converting a program designed for one computer to operate on another type.

Press To depress and hold the mouse button without moving the mouse.

Program A set of instructions that tells a computer how to perform a particular task. MacPaint and MacWrite are programs for the Mac.

Pull-down menu A menu that can be displayed by moving the mouse pointer to a title on the menu bar, then pressing the mouse button. Pull-down menus spring closed when the mouse button is released.

RAM Random access memory. A type of memory used for temporary storage and manipulation of information. On most computers, including the Macintosh, information stored in RAM is lost when the computer is turned off.

Resolution A measure of the ability of a screen to display text or graphics. For text, resolution is usually measured in columns and rows; for graphics, in pixels across the screen by pixels down the screen.

Ribbon cable A flat cable containing a number of wires side by side. Often used to connect computers with peripherals.

ROM Read only memory. A type of memory that is programmed with information at the factory, and that cannot be erased or changed. The contents of ROM will not be lost when the computer is turned off.

RS-232 A standard type of serial interface, often used to connect a computer with peripherals; can also be used to connect two different computers together.

RS-422 A recently adopted standard for a very high-speed serial port. The Mac uses this type of port to communicate with peripherals.

Ruler A graphic representation of a ruler that is used in MacWrite to indicate tabs, margins, line spacing, and text alignment.

Save To transfer information from the computer's memory to a disk for storage.

- Scrapbook** A Macintosh desk accessory that stores text and pictures for frequent use in documents.
- Scroll** To move the contents of a window; a process used to view all of a document or picture that is too large to be displayed all at once.
- Scroll arrow** Arrows located at the edges of scroll bars which, when pressed, cause the contents of that window to scroll.
- Scroll bar** Bars located along the bottom and right edges of most active windows. Scroll arrows located in these bars allow the contents of the window to be scrolled vertically or horizontally.
- Scroll box** A small box located within each scroll bar. The scroll box moves within the bar to indicate the window's position within the document. Also called an elevator.
- Select** To choose a command, an icon, an action, and so forth.
- Serial port** A type of computer interface that transmits data in a continuous stream, one bit after another.
- Shift-click** To click the mouse button while depressing the Shift key on the keyboard.
- Size box** A small box located at the lower right-hand corner of most active windows. Dragging this box with the mouse causes the window to shrink or expand.
- Slot** A connector located within the computer and connected to the computer's bus, used for inserting boards that expand the capability of the computer. The Macintosh has no such slots (see *board*, *bus*).
- Software** A recorded list of instructions that tells a computer how to perform a particular job.
- Spreadsheet** A special program used to store and manipulate rows and columns of numbers. Useful for a wide variety of business, financial, and statistical applications. Useful in making "what-if" business projections.
- Startup disk** A special disk containing the Finder and other programs used by the Macintosh for its normal operation. Must be inserted in the computer in order to start, or boot, the system. The System disk provided with the Macintosh is a Startup disk; so are most disks that contain application programs (see *boot*).
- Style** Describes the style in which a Macintosh font is printed or displayed; for example, italic, bold, underline, or shadow.
- Tab well** The two boxes in the MacWrite ruler that serve as an endless source for regular and decimal tabs.
- Title bar** A bar located at the top of the window. The printed title in the bar indicates the file, folder, or application that is being displayed in that window.
- Toolbox** A set of powerful graphics programs stored inside the Mac. Used by applications programmers to simplify making windows, icons, and the other complex screen devices that make the Mac so simple for the user.
- Tractor feed** A printer option that pulls continuous paper through the printer using pins that engage holes on each side of the paper. Also known as pin feed.
- Windows** Areas on the Macintosh desktop that display information. More than one window may be on the desktop at one time, and windows may overlap.
- Write protect** To protect a disk so that information on the disk can be loaded and examined, but not erased or modified. Can be done within the software or by using a small tab on the floppy disk.

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