Introduction to
Macintosh® System 7

Marvin Bryan

For All System 7 Users

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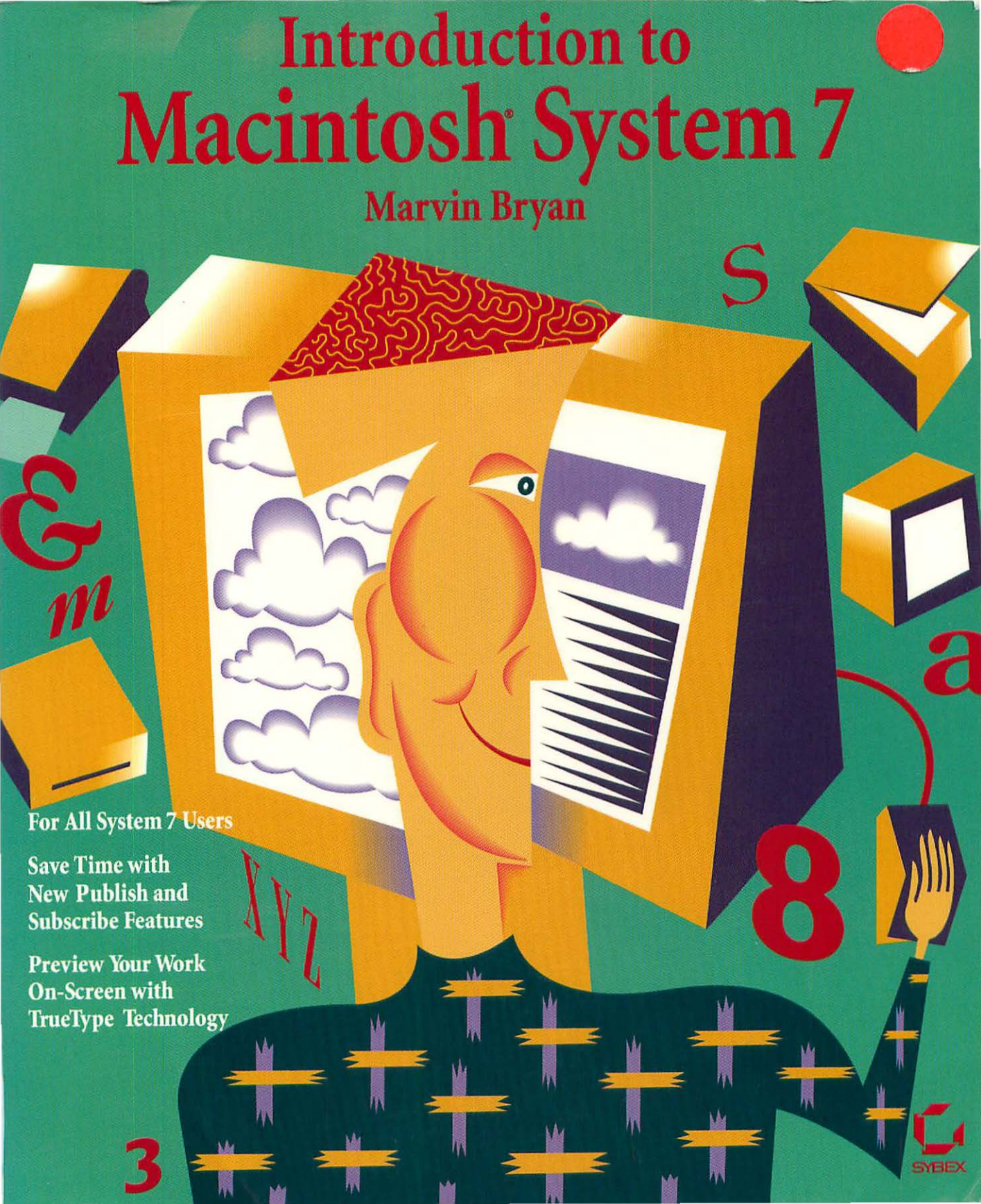On-Screen with
TrueType Technology**

SYBEX

System 7 Menus

File

New Folder	⌘N
Open	⌘O
Print	⌘P
Close Window	⌘W
Get Info	⌘I
Sharing...	
Duplicate	⌘D
Make Alias	
Put Away	⌘Y
Find...	⌘F
Find Again	⌘G
Page Setup...	
Print Window...	

🍎

About This Macintosh...

- ⏰ Alarm Clock
- 📱 Calculator
- 🖧 Chooser
- 🗄 Control Panels
- 🎹 Key Caps
- 📝 Note Pad
- 🧩 Puzzle
- 📋 Scrapbook

Edit

Undo	⌘Z
Cut	⌘X
Copy	⌘C
Paste	⌘V
Clear	
Select All	⌘A
Show Clipboard	

View

- by Small Icon
- ✓ by Icon
- by Name
- by Size
- by Kind
- by Label
- by Date

Label

✓ None

⬚ Essential
⬚ Hot
⬚ In Progress
⬚ Cool
⬛ Personal
⬚ Project 1
⬚ Project 2

Special

Clean Up Window
Empty Trash...

Eject Disk   ⌘E
Erase Disk...

Restart
Shut Down

?

About Balloon Help...

Show Balloons

Finder Shortcuts

Hide TeachText
Hide Others
Show All

🖥 Finder
✓ 📖 TeachText
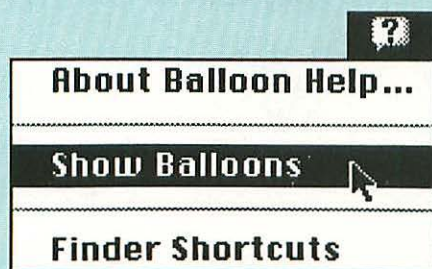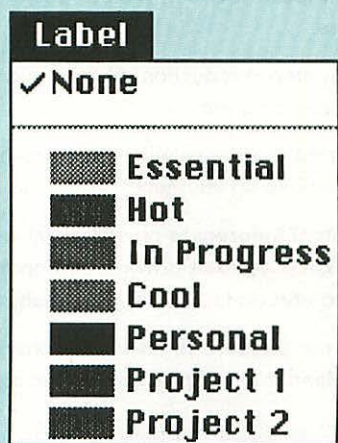
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Introduction to
Macintosh System 7

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MARVIN BRYAN

To Keri Walker of Apple Computer, whose skillful efforts through the years have produced more Macintosh lovers than John Sculley will ever realize.

ACKNOWLEDGMENTS

Contents at a Glance

Contents

CHAPTER 6

HANDLING TYPEFACES

CHAPTER 7

SHARING INFORMATION

CHAPTER 8

USING SOUND UNDER SYSTEM 7   181

CHAPTER 9

ENHANCING YOUR MACINTOSH UNDER SYSTEM 7   199

C H A P T E R **10**

SOLVING MEMORY AND OTHER SYSTEM PROBLEMS   217

U nlike some other books about System 7, this book was completed after the new version of the Macintosh operating system was released and includes both last-minute changes that were made in the software itself as well as compatibility information concerning products you may want to use with System 7.

Introduction to Macintosh System 7 is written in a style that everybody can understand. It is intended for all Macintosh users who want to learn the important information about System 7 without having to be master programmers to accomplish this goal.

How THIS BOOK CAN HELP YOU

If you've never used System 7 and are thinking about updating your current system software to this version, you need to know how to install the upgrade and how you may be able to continue to use old accessories and programs. You want to be able to weigh the advantages and disadvantages of switching to the new version. Finally, you'd like to find out how you can get the most out of System 7's exciting features. This book provides you with practical, step-by-step help with all of these objectives.

If you're already working with System 7, you need to learn how to get the most from its powerful options such as file sharing and the ability to run several programs simultaneously. The chapters that follow are packed with practical tips on these and other subjects.

The explanations of System 7 itself are backed up by descriptions of software and hardware that are compatible and can enhance your use of the operating system.

In addition to providing you with detailed instructions on tricky topics, this book reproduces hundreds of screens that graphically illustrate the points being described.

How this book is organized

The following is a summary of the organization of the book and the helpful subjects covered:

- **Chapter 1** explains the hardware requirements for using System 7 and tells you how to install the system software. You'll also learn how to select printer and monitor options and about tricks you can use to make older software continue to function properly under System 7.

- **Chapter 2** takes you on a tour of the System 7 desktop. You'll find detailed coverage of each menu and instructions on the use of handy desk accessories.

- **Chapter 3** explores the procedures required to install and work with several programs simultaneously. The chapter also discusses new ways to open and use files and folders, explains the Scrapbook and a powerful replacement you can buy for that utility, plus covers the basics of using typefaces installed with the system software.

- **Chapter 4** is all about printing your files—how to use multiple printers under System 7, letting files print while you continue to work, and the options available with different printers. The text tells you how to solve special problems too, such as how to share a printer between Macintoshes running under different versions of the operating system and how to capture and print all or any part of what's displayed on your screen.

- **Chapter 5** reveals the secrets of customizing your Macintosh. You can create your own pattern for the desktop and display its contents in the typeface of your choice. You can also fine-tune the operation of your mouse and keyboard, organize files and folders into groups with special names and colors, and even design your own icons.

- **Chapter 6** contains an in-depth look at typefaces. It explains the new TrueType technology as well as bitmap and PostScript fonts and how to use them all. You'll learn how to access hidden typefaces that are provided with System 7 but not installed. There's also information about solving typeface problems, new ways to install and view typefaces, and helpful accessories that can store fonts more efficiently and even convert them between TrueType and other formats.

- **Chapter 7** is a complete guide to sharing files. It tells you how to use your Mac on a network and how to restrict and control other users of your files. Other topics include sharing disks with users of MS-DOS computers and how to use System 7's new publish and subscribe features.

- **Chapter 8** deals with using sound. You can attach comments, sound effects, and even music to your files under System 7. If you don't have one of the new Macs with built-in sound recording capabilities, you can add that feature with an inexpensive accessory. You'll learn about sound recording and editing in HyperCard and through third-party utilities, and there's a discussion of Apple's new QuickTime technology too.

- **Chapter 9** features inside information about how to enhance your system with powerful new applications, hard drives, CD-ROM drives, scanners, large monitors, and accelerators that make your Mac work faster. The chapter describes common pitfalls and how to avoid them, and even presents large-screen options for Mac Classic users.

- **Chapter 10** is a problem-solver. You'll learn how to add more system memory and under what circumstances this goal is achievable. You'll read explanations of virtual memory and 32-bit addressing, and the fine points of allocating memory between applications. Other topics are the repair of damaged files and drives and how to fight computer viruses.

Introduction to Macintosh System 7 is a common-sense, friendly, and authoritative approach to the subject. You will benefit from hands-on analysis of System 7 *as it was released*—plus specific findings about how other programs work with the release version of the system software.

Important procedures are described in *numbered steps*; after reading about a feature, you won't have to guess about how to proceed in order to use it.

The book has been organized to save you time—to make you productive with System 7's many options as soon as possible.

After all, productivity is what System 7 is all about.

Getting Started
with System 7

FEATURING

- Hardware requirements
- Installing the system software
- Selecting printer and monitor options
- Making old accessories work

I f you're using a Macintosh that isn't already set up under System 7, you'll have to install the new version of the operating system. This process may involve resolving some incompatibilities with older software and also the selection and configuration of one or more monitors and printers. If System 7 has already been installed (perhaps by your Macintosh dealer), you may still want to make some adjustments to the configuration. This chapter will cover these subjects.

WHAT YOU NEED TO RUN SYSTEM 7

Apple usually furnishes the System 7 software on a group of eight disks. (You will have fewer disks if your copy is on high-density floppies.) This version of the operating system requires so much storage space that you must have a hard disk to use it satisfactorily. However, if you don't have a hard disk, you can buy an inexpensive external model and install it by simply plugging it into the SCSI port at the rear of your Mac (see Chapter 9). You must have a Mac Plus or later model Macintosh.

You will also need an absolute minimum of two megabytes of memory (RAM, or random-access memory). If you want to have two or more large applications loaded at the same time, you'll need five to eight megabytes of RAM; the exact amount will depend upon the requirements of the specific applications and upon the drain caused by memory-resident accessories such as added typefaces, sounds, *DAs*, *INIT* files, or *CDEVs*.

A *DA* (desk accessory) is an accessory program you can activate through the Apple menu (see Chapter 2), such as the alarm clock, the calculator, and the control panels that let you adjust many aspects of your Mac's operation.

An *INIT* (initialization program) is a utility program you install by dragging it into your System folder; after you restart your Macintosh, the INIT then resides in memory and provides the service for which it was created. An example of an

INIT is After Dark (from Berkeley Systems, Inc.); this program produces random patterns on your screen during periods of inactivity to prevent burn-in of static images, which would damage your monitor. After Dark is also a CDEV (see the next paragraph).

A *CDEV* (control device) is a software module you also install by dragging it into the System folder and restarting your Macintosh; however, you adjust the CDEV's operation by accessing it as a *control panel* (see the explanation of control panels later in this chapter). Apple provides a number of CDEVs that are installed automatically by System 7; these control panels let you adjust your computer's sound level, the appearance of your monitor, the speed of your mouse, and many other features. Third-party CDEVs include products as varied as After Dark (mentioned previously), SoundMaster (a fun program that applies sounds of your choosing to functions such as inserting a disk), and Adobe Type Manager (a utility that greatly improves the display and printing of many typefaces). You'll read more about these products in Chapters 6 and 9.

If your computer has only a minimum amount of memory, you may have to do without some DAs, INITs, and CDEVs that are already installed. You can remove these accessories temporarily and reinstall them later after you've added more memory. In most cases, you can deactivate the accessories by starting your computer from a floppy disk containing a recent version of the operating system (so the accessories won't be currently in use), then dragging the icons for the accessories out of the System folder to another location on your hard disk.

After you've installed System 7, you can try reinstalling favorite accessories one by one, to determine whether or not you have enough memory to run them (and whether or not they're compatible with System 7). If your available memory is severely limited, it may not be a good idea to push your memory usage to the limit in this fashion. At any time, one of your regular applications could require more memory than usual for a particular function; you could also crash your system, resulting in the loss of any work not previously saved to disk.

You can use either a standard Macintosh keyboard or an *extended* keyboard with System 7. An extended keyboard provides additional keys usually found on the keyboards of MS-DOS personal computers: function keys numbered F1 through F12, Page Up and Page Down keys, and so on. Some versions of Macintosh programs released for use with System 7 make use of these extra keys as a

convenience; for example, in MacWrite Pro you can scroll through the pages of a document by pressing the Page Up and Page Down keys rather than using the mouse or shortcut keyboard combinations. In many programs, you can press the Insert key to display help screens or F1 to undo your last action.

▌NSTALLING SYSTEM 7

Prior to installing System 7, you should drag a program called Compatibility Checker onto your hard disk. The program is provided on a disk named "Before You Install System 7" and requires HyperCard 1.2.2 or later to run.

Double-click on the Compatibility Checker icon and follow the on-screen directions to obtain a report on installed software the program suspects may be incompatible with System 7. This report contains information on each program stored on your hard disk, such as version, compatibility status, notes on compatibility, and telephone numbers for developers of products listed in the report. The program will even offer to move questionable items out of your system folder. However, often these items will work perfectly with System 7 after all.

Transferring System 7 onto your hard disk involves little more effort than giving the proper response to messages displayed on your screen and inserting floppy disks as they're requested. These are the steps required:

1. If you're using a Macintosh already running under a previous version of the operating system, it's advisable (although not absolutely necessary) to shut down the computer before you begin installation. Otherwise, conflicts could be caused by elements of your present operating system that are already in memory.

2. After shutting down the computer, locate the installation disk labeled Install 1, and insert it into a floppy drive. (You may have more than one diskette drive in your system—for example, the usual internal floppy drive plus an additional external drive. When you reboot your system, your Macintosh will find and load the installation program from either of these drives.)

3. Turn on your Macintosh. After a pause, you'll see a message beginning "Welcome to the Apple Installer" (see Figure 1.1).

This message informs you that you have two installation options: either you can choose Easy Install to have the Installer program select the appropriate items for installation, or you can choose Customize to override the automatic installation procedure. After you've read the message, click the OK button to continue to the next screen.

4. This screen is named Easy Install; it's here that you really make your decision as to whether you want to select Easy Install or Customize. You would click the Customize button to hand-pick items for installation. (We recommend that you do not choose this option—unless you have the knowledge to be certain that your installation is a special case and unless you know exactly how your installation should differ from the standard procedure.) You can also click a Help button if you're unsure of the meaning of the options, or click Quit if you want to abort the installation process for some reason. Click the Switch Disk button if the Installer is about to install the operating system on a hard disk other than the one where your system software is located. (The name of the disk selected for installation is displayed at the bottom of the Easy Install screen.) In most cases, all you have to do when you see this screen is click the Install button to start the installation using the Easy Install option.

5. If you should select the Customize option, you will see a screen allowing you to select individual elements of the operating system for updating. Make your choices, then click the Install button to proceed, or click the Easy Install button to return to the Easy Install window.

6. As the installation process begins, the Installer will display a progress report: "Determining which files will be needed." This message will be replaced by another stating: "Reading from Install 1. Removing outdated files." You will see a graphical representation of the installation disks the Installer will soon request, plus an animated drawing of a hand with fingers counting the passage of time as the program proceeds. Soon the Installer will eject the Install 1 disk and ask that you insert the Install 2 disk. Insert the disk as requested.

7. Continue responding to on-screen prompts until you've provided all of the disks needed for the installation. The final request will be for you to insert the Install 1 disk again.

8. At last, you'll see a screen with a message stating that the installation has been completed. Click the Quit button.

9. On the next screen you'll be given two options: to restart your Macintosh under System 7 or to shut down the computer. If you choose the shut-down option, remember that you'll still have to make decisions later regarding memory management, the designation of a printer, and the configuration of the display produced by your monitor. If you choose Restart, you can continue immediately with the next section of this chapter.

Figure 1.1
The Installer
welcome message

Welcome to the Apple Installer

Your Macintosh needs certain software to start up.

The Installer places this software on your disk in the System Folder.

System Folder

"Easy Install" chooses the software Apple recommends and creates a disk which can be used to start up your Macintosh.

("Customize" if you are sure you want to override those recommendations.)

OK

SELECTING MEMORY, PRINTER, AND MONITOR OPTIONS

As soon as your Macintosh restarts under System 7, you'll realize that the appearance of the screen is slightly different than under previous versions of the operating system. For one thing, you'll notice a three-dimensional look

to the items on the desktop, produced by carefully placed shadow effects. The names of some of the menus are different too. We'll explore most menus and their contents in Chapter 2. However, in order to complete the details of the System 7 installation, you'll need to use the Apple menu right away.

Figure 1.2 shows the basic Apple menu for System 7. Most Mac users will add utilities and other options that will expand the list of items on the menu. Unlike previous Apple menus, the System 7 version displays a distinctive icon beside each name that will symbolize the item on the Application menu; the Application menu is a new System 7 menu used to switch between applications and is described more fully in Chapter 2.

Figure 1.2
The Apple menu


```
 About This Macintosh...
─────────────────────────
  Alarm Clock
  Calculator
  Chooser
  Control Panels
  Key Caps
  Note Pad
  Puzzle
  Scrapbook
```

Checking the Memory on Your Macintosh

First let's investigate the first item on the Apple menu: About This Macintosh.... This option was named About the Finder... in previous versions of the system software.

Pull down the Apple menu and select About This Macintosh.... You'll see the About This Macintosh window displayed in Figure 1.3, which primarily provides data on memory usage.

Incidentally, Figure 1.3 provides a good view of the System 7 desktop, including the menus, icons for installed applications, and the Trash.

Figure 1.3
The desktop with
the About This
Macintosh window
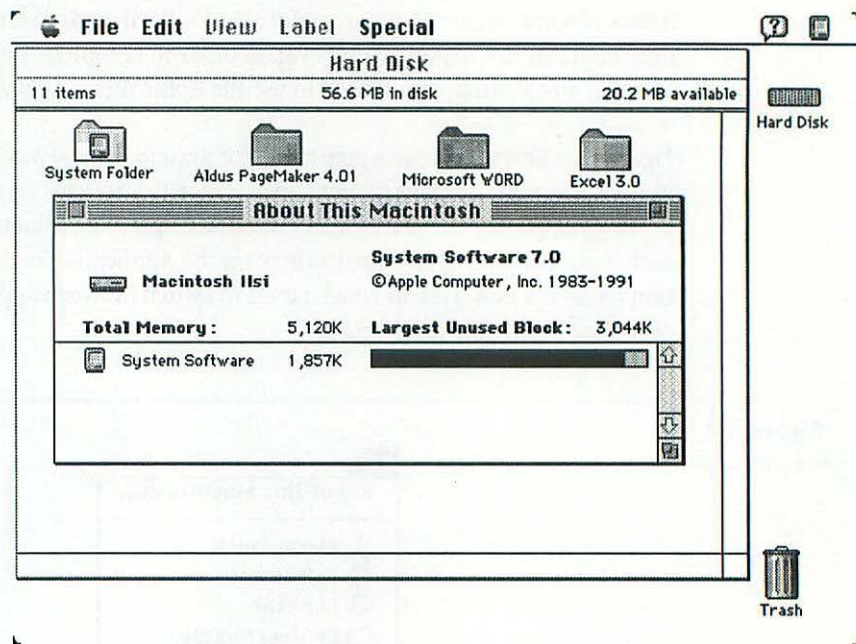
Observe that the About This Macintosh window tells you what version of the system software is in use (System 7, of course), the kind of Macintosh on which the software is running (in Figure 1.3, the computer is a Mac IIsi), the Total Memory installed, and the Largest Unused Block.

The memory amounts are shown in kilobytes (represented by the letter K). Figure 1.3 shows the Total Memory as 5,120K; computer users would normally round off this amount and say the computer has "five megabytes of memory installed." Technically, a megabyte is equal to 1,024 kilobytes.

The Largest Unused Block item shows the amount of memory that is currently not in use and therefore available to load additional programs or accessories. In Figure 1.3, the RAM available is listed as 3,044K, which would be enough to load two applications with relatively modest memory requirements.

Beneath this information, a line runs across the window. Below the line, the window always displays the amount of memory occupied individually by System 7 and any applications currently loaded. Only the operating system is active in Figure 1.3; both a horizontal bar and the quantity 1,857K tell you the amount of memory in use. If applications had been loaded into memory, each would be listed by name below the System Software item, along with the memory drain caused by each.

As you can see, the About This Macintosh window is a handy way to monitor your memory usage.

System 7 provides ways of adjusting the amount of memory available. You'll learn about most of these methods in Chapter 10. However, later in this chapter we'll show you one other memory option connected with your monitor that is available on many Macintoshes.

Selecting a Printer or Network Connection

You can print files either on a printer located near you or through some distant facility accessed through a variety of networking options.

You may have a printer directly connected to your Macintosh; for example, Apple ImageWriter printers are connected in this manner.

If you're using a Macintosh that is not linked through a network to any other computer and is attached by cables to a printer in the LaserWriter family (at home or office), you might think that this Macintosh/printer coupling is a direct connection too. Actually, it's not. Technically, your LaserWriter is connected to your Mac through an AppleTalk network.

If your computer really is part of a network, you may print files by yet another method. You may need to connect through an AppleShare icon or some other special icon representing a network with a name like EtherTalk or TokenTalk.

In all of the above situations, you select your printer or network connection through the Chooser, a standard Apple menu option that has changed only slightly under System 7. Nevertheless, some regular Macintosh users are unfamiliar with the Chooser—because a dealer or friend set up a printer for them long ago, and they've never had any reason to change the configuration.

Follow this procedure to make your selection:

1. If necessary, click the close box to close the About This Macintosh window.

2. Pull down the Apple menu, and select Chooser. You'll bring up the Chooser window, as shown in Figure 1.4. The list of printer-driver icons displayed at the left of the window will vary according to the hardware you have available and the number of drivers that have been added or removed from your System folder.

3. From the icons available, click the icon representing the printer or network connection you wish to activate.

4. If you select the ImageWriter icon, you'll immediately see a message at the top of the right side of the window stating: "Select a port." This is not a nautical term; the message means you should specify the place where your ImageWriter is plugged in at the back of your Macintosh—either the printer port or the modem port. To make this selection, you click on one of the two icons that will have appeared at the right side of the window. In case you're not sure to which one the printer is attached, all you have to do is match up the symbol on the icon with the symbol over your printer cable at the back of your Macintosh. (See how easy the Macintosh is to use!) The Inactive button will be automatically selected in the AppleTalk area at the bottom of the screen, since an ImageWriter does not use the AppleTalk network.

5. If you want to select a LaserWriter printer, be sure your printer is turned on first. Then click the LaserWriter icon. The message at the top of the right side of the window will say: "Select a LaserWriter." There will be no icons shown on the right side of the screen; instead, the Chooser will display the name of your particular LaserWriter model. (It can derive this information through AppleTalk only if your printer is turned on).

6. *Click the name of your model to select it*—even if your particular printer is the only item displayed; don't skip this step or

your documents won't print! (If you work in a large organization, you may see the names of several LaserWriters at the right of the screen, listed not by the model name but by some descriptive name provided by the organization, such as Third Floor or Accounting Department.) When you select a Laser-Writer, the Active button is also selected automatically in the AppleTalk area at the bottom of the window.

7. If you're a member of a network, you may have to click a special icon to connect to the network, then—from the right side of the window—click the name of the printer you want. (Printers may have been identified by the network administrator with special names denoting their specific locations.)

8. If you're using some printer other than a LaserWriter or an ImageWriter in a non-network situation, select its icon and follow directions from the printer manufacturer.

9. If you need to use a new printer that does not have an icon displayed, you may have to obtain a printer-driver file from the printer manufacturer or your dealer, then drag its icon into the System folder to install it. Following this procedure, you can then select the printer in the Chooser.

10. When you've completed your selection in the Chooser, click the close box to close the window and return to the desktop.

You'll find more information about printers and printing procedures in Chapter 4.

Configuring a Monitor

You can connect more than one monitor to your Macintosh at the same time. If you do so, you can drag items from one screen to the other, as if the monitors constituted one continuous screen. You can specify the relative positions of each monitor (left, right, etc.) by dragging icons representing the monitors. You do all of this in the Monitors control panel, one of a group of control panels furnished with System 7. (Under previous versions of the system software, there was only one control panel—with items within it that you could select—merely a difference in terminology. However, you can see most control panel options displayed simultaneously now in a window—a definite improvement; formerly, you had to scroll a list box to find many of these icons.)

sub-folders in an outline format. However, to do so, you must have chosen one of the five file/folder viewing options that lists the items without displaying their icons. (For example, you can elect to show the names sorted alphabetically, or by the dates when they were created, and so on; you make this viewing choice through the View menu, explained in Chapter 2).

Filenames displayed from a sub-folder are indented to distinguish them from the files stored in the main System folder. You reveal the contents of a sub-folder by clicking on a little triangle to the left of its name; the triangle changes position to point downward rather than toward the name of the sub-folder, and you'll see the contents of the sub-folder. Click again to hide the contents and rotate the triangle to its previous position.

Figure 1.8 illustrates this outlining capability. In this figure, the System folder is open, revealing several sub-folders. One of the sub-folders—Apple Menu Items—is also open, displaying its contents. You can use the outlining feature with any folders and files stored on your disks—not merely the System folder.

Figure 1.8

The contents of the System folder, displayed in an outline format

Name	Size	Kind
▷ ☐ Aldus	867K	folder
☐ Aldus Prep	26K	document
▷ ☐ APDs	9K	folder
▽ ☐ Apple Menu Items	132K	folder
🖎 Alarm Clock	12K	desk accessory
🖎 Battery	9K	desk accessory
🖎 BigCaps™	14K	desk accessory
🖎 Calculator	8K	desk accessory
🖎 Chooser	38K	desk accessory
☐ Control Panels	2K	alias
🖎 Key Caps	12K	desk accessory
🖎 Note Pad	9K	desk accessory
🖎 Puzzle	20K	desk accessory
🖎 Scrapbook	11K	desk accessory
☐ Claris Fonts	36K	MacWrite II docu
▷ ☐ Control Panels	743K	folder

your documents won't print! (If you work in a large organization, you may see the names of several LaserWriters at the right of the screen, listed not by the model name but by some descriptive name provided by the organization, such as Third Floor or Accounting Department.) When you select a LaserWriter, the Active button is also selected automatically in the AppleTalk area at the bottom of the window.

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8. If you're using some printer other than a LaserWriter or an ImageWriter in a non-network situation, select its icon and follow directions from the printer manufacturer.

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10. When you've completed your selection in the Chooser, click the close box to close the window and return to the desktop.

You'll find more information about printers and printing procedures in Chapter 4.
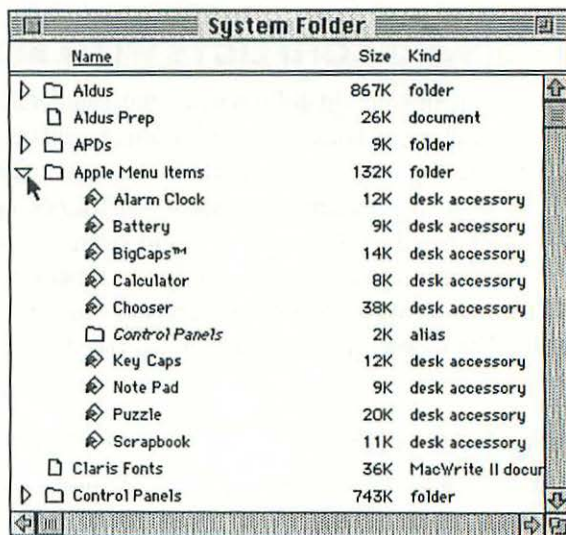
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Figure 1.4

The Chooser window
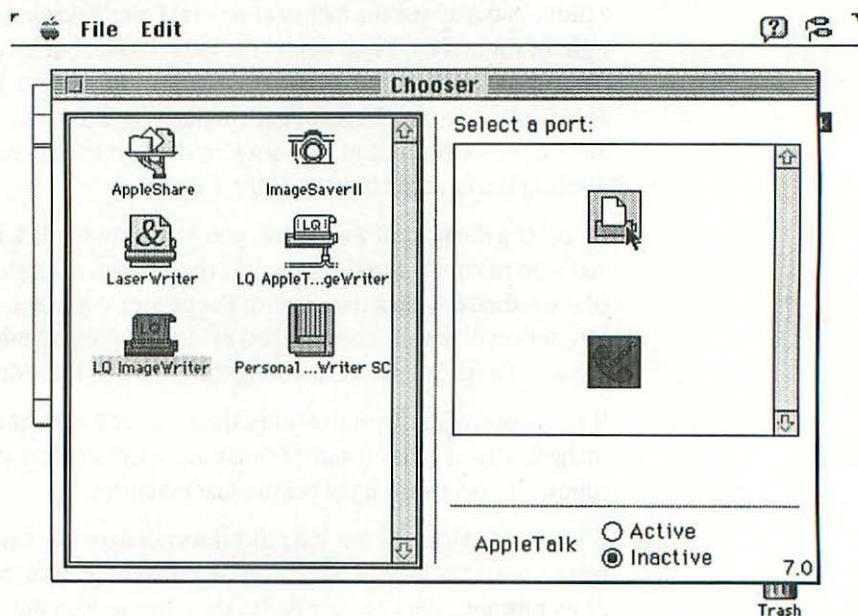
Most Macintosh users connect only one monitor to a computer, and very few connect more than two. When a user employs two monitors, sometimes one is a small monitor for everyday work, while the other is much larger, displays two full pages simultaneously, and is used for preparing publications.

To configure a monitor, follow these steps:

1. Pull down the Apple menu, and select the Control Panels option. You'll see the Control Panels window. A typical window will resemble Figure 1.5 and will contain most of the items displayed; you can drag any panel to change its position. Your Control Panels window may display CDEVs purchased from third-party sources and not provided with the operating system. In Figure 1.5, two items at the bottom of the window fall into this category: After Dark and Adobe Type Manager (ATM), both mentioned earlier in this chapter.

2. Click the Monitors icon to select this control panel. The Monitors window will appear, as shown in Figure 1.6. The exact options you'll see will depend upon the characteristics of your monitor and the video installation supporting it. For example,

Figure 1.5
The Control Panels
window
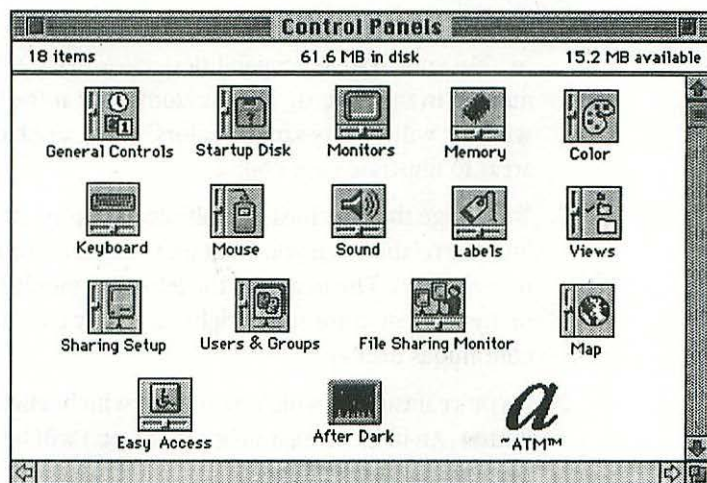
Figure 1.6
The Monitors control
panel window
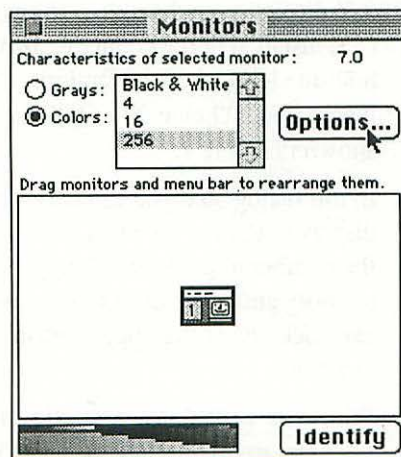
some Macintoshes can display millions of colors; others are limited to 256 colors or less. Monochrome monitors display images in black and white; grayscale monitors display many shades of gray.

3. To select the display of Grays or Colors, click one of the buttons on the left.

4. To select the number of colors or grays you want displayed (within your system's capabilities), click Black & White or a number in the list box. The horizontal bar at the bottom of the window will display sample colors, grays, or black and white areas to illustrate your choice.

5. To arrange the positions of multiple monitors, drag their icons into the relationship you want (in the area at the bottom half of the window). The image on the left-hand monitor will continue on the next monitor to the right, as if they constituted a single continuous display.

6. If you're unsure of which monitor is which, click the Identify button. An identifying number (1, 2, etc.) will be displayed on the screen of each monitor.

7. To specify a monitor as your main monitor, drag the miniature menu bar from the top of one monitor icon to another.

8. On many Macintoshes, if you click the Options... button, you will display a small window showing only the name of a video card installed in the computer. However, if your Macintosh has built-in video, click the Options... button to make a memory-management choice. The Options dialog box will appear as shown in Figure 1.7.

9. In this dialog box, you can click a button to provide the video display with only the amount of memory required to support the number of grays or colors you've selected. If you're short of memory and don't need to see 256 colors or shades of gray, you can click one of the upper buttons to release some RAM for other uses.

10. When you've made your selection in the Options dialog box, click OK to return to the Monitors control panel window, then click the

Macintosh II Built-In Video

OK

Cancel

Memory Allocation For Built-In Video 1.0.1
Select the maximum number of colors/grays for which you want
to reserve memory.

○ Black & White Only

○ Up to 4 Colors/Grays

○ Up to 16 Colors/Grays

● Up to 256 Colors/Grays (current selection)
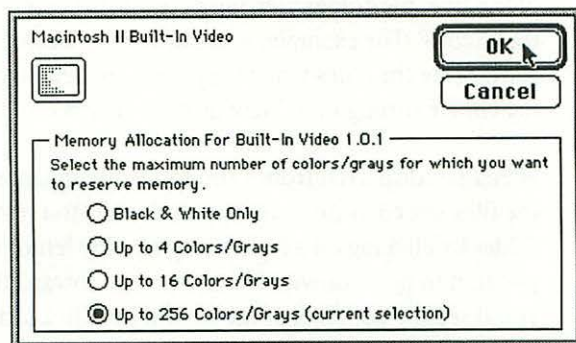
close box to close that window and return to the Control Panels
window.

11. Click the close box in the Control Panels window to close this
window too and return to the desktop.

RESOLVING CONFLICTS WITH ACCESSORIES

If some of your old utilities won't work under System 7, you may have to go
through the tedious process of removing all DAs, INITs, and CDEVs, and then
reinstalling them one at a time to find out if you're now faced with one or
more utilities that are incompatible with the new operating system or with each
other. Based on the results of this research, you may have to delete a utility so
the remaining ones will load properly. However, you may be able to salvage an
accessory you used under an earlier version of the system software by moving
it. The following are two techniques that may succeed.

Moving Files within the System Folder

Sometimes you can make a favorite old utility work under System 7 by merely
changing its location within the System folder.

Starting with System 7, accessories stored in the System folder are automati-
cally filed in various sub-folders. You can examine the contents of any of these

sub-folders in an outline format. However, to do so, you must have chosen one of the five file/folder viewing options that lists the items without displaying their icons. (For example, you can elect to show the names sorted alphabetically, or by the dates when they were created, and so on; you make this viewing choice through the View menu, explained in Chapter 2).

Filenames displayed from a sub-folder are indented to distinguish them from the files stored in the main System folder. You reveal the contents of a sub-folder by clicking on a little triangle to the left of its name; the triangle changes position to point downward rather than toward the name of the sub-folder, and you'll see the contents of the sub-folder. Click again to hide the contents and rotate the triangle to its previous position.

Figure 1.8 illustrates this outlining capability. In this figure, the System folder is open, revealing several sub-folders. One of the sub-folders—Apple Menu Items—is also open, displaying its contents. You can use the outlining feature with any folders and files stored on your disks—not merely the System folder.

Figure 1.8

The contents of the
System folder,
displayed in an
outline format

Name	Size	Kind
▷ 🗀 Aldus	867K	folder
🗀 Aldus Prep	26K	document
▷ 🗀 APDs	9K	folder
▽ 🗀 Apple Menu Items	132K	folder
🔷 Alarm Clock	12K	desk accessory
🔷 Battery	9K	desk accessory
🔷 BigCaps™	14K	desk accessory
🔷 Calculator	8K	desk accessory
🔷 Chooser	38K	desk accessory
🗀 *Control Panels*	2K	alias
🔷 Key Caps	12K	desk accessory
🔷 Note Pad	9K	desk accessory
🔷 Puzzle	20K	desk accessory
🔷 Scrapbook	11K	desk accessory
🗀 Claris Fonts	36K	MacWrite II docur
▷ 🗀 Control Panels	743K	folder

When you drag items into the System folder, System 7 automatically files them, often storing them in sub-folders it deems appropriate. Unfortunately, this procedure sometimes locates older utilities where they cannot communicate properly with the new operating system. You can make some uncooperative INITs and CDEVs work by merely dragging them out of a sub-folder where the System 7 Installer has placed them. To accomplish this move, click on triangles to open and inspect the contents of folders (as just described), until you locate the item you want. Then drag its icon into the main System folder.

INIT files are normally stored in the Extensions sub-folder. CDEVs are in the Control Panels sub-folder.

Dragging Desk Accessories out of Suitcases

If you've used a Macintosh before, you're probably accustomed to having desk accessories stored in special files called *suitcases*. System 7 doesn't use suit-cases. There are two ways to continue to use those older DAs (assuming that they are otherwise compatible with System 7).

First of all, if you use the Suitcase II utility (or a similar desk accessory/font management product) and have a version compatible with System 7, you can still open those suitcases and use desk accessories through Suitcase II. (For more information about Suitcase II, see Chapter 6.)

If you don't possess this sort of utility, you must remove the desk accessories from the suitcases and install them directly into the System folder. This is easy to do:

1. Locate the suitcase containing the desk accessory.

2. Double-click on the suitcase icon. Under System 7, this action will *open* the suitcase, revealing its contents in a window, as shown in Figure 1.9.

3. Drag the desk accessory itself (not the suitcase) from within the window to the System folder. You'll see a message stating that desk accessories should be stored in the Apple Menu Items folder and asking your permission to place the accessory there.

4. Click OK. The file will be stored, and the desk accessory will thereafter be displayed on the Apple menu.

Figure 1.9
Opening a suitcase
to remove a desk
accessory
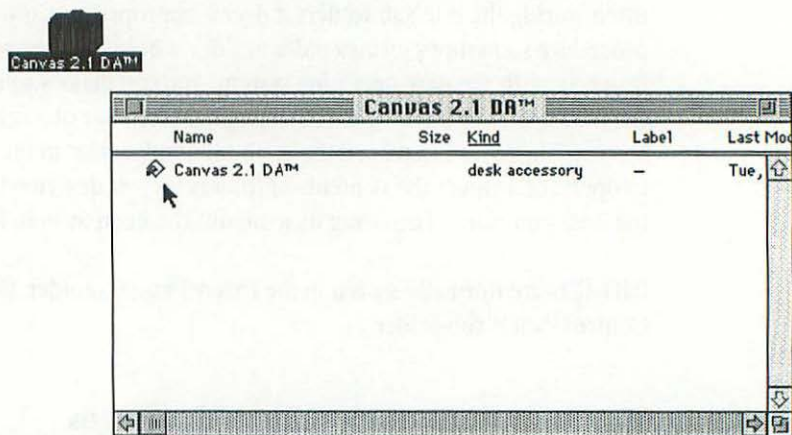
Chapter 2 explains the System 7 menus and more features of the new operating
system.

Taking a Tour
of the Desktop

FEATURING

- The System 7 menus
- Special features on menus
- Handy desk accessories
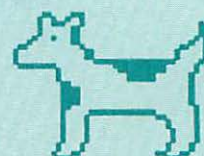
Whexn you don't see the clutter of application icons usually displayed on a Mac desktop, the basic structure of the System 7 user interface becomes very simple. In fact, if your Macintosh has a large monitor, the effect can even be stark.

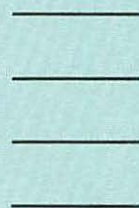Most of the figures in Chapter 1 were captured from the screen of the 12-inch color monitor normally sold with the Mac IIsi, which exhibits a relatively small area. However, Figure 2.1 shows the System 7 desktop of a Mac connected to a 13-inch Sony color monitor (with the hard disk display closed to conceal application icons). As this figure illustrates, in comparison to the Mac IIsi display, the distance is much greater between the menus at the left of the menu bar and those at the right end; System 7 menus occupy so little space here they almost seem insignificant. The only object visible on the desktop in addition to the menus and the hard-disk icon is the Trash icon far below.

This figure dramatizes how uncomplicated day-to-day use of System 7 can be. You don't need to master many system elements in order to handle routine operations. In Chapter 1, you already used some items from the Apple menu. In this chapter you'll explore the remainder of the options on that menu and then investigate the other System 7 menus.

As has always been the case with the Macintosh, some operating-system menu items also appear in the same positions on the menus of applications and provide the same functions. This conformity makes it easier for any Mac user to learn new programs.

OTHER ITEMS ON THE APPLE MENU

Figure 2.2 shows four accessories accessed through options on the Apple menu. Three of them are handy utilities; the fourth is merely a game we'll let you play as a reward after you finish this book!

Here are details of their operation.

Alarm Clock

When you select the Alarm Clock command, a tiny horizontal bar will be displayed in the upper-right corner of your screen; it will show only the current time, taken from the system clock built into your Macintosh. Click on the small lever that is pointing upward at the right of the time (in Figure 2.2, this lever is just above the tip of the mouse pointer arrow), to turn the lever downward and expand the Alarm Clock window so it will appear as it does in Figure 2.2. As you can see, this figure shows *two* time settings; the top setting is the actual time of day, while the bottom setting shows the time entered for the alarm clock.

Here's how to use the options presented:

1. To set the alarm, click the little alarm clock icon on the right to highlight it, then click anywhere in the lower time displayed

Figure 2.1

The System 7 desktop with the hard disk closed

File   Edit   View   Label   Special

Macintosh HD

Trash
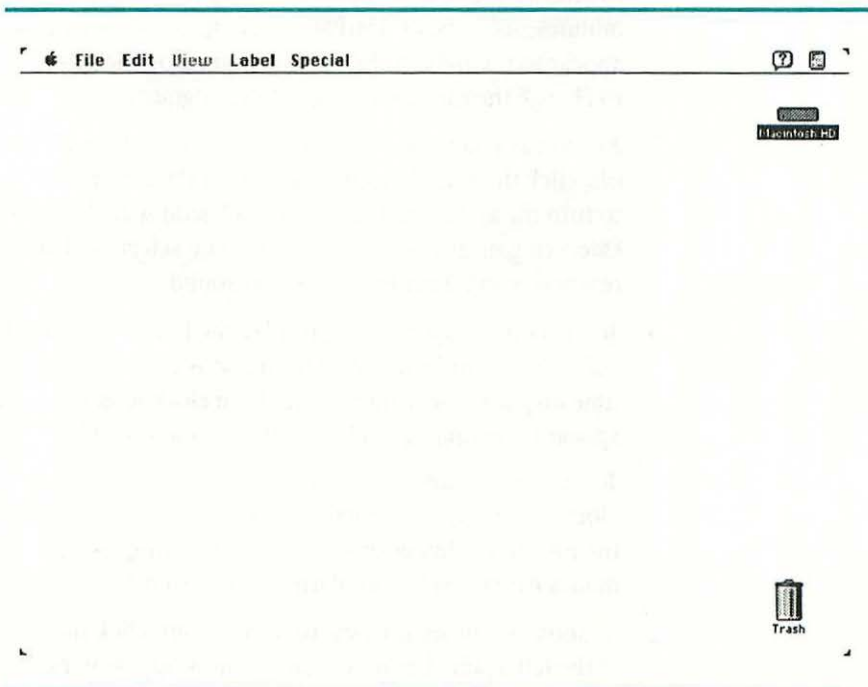
Figure 2.2
Four Apple
desk accessories
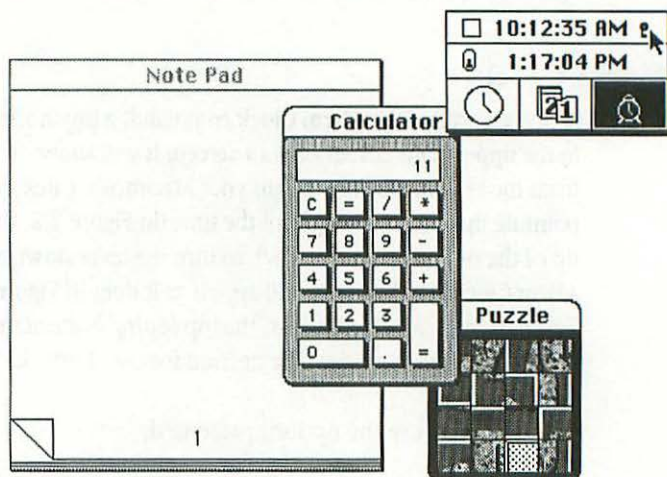
to select a segment of the time you want to change (hour,
minutes, seconds, or AM/PM). Small up and down arrows will
appear to the right of the time; you press or click these arrows
to change the time in the highlighted segment.

2. As soon as you've set the time when you want the alarm to go
off, click the small button to the left of the lower time display
to turn the alarm on. The alarm clock icon will change to indi-
cate a ringing alarm. When the time you select has been
reached, you'll hear the Mac's alert sound.

3. To turn off the alarm clock, display the full window for the
utility again, and click the button that is to the left of the lower
time displayed once more. The alarm clock icon will no longer
appear to be ringing, and the alarm function will be turned off.

4. To change the time shown continuously on the clock, click the
clock icon in the lower left corner of the window and change
the time in the lower display to a new setting, using the tech-
niques explained for the alarm clock in step 1.

5. As soon as you see the new time you want, click the clock icon
at the left again. The new time will now appear in both the top
and bottom time displays.

6. To change the date, click the miniature calendar pages shown between the clock and alarm clock icons. The currently set date will replace the lower time display.

7. Click the component of the date you want to change (day, month, or year). The small up and down arrows will appear to the right of the date.

8. Press or click an arrow to change the selected component until you see the date you want.

9. Click the calendar pages again to save the date setting.

10. After you've made all of the changes you want in the window, you can click the lever to the right of the top time display again to reduce the window to its minimum size on the screen.

11. If you prefer not to have a continuous display of the current time, click the close box in the window. Any changes you made (such as setting the alarm) will still be in effect.

Bear in mind that when you change time and date settings, you are actually changing the settings for the system clock. Therefore, the system will use the new settings in recording the time and date when files are saved to disk.

Calculator

When you select Calculator from the Apple menu, you display a small representation of a standard algebraic calculator. To operate the calculator, position the mouse pointer on the key you want to "press" and then click the mouse button. You can also operate the calculator by using the keys on the numeric keypad.

You can drag the calculator by its title bar to any convenient location on your screen.

Click the close box on the calculator to remove it from the desktop.

Note Pad

The note pad is simply a convenient place to store notes. You can pop up this desk accessory from the desktop or from within any application and either write a note or review anything previously stored on the eight pages it contains.

Try this exercise to familiarize yourself with the note pad:

1. Pull down the Apple menu, and select Note Pad. The note pad will appear.

2. Drag the utility by its title bar if you want to move it to a more convenient location on your screen.

3. Type a short note of a few words. As indicated by the number at the bottom of the little page, you will be typing your message on page 1 of the note pad.

4. Now you'll move this note to page 8 of the note pad. Drag across all of the text you've written to select the material.

5. Pull down the note pad's Edit menu at the top of the screen, and select the Cut command. (**Shortcut:** press ⌘-X.) The words you typed will disappear as they're stored temporarily in the clipboard.

6. Click the portion of a page visible below the turned-up corner in the lower left area of the note pad. This action will take you to the last page of the note pad—page 8. (If you had clicked the turned-up corner, you would have displayed page 2 instead.)

7. Pull down the Edit menu again, and select the Paste command. (**Shortcut:** press ⌘-V.) The text you typed has been moved from page 1 to page 8. (You could have used the Copy command to *copy* and paste selected text from one note pad page to another.)

8. Click the close box to hide the note pad from view. You can activate it again with the same contents intact by selecting the note pad from the Apple menu at any later time.

Notes are saved automatically when you close the note pad; you don't issue a Save command.

To delete a note or any part of it, drag to select the text and issue the Edit menu's Clear command.

Puzzle

This desk accessory is purely recreational. The object of the puzzle is to drag a checkered square into adjacent squares until all of these squares form a recognizable picture. To display and use the puzzle, you need only select Puzzle from the Apple menu.

But remember: No fair peeking at the puzzle until you've finished reading the book!

THE FILE MENU

The System 7 File menu (shown in Figure 2.3) offers both familiar commands and some interesting new capabilities. When you're actually in an application, you see a different File menu—created by the developers of the particular program; some commands are identical to system commands, but others have been added because they're either necessary or helpful to users of the application. Some special System 7 commands don't appear on menus within programs because they work only from the Finder. However, application File menus are still in the same location as their System 7 counterpart—next to the Apple menu.

Figure 2.3
The System 7
File menu

File	
New Folder	⌘N
Open	⌘O
Print	⌘P
Close Window	⌘W
Get Info	⌘I
Sharing...	
Duplicate	⌘D
Make Alias	
Put Away	⌘Y
Find...	⌘F
Find Again	⌘G
Page Setup...	
Print Window...	

You can issue several commands on the File menu (and on some other menus) without pulling down the menu at all. Instead, you can use the keyboard shortcuts displayed to the right of each command. Nine shortcuts are shown in Figure 2.3.

As was the case with previous versions of the system software, commands that are not currently available for execution are shown in gray (dimmed) type. For example, the Print command won't be available if you haven't selected anything to be printed.

The New Folder and Open commands—the first two on the menu—perform the same functions as in previous versions of the system software.

When you select the New Folder command (**Shortcut:** press ⌘-N), a new folder appears, named *untitled folder*; you can start typing immediately to give it a name, then click outside the folder to save the name. Drag the icons of files into the folder to store them there.

Under previous versions of the operating system, a new folder was called *Empty Folder*. Although you can select a folder or edit its name as you did before System 7, the folder icon has changed slightly in appearance in its various configurations—when it's selected, when text is being edited, and so on. You'll see more on this subject in Chapter 3.

When you're using the Finder (working on the desktop and not in an application), the Open command lets you open a selected file or folder (one that has already been highlighted). Of course, you can also double-click the icon of a file or folder to open it—a faster procedure.

The Print command will now print documents from the Finder, without opening the applications in which they were created. Just select a document (or a group of documents, by holding down the Shift key as you click each one), then issue the Print command and choose the options you want in the Print dialog box that will appear. If you select multiple documents that have been created in different applications, you'll see a Print dialog box for each.

The Close Window command (**Shortcut:** press ⌘-W) accomplishes the same goal as clicking the close box of a window from the desktop: it closes the active window and removes it from view.
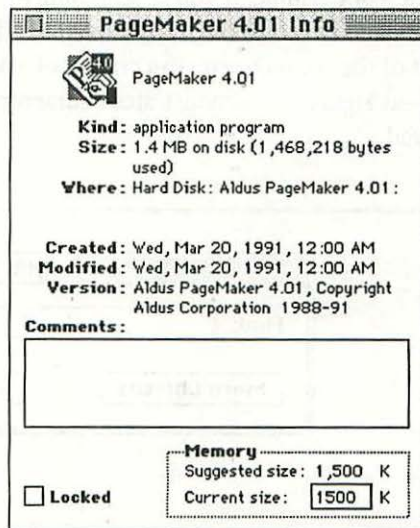
The Get Info command provides considerable data about a selected file. To use the command, click a file to highlight it, then select Get Info from the File menu. You'll see an information window similar to that shown in Figure 2.4, which provides background on the program file for Aldus PageMaker 4.01. Note that you can use this window to determine the kind of file, its size, where it's located, exactly when it was created and modified, as well as the version number (if it's a program file). Following this data, there is a space where you can enter comments.

At the bottom of the window, you can click the lock check box to keep anyone from saving changes to the file (a feature intended primarily to prevent accidental changes, since an experienced Mac user could certainly click the box again to remove the protection). In the case of a program file such as the one shown, you'll also see a Memory box, showing how much memory the application requires and how much has been assigned. Read more about using this feature in Chapter 10.

The Sharing... command lets you designate a folder for sharing with other users of a network. The command is explained in more detail in Chapter 7.

Figure 2.4
Using the Get Info
command

PageMaker 4.01 Info

PageMaker 4.01

Kind: application program
Size: 1.4 MB on disk (1,468,218 bytes used)
Where: Hard Disk: Aldus PageMaker 4.01:

Created: Wed, Mar 20, 1991, 12:00 AM
Modified: Wed, Mar 20, 1991, 12:00 AM
Version: Aldus PageMaker 4.01, Copyright Aldus Corporation 1988-91
Comments:

Memory
Suggested size: 1,500 K
☐ Locked   Current size: 1500 K

The Duplicate command makes a copy of a selected file or folder.

The Make Alias command lets you open a file or folder by opening a tiny "stand-in" for the item that can be located anywhere in your system. Aliases are explained more fully in Chapter 3.

The Put Away command removes a selected item from the desktop and stores it again in its original location.

The Find... command brings up a dialog box in which you can enter the name of a file or folder you want to find (see Figure 2.5). Click the Find button to start the search.

Click the More Choices button in that dialog box to display the expanded dialog box in Figure 2.6, which offers a sophisticated search capability that was not available before System 7. By using a pop-up menu within the expanded dialog box, you can search for an item by its name, size, kind, label (labels are explained in the discussion of the Label menu later in this chapter), date created, date modified, version, comments, or by whether the item is locked or unlocked. A second pop-up menu establishes a criterion for the search; the options in this menu change according to the attribute selected from the first menu. For example, if you're searching for *comments* relating to an item, the second menu choices are only *contain* and *do not contain*. The area to the right of the second menu can consist of a box for text entry or a list of choices, but—as Figure 2.7 demonstrates—sometimes offers a changeable date display instead.
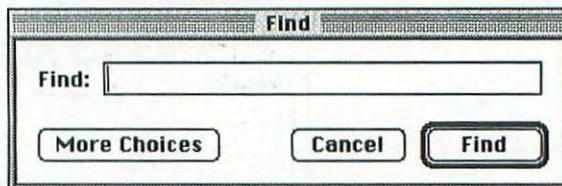
Figure 2.5
The Find dialog box

Figure 2.6
Additional options
for the Find command
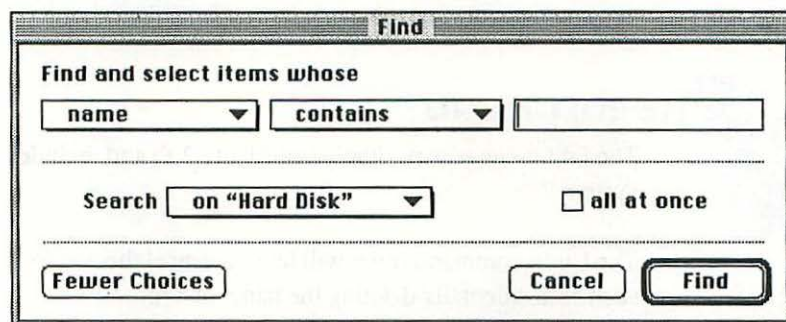
Figure 2.7
Search criteria can be
highly customized
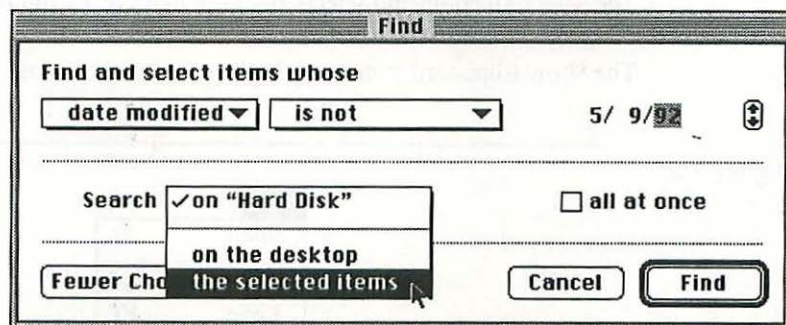
The Search pop-up menu—located in the dialog box below the features just discussed—is where you select the portion of your system to be searched for items matching your criteria (hard disk, selected folders, etc.)

You can search for multiple items matching the same description, on any disk in your system, by clicking the *all at once* option. When this kind of search is completed, the window containing the items located will switch from displaying icons to listing files and folders alphabetically; and any items matching the criteria will be highlighted.

When you haven't selected the *all at once* option, use the Find Again command
to look for an additional example matching the criteria you've provided.

THE EDIT MENU

The Edit menu is very simple (see Figure 2.8) and includes no features new to
System 7.

The Undo command often will let you cancel the action you've just taken—
such as accidentally deleting the name of a file.

The Cut, Copy, Paste, and Clear commands work in the same way as the com-
mands with those names you used in the Note Pad desk accessory.

The Select All command selects all of the items in a window.

The Show Clipboard command displays the current contents of the clipboard.

Figure 2.8
The Edit menu

Edit	
Undo	⌘Z
Cut	⌘X
Copy	**⌘C**
Paste	⌘U
Clear	
Select All	**⌘A**
Show Clipboard	

THE VIEW MENU

The View menu lets you look at files and folders in several different ways (see
Figure 2.9). You can see them represented by small icons; by large icons (the
default—the choice that will be used unless you specify something else); alpha-
betically by name; by size (with the largest shown first); alphabetically by kind
of file (application, document, folder, etc.); by *label* (items identified by text
labels as part of a group; see the description of labels in the next section); or by

the date and time of creation (with the most recent shown at the top of the window).

All you have to do to look at files and folders in one of these configurations is use the View menu to select the way you want them displayed. The contents of the window will immediately be rearranged in the order you've specified.

Figure 2.9
The View menu

THE LABEL MENU

The Label menu (Figure 2.10) lets you tag related files and folders with an identifying combination of text and a selected color (color only if you have a color monitor, of course). For example, if you worked for a construction company, you might want to attach the same label to a group of files that concerned a particular building project. By default, the Label menu shows names attached to colors that are merely placeholders. You're expected to change the labels so the colors will represent something more meaningful to you. You make these changes through the Labels control panel (more about this in Chapter 5).

Figure 2.10
The Label menu
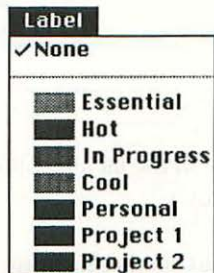
Once you've established the labels you want, here's how you apply them to file and folder icons:

1. Select the icons to which you want to apply a particular label.

2. Pull down the Label menu and select the label you want to apply to the group.

Once a label has been attached to a group of files and/or folders, you can search for those labels with the Find command.

You can view files and folders sorted by group through the *by Label* option on the View menu.

When you look at files and folders in any of the list views, you will see their text labels just to the left of the column displaying the date and time of the most recent changes.

THE SPECIAL MENU

The Special menu is short, but particularly important. You'll use it every day (see Figure 2.11). Some commands have changed under System 7.

Figure 2.11
The Special menu

Special	
Clean Up Window	
Empty Trash...	
Eject Disk	⌘E
Erase Disk...	
Restart	
Shut Down	

The first item on the menu—Clean Up Window—arranges the icons in a window in neat rows.

When you issue the Empty Trash... command, you'll see a message telling you how many items are in the Trash and how much space they occupy; you're

asked if you're sure you want to remove them permanently. Click OK to delete the items, or Cancel if you've changed your mind or want to check the contents of the Trash first. (As you'll discover in Chapter 5, you can stop the warning message from appearing; however, bear in mind that some day the warning could keep you from accidentally deleting an important file or folder.)

Next you'll see an Eject Disk command (**Shortcut:** press ⌘-E), which will eject a disk from your floppy drive.

Below this menu option you'll find Erase Disk.... This command reformats a disk in your floppy drive.

The last two commands are the ones you'll use most often. Restart "restarts" the computer without turning it off (sometimes called "rebooting" or "a warm boot"). You must use this command to let changes take effect that you've made in some utilities such as desk accessories that reside in memory. Bear in mind, however, that when you restart the computer, you'll lose any changes you've made in a file since you last saved it.

The final command—Shut Down—must be used to turn off your Macintosh safely. Never merely turn the power off. Macs manufactured in recent years are constructed so that this command turns off the power too—after the operating system has done necessary housekeeping and stored information required to maintain the desktop.

Sometimes you may have to shut down your Macintosh because there's been some software malfunction, then wait a few seconds and restart the computer. (This procedure is sometimes called a "cold boot.")

Occasionally, defective software may freeze up your screen so no mouse movement or keyboard command will have any effect. In these rare situations, you may have no choice but to turn off the power and restart—since you would then have no way to issue the Shut Down command first.
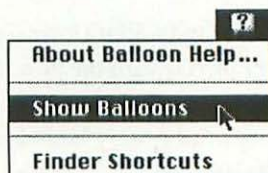
THE HELP MENU

The Help menu is at the right side of the menu bar (only the Application menu—discussed next—is further to the right) and is identified by a question

mark inside a dialog balloon such as those seen in comic strips when characters speak. Here you can activate a feature called *balloon help* in System 7—or turn this special kind of help off again.

Balloon help displays small dialog balloons containing useful explanations, whenever you move the pointer to major components of the Mac user interface. This kind of help can be a real boon if you're using a Macintosh for the first time—or even if you're using System 7 for the first time—because commonly asked questions are answered for you automatically.

Figure 2.12 shows the Help menu. You'll see this same menu within most applications (without the Finder Shortcuts option); often, application developers add their own command to the menu when you're using their program, letting you access conventional indexed help screens relating to the application. Some applications provide the new-style bubble help too (Microsoft Excel is an example).

Figure 2.12
The Help menu

Note: if you have a small-screen Macintosh and are using an application with several menus of its own, there may not be room on the menu bar to display the balloon help menu too. In these cases, the application will automatically sense the presence of the small screen and will let you access balloon help through a Window menu used to switch windows within the application.

The first command in the balloon help menu (About Balloon Help...) brings up a screen explaining the feature. The second command is Show Balloons when balloon help is not active and Hide Balloons if balloon help is in use; obviously, these are the commands that turn balloon help on and off.

The final command—Finder Shortcuts—loads a series of special help screens listing those keyboard shortcuts you can use instead of menu commands. Figure 2.13 shows an example of balloon help in operation.

Figure 2.13
Balloon help in
operation
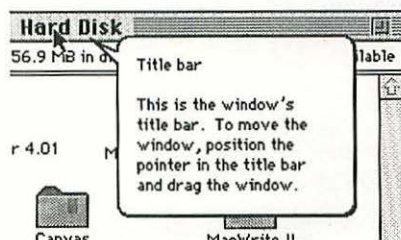
THE APPLICATION MENU

The final System 7 menu is the Application menu, where you switch between items that are currently in memory. You use the Hide command to hide a currently active application. To make a loaded application current so you can use it, select the item by name from the lower part of the menu.

Figure 2.14 shows that—in addition to the Finder, which is always available in memory—only TeachText is loaded. This is a utility furnished with System 7 that is used most often to display README files; these files are often created by developers of applications to provide information that became available after the program's manuals were printed. Under System 7, you can also use TeachText to look at graphic files.

Figure 2.14
The Application
menu

Selecting the Show All command is a quick way of displaying all of the applications currently in memory. However, you can work in only one at a time, even though you can show windows from others on your screen simultaneously.

Chapter 3 will provide much additional information about working with applications.

Working with Programs

👉 FEATURING

- Managing Multiple Applications
- Installing and Opening Programs and Files
- Creating and Naming Files and Folders
- Identifying Folder Configurations
- Using the Scrapbook
- Selecting and Changing Typefaces

Most users of previous versions of the Macintosh system software are accustomed to working with one program at a time—closing one application before loading another. Although the MultiFinder feature of these versions permits switching between several programs held in memory simultaneously, the average person exploits this feature only sporadically. Some are uncertain as to the exact procedures required by the MultiFinder, Some are worried that their Macs may not have enough memory to run the MultiFinder satisfactorily, and others are simply happy handling one task at a time—which is the way many of us would prefer to conduct our lives.

It's a different ball game with System 7. You may still have memory concerns, but the ability to load multiple applications on your Macintosh is there all the time—whether you utilize it or not. This can lead to confusion and sometimes the inability to load an application because you've inadvertently used up all of your memory.

This chapter explains how to handle applications under System 7 and how to avoid some potential problems.

JUGGLING MULTIPLE APPLICATIONS

Look at Figure 3.1. What's happening there? At first glance, you might think you're simply looking at the desktop. There are two windows visible—one showing the contents of the hard disk itself and the other the folder containing Claris' FileMaker Pro database application. Yet neither of these windows is active because their borders are dimmed and without scroll bars; also, you don't see a series of horizontal lines in either title bar, another characteristic of an active window.

Furthermore, there's a menu bar across the top of the screen. Even more confusing, one of the menus on the menu bar has been pulled down—seemingly into midair over the desktop.

Figure 3.1

Confusion on the
desktop
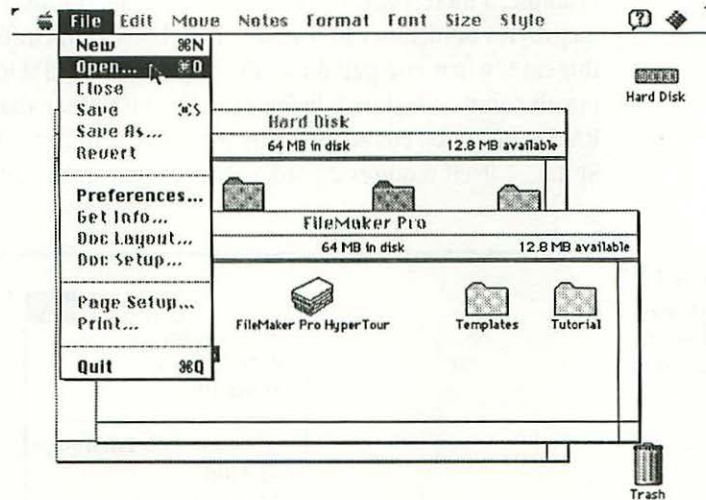
Actually, this figure shows the scene on a monitor after a user has opened File-Maker Pro and then pulled down the Application menu and switched to Ashton-Tate's FullWrite Professional word processing program, previously loaded into memory. FullWrite is active, but with no file open at the moment. Frequently, under System 7, when an application is open with no document displayed, you can see the contents of inactive windows underneath. If you've forgotten what you have in memory and exactly where you are in the procedures you intended to follow, a good first step is to glance at the menu bar. In most cases, you'll be able to identify the active application by recognizing the names of the menus displayed.

If that effort doesn't reorient you, pull down the Application menu. The applications will be listed that are currently loaded, and the active application will be identified by a checkmark before its name. Figure 3.2 shows an Application menu for a Mac with the Finder active. (It's always present in memory even when it's not the active selection.) Five applications are also in memory and available for instant selection.

Some of the applications shown in Figure 3.2 don't require much memory—for example, a mere 192K for TeachText. Even so, it took a Macintosh with eight megabytes of memory to load them all. Look at the information revealed, in this case, when you pull down the Apple menu and select the About This Macintosh command (shown in Figure 3.3). You can see that an amazing amount of RAM is occupied cumulatively by these five programs. You can also see that System 7 itself requires 2,636K—or over two and a half megabytes of RAM;
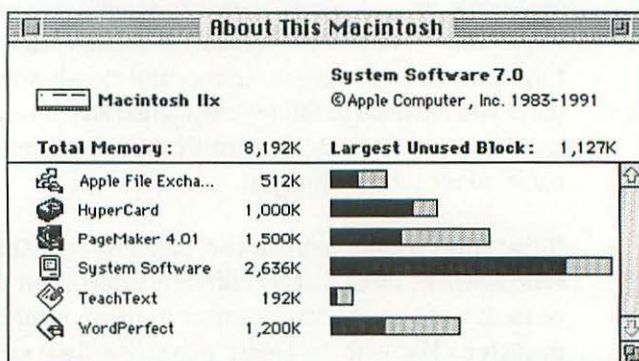
Figure 3.2

The Application menu with several applications loaded

Figure 3.3

Memory usage caused by multiple applications

some of this drain is caused by accessories and typefaces resident in memory—not an unusual circumstance. (By eliminating the use of such extras, it's possible to load the system software so it uses as little as 1,000K; however, you'll be doing without the convenience of these features.)

When you have reached your Mac's memory capacity, you'll see one or more warning messages; some messages of this kind are displayed by the applications themselves.

It's easier than you might think to run out of RAM. The situation usually occurs under System 7 when you open an application, create or use a file within the application, and close the file. Then you open a different application and create or use a file within that second application.

"What's wrong with this sequence?" you may ask. The problem arises because you probably took these steps: You finished using a file in the first application and closed the file. Immediately, the windows of other applications and/or the desktop became visible—previously hidden underneath the open file. Perhaps you clicked on an application whose icon was visible; this action would instantly make that window active and would load the application. *However, although you closed the file you were using in the first application, you did not follow up by closing the application itself.*

When you've finished using an application, you must either pull down the File menu and select Quit—or use the shortcut: hold down the Command key and press the letter **Q**. Otherwise, you can easily end up with four or five applications still in memory that you've finished using.

In Chapter 10, you'll find out how to change system and application settings to help you use your available memory more effectively.

INSTALLING AND OPENING APPLICATIONS AND FILES

There is usually only one way to install an application—the procedure specified by its publisher; in this section we'll discuss the most popular procedures used by software vendors.

Once an application is installed, you can open it in several ways, some of them unique to System 7. You'll learn about these options in this section too.

Transferring Programs to Your Hard Disk

As current Macintosh users know, you can install most applications right out of the package with very little effort. However, because installation procedures can vary widely, we'll review the basic steps:

1. Open the envelope containing the disks and insert the program disk into a floppy drive.

2. If the program disk doesn't open automatically, double-click on its icon to open it. You'll probably see either a folder containing the application or individual icons for the files required to run the program.

3. If the floppy drive does contain a folder, drag the folder onto your hard disk. Your Mac will create a new folder on the hard disk with the same name and copy the application's files into it. You're finished!

4. However, if there is no folder on the floppy disk (only icons for program files), you'll have to create a new folder on your hard disk to contain the program files. Pull down the File menu and select the New Folder command (**Shortcut:** press ⌘-N). A new folder will appear, labeled *untitled folder*.

5. Type a name for the folder immediately, and the name will automatically appear underneath the folder. (You'll probably want to give the folder the name of the application.) Click on your desktop outside of the folder area to complete the entry of the name.

6. Drag the contents of the floppy disk into the new folder. (To speed up the process, you can hold down the Shift key and click in order to select more than one icon at a time; you can also press ⌘-A to select all of the items in an open disk or window with one command.)

7. You may have to open additional disks and drag their contents into your new folder too. (Follow the instructions provided with the application.)

8. A few applications require a more involved installation. For example, their documentation may tell you to drag certain files into your System folder.

9. Some applications have an automated installation routine. As with the installation of System 7 itself, you may have to double-click on an Installer icon and follow on-screen directions to provide needed information and insert disks as requested. Don't try to bypass the installation program by dragging icons onto your hard disk. The basic reason for most automatic installation programs is that the files are shipped to the purchaser in compressed form; the installation decompresses the files so they're usable, as well as placing them where you want them on your hard disk.

Opening Programs and Files

Once an application has been stored on your hard disk, you can open it by using any of several methods which we'll describe now.

Opening by Scrolling and Double-Clicking

The most common way to start a program is to double-click on the icon for the folder containing the program in order to open the folder, then to locate the program icon within the folder and double-click on that icon to load the application. You probably use this technique yourself on a regular basis. However, you may have trouble locating the right folder on your desktop and then find it necessary to scroll the folder window or zoom it to a larger size in order to find the program icon.

System 7 offers better alternatives!

Opening a Program through a File

When a file is saved through any application, a record is included with the file of the program that created it. To open that file again, you can simply double-click

on the *file* icon; the program that created the file will load automatically, then the file itself.

System 7 adds another way to open a file along with a program to run it. For example, you can save a file in the PICT format through MacDraw Pro. Several other drawing programs can open and use PICT files too. Under previous versions of the system software, in order to use a PICT file in Canvas that was created in MacDraw, you'd have to open Canvas first, pull down its File menu, select the Open... command, locate the PICT file in the list box of the Open dialog box (perhaps by switching to another folder and/or drive), then select the file. Under System 7, you can bypass this entire routine by dragging the PICT file icon onto the Canvas program icon, as shown in Figure 3.4. Canvas will load, with the PICT file displayed (see Figure 3.5).

Figure 3.4
Dragging a file icon

Canvas™ 2.1

Country Boy Boogie

Remember, this trick works with any kind of file, so long as the application in question can normally open and use a document in that file format.

System 7 provides even more good news on the subject of opening files. What if you have a file created in a certain application and saved it in the PICT graphic format, but you don't have any other application installed on your Macintosh that can open a PICT file? What to do? The version of TeachText shipped with System 7 can come to the rescue.

Previously, TeachText was primarily a handy utility for opening and reading text files. Application developers often create README files to ship with their software. These README files list mistakes found in the manuals or provide additional information about using a program; you can usually double-click on one of these README files and find that it has been opened for you in TeachText.
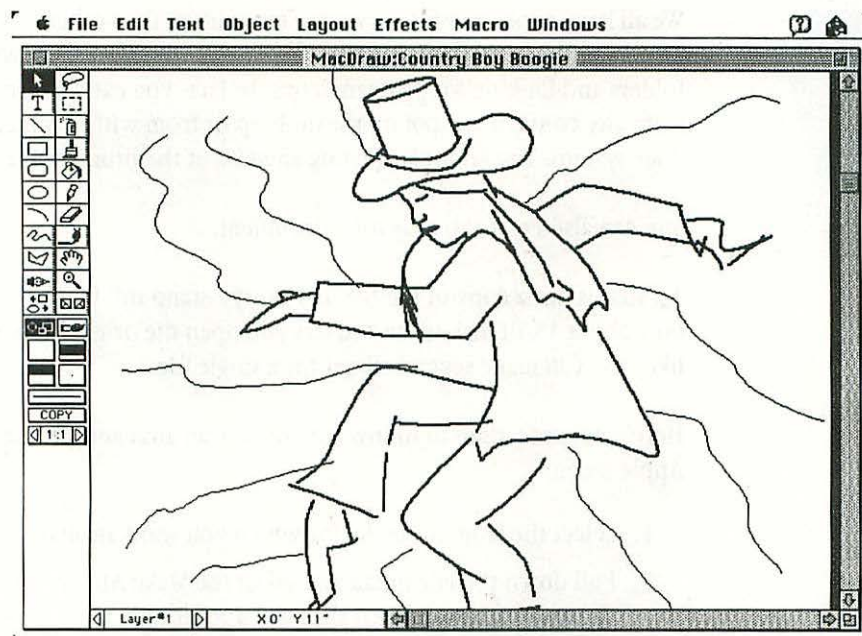
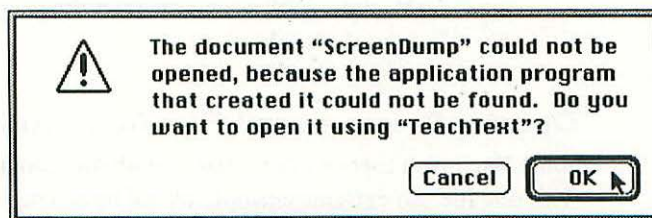Now, under System 7, when you double-click on a PICT file and when the application that created the files is not installed on your Mac, you'll see the message shown in Figure 3.6, asking you if you want TeachText to open the file. Of course, the purpose of opening files in this manner is so you can look at them; you can't revise a drawing with TeachText. Nevertheless, this new way to open "orphan PICT files" can be very useful.

The document "ScreenDump" could not be opened, because the application program that created it could not be found. Do you want to open it using "TeachText"?

Cancel   OK

Opening a File through an Alias

We all have applications that we use more often than others. System 7 lets you display those applications on the Apple menu and start them without opening folders and looking for program icons. In fact, you can load an application from any convenient spot on the desktop or from within folders anywhere on your system. The secret is creating an *alias* of the program file.

You can also create an alias for a document.

An alias is not a copy of the file; it's a tiny "stand-in" for the file that occupies only about 1K of disk space and lets you open the original from anywhere you like. You can make several aliases for a single file.

Here's the procedure to follow for creating an alias and adding it to your Apple menu:

1. Select the icon of the file for which you want an alias.

2. Pull down the File menu and select the Make Alias command, as shown in Figure 3.7. An alias will appear next to the original file; the alias will bear the name of the file, with the word *alias* added; the name will be displayed in italics.

3. Double-click the System folder to open it and scroll the folder if necessary until you see the Apple Menu Items sub-folder. Drag the alias icon into this sub-folder, as depicted in Figure 3.8. (Unlike the manner in which System 7 handles some kinds of files, it will not automatically store an alias in the Apple Menu Items sub-folder if you merely drag that alias into the System folder itself; you must place the alias exactly where you want it.)

4. Pull down the Apple menu. Instantly, as shown in Figure 3.9, the alias will be displayed as part of the menu, without restarting your Macintosh. You can now start the program at any time directly from the Apple menu.

Opening Programs and Files Automatically

Some Macintosh users work primarily with one program everyday—or even with one file. An extreme example would be an employee whose job is entering

Figure 3.7
Selecting the Make Alias command
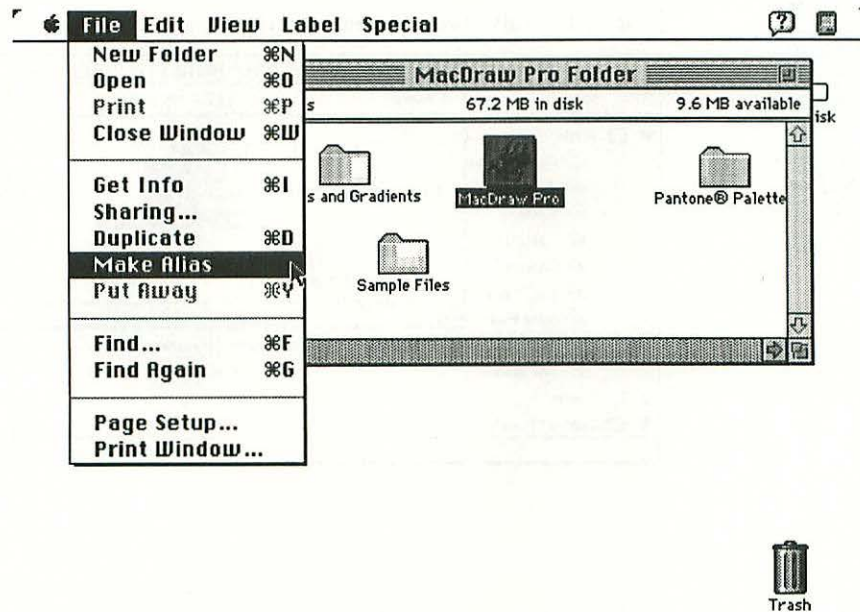
orders into a sales database and who might never use other files or programs. Perhaps the boss would like to have that file available at starting time everyday, without compelling the employee to learn how to load files and navigate Macintosh menus.

On the other hand, someone working at home might need to switch between three programs everyday and would like all of them handy and ready to use at any moment.

Under System 7, both of these situations can be handled easily and automatically.

There is a sub-folder inside the System folder called Startup Items. If you want any programs or files loaded the instant you turn on your computer, just drag aliases of the items into this sub-folder.

Figure 3.8
Dragging the alias
into the Apple Menu
Items sub-folder
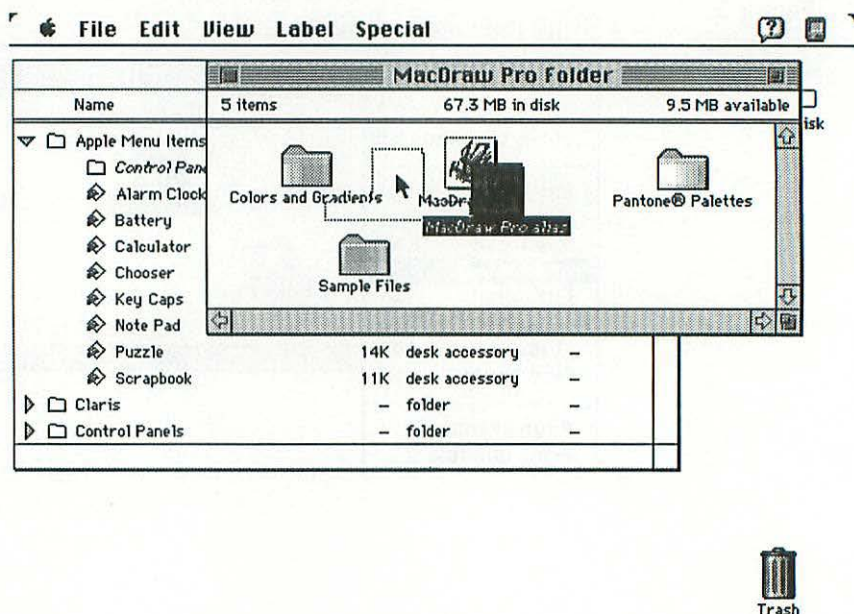
Figure 3.9
The Apple menu
displays the new alias

Of course, if your daily routine later changes, you can terminate the automatic start-up of any program or file by dragging its alias out of the Startup Items folder again.

IDENTIFYING THE STATUS OF FOLDERS

Under System 7, a folder will acquire a different look every time you alter its mode. This section will show you how to identify these changes.

First of all, if you have a color monitor and have attached a label to a folder, the folder will be displayed in the color that accompanies the label. For example, if you've defined a label named Accounting and associated it with the color green, all folders given the Accounting label will automatically appear in green.

Before you installed System 7, you may have already applied colors to folders through the Color menu that was previously part of the Finder. You may have used the colors strictly because they added a bit of sparkle to your desktop.

The System 7 installation program retains any prior folder color assignments, meaning that the *label* now associated with a color will also be attached to old folders with that color. Therefore, you may want to check your colored folders to be sure that none of them carry an unintended label.

If you're not using a color monitor, all folders will appear in a single shade of light gray; to identify folders with labels attached, you will have to select one of the list formats from the View menu so any assigned label name will be displayed along with its associated filenames.

Now let's review the appearance of folder icons in their various configurations.

Figure 3.10 shows a folder on the desktop when no part of it has been selected.

Figure 3.11 shows a folder when the icon has been selected. Note that the name of the folder is now reversed—white lettering on a black background.

Figure 3.12 shows a folder when the text area has been selected. The lettering is black on a light gray background. (On a color monitor, the background is whatever color you have selected for highlighting; Chapter 5 tells you how to specify this color.) The text area is surrounded by a border.

Figure 3.13 shows a folder during text entry; the background turns white, and the border remains around the text.

Figure 3.14 shows a folder when a word has been selected for deletion. All of the text is black. The background is white, except for the selected area, which is shown in light gray or (on a color monitor) in the color chosen for highlighting.

Figure 3.10
A folder with no part selected

Janet's Files

Figure 3.11
A folder with its icon selected

Janet's Files

Figure 3.12
The icon's text area is selected

Janet's Files

Figure 3.13
Editing the folder's name

Janet's Data Files

Janet's Data Files

USING THE SCRAPBOOK

You know that the Mac clipboard is a handy tool for moving or copying text or graphics from one part of a document to another or from one file to another. In fact, you can paste a single entry from the clipboard into a series of documents—as long as you don't restart your computer or shut it down.

The instant you use the Cut or Copy commands to place a different item in the clipboard, the new entry automatically wipes out the the previous one.

Fortunately, if you want to store many frequently used text or graphics items for days or months and paste them into documents or applications at will, there is a way to do it. It's called the *Scrapbook*. Many Mac users have never taken advantage of this feature. However, since System 7 lets you have several applications in memory simultaneously, the Scrapbook can help you more than ever.

Some applications also let you store and play sounds in the Scrapbook.

You access this desk accessory through the Apple menu and can display it on top of any other application you happen to be running.

The easiest way to understand the Scrapbook is to see it at work. Follow this sequence as a design created in the MacDraw format is copied from MacDraw Pro into the Scrapbook:

1. Select the object to be moved by clicking it.

2. If you're dealing with a graphic actually composed of several independent objects, drag to enclose the graphic with a dashed line (as illustrated in Figure 3.15). When you release the mouse button, all of the graphic's components will be selected (indicated by small square black handles around the boundaries of each object).

3. If the program has a Group command, issue this command with the objects still grouped. They will thereafter function as a single object and—when selected—will be bounded by a single series of black handles.

4. Pull down the Edit menu, and select the Copy command (**Shortcut:** press ⌘-C), to copy the graphic to the clipboard.

5. Pull down the Apple menu, and select Scrapbook (as shown in Figure 3.16). The Scrapbook will appear, displaying the entry last accessed. Figure 3.17 identifies the graphic shown as 2/3, meaning the second of three total entries in the Scrapbook. When you paste in a new item from the clipboard, it will replace the entry displayed in the storage sequence, causing that entry and all higher numbered entries to have their numbers increased by one. You can use the scroll bar to select the exact place in the Scrapbook file where you want to insert the new item.

Figure 3.15

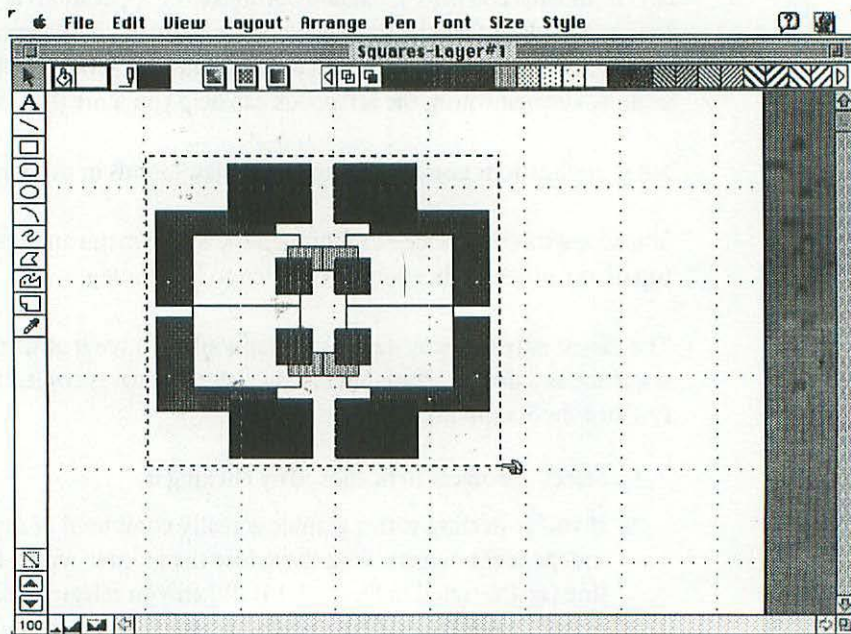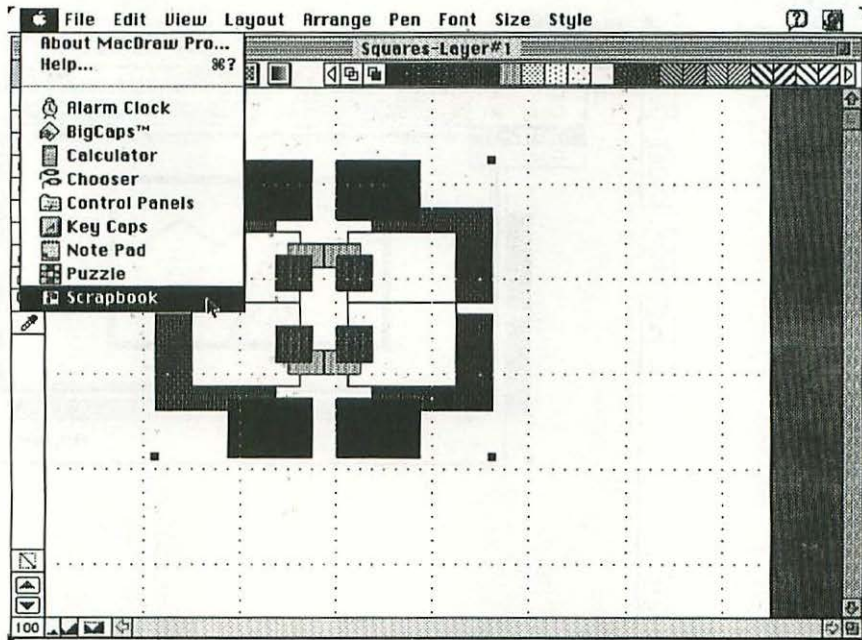Dragging to select a graphic

Figure 3.16

Opening the
Scrapbook from
the Apple menu

6. Pull down the Scrapbook Edit menu, as shown in Figure 3.17, and select the Paste command. The item you previously copied to the clipboard will be inserted into the Scrapbook. In this example, Figure 3.18 confirms that the design imported from MacDraw Pro is now number two of four entries (2/4). The lettering at the lower right corner of the Scrapbook window identifies the file format of the stored entry (in this case, it's been stored in the PICT format) and the application in which it was created (dPro for MacDraw Pro).

7. Close the Scrapbook. The graphic is now available for copying into other applications and/or documents.

8. To copy an item from the Scrapbook to the clipboard for pasting elsewhere, simply display the item and select the Copy command. Displaying the item preselects it for copying.

Figure 3.17
Pasting the graphic into the Scrapbook
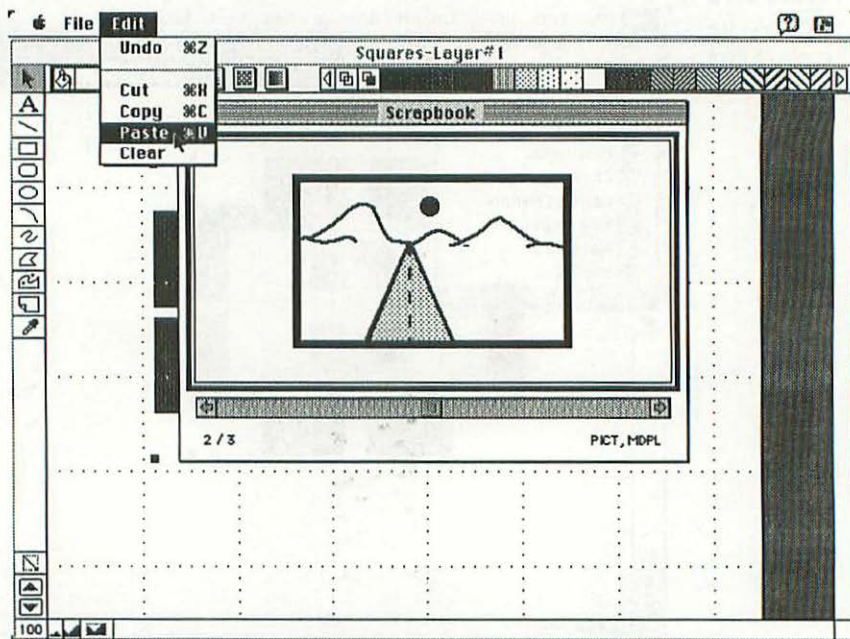
9. To delete an item from the Scrapbook, display the item and
   select the Clear command.

You may be interested in purchasing a third-party utility named SuperScrap
(from Solutions International). It allows you to use multiple Scrapbook files,
name each entry, find entries through either text- or graphic-based tables of
contents, view an entire entry by scrolling (System 7's Scrapbook displays only
the top corner of large files), and (through a companion product called the
Clipper) paste any portion of a Scrapbook file into a document, instead of
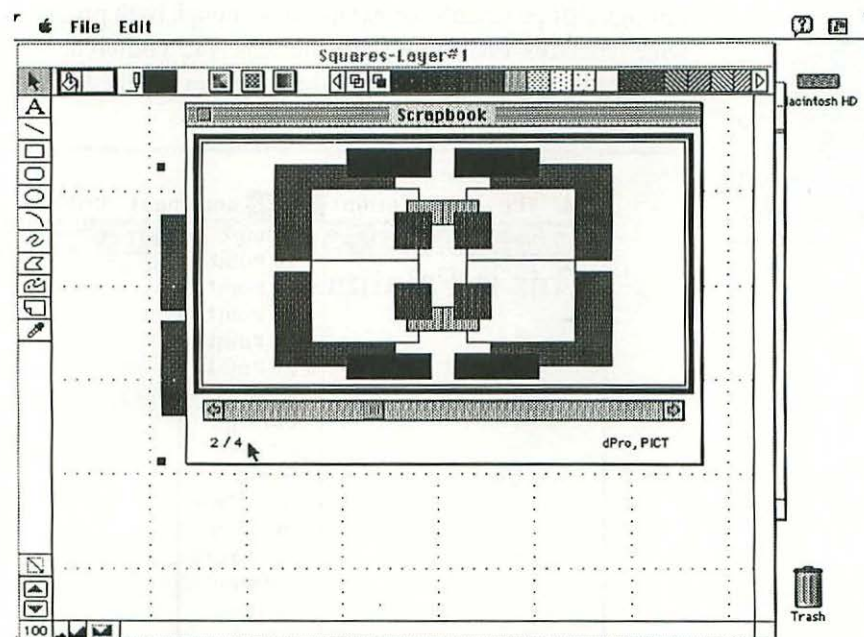being restricted to the use of the complete item.

USING TYPEFACES

System 7 gives all of your applications access to any typeface installed on your
Macintosh.

Figure 3.18
The new item displayed in the Scrapbook

The Installer automatically installs two different kinds of typefaces. By default, *bitmapped* typefaces are employed in creating the user interface—the desktop, the menus, and so on. These typefaces are actually composed of a series of small fixed dots; therefore, they come in set sizes that can't be altered. The other typefaces provided with System 7 are in the *TrueType* outline format; in effect, each typeface is a tiny computer program that lets you instantly create any size you want for both screen display and printing. You can access both bitmapped and TrueType typefaces through the menus of any Mac application, as well as additional bitmapped and outline typefaces you may have purchased and installed separately.

In most applications, you select or change typefaces through a menu or menu option named Font. However, the appearance of these font menus and options can vary greatly. To illustrate this point, Figure 3.19 shows the Font menu of

Microsoft Word. Figure 3.20 shows the Font dialog box of Excel 3.0, accessed through that program's Format menu. Although both programs are offering the same typefaces, each approaches the subject in a different way. (In Excel, you must scroll a list box to see all of the typefaces installed.)
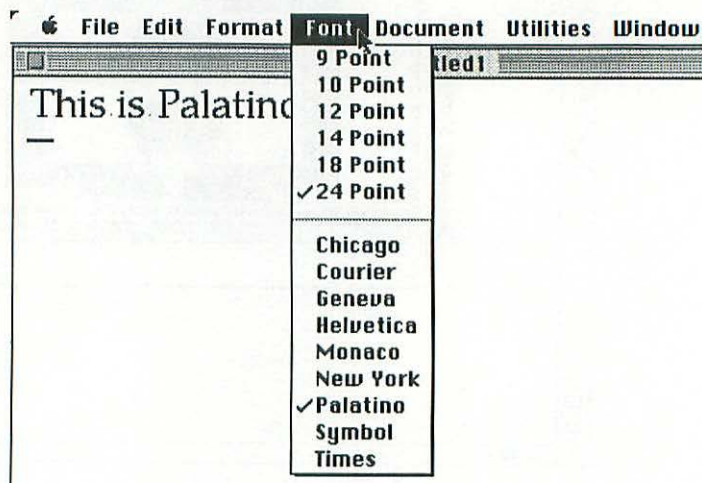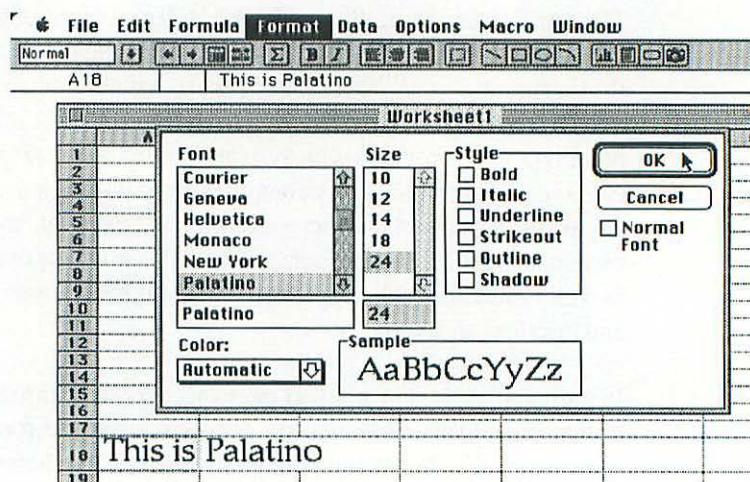
Figure 3.19

The Font menu in
Microsoft Word

**Figure 3.20**

The Font dialog box
in Excel 3.0

To pick a typeface when you're using an application that is in a text entry mode, you can simply use that program's menus to select the typeface and size, and begin typing. The text you enter will appear in the new style.

To change text that has already been entered, drag to select the text, then use the menus to pick the typeface and size you want. The selected text will change immediately to reflect your choice.

Chapter 6 treats the subject of typefaces in detail.
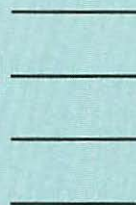
Printing Files

W hen you've completed a document, you'll probably want to print it. Under System 7, you can accomplish this task very efficiently. In fact, with some printers you can even issue a print command, leave the program in which you created the file, and start working in another program. Your document will be printed "in the background" while you perform other functions.

Unfortunately, after you install System 7, you can also run into real roadblocks with certain combinations of printers and circumstances. As a case in point, if your computer shares a LaserWriter with one or more Macintoshes functioning under an earlier version of the system software—either through simple Apple-Talk connections or through a more sophisticated network—you may have compatibility problems.

This chapter covers both the options available when you use popular System 7 printer drivers and the solutions to common difficulties you may encounter. In addition, you'll find information here about System 7 print utilities.

AVOIDING PRINTER SELECTION PITFALLS

Chapter 1 explained how to use the Chooser to select a printer. However, it's very easy to select the wrong printer—in other words, one you don't have—particularly since some of the icons have similar names.

It's also easy to confuse the capabilities of your printer with those of another you may have read about or used in the past. Therefore, we advise caution when either installing or switching printers. If you always use the same printer, you may need to use the Chooser only once—when you first install the printer.

Using Multiple Printers

There are situations where it's advantageous to use the Chooser every day.

For example, some Macintosh users have only a single computer, but it's connected to two printers. One may be a laser or inkjet for letterheads and reports where top quality is required; the other printer could be a dot-matrix model using continuous sheets of tractor-fed paper to reproduce large spreadsheets. Users of this configuration simply connect one of the printers to the printer port of the Macintosh and the other to the modem port. This procedure can be very efficient.

However, not every printer can be attached to the modem port. For example, you can connect the Personal LaserWriter LS to either port, without using AppleTalk. However, other LaserWriters must be connected to the printer port and must use AppleTalk.

A variation on the two-printer setup is frequently used by a person whose Mac is connected to a network. Perhaps the network printers are located far down the hall; they produce excellent quality output and can handle large documents easily, but usually have many documents waiting for their turn to be printed. At the same time, the individual user needs to produce a flood of short memos, reports, and letters throughout each day. If this is your situation, the answer can be to connect to the network through the printer port and also have an inexpensive personal printer in your own office, connected to the modem port.

Selecting Background Printing

Background printing—mentioned at the beginning of this chapter—is supported in System 7 only for LaserWriter printers (including the Personal LaserWriter LS), or a printer not manufactured by Apple that can use a LaserWriter driver. You turn background printing on or off through the Chooser (see Figure 4.1); the option appears in the Chooser window only if you have selected a printer that supports this feature.

When background printing is active, you can issue Print commands for several documents in multiple applications, without waiting for the commands to be executed; each file will be queued and printed without any further action on your part.

In addition, you can check on the progress of background printing or remove a document from the queue by using the PrintMonitor utility, which is explained later in this chapter.

Figure 4.1
Selecting background
printing
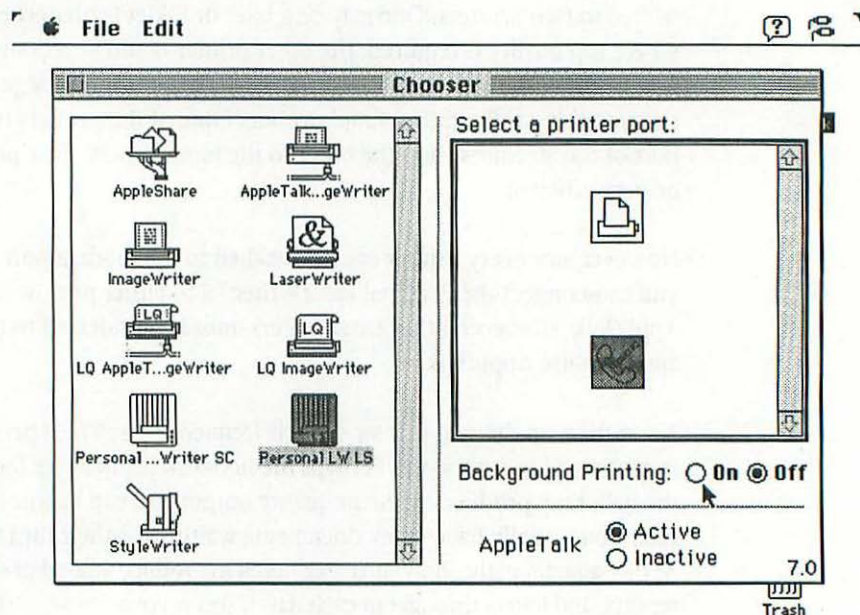
Messages Relating to the Chooser

If you will be working with several applications simultaneously under System 7, be particularly careful about changing printers. Immediately after making the switch, bring up the Page Setup dialog box in each program currently in memory and make any changes that may be required because of the different capabilities of the newly selected printer. The next section describes how both the Page Setup and Print dialog boxes differ for several popular printers.
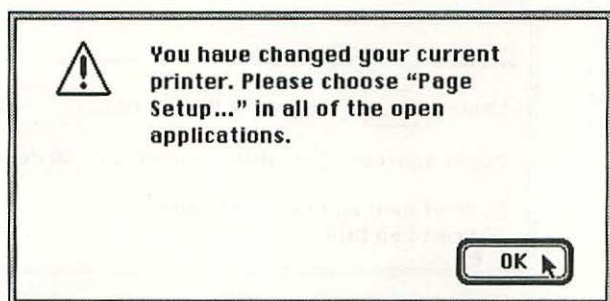
When you switch printers in the Chooser, you'll see the alert message shown in Figure 4.2, which will serve as a reminder to check the dialog boxes.

Figure 4.3 displays the message you'll see if you've accidentally selected a printer you don't have, or if the printer is disconnected or turned off.
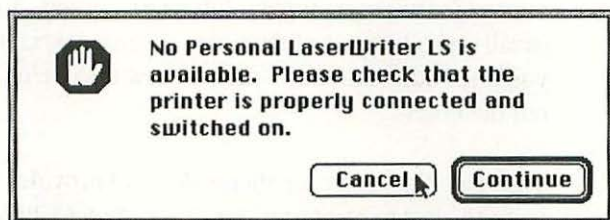
Figure 4.2
Alert message seen
after changing printers

> ⚠ You have changed your current
> printer. Please choose "Page
> Setup..." in all of the open
> applications.
>
> [OK]

Figure 4.3
Warning message seen
when the system
can't find a printer

> ✋ No Personal LaserWriter LS is
> available. Please check that the
> printer is properly connected and
> switched on.
>
> [Cancel] [Continue]

CHOOSING PAGE SETUP AND PRINT OPTIONS

You'll find Page Setup... and Print... commands on the System 7 Finder File menu and on the File menu of every application. However, the appearance of the dialog boxes displayed by the commands will vary according to the capabilities of the printer currently selected. For example, the Page Setup dialog box may contain as few as three items or as many as 13.

The subject is further complicated by the fact that some applications add their own options to those available in the standard dialog boxes, or replace standard options with others. Figure 4.4 shows the Print dialog box for the Personal LaserWriter LS that is displayed within the Claris Resolve spreadsheet program; it adds options relating to the printing of the cell grid and row and column headings.
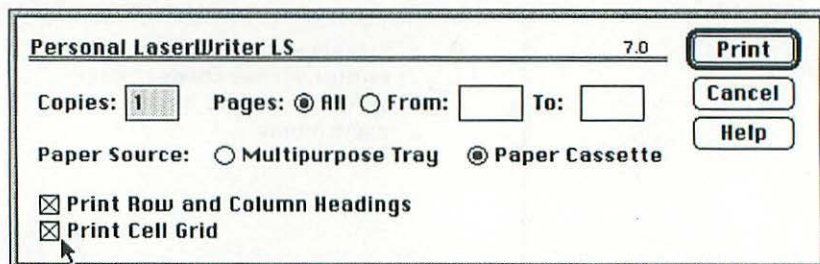
When you print from MacDraw Pro, you won't see these particular options. Instead, you'll have the opportunity to print copies of MacDraw documents created for use in on-screen slide presentations. You can also print handouts (small reproductions of the slides, printed several to a page). A third option lets you print notes attached to a MacDraw document, or print the document without the notes.

The Print dialog box for Microsoft Word provides yet another set of options: you can elect to print portions of a document, hidden text (sometimes written as notes not intended for printing), or the next file in a sequence of Word documents marked for printing.

In this section, we'll explain the dialog boxes for some of the more popular printers. All of them, except the ImageWriter, support the new TrueType typeface technology included with System 7 (see Chapter 6) and receive information for printing through the QuickDraw descriptive language built into the operating system. Of the printers mentioned in this section, only the Laser-Writer NT and NTX printers support the sophisticated PostScript language, also used by professional printing and publishing firms.

The StyleWriter

The Apple StyleWriter is a relatively low-cost *inkjet* printer. The inkjet technology forms a high-resolution dot pattern from tiny sprays of ink. The Style-Writer's output stands up well against that of Apple laser printers, which use the pulses of a laser beam to transfer dot patterns to paper. Both devices can deliver a resolution of 300 dots per inch.

The StyleWriter's Page Setup dialog box (see Figure 4.5) presents only three options. First, you can specify the paper size you'll be using, by clicking one of four buttons. The size options are US Letter, US Legal, a #10 envelope (the envelope customarily used to enclose a business letter), and A4 Letter. The A4 size (with a printing area of 7.45 by 10.86 inches) is popular in Europe.

You can click one of two Orientation settings: to print across the narrow dimension of the page—referred to as printing in *tall* or *portrait* mode, or across the wide dimension of the page—called *wide* or *landscape* mode.

The third option in the dialog box lets you increase or reduce the printed size of the document; this feature is handy if you want to print a graphic image that's a little too large for your page.

Figure 4.5
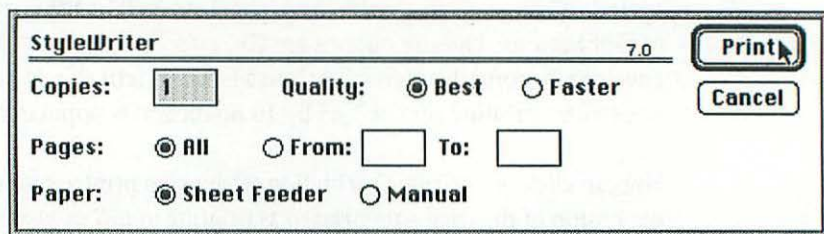The StyleWriter Page
Setup dialog box
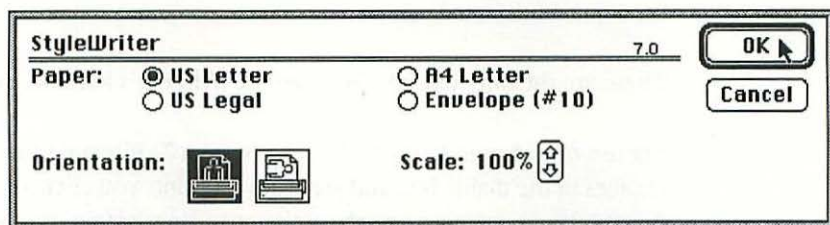
Unless you use a special command in an application to change default settings, changes in the Page Setup dialog box apply only to the current document and are saved with it.

For most of your documents, you may never have to look at this dialog box at all. The default settings will probably be what you want.

All experienced Macintosh users know that to print a document you must pull down the File menu and select the Print... command (**Shortcut:** press ⌘-P). This action brings up the Print dialog box. Here again, the StyleWriter has the very simple Print dialog box shown in Figure 4.6.

Figure 4.6

The StyleWriter
Print dialog box

```
┌─────────────────────────────────────────────────────────────────┐
│ StyleWriter                                    7.0    ┌─────────┐ │
│                                                       │ Print▸  │ │
│ Copies:    [  1  ]     Quality:   ◉ Best  ○ Faster    └─────────┘ │
│                                                       ┌─────────┐ │
│                                                       │ Cancel  │ │
│ Pages:    ◉ All    ○ From: [      ] To: [      ]      └─────────┘ │
│                                                                   │
│ Paper:    ◉ Sheet Feeder   ○ Manual                               │
└─────────────────────────────────────────────────────────────────┘
```

You can specify how many copies of your document you want to print on a
StyleWriter, which pages, fast printing with average quality or slower printing
with the StyleWriter's best quality, and whether the paper is to be drawn from
the sheet feeder or fed manually (as you might do if you wanted to replace the
sheet feeder's usual supply of plain white paper with a letterhead to be used
for a quick business letter).

These are the only options. With a StyleWriter, it's hard to get confused.

There's one change brought about by System 7. When you've made your
choices in the dialog box and are ready to print, you click a button labeled
Print. Under previous versions of the operating system, this button was named
OK. (This change in the button name applies to the Print dialog boxes for all
printers.)

The ImageWriter

The ImageWriter is Apple's time-honored dot-matrix printer. It's what is known
as an *impact printer*. Striker wires in its print head hit an inked ribbon, form-
ing characters on paper from a series of little dots. One advantage of this kind
of printer is that it has a tractor-feed mechanism for the use of continuous fan-
fold paper. Many companies rely on this capability in their accounting depart-
ments, to print long spreadsheets on a single page.

As you might surmise, this hardware feature requires the presence of special
options in the ImageWriter's Page Setup dialog box (shown in Figure 4.7).

Figure 4.7
The ImageWriter
Page Setup dialog box
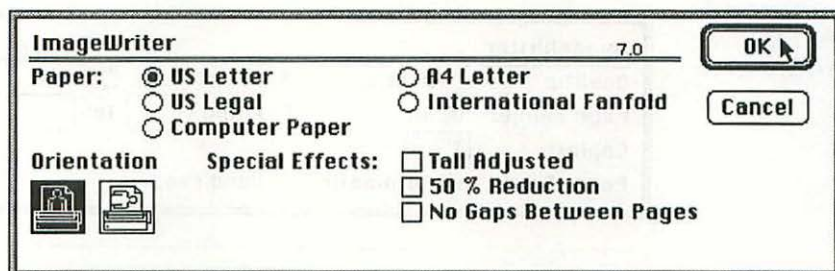
This dialog box adds two paper options not available for the StyleWriter; both options are displayed for the ImageWriter because of its ability to use fanfold paper. The first option is a Computer Paper button you can click to indicate you're using standard US fanfold paper. Second, if you're using the international-size fanfold paper (a companion in dimensions to the A4 single-sheet size used if your ImageWriter has a sheet feeder), click the International Fanfold button.

The only adjustment supported here for the overall print size of documents is a 50 percent reduction, activated by clicking the box beside that option. However, you can click the Tall Adjusted box to adjust image proportions slightly so the dimensions will be the same as if the document were printed on a Laser-Writer. Use this option to make a checking copy of a file you will print later on a LaserWriter.

The final option is No Gaps Between Pages. If you're using fanfold paper, you can use this option to print right across the horizontal perforations that allow you to separate the continuous paper into individual pages.

As Figure 4.8 makes clear, the Print dialog box for the ImageWriter is almost identical to that of the StyleWriter and provides essentially the same choices.

However, the ImageWriter and other similar dot-matrix printers cannot use the new TrueType technology. Fortunately, bitmapped equivalents of the TrueType typefaces included with System 7 are automatically installed with the system software.

Figure 4.8

The ImageWriter
Print dialog box

ImageWriter			7.0	Print
Quality:	○ Best	◉ Faster	○ Draft	
Page Range:	◉ All	○ From: [ ]	To: [ ]	Cancel
Copies:	1			
Paper Feed:	◉ Automatic	○ Hand Feed		
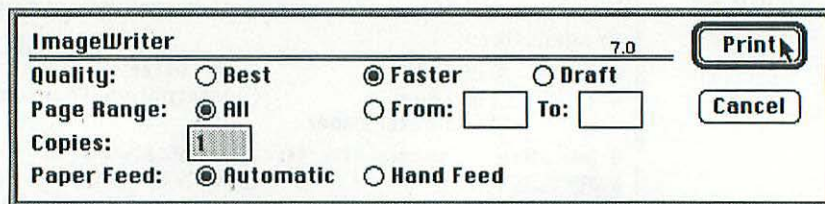
If you purchase Adobe Type Manager (explained in Chapter 6), you can print from PostScript typefaces on an ImageWriter.

The Personal LaserWriter LS

The Personal LaserWriter LS is a true laser printer, but is sold at an economical price because it has fewer capabilities than the more expensive printers in the LaserWriter family. It can print graphics and text through the Macintosh's built-in QuickDraw language, including bitmapped typefaces and graphics (such as MacPaint files). In addition, this printer can use TrueType typefaces, but has no support for the PostScript language and offers only one of the advanced printing options found in the regular LaserWriter Page Setup dialog box.

The advanced option it does have is Precision Bitmap Alignment. This feature lets you reduce the size of a document by four percent for printing; the reduction produces a slightly sharper image.

You can choose portrait or landscape orientation for printing, reduce the printing size of a document to either 75 or 50 percent of normal size, and select the following paper sizes: US letter, US legal, No. 10 envelope, A4 letter, and B5 letter. Like A4, B5 is another paper size that is popular outside the United States; its printing dimensions are 6.45 by 9.76 inches.
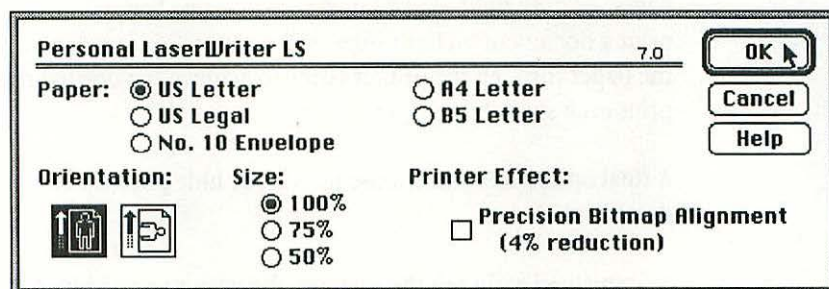
The Page Setup dialog box for the Personal LaserWriter LS is shown in Figure 4.9.

The Print dialog box for this printer has the usual support for selecting the number of copies wanted and for specifying page numbers for partial printing of a document. The dialog box also recognizes special characteristics of the

Personal LaserWriter LS   7.0   OK ▸
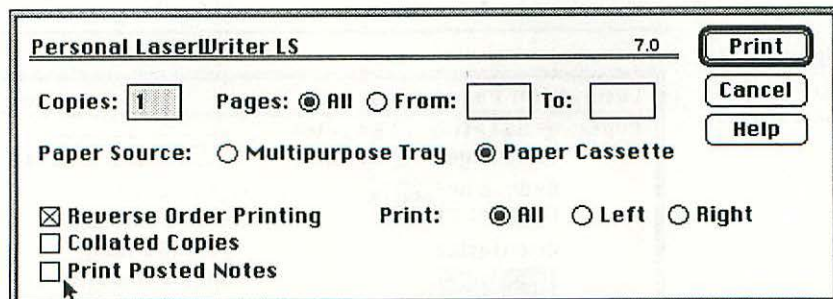
Paper: ⦿ US Letter   ○ A4 Letter   Cancel
        ○ US Legal   ○ B5 Letter   Help
        ○ No. 10 Envelope

Orientation: Size: Printer Effect:
                ⦿ 100%
                ○ 75%   ☐ Precision Bitmap Alignment
                ○ 50%   (4% reduction)

printer: it comes with a multipurpose paper tray, and you can add paper cassettes; you identify which paper source you're using by clicking the appropriate button.

Within MacWrite Pro, this dialog box will display the additional options shown in Figure 4.10. First of all, you can elect to print the pages of a document in reverse order (last page first) and to print collated copies. (Four copies of a collated 12-page document would be produced by printing one copy of each of the 12 pages, then printing a second copy of each of the 12 pages, and so on. Without collating, the printer would make four copies of page 1, then four copies of page 2; you would have to rearrange the pages manually to organize each copy in the proper reading sequence.)

Personal LaserWriter LS   7.0   Print

Copies: 1   Pages: ⦿ All ○ From: [   ] To: [   ]   Cancel
                                                        Help
Paper Source: ○ Multipurpose Tray ⦿ Paper Cassette

☒ Reverse Order Printing   Print: ⦿ All ○ Left ○ Right
☐ Collated Copies
☐ Print Posted Notes

In MacWrite Pro you can also choose to print only left (or even-numbered) pages, or only right (or odd-numbered) pages. You would select this option to print a document on both sides of the paper. Of course, you would have to run the paper through the printer twice to achieve the desired results—once to print each side of the paper.

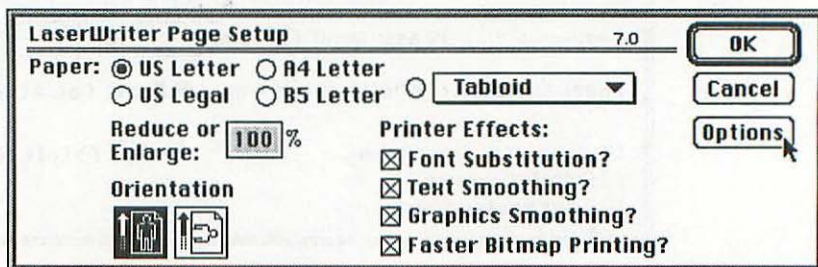A final option lets you choose to print or hide posted notes attached to the document.

As explained earlier in this chapter, the options available in Page Setup and Print dialog boxes change for all printers when you use an application offering special features that must be supported.

The LaserWriters with PostScript

When you use a printer that supports the PostScript language (such as the LaserWriter NT, the LaserWriter NTX, or the older LaserWriter Plus), the Page Setup and Print dialog boxes become more complicated, even without considering PostScript printing options added by sophisticated programs such as Aldus PageMaker. This situation exists because the PostScript language creates an advanced printing environment with many alternatives.

Figure 4.11 shows the LaserWriter Page Setup dialog box as it is displayed within most applications. (A few programs delete and/or add options to accommodate specialized features.) Some of the items in this dialog box duplicate those already mentioned in relation to other printers.

Figure 4.11
The LaserWriter Page
Setup dialog box


```
LaserWriter Page Setup                          7.0        OK

Paper:  ⦿ US Letter  ○ A4 Letter
        ○ US Legal   ○ B5 Letter    ○ [ Tabloid ▼ ]         Cancel

        Reduce or [ 100 ]%        Printer Effects:          Options
        Enlarge:                  ⊠ Font Substitution?
        Orientation               ⊠ Text Smoothing?
        [🧍] [🧍➡]                ⊠ Graphics Smoothing?
                                  ⊠ Faster Bitmap Printing?
```

Of course, you have a choice of paper sizes; tabloid is added here (a tabloid newspaper page with a printing area of 10.57 by 16.5 inches), which many LaserWriter users select when they want to save a PostScript file to disk for printing later by a commercial printshop. You can press the down arrow to the right of the word Tabloid to choose from a few additional paper sizes, including two sizes of envelopes.

The Reduce or Enlarge option lets you reduce a document for printing to as little as 25 percent of its actual size; just type in a number representing the amount of reduction you want. You can also enlarge a document with this option to a maximum of 400 percent of its actual size. If you enter a number that is out of range, System 7 will automatically change it to the nearest percentage that is available.

The Orientation option works just as it does with other printers; click the appropriate button to choose between portrait and landscape modes.

However, there are four other items in this dialog box that are specific to the LaserWriter printer driver and preselected by default. In addition, you can press the Options button (under the Cancel button) to bring up several additional LaserWriter choices.

When the Font Substitution box is checked, System 7 automatically substitutes the Helvetica, Times, and Courier outline typefaces in any document where the bitmapped typefaces Geneva, New York, and Monaco have been specified. This substitution results in better printing quality, particularly if a bitmapped size has been chosen that doesn't actually exist on disk. When a bitmapped font must be approximated in another size, the printed result is often lettering with jagged edges. On the other hand, outline fonts are created "on the fly" in the exact size wanted, producing excellent print quality. (However, the improved System 7 printer drivers greatly reduce the incidence of jagged lettering.)

Text Smoothing attempts to reduce the effect of jagged edges generated from any bitmapped typeface.

Graphics Smoothing minimizes jagged edges on graphic images.

Faster Bitmap Printing speeds up the printing of bitmapped graphic images.

The LaserWriter Options dialog box is displayed in Figure 4.12. By default, none of the items are selected. However, they can be very useful to you in the right situation.
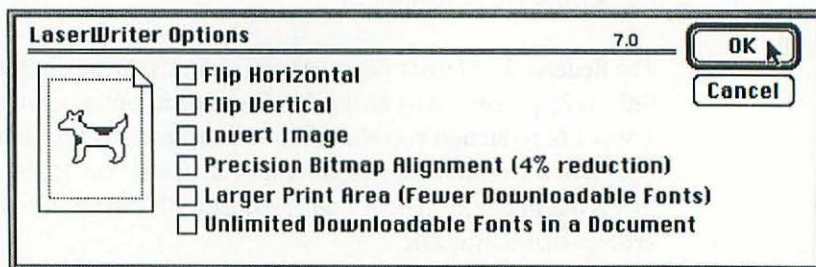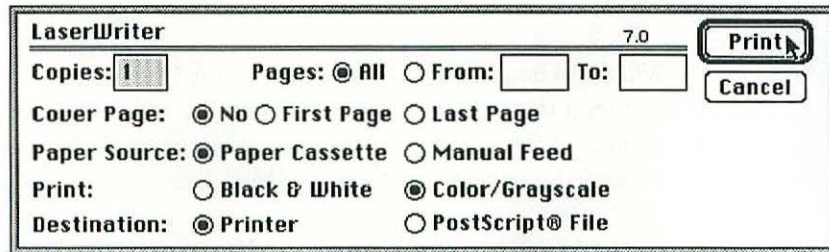
When you use this dialog box, it's easy to figure out what each item accomplishes because the small dog that is shown will illustrate the effect of your choices instantly (except for the last item). For example, click the box labeled Flip Horizontal, and this trained pooch will immediately turn and face in the opposite direction. Select Flip Vertical, and the dog will lie on its back. Pick Invert Image, and the white and black areas of the drawing will be reversed.

Precision Bitmap Alignment reduces the size of a document by 4 percent (making for a slightly sharper printout); the dog becomes smaller to demonstrate the effect. Larger Print Area (Fewer Downloadable Fonts) lets you allocate more memory to printing a larger page, at the expense of having to use fewer fonts; this option is mainly of interest to those with a limited amount of printer memory and is indicated in the drawing by a slight enlargement of the picture area.

The final option—Unlimited Downloadable Fonts in a Document—lets you use as many fonts as you like, by swapping typefaces back and forth to disk during printing. This feature certainly sounds desirable, but is not selected by default because it slows down the printing process considerably.

There are three special features in the LaserWriter Print dialog box (see Figure 4.13).

Figure 4.13
The LaserWriter Print
dialog box

LaserWriter	7.0	Print

Copies: 1   Pages: ● All ○ From: [ ] To: [ ]   Cancel

Cover Page: ● No ○ First Page ○ Last Page

Paper Source: ● Paper Cassette ○ Manual Feed

Print: ○ Black & White   ● Color/Grayscale

Destination: ● Printer   ○ PostScript® File

You can choose to print a cover page either as the first or last page of a document. This option is mainly useful if the printer is being used on a network, since the cover page provides statistics about the document, including who originated it.

PostScript printers can do more than print a document in black and white. They can also reproduce the effect of grays through a pattern of dots (called a halftone), if you select the Color/Grayscale option. Of course, this is also the option to choose if you want to print a document in color on a color PostScript printer.

At the bottom of the dialog box is a button you can click to change the destination of a document from the printer to a PostScript file on disk. A PostScript file can be used by many commercial printers who can print such files very rapidly, at a resolution several times higher than can be produced by the typical LaserWriter.

USING THE LASERWRITER FONT UTILITY

The LaserWriter Font Utility performs several useful functions, and not all of them are concerned with typefaces. This file is not installed as part of the standard System 7 installation procedure. It's a stand-alone utility that you can store in any convenient location on your hard disk. You'll find it on the System 7 disk named More Tidbits.

To install the utility, simply insert the disk into a floppy drive, double-click on the disk icon to open it, and drag the icon labeled LaserWriter Font Utility onto

your hard disk (see Figure 4.14). The utility will be copied to the location you select.

When you double-click the icon to open the LaserWriter Font Utility, you'll first see a short message stating: "This utility will download, list, or print catalogs of fonts on any PostScript imaging device. Other functions are also available for devices equipped with hard disks."

Since you will be using System 7 on a Macintosh with a hard disk, those "other functions" are available to you. Click OK when you've read the message.

A short announcement will appear: "Checking characteristics of..." (followed by the model name of your LaserWriter printer).

Next you'll see only a small menu bar containing four menus: Apple, File, Edit, and Utilities. Pull down the File menu. You'll see the options displayed in Figure 4.15.

Figure 4.14
The icon for
the LaserWriter
Font Utility

LaserWriter Font Utility

Figure 4.15
The LaserWriter Font
Utility File menu

You can use the first item on this menu to download fonts to your printer. When you issue the Download Fonts... command, you'll bring up a dialog box where you select individual font files for transfer to the printer's memory; you can change folders and/or drives as required to find the files you want. This option does not print the fonts; it merely makes them available for use by an application without a delay for downloading.

Since most applications these days do a very efficient job of downloading fonts automatically, some individual Mac users will see little need for the Download Fonts... command. Furthermore, System 7's background printing feature means you can continue to work while fonts are being downloaded to a LaserWriter and a file is printing. However, storing fonts in the printer's memory can offer a real speed advantage in a busy office where a standard group of typefaces is used and many employees are waiting to use one printer; the same fonts can remain in the printer all day, with no delays for downloading.

Other options on this menu let you initialize a hard disk connected to a printer, access the standard LaserWriter Page Setup dialog box, and display or print a list of fonts currently in the printer's memory.

In addition, you can select Print Font Samples... to print samples of all of the fonts in the printer's memory. Figure 4.16 shows a typical portion of such a printout. Of course, if printing from your Mac is handled by a network server, you may not be able to use some of these features.

Figure 4.16

Printed font samples from a Laser-Writer's memory

Palatino-BoldItalic	*The quick brown fox jumps over the lazy dog.*
Palatino-Italic	*The quick brown fox jumps over the lazy dog.*
Palatino-Roman	The quick brown fox jumps over the lazy dog.
Symbol	Τηε θυιχκ βροων φοξ φυμπσ οϖερ τηε λαζψ δογ.
Times-Bold	**The quick brown fox jumps over the lazy dog.**
Times-BoldItalic	***The quick brown fox jumps over the lazy dog.***
Times-Italic	*The quick brown fox jumps over the lazy dog.*
Times-Roman	The quick brown fox jumps over the lazy dog.
ZapfChancery-MediumItalic	*The quick brown fox jumps over the lazy dog.*
ZapfDingbats	✳✸✿ ❏◆✦✳✦ ❍❏❐❘■ ✿❏❉ ✳◆✦❍❏▲ ❏◆✦❏ ▼✳✦ ●◗❙❙ ✿❏

The Edit menu for this utility offers only standard Undo, Cut, Copy, Paste, and Clear options.

However, the Utilities menu provides some unusual commands (see Figure 4.17). The first option lets you download a PostScript graphics file to the printer; this file could be a company logo that workers could add to their documents throughout the work day without waiting for downloading. Other commands on the Utilities menu remove TrueType fonts from a hard disk attached to a printer and initialize (restart) the printer—a quick way of clearing all downloaded fonts and graphics from its memory.

The remaining command on the menu is Start Page Options... (see Figure 4.18). At last, this option provides a simple way to keep your LaserWriter from printing a sample page every time it's initialized.

Figure 4.17
Options on
the Utilities menu

Figure 4.18
Turning off the
printer sample page
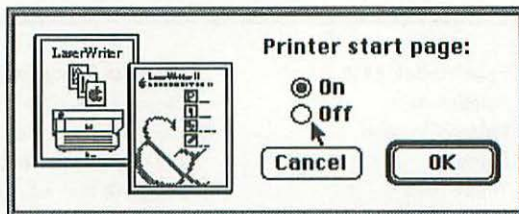
USING ONE PRINTER WITH DIFFERENT OPERATING SYSTEM VERSIONS

If your Macintosh shares a printer with one or more other computers running under versions of the Mac operating system earlier than System 7, you can be

faced with having to reinitialize the printer every time someone wants to print a file from a Mac running under a different version. The reason is that the printer drivers installed with System 7 are not compatible with those installed with older system software. When the problem occurs, you'll see a warning message indicating that the printer must be initialized to print the new file.

You might say, "Well, obviously the answer is to upgrade all of the Macintoshes to System 7." However, this solution may not be possible; Macs running under earlier versions may have insufficient memory to use System 7 properly, or those computers may be using older application software that would not function properly under System 7.

Fortunately, there's an easy remedy for the difficulty—provided you're using a LaserWriter. Although System 7 printer drivers are not compatible with earlier printer drivers, they are compatible with earlier versions of the system software. You can install the System 7 printer drivers on computers running under 6.x system software without affecting the functioning of those computers.

Follow these steps to replace older printer drivers:

1. Locate the System 7 installation disk named Printing and insert it into a floppy drive of the computer with the old software.

2. Double-click on the disk icon to open its contents into a window. The image on your screen will resemble Figure 4.19.

3. Double-click on the icon named Installer. You'll see the message screen in Figure 4.20.

4. Click OK to continue. Next, the program will display the Easy Install dialog box shown in Figure 4.21.

5. At this point, you would click Quit if you didn't use either of these two printers or wanted to abort the updating process for any other reason. Click Switch Disk if the program is about to install the new printer drivers on the wrong hard disk. Otherwise, click the Install button to proceed with the installation.

6. You'll see progress reports as the installation proceeds, then a message indicating that the updating has been successfully completed. Click Quit to acknowledge the message and close that window, then drag the Printing disk into the Trash to eject it

from the floppy drive. You can now share the printer between a Mac with old system software and another Mac running under System 7; since both will be using the same printer drivers, there should be no further initialization problems.

Figure 4.19

Selecting the printer Installer icon
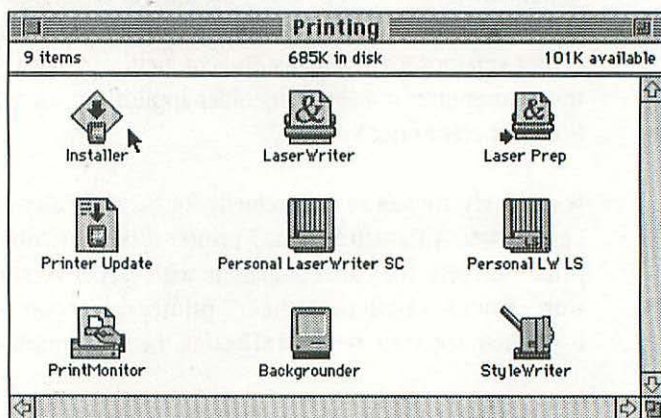
Figure 4.20

The installation update message

```
┌─────────────────────────────────────────────────────────┐
│  Easy Install                                            │
│  ┌───────────────────────────────────────────────────┐  │
│  │  Click Install to update to Version 7.0           │  │
│  │    • Personal LaserWriter SC Printing Software    │  │
│  │    • LaserWriter Printing Software    ┌─────────┐ │  │
│  │                                       │ Install↖│ │  │
│  │                                       └─────────┘ │  │
│  │  on the hard disk named                           │  │
│  │  ⊂⊃ Hard Disk                                      │  │
│  └───────────────────────────────────────────────────┘  │
│                                       ┌─────────────┐    │
│                                       │ Eject Disk  │    │
│                                       └─────────────┘    │
│                                       ┌─────────────┐    │
│                                       │ Switch Disk │    │
│                                       └─────────────┘    │
│                                       ┌─────────────┐    │
│                   ┌──────────┐        │ Customize   │    │
│                   │   Help   │        └─────────────┘    │
│                   └──────────┘        ┌─────────────┐    │
│                                       │    Quit     │    │
│                                       └─────────────┘    │
└─────────────────────────────────────────────────────────┘
```

USING PRINTMONITOR

You can use PrintMonitor to obtain information about documents currently printing, to suspend or cancel printing of any document in the printing queue, and to specify an exact time for printing.

At any time when you've issued a print command—either from the Finder or from within an application, PrintMonitor will appear as an item on the Application menu. Select the item to display both a small PrintMonitor menu bar and a window showing the status of current print jobs.

Figure 4.22 illustrates this window in use. It shows that the graphics layer of a MacDraw Pro document named Concert Poster is being processed for printing, while a second document named Brochure Cover is waiting to be printed. The name of the printer is shown. If the printer were being used on a network, the the name of the user would appear as well, displayed before the word *document* at the bottom of the window.
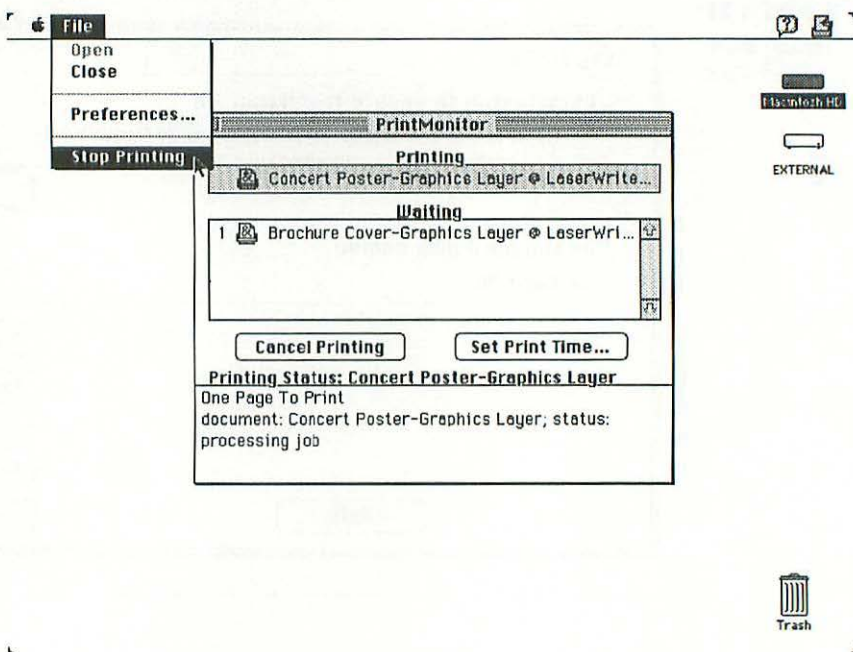
You can cancel the printing of any highlighted document by clicking the Cancel Printing button. Click Set Print Time... to establish a delayed time for printing. (You might want to use this option to print a lengthy document during lunchtime in an office, so as not to tie up the printer during those hours when many employees would need it.)

The PrintMonitor File menu lets you stop or resume printing, as well as open and close the window.

The Preferences... option on this menu brings up a dialog box that lets you display the window continuously during printing, or hide it until you select PrintMonitor from the Application menu. (The second option is the default).

You can also select the method you prefer for PrintMonitor to alert you when a job starts that requires manual feeding of paper or when there is a printing

error. (One of the most common printing errors occurs when the printer is out of paper!) You can choose to receive no warning; in this case, you must pull down the Application menu and select PrintMonitor in order to determine that there is an alert status. The other two alert options are to display the Print-Monitor icon in the Application menu position on the menu bar in place of the icon for the current application, or to display the icon in a flashing mode. (The third option is the default.)

If you want to establish preferences when no job is being printed, you must locate the PrintMonitor icon in the Extensions sub-folder within the System folder and then double-click on the icon to display the PrintMonitor menu.

CAPTURING AND PRINTING SCREEN CONTENTS

You can print the contents of the Finder or an open window, through menu options in System 7. You can also capture screens as disk files.

To print the desktop of your Macintosh, pull down the File menu when the Finder is active and no windows are open. You'll see the Print Desktop... option shown in Figure 4.23. When you select this option, the Print dialog

Figure 4.23
Issuing the Print
Desktop... command

File	
New Folder	⌘N
Open	⌘O
Print	⌘P
Close Window	⌘W
Get Info	⌘I
Sharing...	
Duplicate	⌘D
Make Alias	
Put Away	⌘Y
Find...	⌘F
Find Again	⌘G
Page Setup...	
Print Desktop...	

box for your printer will be displayed; you can click Print to proceed with the printing.

If a window is selected on the desktop, the Print Desktop... command changes to read Print Window.... The Print Window... command prints the entire contents of the window, including any portion not visible on your screen.

System 7 also lets you capture the current screen to a disk file in the PICT format. To do this, hold down the ⌘ and Shift keys while you press the number 3. Files captured in this manner will be named Picture 1, Picture 2, and so on, in sequence, and can be viewed with the TeachText utility.

If your screen capturing and printing requirements are more demanding, you may be interested in purchasing a utility called Exposure Pro, published by Baseline Publishing, Inc., Memphis, Tennessee. This program has very sophisticated capabilities. In fact, it was used by Apple Computer to capture screens for the System 7 manual.

Exposure Pro is an INIT file that can be popped up on your screen at any time through a hot key combination you select. If you have an extended keyboard, you can assign the utility to the F13 function key, which is already labeled *print screen*.

Figure 4.24 shows Exposure Pro in action. Its menu and tools have been popped up over a MacDraw screen. To move this small window to a more convenient location, you drag it by the vertical bar at its left end.

Once Exposure Pro has been invoked, the screen is frozen. You can then use its tools to erase part of the screen, capture only a particular window, add text wherever you want it (using any typeface in your system), and save the file to disk in any folder you specify, in any of several different graphic formats, and with any filename you like. No longer will you have to wonder later which screen capture is represented by Picture 18.

While the screen is still frozen and displayed, you can print it too—sizing and centering the portion captured by using a special print preview window.

Figure 4.24
Using Exposure Pro
to capture a screen
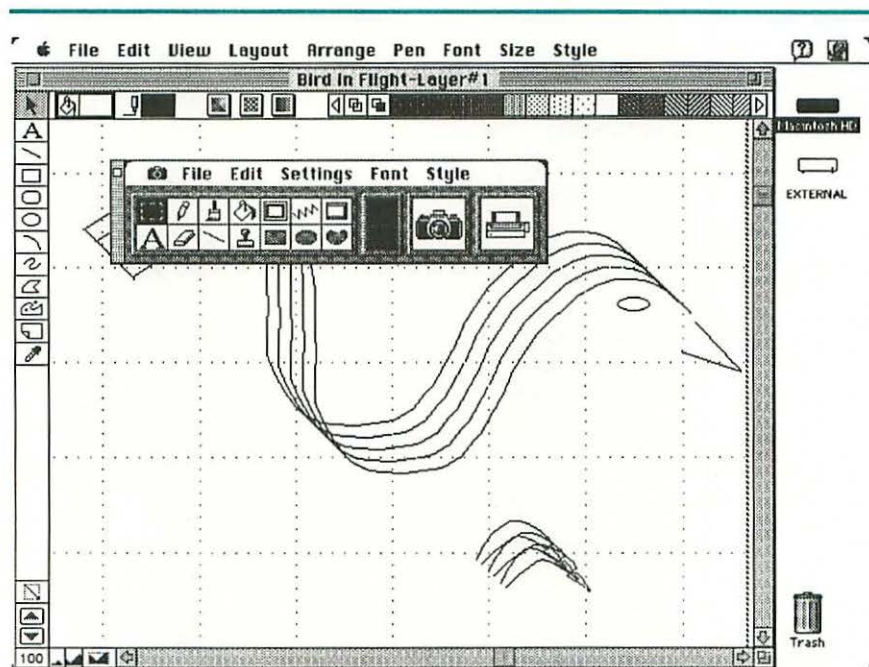
Of course, no alterations you make to a frozen screen in any way change the original file displayed.

These are only a few of the main features of Exposure Pro. Many Mac users wouldn't be without it.

Customizing Macintosh Operations

FEATURING

- Changing desktop patterns
- Selecting a startup drive
- Picking sound, mouse, and keyboard options
- Defining labels for file groups
- Selecting and mixing colors
- Using the Map control panel
- Activating special work aids
- Using new desktop fonts and icons

System 7 lets you change many aspects of the operation of your Macintosh. In addition, you can drastically alter the way your screen looks; the possible changes range from creating a custom background pattern for the desktop to displaying file and folder names in a different typeface or even creating custom icons.

USING GENERAL CONTROLS

You make a large percentage of operational changes through System 7's various control panels. For example, the General Controls control panel is where you can change your desktop pattern, the blinking rate of the pointer during text insertion, the number of times a menu item blinks when selected (the default is three), and the date or time.

As you discovered in Chapter 2, you can also change the date or time through the Alarm Clock accessory. Since you use the same techniques to change the date or time in the General Controls control panel, we won't repeat those steps here.

Changing blinking rates is merely a matter of clicking the appropriate buttons shown in Figure 5.1.

However, changing the desktop pattern requires a bit more explanation. Figure 5.1 illustrates the creation of a custom pattern by clicking the pointer to change an existing pattern.

Here's the procedure you follow to accomplish this:

1. Pull down the Apple menu, and select Control Panels. The Control Panels window will appear, displaying icons for all of the installed System 7 control panels.

2. Double-click the General Controls panel to open it.

Figure 5.1

Changing a desktop
pattern in the General
Controls control panel
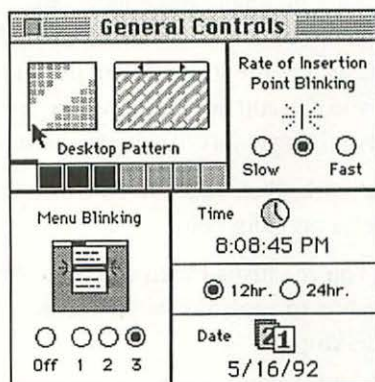
3. In the upper-left quadrant of this panel, click either the left-
   or right-pointing arrow above the small sample box to cycle
   through the available patterns. Stop when you see the pat-
   tern that most closely resembles the custom pattern you have
   in mind.

4. Click a color (or shade of gray, if you don't have a color
   monitor) that you want to add to the existing pattern, from the
   eight choices displayed horizontally in the color bar along
   the bottom edge of the quadrant.

5. If you want to add a color that is not displayed in the color bar,
   double-click a color there that you don't intend to use. A color
   wheel will appear, from which you can select another color for
   that position in the color bar. (Options for the color wheel are
   explained in detail later in this chapter.)

6. Just above the color bar, to the left of the sample box, is a
   square box where you can see an enlarged view of the pattern
   you've selected. Click any dot in this pattern-editing box to
   change its color (or shade of gray) to the choice you've made in
   the color bar. As you change dots, you can immediately see the
   effect in the display box to the right of the editing box, which

shows a normal-size portion of the pattern, where the individual dots are no longer discernible. You can change several dots to one new color, in order to achieve a definite change in the design, such as the stripe shown in Figure 5.1. On the other hand, you can add only a dot or two from a variety of colors, thereby mixing colors to achieve the subtle effect of a new hue.

7. As you work, click a second time on a dot you've changed to restore its previous color.

8. When you're satisfied with your new pattern, click once in the sample box to apply the pattern to the entire background of your desktop.

9. Double-click in the sample box if you want to add the new pattern permanently to the choices in the sample box. If you don't take this step, this pattern will be lost when you change to any other pattern.

10. Click the close box to close the General Controls panel, then click the close box of the Control Panels window to close that as well.

SELECTING A STARTUP DRIVE

If you have more than one hard drive in your system, use the Startup Disk control panel to specify which disk you want your Mac to use in starting up—in other words, which one contains your System folder.

Often a Mac user runs out of storage space on the built-in hard drive and adds an external drive, which can be installed by simply plugging it into a SCSI port. If this is your situation, you can open the Startup Disk panel and click a disk icon, as shown in Figure 5.2, to tell System 7 which disk to access first.

A problem often arises because manufacturers of these hard drives ship them with a System folder already installed. This System folder may even contain a different version of the operating system from the one you're using.

Some applications are also shipped with a System folder.

Figure 5.2
The Startup Disk
control panel
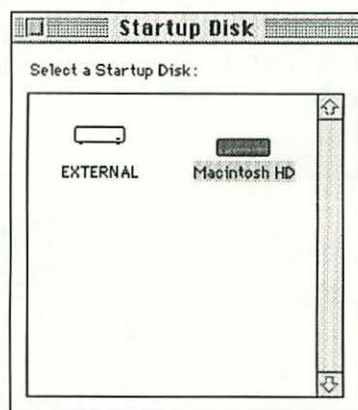
Regardless of the system software version shipped with an external hard disk or with an application, you must have only one copy of one version stored in your system. Otherwise, you may experience frequent crashes and erratic behavior as you use your Macintosh. Select all of the versions you don't want, and drag them into the Trash.

If you're not sure whether or not you have multiple versions of the operating system installed, switch to the Finder, pull down the File menu, and use the Find... command to search for the word System.

Some people try this and discover as many as three or four System folders hidden away in application folders. These can only be viewed as potential time bombs, since the Mac could refer to the wrong folder when least expected.

Selecting Sound Options

When System 7 displays a special message, it often generates a sound effect to attract your attention; this sound is called the *alert sound*. Through the Sound control panel, you can change the default alert sound to any other sound installed on your computer. Simply click the sound you want in the list box, then click the close box to close the panel. Several sounds are provided with the operating system. When you click a sound, you'll hear a sample so you can evaluate it.

Figure 5.3 shows the Sound panel for a Mac IIsi. Since this computer (like the Mac LC) has a built-in sound *recording* capability, it lets you record your own alert sound with the microphone provided. Sound recording is explained in Chapter 8.

Figure 5.3
The Sound
control panel
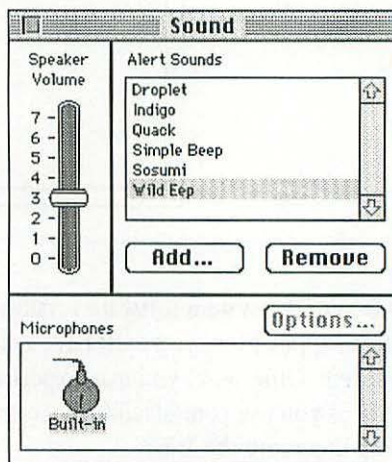
If you don't have a Macintosh that can record sound, you won't see the Add... and Remove buttons displayed in Figure 5.3 (which are for adding and deleting your own custom sounds); also, your Sound panel will not contain the Microphone section at the bottom of the panel. Your only choices will be to change the active alert sound and to adjust the volume of your Mac's speaker by dragging the box on the vertical Speaker Volume bar.

TRAINING YOUR MOUSE

Use the Mouse control panel to adjust the tracking and double-click speeds of your mouse.

As Figure 5.4 illustrates, there are seven speeds you can choose for mouse movement (tracking). The slowest speed moves the pointer on the screen in exact relationship to the distance you move the mouse on your table or desk. Use this speed for drawing with maximum control.

You can select any button and try its effect immediately, to see if the setting suits your purposes. If you try the Fast button (at the right end of the series of buttons), you're likely to think the mouse is completely out of control; it will dart across the screen at the slightest provocation.
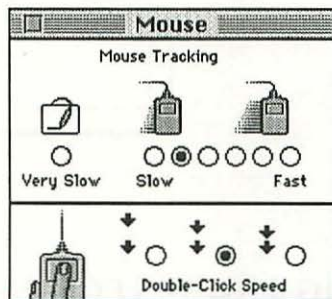
The other option in this panel lets you adjust the speed of double-clicking that the system will recognize as an *intentional* double-click. For example, if you frequently load both a file and a program accidentally when all you wanted to do was modify the name under an icon, the double-click speed may be too slow; click a button further to the right among the three Double-Click Speed buttons to make System 7 recognize only two clicks in very quick succession as an intentional double-click to open a file, folder, or program.

MAKING KEYBOARD ADJUSTMENTS

You can make any character on a Macintosh keyboard repeat by simply holding down the key. The Keyboard control panel lets you use clearly labeled buttons (see Figure 5.5) to adjust the speed with which the repetition takes place, as well as the length of the delay before repetition begins.

If your Macintosh has files installed so you can use more than one keyboard layout, you can switch the active layout between those available by clicking an item in the list box at the bottom of the Keyboard control panel. In the United States, most Macs are sold with only one option: a standard U.S. keyboard. Other keyboard layouts are primarily intended to accommodate languages and symbols used in countries outside the United States.

Figure 5.5
The Keyboard
control panel
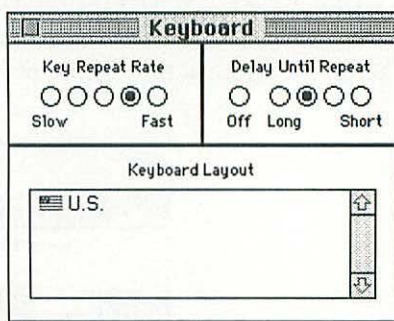
DEFINING GROUPS FOR FILES AND FOLDERS

In Chapter 2, you learned that you can use the Label menu to attach both a distinctive color and a text label to files or folders in order to identify them as belonging to a particular group or project. The Labels control panel is where you can type the name you want associated with each color.

As Figure 5.6 demonstrates, these names could simply represent the departments of an organization.

To change or edit a name, use standard Macintosh editing techniques to delete text you don't want, then type the new or revised label.

Figure 5.6
The Labels
control panel

If you want to use a color not shown next to one of the text labels, click a displayed label color to bring up the color wheel; you can then choose any color or shade you want as a replacement. (For details, see the following section that describes the Color control panel.)

Click the close box to save your changes and close the panel.

SELECTING AND BLENDING COLORS

Use the Color control panel to change the standard color (or shade of gray) used by the system for highlighting. Many Mac users with color monitors choose yellow for this color, since the effect is similar to what you see on paper when you highlight important points with a yellow marker pen.

When you press the down arrow in the Highlight Color area of this control panel, you'll see a dropdown list of colors from which you can select. If you don't like any of the colors offered, you can pick the last item on the list— Other…. This choice brings up the color wheel, where you can choose any other color (unless, of course, your system limits the number of colors that can be used).

As shown in Figure 5.7, this panel also lets you select a *window color*; in this case, you must use one of colors listed.

Figure 5.7
Selecting a window color in the Color control panel
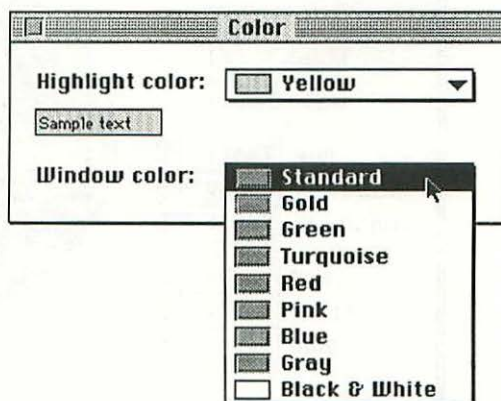
When you select a window color, the effect is subtle but attractive. The color you choose is added to the title bar of each window and to the scroll boxes and arrows. By the way, gold creates a particularly pleasing effect—an understated aura of opulence.

You've seen previous references to the color wheel, which can be used to pick a specific color for a highlight, a label, or a desktop pattern. This wheel lets you "mix your own colors" by clicking up or down arrows to make precise changes "by the numbers" for hue, color saturation, brightness, and the percentages of red, green, and blue to be used. (See Figure 5.8.)

If these numbers confuse you, you can also drag or click the pointer on the wheel itself to mix the exact color you want. (In this case, the scroll bar on the right adjusts brightness.)

Regardless of the method you choose, the result will be displayed in the sample box at the upper-right corner of the color wheel dialog box.

If your monitor is set to display only four colors or grays, the color wheel will identify color values by letters of the alphabet.

Figure 5.8

Selecting a highlight color with the color wheel

Choose a highlight color:	
Hue	10417
Saturation	56899
Brightness	59936
Red	59936
Green	57527
Blue	7899
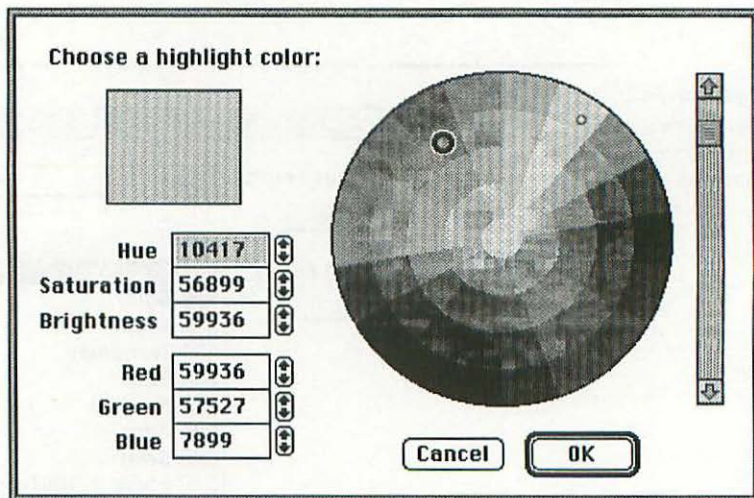
When you've obtained the color you want, click OK to close the color wheel dialog box and put your selection into effect.

MAKING THE MAP UTILITY WORK FOR YOU

Many individuals look at the Map control panel and cannot imagine how it can help them—unless they're world travelers. Actually, you can set up this utility so it will help you even if you never leave home.

As shown in Figure 5.9, the Map panel is initially set for zero latitude and longitude, and a zero time zone. A small, many-pointed star marks this spot, which is off the coast of Africa and at the intersection of the Greenwich prime meridian and the equator.

Figure 5.9
Initial settings for the Map control panel
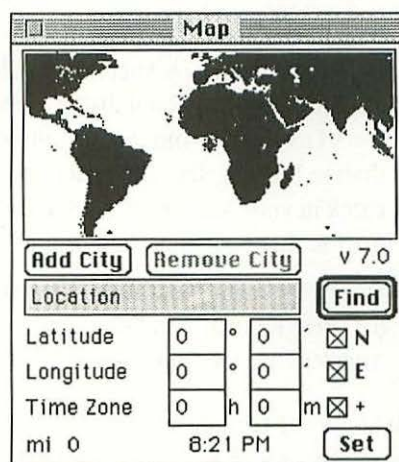
You can type the name of any major city in the text box, then click the Find button, to have the map shift (if necessary) to pinpoint the location of your chosen city on the map, with its latitude, longitude, time zone, and the mileage from the zero starting point. You'll hear your alert sound if the city you select is not in the utility's current database.

But how often do you want to know how far a place is from a spot in the ocean west of Africa? Even if you live in Africa, this particular location is probably far from your area of interest.

However, you can easily change the starting point for the Map panel's calculations. Try this:

1. Type the name **Los Angeles** in the text box.

2. Click the Find button (**Shortcut:** press Return). The map will shift, and Los Angeles will be pinpointed, with its latitude, longitude, relative time zone, and the mileage between Los Angeles and that spot in the ocean west of Africa.

3. Now click the Set button. This action changes the center of the calculations from the intersection of the Greenwich prime meridian and the equator to the city of Los Angeles. Note the time in Los Angeles.

4. Delete the name Los Angeles, type **New York**, and click Find (or press Return). You'll discover that New York is 2,450 miles from Los Angeles and that it is three hours later in New York than in Los Angeles. The exact time is shown (provided the clock in your Macintosh is set accurately). Now this is information that you could find useful!

5. Delete the name New York, type **San Francisco**, and click Find (or press Return). San Francisco is shown as 350 miles from Los Angeles, and the time there is the same as in Los Angeles.

If you know the latitude and longitude of any city not listed, you can type those coordinates and the name of the city, then click the Add City button to add it to the list. The Map utility will then calculate automatically both the mileage from your starting location and the local time.

Select the N box to designate north latitude and the E box for east longitude. When the boxes are not selected, south latitude and west longitude are implied.

You can also remove a city no longer needed; just find it, then click the Remove City button.

USING EASY ACCESS TO OVERCOME SPECIAL PROBLEMS

The Easy Access control panel provides features that can overcome special problems associated with operating a Macintosh in the normal fashion.

Sticky Keys

For example, if you're unable (or don't want to) use two hands on your Macintosh keyboard, you might ordinarily have problems executing commands requiring you to hold down a modifier key (Command, Option, Shift, or Control) while pressing another key. With Easy Access activated, it's possible to press the two keys separately. The feature is called Sticky Keys.

As Figure 5.10 indicates, you click the On button for Sticky Keys to activate the option. You can choose to hear a warning beep when the modifier key is pressed, or to turn off this sound alert. With Sticky Keys activated, whenever you press a modifier key followed by an additional key, your Mac will react as if the two keys had been pressed simultaneously.

Figure 5.10

The Easy Access
control panel
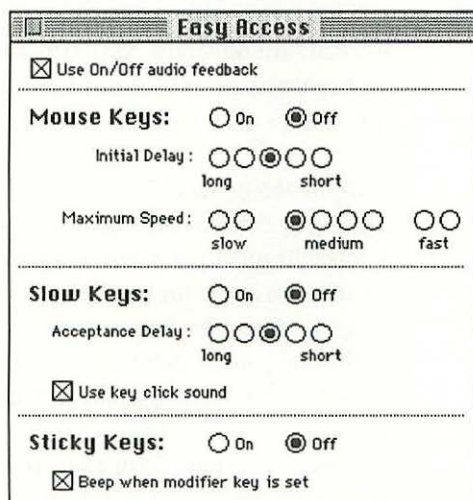
Slow Keys

Slow Keys helps eliminate accidental keystrokes, which can be a problem for people who have difficulty controlling precise finger movements. With Slow Keys active, you must press a key continuously for a short period of time before the keystroke is accepted. A series of buttons in the Slow Keys section of the Easy Access control panel let you adjust the length of the keystroke acceptance delay.

You can turn an accompanying key-click sound on and off; when this sound is on, you'll hear one click when you press a key and a second click when the character you selected appears on the screen.

You can turn off the entire Slow Keys feature from the keyboard by holding down the Return key for eight seconds. You'll hear a brief sound reminder after four seconds have passed and another sound to indicate that the full eight seconds have elapsed and the feature has been terminated.

Mouse Keys

In addition to Sticky Keys and Slow Keys, the Easy Access panel offers Mouse Keys—numeric keypad substitutes for the use of a mouse.

You can turn on Mouse Keys either from the control panel or the keyboard. On the keyboard, press ⌘-Shift-Clear to activate the feature. Press Clear to turn off Mouse Keys. (The Clear key is in the upper-left corner of the numeric keypad.)

With the Mouse Keys feature active, you can press the 5 key as a substitute for clicking or double-clicking the mouse button. Press the 7 key to move the pointer diagonally upward and to the left, the 8 key to move straight up, and the 9 key to move diagonally upward and to the right. Press the 4 key to move straight left and the 6 key to move straight right. Press the 1 key to move the pointer diagonally down and to the left, the 2 key to move straight down, and the 3 key to move diagonally down and to the right.

Note that these keys form a square, with 5 at the center.

Press the 0 (zero) key to lock the mouse button down for dragging, then press 5 or the decimal-point key to unlock the mouse button again.

You can click buttons in the control panel to adjust how quickly the pointer starts moving after you press a key. You can also adjust the speed with which the pointer moves.

Unless you turn audio feedback off in the Easy Access control panel, you'll hear a special confirmation sound when you start or stop Mouse Keys from the keyboard.

Some artists use Mouse Keys for minute adjustments on drawings, since you can tap keys to move the pointer one pixel at a time.

GETTING A CLOSER LOOK WITH CLOSEVIEW

If you have trouble reading small print or if you'd like to magnify some portion of your screen for delicate work, the CloseView control panel can be very handy. With it, you can enlarge any part of a screen up to 16 times its normal size. This enlargement is for viewing purposes only and does not affect your actual files in any way. System 7's screen capture capability won't even save the enlarged view as a PICT file; if you capture a screen when CloseView is in use, the result will be the normal view of the same screen without magnification.

System 7 does not install this control panel automatically. You will find the icon for CloseView (pictured in Figure 5.11) on the Install 3 installation disk if you have the standard eight-disk installation kit; otherwise, you may find the icon on a disk with another name. To install the utility, drag the icon into your System folder and restart your Macintosh.

Once CloseView is installed, you can turn it on or off either from the control panel or—if the Keyboard Shortcuts option is on—by pressing Option-⌘-O (the letter O on your keyboard, not the zero). In fact, you can control all of Close-View's features from the keyboard if you wish—with the exception of clicking a button to make the magnified area display reverse video (white lettering on a black background). The CloseView control panel is shown in Figure 5.12.

When CloseView is activated, you'll see a rectangle with a heavy black border, as illustrated in Figure 5.13. As you move the pointer, the rectangle will move with it. When you have selected an area you want to enlarge, press Option-⌘-X; the selected area will then fill the screen. To increase the amount of magnification, press Option-⌘-Up Arrow. To decrease the amount of magnification, press

Option-⌘-Down Arrow. To turn magnification off, press Option-⌘-X again. To turn CloseView off and remove the black rectangle from the screen, press Option-⌘-O again.

Incidentally, the reason the CloseView control panel includes an option for turning keyboard shortcuts off is that you might have an application that uses the shortcut key combinations for its own purposes. Turning off the shortcuts will eliminate this conflict. You could still use CloseView in this application by controlling the utility entirely through the Apple menu, although the procedure would be awkward and time consuming.

Figure 5.11
The CloseView icon

Figure 5.12
The CloseView control panel
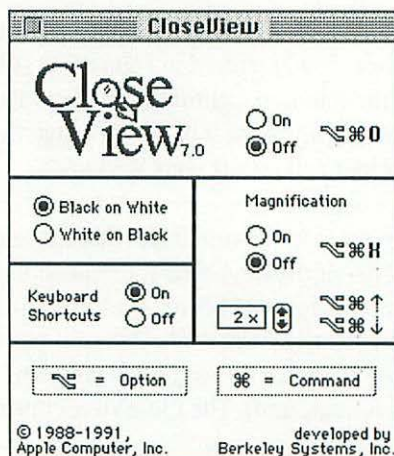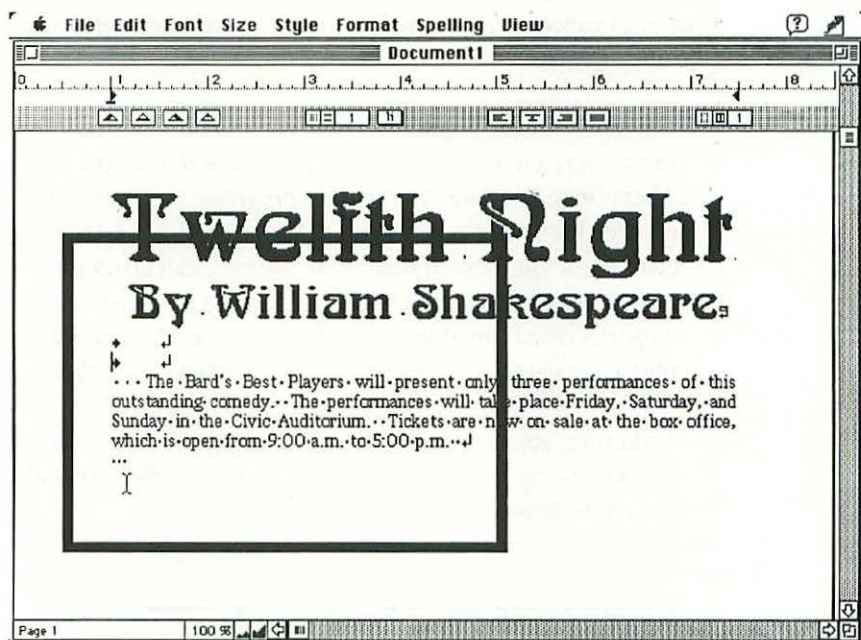
CHANGING THE VIEW OF YOUR DESKTOP

The Views control panel provides several functions that affect the way your screen looks and the information it displays.

First of all, you can choose to have icons arranged in straight lines on the desktop and within folders, aligned with an invisible grid. As an alternative, you can have the icons staggered; this choice can keep long names under icons from overlapping each other and becoming unreadable. Furthermore, you can elect to have all icons snap to that invisible grid, even after you move them.

Most Mac users who use icon views of their files prefer the default "straight grid" option shown in Figure 5.14; these users then make manual adjustments to change the positioning of selected icons. However, if automatic tidiness is of more interest to you than controlling the exact arrangement of icons, you'll like the *Staggered grid* and *Always snap to grid* options.

To put changes into effect that you make in the Icon Views section of the Views control panel, you must pull down the Special menu and issue the Clean Up command.

List views are very popular because you can see detailed information about your folders and files, including the date and time of the last revision, the type of item (such as *folder*, *application program*, or *Microsoft Word document*), and even the size of each folder (although this last option slows down the rewriting of your screen slightly, as System 7 calculates these sizes). In the List Views section of the panel, you can click boxes to display or omit eight such categories of information; remember, however, if you display too many columns of data, you'll have to scroll a window to see them all.

In addition, you can specify three different icon sizes for list views; the smallest icon is certainly the most practical, unless you believe that identifying the icons by their designs is of great importance.

Figure 5.14
The Views
control panel
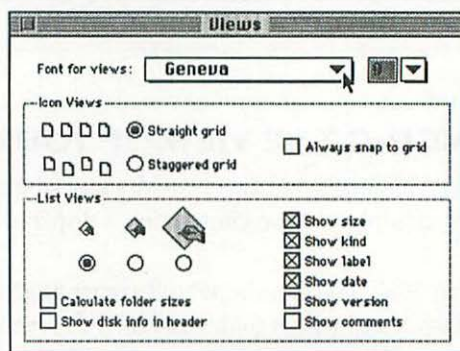
One of the most interesting Views options appears at the top of the panel and is labeled simply *Font for views*. Here is where you can actually change the typeface and font size used on your desktop. The default font is 9-point Geneva. You can press on the down arrow to the right of the word Geneva to

display the complete list of typefaces installed on your system. Highlight a new selection if you like, then use the little dropdown menu on the far right if you want to change the size of the typeface as well. Don't forget that larger sizes may leave insufficient space to display text without overlapping.

Any change in font you make here will not affect the appearance of menus nor the typefaces used in any of your applications.

Figure 5.15 shows a Macintosh desktop with text displayed in the standard 9-point Geneva font. In contrast, Figure 5.16 shows the same desktop with a custom desktop pattern and the text displayed in Franklin Gothic Demi-Bold, one of many classic typefaces sold by Adobe and other vendors.

Certainly, the appearance of the two desktops is quite different.

Figure 5.15
A Mac desktop with text in standard Geneva 9-pt. font
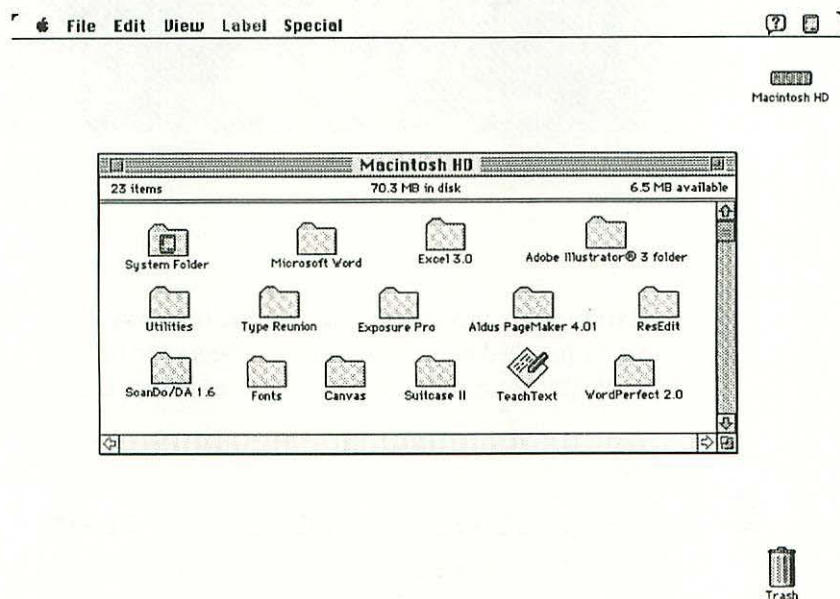
Figure 5.16
The same desktop with a custom pattern and a different typeface
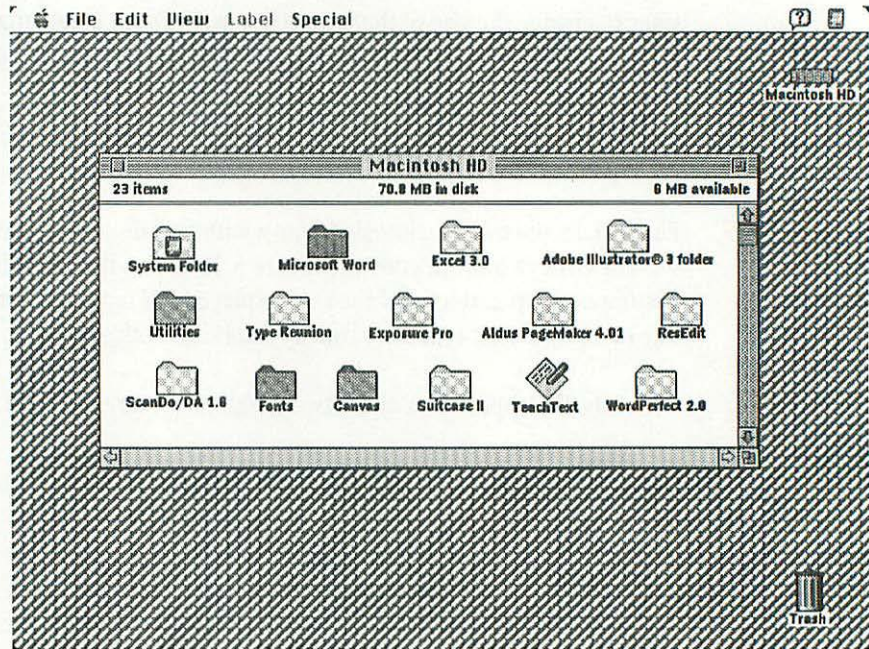
Feel free to experiment with changing the font for your desktop, using any typeface installed on your Mac that you believe to be both attractive and easy to read. You can easily switch to a different selection at any time.

CREATING ICONS WITH CUSTOM DESIGNS

If you'd like to use folder icons that don't resemble miniature file folders, you can do so. Under System 7, you can replace folder or document icons with any graphic image that can be copied to the clipboard.

There are some exceptions. You can't change locked icons or icons that are part of the system software, such as control panels.

This is the procedure to follow in customizing an icon:

1. Select the graphic image you want to use and copy it to the clipboard.

2. Select the icon you want to change, then pull down the File menu and select the Get Info command, as shown in Figure 5.17. The Info window that opens will display a copy of the icon in its upper left corner.

3. Click to select the copy of the icon in the window, then pull down the Edit menu and issue the Paste command (**Shortcut:** press ⌘-V), as shown in Figure 5.18.

4. The image from the clipboard will replace the original icon both in the Info window and on the desktop, as shown in Figure 5.19.

Figure 5.17

Selecting Get Info command for icon to be changed
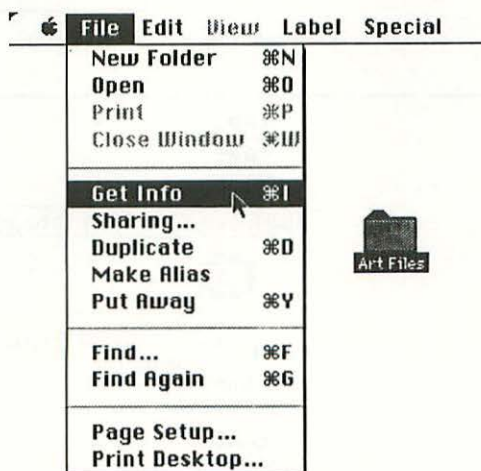
Figure 5.18
Pasting new graphic
image into
icon's info window
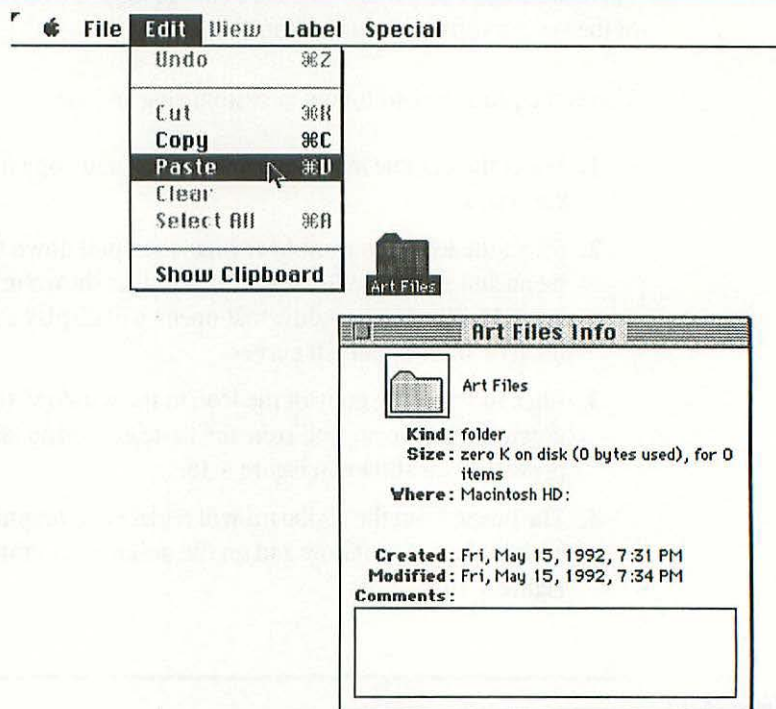
Figure 5.19
Icon is displayed with
new graphic image
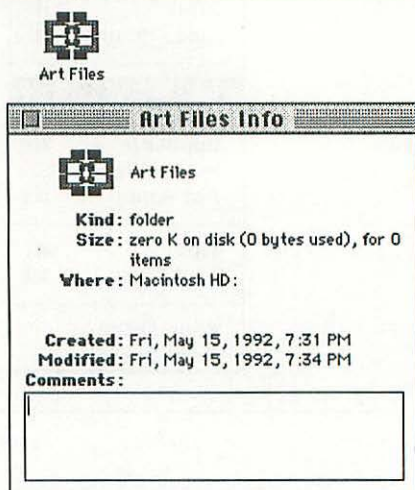
If you don't consider yourself an artist, of course you can apply appropriate clip art files to your icons. For example, all folders containing reports on oil exploration could display a miniature oil well.

Later chapters provide additional examples of how you can customize your Macintosh to make your work easier and more efficient.

Handling Typefaces

FEATURING

- Typeface categories
- Adding styles for effect
- Using the installed typefaces
- How typefaces are stored
- Solving System 7 typeface problems
- Installing and using hidden typefaces
- Helpful accessories
- Selecting the right typefaces
- Converting between typeface formats

System 7 lets you use typefaces produced in four different formats—provided you have a printer capable of supporting all of these options (see Chapter 4). First of all, every Mac printer can print bitmapped fonts; these files consist of characters composed of fixed patterns of dots and were the only typeface choice for early users of the Macintosh. You can also use typefaces in the Adobe Type 1 and Type 3 outline formats, intended primarily for use with PostScript printers. In addition, you can use the new TrueType outlines with any PostScript printer, as well as with printers either designed specifically to print TrueType fonts or supplied with special TrueType drivers by their manufacturers.

When you install System 7, certain typefaces are placed in your System folder automatically. Surprisingly enough, additional typefaces and even small drawings are stored on the installation disks; you can use these on any Mac printer, but you must install them yourself. This chapter will tell you what these extra items are, how to find them, and how to install them.

We'll also cover some tips about typography, how to access special characters, and the features of third-party accessories that can make your work with typefaces much easier.

LEARNING TYPEFACE CATEGORIES

When you work with typefaces under System 7, it helps to know the meaning of a few terms used universally in the printing and publishing industries.

Some readers will be surprised to learn that the two words *typeface* and *font* are not synonyms. Here are some basic definitions:

A *typeface family* is a group of letters, numbers, and symbols that are all part of a single design concept. A *style* is a variation within the design such as boldface or italics. A *typeface* is a complete set of characters with one of those styles, regardless of the size involved.

A *font* is one typeface in a single size. Type is usually measured in *points*; a point is approximately 1/72 of a inch.

Therefore, Helvetica is a typeface family. Helvetica Bold is a typeface. Helvetica 10-point Bold is a font.

Figure 6.1 shows the Times TrueType plain (often called Roman) typeface installed by System 7, in 12-, 24-, and 48-point sizes. Each size is considered a different font.

Figure 6.1
A Times TrueType typeface in three point sizes

This is 12 point

This is 24 point

This is 48 point

All type is either *monospaced* (also called fixed-pitch) or *proportional*. Most typewriters use monospaced typefaces. In a monospaced typeface, each character occupies exactly the same amount of space on paper. Although a capital *M* is much wider than a lowercase *i*, each is allocated an area of equal dimensions.

Most type that you see in newspapers, magazines, and books—even on package labels—is proportional. In a proportional typeface, each character occupies only as much space as it needs. This type you're reading now was set in a proportional typeface.

In Figure 6.2, the top typeface is the TrueType Courier included with System 7. Courier was originally designed for use on typewriters and has been popular for over a quarter of a century. It is monospaced and used on computers mainly by those who want to give the impression that a document was created as a personal effort on a typewriter.

However, proportional typefaces are being accepted more and more as a standard for business correspondence. The bottom typeface in Figure 6.2 is the proportional TrueType Times.

As you can see, there's a lot of wasted space surrounding the letter *i* and the two *l*'s in the word *Willow* as seen in Courier. These spaces make it difficult for the eye to recognize that these spread-out characters constitute a single word.

On the other hand, in the Times version of *Willow*, one character seems to lead smoothly to the next and the word is perceived as a unit.

Figure 6.2
Monospaced vs.
proportional type

```
Willow
```
Willow

You can divide typeface designs into four major categories. A *serif* typeface consists of characters with small nubs or projections at the ends of its strokes or curves. These subtle additions help the eye identify the individual characters. Therefore, books and long articles are usually printed in a serif typeface. (This book is no exception.) Most serif typefaces give a traditional appearance to text.

A *sans-serif* typeface has clean, modern lines, with no serifs. (*Sans* is a French word meaning *without*.) You'll often find sans-serif typefaces used for headings in reports or in short blocks of copy in magazine advertisements. Some book designers do use sans-serif typefaces for the text of entire volumes.

A *decorative* typeface is usually created to attract attention—or, at least, to produce a specific impression on a reader. These typefaces are frequently intricate and therefore hard to read; they're great in headings and rarely used for large blocks of text.

A *script* typeface resembles handwriting. Like the decorative category, it's used to produce a specific impression (such as in a heading or note where a casual

touch is wanted) and becomes difficult to read when used in more than a few consecutive lines.

Figure 6.3 shows examples of these design categories and presents Times as a typical serif typeface. This design was introduced in 1931 in the London Times newspaper. The typeface is still widely used because it's very readable, slightly *condensed* (consisting of narrow characters, which save space), and inconspicuous enough never to detract from the message it conveys.

Figure 6.3
Examples of typeface categories

This is Times, a serif typeface
Helvetica, a sans-serif typeface
Metropolitan is a Decorative Typeface
Mistral—script style (like handwriting)

Helvetica is the world's most popular sans-serif typeface. Its strokes are all of an even width, the characters have conventional shapes for easy recognition, and it has a relatively large *x-height* so that it reads well in small sizes. (X-height refers to the median height of lowercase characters in a typeface and derives its name from the height of the lowercase x, often used for measuring this attribute.)

Metropolitan is a decorative typeface reflecting the Art Nouveau school of design that flourished between 1890 and 1910. Decorative designs often include some elements of both serif and sans-serif typefaces. For example, Metropolitan has tiny serifs at the ends of strokes; however, those strokes vary in width and combine with distinctive flourishes to set the design apart. (This typeface is available from Dubl-Click Software.)

Mistral is a popular script typeface sold by several vendors. Some script typefaces actually mirror the personal handwriting of their designers. One of the

challenges in designing a script typeface is to make lowercase characters seem to connect naturally when joined in any normal combination.

ADDING A STYLE FOR A DIFFERENT EFFECT

You can change the appearance of many typefaces by adding a style attribute such as bold or italic. Figure 6.4 shows a typical Style menu within a Mac application. (This menu is for the Claris Resolve spreadsheet program.)

Figure 6.5 displays the result of adding various style attributes to the Bernhard Modern type family (available in TrueType format from Bitstream). This family is distinguished by elegantly formed characters and a small x-height that draws attention to the long upward strokes (called *ascenders*). The overall effect is an air of sophistication.

Bernhard is sold *as a family*, including *individually designed* typefaces for plain, bold, italic, and bold italic.

Figure 6.4
The Resolve Style menu
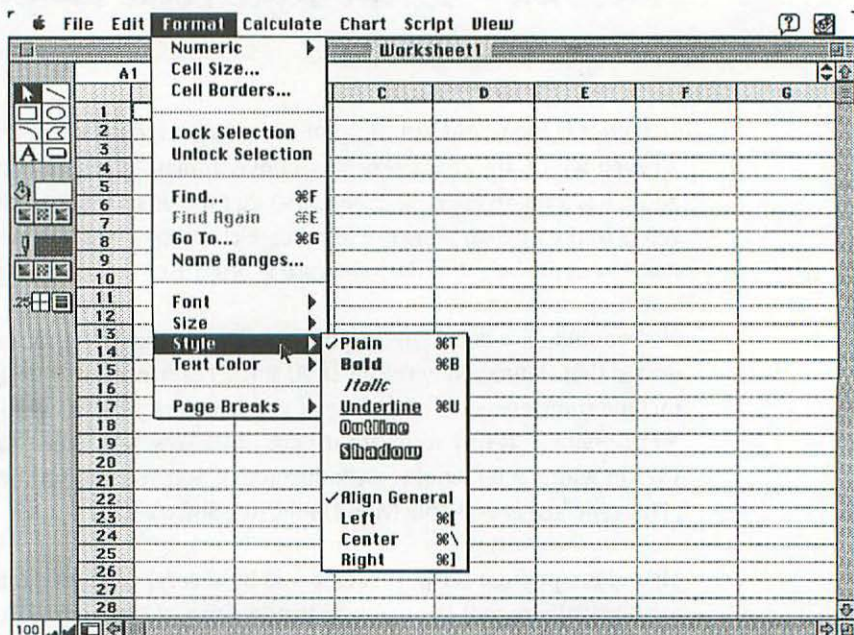
If all candles be out, all cats be black.

If all candles be out, all cats be black.

If all candles be out, all cats be black.

If all candles be out, all cats be black.

If all candles be out, all cats be black.

The first line in Figure 6.5 is Bernhard Modern Roman (the plain version of this family). The second line is boldface.

The third line is italic. Look at the letters *a*, *e*, and *u* in this typeface. They don't look the same as those characters in the Bernhard Roman or bold typefaces. These characters demonstrate that the actual design of the Bernhard italic style is unique; it was not created by merely *slanting* the plain characters. (A typeface created by slanting the plain characters is called an *oblique* version; the Helvetica typeface family includes an oblique rather than an italic style.)

The fourth line is the Bernhard Roman typeface, with the Mac's outline style added. The fifth line combines Bernhard's own italic with the Mac's shadow style.

As Figure 6.5 illustrates, a single typeface family offers considerable variety when these styles are applied.

But what happens when you use the Style menu to add boldface or italic to a type design that comes only in a plain version? Often the results can be disappointing.

Figure 6.6 shows a MacWrite Pro screen displaying various styles created from Bitstream's Exotic 350 Demi-Bold typeface. (Exotic is the Bitstream version of a typeface called Peignot.) You can see that the boldface version is darker than the plain version, and that the italic is really an oblique, created by slanting the

plain characters. We've added outline and shadow styles too, which have been displayed satisfactorily.

Now let's print that file and see what happens. Figure 6.7 exhibits the result. The outline and shadow styles have printed correctly; the plain, bold, and italic versions all look exactly the same.

Figure 6.6

Exotic 350 Demi-Bold
with styles added
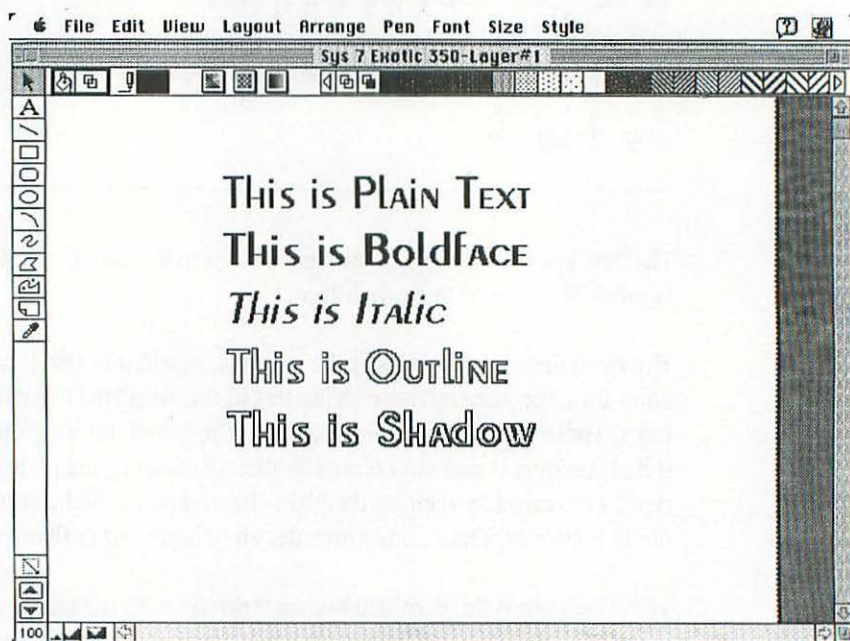
What has happened is that *the System 7 style commands for bold and italic were ignored*. This situation occurred because of deliberate programming decisions made by the typeface designers.

Why would designers want to do this? In this case, they didn't want the appearance of the typeface corrupted. There is no italic (or oblique) version of Exotic 350 (or Peignot), and the designers don't want you to try to create one!

This is Plain Text
This is Boldface
This is Italic
This is Outline
This is Shadow

Another reason why many typefaces will not accept Mac style commands is that the vendors of the typefaces want you to purchase separate plain, bold, italic, and bold italic variations; they don't want you to be able to approximate the effect of style variations through System 7.

USING THE TYPEFACES INSTALLED WITH SYSTEM 7

As mentioned at the beginning of this chapter, not all typefaces furnished with System 7 are installed by the installation program. Later in this chapter we'll introduce you to those hidden goodies.

Right now let's investigate how to use the typefaces that *are* installed automatically. Figure 6.8 displays samples of each family.

When System 7 was first shipped, the installation program automatically installed every typeface shown in Figure 6.8, in both bitmapped and TrueType versions— with the sole exception of Palatino. Palatino was supplied only in a bitmapped version, but a TrueType version may have been added by the time you read this.

The presence of those bitmapped fonts means that, if you have a dot-matrix printer such as an ImageWriter—designed before TrueType was invented—you can still use every typeface shown in Figure 6.8.

Figure 6.8
The typeface
families installed with
System 7

Chicago is used for Apple menus.

Courier is used most on typewriters.

Geneva is used for the Apple desktop.

Helvetica is the most popular sans-serif typeface.

Monaco is the ImageWriter draft mode font.

New York substitutes for Times on ImageWriters.

Palatino was provided in bitmapped sizes, not TrueType.

σ ψ μ β ο λ ω ε φ ϖ π θ (Symbol)

Times is the most popular serif typeface.

If you have a PostScript printer or some other printer that can use TrueType typefaces, you'll have the advantage of being able to specify any font you want and have it built for you instantly from an outline—a file that contains a mathematical representation of the family's characteristics; the outline will provide sharp screen and printer versions of the typeface in whatever size you want (although some applications don't support extremely large sizes).

You'll probably achieve good output results in a variety of sizes even with the bitmapped Palatino—thanks to the greatly improved printer drivers Apple has created for System 7. Before these drivers were devised, bitmapped characters became very jagged when printed in a size not stored on the computer. Now the new drivers do an admirable job of extrapolating between existing sizes and smoothing out rough edges.

Furthermore, you'll be happy to know that you can apply any of the style options to any of these installed typefaces and see the styles appear on paper as specified.

There is one potential problem for LaserWriter users. As discussed in Chapter 4, the LaserWriter Page Setup dialog box includes an option called Font Substitution; *this option is selected by default*. When Font Substitution is activated, the Monaco typeface will be replaced automatically by Courier. The New York typeface will be replaced by Times. The Geneva typeface will be replaced by Helvetica. Before the development of the new printer drivers and the TrueType outline versions of all of the typefaces, this substitution was a blessing in disguise; it kept LaserWriter users from selecting bitmapped typefaces in nonexistent sizes instead of PostScript typefaces and thereby producing printouts full of uneven, poorly formed fonts. However, now that quality is not such an issue, if you want to use Monaco, Geneva, or New York—you must still pull down the File menu, select Page Setup... and deselect Font Substitution before you print. Otherwise, you will see the substitutes for those typefaces.

Selecting the Right Typeface for the Job

Among the typefaces installed with System 7, Helvetica, Palatino, and Times are all excellent choices for the body copy of a document. In larger sizes and with bold added, these families are also appropriate for headings of all kinds. Palatino is not used as frequently as the other two choices, so it could impart a freshness to your work. However, Palatino has wider characters than the others. If you really need to cram a lot of words into a small space, Helvetica or Times will do the job better. (As an alternative, you can purchase many highly condensed typefaces that are specifically designed for space-saving.)

Chicago is a good choice if you need a headline that will be noticed. Pick Monaco to make a casual impression. Geneva and New York are really much like Helvetica and Times, except with wider characters and a larger x-height. The Symbol typeface contains useful Greek and mathematical symbols.

Understanding Typeface Storage

Under previous versions of the Mac operating system, you had to use the Font/DA Mover to install typefaces. This utility placed the typefaces inside the System file, within the System folder. Through the Font/DA Mover, you could see a list of the fonts and desk accessories in the System file, but you certainly could not open up the file itself to take a look at it.
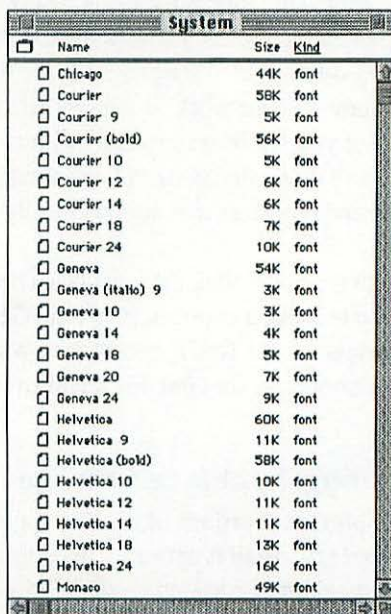
That's all changed now. The installation program automatically installs certain fonts and some alert sounds in the System file. You can install others without a special utility.

If you want to remove fonts, you can actually double-click on the System file itself to open it into a window. Scroll the window as you would any other to examine the contents, then remove any item by simply dragging it out of both the System file and the System folder.

Figure 6.9 shows a portion of a System file displaying typefaces installed by the installation program.

Bitmap and outline typefaces have always been installed in files called suitcases, designated by an icon that resembles a small suitcase. An example is shown in Figure 6.10.

Figure 6.9
An open System file

Name	Size	Kind
Chicago	44K	font
Courier	58K	font
Courier 9	5K	font
Courier (bold)	56K	font
Courier 10	5K	font
Courier 12	6K	font
Courier 14	6K	font
Courier 18	7K	font
Courier 24	10K	font
Geneva	54K	font
Geneva (italic) 9	3K	font
Geneva 10	3K	font
Geneva 14	4K	font
Geneva 18	5K	font
Geneva 20	7K	font
Geneva 24	9K	font
Helvetica	60K	font
Helvetica 9	11K	font
Helvetica (bold)	58K	font
Helvetica 10	10K	font
Helvetica 12	11K	font
Helvetica 14	11K	font
Helvetica 18	13K	font
Helvetica 24	16K	font
Monaco	49K	font

Helvetica

Before the advent of System 7, you had to rely on the Font/DA Mover to place items in a suitcase or remove them. Now, if you want to open a suitcase and install only a few of its typefaces into the System file, all you have to do is double-click on the suitcase itself. The suitcase will open, revealing its contents; you can drag the typefaces you want into the System folder, from where they will be placed automatically in the System file.

If you want to install all of the contents of a suitcase, drag the suitcase itself into the System folder. It will be opened automatically, the typefaces will be stored in the System file, and then the suitcase itself will disappear into midair—no longer needed.

Figure 6.11 shows the contents of the TrueType Helvetica suitcase, in a list view. Figure 6.12 demonstrates how you can change to a view with icons by selecting *by Icon* from the View menu.

Figure 6.13 illustrates the difference between a TrueType outline typeface and a bitmapped typeface. The outline typeface displays three A's in varying sizes, indicating that type can be generated in any size wanted. On the other hand, New York 18 displays only one letter A and is identified by size under the icon; this is a bitmapped typeface in an 18-point size.

If you want to know what a particular typeface looks like without installing it or using it in a document, double-click on the typeface file; it will open and display a handy sample. If the file is a TrueType outline, you'll see samples of the typeface in three different sizes: 9-point, 12-point, and 18-point, as shown in Figure 6.14. If the file is a bitmapped typeface, you'll see one sample, in the size represented by the bitmap, as shown in Figure 6.15.

Figure 6.11

The contents of
the TrueType
Helvetica suitcase,
displayed in a list view

	Name	Size	Kind	Label	Last Mod
	Helvetica	60K	font	–	–
	Helvetica 9	11K	font	–	–
	Helvetica (bold)	58K	font	–	–
	Helvetica 10	10K	font	–	–
	Helvetica 12	11K	font	–	–
	Helvetica 14	11K	font	–	–
	Helvetica 18	13K	font	–	–
	Helvetica 24	16K	font	–	–

Figure 6.12

Changing to an icon
view of the
suitcase contents

 File   Edit   View   Label   Special

by Small Icon
✓by Icon
by Name
by Size
by Kind
by Label
by Date

Helvetica

8 items   126.6 MB in disk   45.1 MB available

Helvetica   Helvetica 9   Helvetica (bold)   Helvetica 10

Helvetica 12   Helvetica 14   Helvetica 18   Helvetica 24
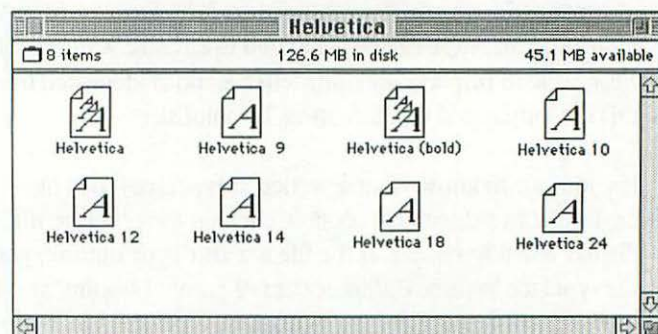
Figure 6.13
TrueType and
bitmapped typeface
icons compared
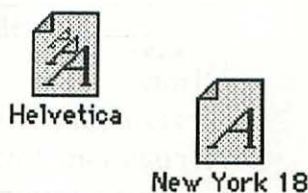
Each TrueType typeface requires only one file; the same outline file is used to generate both the screen image and the output for the printer.

Typeface files in an Adobe PostScript format are composed of two elements: bitmapped typefaces in a suitcase, used to generate the screen display, and separate outline printer files from which the printed typefaces are created. You can double-click on an Adobe bitmapped screen typeface file and see a sample, as just described. If you double-click on an Adobe printer typeface, instead of a sample you'll see the message shown in Figure 6.16.

Figure 6.14
Opening a TrueType
typeface outline
to see type samples
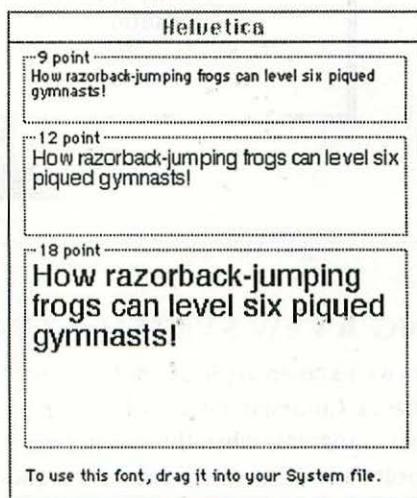
Figure 6.15

Opening a bitmapped
typeface file
to see a type sample
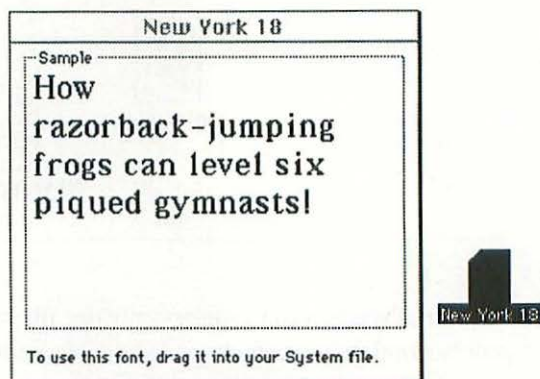
Figure 6.16

The message shown
when you double-click
on an Adobe PostScript
printer typeface
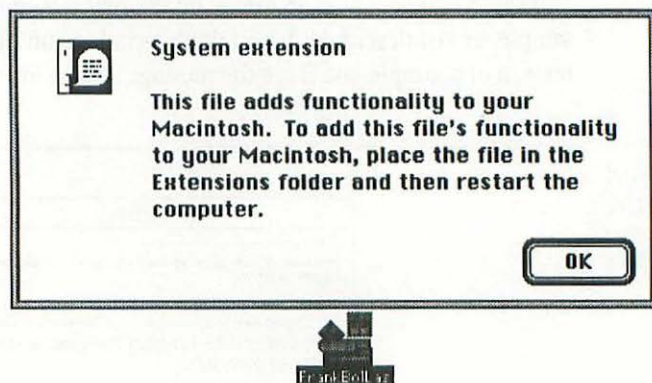
SOLVING A FEW SYSTEM 7 TYPEFACE PROBLEMS

Many well-known applications have been based on support for PostScript
typefaces. Consequently, TrueType typefaces did not work properly with some
of these programs when this chapter was written. Check with the publisher of
any software about which you have a question, to see if they currently support
TrueType.

Here are a few examples:

Aldus Fontographer 3.2 and earlier versions are not compatible with TrueType. Select only PostScript typefaces when using this program.

Aldus PageMaker 4.01 prints all TrueType fonts in the Courier typeface if you print using the default Aldus driver. However, you can print documents correctly that contain TrueType typefaces by using the Apple printer driver instead. To select the Apple driver, simply hold down the Option key as you select the Print... command from within PageMaker.

Microsoft Word 4.0 will not print TrueType typefaces correctly on the Personal LaserWriter LS printer unless the Background Printing option in the Chooser is turned on (see Chapter 4).

Adobe TypeAlign 1.0.2 and earlier versions are not compatible with TrueType.

Adobe Illustrator is not compatible with TrueType.

SmartArt 1.0 is not compatible with TrueType.

Broderbund TypeStyler 1.5.2 and earlier versions are not compatible with TrueType.

Letraset FontStudio 1.0 is not compatible with TrueType.

Some applications don't display TrueType typefaces properly in sizes above 120-pt. However, the typefaces will probably print correctly.

You can continue to use PostScript typefaces under System 7 with all of the product versions mentioned here as having difficulties with TrueType.

Font/DA Juggler and Master Juggler are not compatible with System 7.

If you were using the Suitcase II utility (described in detail later in this chapter) to manage your typefaces prior to installing System 7, you may find that suitcases will not open when you double-click on them. In fact, you'll see the warning message displayed in Figure 6.17, stating that the suitcase "could not be opened, because it is damaged."

Figure 6.17
Warning message
sometimes seen when
trying to open a
suitcase

The font suitcase "Adobe Garamond Screen
Fonts" could not be opened, because it is
damaged.

OK

Adobe Garamond Screen Fonts
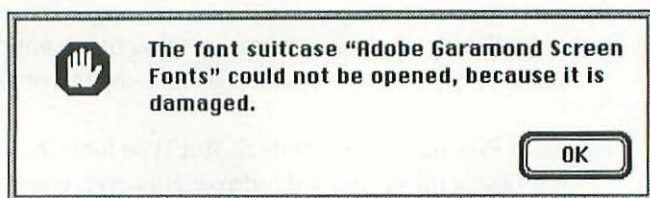
More than likely, the suitcase is not damaged at all. You probably used the
Suitcase II utility called Font & Sound Valet to compress the contents of your
suitcases so they would take up less space on your hard disk. Compressed suit-
cases work fine with Suitcase II (even under System 7) but are not recognized as
being in operational condition to be opened. You can continue to use the type-
faces if you access them through Suitcase II.

You must have Suitcase II version 1.2.10 or later to have full compatibility with
System 7. Version 1.2 of Font & Sound Valet (and earlier versions) do not work
properly with System 7, either for compressing or decompressing typefaces.

If you want to open compressed suitcases for some reason, you have two
choices: either decompress them under a previous version of the system soft-
ware or copy the uncompressed suitcases again from their original floppy
disks to your hard disk.

If you try to use any version of Font/DA Mover under System 7, you'll see the
warning message displayed in Figure 6.18. The new font-handling features of
System 7 make the utility obsolete.

Some applications are not compatible with certain features of typefaces. For
example, as illustrated by the message reproduced in Figure 6.19, Ventura Pub-
lisher 3.0 on the Macintosh won't work with typefaces containing more than
30 characters in their names.

Figure 6.18

Warning message
indicating that Font/
DA Mover can no
longer be used

> This version of Font/DA Mover is out of
> date. To install a font, drag it to the
> System file. To put a desk accessory in
> the Apple menu, drag it to the Apple Menu
> Items folder.
>
> OK
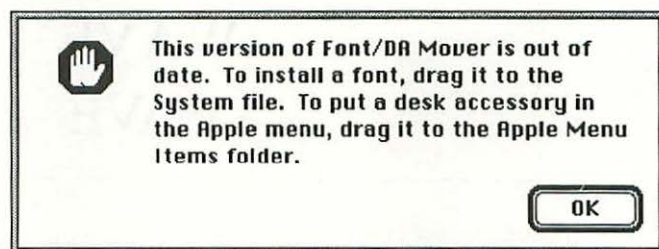
Kerning is an important aspect of typography and can make the typefaces in
your documents look much more professional. The absence of kerning is par-
ticularly noticeable in headings. (Kerning is the adjusting of the space between
individual characters so they fit together better. In Figure 6.20, the word *WAVE*
is displayed at the top without kerning; note the awkward spaces between
characters. Underneath, the word is shown properly kerned.) Typefaces are
usually accompanied by *kerning pairs*—lists of paired characters to be placed
closer together by programs supporting automatic kerning. (Without automatic
kerning, you must laboriously adjust kerning manually; even this procedure is
not supported in some applications.) Ventura Publisher does support automatic
kerning, but—as indicated by the warning message shown in Figure 6.21—it
can handle only 1,024 kerning pairs for a single typeface style. This means that
you'll have to kern the remaining pairs yourself when they appear in your
Ventura documents.

Figure 6.19

Ventura message
warning that
a typeface name is
too long

> ᴡ   Chapter   Frame   Tags   Graphics
>
> Uentura Publisher
>
> The font "HI Franklin Gothic
> HeavyOblique" has more than 30
> characters in its name. The font
> cannot be included in the System
> fonts width table.
>
> OK
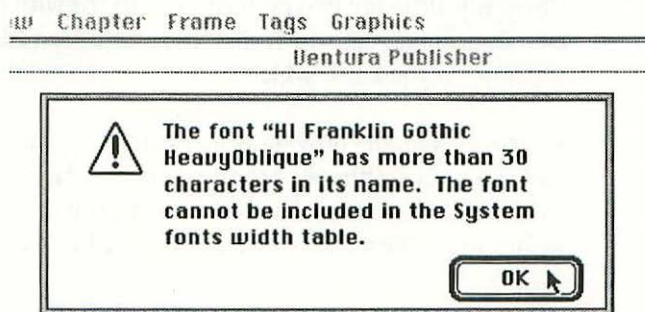
Figure 6.20

At the top, WAVE is not kerned; below, it is properly kerned

WAVE
WAVE

Figure 6.21

Ventura message warning of too many kerning pairs

ᴵᵂ   Chapter   Frame   Tags   Graphics

Ventura Publisher

⚠ The font "FrankfurtLaser" has more than 1024 kerning pairs for a style. The remainder will not be included in the System fonts width table.

OK ▸
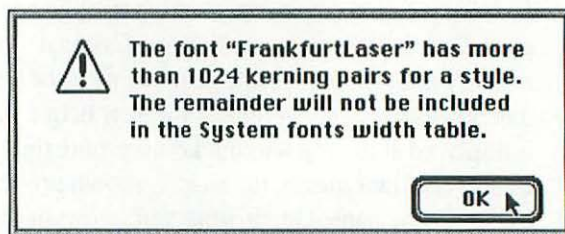
You may not be aware that there is a great difference between the number of characters provided in different typefaces. Although extra characters do not appear on your keyboard, they can be easily accessed by pressing the correct key combinations. For example, you can enter many of these hidden characters by pressing a keyboard character in combination with the Option, ⌘, Control and/or Shift keys. (However, there is no Control key on a Mac Plus keyboard.) Obviously, there are two problems connected with these bonus characters: how do you find out which characters have been added to a particular typeface and how do you know which keys to press to use those characters?

Sometimes vendors provide a chart in their typeface packages that answers these questions. Otherwise (or if you've misplaced the chart) you can find the characters by using Key Caps; you can pop up this System 7 desk accessory within any application by merely selecting Key Caps from the Apple menu.

When you activate Key Caps, you'll see the reproduction of a keyboard displayed in Figure 6.22. You can pull down the Key Caps menu and select any

installed typeface in your system for examination. The characters shown on the keys will change to reflect both the appearance of the chosen typeface and the individual characters obtained by pressing each key. When you press a modifier key, such as the Option key, the display will change (if additional characters are available) to show the key assignments for characters you can access in combination with that modifier key. In addition, you can test the available characters and the effect of the typeface design by typing and observing the results in the Key Caps text box.

The Key Caps desk accessory is installed automatically with System 7.

Figure 6.22
The Key Caps desk
accessory
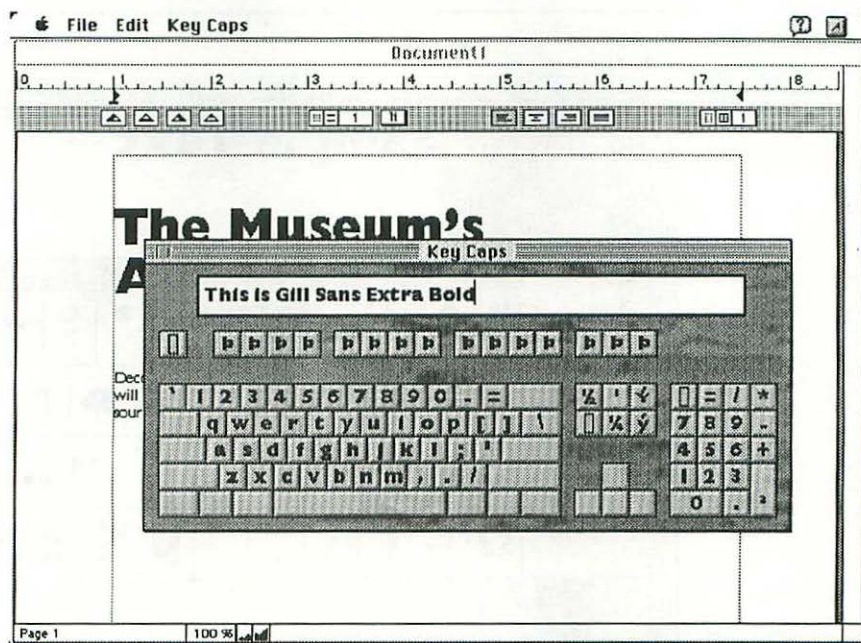
A much better desk accessory for evaluating typefaces has been created by Dubl-Click Software. It's called BigCaps, and the company includes it free of charge with the purchase of any of its inexpensive typefaces. We'll explain just a few of the many BigCaps features. First of all, you can make the accessory fill your entire screen and then display a typeface in any point size you wish,

giving you the opportunity to analyze character attributes in detail. You can see the typeface with any style applied. BigCaps contains a large text box where you can type several lines of text and observe the effect; when you first open BigCaps, the words Sample Text appear in this box by default, so you can quickly select several typefaces in succession from the dropdown font menu and note their appearance without typing anything.

Figure 6.23 shows Monotype's Gill Sans Extra Bold typeface displayed in BigCaps; the Option key has been pressed, showing part of the rich variety of extra characters included with each Monotype typeface for the Macintosh. (You can obtain still more characters by using other modifier key combinations.)

Figure 6.23
Dubl-Click's BigCaps
desk accessory

USING SYSTEM 7'S HIDDEN TYPEFACES

You can use six additional typefaces under System 7 that are not installed automatically but are included on your installation disks. Five of these typefaces

provide pleasing alternatives to the installed type families. The sixth is actually a collection of small drawings you access by pressing designated keys on your keyboard. The typeface consisting of drawings is named Cairo and is provided only in an 18-point size. All of the typefaces carry the names of cities and will be "old friends" to long-time Mac users, since these typefaces were acquired by Apple years ago and supplied to early purchasers of the computers. The typefaces included in addition to Cairo are Athens, London, Los Angeles, San Francisco, and Venice.

Although these typefaces are provided only in a bitmapped format and only in a single size and style (except for Los Angeles, which has two sizes), you can probably use them on your printer in any size or style you like with good results, thanks to the improved System 7 printer drivers.

If you have the standard eight-disk System 7 kit, you will find all of the extra typefaces on the disk labeled Fonts. To install them, just drag their suitcases into your System folder.

Figure 6.24 shows the result when you open the Fonts disk, then the San Francisco suitcase, then the San Francisco 18 font, displaying a sample. This "fun" typeface resembles nothing more than a ransom note, but its effect can be delightful under the right circumstances.

All of the extra typefaces are shown in Figure 6.25, except for Cairo. You'll find every drawing included in Cairo displayed in Figures 6.26 and 6.27 (as seen in BigCaps), with each drawing shown in the key position used to access it. Figure 6.27 shows the drawings available when the Shift key is pressed in combination with a character key.

You can tell very quickly what bitmapped sizes are available for any installed typeface by selecting the typeface and then pulling down the Size menu in any application. Figure 6.28 shows the Size menu for MacWrite Pro, with the TrueType Helvetica typeface selected. Since this is not a bitmapped typeface, all of MacWrite Pro's normal size alternatives are displayed with an outline type style applied, *meaning that all of these styles are available*. In fact, since TrueType typefaces will be generated in any size you want, all of the point sizes not shown are available too.

Figure 6.24
Displaying a sample
of the San Francisco
typeface
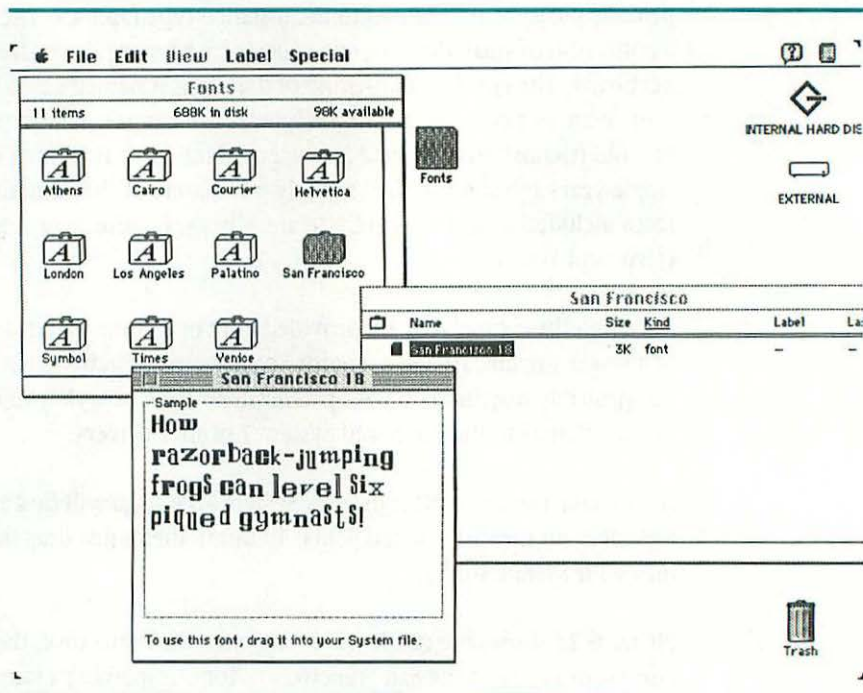
Figure 6.25
The extra typefaces
not installed with
System 7 (Not
reproduced here
actual size)

This is Athens, provided only in 18 pt.

This is London, provided only in 18 pt.

This is San Francisco, only 18 pt.

This is Venice, provided only in 14 pt.

This is Los Angeles, provided in both 12 and 24 pt.

This is Los Angeles, 24 pt.
Los Angeles with bold added
Los Angeles with shadow

Figure 6.26

Drawings available in the Cairo typeface when no modifier key is pressed

Figure 6.27

Drawings available in the Cairo typeface when the Shift key is pressed

In contrast, Figure 6.29 shows the Size menu when the Athens bitmapped type-face is selected. Since this typeface is supplied only in 18-point, only that size is displayed with the outline style applied.

Figure 6.30 demonstrates how well Athens reproduces on a LaserWriter printer when sizes and styles are selected that are not provided on disk. The last line shows 72-point Adobe PostScript Helvetica, which displays characters that are more smoothly formed. However, by seeing this sample reduced on a page in a computer book, you may be unable to detect any difference in quality without a magnifying glass.

Figure 6.28
The MacWrite Pro
Size menu with a
TrueType font selected

Size
7 pt
9 pt
10 pt
✓ 12 pt
14 pt
18 pt
24 pt
36 pt
48 pt
60 pt
72 pt
Other...   ⇧⌘0
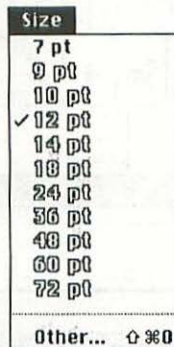
Figure 6.29
The same menu with
a bitmapped typeface
selected that is
available only in an
18-point size

Size
7 pt
9 pt
10 pt
12 pt
14 pt
✓ 18 pt
24 pt
36 pt
48 pt
60 pt
72 pt
Other...   ⇧⌘0

This is Athens reduced to 12 pt., not available on disk.

This is Athens in its actual bitmapped 18 pt.

This is Athens in 36 pt.

This is Athens with bold added.

This is Athens in italics.

This is Athens with shadow.

72 pt. Athens
72 pt. Helv.

USING HELPFUL TYPEFACE ACCESSORIES

TrueType typefaces require no accompanying bitmapped typeface to function; the same outline file is used to produce both the font display on-screen and the printout. System 7 produces on-screen and printed versions of bitmapped typefaces from the same bitmap file. However, typefaces in Adobe Type 1 or Type 3 PostScript formats require bitmapped versions to create the screen display and generate the printed result from a separate outline file. Of course, the outline delivers excellent results on paper because—like TrueType—it creates exact sizes for printing on demand.

When you use a PostScript typeface in a size not available in the bitmapped versions, the result on the screen can be terrible. Figure 6.31 shows the same 72-pt. Adobe Helvetica font seen in Figure 6.30 as displayed on the screen. (Of course, *TrueType* Helvetica would have been displayed correctly.)

Figure 6.31
A PostScript typeface
displayed in a size for
which no bitmapped
screen font was avail-
able (Not reproduced
here actual size)

72 pt. Helv.

You can eliminate this PostScript display problem by purchasing the Adobe
Type Manager utility. If you use only TrueType typefaces, you won't need it.

Adobe Type Manager requires that at least one bitmapped screen font be avail-
able for each PostScript typeface you use. However, the utility uses this bitmap
only for internal bookkeeping. It generates all of the screen displays from the
same outline file used for printing, in any size you specify.

Adobe Type Manager is an INIT file. You install it by dragging it into the System
folder and restarting your Macintosh. Thereafter, it functions automatically.
However, it performs its magic only on Adobe Type 1 typefaces. These are the
PostScript typeface versions originally created and sold only by Adobe, using
secret ''hints'' to generate characters with subtle detail features. Typeface ven-
dors who didn't have access to the Type 1 secrets created what are known as
Type 3 typefaces, trying to adjust their designs to compensate for the missing
''hints'' by using some other method of fine-tuning.

In the interests of standardization, Adobe eventually released the Type 1 speci-
fications to the industry at large. However, some typefaces are still sold only in
the Type 3 format—either because the vendors decided it would be too expen-
sive to convert their libraries or because their typefaces contained certain
unusual features they could not duplicate in the Type 1 format. (To see an
example of a Type 3 font with unusual features, look ahead at the words
Child's Play in Figure 6.36.)

When you use Adobe Type Manager, you can still use Adobe Type 3 fonts,
TrueType fonts, and bitmapped fonts as well. They will simply be unaffected
by the operation of Adobe Type Manager.

Adobe Type Manager has another tremendous advantage if your printer is a
dot-matrix model such as an ImageWriter. The utility lets you print quality

reproductions of any typeface in the Adobe Type 1 PostScript format, in addition to your usual bitmap fonts.

If you install a large quantity of typefaces, sounds, and desk accessories, your System file can become enormous. Each of those items adds to the memory requirements of your system software and slows down the operation of your Macintosh slightly. In addition, your Font menu can swell to unmanageable proportions, requiring that you scroll the menu almost every time you want to select a typeface. This particular problem is further complicated by the fact that the bold, italic, and bold italic variations of many typefaces are displayed as separate options.

Two utilities can make sense out of this chaos. One is Suitcase II, mentioned earlier, from Fifth Generation Systems. When you use this desk accessory, you can store typefaces and desk accessories anywhere you like on your hard disk—outside the System folder and without removing them from their suitcases. Then you can use the simple dialog box shown in Figure 6.32 to open only those suitcases you need for your current work. Just as easily, you can close suitcases that you won't be using again for a while.

Figure 6.32

Opening a suitcase with the Suitcase II desk accessory
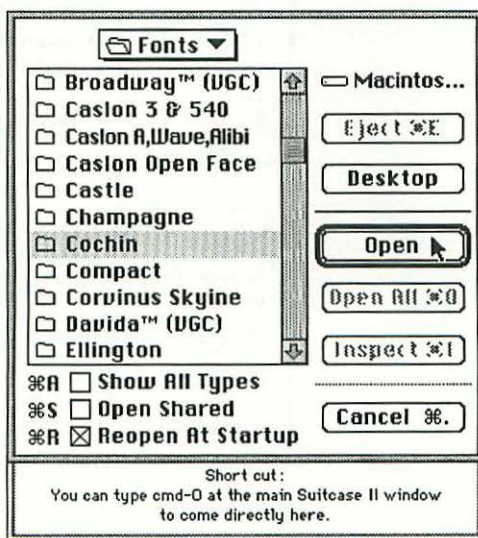
For example, you might use some special typefaces in producing a meeting announcement. After the job was finished, with a few keystrokes you could return all of those typefaces to their suitcases.

Suitcase II has many other features. One of its accessories can resolve conflicts between typefaces using the same system identification numbers. Another can compress the contents of your suitcases so they occupy less disk space. One Suitcase II dialog box quickly shows you the appearance of any installed typeface in any available size and style (see Figure 6.33). You can display all of the names on your Font menu in their actual typefaces; this feature is demonstrated in Figure 6.34.

Use Suitcase II in combination with a second utility—Adobe Type Reunion—and you can unite all of the style variations of a typeface normally displayed in different locations on a Font menu so they will appear as a single listing, as shown in Figure 6.35. Then, if you want to see the actual appearance of the typefaces, hold down the Shift key as you select the Font menu, and you can still obtain the kind of display that is shown in Figure 6.34.

Figure 6.33

Examining a typeface in a specific size and style with Suitcase II
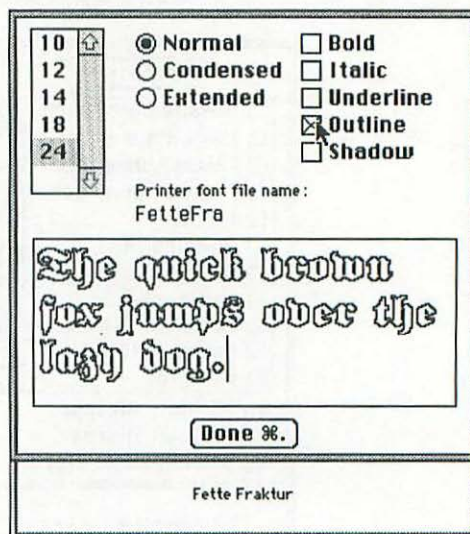
Figure 6.34

Using Suitcase II to display the actual appearance of typefaces on the Font menu
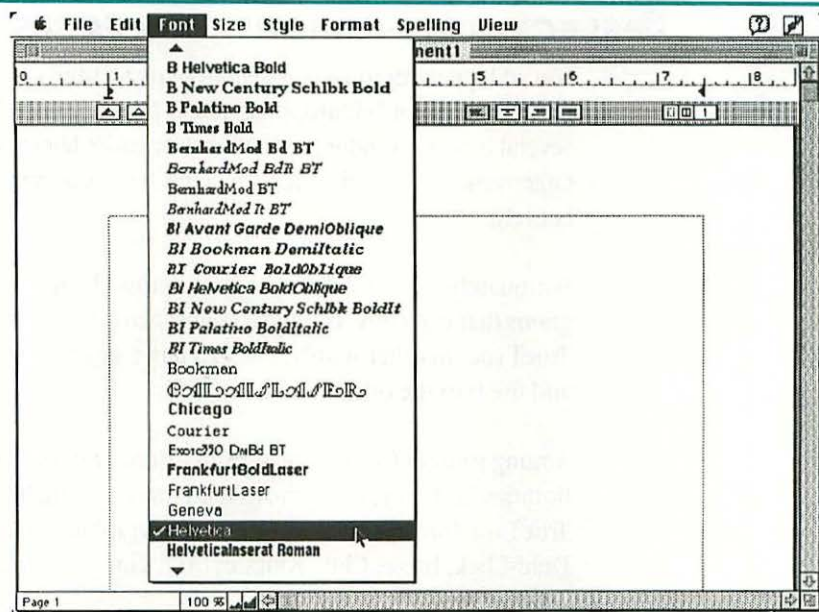
Figure 6.35

Using Adobe Type Reunion to display the styles for a typeface under one listing
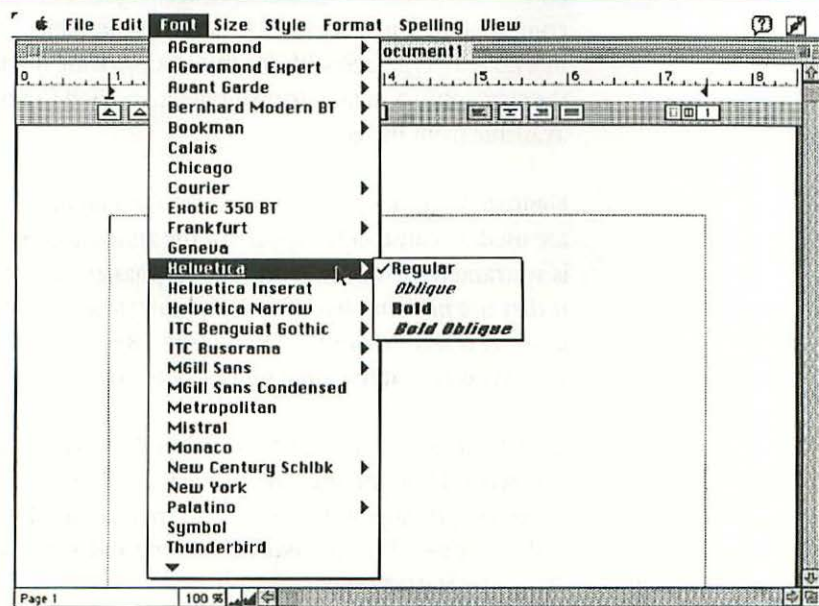
SELECTING THE RIGHT TYPEFACES

You add typefaces to your system from many sources, in any of the formats supported by System 7: bitmapped, Adobe Type 1, Adobe Type 3, and TrueType. Several typeface vendors now offer their entire libraries in the TrueType format. Other vendors (as of the time when this book was written) have ignored TrueType entirely.

Fortunately, as you'll discover later in this chapter, you can now obtain programs that can convert typefaces automatically between the Adobe formats and TrueType. In other words, you can buy a typeface in any of these three formats and use it in the other formats as well.

Among sources for typefaces, both Adobe and the Font Company sell large libraries in the Type 1 format. Vendors supplying libraries in both Adobe and TrueType formats include Agfa Compugraphic, Bitstream, Casady & Greene, Dubl-Click, Image Club, Kingsley/ATF, Linotype, and Monotype.

Good typefaces are plentiful. Many of them are very inexpensive. These circumstances mean that you should be able to find exactly the typeface you want to convey a particular mood or message. Figure 6.36 shows a nursery school sign composed of typefaces that certainly fit the subject. The words Child's Play are in a novelty typeface with the interesting name Rock A Billy. The remainder of the sign appears in an informal typeface called Comic Book. Both typefaces are available from Image Club.

Figure 6.37 shows an announcement for a nightclub. Five different typefaces are used. Because of the nature of the announcement, the use of each typeface is warranted. However, it must be emphasized that *most documents look better if they use no more than two separate typeface families—one for the text and possibly a second family for headings*. Resist the temptation to show off all of your typefaces at the same time! The result can be simply dreadful.

In Figure 6.37, the name of the club is displayed in a typeface named Paladin. The second line and the days of the week were printed with a typeface family called simply Sans Serif. The other typefaces used were Meath, Gatsby Demi, and Abilene—all from Casady & Greene and available in an inexpensive TrueType Starter Set package.

GRAND OPENING!

CHILD'S PLAY

NURSERY SCHOOL

The 400 Club

This Week's Parties

Tuesday:

Irish Night

Friday:

Roaring Twenties Night

Saturday:

WESTERN NIGHT

CONVERTING TYPEFACES

If you have PostScript typefaces in the Adobe Type 3 format and you'd like to convert them to the Adobe Type 1 format for use with Adobe Type Manager, you can do it. You can also convert all of your Type 1 or Type 3 typefaces to TrueType, to standardize on that technology. If you use high-end desktop publishing programs and perhaps work with professional service bureaus that require that documents for publication be submitted to them in PostScript format only, you can even convert your TrueType typefaces to Adobe Type 1.

All of these options and additional typeface editing and design features are provided by four conversion programs: FontMonger (from Ares Software Corporation), Altys Corporation's Metamorphosis, Letraset's FontStudio, and Image Club's Evolution.

Sharing Information

7

☞ FEATURING

- Setting up for networking
- Sharing a folder
- Using files on other Macintoshes
- Controlling access to files
- Using Apple File Exchange
- Creating Publishers and Subscribers

Before the introduction of System 7, you could use the Apple File Exchange utility on a Macintosh to transfer files to and from computers running under the MS-DOS operating system. Under System 7, you can still use Apple File Exchange for this purpose and even enhance its capabilities, as will be explained later in this chapter.

In addition, through the purchase of special software and hardware, it has long been possible to form networks between Macintoshes and also with computers using MS-DOS, UNIX, and other operating systems. Of course, you still have these networking options under System 7.

However, System 7 adds two exciting new capabilities. One is the new publish/subscribe technology, which lets you create a document in one application and then use all or part of the document in other documents—even in other applications and on other computers; the copies will be updated automatically every time the original document is changed. You'll learn about this feature here in Chapter 7 too.

The other major innovation is *built-in networking*. You can use the familiar AppleTalk cables (recently called LocalTalk cables) and System 7 to transform two or more Macintoshes into your own personal network. You don't need to buy anything extra.

NETWORKING THROUGH SYSTEM 7

If you use a printer in the LaserWriter family (except the Personal LaserWriter LS), the printer is connected to your Mac through LocalTalk cables. This means you already have a good start toward operating a network.

If you connect a second Mac to the same LaserWriter, both computers can easily share the printer; the operating system's PrintMonitor utility can manage the printing jobs so that each document is printed in its turn, from either source.

For years, thousands of small offices have been sharing a LaserWriter in this manner between several Macintoshes.

With only this hardware and cabling setup, and with System 7 running on all of the Macintoshes, *you can now share files and folders* between the Macs, complete with security precautions and password protection. You can even operate an application from your Macintosh that is stored on another computer. You can have your own LocalTalk network!

Add special AppleShare software, and you can dedicate one Mac as a file server—a repository for files to be used by the operators of dozens or even hundreds of other Macintoshes. Other AppleTalk options are the installation of Ethernet or Token Ring networks, both of which require that a special expansion card be inserted into each Macintosh on the network.

AppleShare, Ethernet, and Token Ring networks have sophisticated features that are usually managed by a network administrator or a company technical support staff. However, it's easy to connect to these networks and use them, following the same procedures outlined in this chapter for connecting to a LocalTalk network. The difference is that if you have a LaserWriter hooked up to two or more Macs through LocalTalk connectors, you can follow the steps presented here to set up and administer your own network right now. You won't need a dedicated file server either.

Setting Up Your Mac for a Network

You set up your Macintosh to connect to any kind of AppleTalk network through the Control Panels window. Three control panels are involved with networking: Sharing Setup, Users & Groups, and File Sharing Monitor. The icons for these control panels are shown in Figure 7.1.

Figure 7.1
The control panels used for networking

Sharing Setup   Users & Groups   File Sharing Monitor

Follow these steps to prepare your Mac for network use:

1. Pull down the Apple menu, and select Control Panels. The Control Panels window will appear.

2. Double-click the icon named Sharing Setup, to open this control panel, shown in Figure 7.2.

Figure 7.2
The Sharing Setup control panel
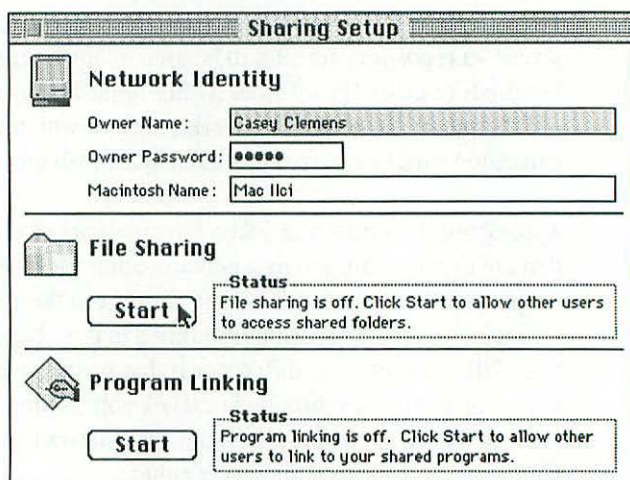
3. In the Network Identity section of the control panel, type an owner name in the Owner Name text box. Normally, since you're the individual entering this information, you will be considered the ''owner'' of your computer.

4. Press the Tab key to move down to the Owner Password text box. Enter any password you like here, up to eight characters in length. This box is case-sensitive; in other words, capital letters are considered different from lowercase characters. Select a password that will be easy for you to remember and hard for others to guess.

5. Press Tab to move down to the Macintosh Name text box. As soon as you leave the Owner Password text box, the characters

in the password you typed will be replaced by bullets—as a security measure.

6. Enter any name you like for the Macintosh Name. It doesn't need be the model name of your Macintosh. In a small office, where all of the Macintoshes may be sitting next to each other in one area, you and other users may find it convenient to use the model name—provided each of the Macintoshes is a different model and that all of the users know which is which. As an alternative, you could use simple designations such as Left-Hand, Middle, and Right-Hand. In a large company, you might want to enter the name of a department, such as Personnel.

7. To permit others to share files on your computer, click the Start button in the File Sharing section of the control panel. (However, you can access files on other network computers without allowing others to access your files.) Before this feature will function, you'll have to designate at least one file to be shared. (Sharing will be discussed shortly.)

8. If you want to permit Program Linking, click the Start button in the Program Linking section of the control panel. This feature allows the operators of other Macintoshes to establish links between their applications and applications you've designated for sharing on your Mac. (Applications that support linking display one or more link commands on their Edit menu.)

9. Click the close box when you're finished. The control panel will close.

10. Now double-click the Users & Groups control panel to open it and take a look at what's inside (Figure 7.3). You'll see that it contains icons representing just two users. One icon has your name on it and is surrounded by a heavy black line; this icon represents the owner of the computer. The only other access permitted to your computer at this point is for Guest. By default, this icon is set up so that anyone can log onto your computer as Guest and work with designated files (unless you've established passwords for certain files through applications installed on your Mac). You'll learn how to change this default later on.

Figure 7.3
The Users & Groups
control panel
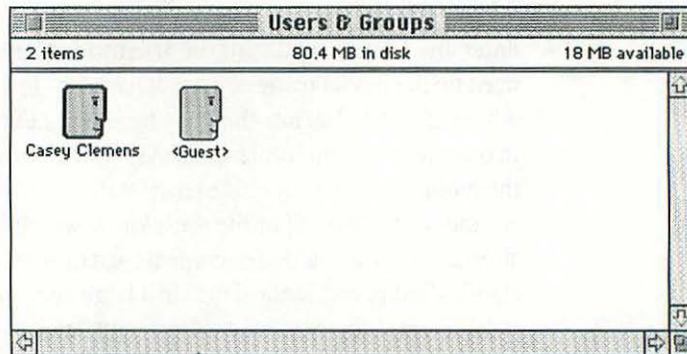
11. Click the Users & Groups close box to close the control panel,
then click the close box on the Control Panels window to close
that window as well. You've completed the basic sharing setup.

Sharing a Folder

Although System 7 refers to File Sharing, you don't actually designate individual files for sharing; you designate folders, hard disks (but not floppy disks), or CD-ROM drives. You can specify up to ten such items at a time; this limitation may sound restrictive; however, each of these items can contain as many folders and files as you like. Obviously, if your Mac has only one hard disk and you've chosen that disk for sharing, you've granted access to your entire system.

To designate a folder for sharing, you use the Sharing... command on the File menu. This command appears only when the Finder is active, rather than an application.

This is the procedure required to share a folder:

1. Select the folder you want to share.

2. Pull down the File menu, and select the Sharing... command (as shown in Figure 7.4). This command will be dimmed if you haven't selected a folder to share.

Figure 7.4

Issuing the Sharing... command for a selected folder
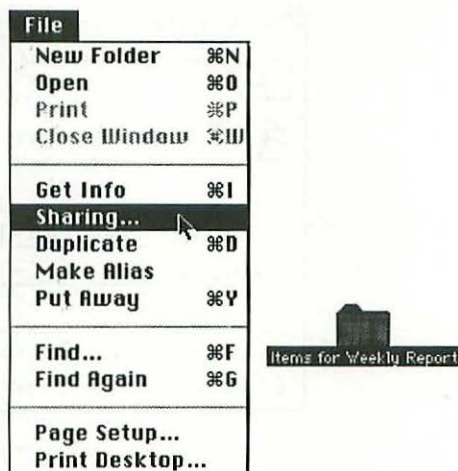
3. If you haven't activated File Sharing in the Sharing Setup control panel, you'll see the message displayed in Figure 7.5, indicating that you must first turn on File Sharing. If File Sharing has been activated, you'll see a sharing window for the item selected. Click the box labeled *Share this item and its contents* (see Figure 7.6). In this window, you can choose exactly the kind of access you want to allow for specific individuals and groups; we'll discuss these options later.

Figure 7.5

Alert message displayed if file sharing has not been activated
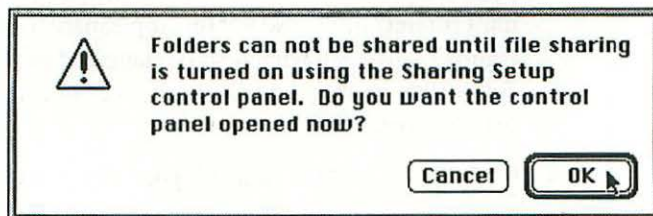
Figure 7.6
Clicking a box
to share the
selected folder
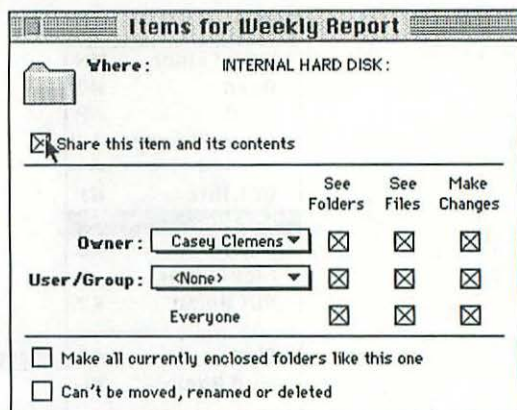
4. Click the close box. You'll see the dialog box shown in Figure 7.7, displaying a message asking if you want to "Save changes to access privileges" for the folder.

5. Click Save. The dialog box will disappear. Users of other computers on the network will now be able to share the contents of this folder with you.

Using Files on Other Network Macintoshes

Use this routine to access files on other Macintoshes on your network:

1. Pull down the Apple menu, and select the Chooser. The Chooser will open. You'll see the icons you've used for selecting a printer. You'll also see the AppleShare icon highlighted in Figure 7.8. If your Macintosh is connected to an Ethernet or Token Ring network, you'll see an additional icon representing that network.

2. Click the icon for the network you wish to access.

3. A list of available file servers (often merely other Macs) will appear in the box to the right. On a large network with assigned zones, you may first have to select the zone in which the file server or computer is located that you wish to access. If you're

Figure 7.7

Saving the access
privileges for
the folder

Save changes to access privileges for
"Items for Weekly Report"?

Don't Save   Cancel   Save
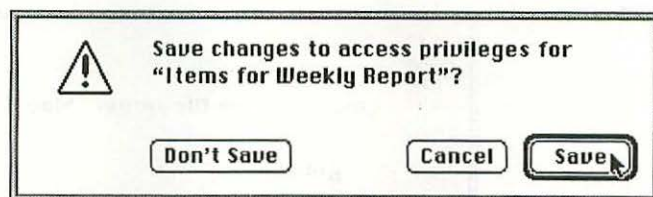
Figure 7.8

Logging on to
another computer

Chooser

AppleShare   AppleTalk...geWriter

ImageWriter   LaserWriter

LQ AppleT...geWriter   LQ ImageWriter

Personal ...Writer SC

Select a file server:

Mac IIfx
Mac IIsi

OK

AppleTalk   ● Active
                    ○ Inactive
                                   7.0
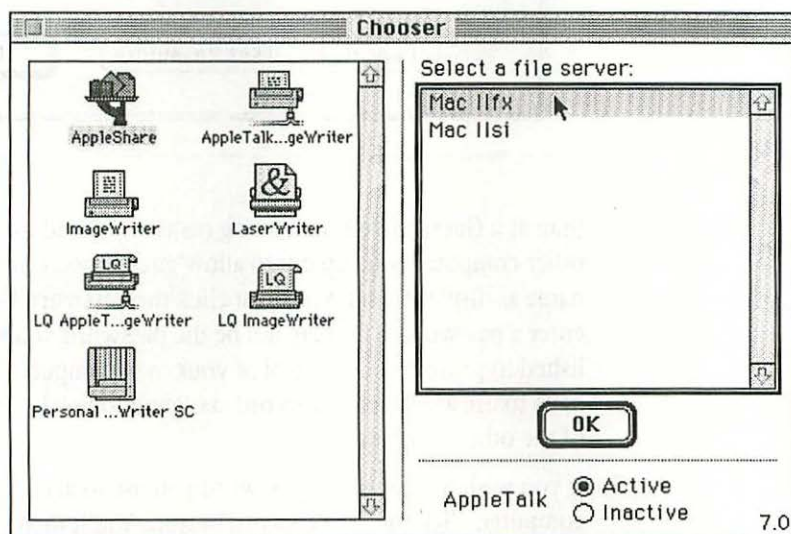
using a LocalTalk network (with no dedicated file server), each
of the other Macintoshes on the network will appear as file
servers, under the names their "owners" have assigned to
them. (Of course, if a computer has been turned off, its name
will not be on the list.) Click the name representing the Mac
with the files you want to access. You'll see the dialog box
shown in Figure 7.9.

4. In this dialog box, the default display will indicate that you
want to log onto the other computer as a Registered User, rather

```
Connect to the file server "Mac IIfx" as:

    ○ Guest
    ● Registered User

    Name:      [Casey Clemens          ]
    Password:  [        ] (Two-way Scrambled)

    [ Cancel ]    [ Set Password ]    [[ OK ]]
                                            v7.0
```
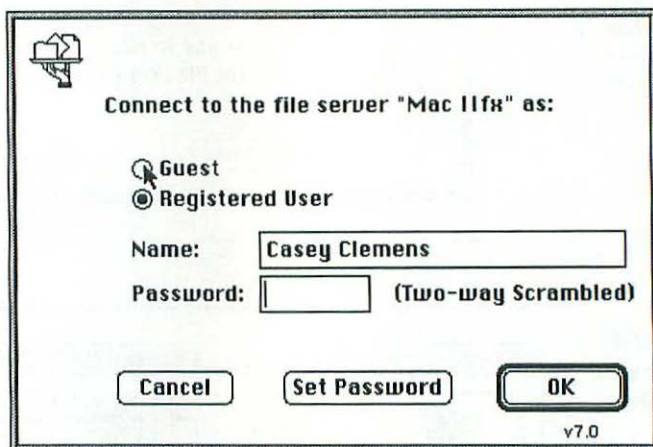
than as a Guest. If you wish to log on as registered user, or if the other computer is set up not to allow guests, you can use your name as displayed, but you must click the Password box and enter a password. This may not be the password you've established to protect your control of your own computer; you may have to use a different password, assigned to you by the owner of the other computer.

5. If you wish to change the password you use to access the other computer, click the Set Password button. You'll then be asked to type your current password, followed by the new password you want to use. You can change your password only if the owner of the host computer has set up file sharing so this action is permitted. (To the right of the Password text box, you'll see a few words in parentheses, indicating the type of encoding the host computer is using for passwords.)

6. If you wish to log on as a guest, select Guest (if the host permits this choice).

7. Click OK to obtain access. You'll see a dialog box listing the items that have been approved for sharing, as shown in Figure 7.10.

Figure 7.10
Selecting a folder
to use
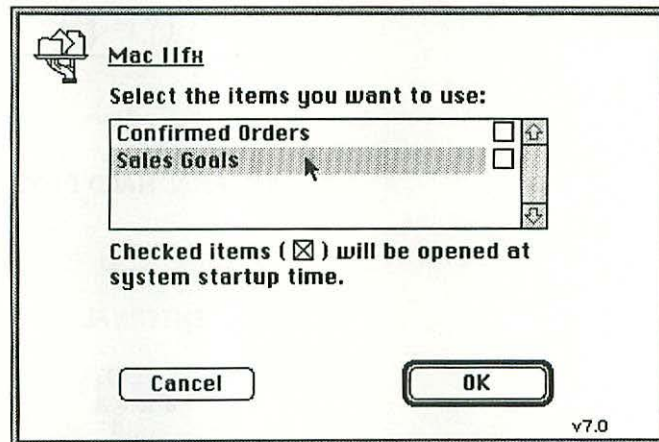
8. Highlight the items you want to use. You can select more than one item by holding down the Shift key as you click items. If you click the box to the right of an item, that item will automatically be available to you the next time you start your computer (unless the host computer is not turned on, of course).

9. Click OK when you've completed your selections. *Those selections will now appear as icons underneath the disk icons on your computer* (as shown in Figure 7.11).

10. Double-click one of these icons to open the item. A window will open, displaying the contents of the shared folder, disk, or CD-ROM drive (see Figure 7.12). You can use these files and folders just as if they were stored on your own computer (within the guidelines established by their owner). You can also drag icons onto your own desktop to copy them to your hard disk, unless the owner has prohibited this action. In the next section, you'll learn the ways in which an owner can control access.

11. When you've finished using a shared item, you can break the connection by simply dragging the icon for the item into the Trash. This action will in no way affect the integrity of the item itself, which will still be stored safely on the computer that

Figure 7.11
The selected folder
appears on the
desktop
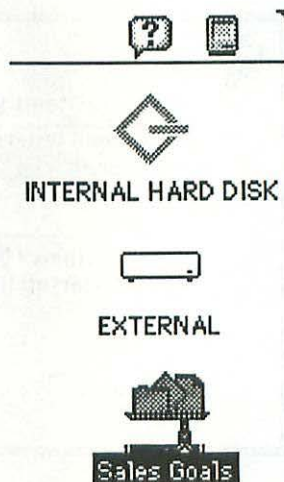
Figure 7.12
The contents of the
shared folder
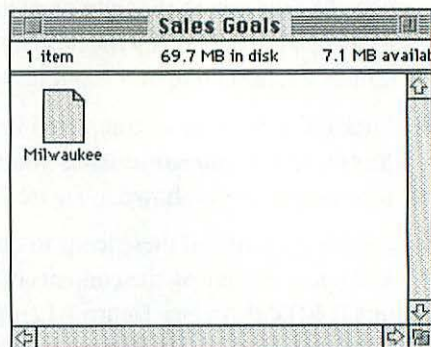
originated it. However, if you drag a file within a shared item into
the Trash, you'll delete the file on the host computer!
So be careful!

System 7 lets you share items from several different computers simultaneously,
if you so desire. Simply repeat the steps just described for each computer or file
server that is storing files you want to use.

Controlling Shared Access

You can use the Users & Groups control panel to allocate specific file access privileges to individual members or groups on your network.

You'll remember that this control panel contains, by default, only an icon for the owner of the computer and another for Guest, who could be anyone on the network. Obviously, with the default settings, the only security you have is the fact that an uninvited guest cannot share or open any folders, hard disks, or CD-ROM drives that you haven't designated for sharing. In addition, any guest would need a special password to open individual files you've protected through security features provided within particular programs.

As a first step toward increased security, you might want to add a password to the Guest icon. At the least this would mean that all guests would need to know that one password to gain access to your Macintosh. However, you can add a new user icon for each individual on the network to whom you wish to grant access to your files. You can establish separate passwords for each, and you can decide which access privileges each will have. Furthermore, you can create groups with certain privileges and decide to which of your groups an individual will belong. Finally, you can restrict the kind of access each individual user or group will have to each shared item.

Establishing Users and Groups

Here's how to establish new users and groups:

1. Pull down the Apple menu, and select Control Panels.

2. Double-click the Users & Groups control panel to open it. Two new commands will now appear on the Finder's File menu: New User and New Group.

3. To create another user icon, pull down the File menu and select New User (**Shortcut:** press ⌘-N). An icon will appear, bearing the temporary name New User. Like the other user icons, it will be in the form of a stylized human head in profile.

4. Type the user name you wish to assign to this icon, and click outside the icon to complete the entry.

5. To create a group, pull down the File menu and select New Group. An icon will appear, bearing the temporary name New Group. It will be in the form of two stylized human heads in profile.

6. Type the name you wish to assign to the group, and click outside the icon to complete the entry. Figure 7.13 shows the Users & Groups control panel for a Macintosh owned by Fred. The panel displays an icon for Fred, the usual Guest icon (which cannot be deleted or duplicated), and three other individual-user icons. In addition, the panel contains group icons for the Accounting and Sales departments.

Figure 7.13
A typical Users & Groups control panel
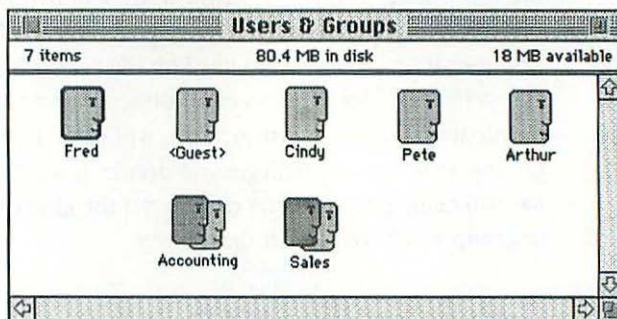
7. To make a user a member of a group, drag the user's icon to the group icon. A copy of the user icon will be stored inside the group icon, in the form of a photo hanging on a wall. Figure 7.14 shows what you might see if you double-clicked on the Sales group icon to open it; the icons indicate that Arthur and Pete have been made part of the group.

8. When you double-click on a user icon, you'll see specific restrictions and privileges pertaining to that user, which you can change at any time as the owner of your computer. As Figure 7.15 shows, you can permit the user to connect to your computer or withhold that privilege. Also, you can assign or change the password you want used, allow the user to change

Figure 7.14

The contents of a group icon
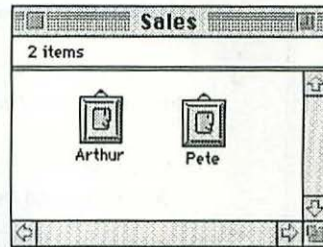
Figure 7.15

Opening a user icon to change privileges
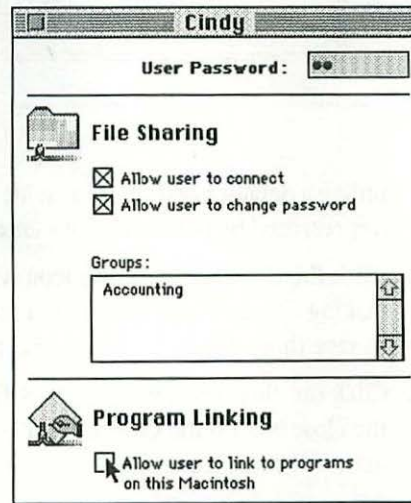
the password too if you wish, and allow the user to link to shared programs (discussed later in this chapter). Your owner's icon displays one option not provided for other user icons: *Allow user to see entire disk*; if this option plus *Allow user to connect* are both selected (as they are by default), you as the owner can access the entire contents of your own Macintosh system from any other computer in the network. Figure 7.16 shows a typical log-on situation for a registered user, who,

Connect to the file server "Sales Dept." as:

○ Guest
◉ Registered User

Name: Cindy

Password: ●●   (Two-way Scrambled)

[Cancel]   [Set Password]   [OK]

v7.0
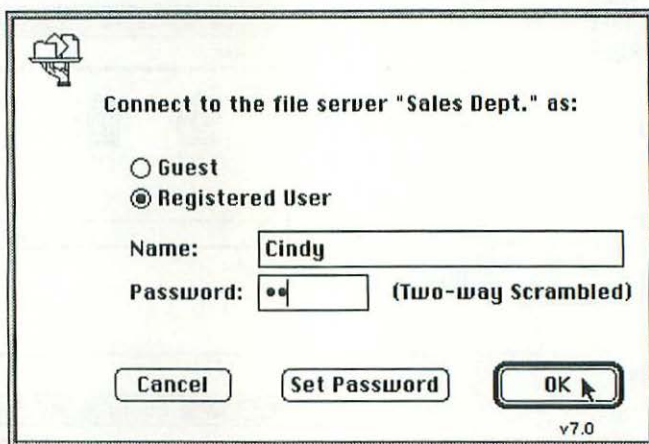
unlike a default guest, must provide an assigned password
(represented by bullets after it's entered).

9. Click the close box on a user icon when you've completed
   making changes. You'll then see a message asking if you want
   to save those changes; click the Save button.

10. Click the close box on the Users & Groups control panel, then
    the close box on the Control Panels windows, to close those
    items too and return to the desktop.

If you will frequently be making changes relating to user access on your net-
work, you may want to create an alias for the Users & Groups control panel
and drag the alias into the Apple Menu Items subfolder within the System
folder. Then you can access that control panel very conveniently at any time
from anywhere in your Macintosh system.

Also for convenience, you may want to create an alias of the File Sharing Con-
trol Panel, described in the following section.

Monitoring Shared Usage

If you can't remember which of the folders on your Macintosh you decided to share on the network, you can refresh your memory quickly by glancing at folder icons; the icons for shared folders have a different appearance. In Figure 7.17, the icon on the left represents a folder designated for sharing; the icon on the right is for a folder that is not shared. On a shared folder, the top of the tab will display a wide black horizontal line; this line indicates that you own the folder. (See Changing Ownership of Shared Items later in this chapter.) If a folder is both designated for sharing and is currently being shared by the operators of one or more other computers on the network, the center of the folder will display the two heads in profile also associated with group icons (see Figure 7.18).

Figure 7.17
Standard and shared
folders compared

Items to Reorder   Shrinkage

Figure 7.18
The appearance of
a shared folder during
network access

Items to Reorder

You can use the control panel called File Sharing Monitor for a running summary of sharing information. As shown in Figure 7.19, this control panel supplies you with a list of items currently shared and with a list of connected users. In addition, a horizontal bar at the bottom of the panel shows the relative sharing activity in progress, ranging from Idle to Busy. The bar often reports an Idle status; others on the network may be connected to your computer—meaning that icons for some of your shared files are now sitting on their desktops—but they may not be using those files at the time you open the File Sharing Monitor.

Figure 7.19
The File Sharing
Monitor
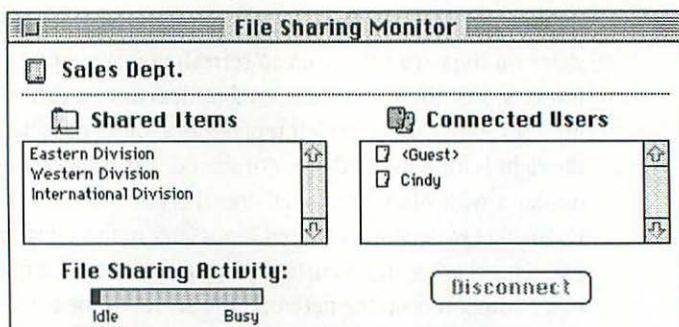
Handling Security Problems

There are several ways in which security problems can be handled quickly and efficiently. For example, if you notice that a user is engaging in questionable activities while sharing your files, you can terminate that user's privileges instantly. As Figure 7.20 demonstrates, you can simply highlight the user's name and click the Disconnect button.

You can follow up this action by opening the icon for the user and changing the privileges to deny all access. If a user tries to log onto your computer as a guest when no guests are permitted, or tries to log on with an unapproved user name, that individual will see the warning message shown in Figure 7.21.

Figure 7.20
Disconnecting a user
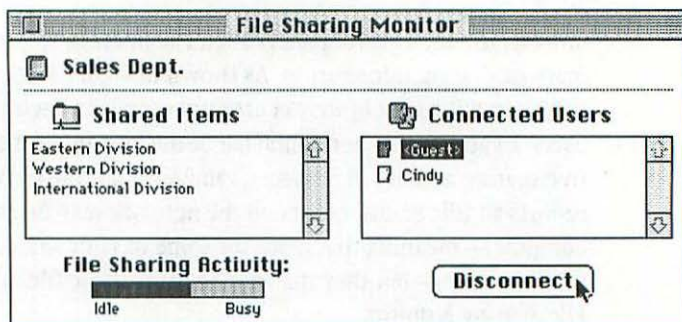
Figure 7.21
Message seen by an
unauthorized user

> **Unknown user or log on is disabled.**
> **Please retype the name or contact the**
> **server's administrator.**
>
> OK ▸
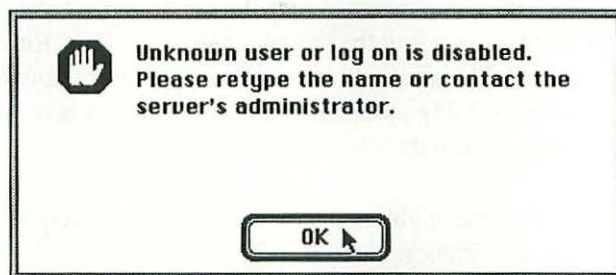
Remember that you can be very specific in your access authorizations for any shared item (folder, hard disk, or CD-ROM drive). Through the Sharing dialog box for the item, you can assign different privileges to various individual users and groups.

Figure 7.22 shows how a payroll folder can be set up to allow company departments to turn in their payroll information to the accounting department (headed by Cindy) without being able to see or read the payroll files deposited in the same folder by other departments. The secret is simply to click the appropriate boxes to prevent users from seeing *files*. (They must be able to see *folders* or else they wouldn't see the payroll folder itself.) With this access

Figure 7.22
Setting up a shared
folder to hide files

```
▦▦▦▦▦▦▦▦▦▦▦ Payroll ▦▦▦▦▦▦▦▦▦▦▦
   ┌──┐  Where:        Hard Disk:
   │  │
   └──┘

☒ Share this item and its contents

                              See      See     Make
                            Folders   Files   Changes

   Owner:  │ Cindy      ▼│    ☒        ☒        ☒
User/Group: │ <None>     ▼│    ☒        ☐        ☒
            Everyone           ☒        ☐        ☒

☒ Make all currently enclosed folders like this one
☒ Can't be moved, renamed or deleted
```
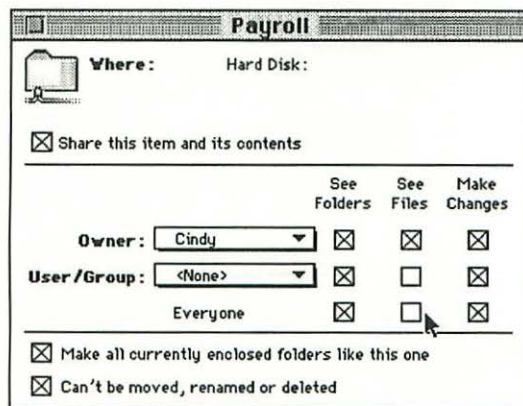
configuration, they can select the payroll folder from the accounting department's computer, then drag the file or folder containing their own payroll information into the shared folder at any time. However, if they choose to *open* that folder, they will see only an apparently empty folder containing "0 items" (Figure 7.23), despite the fact that the folder may actually contain dozens or even hundreds of payroll files.

Of course, if you're the owner of the folder in question, you would reserve full access privileges for yourself.

System 7 provides an even better way of allowing users only to insert files or folders into a folder. You set up what is known as a *drop folder*, a folder established only to serve as a depository for information. Create a folder within a shared folder. Deny users the right to see files *and* folders. In this case, the folder will appear inside the shared folder with a strap around it and an arrow above it, indicating that it must be used as a drop folder (see Figure 7.24).

Figure 7.23

The Payroll folder shown as empty, regardless of how many files it may contain

Payroll
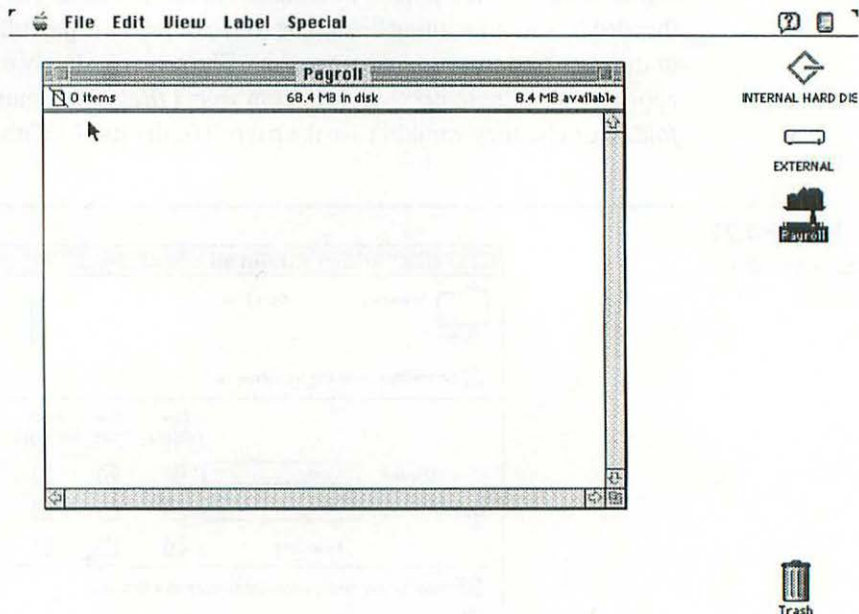
If a user has been granted the right to see folders, but has not been permitted any personal access to a particular folder within a shared folder (not even to use it as a drop folder), the user will see the restricted folder encircled with a strap but not surmounted by an arrow.

Please note: If you deny users the privilege of making changes to a particular folder, you have not protected the files within the folder. Although users could not then change the folder itself, they could—for example—drag any or all of the files out of the folder and into the Trash, thereby destroying them on the host computer as well. They might take this action in all innocence, believing that they were merely terminating a network connection.

So—to protect files from this disaster, click the bottom option box in the dialog box for the item: *Can't be moved, renamed or deleted.*

If you don't want a user to make changes in files either (to be allowed only to read them), click the *Make Changes* box to deselect it.

Changing Ownership of Shared Items

Normally, you will see all shared folders on your own computer displayed with a black edge running along the top of the tab for the folder (see Figure 7.17); as previously mentioned, this symbol indicates that you own the folder. However, you can give up the ownership of any folder or disk in your system. You might want to do this because someone else has assumed responsibility for the materials in the folder or on the disk, or because you have unused storage space that you want to make available on a secure basis to others on the network. Here's how to relinquish ownership of an item:

1. Select the shared folder or disk.

2. Pull down the File menu, and select Sharing . . . .

3. From the Owner pop-up menu, select the name of an individual user or group. If you want everyone on the network to share ownership jointly, select <Any User>.

4. Click the close box, then click Save in the dialog box that appears asking if you want to save changes. A second dialog box will appear, asking you to confirm that you want to change ownership.

5. Click OK to complete the change of ownership. The dialog box will close. If the item is a folder, the black edge will disappear from the top of its tab.

Caution! Don't forget to remove your personal files from a folder before turning over ownership to someone else who will have the authority to limit future access.

Handling Shutdown on a Network

You're probably accustomed to shutting down your Macintosh when you've finished working on it for the day, giving no thought to the procedure other than making sure that you've saved any files you've been using. In fact, you don't have to give much thought to saving files either—because most applications will warn you if you haven't saved changes.

Other considerations enter the picture when you're connected to a network— particularly a LocalTalk network running under System 7 with no dedicated file server. This configuration means, as you've learned already, that any Macintosh on the network can serve as a file server; all that is required is for the operator of the computer to decide to share some of its files.

If you suddenly decide to shut down, without notice, a Mac containing shared files, or if you experience a power failure, the other computers on the network will display a warning that this server has shut down. Of course, this warning will provide little comfort to a network member who was using one of the files, which will no longer be available unless it was copied to the guest's hard disk. Changes already saved will be stored on the owner's hard disk, but changes not saved will be lost.

Of course, you want to avoid sudden, unannounced shutdowns.

If you decide to terminate a user's access privileges while the user is connected to your computer (a decision probably made only because of a discovered security problem), that user will see a special message saying that "The file server's connection has unexpectedly closed down." Note that the message does not say that the server has shut down; it says a connection has *closed down*. Figure 7.25 shows this message displayed on the screen of a Mac that was using the Payroll file on the Accounting file server (or computer) when access privileges were revoked.

If you decide to shut down your Macintosh while others are using your files, you will see the message shown in Figure 7.26, reminding you that file sharing is in progress and asking you how much warning you want to provide before the shutdown takes place. The default period of time allowed before shutdown is 10 minutes, so that users can finish their current work and save their files.

Figure 7.25

The message seen by a user whose access privileges have been revoked while sharing items stored on another computer
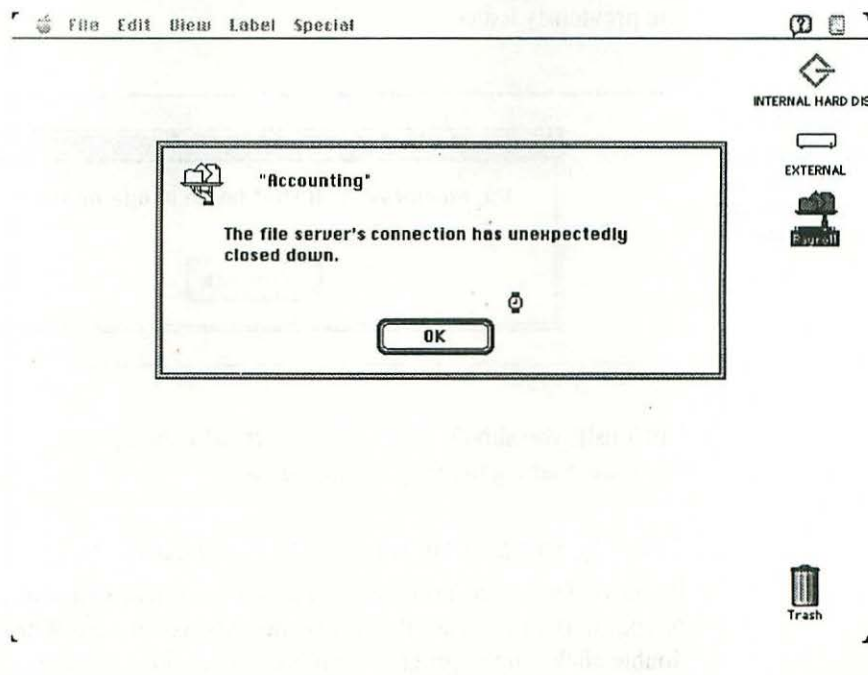
> There are people connected to
> this Macintosh, how many
> minutes until they are
> disconnected?
>
> **10**
>
> Cancel   OK
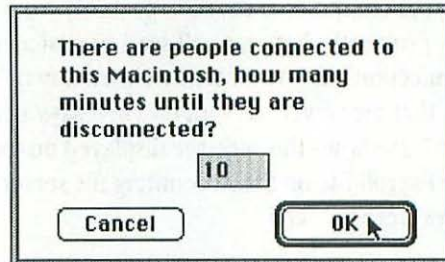
As soon as you've entered the amount of warning time you want to permit, all users on the network will see a message informing them that you're going to shut down and telling them how much connect time they have left. You, the owner, will see a reminder like the one shown in Figure 7.27, indicating that your Macintosh is about to shut down automatically—because of the command you previously issued.

> The Macintosh will Shut Down in one minute.
>
> Cancel
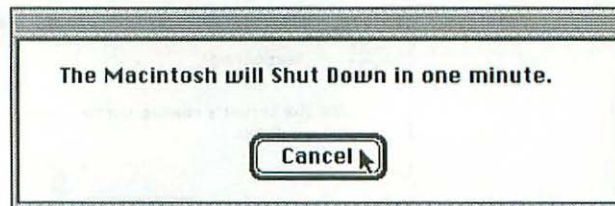
Obviously, you should make every effort to be thoughtful and give other users adequate warning before you shut down.

Sharing Programs with other Computers

If you've designated a folder for sharing that contains an application, a member of your network can use that application just as you can. When a member double-clicks on the program icon inside the folder, the application will load just as if it were installed on the member's own computer. The only difference is that the program will probably load and operate more slowly.

Figure 7.28 shows a network access dialog box for a Macintosh named Warehouse; the name was chosen because the computer is located in the office at the company's warehouse. You'll note that the dialog box lists shared items that you might expect from a warehouse computer, such as files named Items to Reorder and Out of Stock. However, Aldus PageMaker and Microsoft Word are also listed as shared items. Although a warehouse office might use Microsoft Word to create reports and correspondence, not many warehouse operations would be involved in the desktop publishing operations for which PageMaker is normally used. Nevertheless, the warehouse might have a large hard disk—bought with future expansion in mind; the company could store programs such as PageMaker on this computer to alleviate shortages of storage space on other Macintoshes in the network.
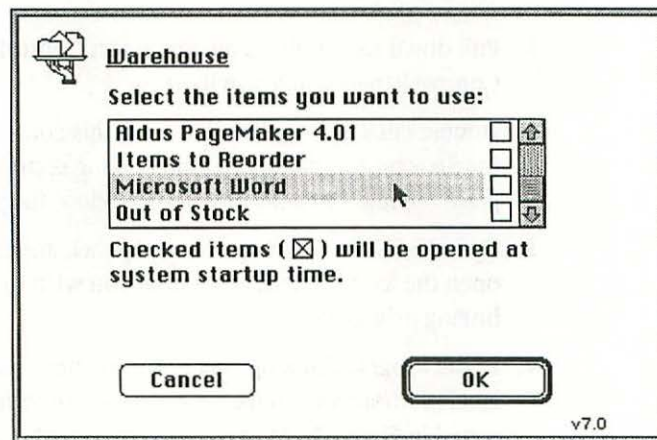
Figure 7.29 shows a network computer with the icon for a folder containing Microsoft Word displayed under the icon for this Mac's hard disk. The user can double-click the icon for this folder stored on another computer to open the folder, then use the application and its files as if they were on the individual's own hard disk.

Some programs have the capability to *link* to other programs so they can exchange data and otherwise interact. You can permit the linking of your

Figure 7.29
The application
folder ready for use on
another computer
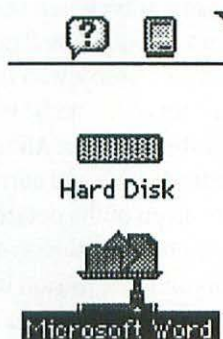
shared programs by taking the following steps:

1. Pull down the Apple menu, and select Control Panels. The Control Panels window will open.

2. Double-click Sharing Setup to open this control panel, and click the Start button in the Program Linking section to permit program linking. Click the close box to close the panel.

3. Open the Users & Groups control panel, and double-click to open the icon for a user to whom you wish to extend program linking privileges.

4. In the Program Linking area of the opened icon, click the box labeled *Allow user to link to programs on this Macintosh* (illustrated in Figure 7.15), then click the close boxes to close the icon, the control panel, and the Control Panels window.

5. Select the *program icon* for a shared application (an application in a folder you've designated for sharing), then pull down the File menu and select Sharing.... A small Sharing dialog box will open.

6. The box marked *Allow remote program linking* is selected by default for applications that support linking. If this box is not already selected, click it to select it, then click the close box. Network users can now link your application to their applications that support linking.

USING APPLE FILE EXCHANGE

You've found that System 7 will let you exchange files between computers, using its built-in networking capabilities. With Apple File Exchange—a utility provided with System 7—you can also exchange files on disk with computers running under the MS-DOS operating system and even initialize floppy disks in the MS-DOS format. Moreover, with added translator files, you can convert files to and from many different application formats—both Mac and IBM. However, to use this utility, you must have a SuperDrive—a floppy drive that can use high density 3.5-inch disks.

Apple File Exchange is provided in a folder with that name which is stored on the Install 2 installation disk (if you have the standard eight-disk version of System 7). The utility is not transferred to your hard disk by the Installer during the standard installation of the system software. To use Apple File Exchange, you'll have to copy it yourself, by dragging the folder from its floppy to your hard disk.

You open Apple File Exchange as you would any other program: double-click its folder to open it, then double-click its program icon.

You'll see a window much like that shown in Figure 7.30. Of course, you may have one or more hard disks with different names; and you certainly will have some folders installed with names different from those shown in the left-hand list box.

Once the window has been opened, you can insert a disk into your floppy drive that has been formatted for MS-DOS, and it will be recognized as such. The window display will change to show the name of the inserted disk (if it has been named) and will add two more menus: Mac to MS-DOS and MS-DOS to Mac (see Figure 7.31). These menus contain the conversions that are currently available (meaning that translator files have been installed for them).

Apple File Exchange has a built-in capability to translate files between System 7 and MS-DOS disks in two default formats: a text format for text files and a binary format for all other files. In addition, a single translator file is provided that will translate between DCA-RFT (Document Content Architecture/Revisable Form Text) and MacWrite. Third-party vendors supply many other

Figure 7.30
The Apple File
Exchange window
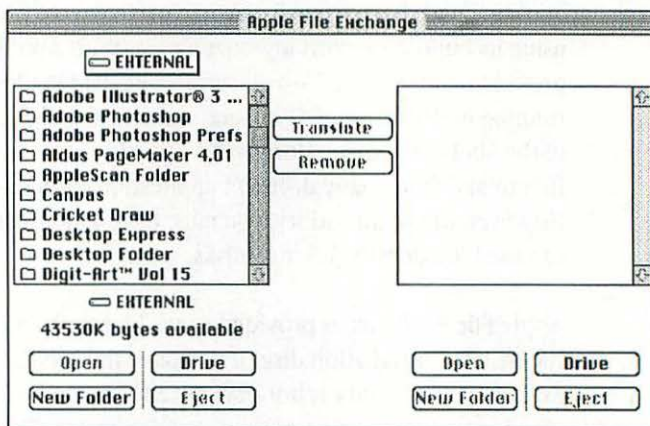
Figure 7.31
The same window
after inserting
a floppy formatted
for MS-DOS
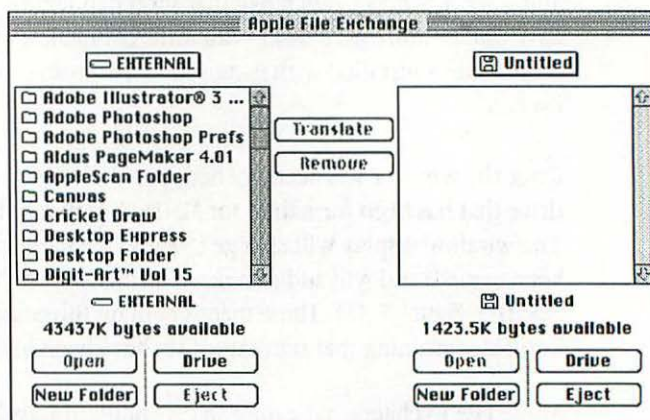
translator files, and some applications include a translator utility or can save files in an MS-DOS format.

One of the best sources for translator files is Software Bridge, a utility from Systems Compatibility Corporation and available in both IBM and Macintosh versions. The Macintosh version provides translator files that will convert documents between several Macintosh formats such as Microsoft Word and WordPerfect/Macintosh to MS-DOS formats such as various versions of Word-Star, Word, WordPerfect, and MultiMate. Once you complete a conversion using one of these translators within Apple File Exchange, you can take the MS-DOS formatted disk and load its translated files directly into the IBM application for which they were made.

Figure 7.32 shows the Installer program for Software Bridge in action. It allows you to select only the translators you need—and to add more at any time. If you install all of the 400 possible pairings, you'll need a full 1.7 megabytes of disk space.

Figure 7.32
The Software Bridge
file translation utility
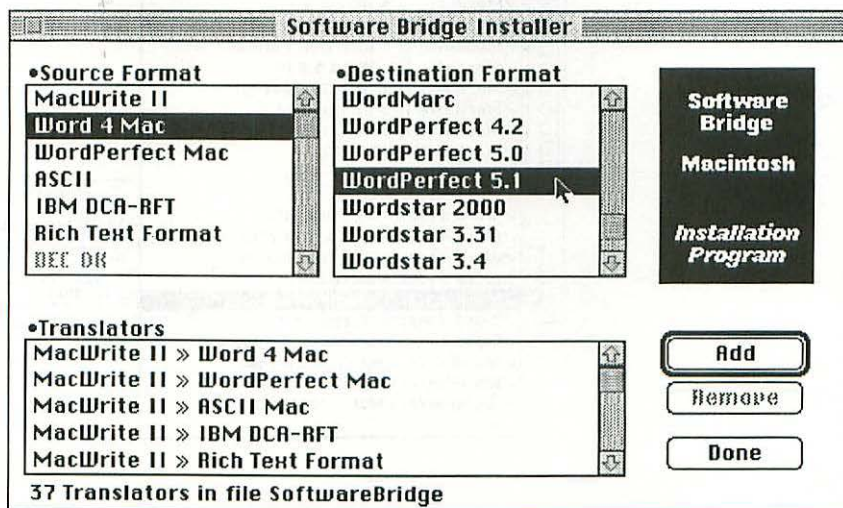
Figure 7.33 shows the appearance of the Apple File Exchange Mac to MS-DOS menu when many translators have been installed. A checkmark precedes each active translator.

Apple File Exchange has several features that are not immediately obvious. For example, there is a user log; you'll be directed to this log if a translation problem develops, and you can access the log at any time by selecting the Show User Log command from the utility's File menu. Figure 7.34 shows a typical message seen when translation was not possible. In this case, the translator file did not support Microsoft Word's Fast Save feature; resaving the Word document with the Save As... command corrects the problem. The user log is deleted when you exit Apple File Exchange unless you first save it under another name.

Figure 7.33

Selecting a conversion from an Apple File Exchange menu
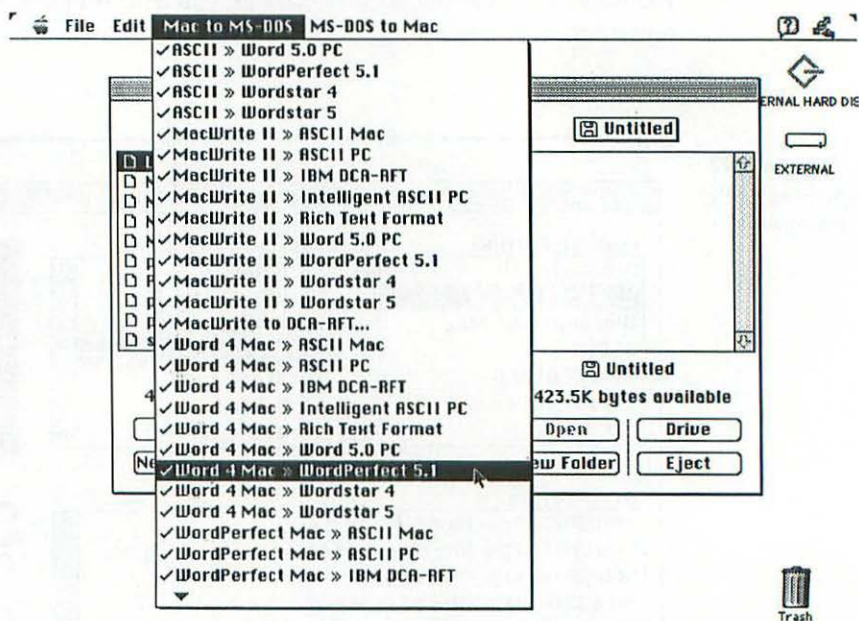
Figure 7.34

The Apple File
Exchange User Log
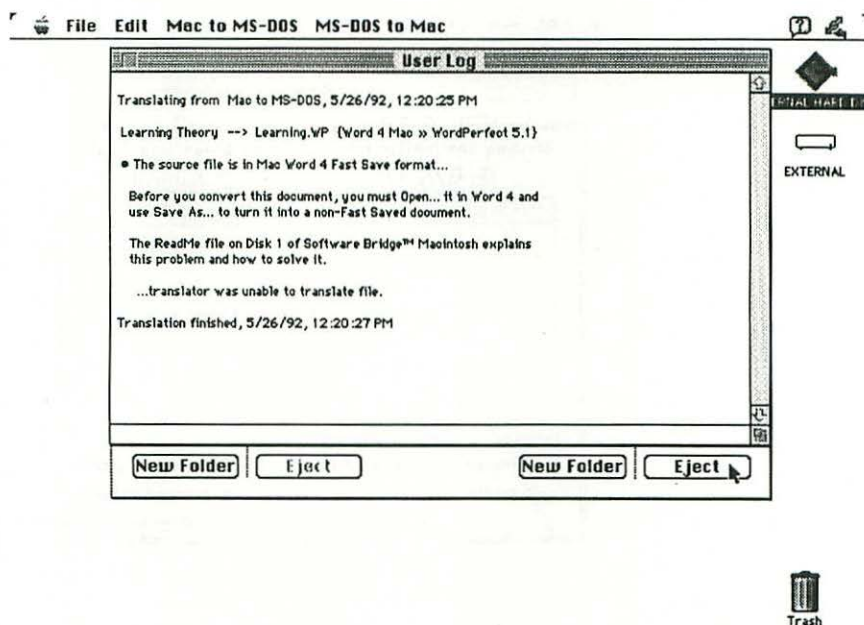
Another File menu option permits the renaming of destination files (the files to be created during the translation). When you don't exercise this option, Apple File Exchange creates a standard MS-DOS filename of eight characters plus a two- or three-letter extension that reflects the new file format. As Figure 7.35 illustrates, this extension is WP for WordPerfect files. Since System 7 permits much longer filenames, Apple File Exchange would translate both *Book Chapter 1* and *Book Chapter 2* into an MS-DOS WordStar format as BOOKCHAP.WS. Obviously, this default procedure for translating names would indicate that you should provide new names such as BKCHAP01.WS and BKCHAP02.WS if you want to tell these two files apart or prevent one from overwriting the other.

Fortunately, no naming confusion should result from the example shown in Figure 7.35: the automatic translation of the Mac name Learning Theory into the MS-DOS name LEARNING.WP.

Figure 7.35
You can rename
destination files
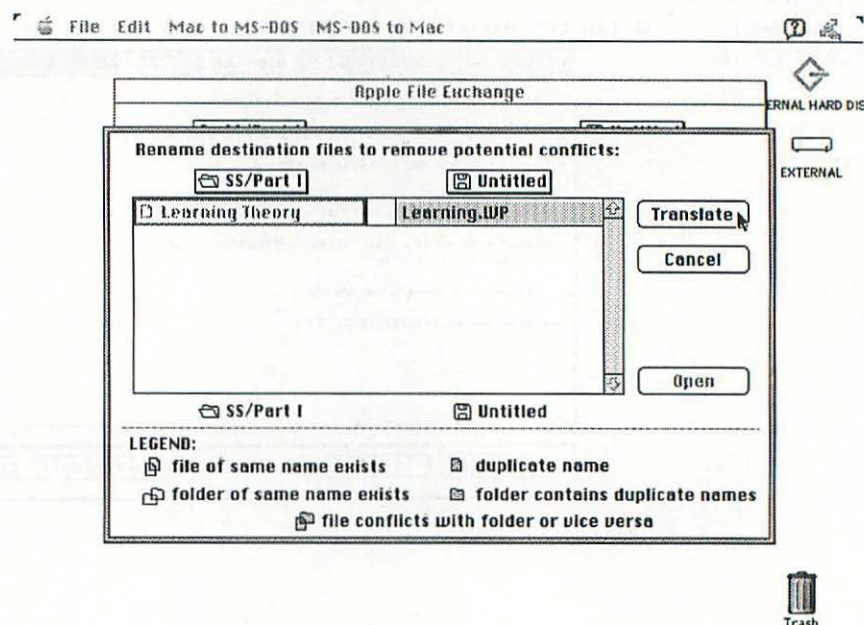
Figure 7.36 shows the appearance of the Apple File Exchange window after a file
has been successfully translated into an MS-DOS format. The next step would be to
click the Eject button to eject the MS-DOS disk from the Macintosh.

Incidentally, if you activate Apple File Exchange and then insert an unformatted
floppy, you will be given the opportunity to have it formatted either as a Macin-
tosh or MS-DOS disk. However, please note that if you insert a formatted MS-
DOS floppy into your Mac at any time when Apple File Exchange is not open,
the disk will be recognized only as "not a Macintosh disk." You'll be asked if
you want to initialize the disk—which, of course, would mean reformatting it
as a Macintosh disk. You would lose any files stored on the disk. If you acciden-
tally run into this situation, be sure you click the Eject button instead of Initialize!

Figure 7.36
The Apple File
Exchange window
after translating a file
to MS-DOS format
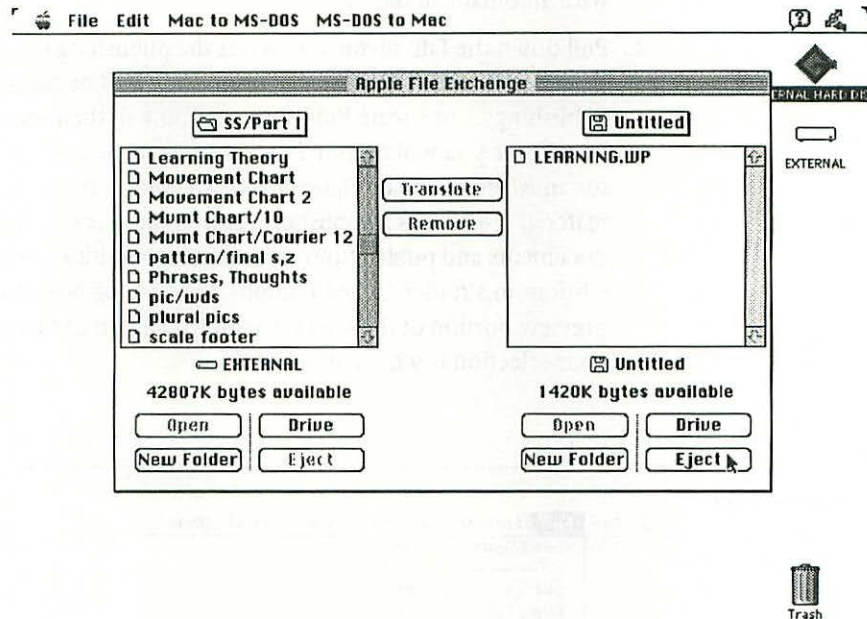
USING SYSTEM 7'S NEW PUBLISH/SUBSCRIBE FEATURE

As indicated at the beginning of this chapter, you can designate all or part of a System 7 document as a "publication," to which other documents or applications can "subscribe." Many major applications now support this new feature of the system software. (Programs that do provide support display an Edit menu option with a name relating to publishing.)

The concept is simple but powerful. These are the steps to follow in creating and/or subscribing to a publication:

1. Select all or a portion of a document from which you want to create a *publisher*. A publisher is any material in a document

that you want to designate for inclusion in other documents, with automatic updating.

2. Pull down the Edit menu, and select the publishing option, as shown in Figure 7.37. (Usually, this option will be named either Publishing... or Create Publisher....) You will then see a dialog box where you will be asked to provide a name and a location for an *edition* file (see Figure 7.38). An edition is the file where material selected as a publisher is stored for access by other documents and publications. It's often a good idea to store editions in a folder named Editions. (The dialog box shows a preview portion of the selected material so you can be sure your selection is what you wanted.)

Figure 7.37

Selecting material to publish
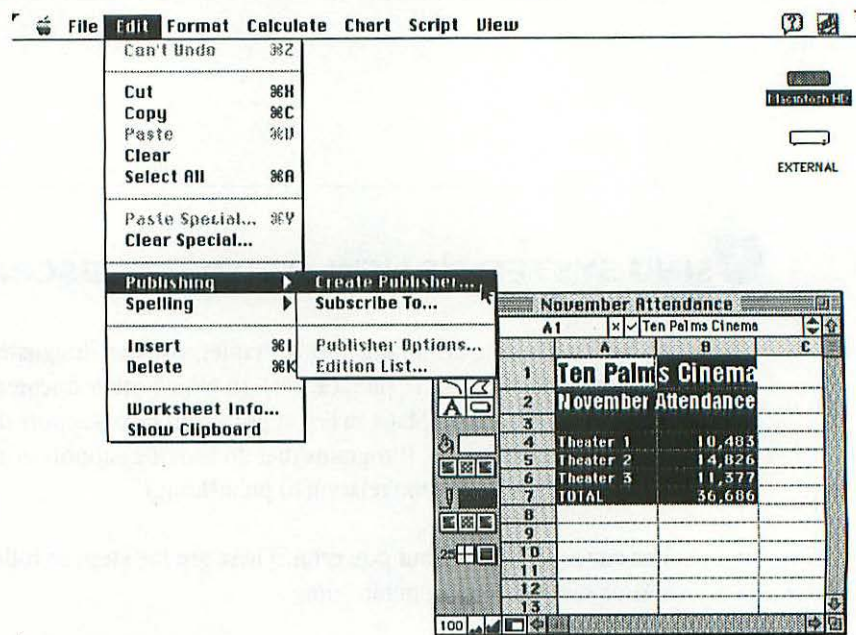
Figure 7.38

Naming an edition


```
         Preview                [folder] Editions ▼          [disk] Macintosh HD

                                                    [⇑]          [ Eject   ]
    Ten Palms Cinema
    November Attendance                                          [ Desktop ]

    Theater 1  10,483                                           [ New 📁   ]
    Theater 2  14,826
    Theater 3  11,377                                  [⇓]
    TOTAL  36,686
                             Name of new edition:             [ Cancel  ]

                             Monthly Attendance|              (( Publish ▶ ))
```
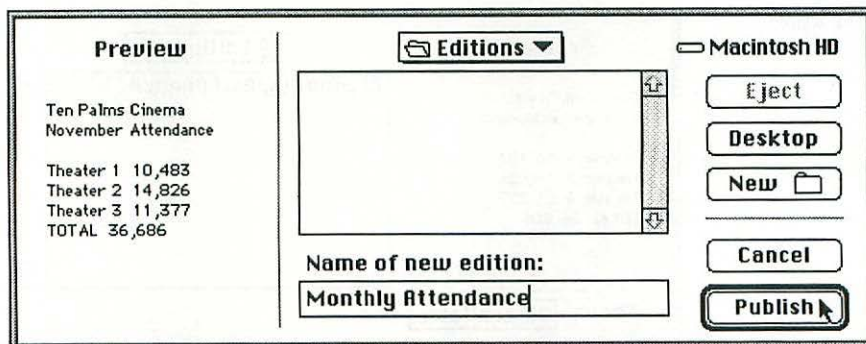
3. Specify the storage location and name for your edition and click
   the Publish button. The edition will be created, and the dialog
   box will close.

4. To use the edition in another document or application, select an
   insertion point for the material, then pull down the Edit menu and
   select the Subscribe... command. (The name of the command may
   vary, and it may be located on a submenu under the name Publish-
   ing....) You'll see the dialog box shown in Figure 7.39.

5. Highlight the name of the edition to which you want to sub-
   scribe, and click the Subscribe button. The published material
   will appear in the new document. (This dialog box also has a
   Preview area at the left, where you can see the contents of the
   edition and verify that you've chosen the correct file.)

Changes to an edition can be made only by changing the document containing
the publisher. By default, changing the publisher will, in turn, change the edi-
tion. When a subscriber document is opened, it's updated automatically from
the edition file. You don't have to open the edition in order for this revision to
take place.

Figure 7.39

Subscribing to an edition
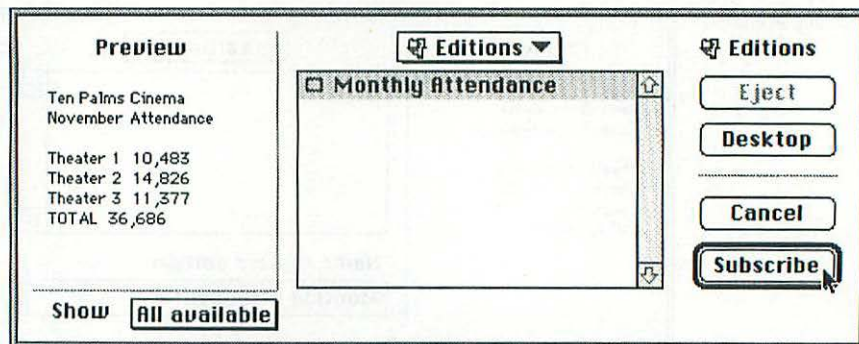
If you want to have editions updated manually instead of automatically, you can change the default procedure from within the document containing the publisher, through an Edit menu option called Publisher Options.

Users of other computers on your network can subscribe to your publications. All you have to do is designate your Editions folder for sharing. Then, when the subscribers log onto your computer and pick the Editions folder, they will probably want to click the box beside the name so that the folder will automatically appear on their desktops thereafter when they turn on their computers. As soon as they open a document that subscribes to an edition in the folder, that document will be updated.

SEEING AND CONTROLLING OTHER MAC SCREENS

Using LocalTalk or another Macintosh network, you can control several other Macs simultaneously, monitoring the contents of their screens in separate windows on your own Mac. For example, you can view and discuss 24-bit graphic designs displayed on the screens of competing Macintosh computer artists— seeing the designs on your own Macintosh, supervising modifications in real time, and selecting the design you prefer—without ever leaving your own

office. You can transfer any text or graphic across the network as if it were a giant clipboard, without requiring that network users have the applications in which the items were created.

All you need to perform these feats of magic is to purchase a copy of Farallon Computing's Timbuktu for each Macintosh involved. This utility also works across telephone lines, letting you operate a Mac hundreds or thousands of miles away as if you were sitting in front of it. Timbuktu is a standard utility that is commonly used in the technical support departments of many corporations. Starting with version 4.0, it is completely compatible with System 7.

Using Sound under System 7

FEATURING

- Recording and playing sounds
- Adding sound recording to your Mac
- Using sound in HyperCard
- Editing sounds
- Using sound in applications
- Using sound in QuickTime
- Adding sound to Macintosh functions

Apple now places a strong emphasis on the use of sound. Of course, the Macintosh has always been able to reproduce sound—whether it be voice, music, or sound effects. However, user-recorded sound has suddenly been thrust into the limelight. For example, the Mac LC and IIsi computers were introduced with a built-in recording capability, and a microphone is shipped with each unit. The version of HyperCard included with System 7 supports both sound recording and editing, and the operating system makes it easy for application developers to permit the attaching of sound notes to spreadsheet and word-processing documents.

Fortunately, you don't have to buy a new Macintosh to be able to record sound. Inexpensive accessories can make any Mac a miniature recording studio.

Even without a recording capability, you can obtain prerecorded sounds at little or no cost from sources such as computer bulletin boards, edit these sounds, and incorporate them into your system.

USING THE MACINTOSH'S SOUND FACILITIES

Can your Macintosh record sound now? There's an easy way to tell:

1. Select Control Panels from the Apple menu.

2. Double-click on the icon for the Sound control panel (shown in Figure 8.1). The panel will open.

Figure 8.1
The icon for the
Sound control panel

Sound

3. Note the contents of the panel. Figure 8.2 shows the Sound control panel for a Mac IIsi.

If your Macintosh is not set up to record sound, this control panel will display only the volume control bar and a list of sounds from which you can choose the alert sound you want for your system. (The alert sound is used by the system software and by applications to attract your attention.)

Figure 8.2

The Sound control panel for a Mac IIsi

Operate the panel like this:

1. Drag the handle on the volume control to change the volume of your Mac's speaker system.

2. Click on the name of a sound to select it as your alert sound; when you click a sound, you'll hear a sample.

3. Click the close box to make your choice take effect.

If your Mac can record sound, the Sound control panel will contain the additional elements shown in Figure 8.2. It will display buttons labeled Add... and Remove, plus an Options... button that will be dimmed (not available for use) if the installed sound recording hardware and software provide no options.

Below the buttons you'll see an area named Microphones that will show an icon for each microphone installed. The Mac LC and IIsi display a microphone icon labeled *Built-in*. Some Mac owners install two microphones so they can record in stereo.

Recording and Playing Sounds

Here is the process involved in recording and playing sounds through the Sound control panel:

1. If you have more than one microphone, click the icon for the one you want to use.

2. Click the Add... button. The Record dialog box will open (shown in Figure 8.3).
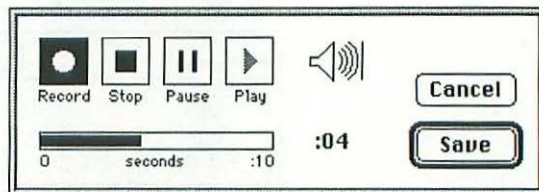
3. Test the level for the sound you want to record. Using a built-in microphone, you can change the volume only by adjusting the sound itself (example: speaking louder or more softly) or by moving the sound closer to the microphone or further away. Some other microphones and recording devices have volume control knobs. You can judge the correctness of the sound level by watching the simulated sound waves emitted from the small loudspeaker icon in the dialog box. When the sound waves strike a vertical line (as demonstrated in Figure 8.3), the sound is too loud and will probably record with some distortion.

4. When you're satisfied with the sound level, click the Record button to begin recording. You have a maximum of ten seconds to complete the recording; a horizontal bar at the bottom of the

dialog box and a readout in seconds will indicate the elapsed time since recording started.

5. Click the Stop button to stop recording.

6. Click the Pause button to pause temporarily while recording.

7. Click the Play button to listen to a completed recording.

8. Click the Cancel button to close the dialog box without saving the sound.

9. Click the Save button to save the sound. You'll be prompted to provide a name.

10. Name the sound (see Figure 8.4), then click OK. The Record dialog box will close, and the new sound will appear in the list of alert sounds in the Sound control panel.

11. Select the new sound as your alert sound if you like, adjust the volume if necessary, then click the close box to close the control panel. You'll return to the Control Panels window.

12. Click the close box in the window to return to the desktop.

Figure 8.4
Saving a recorded sound
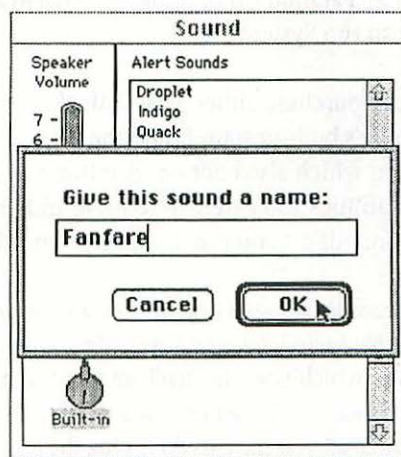
To remove a sound from the list of alert sounds, open the Sound control panel, highlight the sound, and click the Remove button. You'll be asked to confirm your decision to erase the sound.

Although the Sound control panel limits the length of your alert-sound recording to 10 seconds, an application will often allow you to make much longer recordings, limited by the amount of memory allocated to the particular application. (See Chapter 10 for more information about memory allocation and management.)

Applications often give you the opportunity of varying sound quality as well. For example, if you select Good quality instead of Best, the sounds you record will have less fidelity but will require less memory and disk storage space.

Adding Sound Recording to Your Mac

If your Macintosh doesn't have a built-in sound recording capability, you can easily add sound recording and even a sophisticated sound editor for a total cost of $200 to $300.

The best known sound-recording add-on product is MacRecorder, manufactured by Farallon Computing, Inc. MacRecorder will work with any Macintosh that can run System 7.

You can purchase either a basic MacRecorder unit that matches the capabilities of Apple's built-in sound function, or you can buy the MacRecorder Sound System, which also contains Farallon's SoundEdit and HyperSound Toolkit; these utilities add extensive editing and programming capabilities. For example, with SoundEdit you can mix four sound channels simultaneously.

MacRecorder consists primarily of a small gray box about the size of a transistor radio that includes a digital recording unit, a built-in microphone, and two input plugs to which you can attach an external microphone or a line connected to a device such as a TV set or tape recorder. To make System 7 recognize the MacRecorder, all you have to do is plug the box into either your modem or printer port, then drag a MacRecorder sound driver icon into your System folder. As soon as you restart your Macintosh, your Sound control panel will then resemble Figure 8.5.

Figure 8.5

A Sound control
panel with
MacRecorder
installed
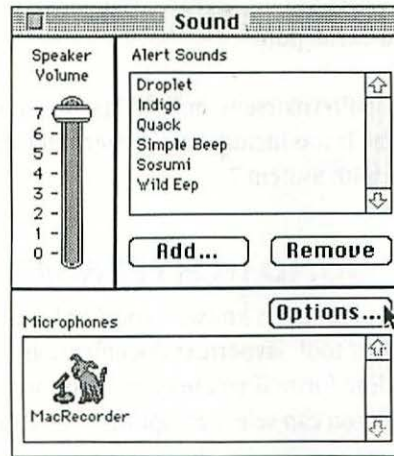
You'll note that the Options... button is not dimmed in this control panel. You can click it to see the Port Status dialog box shown in Figure 8.6. Here you can quickly verify at any time to which port your MacRecorder is attached, without standing on your head to examine the rear panel of your Mac; and you can press the Update button to make sure the dialog box is displaying the latest information.

Of course, the disadvantage to using a device such as MacRecorder instead of a Mac with built-in sound recording is that you lose the use of either your

Figure 8.6

The MacRecorder
Port Status dialog box
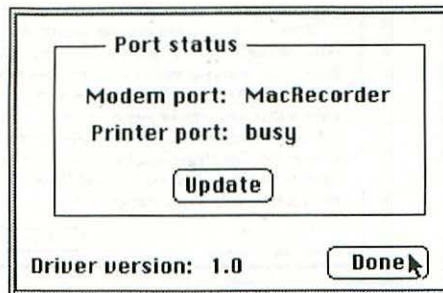
modem or printer serial port while the product is connected. However, computer stores sell inexpensive switch boxes that let two or more devices share a single serial port.

Another alternative to built-in Macintosh sound is Voice Link, from Articulate Systems. It too includes a digitizer/microphone unit and software to make it usable with System 7.

USING SOUND IN HYPERCARD

As most Mac users know, HyperCard was introduced as primarily a visual *hypertext* tool. Hypertext documents are organized so you can read them in an outline form; if you need more information about a particular subject mentioned, you can select an option to go to another level and see more detail.

Early sample HyperCard *stacks*—as its data files are called—contained mainly visual images, stored according to their subject matter.

As in the past, the HyperCard utility is currently shipped with the operating system—at no additional cost. However, the version included with System 7 contains only sample stacks with an audio rather than a visual emphasis. Figure 8.7 shows the opening "card" or master menu for HyperCard; this card is

Figure 8.7
The first card
in the HyperCard
Home stack
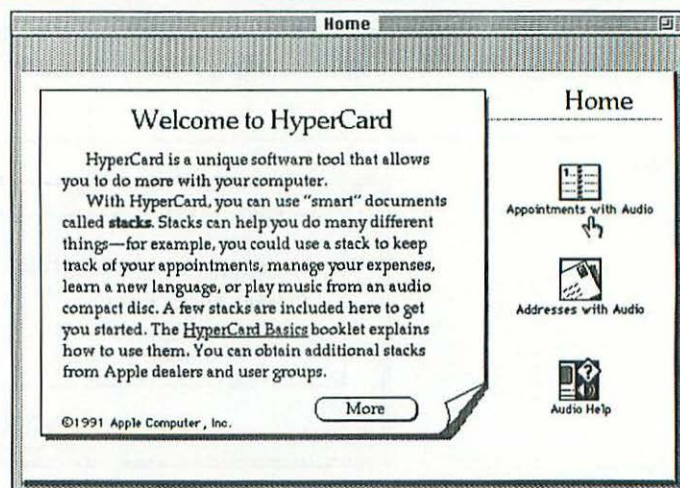
the top card in a stack called Home, a file containing part of the actual Hyper-Card program. The three sample stacks available for use are shown as Appointments with Audio, Addresses with Audio, and Audio Help.

Appointments with Audio is a daily appointment scheduler, while Addresses with Audio is a computerized personal address book. You can add verbal notes to either one.

Audio Help is a help stack that tells you how to record and edit sound in Hyper-Card. (See a typical card from that stack in Figure 8.8.)

Recording in HyperCard

To record a sound in either the Appointments or Addresses HyperCard stack, follow this procedure:

1. Select the location on a card where you want the icon for the sound to appear. This icon will appear after the sound is saved, and will be in the form of a loudspeaker; clicking the icon will play the recorded sound.

Figure 8.8

A typical card in the Audio Help stack
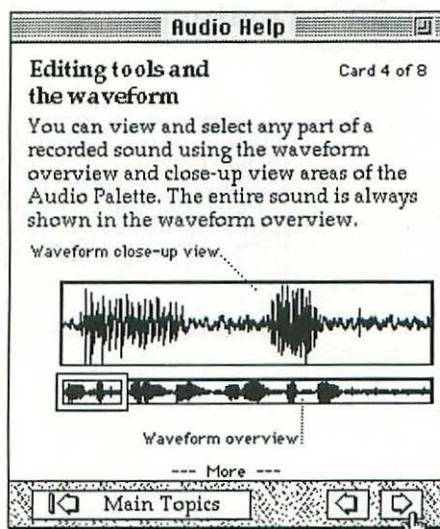
2. Pull down HyperCard's Edit menu and select Add Audio Memo. An object called the Audio Palette will appear (see Figure 8.9). This is really a three-dimensional representation of the Record dialog box previously described for System 7, providing the same features and operated in the same way—with two exceptions. Audio Palette also includes an Edit button, through which you can edit sounds and select recording options, as well as a list box from which you can select sounds by name to play or edit.

3. If the Audio Palette is in an inconvenient location for you, drag it by its top border to a new position on your screen.

4. Use the controls as you would those in the Record dialog box to record, play, and save the sound.

5. Click the close box to close the Audio Palette. The speaker icon will now appear on the current card at the spot you selected, making the sound available for playback at any time.

Figure 8.9
The HyperCard
Audio Palette
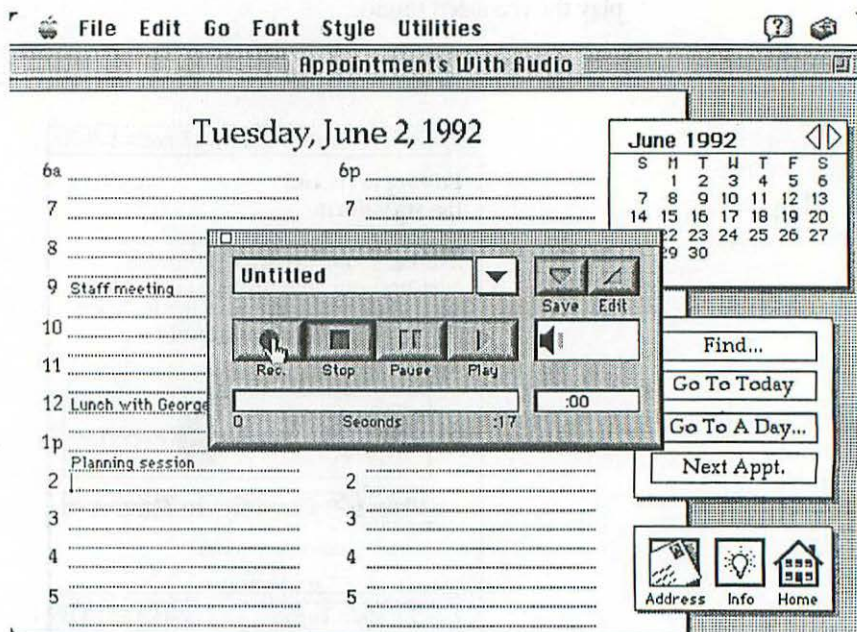
Sound Editing in HyperCard

When you click the Edit button on the Audio Palette, the palette expands downward to display both editing and recording options (see Figure 8.10).

In the center of the palette, you'll now see three boxes that will display different *waveform views* of a selected sound. (If no sound is currently selected or in memory, you will see two empty boxes.) In a waveform view, the volume of the sound is represented by vertical fluctuations; the duration of the sound is represented horizontally.

The top box is the *close-up view*, an enlarged version of the portion of the waveform seen in the lower left box; this lower box is called simply the *view box*. You can drag the view box to the left or right on top of the third box—called the *waveform overview*—to select the portion of the sound you want to edit in the close-up view. The waveform overview box always displays the entire sound, from beginning to end.

Below the waveform boxes, you can click the Play Through box to hear a sound as you record it (an option usable only if you have special hardware that supports

Figure 8.10

Sliding the view box to select a portion of a sound in the expanded Audio Palette
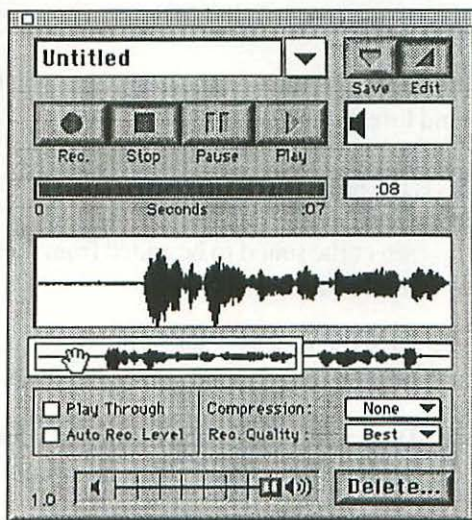
this feature). Click the Auto Rec. Level box to have the Audio Palette adjust the recording volume for you automatically.

The slide control at the bottom of the palette lets you adjust playback volume manually (not recording volume). A setting you choose here is effective only when you're in HyperCard.

The Compression option has a pop-up menu that lets you save sounds to disk in a compressed form if you like, thereby using less disk space. The two compression ratios available are 3 to 1 and 6 to 1; the 6 to 1 option uses the least amount of disk space but provides lower sound quality. If disk space is not a problem, use no compression, for maximum quality.

Rec. Quality is another option that affects the quality of the sound you hear. If you select Best from this pop-up menu (the default), sound is recorded at a rate of 22 kHz (kilohertz) per second, meaning that the sound is sampled 22,000 times per second. The other menu choice, labeled Good, records at a rate of 11 kHz per second, with a lower sound quality resulting from the lower sampling rate. However, the Good option uses both less memory (RAM) and less disk space.

Saving 30 seconds of sound recorded at 22 kHz requires 660K of free memory and disk space. Saving 30 seconds of sound recorded at 11 kHz requires only 330K of memory and disk space.

The Delete . . . option on the palette lets you highlight and then delete any sound listed in the current folder.

This is the procedure for editing a sound:

1. Select the sound to be edited from the list box at the top of the Audio Palette.

2. Drag the view box across the waveform overview to select the portion of the sound you want to enlarge for editing.

3. Drag across the enlarged close-up view to select the exact section of the sound you want to edit. Figure 8.11 shows as

Figure 8.11

Playing a selected
segment of a sound
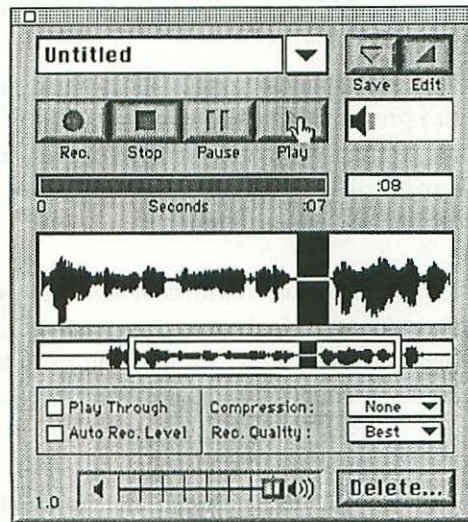
selected a small segment of a voice recording where the person
speaking inhaled audibly between words.

4. To make certain that your selection is correct, click the Play
   button. You'll hear only the selected section of the sound.

5. If you haven't selected exactly the segment you want, drag
   across the close-up view again to adjust the selection. Drag and
   play the highlighted segment until it includes only the exact
   part of the sound you want.

6. If you want to delete the selected element, pull down the Edit
   menu and select Clear Sound. You can also use Cut, Copy, and
   Paste commands to move your selection through the clipboard
   to be pasted into another sound recording, at the exact point
   you specify.

7. Play the affected sounds to evaluate the results of your editing.

8. If you're satisfied with the editing, save the changes.

WORKING WITH FARALLON'S SOUNDEDIT UTILITY

HyperCard's sound editing facilities work only within HyperCard. However, with a program such as Farallon's SoundEdit—included in their MacRecorder Sound System—you can edit waveform representations of sounds for use elsewhere in your Mac system. In fact, you have at your command very advanced recording and editing options.

If you have a Macintosh with built-in sound, you can buy SoundEdit separately, without investing in the complete MacRecorder Sound System. Consider, though, that with both built-in sound and a MacRecorder—or two MacRecorders—SoundEdit will let you record in stereo!

SoundEdit provides four sampling rates instead of two, to help you conserve disk space with satisfactory quality. You can record with four different compression ratios. You can add special effects such as an echo chamber, a loopback to increase the duration of a sound, or a stereo ''ping-pong'' effect (where the sound seems to switch back and forth between left and right speakers). You can play a sound backwards. You can create sounds artificially, such as a siren or birds chirping, with synthesized, frequency-modulated signals. And you can save sounds in your choice of file formats. Figure 8.12 shows some of the special-effect menu options.

Figure 8.13 displays SoundEdit's Spectrogram effect, which lets you analyze the frequency content of sounds. The frequencies are represented by a series of two-dimensional graphs. Each graph represents a time interval. The two axes are power (in decibels) and frequency (in hertz). You select portions of a sound to be graphed and adjust the display through the upper Controls window. The bottom Spectrogram window displays the transforms. You change settings through menu options.

As you can see, SoundEdit has powers that can both fascinate the hobbyist and please the sound professional. Although you may not want to take advantage of all of its features, the utility provides many easy-to-use options for managing sound recording on your Mac.

Figure 8.12
SoundEdit special
effect options
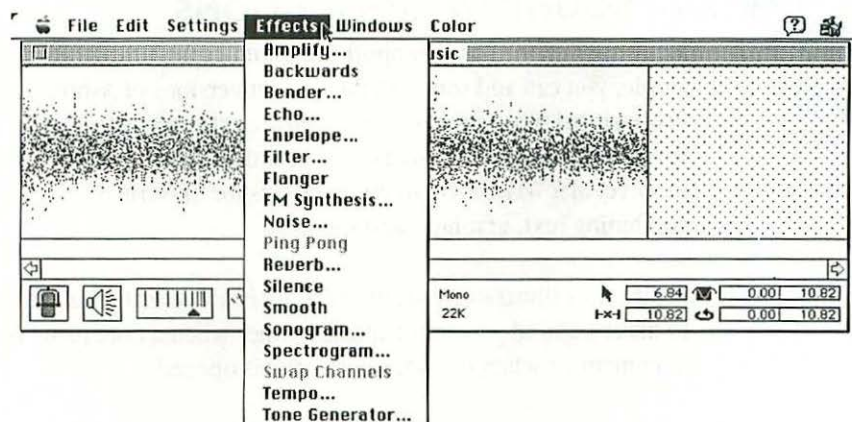
Figure 8.13
A SoundEdit
spectrogram
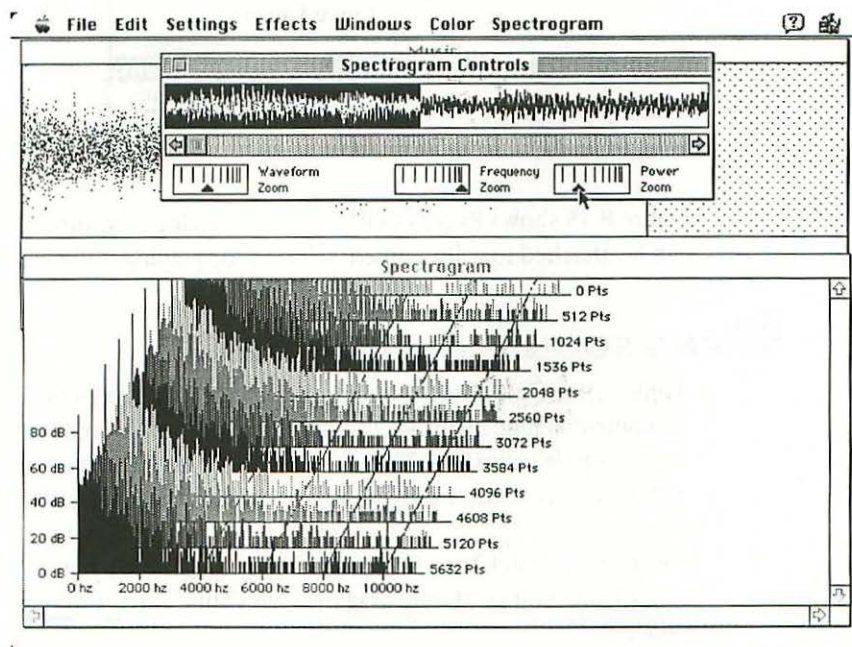
USING SOUND IN APPLICATIONS

Many applications now support the sound capabilities of System 7. For example, you can add sound to the current versions of Ashton-Tate's FullWrite Professional word processor and FullImpact spreadsheet program. Other spreadsheet programs that can use sound include Microsoft Excel and Claris Resolve. MacWrite Pro can create effects for on-screen presentations by combining text, graphics, and sound.

Figure 8.14 illustrates that, in FullWrite Professional, you can use menu options to make a sound play automatically either when a note panel is opened within a document or when the document itself is opened.

Figure 8.14

The Sound menu in FullWrite Professional

Sound
Play Sound
Record Sound...
Erase Sound
....
Play When Panel Opens
Play When Doc Opens

Figure 8.15 shows Excel's Cell Sound Note dialog box, through which sounds can be attached to cells, copied, selected for playing, or deleted.

USING SOUND IN QUICKTIME

Apple's new QuickTime software architecture lets developers and Mac users combine dynamic media such as sound, video, and animation into an integrated whole. Apple calls QuickTime presentations "movies," and the experience of watching a QuickTime movie can be very much like watching a motion picture.

For the user, QuickTime functions as an extension to System 7. To be able to use QuickTime, you need only drag the QuickTime extension into your System folder.

Figure 8.15

Excel's Cell Sound
Note dialog box
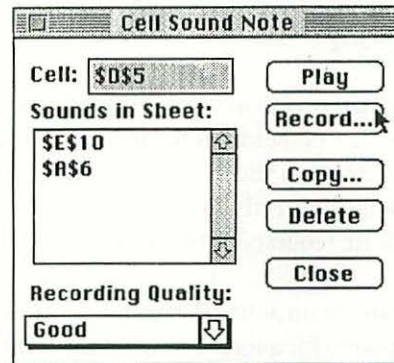
As you might imagine, creating the effect of a motion picture—with constantly changing images and sound—requires the storage of a tremendous amount of data. Therefore, QuickTime employs new file compression techniques to enable Mac users to utilize QuickTime on their hard disks. Some elaborate QuickTime productions are available only on CD-ROM disks.

QuickTime movies can be interactive. A movie controller designed by Apple lets you turn sound on and off and employ techniques familiar to users of videotape recorders such as fast-forward and freeze-frame. In addition, some QuickTime movies let you select the scene you want to see next, or even choose between alternate endings to a presentation.

ADDING SOUND TO MACINTOSH FUNCTIONS

If you'd like to develop a meaningful relationship with your Macintosh, you can teach it to talk to you. All you have to do is obtain SoundMaster. This CDEV (control panel device) can attach sounds to Macintosh functions such as startup or even pressing the Return key. For example, when you insert a disk, your Mac could respond politely by saying, "Thank you very much."

You must provide the sounds used. If you don't want to record your own, you can obtain free prerecorded sounds through many Mac bulletin boards and user groups.

Figure 8.16 shows the SoundMaster control panel. (By the time you read this chapter, the product will probably allow you to connect sounds to additional functions.)

SoundMaster is shareware software—meaning that its author would appreciate receiving a donation from you if you use and like it. The utility was written by Bruce Tomlin, 15801 Chase Hill Blvd., #109, San Antonio, TX 78256, and can be obtained directly from him or downloaded from the GEnie network bulletin board. He requests a $10 donation.

You can obtain SoundMaster, plus four disks of fun sounds, from Advantage Computing for a total cost of $19.95. The telephone number is (800) 356-4666.

Figure 8.16
The SoundMaster
control panel
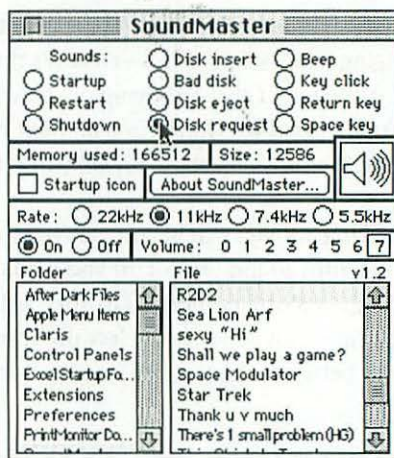
Enhancing Your Macintosh under System 7

FEATURING

- Protecting your screen
- Adding powerful applications
- Handling SCSI devices
- Adding a hard drive
- Using CD-ROM drives
- Adding a scanner
- Buying a larger monitor
- Speeding up and expanding your Mac
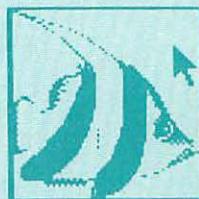
In earlier chapters, you learned about some products that can enhance the capabilities or performance of your Macintosh under System 7. These products were usually introduced in connection with a specific topic such as typefaces or sound recording. This chapter will discuss additional products that will let you do more with your Mac.

Products that deal specifically with solving system problems (such as the recovery of files that have accidentally been erased) are covered in Chapter 10.

PROTECTING YOUR SCREEN

When you walk away from your Macintosh and leave it on for a long period of time unattended, the image on the screen can "burn in," causing permanent damage to your monitor. After Dark (from Berkeley Systems Inc.) is a screen-saving utility that prevents this potential damage by automatically replacing that static image with a continuously changing display. As soon as you return to your Mac and move the mouse or press a key, your original image is restored, ready for you to work with it again.

You can set After Dark to take over your Mac after 15 minutes of inactivity (the default), or following the passage of any other number of minutes you wish. Obviously, if you set the elapsed time for activation of the utility at too brief a period, you could be irritated by seeing your current document disappear while you sit in front of your Mac, thinking of the next sentence you want to type.

After Dark provides more than 30 moving screen patterns from which you can choose. Figure 9.1 shows an example: a fish display that turns your inactive screen into an instant aquarium. In Figure 9.2, you see the control panel for this CDEV as it presents the options for the fish display; as you'll note, you can select how many fish you want swimming at one time, how fast you want them to move, and whether or not you want the sea floor to be visible.

Figure 9.1
An After Dark screen display
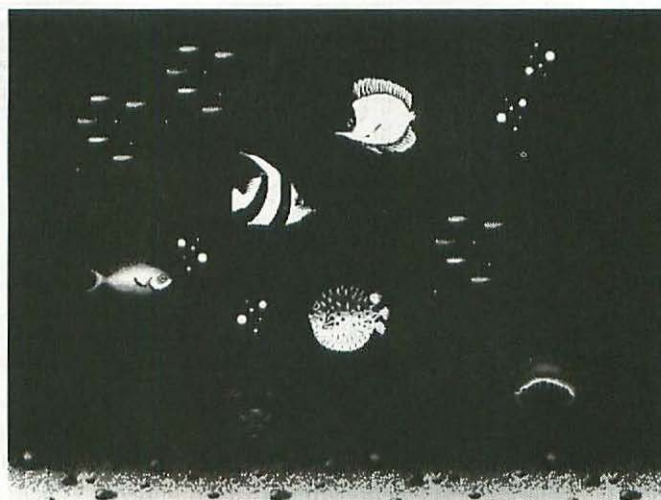
Figure 9.2
The After Dark control panel
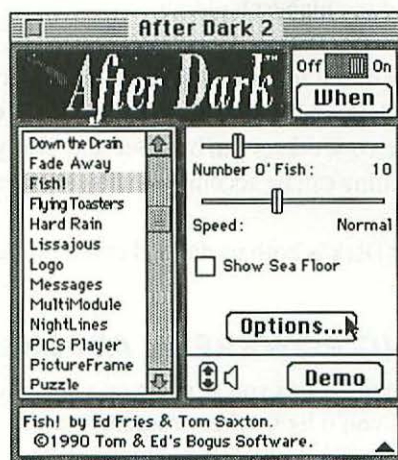
There's even more. Click the Options... button for the fish selection, and you'll bring up the dialog box in Figure 9.3. Here you can decide exactly which objects you want included in your display: fish (by the name of the species), seaweed, bubbles, etc.

Figure 9.3
Selecting After Dark
fish by species
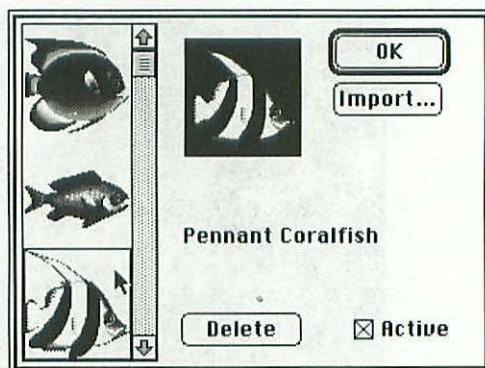
Each object moves in a characteristic manner; for example, a jellyfish has a different movement pattern than an Imperial Angelfish.

Other After Dark scenes have appropriate options. If you select a Starry Skyline, you can decide whether or not you want to see a flashing red beacon on top of the highest building.

Many of the selections have accompanying sound effects; you can turn the sound on or off and adjust its volume. A clock can tick and chime. Your amazed office co-workers can both see and hear your screen devoured by worms. Lightning can be accompanied by thunder.

After Dark is both useful and entertaining.

ADDING POWERFUL APPLICATIONS

If the programs you're using on your Macintosh don't provide all of the features you'd like, other programs may be available that will give you exactly the options you want. Fortunately, you can now select from a long list of applications in almost every program category that are compatible with System 7.

Compatible doesn't necessarily mean that the application supports all of the capabilities of System 7, such as Publish and Subscribe. However, the application will function correctly and may be more powerful than the one you're currently using.

For example, QuarkXPress 3.0 does not support TrueType. Users of Frame Technology's FrameMaker 3.0 do receive TrueType support, plus many unique features, including the ability to create up to 25 master pages in a document.

Of interest to large organizations engaged in electronic publishing is the fact that FrameMaker is available in versions for many platforms in addition to the Macintosh. These include DEC, HP/Apollo, IBM, NeXT, Sun, PCs running SCO Open Desktop, many X terminals, Altos, Bull Worldwide Information Systems, Cetia, Data General, Encore, Intergraph, Matsushita, MIPS, Motorola, Pyramid, Sequent, Siemens, Silicon Graphics, Sony, and Toshiba.

If you frequently need to make color separations on your Mac for use by professional printshops, you may be interested in Letraset's DesignStudio 2.0. This desktop publishing program includes a separation utility offering unusual power and versatility.

FrameMaker and DesignStudio are only two options in a rapidly developing field that now even includes high-end word processing programs.

HANDLING SCSI DEVICES

You can expand your Mac system by adding SCSI devices. The letters SCSI stand for Small Computer System Interface. By merely attaching a device through a cable connected to a SCSI port on your Macintosh, you can make the device a regular part of your system; some devices are accompanied by special software also required for their operation.

What kind of devices can you connect? The most common are external hard drives, scanners, and CD-ROM drives. (These devices will be described individually later in the chapter.)

Macs are sold with only one SCSI port, but this fact does not limit your use of SCSI hardware to one device. You can *daisy-chain* devices—connecting up to seven devices in a single chain.

Assigning Unique SCSI ID Numbers

You must assign each device a unique SCSI identification number, which is usually done by pushing buttons to change the number displayed in a small

window on the back panel of the device. Address 7 is always reserved for your Mac itself. Address 0, by general industry agreement, is normally an internal hard drive (a drive installed inside the case of your Macintosh). This arrangement leaves addresses 1 through 6 open for assignment to other devices.

Let's say you have two Macintoshes. You might attach an external hard drive to each, and—in this case—give each hard drive the same SCSI ID number; let's say you pick the number 1. There will be no problem because the two SCSI devices with the same number are attached to different Macs.

However, what if the power supply goes out on one of these Macs; and you take the computer to your local Macintosh dealer for repair? While the Mac is out of service, you still want to use the data and programs stored on its external hard drive. You can do this through daisy-chaining; connect both external drives to the remaining Macintosh, and you can use them both. *If both drives still have the same ID number when you do this, you will lose the data on at least one of the drives!* The reason is that you'll be confusing System 7; the catalog files will become scrambled that identify the nature of stored data on the disks for the system software.

For the same reason, you risk losing data if you change the SCSI ID number for an external hard drive without turning its power off first.

If you do have more than one Mac with an external hard drive, it's a good idea to give each external drive a unique ID number to avoid a future problem if the two drives should ever be daisy-chained.

Terminating Devices

When you daisy-chain devices, each end of the daisy-chain must be marked with a *terminator*, a piece of hardware that identifies the beginning or end of the chain. There must be no more than two terminators in the chain.

An internal hard drive is already terminated. Therefore, if you have an internal hard drive, you can add only one more terminator. If you'll be using only one SCSI device on a Mac, you usually don't have to worry about termination. The device—hard drive, scanner, or whatever—will probably be shipped with internal termination already in place. Just plug in the device, install accompanying software if necessary, and use it.

If you want to daisy-chain—in other words, use at least one additional SCSI device with the same computer—you must remove the internal termination from one of those devices. Either device can be at the end of the chain. Most Mac users simply remove the internal termination from the device for which the process is the easiest. Usually, you must follow printed instructions carefully to remove termination, opening the case that houses the device and removing a small object from a circuit board.

The device that is not internally terminated becomes the middle device in the chain. SCSI devices usually have two SCSI ports. You use a SCSI cable to make the connection between the computer and the middle device, plugging into either one of the device's SCSI ports. You then run additional SCSI cabling from the middle device's remaining SCSI port to the device at the end of the chain.

If you later need to restore termination to a device from which you've removed the internal terminator, you can do this by merely plugging an external termination plug into either one of the device's SCSI ports.

ADDING A HARD DRIVE

As was stressed at the beginning of this book, you need a hard drive to use System 7. This drive could be an external drive. You can install the system software on this drive and designate it as your startup drive through the Startup Disk control panel. In fact, as demonstrated in Figure 9.4, you can choose an external drive as your startup drive even if you also have an internal hard drive.

Most users of System 7 do have an internal drive, even if its storage capacity is limited. They're interested in adding an external drive to increase that capacity and to provide some protection for critical data; if you have both internal and external hard drives, you can easily copy a critical file or folder from one drive to the other—a quick and effective method of backing up a limited number of items.

Some Mac users use an external device that can contain any one of a series of *removable* hard drives, making possible almost unlimited backup and storage possibilities. This type of device is often expensive though, and the access speed of a removable drive is usually slower than that of conventional hard drives.

Figure 9.4
Selecting a startup
drive in the
Startup Disk control
panel
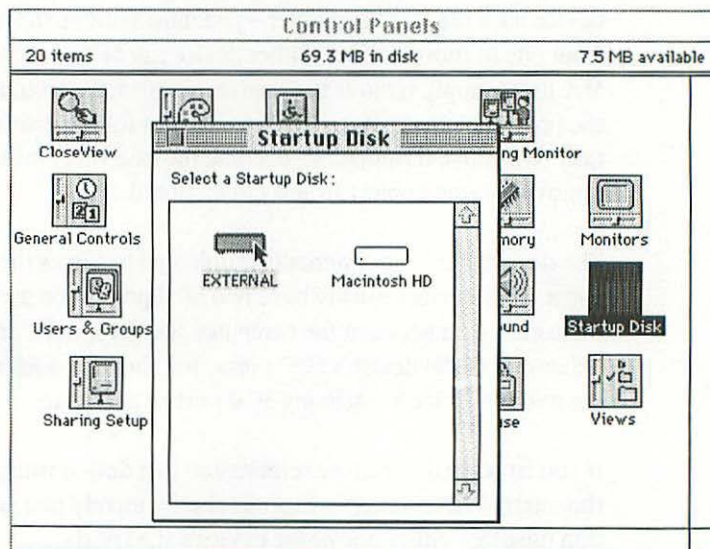
You can purchase some external hard drives at very low cost. For example, Ehman Incorporated (Evanston, Wyoming) manufactures and sells direct a series of attractive drives that can fit under most monitor stands. Ehman has been selling an external drive with a 170-megabyte capacity for less than $800. A drive with a 40-megabyte capacity is about $250.

You can rename a hard drive using exactly the same technique you'd use to rename a folder on your desktop (however, not while the drive is being shared). If you have two or more external drives in a daisy-chain, you certainly don't want them to carry identical names. Many external drives are initially identified simply by the name of their manufacturer.

CHANGING THE INTERLEAVE

When you buy an external hard drive, it will probably be sold preformatted and ready for use. If you buy through a local computer store, that retailer should format the drive with the proper interleave for maximum performance with the kind of Mac with which it will be used. The interleave ratio determines how the sectors are arranged on each track of the hard disk. A fast computer can use a 1 to 1 (1:1)

interleave ratio, wherein the sectors are in strict numerical order (1, 2, 3, and so on). A slower computer may require that the first sector (number 1) be followed by the second sector in a number 3 position; in other words, the magnetic reader head will skip the number 2 position temporarily to give the computer more time to read the data.

These computers are all fast enough to use a 1:1 interleave ratio: any Mac II, the Mac LC, and the SE/30. The standard Mac SE and the Mac Classic require a 2:1 interleave. The Mac Plus needs a 3:1 interleave. If you try to use an external hard drive that has been formatted with too fast an interleave factor for your Mac, the Mac will not recognize the drive.

For this reason, most vendors of external hard drives ship them formatted with a 3:1 interleave. This means that they can be used without difficulty on any Macintosh. However, if you have any Mac other than a Mac Plus, your drive will be operating at half or even a third of the speed it should deliver.

You correct this disparity by *changing the interleave* when you receive the drive (provided a dealer has not already done this for you). Usually, the drive manufacturer will have furnished software with the drive that can easily accomplish this goal.

Since changing the interleave requires the reformatting of the drive and the loss of any data already stored on it, you'll want to change the interleave before you use the drive.

Figure 9.5 shows the interleave dialog box for the formatting software shipped with the Ehman drives. As you can see, this dialog box makes it very easy to choose the proper interleave ratio for your particular situation.

If you purchase a large external drive, you may want to divide it into *partitions*. Usually, the software supplied with the drive can handle this task too. The result of partitioning will be that the drive will appear on the desktop as if it were actually two or more separate drives. You might think of partitions as extra-large folders that will help you organize your files and folders.

Advanced Mac users sometimes partition hard disks so that one or more partitions actually function under a different operating system. This procedure requires special software and knowledge.

Figure 9.5
Reformatting to
change the
interleave ratio

Warning!
Formatting this device's media will cause
ALL of the information on it to be lost. Are
you sure that you wish to continue?

┌─Interleave:─────────
│ 1 │ ○ Macintosh Plus   [Cancel]
│   ○ Macintosh SE, Classic
│   ⦿ Macintosh II's, LC, SE/30   [Format]

Help...
The Interleave of the Hard-disk should be set for the type of computer that
it is to be connected to. Interleave settings do not change until the Hard-disk
is re-formatted.

USING CD-ROM DRIVES

CD-ROM drives are a kind of compact-disk player. A single CD-ROM disk can
hold the equivalent of hundreds of floppy disks. Therefore, you can buy and
access a complete electronic encyclopedia on one compact disk—or a complete
typeface or clip art library, or a QuickTime movie presenting highlights of all of
the tours available through a travel agency.

If you already have a CD-ROM drive that you used before you installed Sys-
tem 7, you will need to update your CD-ROM software before you can run the
unit under System 7.

Apple provides a CD-ROM Setup disk for this purpose with its Group Up-
grade Kit for System 7. This particular disk is not included in the System 7 kit
for individuals and is intended for use only with Apple's own AppleCD SC
CD-ROM drive. If you're an individual who needs this CD-ROM software,
contact your Macintosh dealer.

Figure 9.6 displays the contents of the setup disk, which includes support
for the HFS, ISO 9660 and High Sierra CD-ROM file formats, as well as a desk
accessory called CD Remote that lets you play regular audio compact disks
on your CD-ROM drive.

Figure 9.6
The contents of
Apple's CD-ROM
Setup disk
for System 7
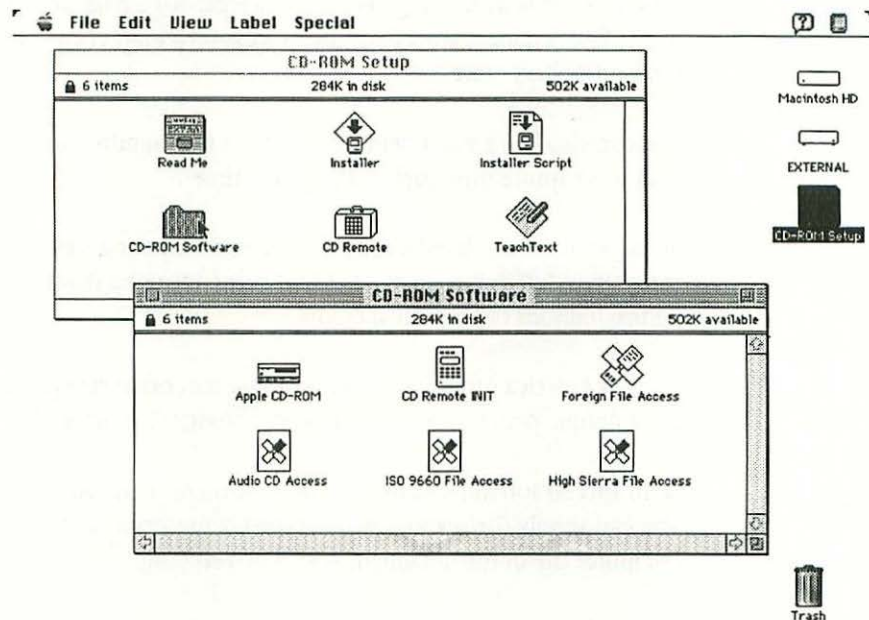
You can use a CD-ROM drive on a network. Any CD-ROM disk that is mounted on the desktop when file sharing is started will automatically be made available for sharing. However, you can't eject a shared CD-ROM disk while file sharing is active. This means that if you want to switch disks, you must first terminate file sharing, then insert the new disk, and, finally, restart file sharing.

To avoid shutting down a network merely to change a CD-ROM disk, some companies install a separate CD-ROM drive for each disk to be shared. This solution is expensive, but means that all of the wanted disks are available all the time, without causing any interruption to activities on the network.

ADDING A SCANNER

A scanner is a SCSI device that can convert images on paper into digital computer files your Macintosh can use. You operate most scanners by laying the subject matter to be scanned face down on a flat glass bed, then closing a lid

and using software to control the actual scanning operation. Most of these products can scan an image as large as a legal-sized page and retail for $1,500 to $3,000. Scanners geared for the professional market can cost many thousands of dollars more.

You can also buy a hand-held scanner for a few hundred dollars; however, these scanners capture only part of a page at a time.

Some scanners can handle only a black and white or grayscale image. Others can scan in full-color—some in 24-bit color, meaning that the scanner can recognize millions of individual colors.

Chinon America offers a full-page color scanner that recognizes 4,096 colors, has a unique pedestal construction, and boasts a list price of less than $1,000.

With special software, scanners can perform *optical character reading* (OCR). You can supply the scanner with a typed manuscript, and it will produce a computer file of the document—with no retyping.

Although scanners would seem to be primarily a question of hardware, you use computer programs not only to accomplish the scanning process but also to retouch and manipulate the image after you've captured it on disk. Therefore, we come back to that old bugaboo again: System 7 compatibility. You want to make certain that the programs you use for these purposes will run properly under System 7.

Often the vendors of scanners include software with their products— sometimes for both capturing and editing images. The practice is known as "bundling." If a particular scanner unit was manufactured some time ago and has been sitting in a warehouse waiting for a purchaser, the bundled software included in the carton could be many months out of date. It's good business to check out software version numbers before you buy a scanner that comes with software. After all, in reality you are paying for the software—even if the price is hidden and discounted.

Some of the better scanners are sold with both scanning software in the form of a Mac desk accessory—so you can scan an image at any time without leaving

some other program—and with sophisticated image retouching and modification applications like Letraset's ColorStudio and Adobe Photoshop, which can also control the scanning of images.

Figure 9.7 shows the special scanning desk accessory supplied with Abaton scanners. It allows you to select a scanning mode appropriate to the subject being captured (line art, photograph, and so on), preview the subject, crop the image to select only the portion you want, adjust attributes such as brightness and contrast, and, finally, capture the image to disk in your choice of Macintosh graphic file formats.

Adobe Photoshop is also included with Abaton scanners.

Figure 9.8 shows the ScanDo desk accessory bundled with Epson scanners. It provides the ultimate in carefree scanning for novices, since you can select settings in plain English that will provide the best scan for each type of image.

Both Letraset ImageStudio (for grayscale work) and ColorStudio are also bundled with Epson scanners.

Figure 9.7
The Abaton Scan desk accessory
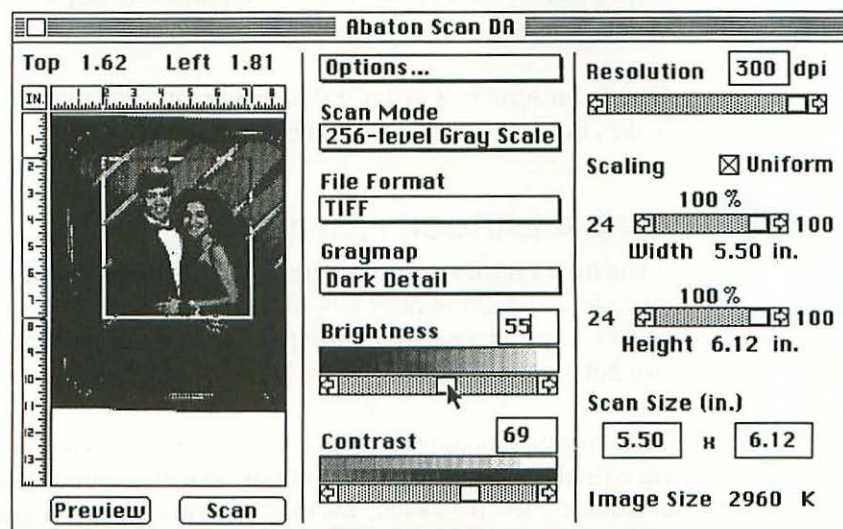
Figure 9.8
Epson's ScanDo desk
accessory
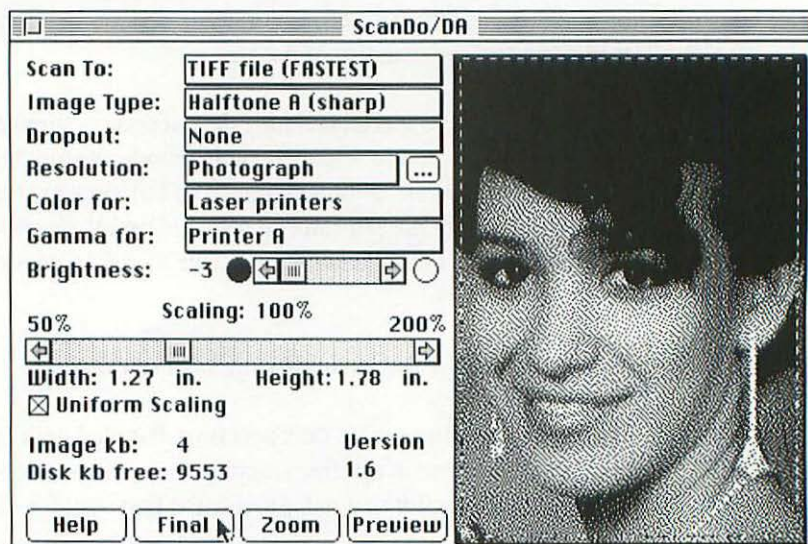
All of the scanning software mentioned here is compatible with System 7.
Both the Abaton and Epson scanners support 24-bit displays with their millions
of colors.

When your scanner is part of a SCSI daisy-chain, you can use the other devices
in the chain without turning on the scanner.

Buying a Larger Monitor

If you have a small-screen Macintosh, you could be tempted to buy a larger
monitor. You might think of how much more efficiently you could work if you
could see an entire 8.5 by 11-inch page of a document at one time—or even
two full pages side by side.

The temptation becomes stronger when you see the relatively low prices
advertised for some brands of monitors. Two-page monochrome displays are
available for less than $900. You can buy a two-page color monitor for under
$3,000. These prices include the video card that must be installed in your
Mac so the monitor can function.

Install two monitors, and you can make them operate as if they were one large screen (through the monitors control panel). Drag an object beyond the right edge of the screen of your left-hand monitor, and the object will appear on the screen of your right-hand monitor.

Assuming that these large monitors provide adequate quality at these prices— and some of them certainly do—you could still be very disappointed with your purchase.

The catch is that it takes real computing power to rewrite the information on a large-screen monitor at an acceptable rate of speed every time you move an object or add a line of text. Whether your goal is to create engineering drawings or to publish a newsletter, you can become very irritated if you continually have to wait a second or two for the results of your latest change to appear on the screen.

If you don't have a fast Macintosh, the answer is to buy an accelerator as well as a monitor, or buy a monitor that has an accelerator incorporated into its video card. An accelerator does exactly what the name implies. It's an electronic gadget that makes your Mac perform some functions faster. The next section discusses these speed-up options in more detail, but be forewarned that not all accelerators are compatible with System 7.

When you add an accelerator, the price for that large-screen monitor starts to go up. Sometimes you can invest so much in speeding up an inexpensive computer that you'd be better off buying a faster Mac in the first place.

Another point to consider regarding a large-screen upgrade is that some Macs (including the Mac Classic) have no expansion slots; at least one is required if you're going to plug in one of those video cards that support a large-screen monitor.

However, enterprising developers have already come up with large-screen monitors and accelerators for the Classic anyway. For example, Mobius Technologies (Emeryville, California) offers both one- and two-page monitors for the Classic, with built-in acceleration. Mobius gets around the absence of an expansion slot by having the interface clip onto the computer's logic board.

Figure 9.9 illustrates the relative size of Apple's line of monitors. On the left is a 13-inch color unit—a size often used with the more expensive Mac II computers. At the right end of the display is a 12-inch monitor—the size usually sold with the Mac LC and IIsi. Next to the 12-inch monitor is Apple's 15-inch unit, which provides a full-page monochrome display. The remaining monitor—in the left center position—is the 21-inch two-page mono-chrome model.

Figure 9.9

Four sizes of Apple monitors for the Macintosh
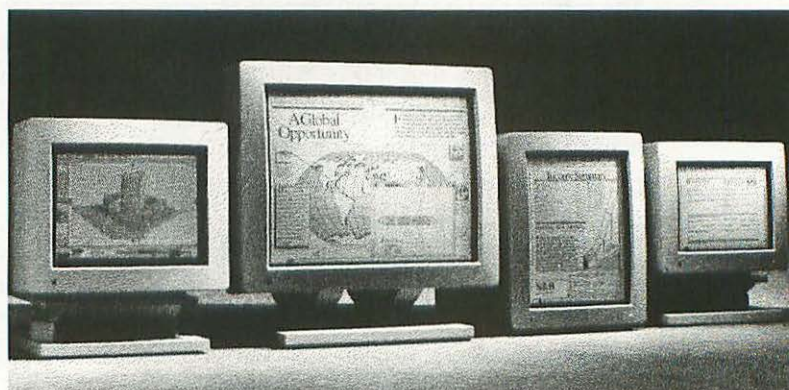
SPEEDING UP AND EXPANDING YOUR MAC

If you decide you want to speed up your computer, be sure you find out the total cost. For example, for some thousands of dollars you can buy a new motherboard for a Mac IIx that will, presumably, give it the performance of a Mac IIfx. However, you'll also need to buy new memory chips to make it function properly (see Chapter 10 for more about memory); and you'll need a new hard disk to match the speed of the hard disk provided with the real IIfx.

If you want to install any card in the expansion slot of one of the low-cost Macs such as the LC or the IIsi, you must make certain that the card has a low power drain. These computers have low-capacity power supplies.

Because the LC and the IIsi each have only one expansion slot, several vendors have produced multi-function cards for them.

A good example is QuickSilver, from Applied Engineering, Dallas. This card is shown in Figure 9.10.

QuickSilver includes all this: an on-board static RAM cache that speeds up performance as much as 40 percent, a socket that lets the IIsi use SE/30 circuit boards, plus a socket where you can install a math coprocessor chip (to speed up math-intensive applications such as spreadsheet and CAD programs). The card retails for about $400; the math coprocessor adds another $140.

To speed up a Mac II, Mac IIx, or Mac IIcx without going to the expense of buying a new motherboard, you may want to consider a product like the PowerCard 030 produced by DayStar Digital. The card includes its own Motorola MC 68030 processor and comes with your choice of 25, 40, or 50 MHz clock speeds. A math coprocessor is optional. The PowerCard can more than double the processing speed of some functions. However, it installs into your CPU socket; we suggest that you have a professional make this installation, since it's very easy to damage some of the delicate components.

The Mac IIci has a built-in cache socket, into which you can easily insert a *cache card* to improve processing speed as much as 40 percent. Some of these cards are inexpensive, priced at about $300. Figure 9.11 shows an example, Applied Engineering's Cache-In.

Another Applied Engineering product—QuadraLink—fits into an expansion slot on any Mac II and provides four additional serial ports (see Figure 9.12). With

Figure 9.10
The QuickSilver
multi-function card
for the IIsi
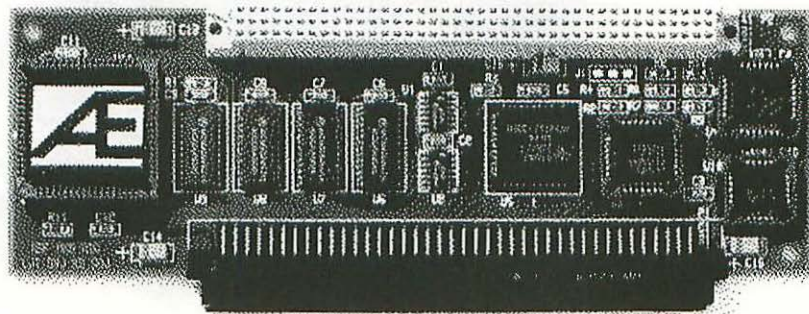
this product, you could attach a printer to your regular printer port, a modem
to your modem port, and a MacRecorder to one of the QuadraLink ports, and
still have three additional serial ports available. But QuadraLink is even more
interesting because of another of its features. It comes with a control panel
device called AE Shadow. Use this driver on every computer in a network, and
all of the network users can share any devices connected to a QuadraLink, such
as modems and even Apple ImageWriters, StyleWriters, and Personal
LaserWriters—printers normally not usable on a network. QuadraLink sells for
about $300.

Figure 9.11
The Cache-In cache
card for the Mac IIci
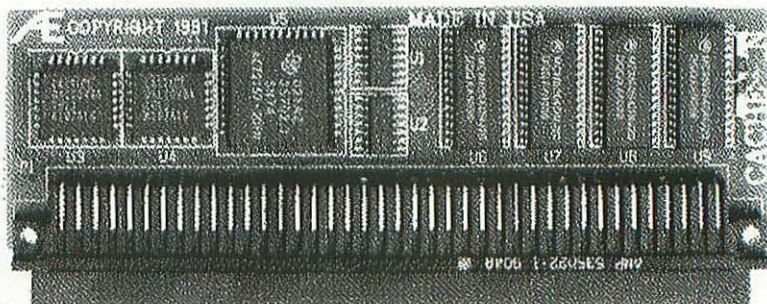
Figure 9.12
The QuadraLink card,
which adds four serial
ports to any Mac II
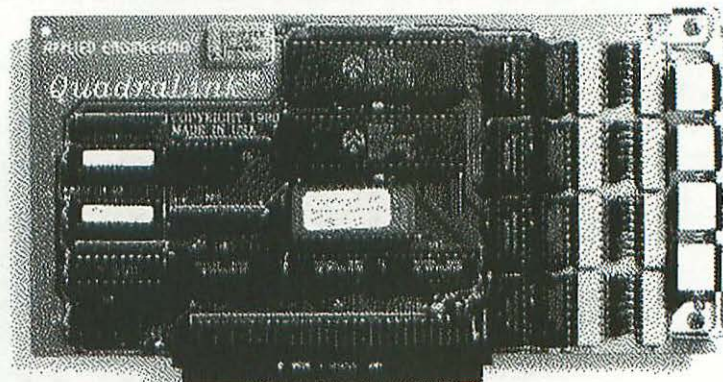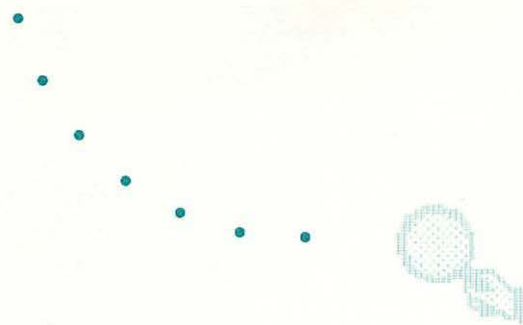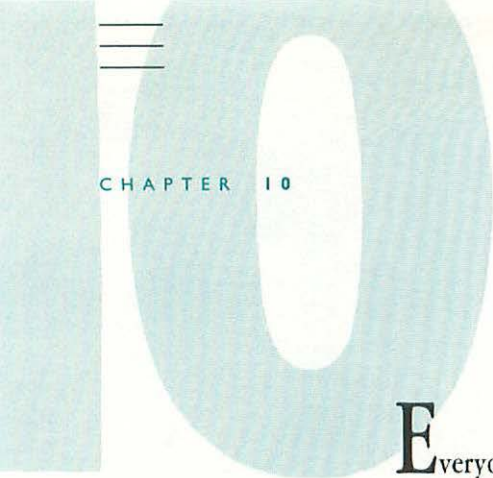
Solving Memory and Other System Problems

🖝 **F**EATURING

- Adding more system memory
- 32-bit addressing and virtual memory
- Allocating memory to applications
- Repairing damaged files and drives
- Fighting computer viruses
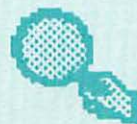
Everyone runs into problems sooner or later when using a personal computer, although the Macintosh is so easy to use that it keeps simple "human error" problems to a minimum. Of course, you will still hear stories such as the one about the novice who lost a file for weeks and assumed that it had been accidentally erased—only to discover one day that it was only hidden behind a window. However, even computer gurus sit at their Macintoshes occasionally when they're tired or in a hurry and may *really* erase a file accidentally.

Another class of problems occurs because a computer runs out of memory, and therefore the memory management plan must be adjusted.

The third problem area is the worst—difficulties caused by hardware or software failure. A disk fails, or an electrical surge or power failure destroys or damages data. A new software program has an undiscovered bug that causes the system to freeze up. A file can no longer be opened because information about its type and origin has been lost or corrupted.

This chapter deals with some of these difficulties and how to handle them.

MANAGING MEMORY

As indicated earlier in this book, the more memory you have in your Mac, the more you can take advantage of the features of System 7. For example, even activating file sharing can soak up 350K or more of your available RAM. So if you have a few dollars to spare, adding memory to your system is a good idea.

Adding Memory

Buying memory chips is far less expensive than it used to be. However, there are several considerations to adding memory other than having the extra money handy.

First of all, not all memory chips are the same. RAM upgrades are usually accomplished by installing SIMMs. A SIMM is a Single In-Line Memory Module, consisting of a tiny circuit board with memory chips soldered to it. You can buy five kinds of SIMMs: 256K, 1MB, 2MB, 4MB, and 16 MB—and they come in different speeds. It's OK to install SIMMs that are faster than your particular Mac can use. It's not okay to install SIMMs that are too slow; your system will crash. It's also not OK to install 4MB SIMMs in a Mac Classic, Plus, or SE; these models don't understand high-capacity SIMMs. In fact, a Mac II can't handle 4MB SIMMs either unless its ROM has been updated, and a Mac IIx needs an extra logic chip on each SIMM board (called a PAL—technically a Programmable Array Logic chip).

You have to buy a memory-expansion board to install SIMMs on a Mac Classic; the computer's main logic board has no sockets for SIMMs.

The construction of the Mac Classic, Plus, and SE limits them to a maximum of 4MB of RAM (in other words, four 1MB SIMMs). The SE/30, II, IIx, and IIcx can use no more than 8MB of RAM.

Using 32-Bit Addressing, Virtual Memory, and the Disk Cache

If you have a Mac LC, IIsi, IIci, or IIfx, you can use *32-bit addressing*, a new memory-management process through which you can access up to 128MB of RAM. If your computer supports 32-bit addressing, your Memory control panel will display a section where you can turn this feature on (see Figure 10.1). You're provided with On and Off buttons because some programs don't support 32-bit addressing.

If your computer is an SE/30 or a member of the Mac II family, you can use *virtual memory*. This means that you can use huge files by having the computer swap parts of the files back and forth to disk. For example, Figure 10.1 shows the Memory control panel for a computer that has 5MB of RAM, but can act as if it had 20MB more, by using available hard disk space. If your computer supports virtual memory, you'll see On and Off buttons for this feature in your Memory control panel.
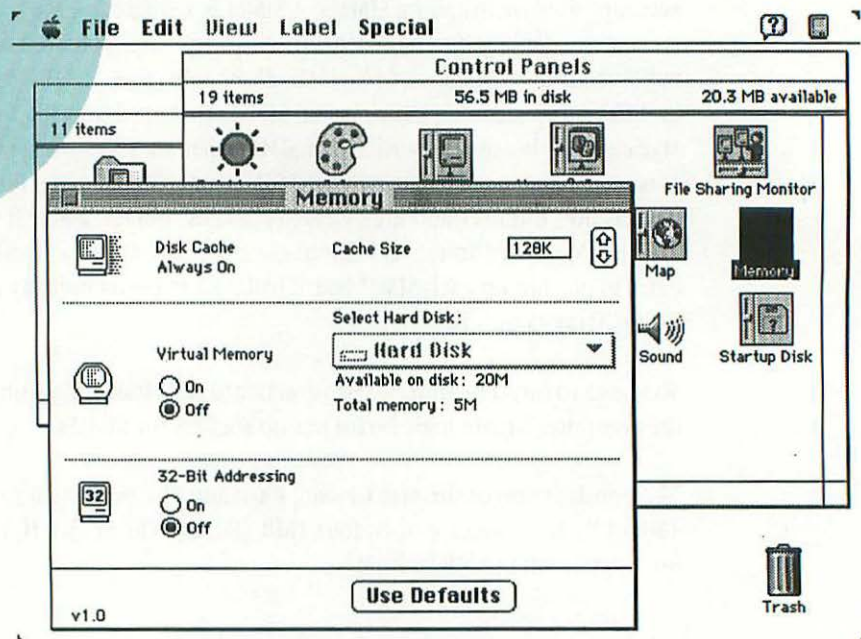
The use of virtual memory will slow down the operation of your Mac and is
recommended only when you're working with giant files that need more RAM
than you have available.

All Macs have a *disk cache* area in their Memory control panel under System 7.
A disk cache is a special area of RAM where an active program can store infor-
mation it needs frequently, thereby speeding up operations. You can't turn this
feature off, but you can adjust its size. Be aware that a large disk cache may
make some of your programs run faster, but any memory you allocate to your
disk cache is not available for other purposes. The default cache size of 128K
is a good choice if your memory is limited; however, if you have problems
running multiple applications, you may want to reduce that cache size to
64K or even 32K.

Adjusting Application Memory Size

Each application on your Mac requires a minimum amount of memory to work properly. If you want to use very large files in a favorite program, you may need to increase its memory allocation. For example, to load a full-page graphics file in a draw or paint program may require this sort of adjustment.

Here's how to change the memory reserved for an application:

1. Close the application, if it's open.

2. Select the icon for the program (not its folder). Don't double-click on the icon because you don't want to open the program.

3. Pull down the File menu, and select Get Info. You'll see an Info window. The Info window for Microsoft Word is shown in Figure 10.2.

4. In the Memory section at the bottom of the window, the number shown as *Suggested size* is the amount of memory the application needs in order for all of its features to function. If the

Figure 10.2
The Info window for
Microsoft Word

Microsoft Word Info
Microsoft Word
Microsoft Word 4.0

Kind: application program
Size: 669K on disk (683,286 bytes used)

Where: Hard Disk : Microsoft Word :

Created: Mon, Apr 10, 1989, 5:00 PM
Modified: Wed, May 17, 1989, 10:30 AM
Version: 4.0, © 1987–1989 Microsoft
Corporation
Comments:

☐ **Locked**

Memory
Suggested size : 512   K
Current size : 1024   K
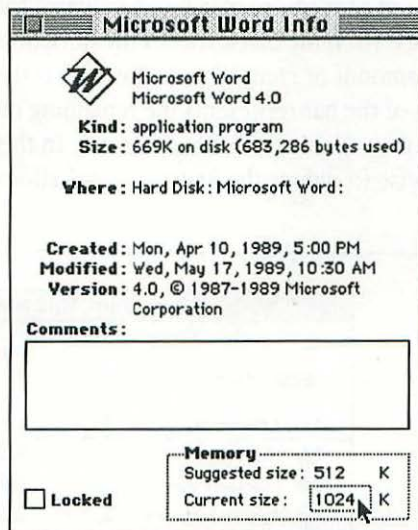
program's memory usage has never been adjusted, the *Current size* box will display the same amount of memory.

5. To change the amount of memory allocated, type a new number in the *Current size* box, then click the close box to close the window.

6. If you want to work in the application, open it in the usual way. The changed amount of memory will be available immediately (unless your Mac cannot load the program because insufficient overall memory is available).

If you find that you're running out of memory frequently when you want to have multiple applications loaded, you may want to reduce the allocated memory for one or more applications. However, it's not a good idea to reduce the allocation below the *Suggested size*; the program could crash unexpectedly.

The amount of memory allocated to a program will be reserved for it *whenever it's loaded* and will not be available for other programs, regardless of whether or not a large allocation is currently needed for its operation. You can check current memory usage by pulling down the Apple menu and selecting the first item, About This Macintosh... You'll see a graphical representation of the amount of memory in use and available for each application. For example, in Figure 10.3, the black area of the horizontal bar for Microsoft Excel represents the amount of memory actually used at the moment by that program; the gray area of the bar represents the remaining memory reserved for the application and unavailable for other programs. In this instance, you might think it would be wise to reduce the Excel memory allocation because little of it is in use;

Figure 10.3

Checking application memory usage
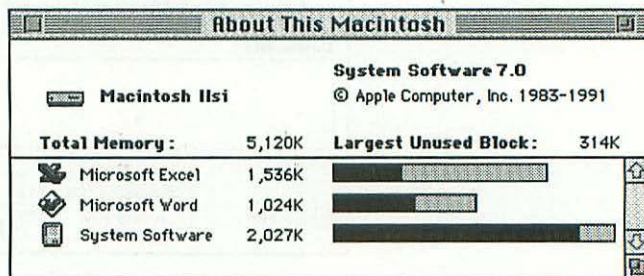
however, 1,536K is the recommended size and is required for some of the program's major features.

PROTECTING AND RECOVERING DATA

If you don't want to lose data (and who does?), it's a good idea to back up your files frequently. Apple used to provide a backup utility with each copy of the operating system, but the company stopped this practice, starting with the release of System 7.

Of course, you can still back up files and folders by copying them: dragging their icons onto other disks. A better alternative is to use a commercial backup utility, such as those included as part of most file recovery programs. The advantage is that these programs let you make selective backups—only certain kinds of files or only files that have been changed. The programs can also compress backup files so they require less disk storage space and can split large files for rejoining later (such as a graphic image that may be too large to be copied onto a single floppy disk).

Even if you do back up files, you will probably be faced some day soon with a file that won't open or a disk that has gone bad.

Using Disk First Aid

System 7 includes a disk repair utility called Disk First Aid. This is a very simple program that may not succeed in repairing your disk and, in fact, could make repair by some other utility more difficult if you let it make automatic changes through its Repair Automatically command.

Here's how you use it:

1. Load the utility. You'll be asked to select a disk for examination.

2. Select the disk you want checked (it could be a floppy or a hard drive), and click the Open button.

3. When the utility has opened the disk to be tested, click the Start button to begin the analysis. You'll see this message: *Checking disk volume....*

4. As illustrated in Figure 10.4, if Disk First Aid categorizes the tested disk as undamaged, you'll see a second message: *Finished. No repair necessary.* You can then pull down the File menu and select the Quit command to return to the desktop, or you can select Open Volume... from the same menu if you want to check another available disk or drive.

5. If the test disk does present a problem, you may obtain an advance warning. For example, Figure 10.5 displays a message reading *Disk with Bad Name*—before the disk is even opened!

6. To have Disk First Aid repair a disk automatically, select the Repair Automatically command from the utility's Options menu. You may still end up seeing the message shown in Figure 10.6: *Unable to read from disk.*

Figure 10.4
Disk First Aid finds that no repair is necessary
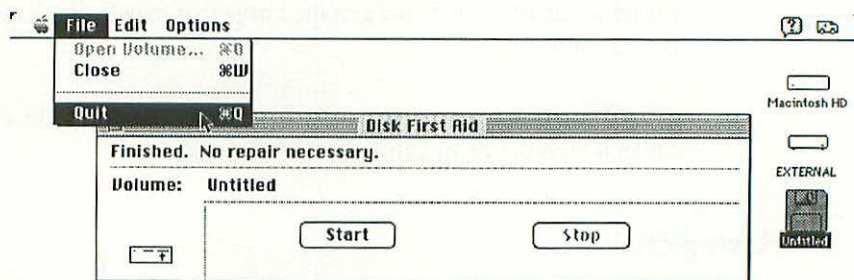
Figure 10.5
Opening a damaged floppy disk
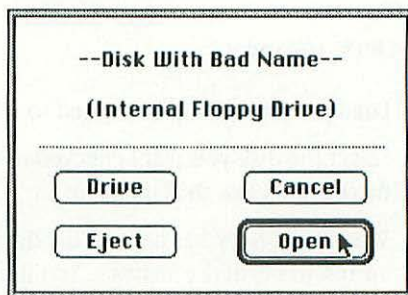
Figure 10.6

Disk First Aid is
unable to repair a disk
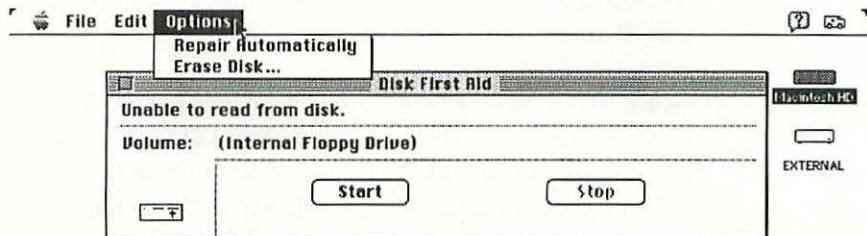
7. When Disk First Aid indicates that a disk is bad, you may be able to salvage the disk (but not its data) by selecting the Erase Disk... command from the Options menu. This command will begin reinitialization of the disk. In many instances, the initialization process will fail.

8. As mentioned in step 4, select the Quit command from the File menu to close the utility and return to the desktop.

Disk First Aid messages can be confusing. For example, one message reads: *This is not an HFS disk.* If you haven't any idea what an HFS disk is, the message won't be of much help. (HFS refers to the Mac's Hierarchical File System of files and folders, used on all Macintoshes following the early 128K and 512K models. Therefore, the message is really saying: *This disk is not formatted for use on a Macintosh.*)

Using Commercial Recovery Programs

Commercial recovery programs can usually analyze a file or disk, provide you a detailed report as to what's right or wrong about the tested item, then supply you with several options for recovery. You may already have such a program, which you bought long ago "just in case" or because of a past crisis. *If this program does not specifically support System 7, don't use it on any Mac running under System 7.* By using one of these utilities created for use with previous versions of the operating system, you could easily alter files or disk information in such a way that recovery will be impossible.

This section will present a few sample screens from Central Point Software's MacTools Rescue utility—just to demonstrate typical recovery options and procedures.

Figure 10.7 shows the Rescue main menu, where you can choose to restore files deleted unintentionally, repair damaged disks, or repair individual files. For example, if you click the Fix Volumes button on this screen and select a disk or drive for analysis, Rescue will run checks on the item, providing in-progress reports as long as the tests show favorable results. As soon as a problem is encountered, the testing process stops; and you'll see a screen such as Figure 10.8, wherein the user is told: *An entire block in the extent file is damaged*. Symptoms are listed that the error could produce, and you're asked if you want to search for files that can be recovered.

Figure 10.9 shows a search in progress, as Rescue lists files that are candidates for recovery, along with their size, an estimate as to how much of the file can be recovered, the date (usually not retrievable), and the type of file.

Figure 10.7
The Rescue main
menu
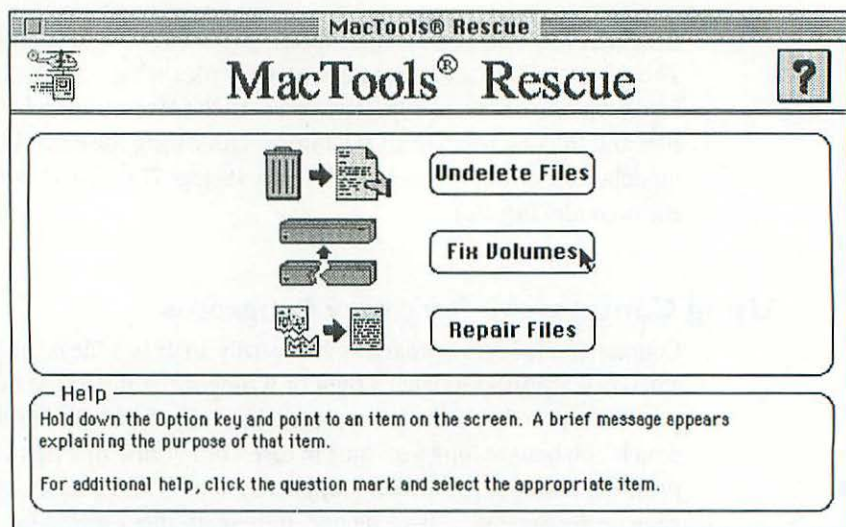
Figure 10.8

A report on disk damage
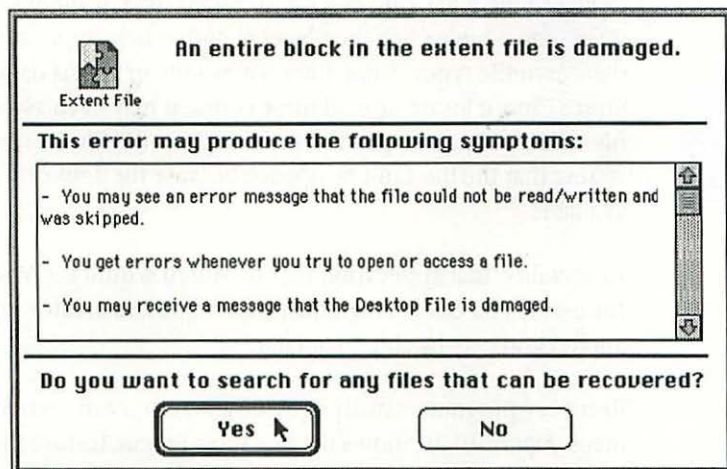
Figure 10.9

Searching for files that can be recovered
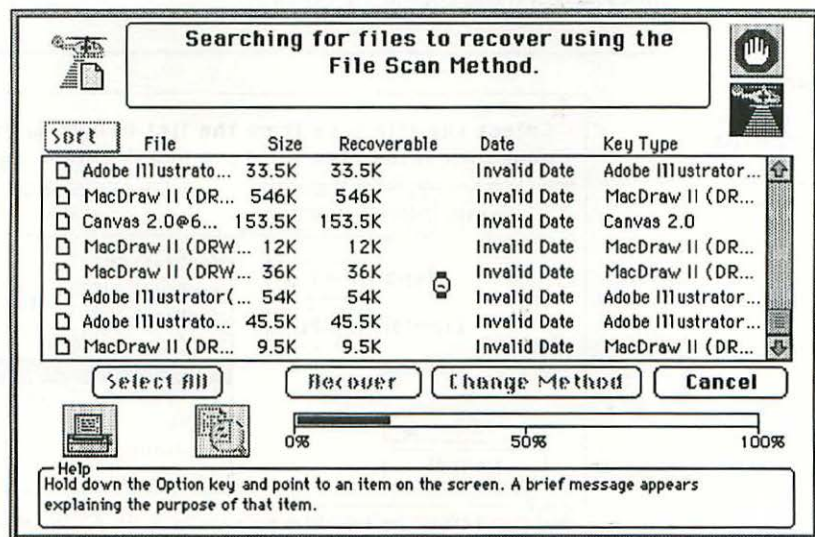
System 7 uses type and creator codes attached to files for multiple purposes: to determine what kind of icon to display, which application should be opened when you double-click the file icon, and to help applications find and open their own file types. Sometimes when a file or disk is damaged, the recovery utility cannot locate or read these codes; it may even assign the wrong codes to files. If this happens, you'll double-click on the file to open it and see a message stating that the file can't be opened because the application that created it is not available.

In actuality, that application may be stored within the Mac's system and ready for use. If you can reassign the proper type and creator codes to the file, the application may be able to open it.

Recovery programs usually provide a way you can accomplish this reassignment. Figure 10.10 shows the MacTools Rescue feature that lets you reassign codes—either from a list supplied, or by typing in the four-letter designations yourself. If you don't know the proper codes for a damaged file and you do know what kind of a file it actually is and which program created it, you can have the utility look at an undamaged file of the same type so you can see the codes assigned and copy them down.

Figure 10.10
Reassigning type and
creator codes


```
Select the file type from the list below, or type in
your own values for the Type and Creator.

Name: Memory dialog

Type:  PICT          MacDraft PICT          ⬆
                     MacDraft PICT
Creator: MDPL        MacDraw
                     MacDraw II (DRWG)
                     MacDraw II (PICT2)
                     MacDraw II (STAT)
     OK  ▶           MacPaint 1.0
                     MacPaint 2.0
   Cancel            MacProject              ⬇
─ Help ──────────────────────────────────────────────
Hold down the Option key and point to an item on the screen. A brief message appears
explaining the purpose of that item.
```

Many experts believe that the Norton Utilities for the Macintosh is currently the most powerful and comprehensive data and disk recovery utility for Macs running under System 7. It supports balloon help and multiple-user access across networks.

FIGHTING VIRUSES ON YOUR MACINTOSH

Computer viruses, as most Mac users know, are files created by people with twisted minds with the objective of destroying your data. If you download files from public bulletin boards or use programs acquired from friends or acquaintances, you're particularly vulnerable to virus infection.

Some viruses are designed to alter your System file so that your data will start disappearing. Others add special instructions to a file, or create a new Startup file.

One of the best System 7 anti-virus programs is SAM (Symantec AntiVirus for Macintosh). It can check your system for viruses, remove any it finds, repair damaged files in some cases, then maintain a watch so that it catches future viruses and destroys them before they can cause any damage.

Figure 10.11 shows SAM in action as it scans the drives of a system looking for viruses.

Figure 10.11
SAM checks
hard drives for
viruses

Selections from The SYBEX Library

APPLE/MACINTOSH

ABC's of Excel on the Macintosh (Second Edition)
Douglas Hergert
334pp. Ref. 634-0

Newly updated to include version 2.2, this tutorial offers a quick way for beginners to get started doing useful work with Excel. Readers build practical examples for accounting, management, and home/office applications, as they learn to create worksheets, charts, databases, macros, and more.

Desktop Publishing with Microsoft Word on the Macintosh (Second Edition)
Tim Erickson
William Finzer
525pp. Ref. 601-4

The authors have woven a murder mystery through the text, using the sample publications as clues. Explanations of page layout, headings, fonts and styles, columnar text, and graphics are interwoven within the mystery theme of this exciting teaching method. For Version 4.0.

Encyclopedia Macintosh
Craig Danuloff
Deke McClelland
650pp. Ref. 628-6

Just what every Mac user needs—a complete reference to Macintosh concepts and tips on system software, hardware, applications, and troubleshooting. Instead of chapters, each section is presented in A-Z format with user-friendly icons leading the way.

Encyclopedia Macintosh Software Instant Reference
Craig Danuloff
Deke McClelland
243pp. Ref.753-3

Help yourself to complete keyboard shortcut charts, menu maps, and tip lists for all popular Macintosh applications. This handy reference guide is divided into functional software categories, including painting, drawing, page layout, spreadsheets, word processors, and more.

Mastering Adobe Illustrator
David A. Holzgang
330pp. Ref. 463-1

This text provides a complete introduction to Adobe Illustrator, bringing new sophistication to artists using computer-aided graphics and page design technology. Includes a look at PostScript, the page composition language used by Illustrator.

Mastering AppleWorks (Second Edition)
Elna Tymes
479pp. Ref. 398-8

New chapters on business applications, data sharing DIF and Applesoft BASIC make this practical, in-depth tutorial even better. Full details on AppleWorks desktop, word processing, spreadsheet and database functions.

Mastering Excel on the Macintosh (Third Edition)
Carl Townsend
656pp. Ref. 622-7

This highly acclaimed tutorial has been updated for the latest version of Excel.

Full of extensive examples, tips, application templates, and illustrations. This book makes a great reference for using worksheets, databases, graphics, charts, macros, and tables. For Version 2.2.

Mastering Microsoft Word on the Macintosh
Michael J. Young
447pp. Ref. 541-7

This comprehensive, step-by-step guide shows the reader through WORD's extensive capabilities, from basic editing to custom formats and desktop publishing. Keyboard and mouse instructions and practice exercises are included. For Release 4.0.

Mastering PageMaker 4 on the Macintosh
Greg Harvey
Shane Gearing
421pp. Ref.433-X

A complete introduction to desktop publishing—from planning to printing—with emphasis on business projects. Explore the tools, concepts and techniques of page design, while learning to use PageMaker. Practical examples include newsletters, forms, books, manuals, logos, and more.

Mastering Powerpoint
Karen L. McGraw, Ph.D.
425pp. Ref. 646-4

The complete guide to creating high-quality graphic presentations using PowerPoint 2.01 on the Macintosh—offering detailed, step-by-step coverage of everything from starting up the software to fine-tuning your slide shows for maximum effect.

Mastering Ready, Set, Go!
David A. Kater
482pp. Ref. 536-0

This hands-on introduction to the popular desktop publishing package for the Macintosh allows readers to produce professional-looking reports, brochures, and flyers. Written for Version 4, this title has been endorsed by Letraset, the Ready, Set, Go! software publisher.

PageMaker 4.0 Macintosh Version Instant Reference
Louis Columbus
120pp. Ref. 788-6

Here's a concise, plain-language reference, offering fast access to details on all PageMaker 4.0 features and commands. Entries are organized by function—perfect for on-the-job use—and provide exact keystrokes, options, and cross-references, and instructions for all essential desktop publishing operations.

Up & Running with PageMaker on the Macintosh
Craig Danuloff
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Ideal for computer-literate users who need to learn PageMaker fast. In just twenty steps, readers learn to import text, format characters and paragraphs, create graphics, use style sheets, work with color, and more.

Understanding Hard Disk Management on the Macintosh
J. Russell Roberts
334pp. Ref. 579-4

This is the most comprehensive and accessible guide to hard disk usage for all Macintosh users. Complete coverage includes SCSI and serial drives and ports, formatting, file fragmentation, backups, networks, and a helpful diagnostic appendix.

Up & Running with Norton Utilities on the Macintosh
Peter Dyson
146pp. Ref. 823-8

In just 20 lessons, you can be up and running with Norton Utilities for the Macintosh. You'll soon learn to retrieve accidentally erased files, reconstruct damaged files, find "lost files," unformat accidentally formatted disks, and make your system work faster.

Using the Macintosh Toolbox with C (Second Edition)
Fred A. Huxham
David Burnard

Jim Takatsuka

525pp. Ref. 572-7

Learn to program with the latest versions of Macintosh Toolbox using this clear and succinct introduction. This popular title has been revised and expanded to include dozens of new programming examples for windows, menus, controls, alert boxes, and disk I/O. Includes hierarchical file system, Lightspeed C, Resource files, and R Maker.

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Bob Campbell

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Learn all about communications and information retrieval as you master and use PROCOMM PLUS. Topics include choosing and using a modem; automatic dialing; using on-line services (featuring CompuServe), and more. Through Version 1.1b; also covers PROCOMM, the "shareware" version.

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Peter W. Gofton

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Sample programs in C, assembly language and BASIC.

Mastering UNIX Serial Communications

Peter W. Gofton

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The complete guide to serial communications under UNIX. Part I introduces essential concepts and techniques, while Part II explores UNIX ports, drivers, and utilities, including MAIL, UUCP, and others. Part III is for C programmers, with six in-depth chapters on communications programming under UNIX.

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Bob Campbell

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NETWORKS

The ABC's of Local Area Networks

Michael Dortch

212pp. Ref. 664-2

This jargon-free introduction to LANs is for current and prospective users who see general information, comparative options, a look at the future, and tips for effective LANs use today. With comparisons of Token-Ring, PC Network, Novell, and others.

The ABC's of Novell NetWare

Jeff Woodward

282pp. Ref. 614-6

For users who are new to PC's or networks, this entry-level tutorial outlines each basic element and operation of

Novell. The ABC's introduces computer hardware and software, DOS, network organization and security, and printing and communicating over the netware system.

Mastering Novell NetWare
Cheryl C. Currid
Craig A. Gillett
500pp. Ref. 630-8

This book is a thorough guide for System Administrators to installing and operating a microcomputer network using Novell Netware. Mastering covers actually setting up a network from start to finish, design, administration, maintenance, and troubleshooting.

OPERATING SYSTEMS

The ABC's of DOS 4
Alan R. Miller
275pp. Ref. 583-2

This step-by-step introduction to using DOS 4 is written especially for beginners. Filled with simple examples, *The ABC's of DOS 4* covers the basics of hardware, software, disks, the system editor EDLIN, DOS commands, and more.

The ABC's of DOS 5
Alan Miller
267pp. Ref. 770-3

This straightforward guide will haven even first-time computer users working comfortably with DOS 5 in no time. Step-by-step lessons lead users from switching on the PC, through exploring the DOS Shell, working with directories and files, using essential commands, customizing the system, and trouble shooting. Includes a tear-out quick reference card and function key template.

ABC's of MS-DOS
(Second Edition)
Alan R. Miller
233pp. Ref. 493-3

This handy guide to MS-DOS is all many PC users need to manage their computer files, organize floppy and hard disks, use

EDLIN, and keep their computers organized. Additional information is given about utilities like Sidekick, and there is a DOS command and program summary. The second edition is fully updated for Version 3.3.

The ABC's of SCO UNIX
Tom Cuthbertson
263pp. Re. 715-0

A guide especially for beginners who want to get to work fast. Includes hands-on tutorials on logging in and out; creating and editing files; using electronic mail; organizing files into directories; printing; text formatting; and more.

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Kris Jamsa
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Paul J. Perry
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DOS 3.3 On-Line Advisor
Version 1.1
SYBAR, Software Division of SYBEX, Inc.
Ref. 933-1

The answer to all your DOS problems. The DOS On-Line Advisor is an on-screen reference that explains over 200 DOS error messages. 2300 other citations cover all you ever needed to know about DOS. The DOS On-Line Advisor pops up on top of your working program to give

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SYBEX Prompter Series
Greg Harvey
Kay Yarborough Nelson
220pp. Ref. 477-1

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Robert M. Thomas
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The DOS 5 User's Handbook
Gary Masters
Richard Allen King
400pp. Ref. 777-0

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Encyclopedia DOS
Judd Robbins
1030pp. Ref. 699-5

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Offers complete information on every DOS command, with all possible switches and parameters—plus examples of effective usage. An invaluable tool.

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Written by an OS/2 expert, this is the guide to the powerful new resources of the OS/2 operating system standard edition 1.1 with presentation manager. Robbins introduces the standard edition, and details multitasking under OS/2, and the range of commands for installing, starting up, configuring, and running applications. For Version 1.1 Standard Edition.

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Susan Soltis Shaw
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Glenn H. Larsen
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Up & Running with Harvard Graphics
Rebecca Bridges Altman
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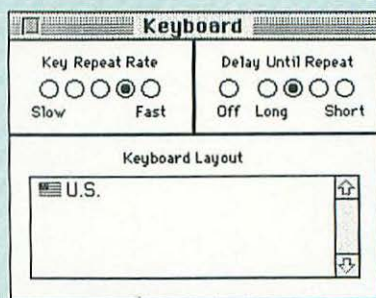- -

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System 7
Control
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Color

Highlight color: [ ] Yellow ▼

Sample text

Window color:
- Standard ▶
- Gold
- Green
- Turquoise
- Red
- Pink
- Blue
- Gray
- Black & White

Choose a highlight color:

Hue	10417
Saturation	56899
Brightness	59936
Red	59936
Green	57527
Blue	7899

[Cancel]   [OK]

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Initial Delay : ○○◉○○
                 long   short

Maximum Speed : ○○   ◉○○○   ○○
                 slow   medium   fast

Slow Keys: ○ On   ◉ Off

Acceptance Delay : ○○◉○○
                    long   short

☒ Use key click sound

Sticky Keys: ○ On   ◉ Off

☒ Beep when modifier key is set

General Controls

Desktop Pattern

Menu Blinking

○ ○ ○ ◉
Off 1 2 3

Rate of Insertion Point Blinking

○ ◉ ○
Slow   Fast

Time 🕐
8:08:45 PM

◉ 12hr. ○ 24hr.

Date 📅
5/16/92

Keyboard

Key Repeat Rate
○○○◉○
Slow   Fast

Delay Until Repeat
○ ○◉○○
Off Long   Short

Keyboard Layout

▤ U.S.

Labels

- General Office
- Marketing
- Production
- Accounting
- Warehouse
- Design
- Service

Map

Add City · Remove City · v 7.0

Location · Find

Latitude	0	° 0	'	⊠ N
Longitude	0	° 0	'	⊠ E
Time Zone	0	h 0	m	⊠ +

mi 0 · 8:21 PM · Set

Memory

Disk Cache
Always On · Cache Size · 128K ⬍

Select Hard Disk:

Virtual Memory · Hard Disk ▼
○ On
◉ Off · Available on disk: 15M
Total memory : 5M · ⬍

32-Bit Addressing
○ On
◉ Off

Use Defaults

v7.0

Startup Disk

Select a Startup Disk:

EXTERNAL · Macintosh HD

Sound

Speaker Volume · Alert Sounds

7 –
6 –
5 –
4 –
3 –
2 –
1 –
0 –

Droplet
Indigo
Quack
Simple Beep
Sosumi
Wild Eep

Add... · Remove

Options...

Microphones

Built-in

Mouse

Mouse Tracking

○ Very Slow · ○○◉○○○ Slow ... Fast

Double-Click Speed

Sharing Setup

Network Identity

Owner Name :
Owner Password :
Macintosh Name :

File Sharing

Start

Status
File sharing is off. Click Start to allow other users to access shared folders.

Program Linking

Start

Status
Program linking is off. Click Start to allow other users to link to your shared programs.

Views

Font for views: Geneva ▼ · 9 ▼

Icon Views

▢ ▢ ▢ ▢ ◉ Straight grid
▢ ▢ ▢ ▢ ○ Staggered grid · ☐ Always snap to grid

List Views

◉ ○ ○

⊠ Show size
⊠ Show kind
⊠ Show label
⊠ Show date
☐ Show version
☐ Show comments

☐ Calculate folder sizes
☐ Show disk info in header

Introduction to
Macintosh System 7

Introduction to Macintosh System 7 is a complete, plain-language guide to the exciting new features and capabilities of System 7, the much-awaited new operating system for the Mac. Turn here for:

- Practical, hands-on coverage of every aspect of the system, from installation to advanced and specialized techniques.
- Up-to-the-minute information you won't find in other books, with full details on features not available in pre-release *beta* versions of System 7.
- Complete compatibility information for pre-System 7 programs and accessories—with tips and tricks for making your old software work in the new environment.

Explore all the ins and outs of the System 7 desktop, with a comprehensive tour of the system menus and desk accessories.

Learn how to set up and run multiple applications, including tips on organizing the system for efficient multitasking.

Customize the system to suit your tastes and increase productivity. Topics include using custom icons; creating labels to group files and folders; file aliasing; and much more.

Learn all you need to know about printing and fonts, including printing on a network; and detailed coverage of working with TrueType, PostScript, and bit-mapped fonts.

Take advantage of sophisticated file-sharing techniques, including how to control file access on networks; share disks with MS-DOS computers; and link files using Publish and Subscribe.

You'll also find: in-depth coverage of System 7's sound features; an insider's guide to hardware and software enhancements; and valuable information on memory management, data recovery, and virus protection.

About the Author

Marvin Bryan is a well-known author and columnist in the personal computing field. His feature articles on Macintosh applications have appeared in such major national publications as *Macworld* and *Personal Publishing*. His other books include SYBEX's *Mastering Excel 3 on the Macintosh*.

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