

CHILTON'S BUSINESS COMPUTING SERIES

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MANAGING YOUR OFFICE WITH  
**MACINTOSH**



Phillip and Kathryn Good

**CHILTON** BOOK  
COMPANY

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**Good, Phillip I.**  
**Managing your office with**  
**Macintosh**

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Managing Your Office  
with Macintosh

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**Writing Business Programs in C Language (co-authored with Martin Franz)**



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# **Managing Your Office with Macintosh**

**Phillip and Kathryn Good**

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CHILTON BOOK COMPANY  
Radnor, Pennsylvania

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# Managing Your Office with Macintosh

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# **Programs for All Your Office Needs 1**

Congratulations! You are the owner of one of the most advanced personal computers on the market today. With the right software, you will be able to manage and improve every aspect of your business, including financial planning, promotion, correspondence, order entry, and order fulfillment.

The Macintosh has impressive technical specifications. It has an ultrafast MC68000 microchip, for example, whose 32-bit architecture allows the Macintosh to address up to 5 Megabytes of add-on memory. But these technical specifications mean nothing without the software—the sets of programmed instructions that tell the computer what to do.

## **SOFTWARE IS THE KEY**

The purpose of this book is to guide you to the software you need for your business applications and to show you how to put the software to work. This book is a practical guide to computerizing your business. It can be read and applied in every small business and every home office by accountants, attorneys, engineers, contractors, consultants, mail order, manufacturers representatives, publishers, and physicians. And it will prove invaluable to the manager and executive who has budgetary responsibility for running his or her own “small business” within a corporation. You learn step by step how to computer-

ize your most important business operations, and you learn how to maximize your benefits with a minimum expenditure of your time and dollars.

You receive practical, worked-through examples of such popular Macintosh software as Multiplan, Chart, MacWrite, Filevision, MegaMerge, and ThinkTank. And you get a guide to dozens of other business applications.

## WHAT DO YOU NEED TO KNOW?

Knowing computer jargon won't help you to computerize. Instead, you must thoroughly understand your business. You need to know your strengths and weaknesses. And you need to know what the computer can do for you now, as well as three years from now.

Computer benefits are what this book is all about. *Managing Your Office With Macintosh* will help you in three ways. First, by introducing you to the computer's potential with chapters on spreadsheets, charts and graphs, word processing, data management, mass mailings, and inventory control. Second, with hands-on tutorials that take you step by step through major business applications. Third, you'll use the detailed guides to software and hardware selection to increase your capabilities.

Success in computerizing your business, as in any other business venture, is never guaranteed. But you can help cut down the odds by determining which jobs a computer can do for you more effectively than you now do for yourself.

## ESTABLISHING YOUR APPLICATIONS

Almost every business can benefit by using a spreadsheet, a word processor, and a data manager. In Chapter 2, you learn how to use Multiplan, an electronic spreadsheet, for sales analysis, checkbook reconciliation, chemical calculations, financial planning, manpower assignments, and preparing a graph. You'll discover that there are hundreds of other applications for an electronic spreadsheet too.

Graphs and charts are among the most effective ways to get your point across. They're particularly valuable when you need to make multiple comparisons. In Chapter 3, you learn how and when to make column charts, pie charts, bar charts, line graphs, area charts, and scatter plots. You learn how to transfer information directly from a spreadsheet to a graph. And you learn how to customize each type of graph to meet your exact reporting needs.

In Chapter 4 you learn to use MacWrite to prepare letters, reports, and




## **Bugstopper's Notebook: If All Else Fails**

Computers can be confusing. Throughout this book, you'll find these special sections set off from the rest of the text devoted to helping you recover from possible errors — human or otherwise. We'll show you how to backup and recover your work and how to make corrections simply but effectively. So read on, experiment, and enjoy computerizing your office.

justifications. You learn how to eliminate typists and how to reassign much of the text-editing and report-producing work to others. You also learn how to combine text, charts, and tables in a single report. In the second part of the chapter, you learn how to prepare longer documents and reports with the aid of a thought-organizer program called ThinkTank.

Computerized data management is the topic of Chapter 5. You learn how to record and maintain client and prospect information, maintenance schedules, experimental observations, and product specifications, how to select prime prospects, and how to prepare and print reports and mailing labels.

In Chapter 6, you apply what you've learned to the preparation of a mass mailing. MegaMerge lets you combine the work you've done with your word processing and your data-management software to produce personalized form letters and mailing labels.

Inventory control is the topic of Chapter 7. To help increase your turnover while reducing the size of your inventory, you learn to use the data-management software in Chapter 5 to track the location as well as the quantity of each item you have in stock. 

In Chapter 8, you learn a variety of other business applications for the Macintosh, including accounting, project and appointment scheduling, communications, and developing your own programs. Capsule reviews of some of the more popular business software for the Macintosh are included in Appendix I. Appendix II contains a guide to hardware additions that can increase your productivity, including extra memory, a telephone modem, and a hard disk.

You'll get triple your value from this book. Once, as an introduction to the benefits a Macintosh can provide. Once, when you sit down to plan how to computerize your business. And once again when it comes time to install and take advantage of your Macintosh software. You can have confidence in your efforts at computerization from the very start.

Read the case histories and work through the tutorials, and you'll computerize your office efficiently and successfully.



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# **A Spreadsheet Has 1001 Uses 2**

Electronic spreadsheets are the most popular computer programs on the market today. Why are they so popular? “Immediacy, ease of use, and cost,” says Clark D. Hurlbert, treasurer of the Durametallic Corporation in Kalamazoo, Michigan. “But mostly because with an electronic spreadsheet, I need no help from anyone else.”

An electronic spreadsheet turns your video display into a gigantic worksheet that is already divided into rows and columns. You can type in numbers, row and column headings, or formulas, or you can simply tell the program to duplicate previous entries. The spreadsheet program does the adding and subtracting for you, along with multiplication, division, partial sums, minimums, maximums, and square roots. If you change a number, it will update all the entries that depend on that number automatically and instantly. With a single instruction, you can alter the format of the display to suit your convenience. You can insert or delete rows and columns, alter the column width, or change the number of decimal places. And there’s never a visible erasure! You can save the results for future updates and create a printed copy to show your banker, potential investors, and the IRS.

There are literally thousands of applications for a spreadsheet in your office, including budgets, cash-flow forecasting and analysis, checkbook register, chemical calculations, contractor bid calculations, engineering calculations, financial planning, inventories, lease-versus-buy analysis, ledgers, loan amorti-

zation, manpower assignments, market analysis, materials and labor requirements planning, performance analysis, pricing strategies, profit and loss statements, rate-of-return calculations, sales forecasts, statistics, surveys, tax records, and tax returns.

## WHO USES ELECTRONIC SPREADSHEETS?

It took Jim Gaston, owner of Gaston's White River Resort in the Ozark Mountains near Lakeview, Arkansas, almost 30 hours working until 4 o'clock in the morning to learn to use an electronic spreadsheet. But since those first long nights alone, Gaston has developed almost 30 worksheets for different aspects of his business — daily sales reports, year-to-date and month-to-date sales comparisons in 23 different categories, and monthly sales tax and alcohol tax reports. Gaston says, "I would have to hire three more people to do all the things I can do with my spreadsheet. And I've got far better control over my investments."

Steven Stadler of Genrad, Inc. in Concord, Massachusetts, uses a spreadsheet and his desk-top computer to make projections about new product lines. With the spreadsheet's aid, he can quickly explore a variety of what-ifs. What if the price of raw materials goes up 15 percent in a year or two? What will be the effect on profits? By changing a single number on the worksheet, he can assess the ramifications for three years of sales.

A spreadsheet is among the easiest programs to learn how to use. You can be doing productive work within half an hour (or you can stay up all night with the manual in hand if you want to master every last subtlety). The table shown in Figure 2-1 took exactly 60 seconds to prepare; to produce a similar table, all you need to know is how to type. To convert this table to a full-fledged sales analysis

**FIG. 2-1**

### BOOK SALES FOR FIRST SIX MONTHS

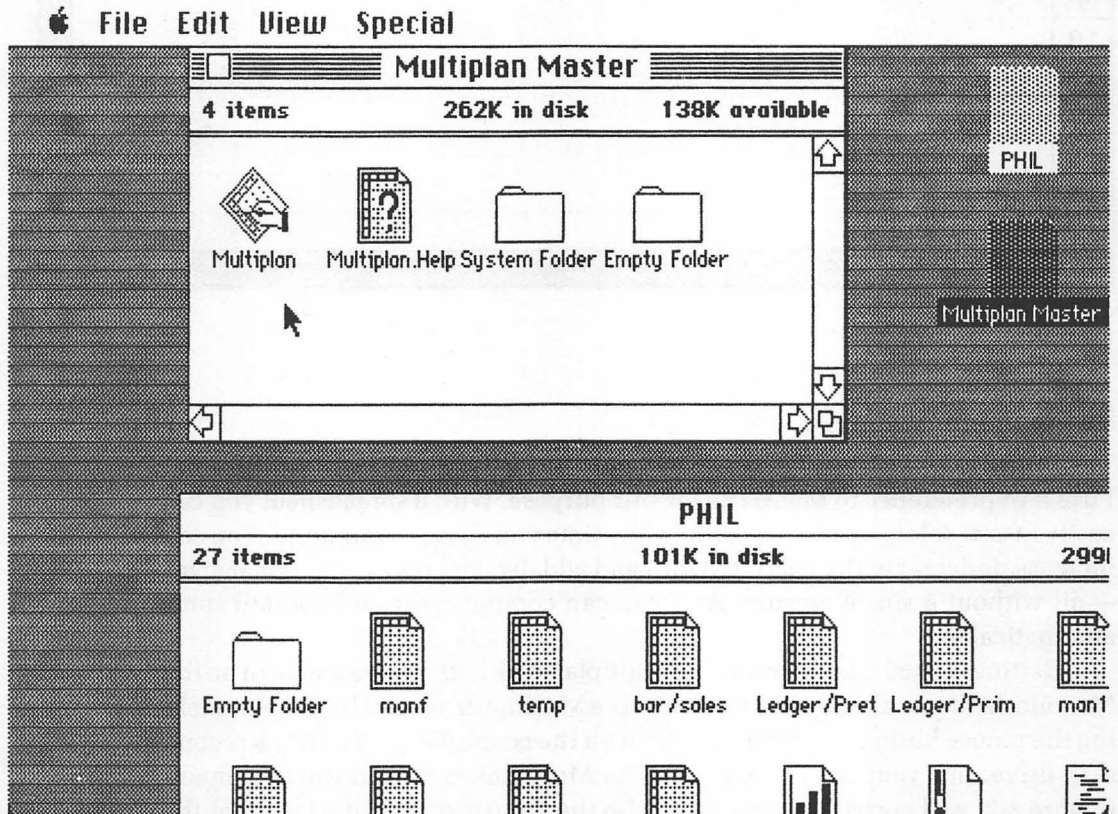
Jan	350
Feb	500
Mar	900
Apr	1200
May	400
June	250
Total	3600

will take you only about 45 minutes with the aid of the instructions given in this chapter.

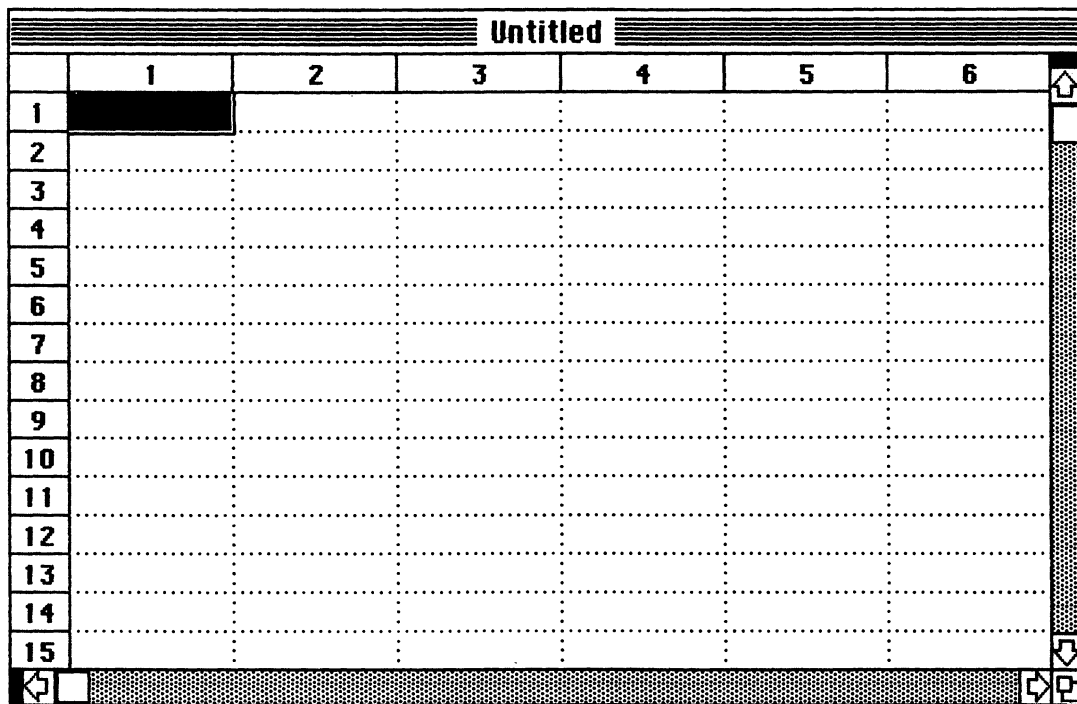
Also included in this chapter are step-by-step instructions for creating spreadsheets for (1) tracking taxable expenses, (2) assigning tasks to personnel, (3) computing interest on a bank deposit, and (4) creating a graph to show your banker.

There's a big difference between just using a spreadsheet and using it effectively. In the concluding section of this chapter, you receive tips on applying advanced features of a spreadsheet and learn six simple rules for increasing the spreadsheet's value to your business.

FIG. 2-2



**FIG. 2-3**



	1	2	3	4	5	6
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						

## BUILDING A TABLE

The spreadsheet is so well adapted to organizing facts and figures into tables that I use it in preference to MacWrite for this purpose. With a spreadsheet you can easily insert, delete, or move a column any time you change your mind. You can increase or decrease the column width and add decimal points and dollar signs—all without a single erasure. And you can compute row and column sums automatically.

Getting started is easy. Insert the Multiplan disk in the drive and turn on the Macintosh. (If you already have a disk in the Macintosh, eject it by double-clicking the mouse button as soon as you turn on the computer. If you own a second disk drive, put your data disk in it.) The Multiplan master document menu (Figure 2-2) will appear on the screen. Use the mouse to point the cursor at the

Multiplan folder on the far left of the menu and double-click. You hear the internal disk drive whirr and in a moment you see the Multiplan spreadsheet (Figure 2-3).

Note that the 6 columns and 15 rows that appear on your screen are only a small fraction of the potential spreadsheet, which may be as large as 63 columns and 250 rows. Don't believe me? Move the cursor to the right or bottom border of the screen to scroll to the other hidden areas of the spreadsheet. Point to the arrow and click to move a column or row at a time. Point to the boxes (next to the arrows in the upper-right and lower-left corners initially) and drag them down or across to scroll across several rows or columns at one time (see Figure 2-4).

Now we're going to use the keyboard to enter a column of figures.

Move the cursor to row 1 of column 1 and click. (If you have completed the previous exercise, you will need to use the arrows and boxes in the borders to scroll back to this section of the spreadsheet first.)

FIG. 2-4

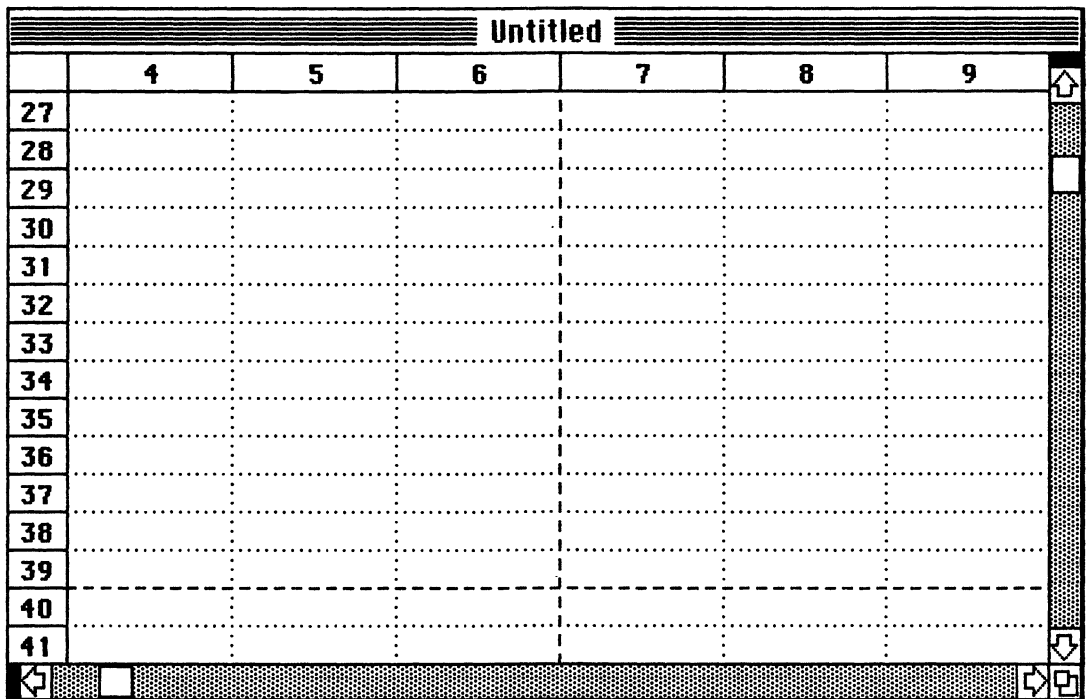


FIG. 2-5

	1	2	3	4	5	6
1	350					
2	500					
3	900					
4	1200					
5	400					
6	250					
7						
8						
9						
10						
11						
12						
13						
14						
15						

Enter the figures as shown in Figure 2-5. Type 350 and press Return. (The cursor will advance to the second row of column 1.)

Type 500 and press Return.

Finish entering the rest of the numbers. Each time you press Return, the active cell (colored black) moves down one row in the column.

I didn't just choose the numbers 350 and 500 at random. Several years ago, I decided to self-publish my first book, *Choosing a Word Processor*. (You notice that I've not made the mistake of trying to publish and distribute this book myself.) We started distributing the word processing book in January and along about July I decided it was time to start keeping track of sales. What you see in the first column are the sales figures for these six months.

This table leaves something to be desired. There's no title and we've left out the names of the months. But we don't need to erase or start all over. This is an



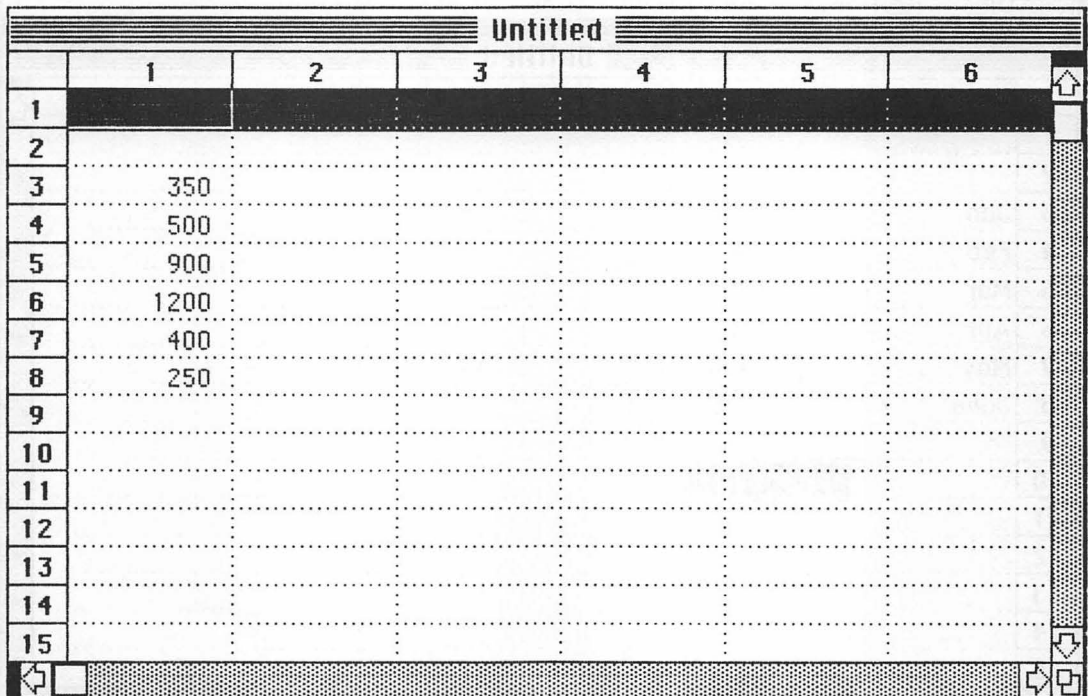
electronic spreadsheet and it will take us only a few seconds to rearrange the display.

First, let's insert two rows at the top of the table so we can put in a title. To insert an empty row takes three steps:

1. Press the shift key (at the right or left end of the second row on the keyboard) and hold it down.
2. Point with the cursor to the number "1" which labels row 1 (it's at the top left of the spreadsheet).
3. Click. (Now you can release the shift key.)

Repeat this procedure twice, and the spreadsheet will look like Figure 2-6. You may insert an empty row or column anywhere in a spreadsheet even

FIG. 2-6



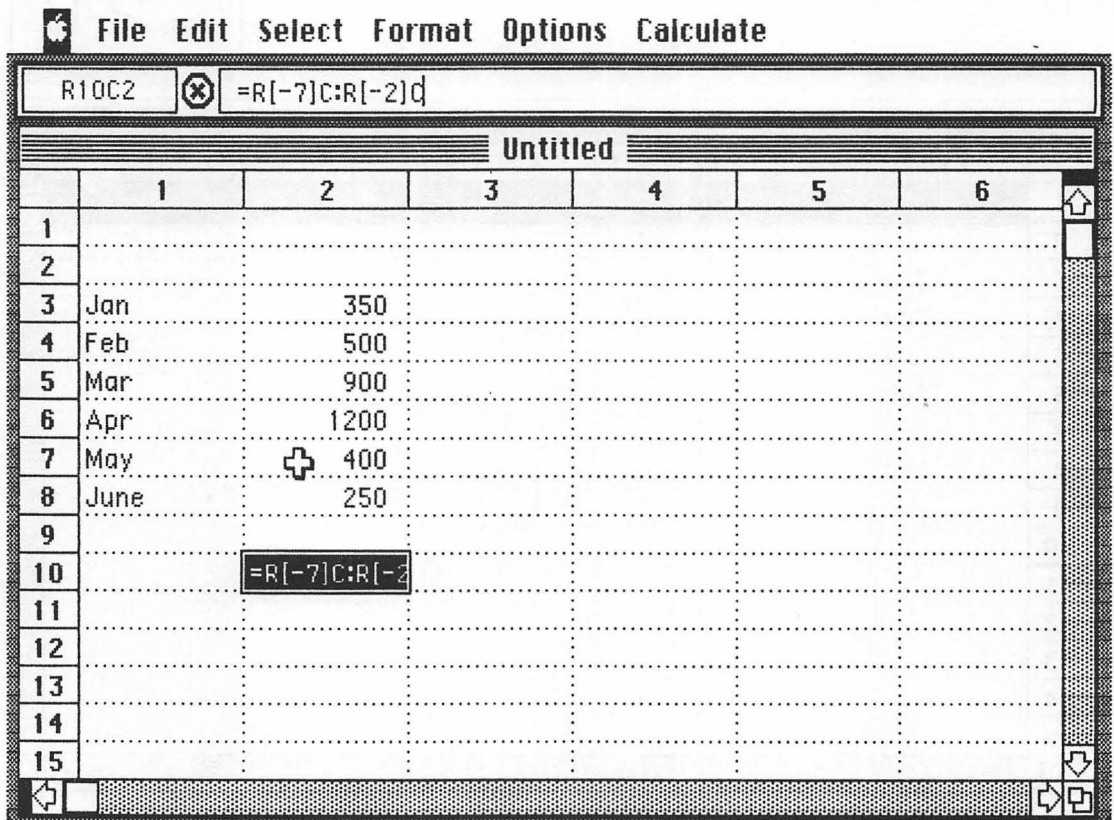
	1	2	3	4	5	6
1						
2						
3	350					
4	500					
5	900					
6	1200					
7	400					
8	250					
9						
10						
11						
12						
13						
14						
15						

## Made a Mistake?

It's easy to correct an accidental typing error. Use the cursor, if necessary, to return to the cell where you made the mistake. Use the backspace key to erase the characters you typed incorrectly, then type them again.

If you need to erase several cells at one time, mark them with the cursor, then select the Clear option from the Edit menu.

FIG. 2-7





## Printing a Hard Copy of Your Results

To produce a hard copy of Figure 2-1 just as it appears in this book takes three steps. First, turn on the printer. Next, drag the cursor across the display to mark off the region covered by the table from row 1, column 1, to row 11, column 4. Last, pull down the Edit menu as shown in Figure 2-8, select the Print option, and stand back. If you'd like to reproduce everything that's on the display screen—borders, menus, and all—depress the Caps Lock key on the left side of the keyboard and hold down the shift key, the  $\mathbb{X}$  key, and the numeral 4 simultaneously.

after it is completely filled in. To insert a column (row), hold down the shift key, point with your cursor to the column (row) number where you want the insert, and click. To test your understanding, insert an empty column at the left of the table for the names of the months. (Hint: After depressing the shift key, point with the cursor to the number "1," which labels column 1; it's in the row immediately above the spreadsheet.)

Move the cursor to the third row of the column you've just inserted (R3C1), click and type Jan [return], Feb [return], Mar [return], Apr [return], May [return], June [return] until you've filled out the column.

Now the table almost looks like Figure 2-1.

We're not finished, however. The original intent of this table was to track the sales of my book. We can't really tell anything from the table until we sum the sales figures. Move the cursor to the foot of column 2 in row 10, column 2, where you will enter the summation formula

Type:     =

(This tells the computer that you are about to enter a function or formula.)

Type:     SUM{

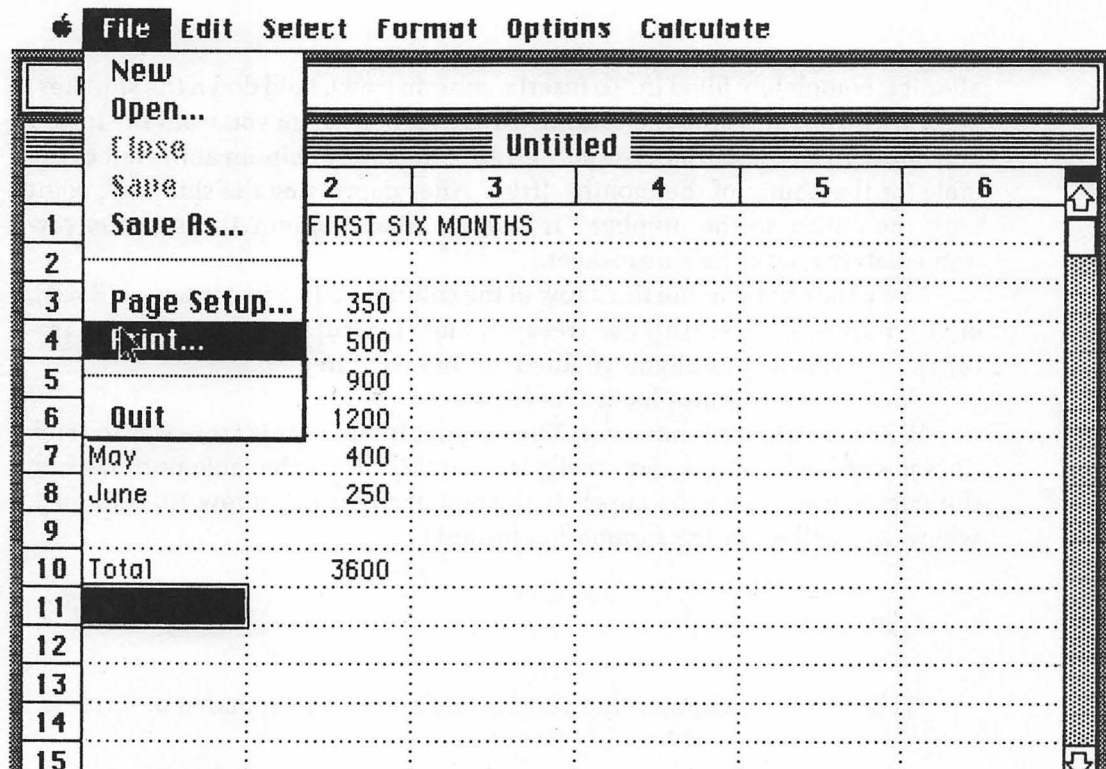
(This tells the computer that you want to compute a sum.)

Move your cursor to the first figure in the column (350), click and continue to hold down the click button as you drag the cursor down the column of figures that you want to sum. You have just defined the range over which you will sum. Now the screen looks like Figure 2-7.

Type: **=** and press Return

The sum 3600 appears at the foot of the column. Add the titles, "Book Sales for First Six Months" and "Total," and you have Figure 2-1.

FIG. 2-8



## GETTING HELP

Multiplan has many functions like SUM that can simplify your calculations. You can access this list or get help with any of Multiplan's other features whenever you use the program. Here is how:

Point the cursor to the apple (at the far left of the menu line at the top of the screen) and pull down the apple menu. Point the cursor to the first item on the menu, "About Multiplan," and click to see the Multiplan help menu (Figure 2-9). Scroll through this menu by dragging the cursor down its border until you find the item about which you want additional information. Point to the item and click. Then move the cursor down to the "Help" square and click again. Figure 2-10 is the display you receive when you ask Multiplan for help with its statistical functions. (To return to the spreadsheet, move the cursor to the "Cancel" square and click.)

## MAINTAINING AN ELECTRONIC CHECKBOOK

*How to Get a Free Desktop Computer* is the title of an excellent book by Vernon K. Jacobs CPA, FPA. It's \$9.95 from Research Press, 4500 West 72nd Terrace, Prairie Village KS 66208. However, I'll give you Jacobs's secret for free: Make your computer tax-deductible.

The best way to make your computer tax-deductible is by using it for business purposes. In this section, you learn how to use your Macintosh and the Multiplan spreadsheet to maintain an electronic register of checks in which you record your withdrawals and deposits.

For example, my own checkbook register is shown in its raw form (Figure 2-11) as it appears in part on the Macintosh display. I use this register to maintain a running balance, to reconcile my bank statements at the end of the month (I keep a separate register for each account), and to help prepare my tax return.

Figure 2-11 shows our new electronic checkbook as of the 15th of the month. To get to this point, you have to make extensive use of Multiplan's Format menu. We have modified the column widths and, in the case of columns 4 to 6, converted to dollar format in which all negative amounts are enclosed in parentheses.

Turn on the computer and load the Multiplan spreadsheet. If you are continuing from the last example, you will have to clear the screen before you can go any further. One quick way to clear the screen is to use the "New" option from the File menu.

When we first load a new spreadsheet into Multiplan, all columns are the same width, 10 digits across, and all numbers are automatically given the Gen-

FIG. 2-9

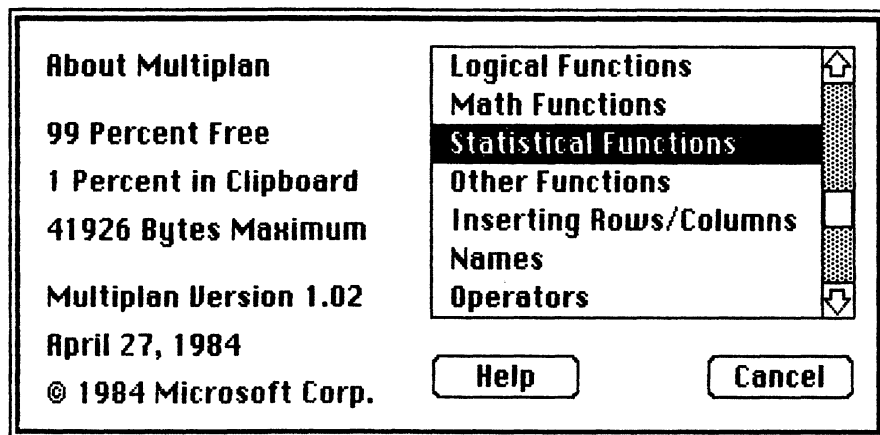


FIG. 2-10

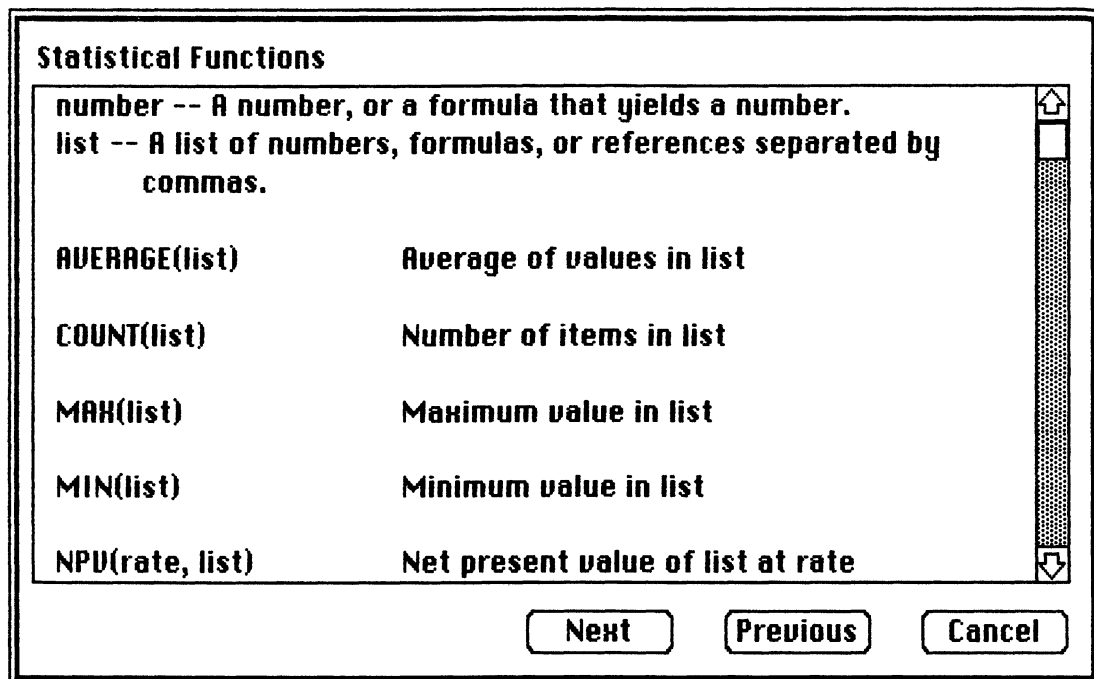


FIG. 2-11

File Edit Select Format Options Calculate

R14C2 01-

Checkbook.final

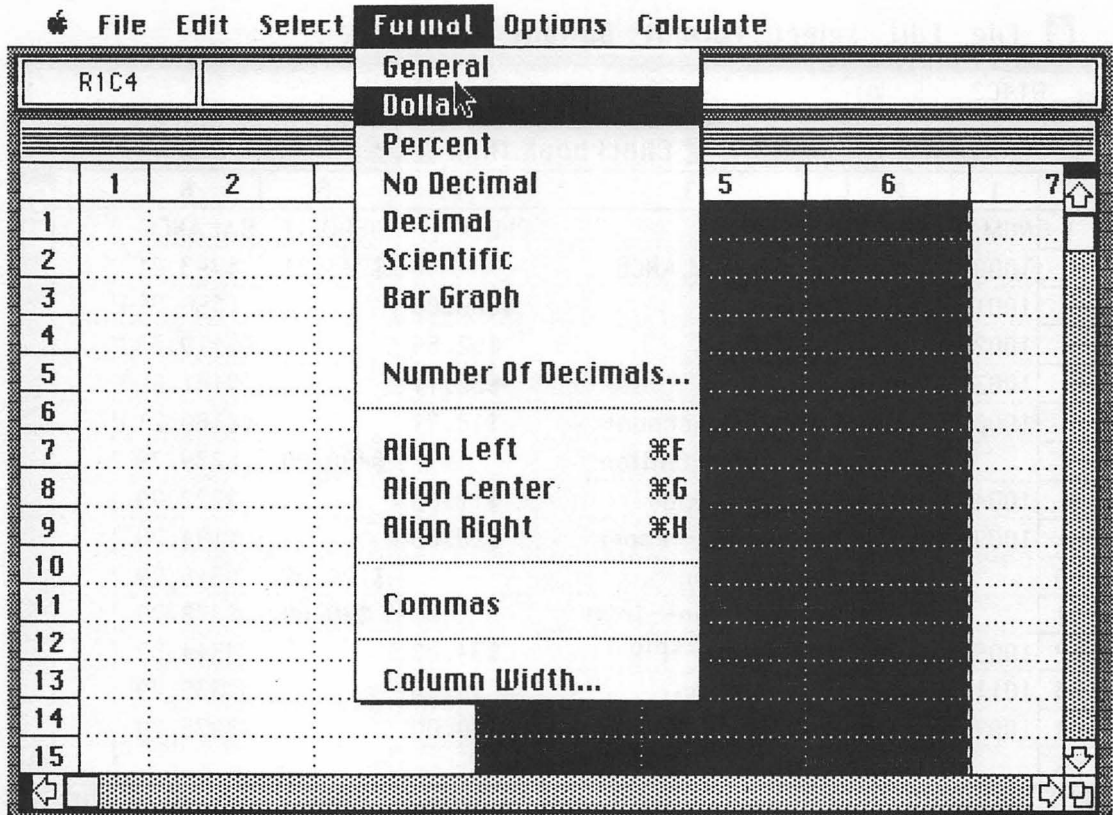
	1	2	3	4	5	6	
1	NUM	DATE	ACCOUNT	CHECK	DEPOSIT	BALANCE	
2	1000	01-01	OPENING BALANCE		\$743.21	\$743.21	
3	1001	01-01	Rent	\$800.00		(\$56.79)	
4	1002	01-01	Electricity	\$62.54		(\$119.33)	
5	1003	01-03	Telephone	\$22.17		(\$141.50)	
6	1008	01-04	Lunch-HJ Account	\$18.71		(\$160.21)	
7		01-05	Royalties--Chilton		\$400.00	\$239.79	
8	1004	01-07	Health--Aikido	\$17.00		\$222.79	
9	1009	01-11	Newsletter--Paper	\$28.00		\$194.79	
10		01-12	Subscription		\$124.00	\$318.79	
11		01-12	Subscription--Trial		\$60.00	\$378.79	
12	1005	01-05	Newsletter--PIP	\$34.27		\$344.52	
13	1011	01-14	UPS--Chilton	\$8.73		\$335.79	
14	1007	01-+	Newsletter--Postage	\$60.00		\$275.79	
15							

eral format. To change the format column by column, point to the column whose format you wish to change, say column 1, and pull down the Format menu.

Multiplan's pull-down Format menu (Figure 2-12) has 13 options, including dollar, percent, decimal, and no decimal. To convert a selected number or column to a dollar format, point with the cursor to the word "Dollar" and click. To alter the width of a column, select "Column Width."

Let's begin by shrinking the width of the first column, the one that will contain the check number. Move the cursor to the "1" at the top of the first column and click; the entire column turns black to show that you have selected

FIG. 2-12



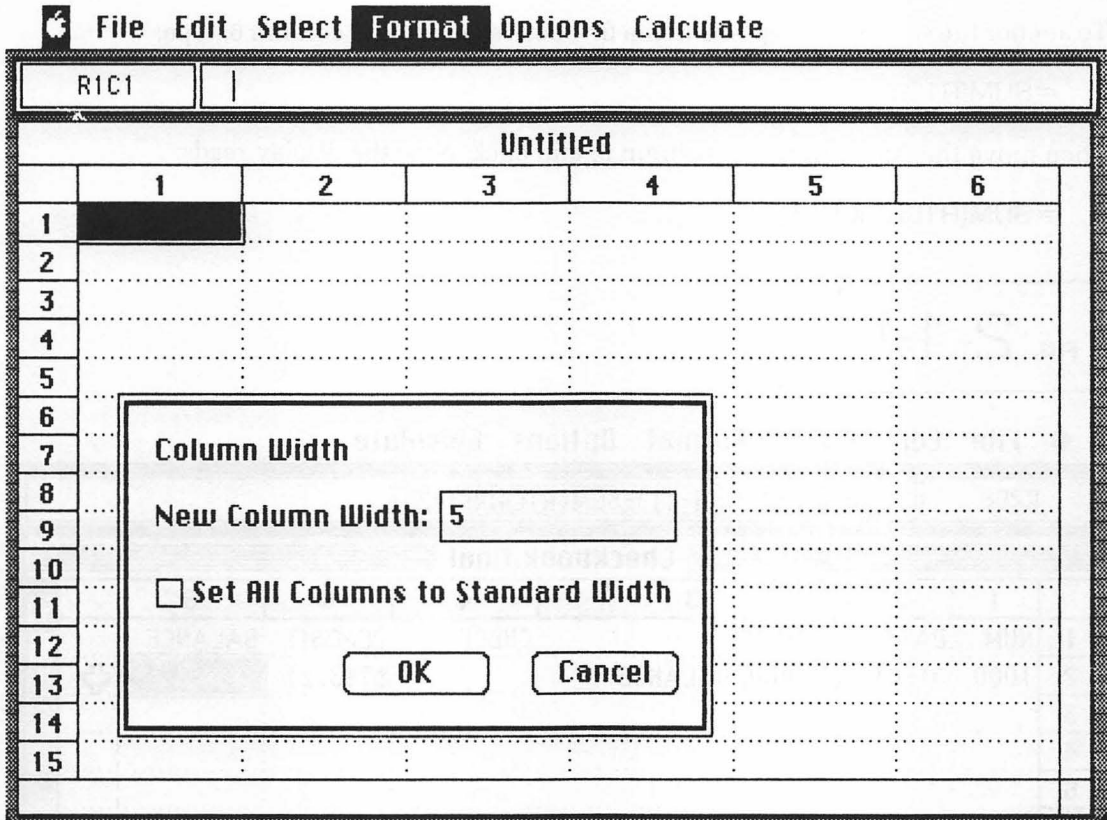
it. Pull down the Format menu and select Column Width. Enter a 5 when you are asked to specify a width (see Figure 2-13).

Repeat this procedure for columns 2 and 3, using 6 for the width of column 2 (the date) and 20 for column 3 (the account description). You could format columns 4, 5, and 6 individually, but there is a much faster way to change the format of several adjacent columns. Simply drag the cursor across the column numbers before pulling down the Format menu, as shown in Figure 2-12.

To format several columns that are not adjacent, use the following procedure: Point to the number at the top of the first column and click. The entire



FIG. 2-13



column will turn black. Now, hold down the command key — the key marked **⌘** on the left side of the bottom row — and point/click each of the remaining columns. This is the technique to use when creating an alternating dollar/description format for a ledger or accounting journal.

#### COMPUTING A RUNNING BALANCE

When you have altered the column widths and entered the column headings to suit your convenience, you are ready to enter the formula for the running

balance:

$$\begin{aligned}\text{Balance (to date)} &= \text{Opening Balance} \\ &+ \text{Deposits (to date)} - \text{Checks (to date)}\end{aligned}$$

To anchor the sum of the deposits in the first active cell, row 2, column 6, type:

=SUM(R1C5:

Then move the cursor to row 2, column 5, and click. Now the display reads:

=SUM(R1C5:RC[-1])

FIG. 2-14

File Edit Select Format Options Calculate

R2C6      =SUM(R1C5:RC[-1])-SUM(R1C4:RC[-2])

Checkbook.final

	1	2	3	4	5	6	
1	NUM	DATE	ACCOUNT	CHECK	DEPOSIT	BALANCE	
2	1000	01-01	OPENING BALANCE		\$743.21	\$743.21	+
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							

To anchor the sum of the checks, type:

) - SUM(R1C4:

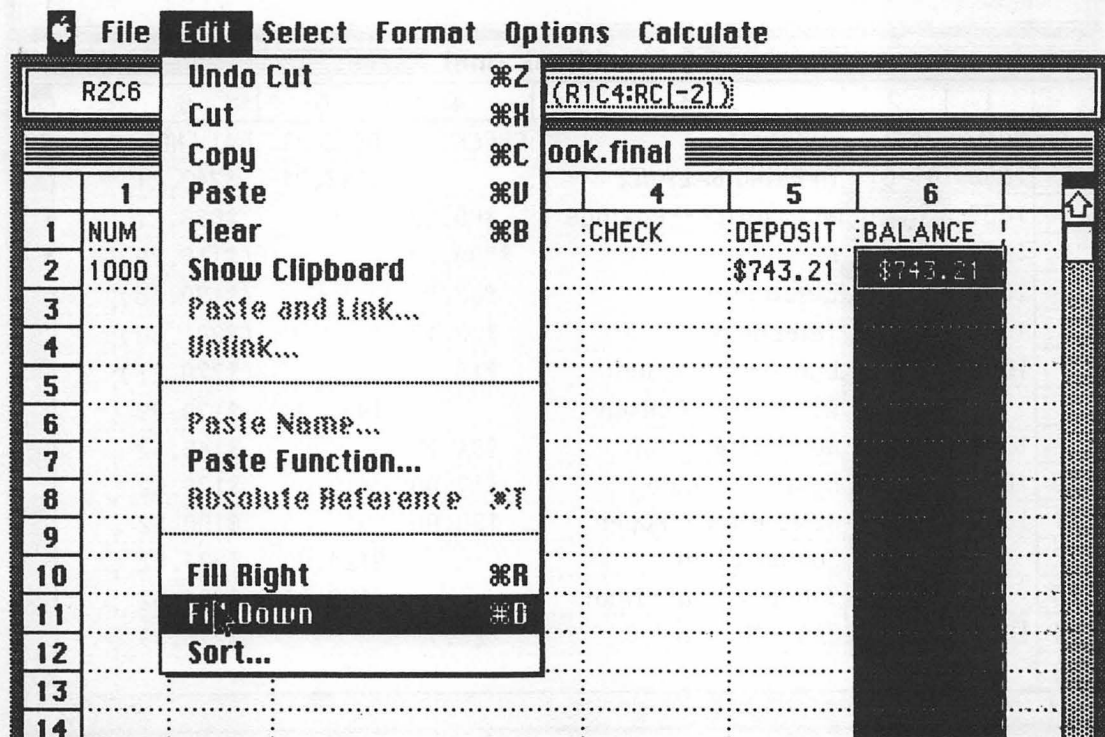
Then move the cursor to row 2, column 4, and click. Now the display reads:

=SUM(R1C5:RC[-1]) - SUM(R1C4:RC[-2])

Type a closing parenthesis and press Return. The display looks like Figure 2-14.

Finally, copy the running-balance formula down the column. Click the cursor and drag it down the balance column as shown in Figure 2-15. Pull down the Edit menu and select "Fill Down" to copy the formula to each cell of the balance column.

FIG. 2-15



Note that it is the formula and not the amount in row 2, column 6, that is copied so that at any point in the column, the balance that is calculated and displayed is the sum of all deposits less the sum of all withdrawals to that point.

## SORTING A COLUMN

In our office, we throw our receipts into a folder as we go, and only at the end of the month do we actually enter them into the ledger. This nonsystem is reflected in the order of the checks, check 1008 is followed by check 1004, and a deposit for the 12th of January is followed by a check made out on the 5th. This is a

FIG. 2-16

<div>File Edit Select Format Options Calculate</div>							
R3C2		01-					
Checkbook.final							
	1	2	3	4	5	6	
1	NUM	DATE	ACCOUNT	CHECK	DEPOSIT	BALANCE	
2	1000	01-01	OPENING BALANCE		\$743.21	\$743.21	
3	1007	01-	Newsletter--Postage	\$60.00		\$683.21	
4	1001	01-01	Rent	\$800.00		(\$116.79)	
5	1002	01-01	Electricity	\$62.54		(\$179.33)	
6	1003	01-03	Telephone	\$22.17		(\$201.50)	
7	1008	01-04	Lunch-HJ Account	\$18.71		(\$220.21)	
8		01-05	Royalties--Chilton		\$400.00	\$179.79	
9	1005	01-05	Newsletter--PIP	\$34.27		\$145.52	
10	1004	01-07	Health--Aikido	\$17.00		\$128.52	
11	1009	01-11	Newsletter--Paper	\$28.00		\$100.52	
12		01-12	Subscription		\$124.00	\$224.52	
13		01-12	Subscription--Trial		\$60.00	\$284.52	
14	1011	01-14	UPS--Chilton	\$8.73		\$275.79	
15							

FIG. 2-17

Checkbook.final							
	1	2	3	4	5	6	
1	NUM	DATE	ACCOUNT	CHECK	DEPOSIT	BALANCE	
2	1000	01-01	OPENING BALANCE		\$743.21	\$743.21	
3	1002	01-01	Electricity	\$62.54		\$680.67	
4	1004	01-07	Health--Aikido	\$17.00		\$663.67	
5	1008	01-04	Lunch-HJ Account	\$18.71		\$644.96	
6	1005	01-05	Newsletter--PIP	\$34.27		\$610.69	
7	1009	01-11	Newsletter--Paper	\$28.00		\$582.69	
8	1007	01-	Newsletter--Postage	\$60.00		\$522.69	
9	1001	01-01	Rent	\$800.00		(\$277.31)	
10		01-05	Royalties--Chilton		\$400.00	\$122.69	
11		01-12	Subscription		\$124.00	\$246.69	
12		01-12	Subscription--Trial		\$60.00	\$306.69	
13	1003	01-03	Telephone	\$22.17		\$284.52	
14	1011	01-14	UPS--Chilton	\$8.73		\$275.79	
15							

convenient way to enter the information, but it's not very effective when it comes to keeping track of your current balance or reconciling your checkbook with your bank statement. Fortunately, Multiplan allows you to sort the items by date (or any other criteria, such as account or check number).

In Figures 2-16 and 2-17, I've sorted the check register, first by date and last by account type. To sort the register, first use the cursor to highlight the items you wish to sort and the variable you wish to sort by, the date in this case. Point to the first entry in the date column (row 3), click, and pull the cursor down to the last entry (we finished in row 14). The entries you selected will be marked in black. Pull down the Edit menu and select "Sort," the last item on the menu. You'll be asked whether you want to sort in ascending or descending order. Choose ascending order and press Return (or click the "OK" button). The result, the newly ordered ledger, is shown in Figure 2-16. (As an exercise, sort by account type to obtain Figure 2-17.)

The rearrangement is not entirely successful. One entry, 1007, a check made out to the postmaster for \$60, lacks a date and as a result is out of sequence. However, you can correct the error quickly — if you catch it in time. Go back to your records before you file them away or discard them and find the missing date. (You'll need a consistent set of records when you go to your banker for a loan or respond to a summons from the IRS.)

## MANPOWER ASSIGNMENTS

It always seems to be feast or famine in my business. One week, I'm out trying to scrounge up work, the next I'm interviewing temporary help and trying to manage five projects at one time. I've learned that the key to a profitable operation lies in keeping all your workers fully employed. This means you must plan your assignments long before you begin a project. In this example, you learn to use Multiplan and your Macintosh to make manpower assignments. You also learn how to reduce the time needed to prepare a spreadsheet by replicating a spreadsheet formula rather than retyping it.

As always, the initial entries on the spreadsheet are identical with those you would make if you were working with pencil and paper, except that Multiplan has already ruled off the spreadsheet for you into rows and columns.

Start several rows and columns from the top-left corner of the spreadsheet to leave plenty of room to add labels and titles later. In the cells of the first working row (row 4 in this case), enter the names of the members of the work group. In my case, this included Kathy, my wife, Phil (that's me), Bud, our trusty editor and general factotum, Donna, a specialist we'd brought in from the outside specifically for Project X, and Denise, our part-time typist (see Figure 2-18). To make your work fit on the Macintosh display screen, reformat columns 3 through 10 to a width of six.)

To advance horizontally across the row after each name you enter, press the Tab key on the upper left of the keyboard.

Put the names of your projects in the cells of the first working column (column 2) and insert the titles shown in Figure 2-18. (Remember to unclick row 4 before you start.) In my case, I have a newsletter, a book in progress ("CP/M book"), a set of reports we were shipping in response to a recent mail-order campaign, and "Project X." (This time, press Return after each entry in order to advance down the column automatically.)

Two additional columns, 8 and 9, are needed at the right side of the table. In column 8, type in the man-hours that have been budgeted for each project. (In this example, our newsletter had 25 man-hours, the book had 60, and so forth.)

FIG. 1.

[illegible]

In column 9, we will program Multiplan to sum the man-hours we've already assigned.

Use the mouse to move to the newsletter entry under MHR Assigned (shown here in row 5, column 9) and click.

Type:     =SUM(

Use the mouse to point out the range over which you are summing—columns 3 through 7—by holding down the click button continuously. Let the computer fill in the formula SUM(RC[-6]:RC[-2]), as in Figure 2-19.

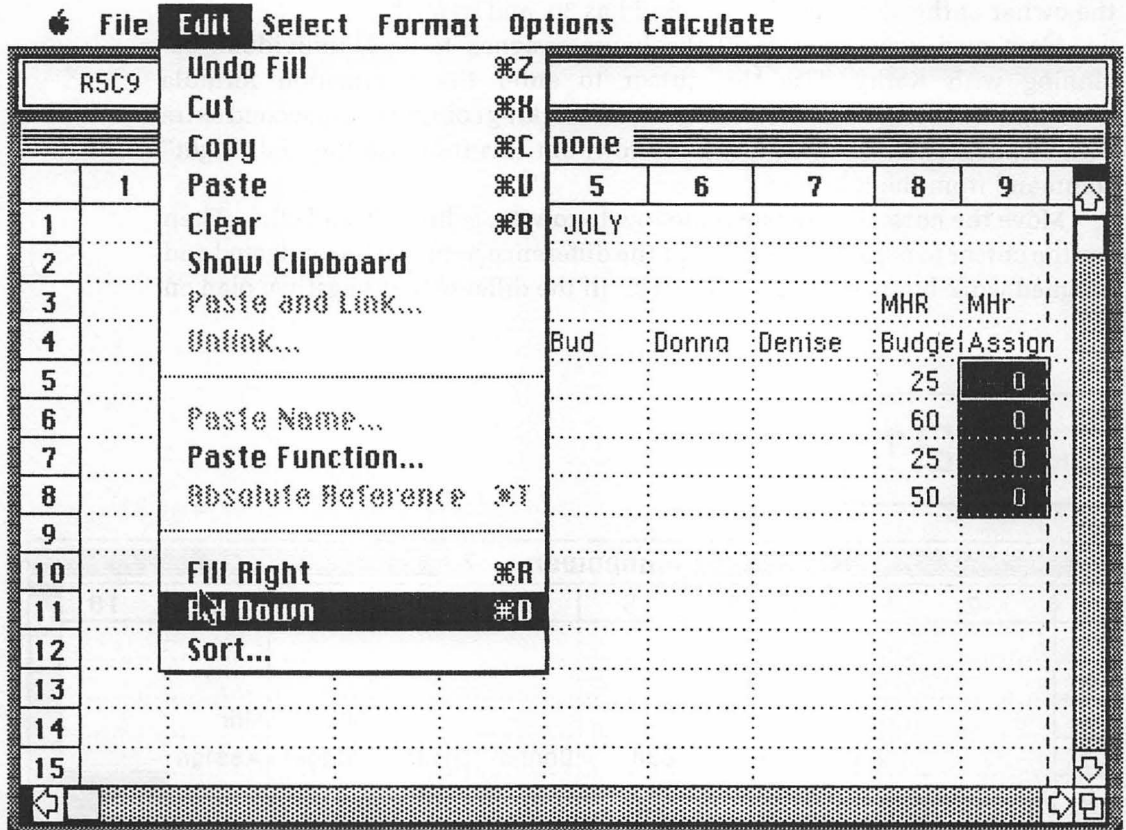
FIG. 2-19

File Edit Select Format Options Calculate

Manone									
	1	2	3	4	5	6	7	8	9
1	MANPOWER ASSIGNMENTS FOR JULY								
2									
3								MHR	MHR
4			Kathy	Phil	Bud	Donna	Denise	Budget	Assign
5		Newsletter						25	=SUM(
6		CP/M Book						60	
7		Shipping						25	
8		Project X						50	
9									
10									
11									
12									
13									
14									
15									



FIG. 2-20



Type: `]` and press Return

Since you haven't entered any numbers yet, a sum of zero will be displayed.

Now you want to replicate this formula in the remaining three cells of this column. You could repeat these steps three times, but there is a much faster way:

Return the cursor to where you just entered the SUM formula (R5C9), then press the button and hold it down while you drag the cursor through the cells where you wish to replicate the formula. Now pull down the Edit menu as in Figure 2-20, select "Fill Down," and click. Immediately, the formula is replicated in each of the remaining cells in the column.

Similarly, add two additional rows at the bottom of the table in which to keep track of the work hours on a person-by-person basis (see Figure 2-21). In the first of these two new rows, record the number of budgeted (available) work hours. In this example, Kathy has 40 hours available, Phil, a tireless worker (and the owner of the company) has 50, Bud has 30, and so forth.

Next, you want to sum all the hours assigned to each individual, beginning with Kathy. Use the cursor to enter the summation formula  $=\text{SUM}(\text{R}[-6]\text{C}:\text{R}[-3]\text{C})$  in R11C3, the first working column of the second extra row. Replicate this formula along the row, but this time use the "Fill Right" command from the Edit menu.

Move the cursor down one more row to row 12, column 3, and click. Then use the cursor to enter the formula for the difference between the budgeted and assigned work hours  $=\text{R}[-2]\text{C}-\text{R}[-1]\text{C}$ . (If the difference is negative, plan on

FIG. 2-21

Manpower 2									
	2	3	4	5	6	7	8	9	10
1									
2									
3							MHr	MHr	
4		Kathy	Phil	Bud	Donna	Denise	Budget	Assign	
5	Newsletter						25	0	25
6	CP/M Book						60	0	60
7	Shipping						25	0	25
8	Project X						50	0	50
9									
10	Budget	40	50	30	20	20			
11	Assigned	0	0	0	0	0			
12		40	50	30	20	20			
13									
14									
15									

## Saving to Disk

It's always a good idea to save your work on disk at regular intervals. Use a separate disk for this purpose. If you have a two-drive system, then use a data disk you've put in the second drive. If you have only one disk drive, then save to the program disk temporarily and copy to the data disk when your work is completed. Never, never use the program disk for long-term storage. (If your data are essential to your business, you may want to make a second backup copy at the end of each day or each week and store it at a remote location.)

Use lengthy descriptive names for each of your files. Include the date of the update if possible. It's always a good idea to keep a copy of the last version of a file in addition to the current version—just in case you have second thoughts.

paying overtime or dropping from exhaustion.) Replicate this formula along the twelfth row using the “Fill Right” command.

Similarly, enter the differences between the assigned and budgeted hours in column 10, the third extra column. A negative result warns you that shortly you'll be falling behind. Again, to enter the difference formula, move to the top cell of the column where you want to enter the formulas, R5C10, click, and use the cursor to point out the two cells whose difference you are computing. Then pull down the Edit menu and “Fill Down” column 10, rows 5 to 8, with this formula.

**Stop!** Before you go any further. Save the template you've just created on disk using the Save As . . . command on the File menu.

## MAKING TENTATIVE ASSIGNMENTS

Now fill in the preliminary work assignments as Kathy has done in Figure 2-22 and Figure 2-23. As you do so, the numbers in the last row will gradually go from positive to negative. When you get a negative result, stop and adjust the figures until all differences are either positive or zero. (If you don't, somebody has just “volunteered” to work overtime.) At this point, you may want to add additional personnel or projects or just lie down for a while until you feel better. But first,

**FIG. 2-22**

	2	3	4	5	6	7	8	9	10
1	MANPOWER ASSIGNMENTS FOR JULY								
2	Prepared by K. Neale								
3							MHr	MHr	
4		Kathy	Phil	Bud	Donna	Denise	Budget	Assign	
5	Newsletter					5	25	5	-20
6	CP/M Book			20	5		60	25	-35
7	Shipping					15	25	15	-10
8	Project X			10	15		50	25	-25
9									
10	Budget	40	50	30	20	20			
11	Assigned	0	0	30	20	20			
12		40	50	0	0	0			

**FIG. 2-23**

	1	2	3	4	5	6	7	8	9	10
1		MANPOWER ASSIGNMENTS FOR JULY								
2		Prepared by K. Neale								
3								MHr	MHr	
4			Kathy	Phil	Bud	Donna	Denise	Budgt	Assgn	
5		Newsletter	10	15			5	25	30	5
6		CP/M Book	10	15	20	5		60	50	-10
7		Shipping	10	15			15	25	40	15
8		Project X	10	15	10	15		50	50	0
9										
10		Budget	40	50	30	20	20			
11		Assigned	40	60	30	20	20			
12			0	-10	0	0	0			
13										

make a copy on disk of this initial assignment. Use a different file name than the one you assigned to the template itself.

It could be argued that the resulting work (or equipment) assignment is not optimal, that you could do much better if you used a critical path method or a PERT chart. But quite the opposite is true. You can't enter your gut instincts and prejudices into a formal scheduling program — there's no room on the form. The spreadsheet method is interactive; you can concentrate on assembling teams that work well together, letting the spreadsheet perform the arithmetic to satisfy the row and column sum requirements.

For example, in passing from the preliminary set of assignments in Figure 2-22 to the final set in Figure 2-24, I might have done the obvious and let poor overworked Phil (10 extra hours already show in his column in Figure 2-23) spend five hours less on the newsletter, which shows a budgetary excess of five hours in the same figure. This would ignore Phil's pivotal role on the newsletter — something that's hard to write down in any sort of a computer program — and Kathy's skill as a supervisor, which is so essential to getting the CP/M book out on schedule. Figure 2-24 represents the final optimal assignment of talent to tasks. Now see what you can do with Multiplan for your business.

## COMPUTING INTEREST ON A BANK DEPOSIT

A spreadsheet is extremely handy whenever you need to make a quick calculation. In this example, we will compute the interest on a bank deposit that is compounded monthly for a range of annual rates. You will also learn more about Multiplan, including how to use both absolute and relative cell references.

First, enter the titles and column headings as shown in Figure 2-25. Then enter the months after deposit. You could simply type 0, 1, 2, 3, . . . down the first column, but there is a much faster way. In row 4, column 1, type:

**= Row() - 4      [return]**

The **=** tells Multiplan that you will enter a function rather than a label. The function **Row()** yields the number of the row in which it appears, a 4 in this case, so that, for example, **Row() - 4** is 0.

Does this seem like a complicated way to type a zero? If you had to type a similar expression for each number in the column, it could take you all morning. Fortunately, there is a faster way: You will replicate this expression in every cell of the column.

Return the cursor to where you just entered the formula (R4C1), then click and hold the button down while you drag the cursor down the column through the cells in which you want the formula replicated. Stop in row 16, pull down

**FIG. 2-24**

	2	3	4	5	6	7	8	9	10
1	MANPOWER ASSIGNMENTS FOR JULY								
2	Prepared by K. Neale								
3							MHr	MHr	
4		Kathy	Phil	Bud	Donna	Denise	Budgt	Assign	
5	Newsletter	5	15			5	25	25	0
6	CP/M Book	15	20	20	5		60	60	0
7	Shipping	10	0			15	25	25	0
8	Project X	10	15	10	15		50	50	0
9									
10	Budget	40	50	30	20	20			
11	Assigned	40	50	30	20	20			
12		0	0	0	0	0			

**FIG. 2-25**

	1	2	3	4	5
1	Interest Earned on Bank Deposit of \$100				
2		Annual Rate			
3	Month	11.00%	11.25%	11.50%	
4	0	\$100.00			
5	1				
6	2				
7	3				
8	4				

the Edit menu and select "Fill Down." The formula is immediately replicated in each of the designated cells in the column.

Next, let's enter the range of interest rates. Recently, the banks in my area were offering rates between 11 percent and 11.5 percent per annum compounded monthly. Mark columns 2, 3, and 4 of the third row with the cursor and enter these percentages in decimal form: .1100 [tab], .1125 [tab], and .115. Be sure to press the Tab key between each entry and not the Return key. To convert these three numbers to percentages, just click Percentage in the Format menu. Similarly, mark off the area from R4C2 to R16C4 with the cursor and format these cells as Dollar. Enter the amount of the deposit, 100 (dollars), in row 4 of column 2 and Fill Right across columns 3 and 4. The result is Figure 2-25.

Now you can begin to compute the interest earned each month. This interest is the product of the amount that is already on deposit and the monthly interest rate (the annual interest rate divided by twelve), or in Multiplan notation:

=R[-1]C\*(1+R3C2/12)

Move the cursor to row 5, column 2.

Type:     =

(This tells Multiplan you will enter a formula rather than a label.)

Move the cursor to row 4, column 2 (where the amount you are depositing is located), and click. The display reads:

=R[-1]C

R[-1]C is called a *relative reference* because it describes the amount in terms of the location relative to the cell in which the formula appears, one row previous and in the same column. In the preceding example of a work assignment, such relative references were used repeatedly. And a relative reference is correct in this case, since you will always express the current month's balance as a percentage of the preceding month's balance.

Type:     \*

(This means times.)

Type:     (1 +

## Error Messages

Occasionally, after you enter a number or formula, Multiplan displays a series of pound signs ##### or some other error message instead of the answer you expect. There are two explanations. First, the number is too large for the column. For example, the number 12345.678 won't fit in a column that is only five digits wide. Second, the formula you provided is in error. Read over the formula to be sure that you entered it correctly. If you can't spot the error immediately, break up the formula into smaller, easily checked sections and try to reproduce the computations by hand. For the meaning of other error messages, check the Multiplan Reference Guide.

Now move the cursor to where the interest rate is located (in row 3 of the same column) and click. The formula bar at the top of the screen reads:

=R[-1]C \* (1 + R[-2]C

R[-2]C is also a relative cell reference. But if you try to replicate this formula down the column, its relative nature could trip you up. All of your calculations must be based on the same (absolute, not relative) interest rate. To be on the safe side, let's convert this reference immediately to the absolute reference R3C2.

Pull down the Edit menu and select "Absolute Reference." The formula bar at the top of the screen changes to read:

= R[-1]C \* (1 + R3C2

(If you try to select Absolute Reference a second time for this same entry, you'll find that the Edit menu now reads "Relative Reference." As an exercise, convert the formula back and forth several times.)

The interest rate in R3C2 is an annual one. To convert to a monthly rate,

Type:     /12

Last, type a closing parenthesis ).



When you press Return, the computer displays the total amount on deposit after the interest is credited at the end of the first month, which is \$100.92. Is this too much work just to do one calculation? You bet. But the result is accurate. (In fact, the amount stored in R5C2 is really 100.91667, something you can verify by switching to the General format from the Format menu.) And it will take you only two more steps to fill in the balance of the column:

Mark off the area from R5C2 to R16C2 over which you want to replicate the formula by dragging your cursor down the column. Fill Down from the Edit menu.

The result is Figure 2-26, and at the foot of the table you see that an 11

FIG. 2-26

File Edit Select Format Options Calculate

R5C2		=R[-1]C*(1+R3C2/12)				
INTREST/FIN/CTWO						
	1	2	3	4	5	6
2			Annual Rate			
3	Month	11.00%	11.25%	11.50%		
4	0	\$100.00	\$100.00	\$100.00		
5	1	\$100.92				
6	2	\$101.84				
7	3	\$102.78				
8	4	\$103.72				
9	5	\$104.67				
10	6	\$105.63				
11	7	\$106.60				
12	8	\$107.57				
13	9	\$108.56				
14	10	\$109.55				
15	11	\$110.56				
16	12	\$111.57				

percent interest rate compounded monthly corresponds to an 11.57 percent annual return.

As an exercise, fill in the balance of the spreadsheet.

## SCIENTIFIC AND ENGINEERING CALCULATIONS

We've taken advantage of only a few of Multiplan's many built-in functions in the examples in the chapter. The exceptions are SUM(list), which we used for summing the contents of rows and columns, and ROW(), which we used to enter time intervals. If you want to monitor a stock portfolio, you will probably take advantage of AVERAGE, MAX, and MIN. And for scientific and engineering applications, you can choose from built-in formulas for average, arctangent, absolute, exponential, and logarithm and decision-making functions like IF, AND, NOT, and OR. (You may also enter and display entries in scientific/exponential notation.)

Do you want to know the angle of incidence at 8:00 A.M. for a solar collector tilted at 35 degrees in a house located at latitude 40 degrees on a winter day when the angle of declination is 16 degrees? The answer, obviously, is given by the well-known Multiplan formula:

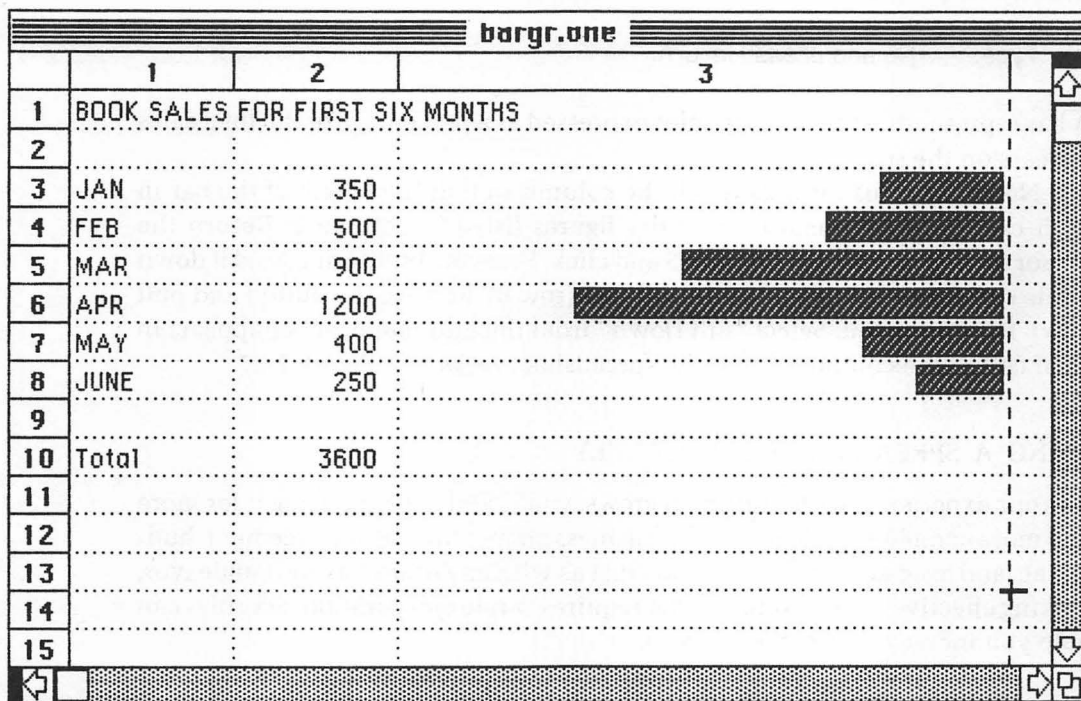
$$\begin{aligned} & \text{ACOS}(\text{SIN}[(40-35)*\text{PI}()/180]*\text{SIN}[16*\text{PI}()/180] \\ & + \text{COS}[(40-35)*\text{PI}()/180]*\text{COS}[16*\text{PI}()/180]*\text{COS}[800*\text{PI}()/180]) \end{aligned}$$

Not so obvious? Actually, this is a good example of when not to use a spreadsheet. Certainly, the formula above comes close to pushing a spreadsheet to its limits. It would help if you broke the formula up into parts, gave each part a name (using the Name command on Multiplan's Select menu), and performed the calculation only as a final step. But in this case, as in most examples where the formulas involve several unit conversions, you can solve the problem more readily and with greater insight by taking advantage of programs specifically designed for engineering and scientific calculations.

## GRAPHING THE RESULTS

Let's create a bar graph from the initial sales-analysis data to take with us to the bank. In other words, take the data of Figure 2-1 so that they look like Figure 2-27. (If you plan to follow along, load the table you built in the first example. Did you save this table on disk? Oh well, it will take you only a minute or so to type it in again.)

FIG. 2-27



To begin with, you need to format a column to hold the graph itself. Move the cursor to column 3 and select from the Format menu a column width of 40 and the option "Bar Graph." Later, we will copy the sales figures in column 2 to this column. First, you must rescale the figures so they can be graphed within the confines of column 3. I've chosen to use twice the column sum as the scaling factor for this example. The copying and scaling is done in two stages. First, create the initial entry, then Fill Down the column.

To compute the initial entry in column 3, move the cursor to R3C3.

Type: =

Move the cursor to the entry 350 in the adjacent column and click.

Type: /

Type: {2\*

Move the cursor to the column sum in R10C2 and click. At this point the screen displays  $=RC[-1]/(2*R[+7]C[-1])$ .

Pull down the Edit menu and select "Absolute Reference." Now the screen displays  $=RC[-1]/R10C2$ .

Type:  $)\%$  and press Return.

A bar representing the January sales expressed as a percentage of the total sales appears on the screen.

Next, copy this formula down the column so that the length of the bar in each case is proportional to the sales figures listed in column 2. Return the cursor to the first entry in Column 3 and click. Press the button and hold it down while drawing it to the end of the column (row 6). Release the button and pull down the Edit menu. Select "Fill Down" from the Edit menu. A bar appears in each cell in the column so that the spreadsheet looks like Figure 2-27.

## USING A SPREADSHEET EFFECTIVELY

As your experience with Multiplan grows, you'll find yourself using it for more and more complex applications like business plans, portfolio management, budgeting, and aged accounts receivable. Just as with any other business endeavor, making effective use of a spreadsheet requires careful preparation. Six rules can help you increase your effectiveness:

1. Know your application
2. Keep the worksheet simple
3. Design the worksheet to be self-verifying
4. Backup and protect your work
5. Maintain a clear audit trail
6. Document your work

## KNOW YOUR APPLICATION

Know your application before you start. Get your formula right, and be sure to write down the source of all the formulas that you use both on the spreadsheet and on separate printed documentation.

Keep it simple. Use several linked spreadsheets that will be completed separately rather than one big all-purpose data-entry form. (Note that Multiplan has a link command that provides for the automatic transfer of data from one worksheet to another.) Group all the data that are to be entered in one portion of

the spreadsheet, either a single column, adjacent columns, or an adjacent block of cells. Give the area a name, using Multiplan's name command, and set it off with plenty of blank space. It's only paper. (Actually, because the "paper" is electronic, it's only blank space.) Take the time to develop meaningful labels and column headings — especially if you want to know what the form means six months from now. Reduce or eliminate possible ambiguities.

Don't succumb to the temptation to use abbreviations in order to get more on the screen. Use two, three, or even four screens to enter the data if you need to. Put a single instruction in the bottom left-hand corner of each screen to guide your employees from one to the next.

Use named variables. It's so much easier to locate and understand the meaning of  $\text{Profit} = \text{Income} - \text{Expenses}$  than  $R11C6 = R10C5 - R10C4$ .

## DESIGN THE FORM TO BE SELF-VERIFYING

Correcting an error is straightforward if you do it right after you make the error. It can be an all-day effort if you put off making the corrections until a later time. Make sure that the data are being entered correctly. Format data items for easy reading: Use commas, decimal points, and dollar signs and provide checksums.

One spreadsheet trick is to subtract the checksum from the actual sum of the items, then multiply the result by the largest number the spreadsheet will hold. If the difference is nonzero, the spreadsheet will flash a warning on the screen.

## PROTECT YOUR WORK

Use Multiplan's "Protect Document" and "Freeze Title" commands (on the Options menu) to protect essential elements from destruction, especially those that you paid an expert to create, like labels, formulas, and critical constants. And backup your work regularly. Keep your master template with labels and formulas on one disk and the completed worksheet containing all the figures on a second disk. Avoid using the Multiplan program disk for storing data except temporarily.

## MAINTAIN A CLEAR AUDIT TRAIL

Label all printed reports with the name of the folder and the disk on which the template used to create it is stored, the name of the individual who created the template, the date it was completed, and the names of the individuals who entered the data. (The latter does a lot toward creating pride in one's work.)

## DOCUMENT YOUR WORK

Documentation is essential. Don't try to be your own expert, data-entry clerk, cook, and chief bottle washer. Don't kid yourself into believing that in six months everything you've done will be as crystal clear in your mind as it is now. Spend as much effort or more on documenting a template if you work alone as you would if you had a whole staff to assist you. (This is where Multiplan's Name command really comes in handy.)

Test the template before you turn it over to someone else. Try it out on yourself, then try it out on a trial basis with one or two data-entry clerks.

## INCREASE THE VALUE OF YOUR TIME

A number of hardware enhancements, including additional memory, a second disk drive, and a hard disk, can substantially increase your productivity.

Buy as much extra memory as you can. Although, there are 128,000 bytes (characters) of memory in the basic Macintosh, no more than 42,000 of these are available for use in a spreadsheet. (The Multiplan program and the Macintosh operating system occupy the remainder.)

The actual number of rows and columns available to you will depend upon the contents of your spreadsheet. Formulas take up much more memory than labels and digits, for example. Increasing your memory to 512 Kilobytes will give you almost ten times as much room and will increase the speed of operation, particularly with extra-large spreadsheets.

Unfortunately, extra memory creates its own problems. You may not notice the delay when your worksheets are small, but when you are working with extra-large worksheets, say 48 columns by 200 rows, you can spend from 5 to 10 minutes waiting for the worksheet to be transferred to or from a floppy disk. A hard disk can cut the delays by a factor of 10 or more.

For almost any spreadsheet application, a second disk drive is a must. Then you can keep your program on one disk and your spreadsheet on another. (Trying to use your program disk for data storage is suicidal. All too soon you run out of space for new worksheets, sometimes in the very middle of an operation.) A second disk drive also makes it more convenient to backup your important data files, the best way to avoid the loss of essential information. See Appendix II for a list of the many competing hardware options.

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# Charting Your Ideas and Results

## 3

Graphs are ideal for expressing both ideas and results. A picture is worth a thousand words. Charts and graphs can bridge the gap between your vocabulary and those of your clients and your banker. The charts you prepare at your Macintosh can be used for presentations, for advertising copy, for creating process and flow diagrams, and for architectural and engineering design. You can use the computer for generating “quick art” or for bypassing the art department altogether. And, with a Macintosh, you can tuck the computer under your arm to bring to the presentation.

### DATA ANALYSIS, PRESENTATIONS, AND DESIGN

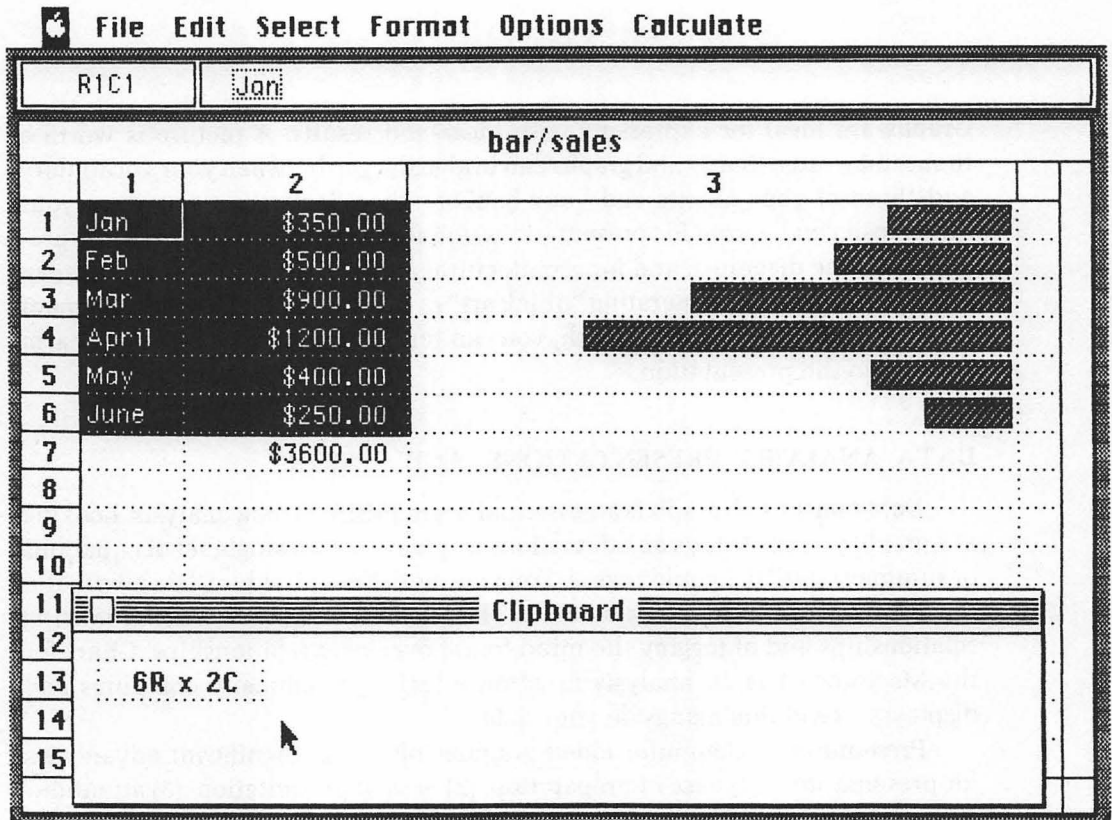
*Data analysis.* A graph is an essential prerequisite to data analysis. Looking at a graph, you see trends and deviations in a way that no single set of equations or summary statistics could reveal. You view both the individual data points and the general trend of all the data points. The graph is a way of exhibiting existing relationships and of jogging the mind to uncover new relationships. **Chart** for the Macintosh has an analysis function which automatically computes and displays a trend line alongside your data.

*Presentations.* Computer-aided graphics offer four significant advantages for presentations: (1) ease of preparation, (2) ease of presentation, (3) attention-getting detail, and (4) ease of updating.

The impact of an appropriate graphics presentation cannot be overestimated. Scott M. Miller, a vice-president with the Bank of California and senior operations officer with the bank's international banking group, makes frequent presentations on the application of new technologies in banking, both to prospective customers and as part of the bank's internal training program. Miller says, "Nothing could be more effective than a micro to make such graphic presentations."

Miller has used a microcomputer for the past two years to prepare and present his ideas to audiences of one to a hundred. He actually brings his micro to the conference room along with an extra-large monitor or a large-screen

FIG. 3-1

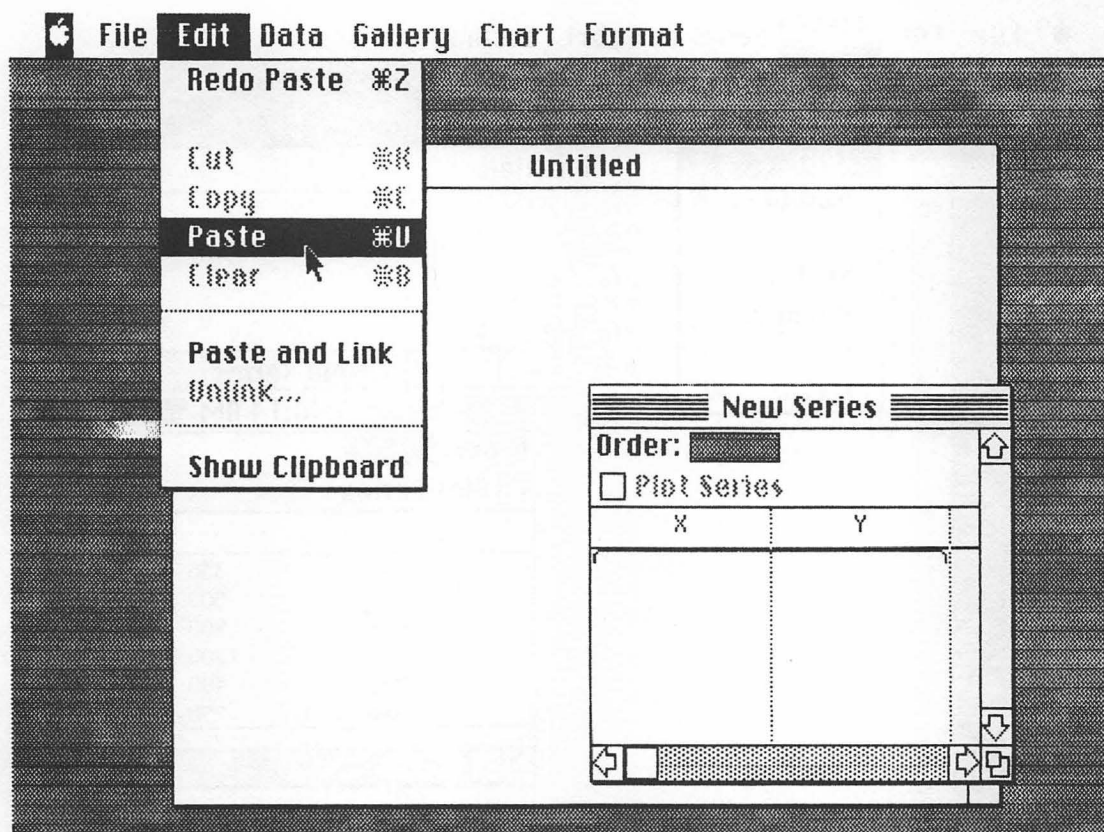




projection T.V. He also uses his micro to replace an art staff for more traditional graphic preparations—printed charts, transparencies, and slides. You too can do without an art staff's services (and the delays and false starts this normally entails) because programs like Chart provide you with control over every aspect of each graph, including the height, style, and positioning of titles, labels, and legends.

*Design.* Although you may not be able to draw a straight line and your handwriting is less than perfect, you can use the Macintosh and graphics software like Filevision and MacPaint to produce absolutely flawless designs and sketches.

FIG. 3-2



The Macintosh gives the designer tremendous flexibility. You can experiment quickly and easily with a variety of alternatives, all without a single erasure. You save time because you can combine portions of several existing designs to create a new drawing. And altering the aspect, the proportions, or the size of a given design is accomplished in a matter of minutes, not hours.

## USING THE CHART PROGRAM

There are essentially two types of graphics software: One for graphs and charts and one for designs and drawings. You will learn to prepare graphs and charts in this chapter and designs and drawings in Chapter 7.

FIG. 3-3

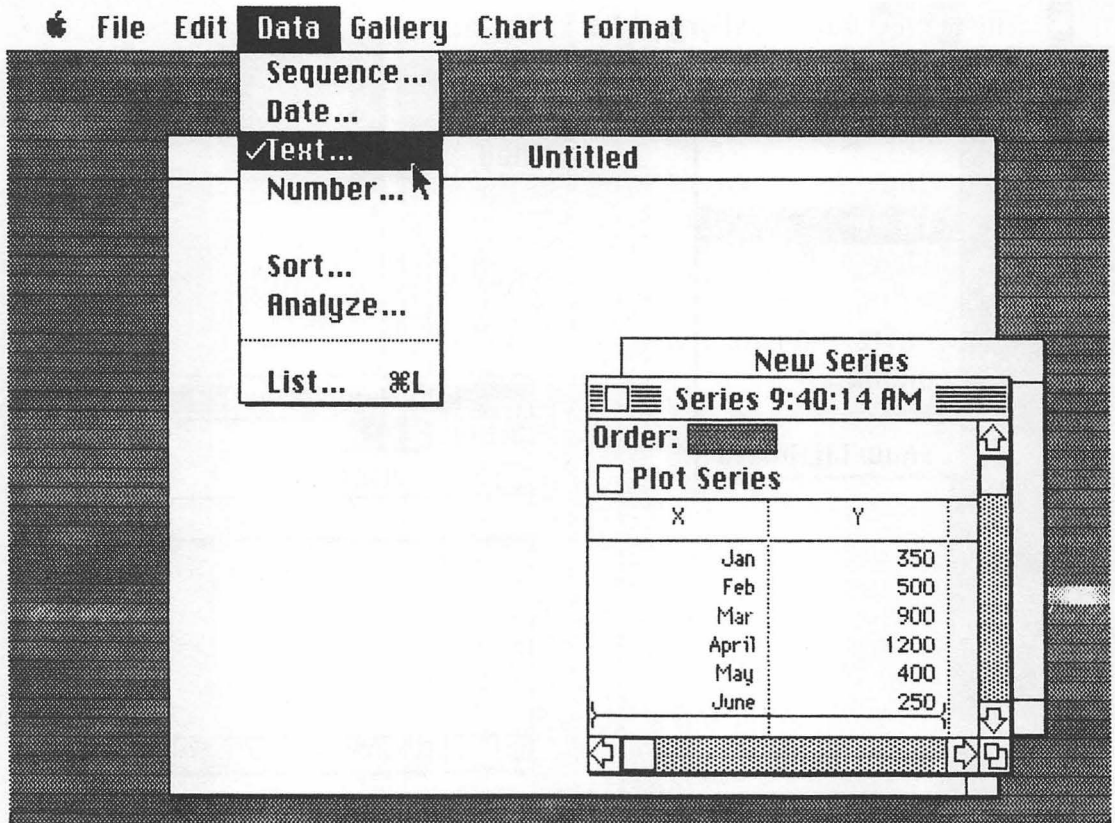


FIG. 3-4

**Text Series**

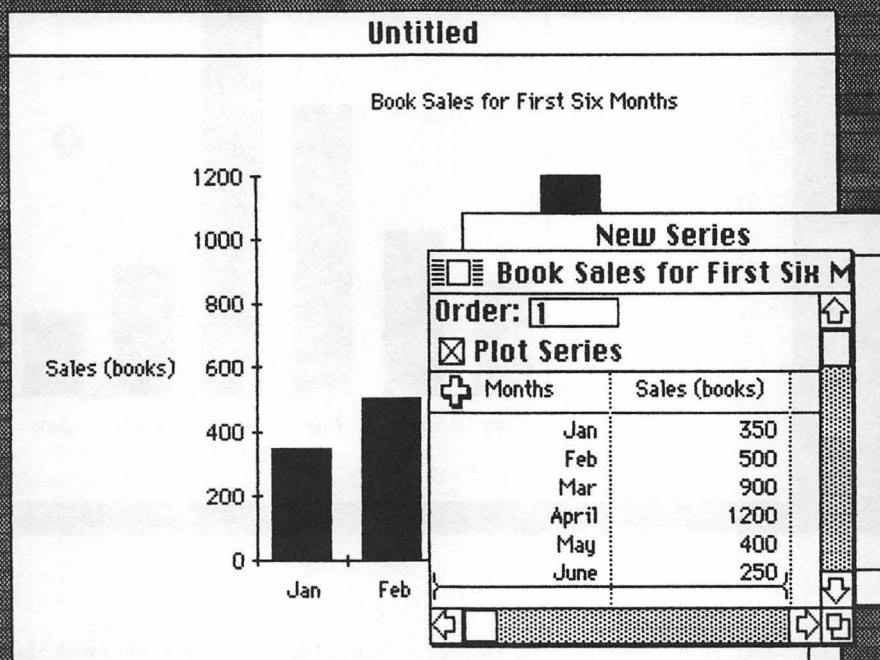
Series Name:

Category Name:

Value Name:

FIG. 3-5

File Edit Data Gallery Chart Format



Chart, the first program you will learn to use, allows you both to analyze data and to present it. With Chart's aid, you will be able to:

- Select the graphics format that will make your point most effectively
- Express your message without compromise or abbreviation
- Highlight specific chart elements through shading, size, and location
- Present your message in slides, plots, and transparencies
- Produce professional, high-quality charts
- Use data generated by other software like Multiplan and MacWrite

**FIG. 3-6**



**File Edit Data Gallery Chart Format**

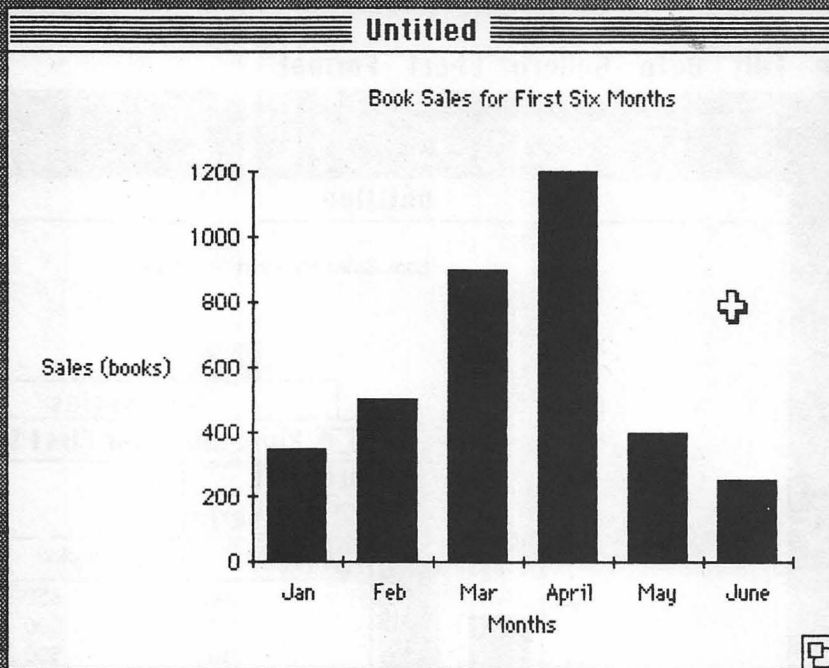


FIG. 3-7

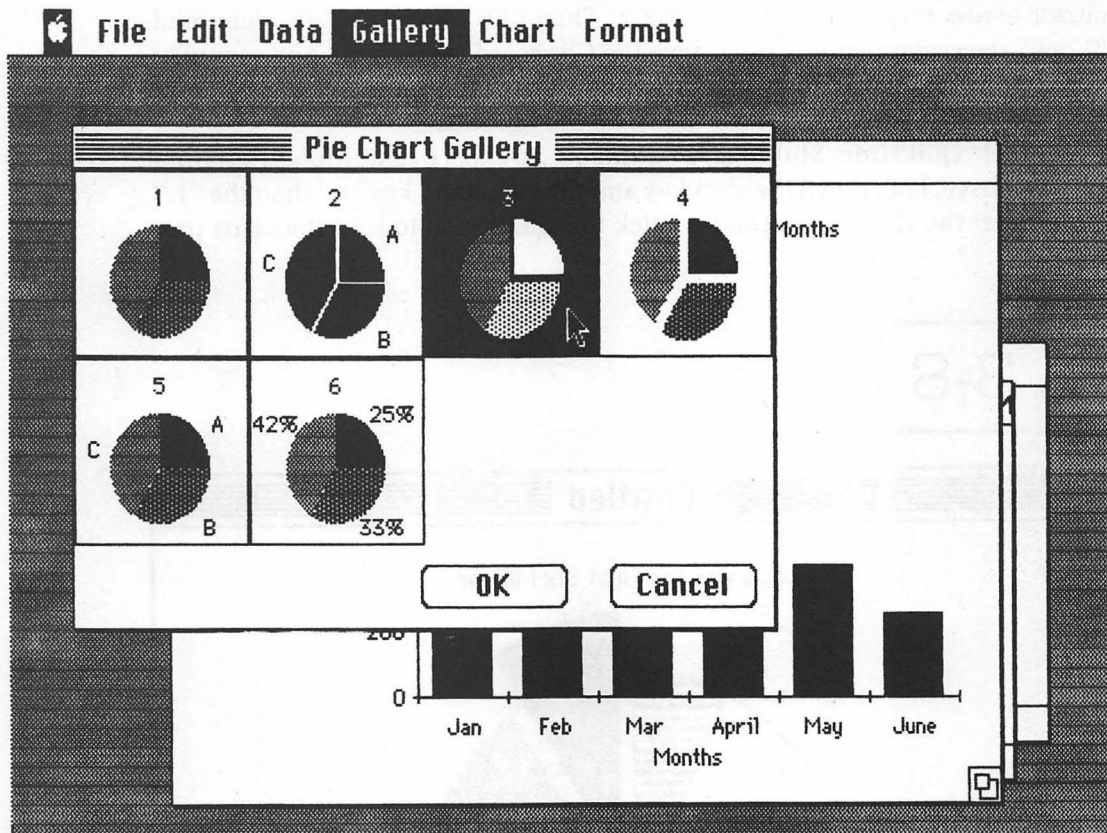


Chart puts a variety of graphs at your disposal—area charts, bar charts, column charts, pie charts, line charts, and scatter plots—and a variety of graphic elements, including size, grid, and text.

### EXAMPLE 1: A SALES ANALYSIS

In Chapter 2, we used Multiplan to construct a simple bar chart. The effort was complicated by the need to scale and format the data before we could express them in graphic form. Chart does all the scaling for you automatically, a major timesaver, as you will see in this example.



Let's begin where we left off in the last chapter — with the Multiplan program loaded into the computer and the data of Figure 2-28 still on the display screen. You will transfer these data to the clipboard and then to the Chart program. First, set off the first two columns of the spreadsheet by dragging the cursor across them from R1C1 to R6C2. Then pull down the Edit menu and "Copy" the section you set off. Check the Clipboard (also on the Edit menu) to see that the six rows and two columns have been transferred to it (see Figure 3-1). To quit Multiplan and load Chart, do the following:

Select "Quit" from Multiplan's File menu. To expel the Multiplan disk from the disk drive, hold down the shift key and the command key and then the "1." Now insert the Chart disk. Double-click the Chart icon to load the chart program.

**FIG. 3-8**

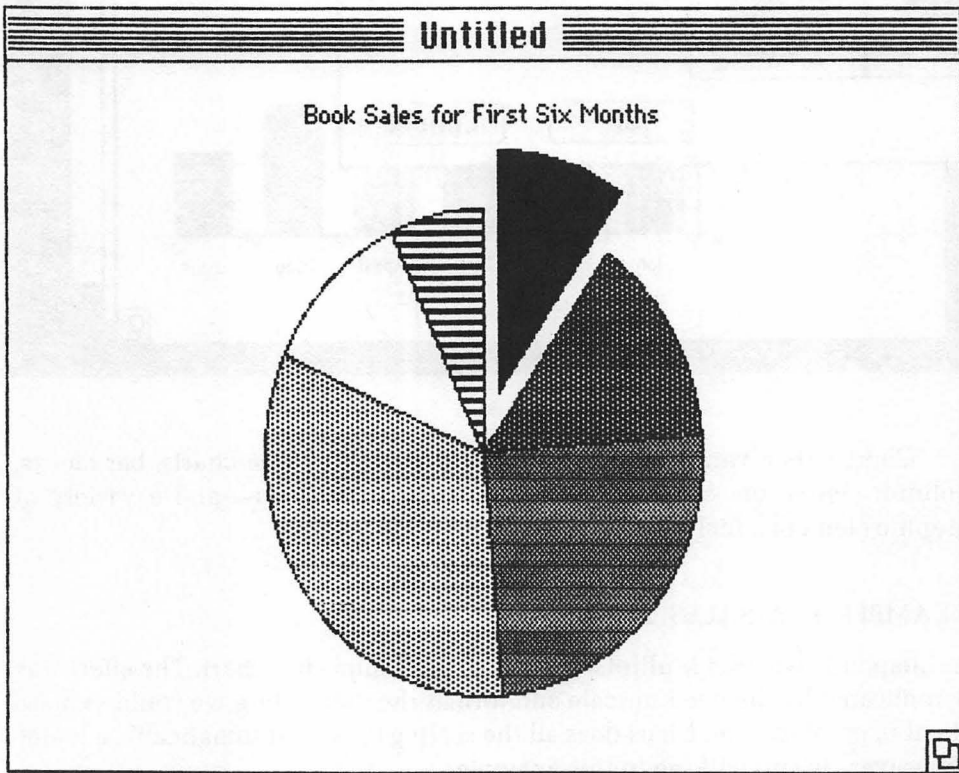
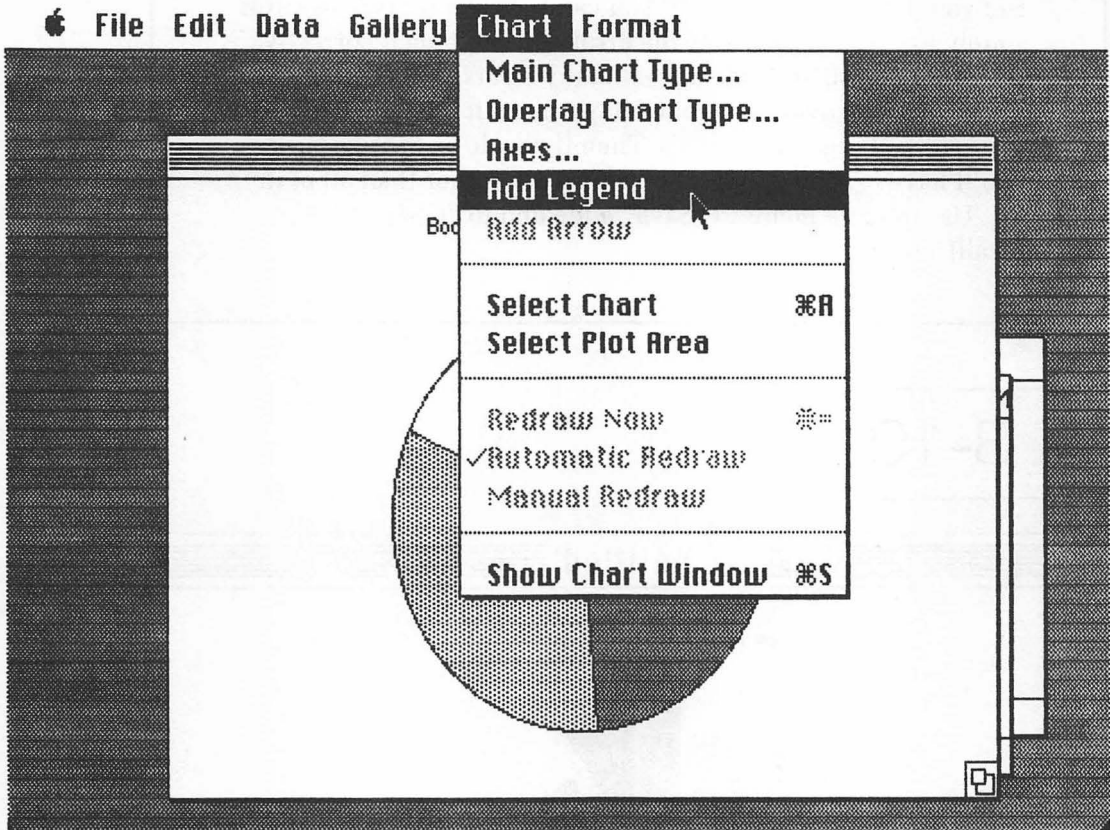


FIG. 3-9



Once Chart is loaded, pull down Chart's Edit menu and select "Paste," as shown in Figure 3-2. The data in the Clipboard will be transferred to the New Series tablet, as shown in Figure 3-3.

(For experienced users: If you select the Paste and Link command rather than Paste, then each time you update the sales figures in Multiplan, that update will be transferred automatically to the charts you create with Chart.)

Let's provide Chart with a title and labels for the X and Y axis. Pull down the Data window and move and click the cursor to select "Text" from the options displayed there (see Figure 3-3). A title form will appear on the display. Start typing (no need even to move the cursor) to fill in the series name "Book Sales for

## **Correcting Mistakes**

Did you make a typing error? You can rectify most typing errors simply by backspacing over the error and retyping it correctly. Of course, if you've made a great many errors, your best bet may be to start over. To avoid delays, make it a practice to save your work at regular intervals. Then if you do have to go back, you'll have to redo only part of your work rather than all of it.

Use the File menu to "Save" a file and to "Open" (and recall) a backup copy.

**FIG. 3-10**

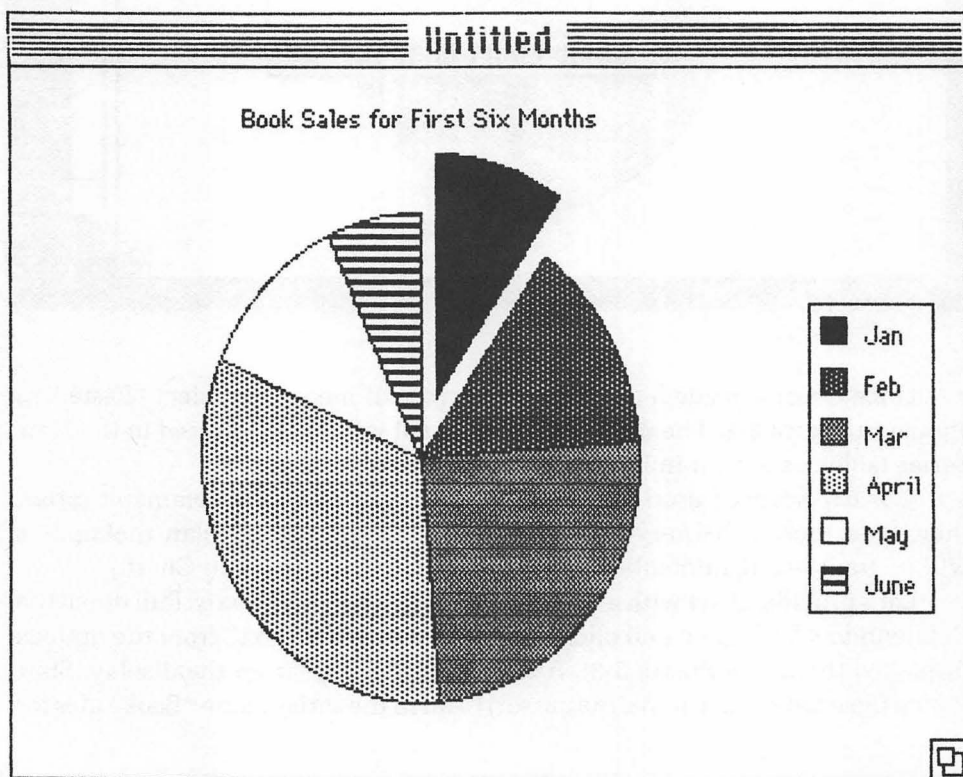
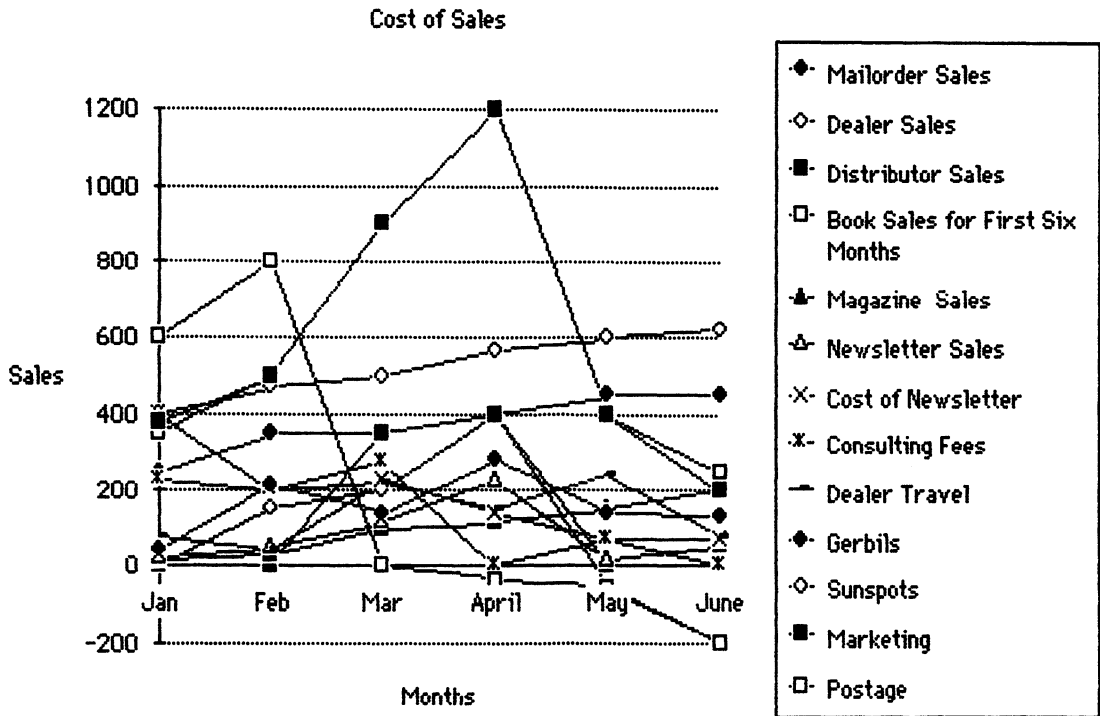




FIG. 3-11



First Six Months.” Press the Tab key when you are through and the cursor will advance to the next field on the Text menu. Then you can fill in the labels for the X category, “Months,” and Y value, “Sales (books),” as shown in Figure 3-4. Press Return when you are through.

To generate a bar chart of the sales data, just check “Plot Series” on the series window. The result is shown in Figure 3-5. To see all of the graph in the foreground of the display as in Figure 3-6, move the cursor to any point on the graph and click.

You don’t have to make do with the bar chart you see on the screen before you. Chart offers a whole gallery of options—bar charts, column charts, area charts, line charts, pie charts, and scatter plots. To see how easy it is to change from one type of chart to another, let’s convert a bar chart to a pie graph.

## BUILDING A PIE CHART

Pull down the Gallery menu and select "Pie Chart." You see a new range of options (Figure 3-7). The third option, the pie chart with one slice detached, looks interesting. Select this type by pointing to it with the cursor and clicking. Now click the OK button; the result is Figure 3-8.

This new chart is arresting, but it doesn't make much sense. What does each slice represent? And what is the special significance of the slice that has been

**FIG. 3-12**

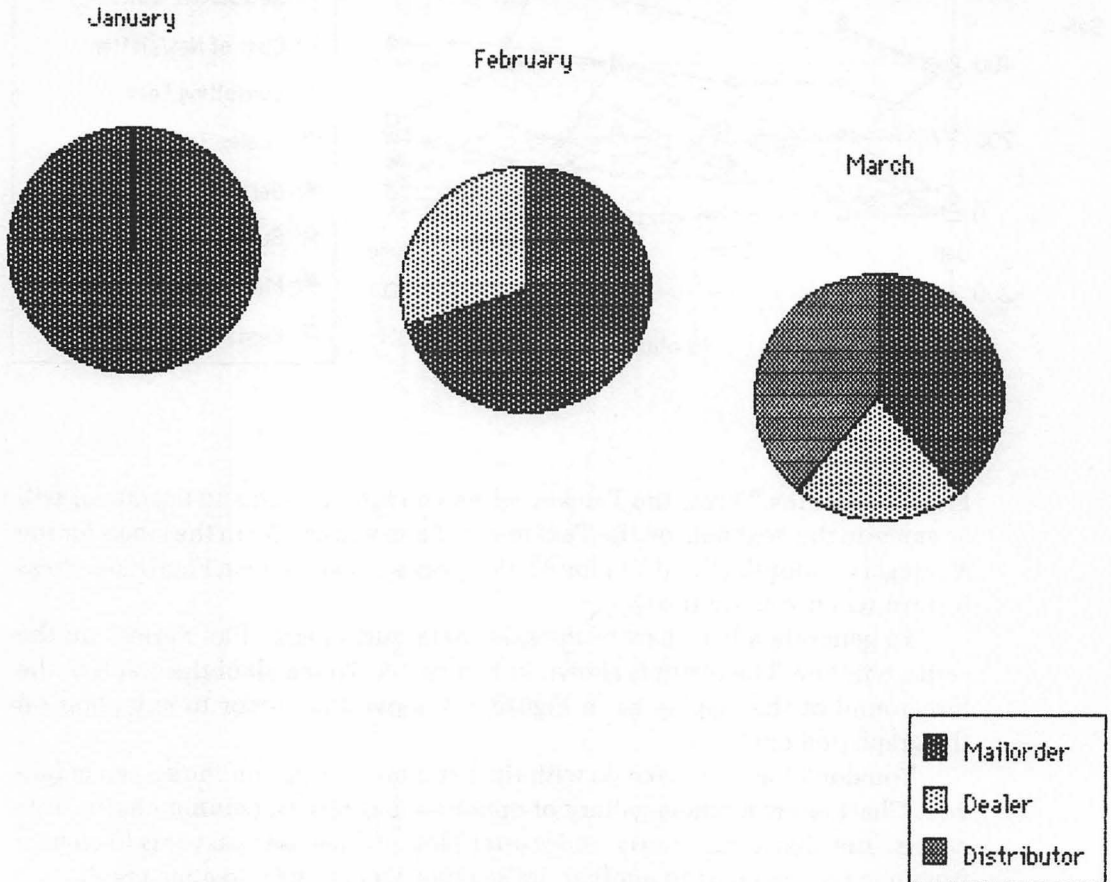
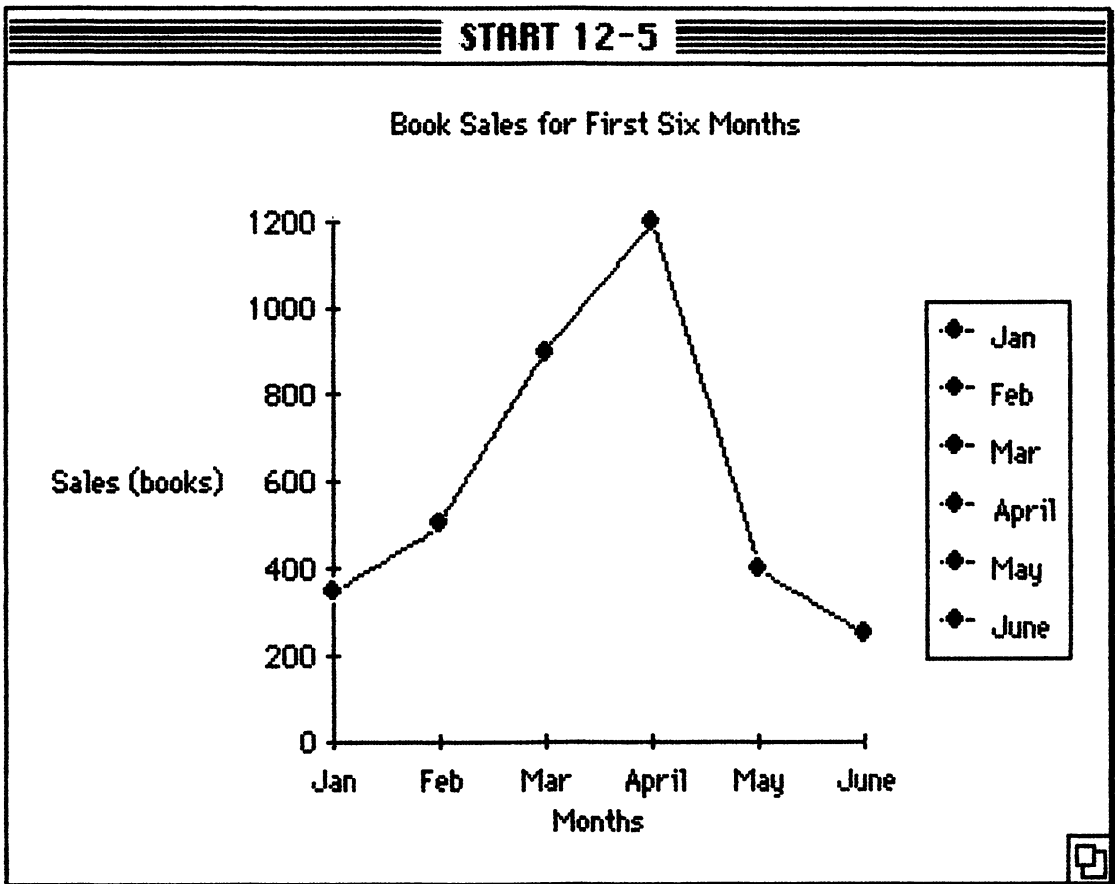


FIG. 3-13



pulled away at the top? You can answer the first question by adding a legend to the graph. Pull down the Chart menu, as shown in Figure 3-9, and select the fourth option on the list, "Add Legend." With a legend added (Figure 3-10), it is easy to see that the sales for March and April made the biggest contribution to profits.

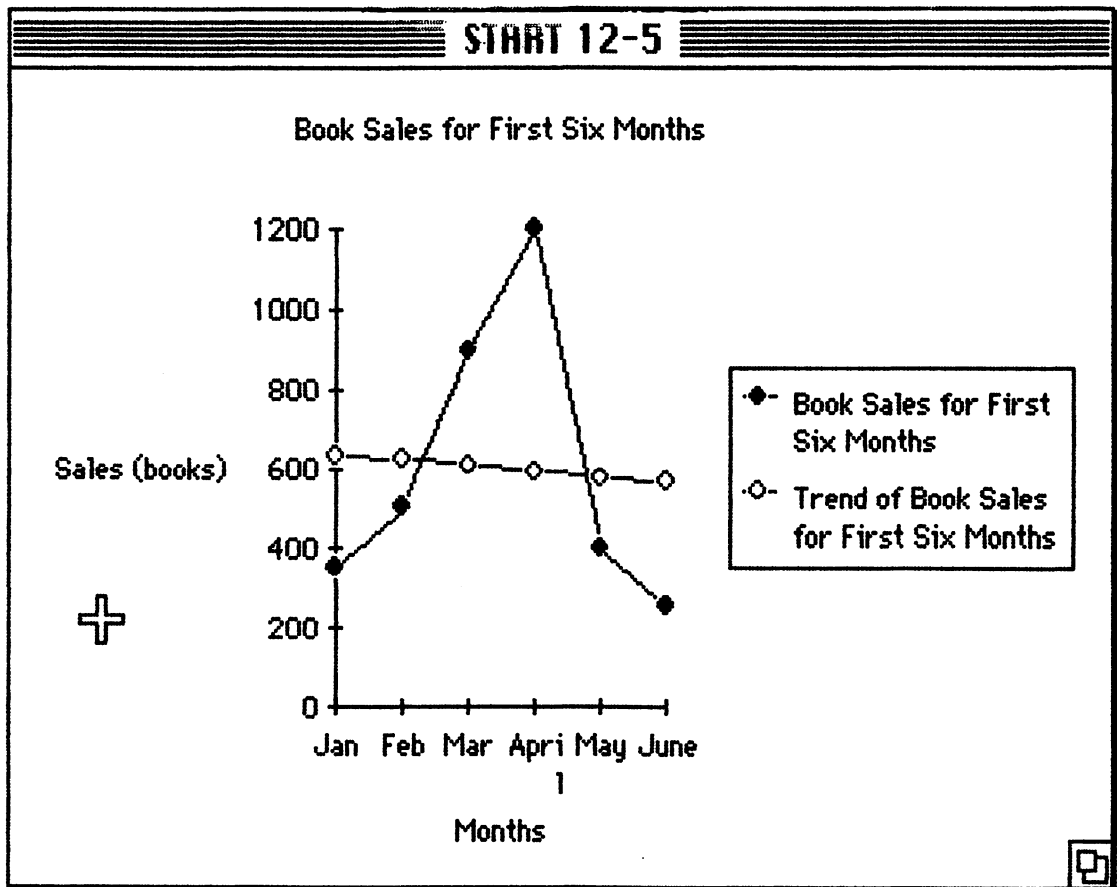
Unfortunately, the pie chart conceals the "trend" that was evident in the previous bar graph. There's a major lesson here: While Chart makes it easy to construct a wide variety of chart types, it's up to you to select the type of graph

that will get your point across and to add text and labels that will give your point the necessary emphasis.

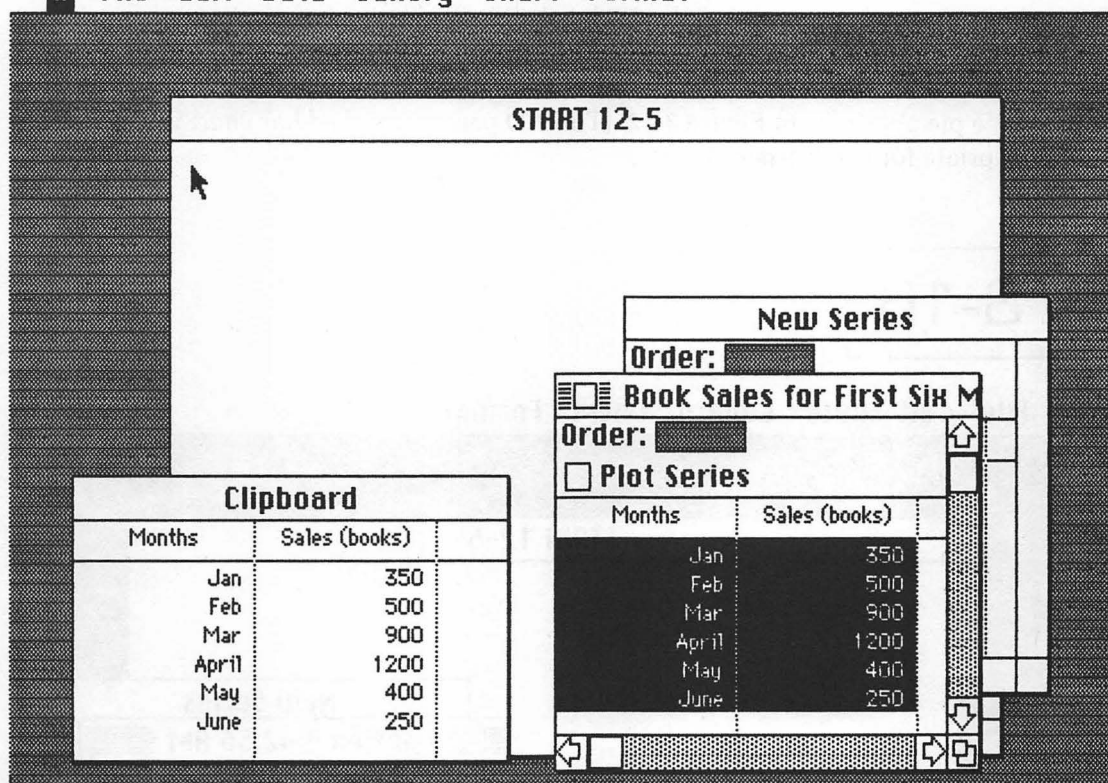
### GETTING YOUR POINT ACROSS

Chart offers a wide array of chart types subdivided into six categories: bar charts, column charts, area charts, line charts, pie charts, and scatter plots. Only one or two of these charts will be appropriate in any given situation. Make sure you use the right chart for each application.

**FIG. 3-14**



File Edit Data Gallery Chart Format



The line chart is invaluable for displaying and comparing trends. And Chart can display up to 12 trend lines simultaneously. However, more is not necessarily better. Is Figure 3-11 a line chart or a road map? Five lines is an effective upper limit.

A line chart or bar chart can be used to exhibit a trend, but the line chart is not appropriate when one of the variables is qualitative rather than quantitative (when displaying sales dollars by salesperson or sales outlet, for example).

Bar and column charts can be used whenever one of the two variables is a category (male/female) rather than a continuous variable (0.5–10.0). And they are also effective for displaying trends, as Figure 3-6 illustrates. Bar and column

charts are particularly valuable when you wish to review the effects of three variables simultaneously. In Figure 3-23, for example, overlapped columns are used to display sales by sales type as well as by month.

The *pie chart*, appropriately used, can be a real showstopper. A pie chart with one segment removed immediately directs the viewer's attention to the missing segment (see Figure 3-10). The pie chart's chief limitation is that you can display the values of only one variable at a time (and even these must sum to 100 percent). However, you can display a trend in composition through the use of side-by-side pie charts, as in Figure 3-12. (The *100 percent stacked bar chart* is also appropriate for this purpose.)

FIG. 3-16

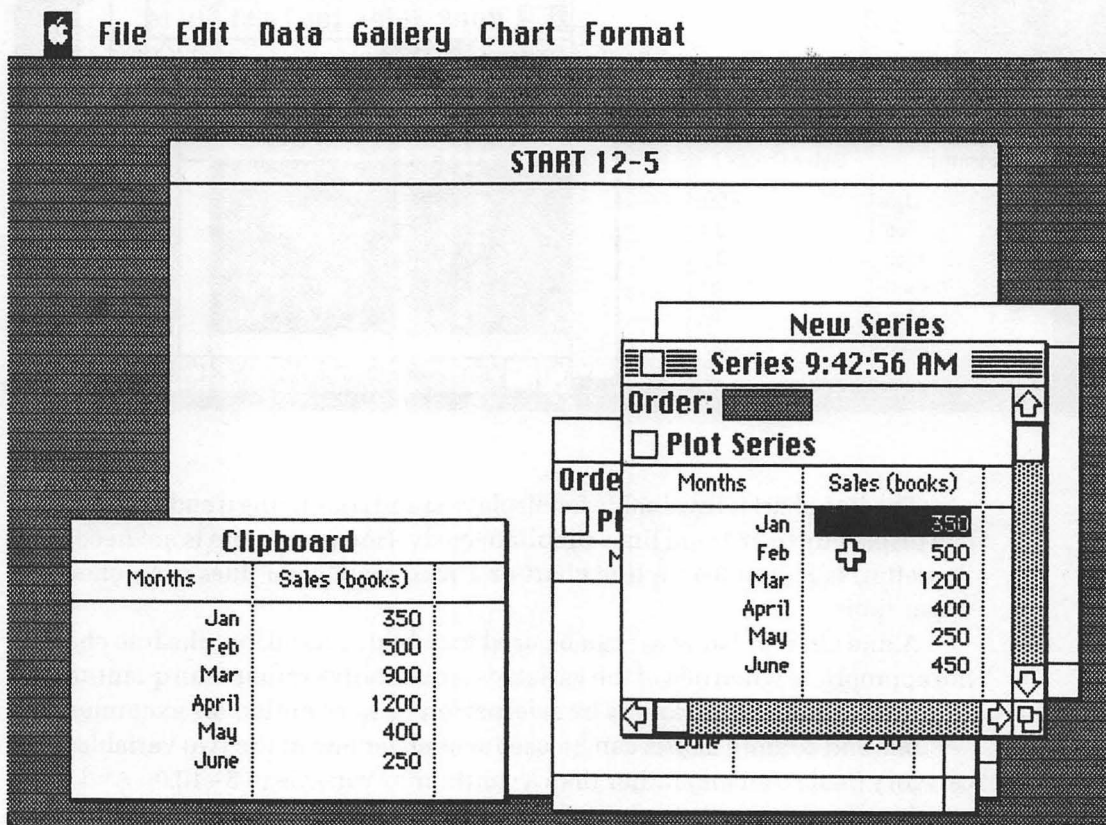
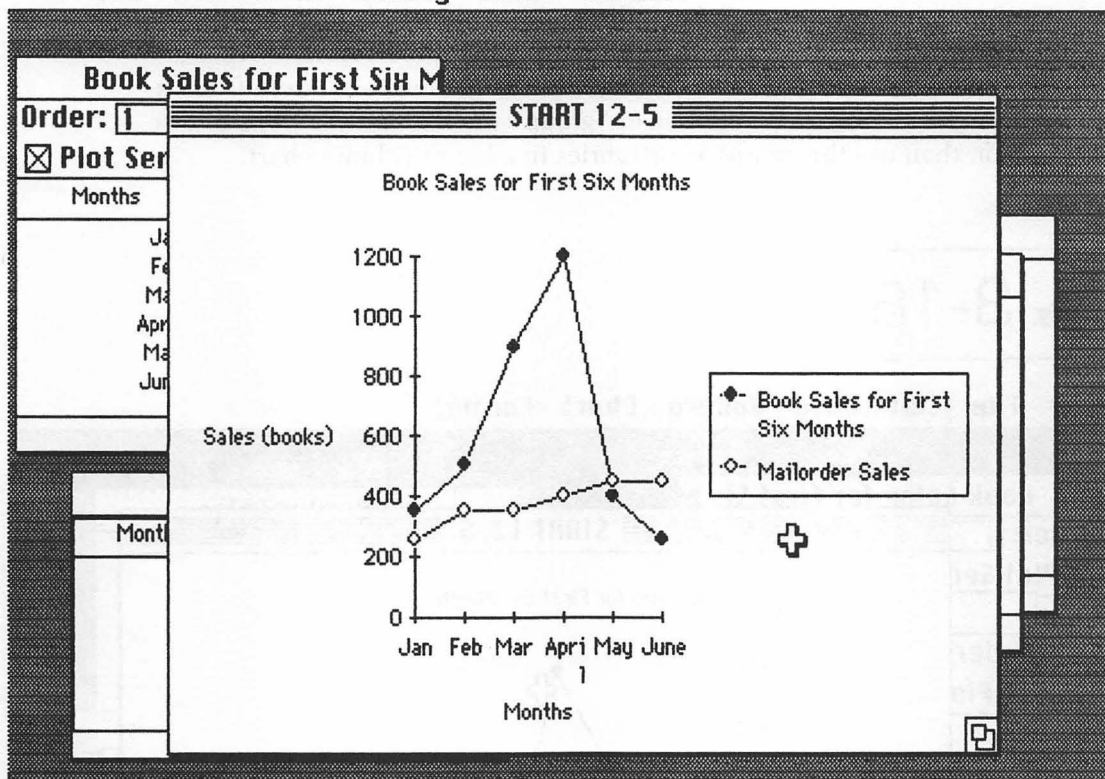


FIG. 3-17

File Edit Data Gallery Chart Format



A primary application for the area chart is to convert sales to sales dollars. When the category (horizontal axis) is price and the variable (vertical axis) is the number of sales, the area under the curve is sales dollars. You can also use an area chart to convert a rate (amps, feet per second) to an amount (watts, feet). In the book-sales example, the category is month and the variable is sales frequency, so the area chart represents total sales for the period of the study. **Warning:** The area chart should not be used when the area or integral under the curve is meaningless, as in Figure 3-20, where negative values (returns from dealers) are incorporated in the plot as if they were positive.

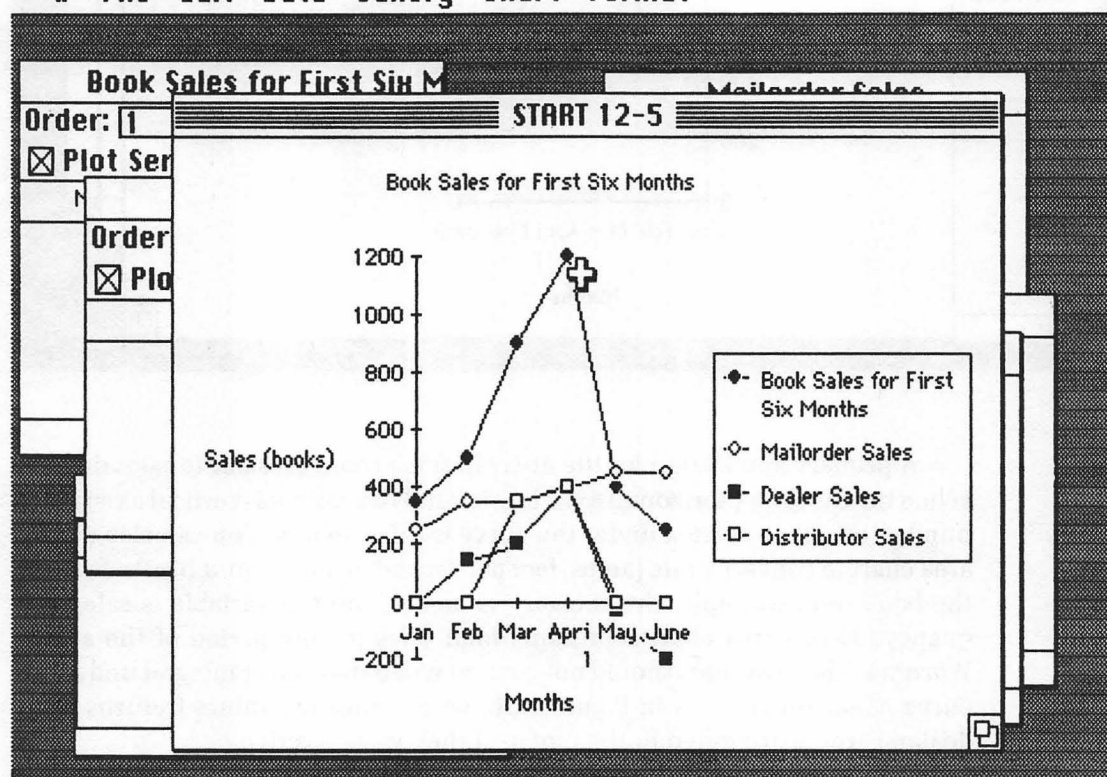
The scatter plot is the friend of the scientist and engineer, the sociologist,

the economist, the marketer, and anyone concerned with analyzing surveys and experimental data. Like the line plot, it can be used whether the underlying variables are continuous or discrete or categorical. Linear, semilog, and log-log plots are available in the scatter plot gallery.

Using a series of scatter plots, the scientist can look not only for trends and relationships but also “clusters” that indicate the presence of a third or hidden variable. A contour plot, which allows the display of three variables simultaneously, would be still more meaningful, but it is missing, alas, from Chart’s gallery. Your next best alternative is to “group” the data on the basis of the scatter plot, then use the groups as categories in a bar or column chart.

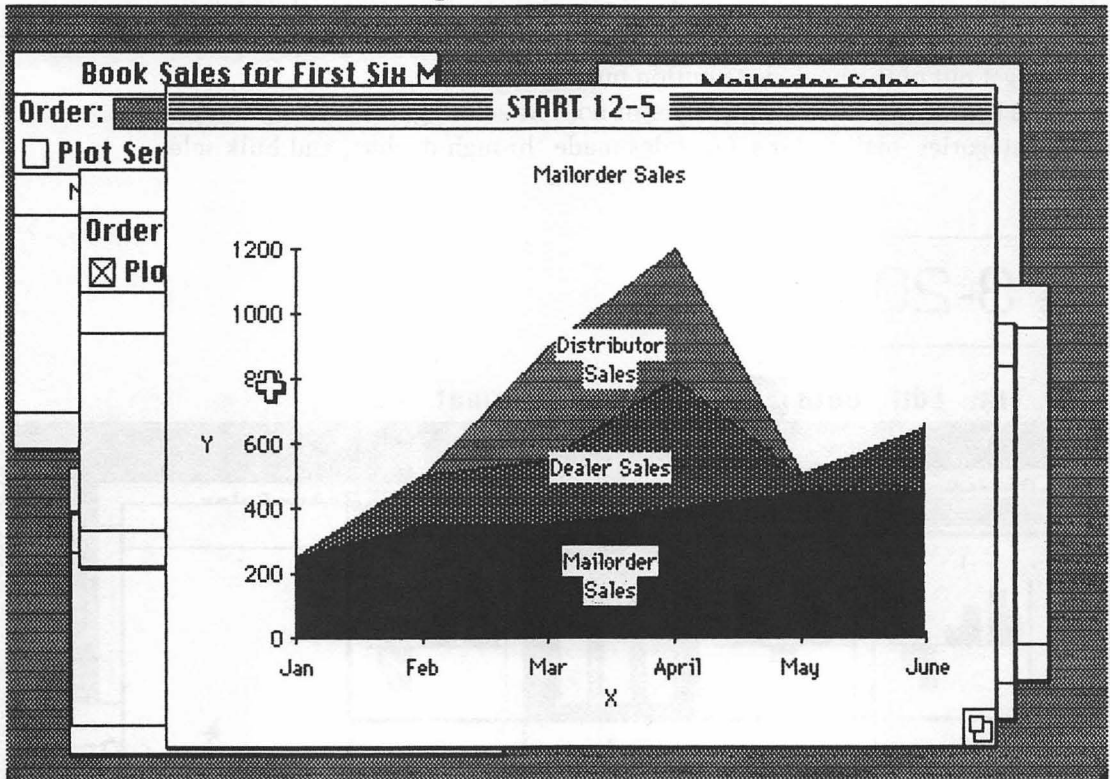
FIG. 3-18

File Edit Data Gallery Chart Format





File Edit Data Gallery Chart Format



### EXAMPLE 2: MAKING MULTIPLE COMPARISONS

Chart's real value can be seen when you want to make multiple comparisons. In this example, let's break down the book sales by type — mail-order, dealer, and distributor sales — and display the results in the form of line, column, and area charts.

To generate a line chart from the sales data, pull down the Gallery menu, select "Line," and click the OK button. The result is shown in Figure 3-13.

Is there a trend here? Let's find out. First, bring the book sales data to the front of the display. Point the cursor at the data box (which is barely visible beneath the graph) and click. Next, pull down the Data menu and select "Ana-

lyze." The list of analyze options includes average, trend, growth, cumulative sum, difference, percent, and statistics. Select "Trend." Click the OK button to display two sets of points—the original data and a trend line, as shown in Figure 3-14.

The trend line reinforces an unhappy feeling that we've been trying to avoid putting into words. Although April was a great sales month, sales have not kept up the pace thereafter. In fact, the overall trend is flat or slightly down. Is it time to get out of the book distribution business?

The answer won't be a simple yes or no. The sales figures actually include three categories: mail-order sales, sales made through dealers, and bulk sales

FIG. 3-20

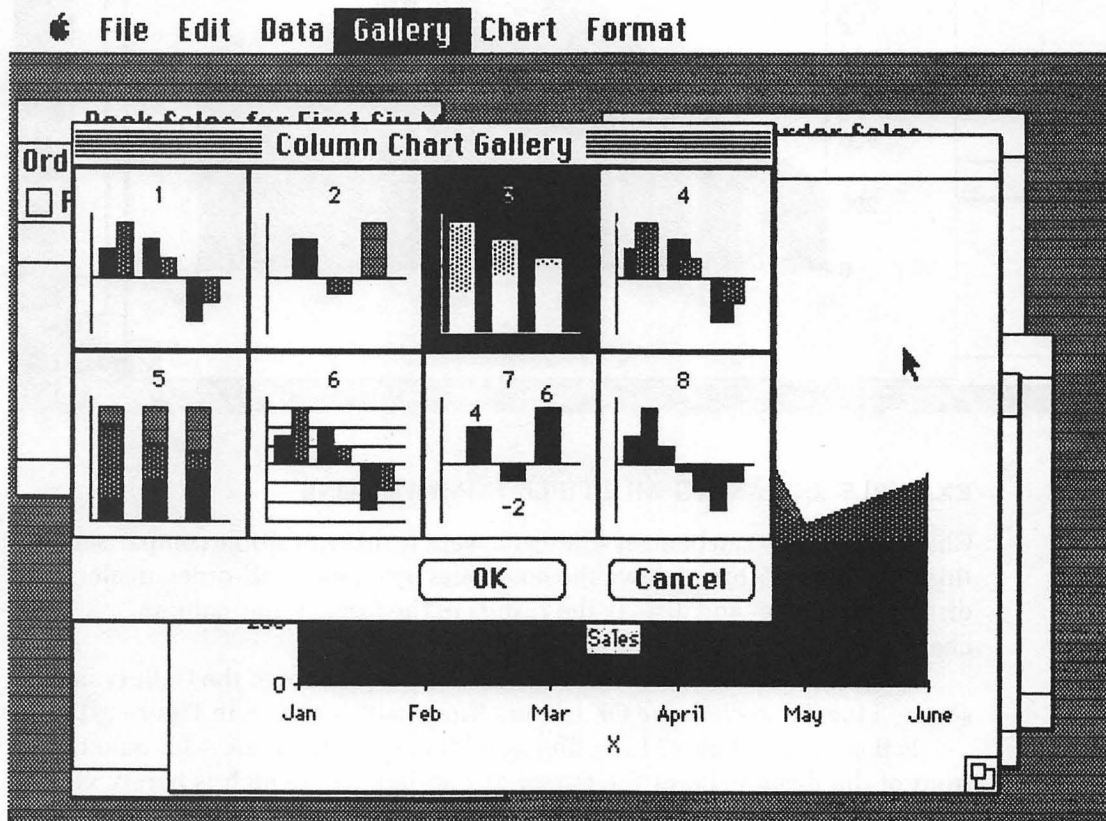
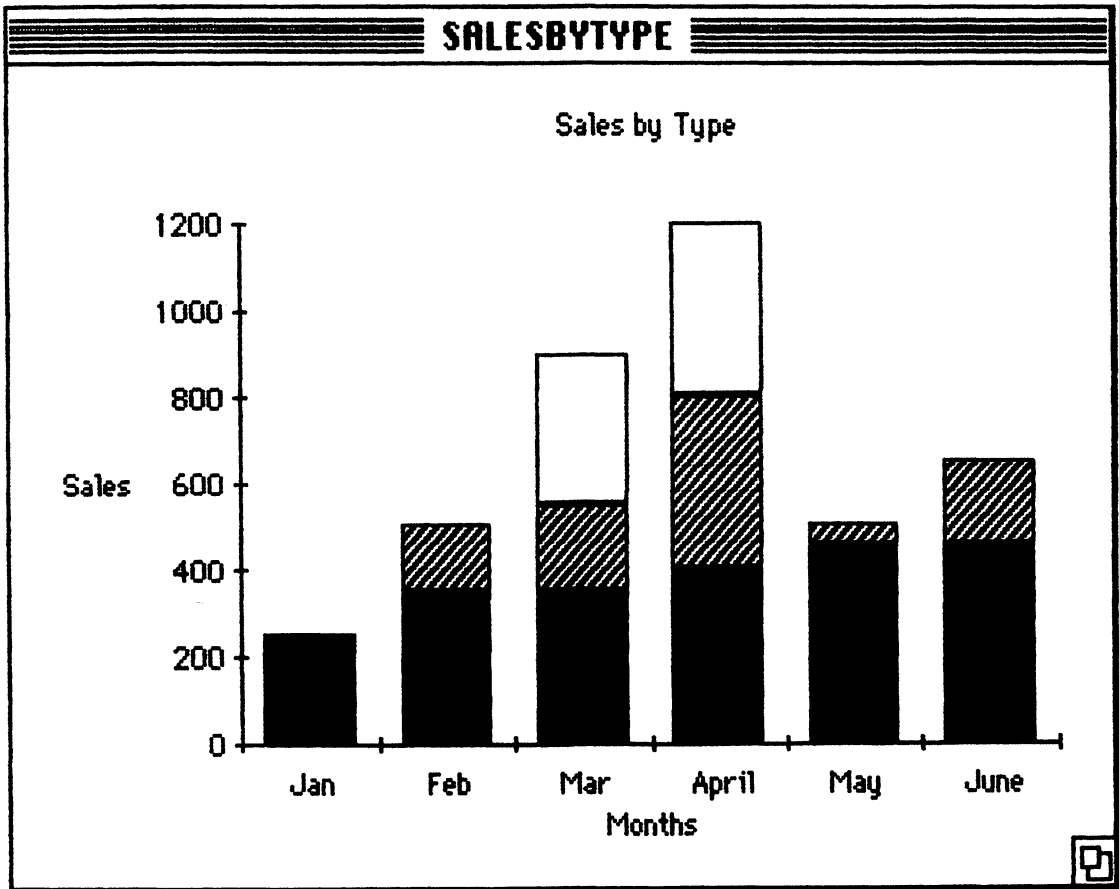


FIG. 3-21



(two of them) made to distributors at a negotiated price. The “trend” is actually a mixture of several trends, each moving in a different direction. To illustrate this and to help my partners and me to make an intelligent go/no-go decision on the book business, let’s enter the monthly figures for each sales type and display them side by side.

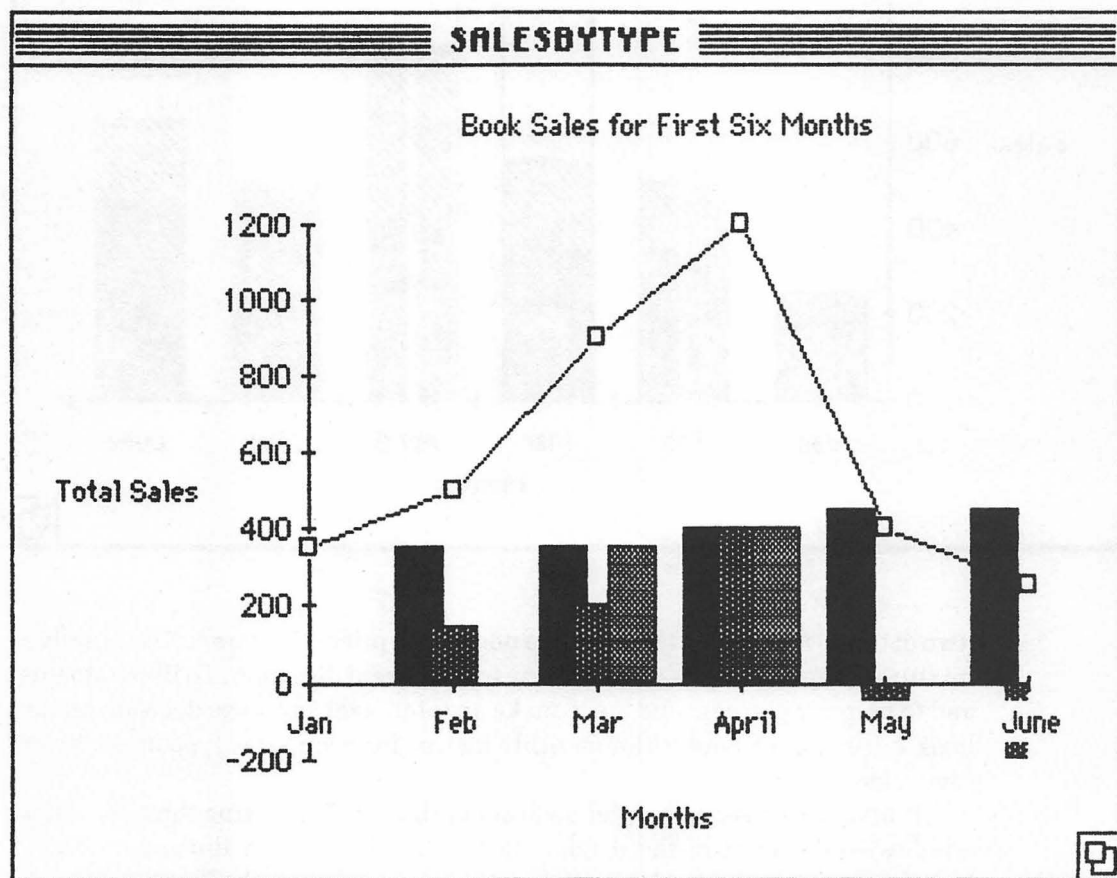
It takes three steps to enter each set of figures. First, bring the new series window to the front of the display by pointing it out with the cursor. Next, transfer the original sales data to it from the clipboard using the Paste command.

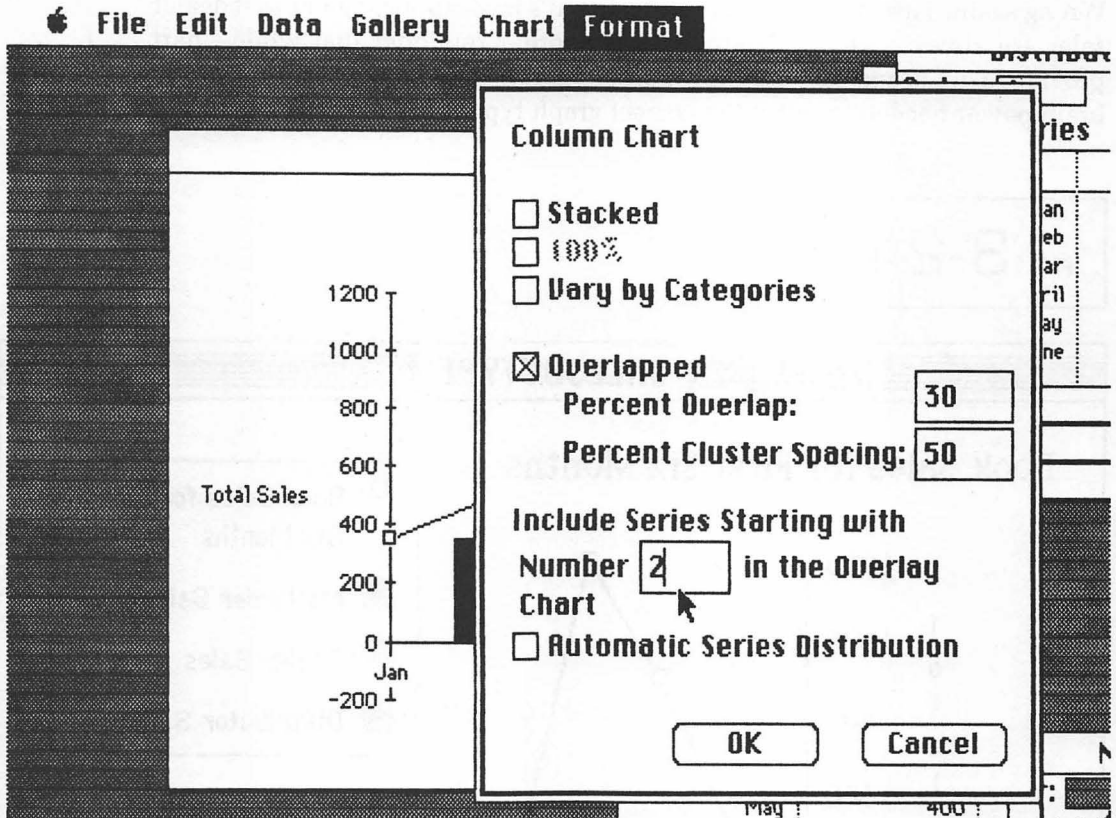
(Actually, you will be throwing away the data, but the transfer saves you from having to reenter the names of the months and the axis labels.) Finally, enter the revised figures into the sales column.

The display screen looks like Figure 3-15 after you have copied the original sales figures to the clipboard. It looks like Figure 3-16 after you call up the new series window, paste in the sales figures, and mark off the first field you wish to modify ("350") by dragging the cursor across it.

Let's enter the mail-order figures first. Type 250, return, 350, return, 350 return, 400, return, 450, return, 450 return. Note that each time you hit Return,

FIG. 3-22





the marker advances to the next field. Use the "Text" selection on the Data menu to give the new data set the label "Mail-order Sales."

By checking the plot series box for each of the two sets of data, you get a chart showing both lines (Figure 3-17). Note the contrast between the two lines: the mail-order sales, showing slow steady growth, and total sales, with its abrupt peak in April. The mystery is clarified when you enter the dealer and distributor sales figures using the same three-step procedure you used to enter the mail-order data. For the dealer figures enter 0, 150, 200, 400, -50, and -200. (Those last minus figures, alas, represent returns from the dealer of sales already credited.) For the distributor sales, enter 350 for March and 400 for April; the other

months are zero. After you add these latter two sets of figures to the graph, the results look like Figure 3-18.

Horrible. And confusing. For once, a picture isn't worth a thousand words. Let's try selecting an area chart from the gallery instead, as shown in Figure 3-19. Wrong again. This chart isn't just confusing, it's misleading; it looks as if dealer sales are always positive. Figure 3-19 is another reminder that while Chart provides a quick and easy way to generate a graph, it does not substitute for the brain power needed to select the correct graph type.

FIG. 3-24

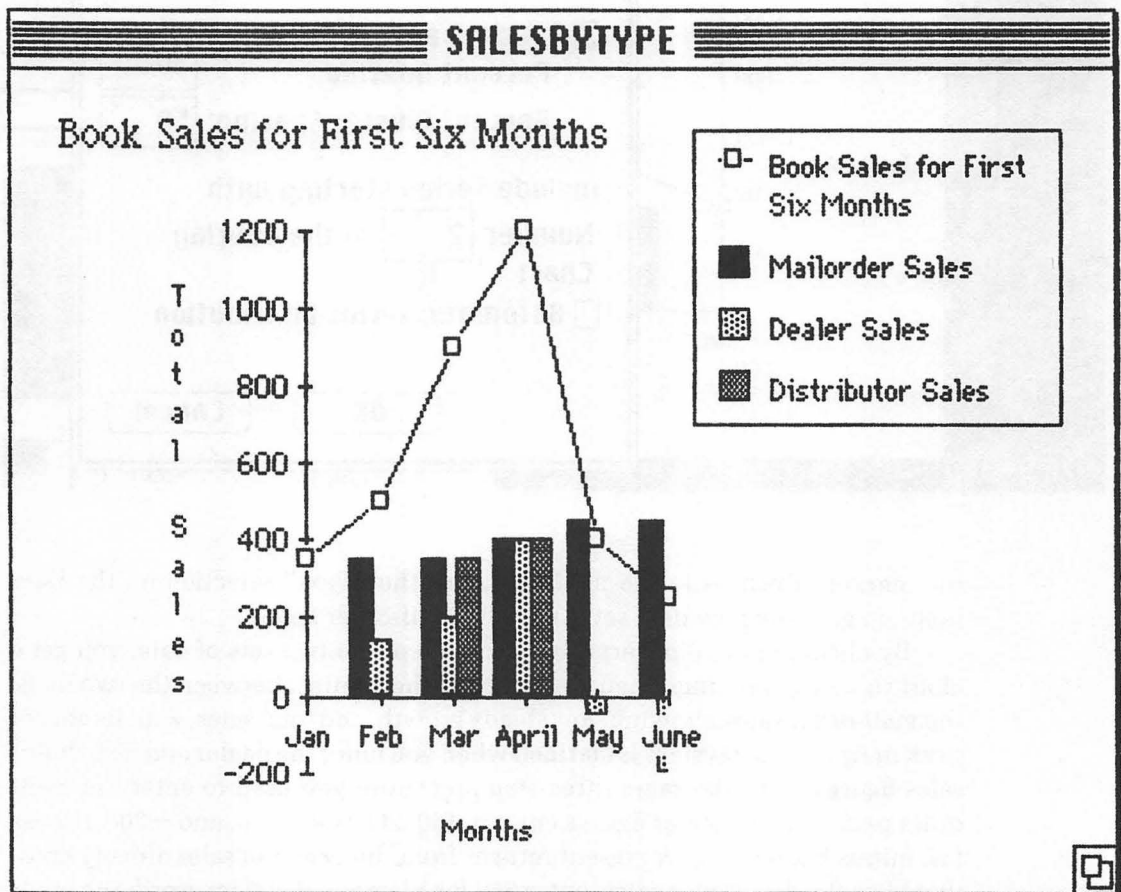
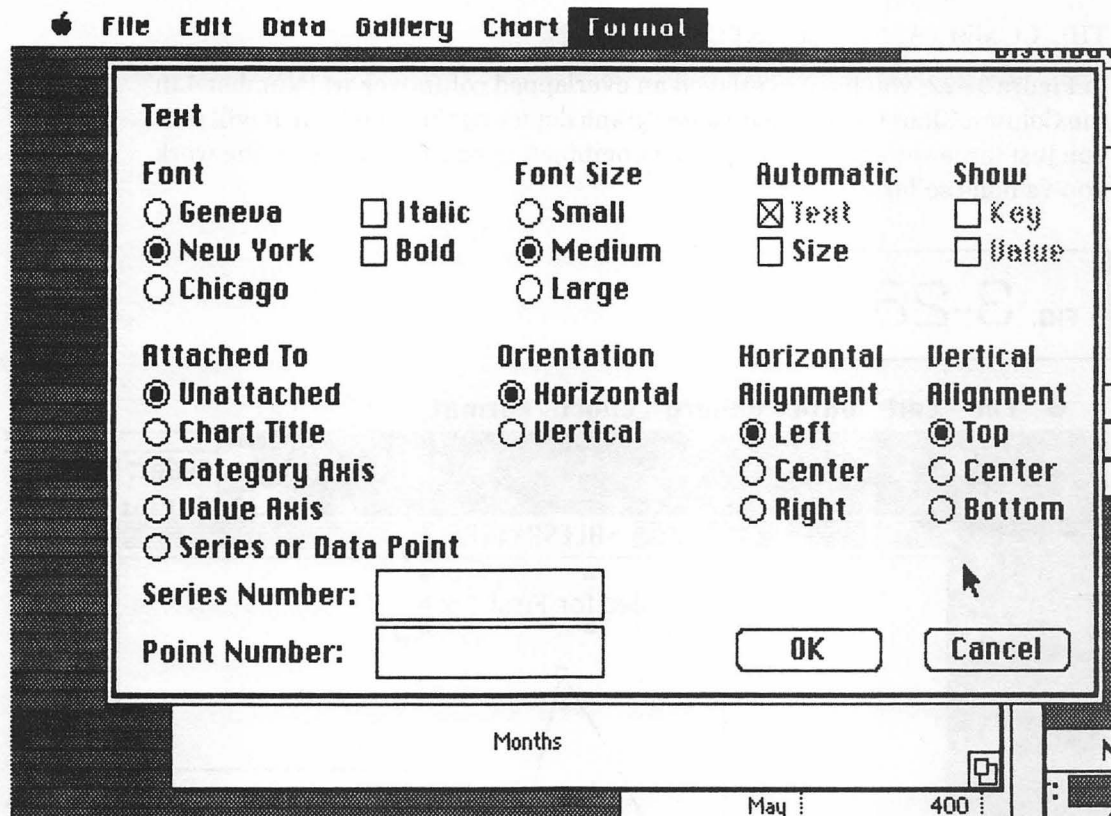




FIG. 3-25



How can you best illustrate the various counter trends? A pie chart? Yes, side-by-side pie charts would be quite revealing. But to generate them, you would need to return to Multiplan and build a series of spreadsheets by month and book type. Instead, let's act on a tip offered in the preceding section and use a stacked column chart.

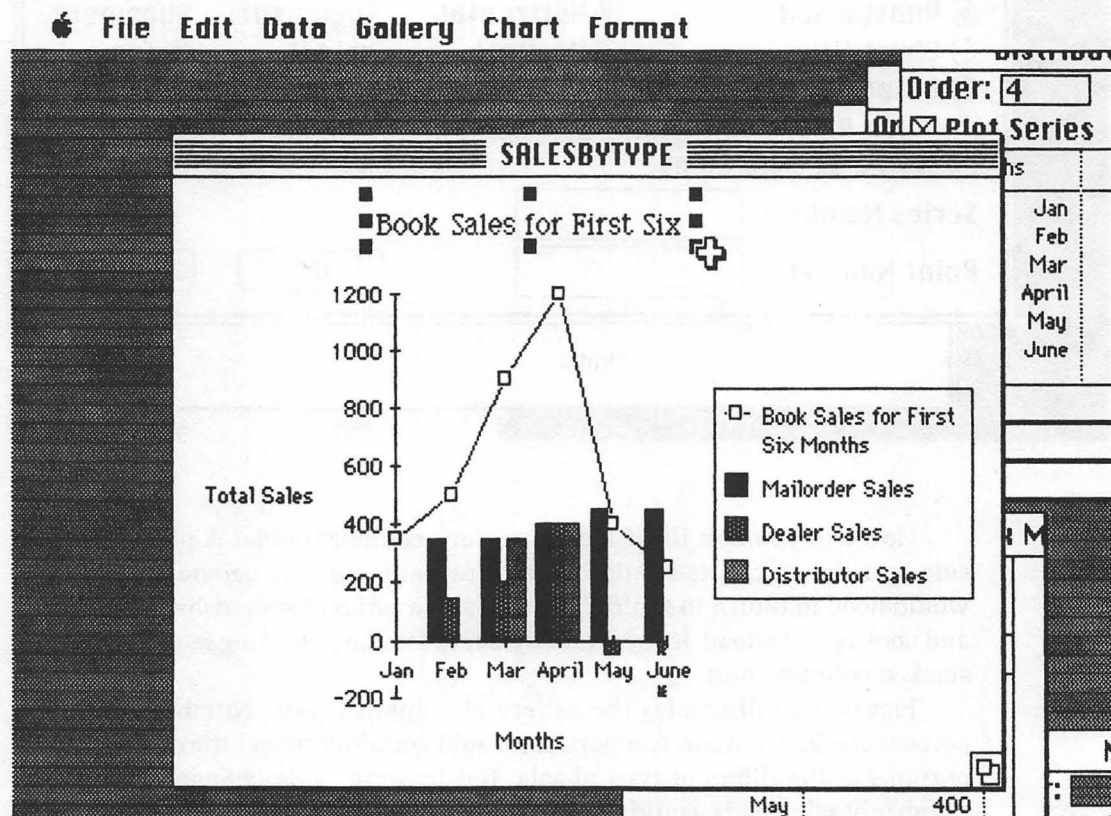
Figure 3-20 illustrates the gallery of column charts. Number 5, the 100 percent stacked column comparison, would certainly reveal the changing proportions of the different type of sale. But it would hide changes in the total number of sales. This would also be true of the simple column chart (Number 1) and the overlapped column chart (Number 4). Number 3, the stacked column

chart, yields almost the full sales picture, as shown in Figure 3-21. Almost. The problem is that once again the negative sales have become positive. Is there any effective way to plot the data? Figure 3-22 reveals the solution.

## THE COMBINATION CHART

In Figure 3-22, you have overlaid an overlapped column chart (Number 4 in the Column Chart Gallery) with a line graph depicting the sales total. It will take you just three steps to create a similar combination chart, building on the work you've done so far.

FIG. 3-26





## It Doesn't Go without Saying

Save your work on disk at frequent intervals. Brownouts, power surges, and power failures can steal your best efforts. Save your work frequently while learning or experimenting. If you make a mistake and can't find your way out of it gracefully, you can always restart from the point at which you saved your work.

Save your work on a separate data disk, not on the program disk. If you have only one disk drive, you may need to store your work on the program disk temporarily, but be sure to copy it to a data disk at the conclusion of the work session.

First, bring the original sales data to the front of the display and check off the "Plot Series" box. Edit the order number, just above the Plot Series box, to read 1 instead of 4. Select "Line" from the gallery.

Second, bring the graph window back to the front of the display and pull down the Chart menu. Select "Overlay Chart Type." The Overlay Chart Type menu will appear on the screen; select column from it.

Third, select "Overlay Chart" from the Format menu. The Overlay Chart Format menu will appear on the screen (Figure 3-23). Check the "Overlapped" box. Type "30" to set the percent of overlap. Tab to the next field and set the percent cluster spacing to "50." Tab again and type "2" to change the number of the starting series. Click the OK button.

## CREATIVE FORMATTING

This chapter only scratches the surface of Chart's formatting potential. You can enhance any of the charts you create with grid lines, arrows, legends, and comments. You can alter the font, style, and size of any text item. (And you can use MacPaint if you don't find enough alternatives on the Text Format menu.) You can also rearrange the chart itself, moving titles and legends and stretching and compressing the actual diagrams.

I used many of Chart's advanced formatting features in converting Figure 3-23 to the chart depicted in Figure 3-24. Note that I've added a legend and moved it to the upper right-hand corner, altered the size, style, and position of

## Keep It Simple

Well-designed visual aids that are part of a well-integrated presentation can cut meeting times by up to 28 percent. But the secret lies in the design and the integration. A sloppy graph with illegible headings and overlying curves can be worse than no graph at all. It's up to you to get the most from your graphics software.

Use a chart to make a single point, or two or three interrelated points at most. Here is an example: Sales are going up. (Point to area curve.) But they're not going up as fast as they did last year. (Point to second part of curve where you've used a different shading.)

Let the chart make your point for you. Use a minimum of text. Even a flip chart should have no more than two or three items per sheet. Don't be afraid to use color, but use it sparingly, and use it meaningfully. If you have three curves on a graph, for example, two in black and white and one in red, the one in color should be the one you want to emphasize.

Don't be afraid to experiment. Use clustered bar charts to show growth and variance, such as an investment yield. Use stacked bar charts for budget projections. Pie charts, particularly those with a missing or exploded slice, can be used to argue for a fair share of the budget. Gantt charts will clarify schedules and manpower assignments.

Make sure that you use the right chart for each application. A line chart or a bar chart can be used to exhibit a trend, but the line chart is not appropriate when one of the variables is qualitative rather than quantitative (when displaying sales dollars by salesperson or sales outlet, for example). Area charts can be used to track sales volume or dollar growth. But don't use an area chart when the area or integral under the curve is meaningless.

the title, changed the orientation of the label on the Y axis (from horizontal to vertical), and selected new patterns for the bars that offer greater contrast.

To alter the title, “Book Sales for First Six Months,” first mark it with the cursor. Then, select “Text” from the Format menu and enter the changes noted in Figure 3-25. To move the title, point to one of the eight small squares depicted in Figure 3-26, and use it to drag the title across the screen. (Experiment to see how the different squares drag and stretch the title in different directions.)

Did I make the right changes? I’ll let you be the judge.

---

# **Creating Letters, Outlines, and Reports**

## **4**

Every piece of paper or text used in your business can probably benefit from the word-processing software reviewed in this chapter: correspondence, case histories, contracts, documentation, filing guides, form letters, formulations, invoices, mailing lists or lists of any kind, maintenance records, memoranda, manuals, notes, notices, organization charts, programs, reports, rough drafts, schedules, spreadsheets, tables, and telephone logs, to say nothing of address books, agendas, agreements, appointment calendars, and articles.

Word-processing software will save you time and let you produce clean, professional-looking copy with minimal secretarial assistance.

Speed is a major benefit. Minor additions and corrections can be completed in seconds and printed without errors at 225 words per minute, about three times the speed of a fast, accurate typist.

You can easily merge contributions from several sources and turn monthly reports into quarterly reports and then into an annual summary—all done professionally, all printed free of errors.

Your filing space will be cut drastically. One diskette can hold 30 separate documents; three can hold almost the entire contents of this book.

Word-processing software can also be used to enhance spreadsheets with boldface and underline and to add titles, legends, and explanatory notes. Additional programs used in conjunction with your word processor will let you produce mass mailings by merging a form letter with an address list.

In this chapter, you learn how to use two Macintosh word-processing programs, MacWrite and ThinkTank, in four everyday business applications: (1) creating and editing a letter, (2) building a document from several documents, (3) enhancing a spreadsheet, and (4) organizing an article or a report. In Chapter 6, you learn how to use MegaMerge with MacWrite to do a mass mailing.

## WORD-PROCESSING SOFTWARE

Henry Lee, the founder, chairman, and president of Lee Pharmaceuticals of South El Monte, California, bought his first desk-top computer so that he could gain some familiarity with the concepts surrounding the “large” computer—a Basic/Four—that his company had just purchased. Today, Lee Pharmaceuticals owns 50 microcomputers used primarily for word processing. Lee himself has two, one in his home and one in his office. The head of data processing and the head of public relations each have two. The scientists have them, the salespeople have them, and the secretaries have them.

Dr. Lee’s first small computer application was word processing. “We have a staff of 40 highly talented engineers,” Lee said, “but they were always late with their reports. Sometimes two weeks of meetings would go by before we’d actually see the reports we were discussing.

“I figured, why not eliminate the step of passing drafts back and forth between the secretaries and the engineers? We have one fellow who is a Korean educated in Germany and another is a Hungarian. In some ways it has been easier for them to talk with the computer.

“Anyway, the experiment worked. The reports started getting out on time. And I kept buying more desk-top computers.”

John Crawford, head of Crawford and Whiteside, a firm of surveyors in Carterville, Illinois, purchased his desk-top to do engineering designs. After a year’s experience, Crawford found that a second computer application, word processing, more than justified his computer purchase. Crawford lists four contributions the word-processing software made to his business:

1. Professional, errorless typing
2. Increased productivity
3. Major time savings when preparing multiple, similar reports
4. Reduced pressure on hard-to-find and overworked professional secretarial staff

Word-processing software is essential for an office that requires professional, errorless typing. Crawford’s survey reports must be error-free since they form the basis of legally binding contracts.

Word-processing software speeds the preparation of form letters and serial reports by letting you take advantage of previous efforts. Crawford says, "Each of our reports could easily fill a three-ring binder. With our word-processing software, we don't have to retype each report from scratch. It's just a case of changing a few specifications, or adding a paragraph or two to a previous report. And while the report is printing, my staff and I can get started on our next project."

Your business needs a computer for word processing if it frequently does mass mailings or has a need for multiple reports with slight variations. Each month, Crawford must transmit copies of the emerging specifications to five or six separate government agencies, along with a "personalized" cover letter. This

FIG. 4-1

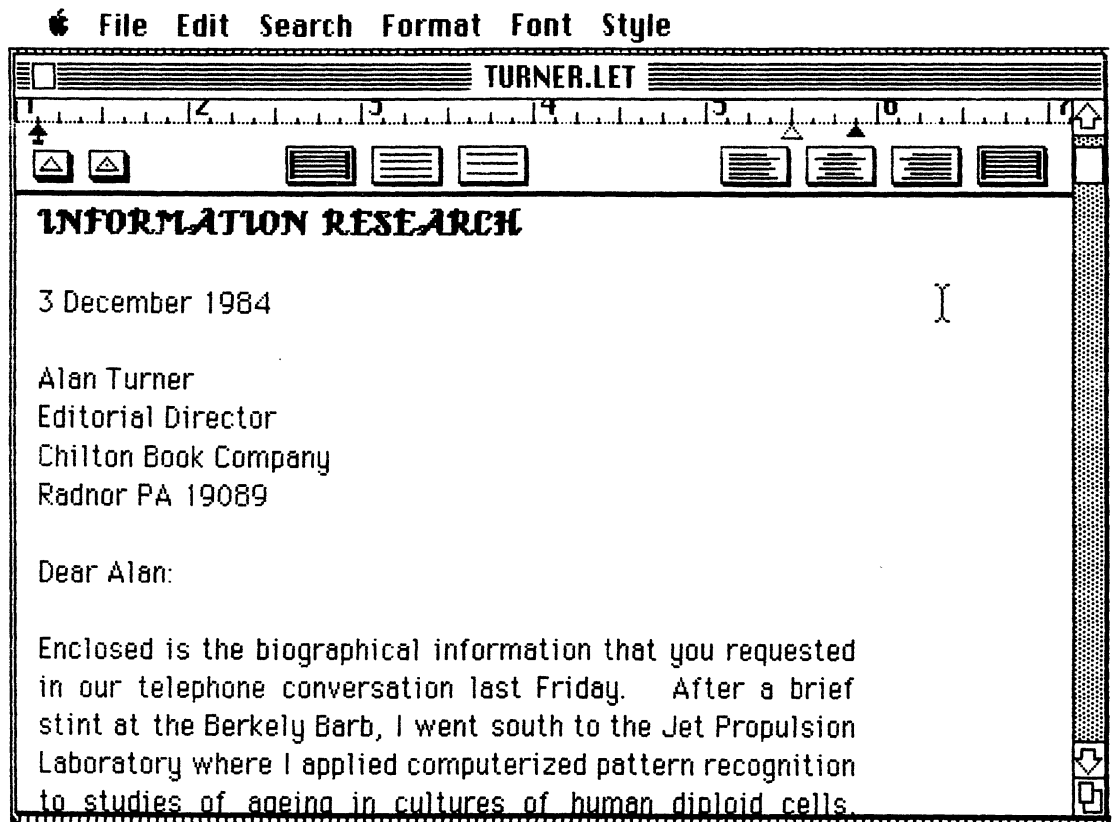
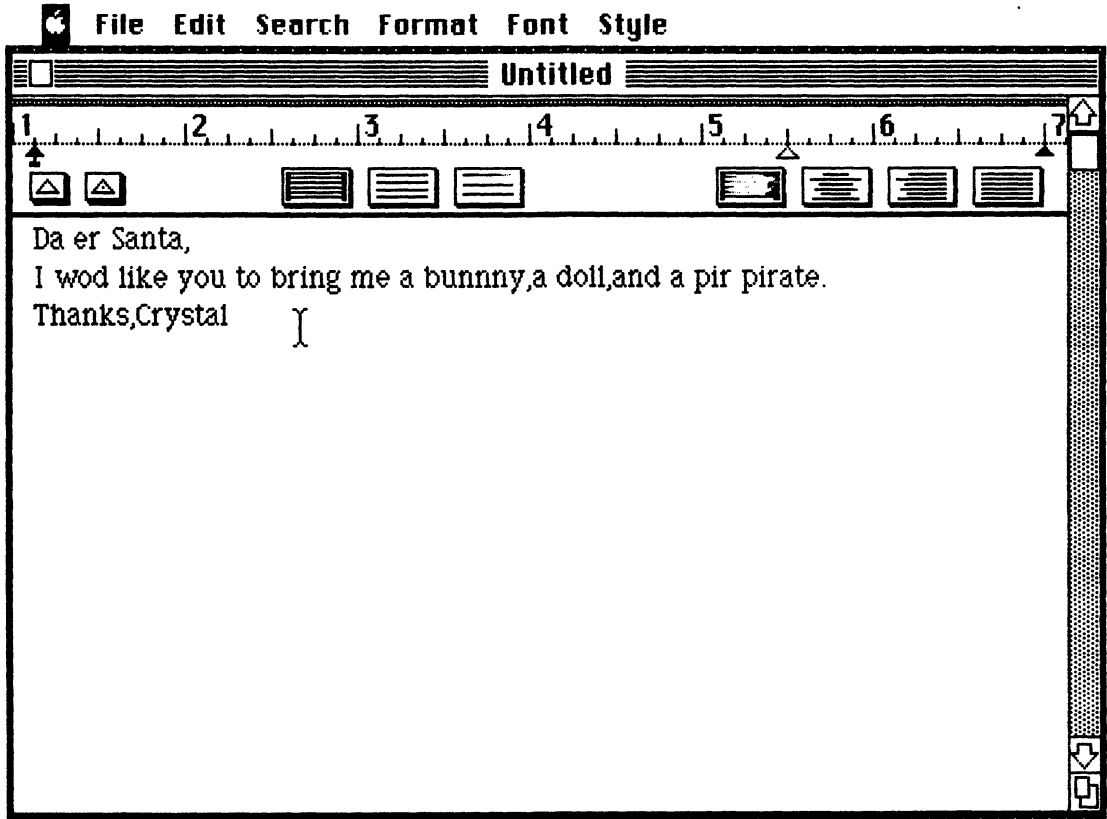


FIG. 4-2



is no problem with word-processing software that cuts the time required to revise and update the reports.

A desk-top computer like the Macintosh can reduce the pressure on hard-to-find professional secretarial staff. Crawford has just one secretary to support a staff of twenty. Like Dr. Henry Lee, he has found that the computer lets his engineers bypass the typist completely.

### **WILL YOU NEED A SECRETARY?**

Whether you can eliminate or get by without a secretary will depend upon the type of work she must do. If she is simply a typist who merely reproduces your

handwritten copy, you may find you can bypass her completely, simply by entering all your correspondence directly at the keyboard. On the other hand, if your secretary is truly a paraprofessional, you may want to let her originate much of your work.

The desk-top computer has created a requirement for three types of assistant—the typist, the editor, and the paraprofessional. Which types or how many of each you need will depend upon your business and the qualifications of your present staff.

FIG. 4-3a

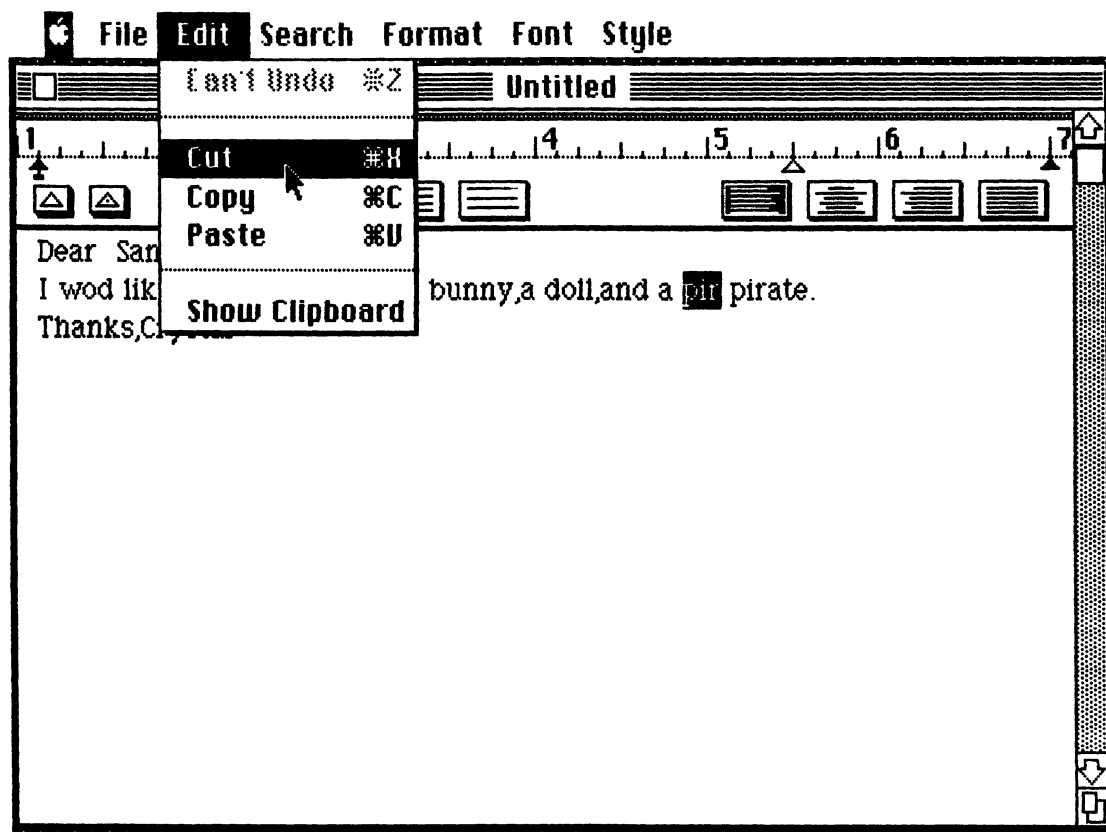
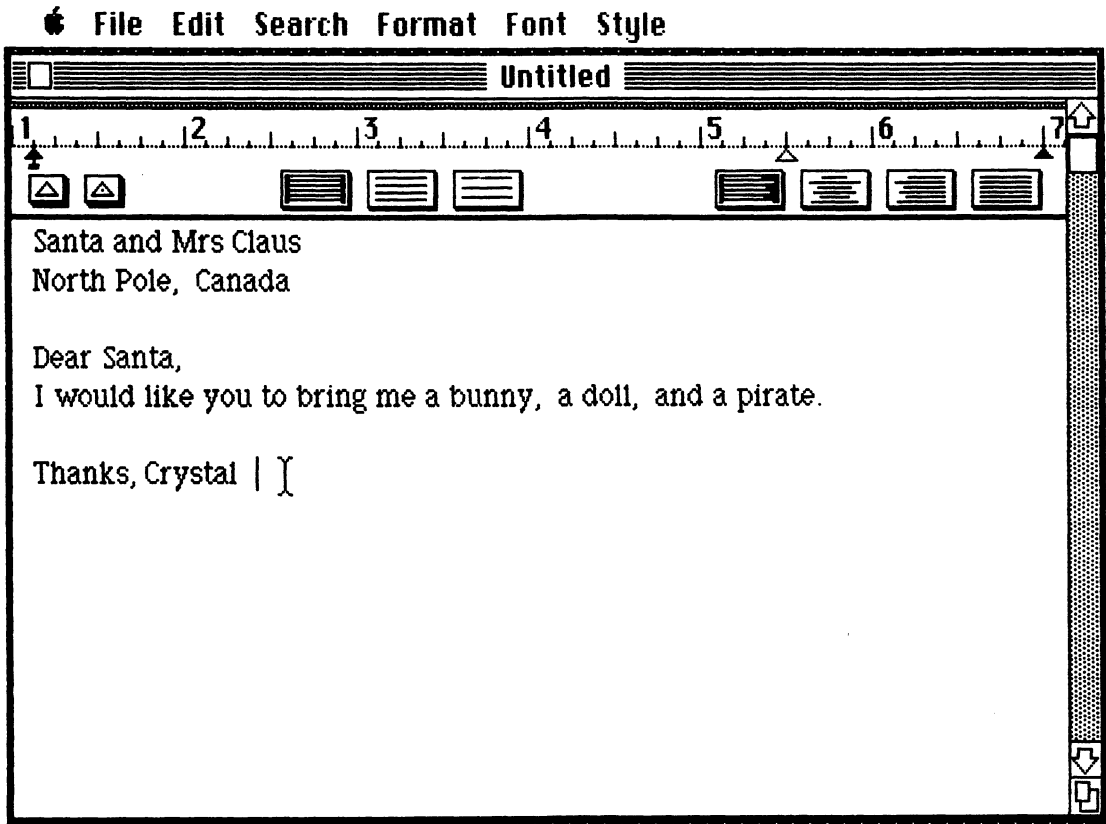




FIG. 4-3b



## THE TYPIST

The reason most executives have typists is to ensure that the copy produced looks professional. I've known how to type (with three fingers) since grammar school, but my typing, with its crossovers and strikeouts, has always looked as smudged and illegible as a child's handwriting. Not so since I started using my desk-top for word processing. Any mistakes or typing errors I make are corrected electronically before I print my work. In fact, the work I produce today looks as clean and neat as if it had been prepared by the most professional typist. For this reason, I rarely need a typist to help me anymore.

When I do use a typist, it is either to enter long lists of addresses or parts into the computer or to transcribe old manuscripts that date back to before the computer age.

I once had a crackerjack typist who was barely out of high school, yet she could produce flawless, error-free copy at 90 words a minute for hours at a time. I hated to let her go, but there simply wasn't enough work to keep her busy.

## THE EDITOR

In one respect, the Macintosh has not lived up to its expectations. Initially, we thought we could edit all our correspondence and reports simply by sitting down at the computer. And although we still do some editing this way, it's far more satisfactory to sit down with a printed version of a manuscript (a cup of coffee and a cigarette) and make corrections in pencil. A printed copy is the only way to proofread a manuscript when waiting at an airport or in a doctor's office. A printed copy is also necessary when several partners need to review a single piece of work, such as the first draft of a contract or a report.

Once you have made corrections, you still need to return to the computer and incorporate them in the electronic copy of the document. This is where an editor comes in. He or she needn't understand the contents of a report, but she must be capable of understanding the subtleties of MacWrite or Word, our word-processing software. She must know whether to insert or delete and what the right command is for each. (*Hint: Have her work through each of the four examples in this chapter as part of her training.*)

## THE PARAPROFESSIONAL

One of the major features of MacWrite and the Macintosh is the ability to merge paragraphs and pages from several documents. Portions of this chapter have appeared previously in nine reports. Preparation of this chapter consisted of merging the nine separate documents into one, selecting the paragraphs that were relevant and deleting those that were not, arranging the remaining paragraphs so as to make them easier to follow, adding new information, then smoothing and polishing the rough spots.

It's the same way with much of my correspondence. Suppose I want to write a follow-up letter to Alan Turner, Editorial Director at Chilton Book Company. I call up to the display screen and read the last letter I wrote to Alan (see Figure 4-1). This letter provides me with his correct title and address, along with the salutation and closing for my letter, and fills me in on where I left off the last time Alan and I corresponded.

Alan asked me to send him a brief biographical sketch to include with some publicity he'll be sending out to accompany this book. I use MacWrite's File menu to display on the video screen various "canned" biographies I've got stored on floppy disks. When I find the one that comes closest to Alan's needs, I copy it onto the Macintosh Clipboard and then Paste it into my letter.

Now, I've been as fortunate in my choice of secretary as I have been with my choice of typists. I am able to delegate the majority of my correspondence to her, such as this letter to Alan. I simply scribble a few instructions on the bottom of each letter, such as "Send him the Rogers file, give him a brief bio, and check my appointment file and see if it's his kid's birthday—mention something in a postscript," and she, wonder of wonders, does it all.

Of course, our new electronic file system is a big help too. She doesn't have to search through the papers on my desk to find the Rogers file or my appointment book with a list of birthdays in the back. All the information she needs is available electronically on disk.

My friend and attorney has a similar system in his office for composing briefs. He scribbles a few notes indicating which paragraphs he wants to incorporate from a previous contract, what standard boilerplate he wants to add (even the page numbers of the legal books they are to be found on), and perhaps a new paragraph or two he's worked out over the telephone. His paraprofessional secretary assembles it all at the computer and hands him as many printed copies as he needs.

Not all secretaries are capable of this type of paraprofessional activity. But for those who are, and for those offices that are fortunate enough to employ them, word-processing software can be a tremendous boon.

## **CREATING A LETTER WITH MACWRITE**

One of the benefits of a computer in the home is that it allows your children to express themselves without too much concern about the appearance of their work (at least initially). For example, Figure 4-2 contains a message my six-year-old left on the Macintosh. As you see, even a six-year-old can create a letter with the Macintosh. There are no special commands that need to be entered, absolutely nothing you need do that you wouldn't do on an ordinary typewriter. In fact, it's easier to use the Mac because you don't need to use a carriage return, except at the end of an address line or at the end of a paragraph.

Crystal's letter contains some spelling and typing errors. Don't panic. Santa will understand. To make things even easier for Santa, we'll use MacWrite to clean up the spelling and punctuation and add an inside address.

## **Getting Started Quickly**

While a minimum of instruction is required to get you or your employees started entering labels or transcribing copy into the Macintosh, the subtle differences from a standard typewriter will confuse most typing professionals. Here are some points to stress during your training.

1. Don't look at the screen as you type, any more than you would look down at your paper in a typewriter.
2. Don't use the return key unless you want to force a new line, as in an address label or at the end of a paragraph. There is no carriage return, since on the computer your typing will automatically wrap around to the next line as the words extend beyond the boundary of the screen. There are no bells at the end of each line, no pauses while you consider hyphenation, and no margin release. (In fact, if you change your margins, the lines will readjust themselves automatically.) Your typing speed will increase substantially.
3. Save your work regularly. How to read and write your files to disk are the first and only special computer skills you and your typists must learn, and these skills are a must. What you see on the screen is only temporary. To keep a permanent record, you must save your work on a floppy disk. If you haven't saved your work by the time the power is turned off, it will be lost forever, even if the power is turned off accidentally.

To make sure your typist understands the importance of saving her work on disk at regular intervals, give this brief demonstration:

1. Have the typist type one page of material. Save it on disk for her, but don't explain what you are doing. Now turn off the power to the Macintosh, then turn it on again. The screen is blank. Her work seems lost forever.
2. Read the material back in from disk. Have the typist add a second page of material. Now show her how to save her work on disk. Have her save it while you watch. Make sure she saves it under a different file name than the one you used the first time.
3. Turn the power switch behind the Macintosh off, then turn it on again. Now have the typist reload MacWrite and read back each of the files that have been saved on the disk. The first file will contain just the original page of typing. The second file will contain both pages.

This exercise shows that if you save your work frequently, you'll have less to retype in the event of a power failure—a good lesson for you as well as your secretary.

Mr and Mrs Phillip Good  
Mattawan MI 49071

Dear Mom and Dad,

I would like you to bring me a bunny, a doll, a snow suit, pyjamis with Snurfs on them, lots of candy, \$5 bill, a camera, a cub hat and a pirate.

Thanks, Crystal.

We're going to do three things: (1) type over errors, (2) delete errors, and (3) insert letters, words, and punctuation.

Typing over errors is easy. Use the mouse to mark the part you wish to type over. Type, and the new material will replace the old automatically. To mark an error, whether a few characters or a paragraph, just move the cursor to the beginning or end of the section you wish to mark, hold down the button, drag the cursor across the error—the marked area will turn black on the display screen—then release the button.

In this case, we want to change “Da er” to “Dear.” Mark off the “Da er” and type “Dear.” That’s it.

You can delete errors in one of two ways, either by backspacing over the error a letter at a time, or by cutting from the pull-down Edit menu. Let’s try both ways. Eliminate the extra n in “bunnny” by moving the cursor to any of the ns and pressing the backspace key (in the upper-right-hand corner of the keyboard). Now the word is correctly spelled, b-u-n-n-y.

Next, take care of the false start “pir.” Mark it off with the cursor, then pull down the Edit menu and select Cut, as shown in Figure 4-3a. The “pir” is deleted and the word “pirate” is moved left to occupy the empty space.

To insert missing letters and phrases—to turn “wod” into “would,” for example—takes only two steps. (1) Move the cursor to where you want to make the insertion, at the d, and click. (2) Type the missing letters. Now the sentence reads, “I would like you to bring me a bunny, a doll, and a pirate.”

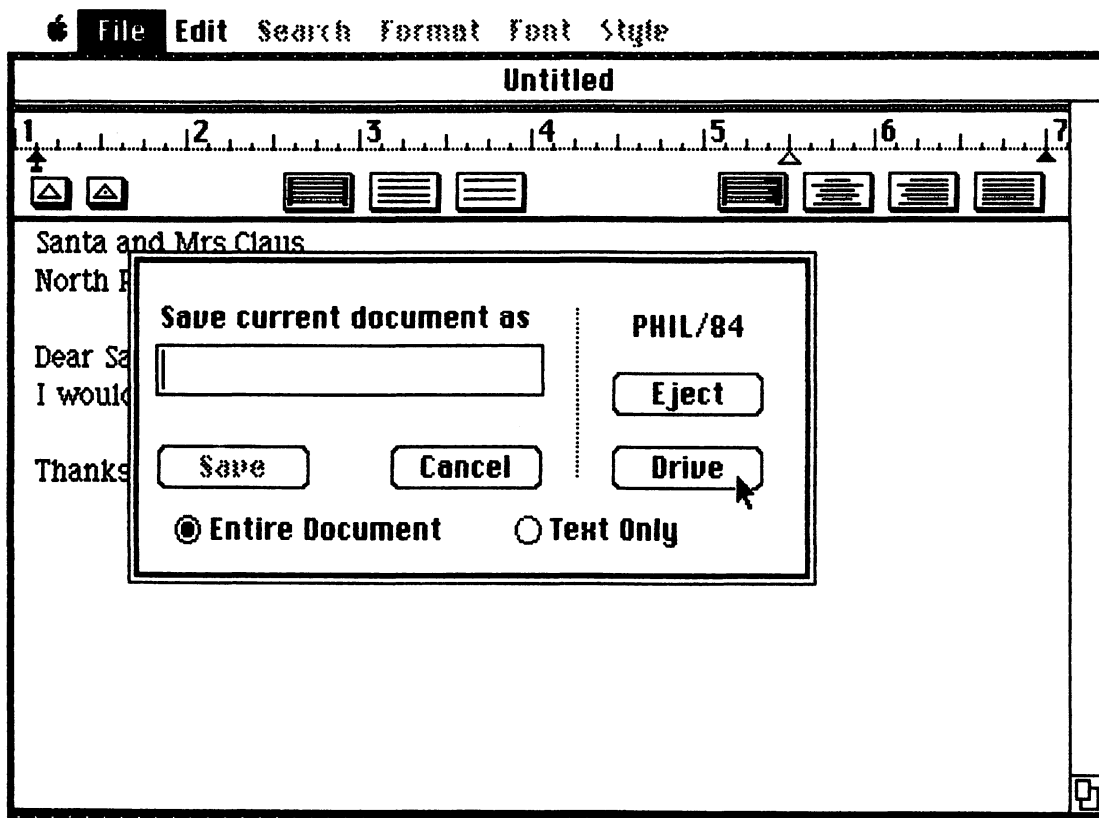
To help Crystal get her letter to the correct destination, let’s insert an address above the salutation. Move the cursor to the top of the text. Type “Santa and Mrs. Claus,” press Return to force a line break, type “North Pole, Canada,”

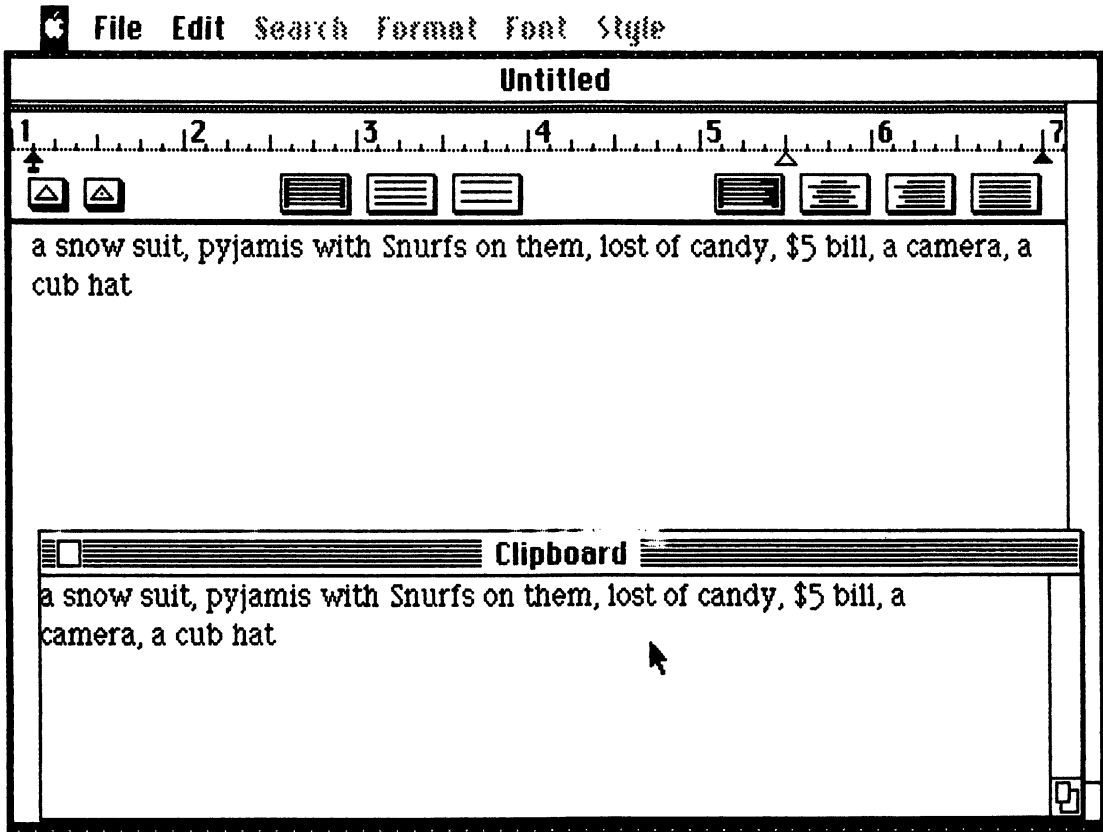
and press Return twice to insert a blank line between the address and the text. The result is shown in Figure 4-3b. It's a letter any six-year-old would be proud of. (But what does she mean, "bring me a pirate?"")

## A WORD OF CAUTION

As you type, you may notice the new text pushing the old text ahead of it on the display screen. Stop looking! Professional typists never waste their time looking at the display screen anymore than they waste it looking at the keyboard. The

FIG. 4-5





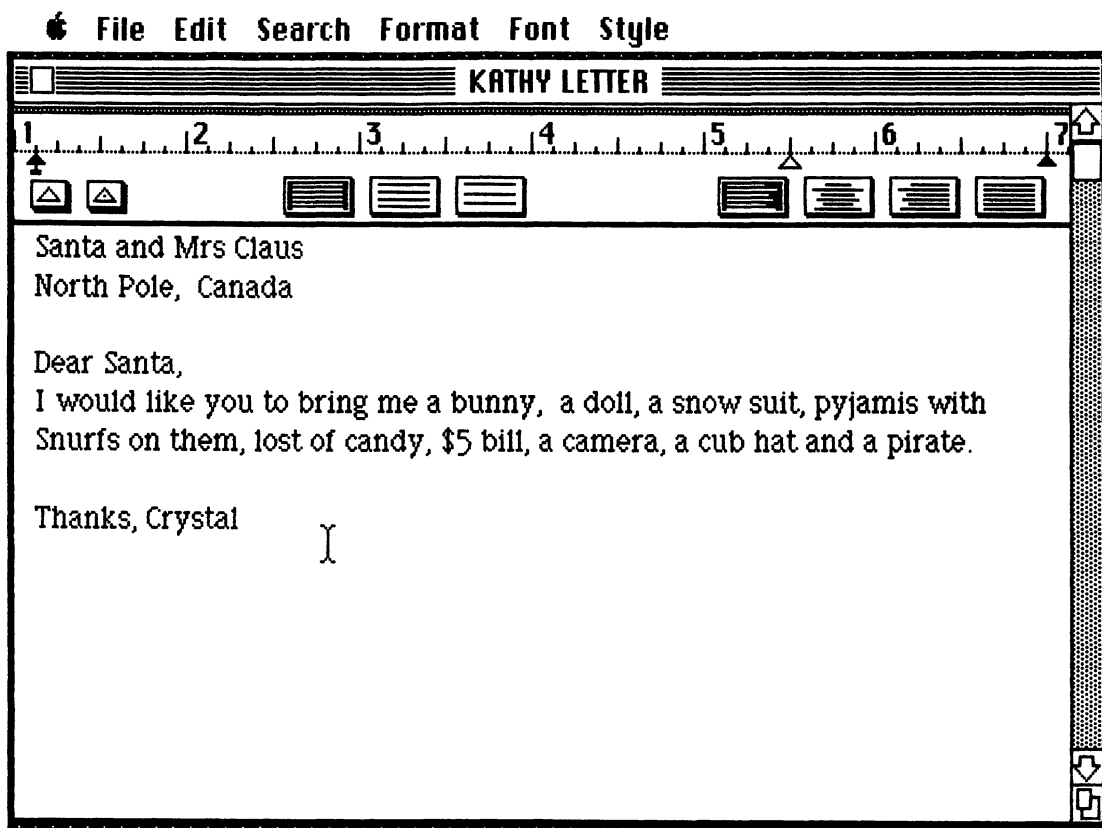
only time you need to look at the display is when you proof your text, make editing changes, and format your text — altering the margins, justification, and spacing— just before you print it. For now, just type as fast as you can. You can always correct errors when you are finished (without leaving a smudge in their place) by typing over, backspacing, cutting, or inserting.

(If you still look at the keyboard as you type, MacType and MasterType will help you learn touchtyping. See Appendix I for a complete review of these and other popular Macintosh programs.)

## MERGING DOCUMENTS

On a typical working day, most small businesses need to send out several similar letters with minor modifications to fit the needs of the individual customer. In the old manual way, you looked through your files until you found a letter similar to the one you wanted, scribbled a few changes, tacked on the new address, and gave it to a secretary to type. In the new, computerized way, your "files" are stored on magnetic disks. You can display or recall your letters or documents to the screen whenever they are needed. You can make all the necessary modifications yourself and print out the letter as soon as you are done.

FIG. 4-7





Jan	\$350.00
Feb	\$500.00
Mar	\$900.00
April	\$1200.00
May	\$400.00
June	\$250.00
	\$3600.00

The second and third letters you prepare on your Macintosh will be even easier than the first. This is because you may use the first few letters as templates. The letter in Figure 4-4 is a good example; it's identical to the preceding letter, with two exceptions: This time Crystal's parents are the recipients rather than Santa, and the list of gifts seems to have grown considerably.

There's something suspicious about this new list of gifts—not just the \$5 and the camera, which were presents Crystal's older sister wanted, but the way in which the new items have been inserted into the body of the letter. "How did you get such a long list?" I asked Crystal.

"Well," she replied, giggling, "first, I saved my letter on disk the way I'm supposed to. Then I started a new list on the computer. Whenever I thought of something I wanted, I typed it on the new list."

"What about the \$5 bill and the camera?"

"Those were on Barbara's list," she said, referring to her older sister. "When I was all through, Barbara took my list and her list and popped them both together in my letter."

Crystal and her sister had done three things: First, they saved the original letter. Second, they created a new document, copied it to the Clipboard, and saved it. Third, they recalled the original document and pasted the new document within it.

These are the same steps you would follow if, after having hammered out an agreement over the telephone, you found you had to go back and add several additional paragraphs to your letter or contract to cover various unanticipated contingencies.

## SAVING A FILE

Let's go over these three steps. First, create and save a list of gifts. (Or you could create and maintain a list of "Things we've got to start doing around this office if

## **Backing Up Your Files**

Back up (store) your work on disk as often as possible. Text created with MacWrite is stored in Macintosh's internal memory as long as the power is on. *This storage is not permanent*; if power to your system is interrupted or turned off, anything in its memory is lost. Save your files on disk so that you can recall them in the future.

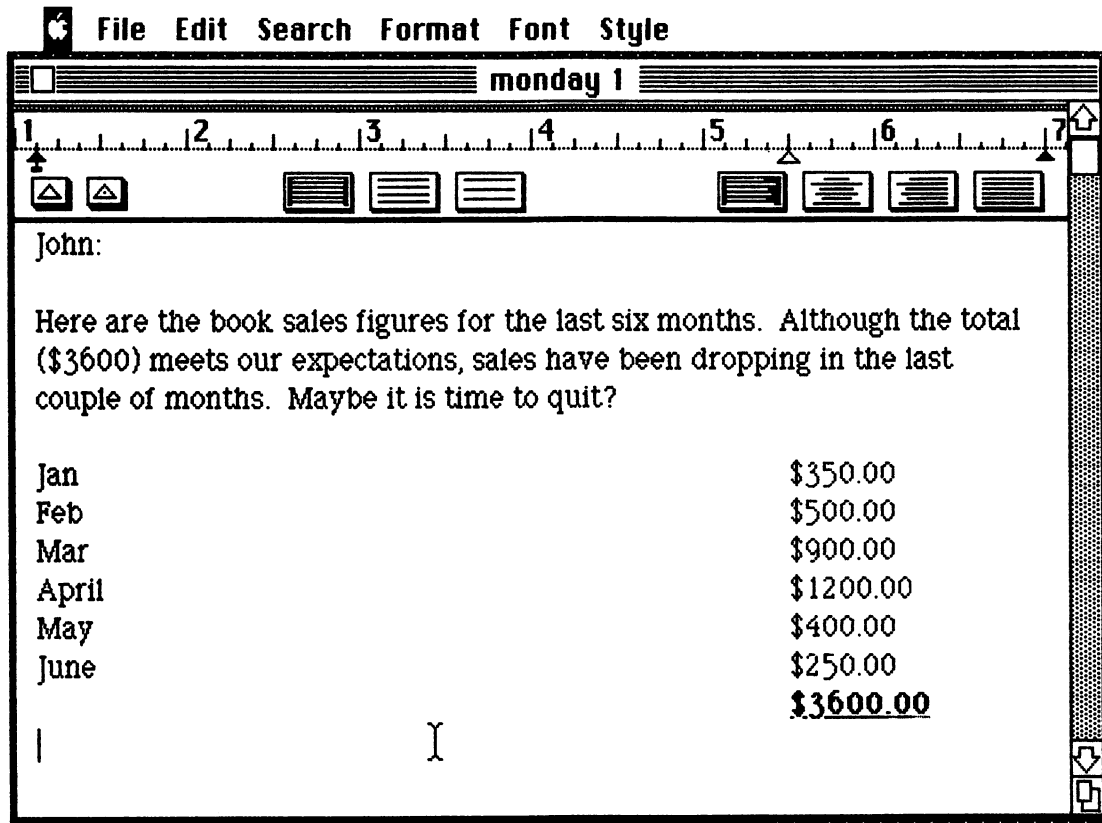
Back up the disk itself to guard against vandalism and accidental destruction. Make it a practice to back up all your files from one disk to another at the end of the day. Do not store documents on your MacWrite program disk! You may use this disk for temporary storage, but copy them to a second data disk at the end of the day.

When MacWrite saves a file, it writes on top of the original file. It's a good practice to keep a backup of the original in case you change your mind. You can do this by naming each successive version of a letter or report Crystal1/11, Crystal4/11, and so forth. Periodically, go through your files and destroy older versions that you no longer need.

we're going to make any money," or a list of the telephone numbers and addresses of sales prospects, or a list of pedigreed horses with solid records on muddy tracks.) If you are starting fresh, just load MacWrite into the computer. If you're continuing from where you left off with the last example, you will have to save the Santa letter before you can enter the new material. Pull down the File menu and select "Save as . . ." Now the display screen looks like Figure 4-5.

Type in a name for the new file. How about "Crystal's letter to Santa?" If you have two disk drives on your Macintosh, make sure you switch to the second or data drive. If you have only one disk drive, remember to copy this letter from your program disk to your data disk before you quit for the day.

As soon as the save is complete, control of the cursor will be returned to you. Now select "Close" from the File menu and, when the screen clears, pull down the File menu once more and select "New."



Once again, you have a blank screen to write on, with a ruler (for the margins) at the top of the screen. Type in your list. In this example, we use Crystal's list of gifts:

a snow suit, pyjamas with Snurfs on them, lost of  
candy, \$5 bill, a camera, a cub hat

(If you insist on cleaning up the spelling, or making your own list, go ahead.)

Next, copy this information to the Macintosh Clipboard. First, mark the text

you wish to copy by dragging the cursor across it. Then pull down the Edit menu to “Copy.” Pull down the Edit menu again to “Show Clipboard,” as in Figure 4-6. Last, to protect yourself against the possibility of a power failure, save the list you’ve just created under a new file name, say, “Crystal’s Wish List 1984.”

## INSERTING THE LIST

Now you can read in the original version of Crystal’s letter that was saved on disk. Select “Close” from the File menu. When the screen clears, select “Open.” MacWrite will display a list of the files you have displayed on disk. These should include Crystal’s Letter to Santa and Crystal’s Gift List ‘84.

FIG. 4-10

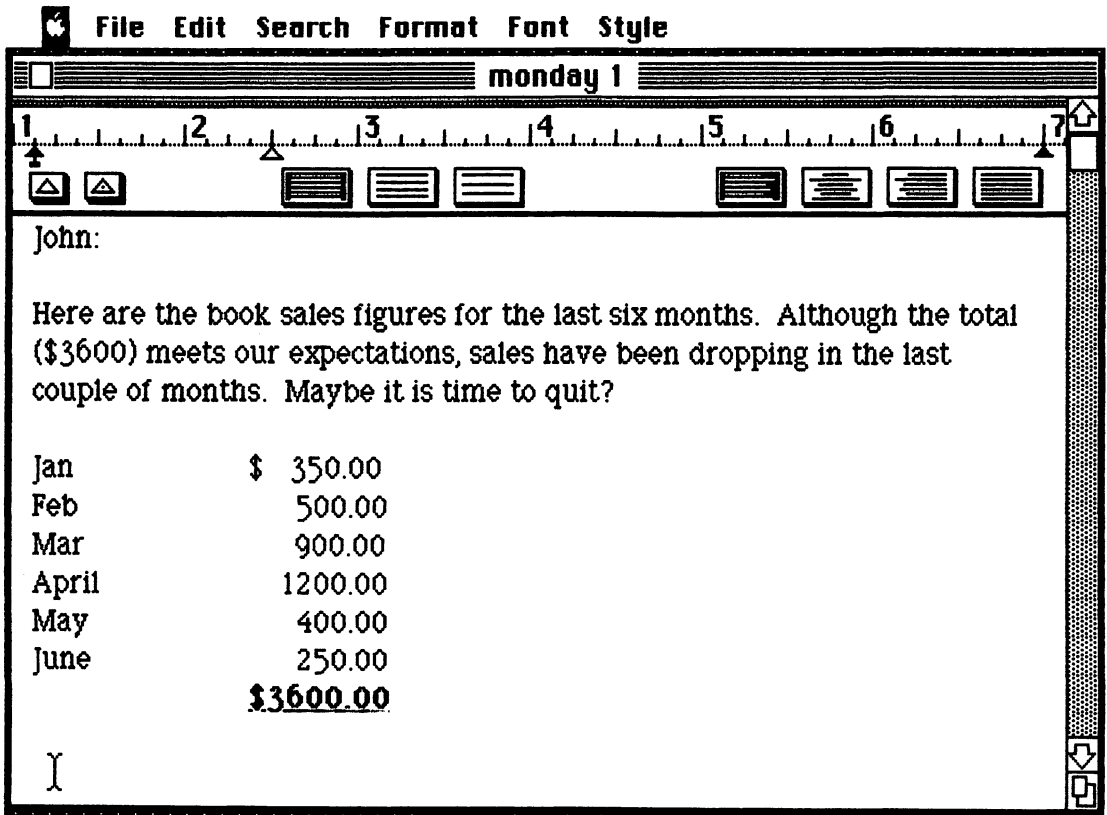
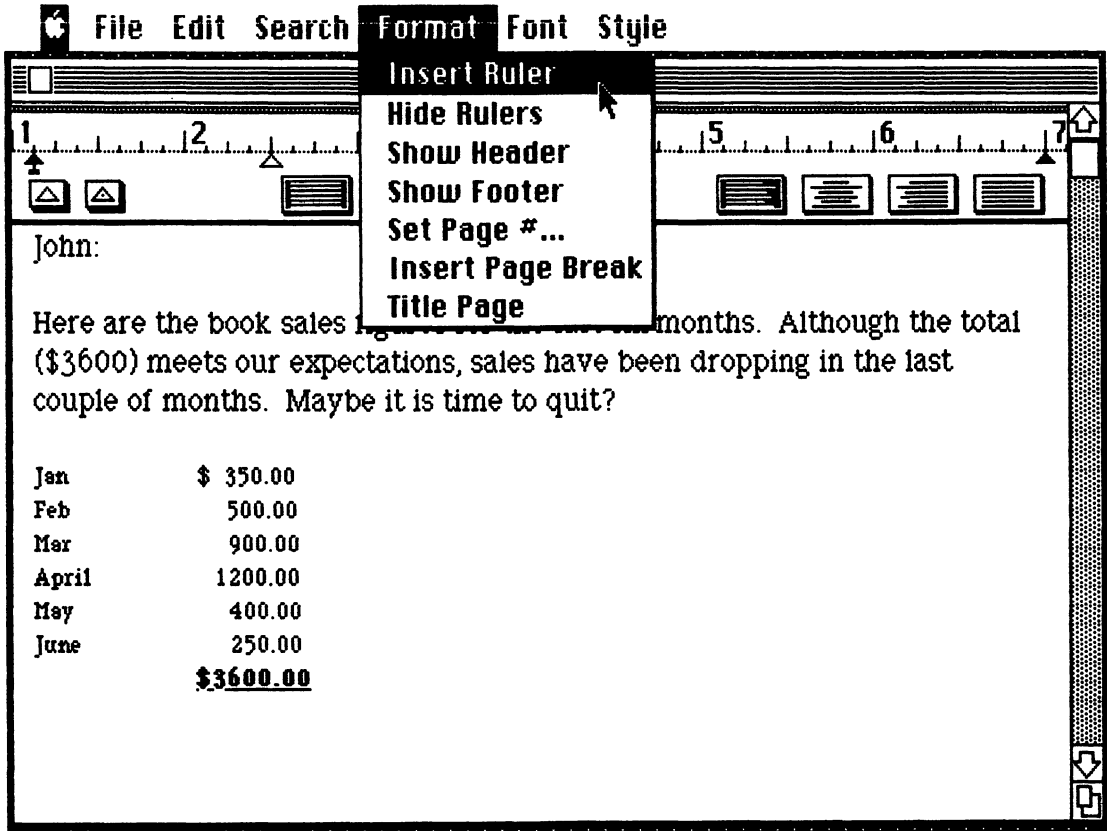


FIG. 4-11a



Double-click "Crystal's Letter" with the cursor. After a moment (while the letter is being read in from disk), the display should look like Figure 4-3b once more. Now, paste the contents of the Clipboard into the letter. Move the cursor to the space just after "doll" and click. Pull down the Edit menu and select "Paste." The letter now looks like Figure 4-7.

You can see that just as the Macintosh Clipboard provides a convenient way to move data between Multiplan and Chart, it provides a very handy way to insert standard boilerplate into a contract or build an annual report out of a series of monthly ones.

## ENHANCING A SPREADSHEET

Many accountants and managers use a word processor to enhance their spreadsheets with underline and **boldface**, and to add titles, footnotes, and annotations. By using the Macintosh Clipboard, you can transfer a table from Multiplan to MacWrite and embed it in the text of a report you are writing. And you can use MacWrite to add emphasis to portions of the table with underline, italics, and boldface, as well as add headings and legends in a variety of type fonts and styles.

Figure 4-8 depicts the report on book sales that was prepared in Chapter 2 with Multiplan and used to create charts with in Chapter 3. Return to Multiplan

FIG. 4-11b

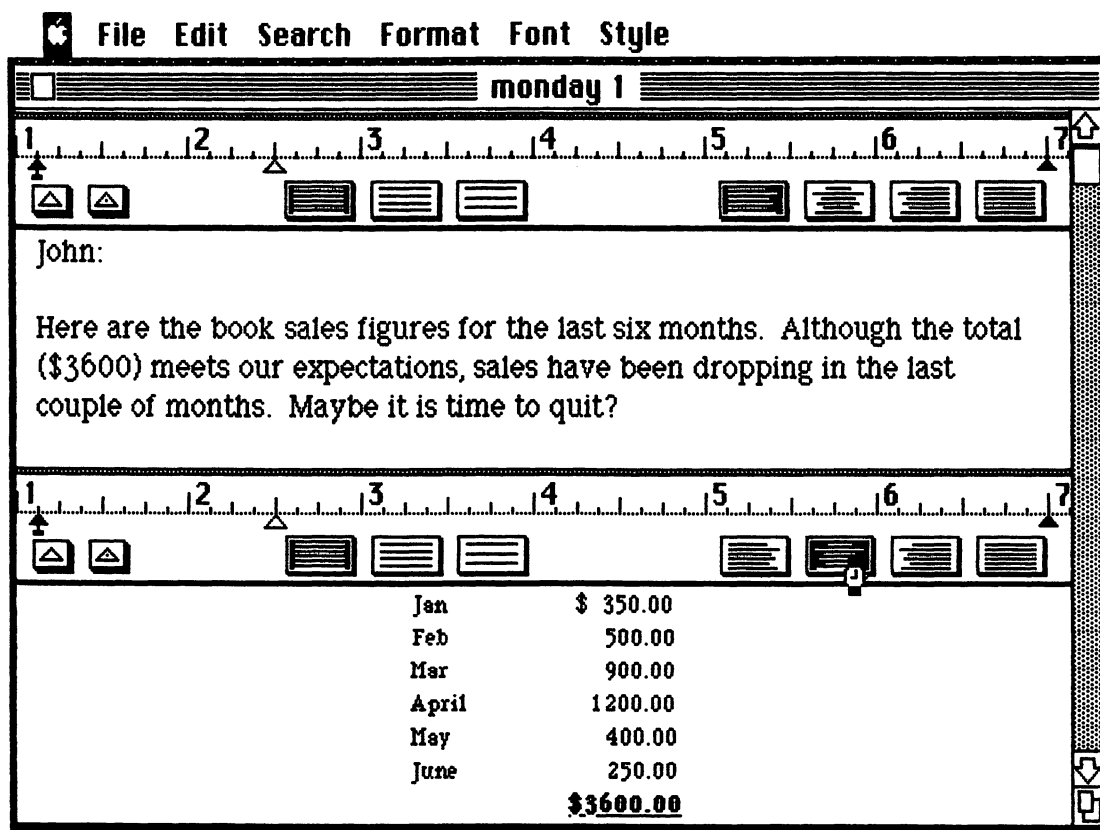
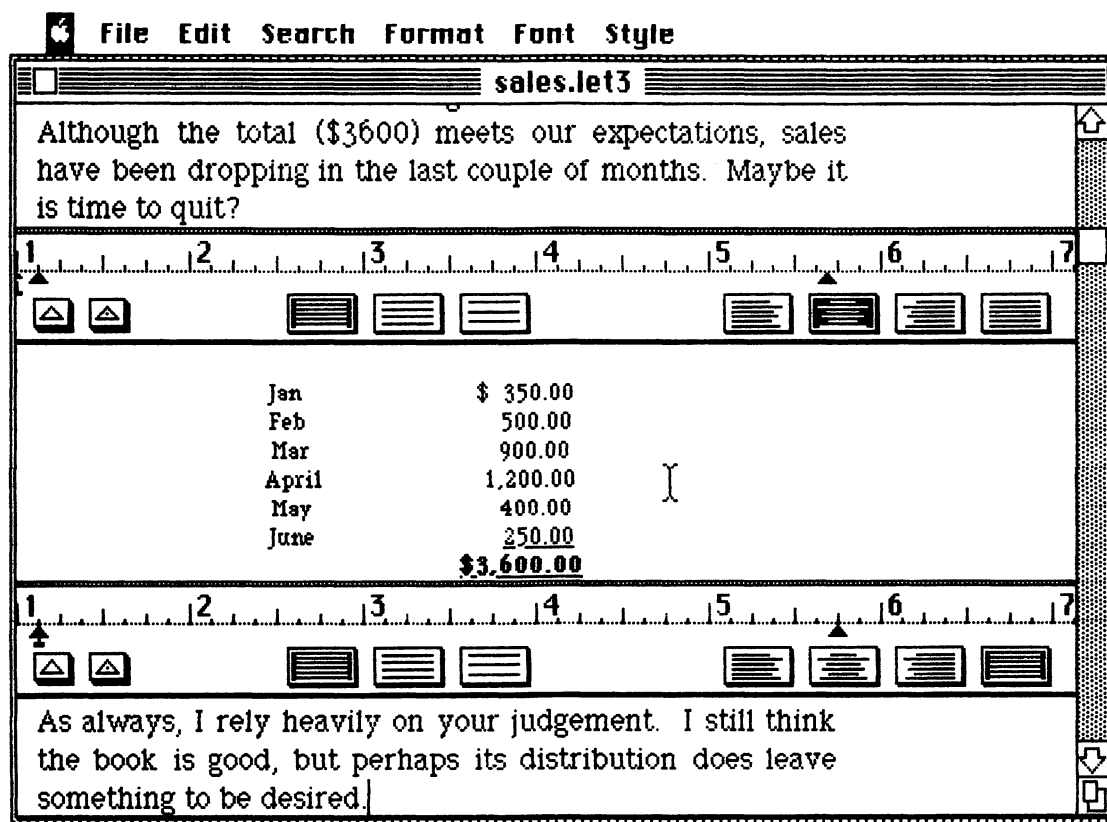


FIG. 4-12



John:

Here are the book sales figures for the last six months. Although the total (\$3600) meets our expectations, sales have been dropping in the last couple of months. Maybe it is time to quit?

Jan	\$ 350.00
Feb	500.00
Mar	900.00
April	1,200.00
May	400.00
June	<u>250.00</u>
	<b><u>\$3,600.00</u></b>

As always, I rely heavily on your judgement. I still think the book is good, but perhaps its distribution does leave something to be desired.

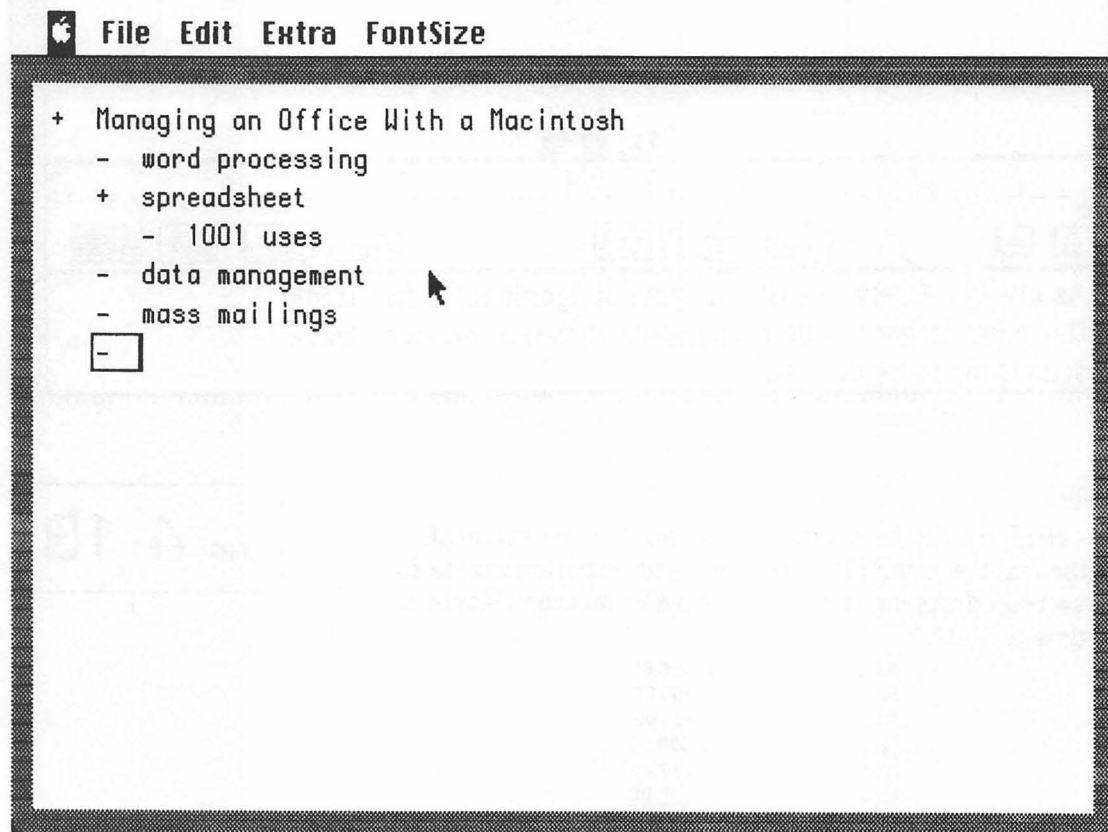
Phil

FIG. 4-13

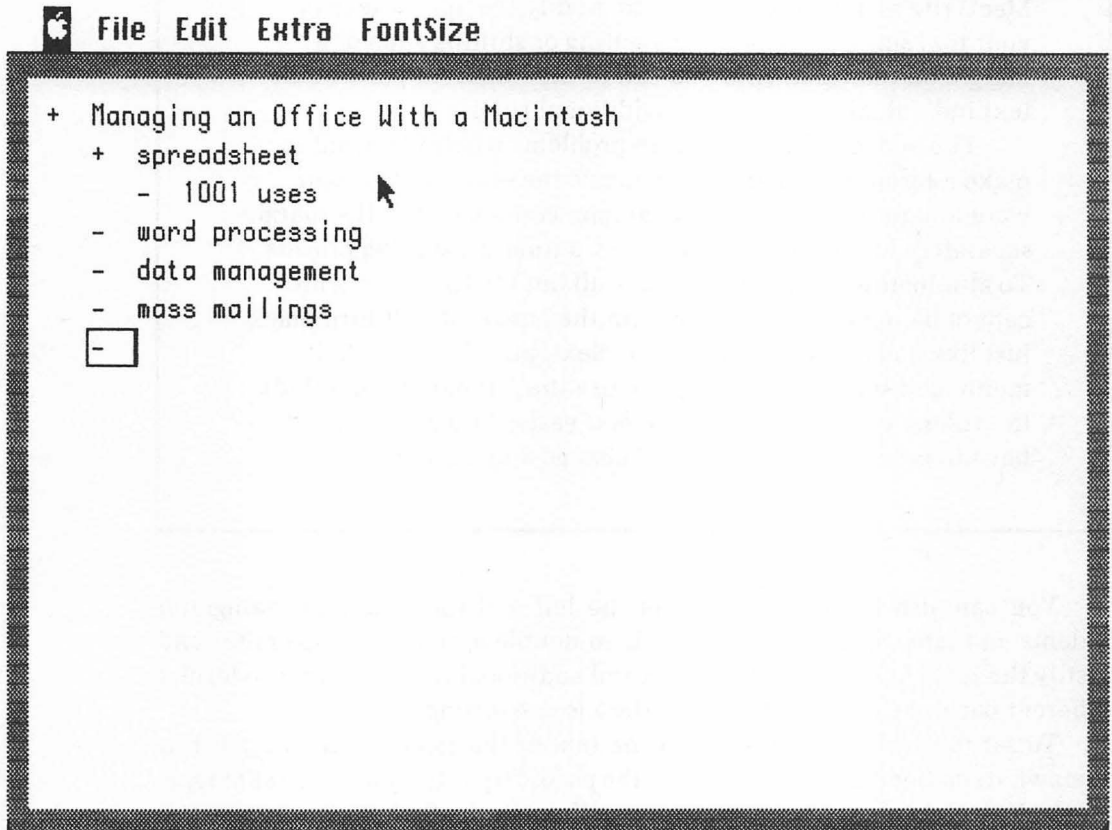
and copy these data to the Clipboard. (The procedure is similar to that used in Chapter 3 to copy to Chart.) Quit Multiplan, load MacWrite, and paste the contents of the Clipboard to the screen.

The result looks like Figure 4-9. Well, it almost does. Obviously, I made a few changes on the table first. I added a paragraph of text at the beginning and set off the total with boldface and underline. (Boldface and underline are two of the options you find when you pull down MacWrite's Style menu. The other options include italics, shadow print, subscripts, superscripts, and a variety of type sizes from tiny to gigantic—9 point for accountants, 24 point for headlines and the visually impaired.)

FIG. 4-14







There are two problems with the report as it appears in Figure 4-9. The gap between the two columns of the table makes it difficult to line up the sales figures with the corresponding months. The sales figures are lined up under the dollar sign, rather than under the decimal point.

You can move the columns closer together simply by changing the tab setting in the ruler at the top of Figure 4-9. To shorten the distance between the two columns, drag the tab marker (the open triangle between the 5 and the 6) across the ruler until it lies halfway between the 2 and the 3. Use the backspace key and the space bar to line up the sales figures and delete unneeded dollar signs. The result looks like Figure 4-10.

## Using MacWrite's Rulers

MacWrite's rulers make it easy to modify the appearance of your text simply by changing a setting or shifting a tab or a margin on the ruler. And you can format different parts of the text individually by inserting additional rulers.

The added rulers can create problems when you want to make a formatting change that affects the entire text. If you want a narrower format, for example, you must shift the margin separately on each one of the rulers, a time-consuming process. To eliminate an unwanted ruler—all but the top-most, which cannot be removed—mark it with the cursor. It will turn black just like a marked section of text. Next, pull down the Edit menu, and select “Cut.” You can use the Format menu to hide the rulers, which will make the text easier to read, but you'll have to unhide them in order to change a margin or a tab.

You can also use the ruler to set the left and right margins, paragraph indents and tabs, to change from single to double spacing, and to center and justify the text. And you can insert several additional rulers in order to format different parts of the text differently. Here is one example:

To set the table off further from the text of the report, you can put it in somewhat smaller type and center it on the page. To put the table in 9-point type, mark off the table with the cursor, then pull down the Style menu and set the typesize of the marked-off portion to 9 point.

To center the table but not the text, move the cursor to the top of the table, pull down the Format menu, and select the first item, “Insert Ruler,” as shown in Figure 4-11a. Next, select the centering option on the ruler (third from the right, as shown in Figure 4-11b).

To narrow the right margin, move the black filled-in triangle to the right of the ruler from 7" to 5¾".

You can use any number of rulers in reports and format each section individually to get exactly the appearance you want on the printed page. For example, in Figure 4-12, a third ruler is used to justify the text that follows. MacWrite inserts spaces into justified text so that the two margins line up evenly both on the right and left. The final printed result, sans rulers, is shown in Figure 4-13.



File Edit Extra FontSize

- + Managing an Office With a Macintosh
  - + spreadsheet
    - charting your results
    - word processing
    - data management
    - mass mailings
    -

### PREPARING LONGER REPORTS

At first glance, it seems that to prepare longer reports and documents, you need only repeat what you have learned so far over and over again. Enter text and tables as fast as you can type, type over and delete errors, insert new text as ideas strike you, and move paragraphs from one part of the text to another (using the Cut and Paste commands from the edit menu).

In actuality, the preparation of a long report is far more complicated. A long report usually involves an intricate series of concepts, rather than one or two simple ideas. To be successful, you must spend as much time organizing your ideas as in writing and editing them on paper.

## CREATING AN OUTLINE WITH THINKTANK

Fortunately, you have another Macintosh software tool to help you organize your ideas. **ThinkTank 128** lets you juggle ideas and concepts with the ease that MacWrite lets you organize words and phrases. ThinkTank is a headline organizer. You type in your main ideas, manipulate and rearrange the outline, and add headings and subheadings until the entire complex series of ideas is completely under your control. A major feature of ThinkTank 128 is the ability to *hide* or *reveal* any part of your outline quickly and easily by switching from the details of one section to the big picture and back again.

My first application for this powerful computer program was to prepare a table of organization (and later the table of contents) for this book. I began by typing in a list of the topics I thought should go in the book:

- word processing
- spreadsheet
- 1001 uses
- data management
- mass mailings

Almost as soon as it was entered into the computer, I began to modify the headings, add new ideas as they occurred to me, and change the way they were organized. I must have changed the arrangement a dozen or more times until I knew it was “right.” All this preparation may seem time-consuming even with ThinkTank’s help, but it paid off when I sat down, finally, to write this book.

## ORGANIZING WITH THE CURSOR

To illustrate ThinkTank’s simplicity and potential value to you, let’s convert my initial list into the final, complete table of contents. First, load ThinkTank into the computer. The word “untitled” will appear at the top of the screen. Backspace over this word to erase it and in its place type “Managing an Office with a Macintosh.” Now press Return and enter the list that appears above. (Press the return key between each topic or thought.)

The real power of ThinkTank is that you can write down your thoughts as they occur, without having to worry about whether they fit into some preconceived structure. For example, one of the entries in my list, “1001 uses,” is not a chapter heading but a comment about spreadsheets. Its subordinate status is shown in Figure 4-14, where it has been indented. To indent a heading, point to it with the cursor, hold down the button, move the cursor to the right, then



File Edit Extra FontSize

- + Managing an Office With a Macintosh
  - + spreadsheet
    - 1001 uses
  - + Multiplan
    - a sales analysis
    - tracking expenses
    - manpower assignments
    - building a graph
  - increasing your productivity
  - charting your results
  - word processing
  - data management
  - mass mailings



release the button. Note that the minus sign to the left of the heading immediately above changes to a plus sign. Headings and subheadings that have subordinate ideas attached to them are always marked with a plus sign.

If you had decided to use the spreadsheet as the initial topic, you would transfer the word *spreadsheet* to the top of the list, point to it with the cursor, hold down the button, and continue to hold it down as you drag the heading to the top (see Figure 4-15).

"Graphs and charts" is an important topic that was omitted from the first list. To insert the heading "chart" just after the heading "spreadsheet" takes two steps. First, hide the subheadings. Point the cursor to the word *spreadsheets* and

## Editing with ThinkTank

We all make mistakes. Fortunately, ThinkTank 128 puts all the correction tools of MacWrite at your disposal, plus some of its own. You can edit a headline by backspacing or by marking and typing over. You can remove unwanted lines by cutting. And you can easily rearrange the order of lines just by moving them with the cursor.

In one instance, if you put a subheading under the wrong heading by mistake, it can take five steps to relocate the subheading correctly: (1) Use the mouse to move the subheading to the top as far as it can go. (2) Shift it left to convert it to a heading. (3) Move it up or down until it is located under the correct heading. (4) Shift it right to convert it back to a subheading. (5) Move it up or down until it is located correctly.

double-click. The subheading “1001 uses” vanishes. A plus sign remains next to the word *spreadsheets* to tell you there is at least one “hidden” subheading. Second, open up a space for the new heading as in Figure 4-16. To open a space, click the cursor at the end of the preceding line (here just after the word *spreadsheet*) and press Return. Type “charting your results” in the space you created.

Now let’s go back and plan the chapter on spreadsheets in detail. Point the cursor to the spreadsheet heading and double-click. It expands to reveal “1001 uses.” What other subtopics should you include? Type Multiplan [return], a sales analysis [return], tracking expenses [return], manpower assignments [return], building a graph [return], increasing your productivity [return]. After indenting four of the subheadings under Multiplan, the display looks like Figure 4-17. You could continue adding subheadings in this fashion chapter after chapter until you have reproduced the entire table of contents.

## OTHER THINKTANK APPLICATIONS

ThinkTank has a number of advanced features like “sort” and “search” that can help you with many of your other office applications. For example, you can use ThinkTank to create lists of telephone numbers and addresses, sort them alpha-

betically with one ThinkTank command, and search for a particular telephone number with a second command. I use ThinkTank for my "Things to Do This Week" list. I type in the list just as fast as I can think of things to do. Then I go back through the list, slowly rearranging the items with the cursor into some kind of order and priority. Like everything else I do with my Macintosh, the final list is smudge-free, and I can print one copy or half a dozen copies for each of my employees.

---

# **Creating Lists of Clients and Prospects 5**

In this chapter, you learn how to use the Macintosh to create lists of clients and prospects, catalogs, and equipment manifests. Once you discover how easy computerized data management can be, you'll find thousands of applications for your new computerized filing system, ranging from a simple directory of telephone numbers and addresses to a comprehensive system for maintaining orders, customer records, and an inventory of parts.

A computerized data manager lets you organize your data into an integrated system of files from which you may quickly retrieve the information you need. It provides for the type of comprehensive cross-indexing you've always wanted but never quite had the time to put into practice. Benefits include the quick retrieval of information, the ability to create a variety of different reports to meet varying needs, and storage of essential data in a compact format. But the overriding advantage is that you regain control of your office. If you make a rule that an invoice must accompany every order, that rule will be adhered to. If you receive a customer inquiry, you can respond immediately. If you wonder which items are slow moving and which show a rising demand, you can have the answer now.

Data entry is simplified because you can use the graphics capabilities of the Macintosh to create a multipage form almost identical to the one you're now keeping on file cards. You can add or delete items to the form or switch them around with a touch of a button. The names of the fields — author, title, journal, for example — are displayed on the screen along with their values. This means



that once you have created the form, you can have someone who knows little or nothing about the subject fill in the blanks.

When you or your employees fill in an item on the form, tabs advance you automatically to the next field. Within each field you have full editing capability and may delete, type over, or add material. As you complete each form, it is stored automatically and correctly in a data file on disk, and is replaced by another form on the screen for continuing data entry.

When you go to retrieve the information you need, you can easily select and display all your prime customers or the names and locations of salespersons who have exceeded their quota. Suppose you want to send a test mailing to potential customers on the West Coast. Use the Macintosh file-management program to order all records by Zip Code and then select a subfile of customers with Zip Codes between 90000 and 99999.

A real estate agent uses her Macintosh and a map of the local area to keep track of listings. A wine connoisseur indexes and displays the contents of his cellar, bottle by bottle. I've used the Macintosh to catalog my collection of cables, screws, memory boards, and other replacement computer parts. I also use it to maintain lists of customers, orders to date, and prospects for future sales. You can cross-index your books and recordings by artist, composer, label, and title. And you can locate the exact spot where each is to be reshelfed. It is easy, and you learn how in this chapter.

Traditional business applications for computerized data management include client and prospect information, personnel files, equipment maintenance schedules, experimental and quality-control observations, inventories, medical records, orders, payroll, product specifications, and investment tracking (see the sidebar for a host of other applications). But there's no need for you to be traditional. Every business can find its own specialized applications for a data manager.

## **INFORMATION AT YOUR FINGERTIPS**

"You don't need to be a programmer to create a data-management system," says Steve Cornell, director of marketing for the Cincinnati-based Hamilton Safe Company. Hamilton Safe is a small firm, but one that is significant in its own industry. The data-management system Cornell wrote for his firm is used for order entry, tracking work in progress, and evaluating sales trends.

"Building a data base is really quite simple if you have the right software," Cornell says. "You can do everything you want to do with a few simple commands. I built one or two of the data-entry screens just to see how it was done, and the office personnel built up the rest."

## 78 Uses for a Graphics List Manager

Abstracts of interviews	Daily observations
Active job seekers	Diary of past attendance and appointments
Applicants and their preferences	Employee numbers
Appointments and a desk-top calendar	Equipment maintenance schedules
Anatomical charts	Experimental observations
Bibliographical data	Feeding and watering schedules
Bird identification and classification	Feeding and medication schedules
Bird sightings	Freight schedules
Birthdays	Important dates
Birth records	Index of recipes
Books by title and shelf location	Index of periodicals
Case references	Information about competitors and opponents
Catalog of programs	Inventory by bin and rack
Chess openings	Key accounts
Client and prospect information	Lists of supplier materials
Client requirements	Lists of chemicals by storage location
Company histories	Lists of contracts
Cross-index of recordings	List of hotels
Customer addresses	

“Now suppose someone walks into the office and wants to know quickly how many model 4440 locks we sold last August and which dealer sold the most? The clerks can walk over to the computer and get the information. It will take them one or two commands at most.”

### **FILEVISION: BUILDING FILES OF PROSPECTS**

In this chapter, you learn how to use Filevision for the Macintosh to maintain your records. Step by step, you learn how to build a file of customers, how to search the file for the information you need, and how to print reports, including a phone directory and a set of labels for a mass mailing. And you get a head start on other data-management applications with a review of Filevision's advanced capabilities and suggestions for their application.

List and locations of restaurants	Sample tracking
Lists of applications	Seating charts
Livestock records	Serial numbers of production runs
Mailing labels	Sermon topics on calendar display
Maintenance records	Service log
Managing an apartment house or a residential hotel	Shelf catalogs
Marching-band choreography	Shopping list
Material lists	Software directories
Medical records	Staging directions
Membership lists	Strengths and weaknesses of teams
Names and relationships	Strengths and weaknesses of players
Payroll information	Student grades
Periodical and book references	T-bill and option expiration dates
Phone numbers and addresses	Team stats
Playbook (for athletics)	Technical specifications
Prescription-renewal information	Theorems and formulas
Production specifications	Tickler files
Quotations	Time cards
Rate-card information	Track commodity contracts, calls, and common stock
Raw-material requirements	Track manuscripts
Real-estate listings	Transactions with tax effects
Records on suppliers	Trivia

You begin by using Filevision's graphic capabilities to make a drawing or map of the sales area with the locations of your customers and prospects. You sketch a data-entry form directly on the display screen, similar to the records you may be keeping now on  $3 \times 5$  or  $4 \times 6$  index cards, with the telephone number of each prospect, address, nature of business, estimated buying power, a record of past sales, and any other data that can help you make a sale. Then you complete a data-entry form for each prospect. Now, you can display your findings on the map, display or print a list of prospects and a routing for tomorrow's sales calls, create a telephone directory, and print a set of mailing labels.

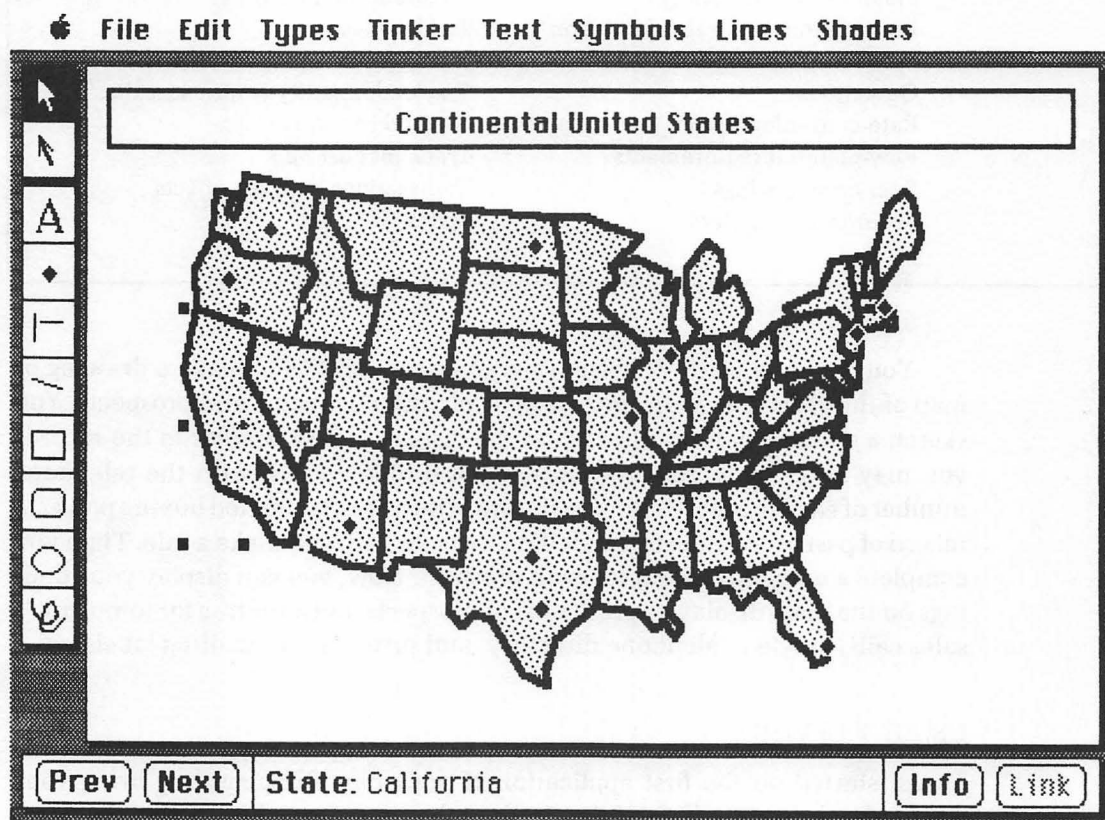
## USING FILEVISION

To get started on the first application of your new filing system, bring your address book or a handful of filing cards to the computer table. Insert the Filevi-

sion disk in the drive and turn on the Macintosh. (If you already have a disk in the Macintosh, eject it by double-clicking the mouse button as soon as you turn on the computer. If you own a second disk drive, put your data disk in it.)

You could use Filevision's many drawing tools to create a street map of your sales territory or a bin-by-bin description of your inventory. We begin the easy way by using a map of the continental United States that is already provided on the Filevision disk. Since a power failure could destroy this file (see the sidebar, "Protect Your Data," at the end of the chapter) take the time to copy this map to a data disk first. (For details of the copying process, see pages 66–67 of the Macintosh owner's manual.)

FIG. 5-1



File Edit Types Tinker Text Symbols Lines Shades

Information for this State:

Name	California	Link	
84 POP.	24.765 mil	84 INCOME	\$31,524
AREA RANK	3	COMPUTER STORES	455
Year admitted	1850	83 HEATING BILL	\$183.42
Visited? <input type="checkbox"/>			

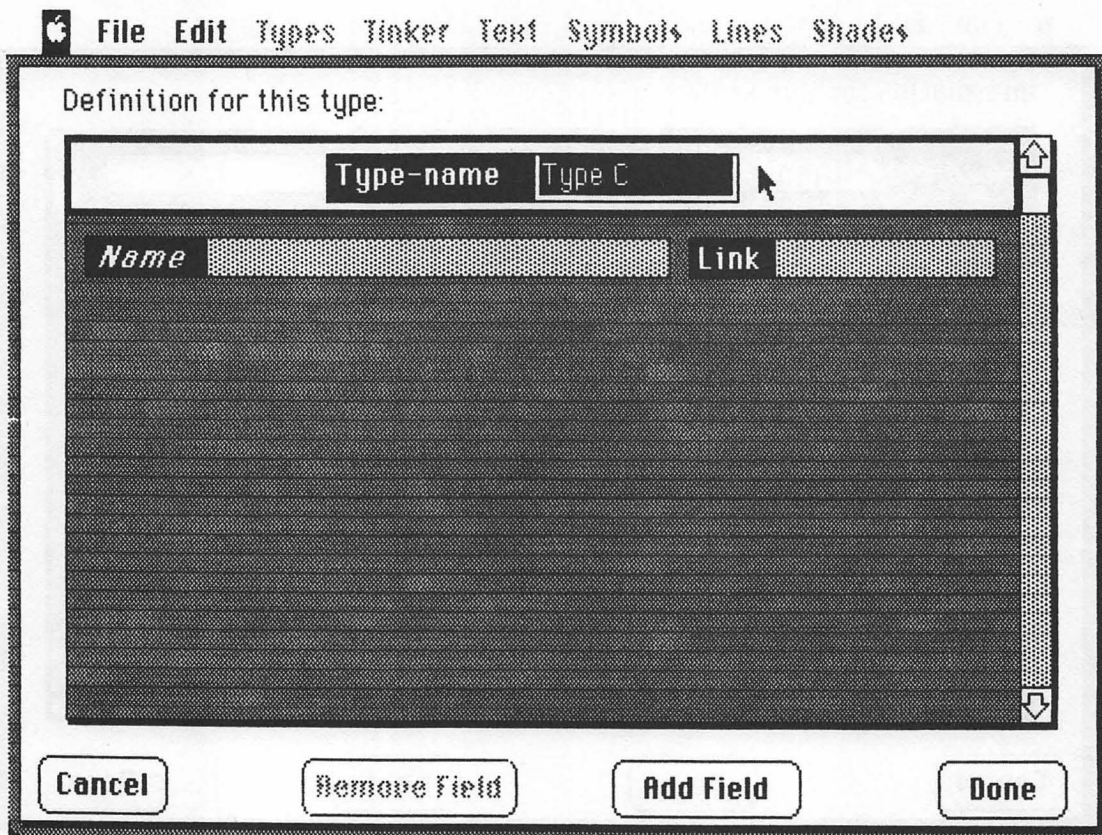
Cancel Prev Next Done

Once you've made the copy, point to the file labeled "Map" on the screen and double-click the mouse button.

Now the screen looks like Figure 5-1. On the left of the screen, in a vertical column, is the Filevision graphic toolkit. The menu bar is overhead. And a map of the United States, divided into states, fills the center of the screen.

There are nine different headings on the menu bar. Take a moment to pull down each menu to see its subheadings. Some of the options are familiar; for example, those under "Text," "Lines," and "Shades." Some options are unique to Filevision, such as those listed under "Types" and "Tinker." Two categories

FIG. 5-3



of data are already listed under Types: Background and States. Let's add a third category, "Clients." But first, let's run through the display procedure.

Pull down the Types menu and click the States type. Release the Types menu and move the cursor across the map until it points to one of the states. If you double-click the mouse, you will see a display of information about the state you have chosen (Figure 5-2). (Click the Cancel button in the lower-left corner to leave the information display and return to the map.)

To create a similar display of information for clients and customers will take three steps. First, you must create a new "type" called "Clients" (or "Customers" or "Prospects").

## Creating the System

Creating a data-management system with Filevision or any other computer program requires four simple steps.

First, decide what reports you would like to have. You don't need precise specifications—a general idea will do. A good data-base manager (and not all advertised products fall into this category) will let you add or delete variables at any time, even after the data base has been constructed. Now is the time to decide exactly what information you require from your business needs. *Hint:* Don't just copy your old reports, although if you require the same information, try to preserve the same format. Maybe you've been skimping on the reports you need because the information was hard to retrieve. With a computerized system, data retrieval is no longer a problem. So design your reports to meet your needs, not according to the time that is available.

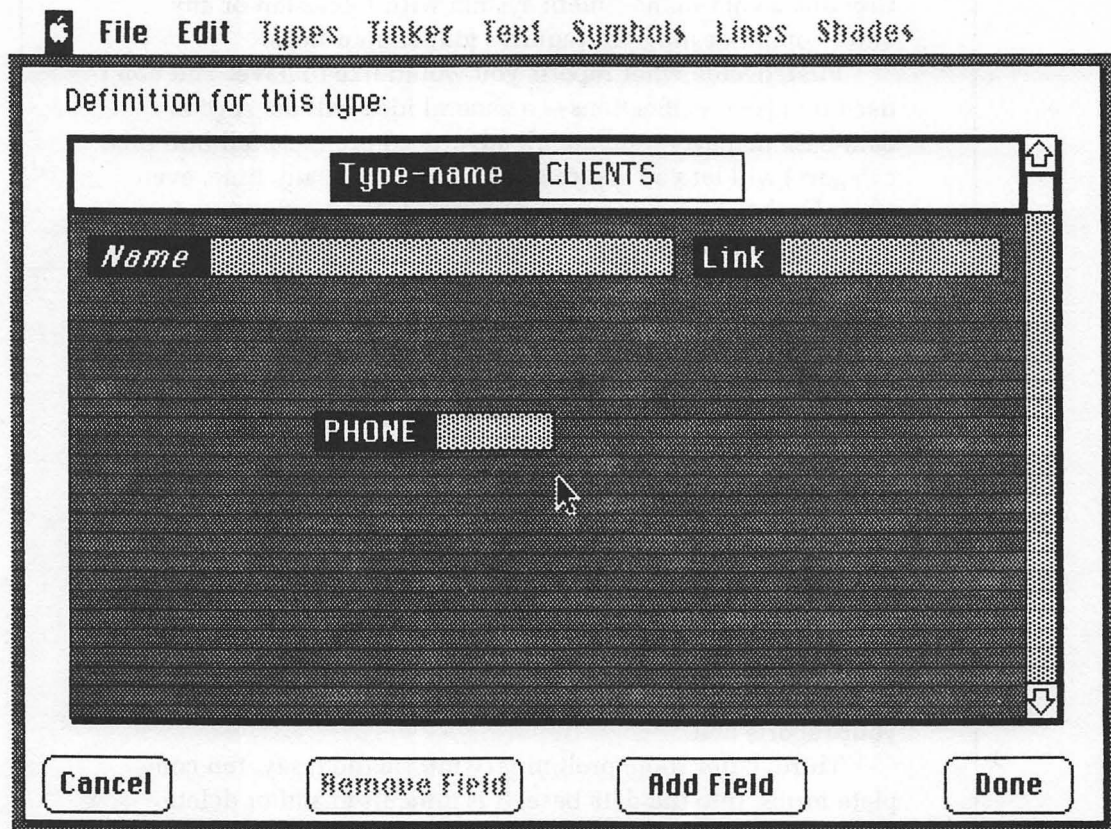
Second, outline a series of data-entry forms. You can save time by working directly at the terminal rather than doing rough work on a sketch pad beforehand. *Hint:* Keep your data-entry forms similar in format and content to those you are already using. This will keep training time at a minimum later. You know what data you need to collect because you designed your reports first.

Third, enter some preliminary information, say, ten complete forms, into the data base. It is difficult to add or delete fields once a data base has been established. Now is your last chance to ensure that the data you are entering will produce the reports you need.

Fourth, design your reports in their final form. This is something you can do completely on your own, without previous computer experience.



FIG. 5-4



Pull down the Types menu and click "Add Another." The display shown in Figure 5-3 appears on the screen. At the top of the display, there is a field called Type-name with the entry Type C. To replace this entry with a type name of your choice, just type Clients (or Customers or Prospects).

Second, sketch a data-entry form for clients. Three fields are already provided on the form: Type-name, Name, and Link. Add a fourth field, Phone. Click "Add Field" at the bottom of your screen. As you move the cursor onto the form, it will take the shape of a hand with a pointing finger. Use the finger to point to the location on the form where you would like to enter the phone number.

(Hint: You may already have a set of forms you complete by hand; try to use



You don't like the appearance of the form. The phone number is too far down and too far to the right. Move the cursor back to the Phone field and click. Two handles appear, one above and one to the right of the field. Move the cursor to

**FIG. 5-5**

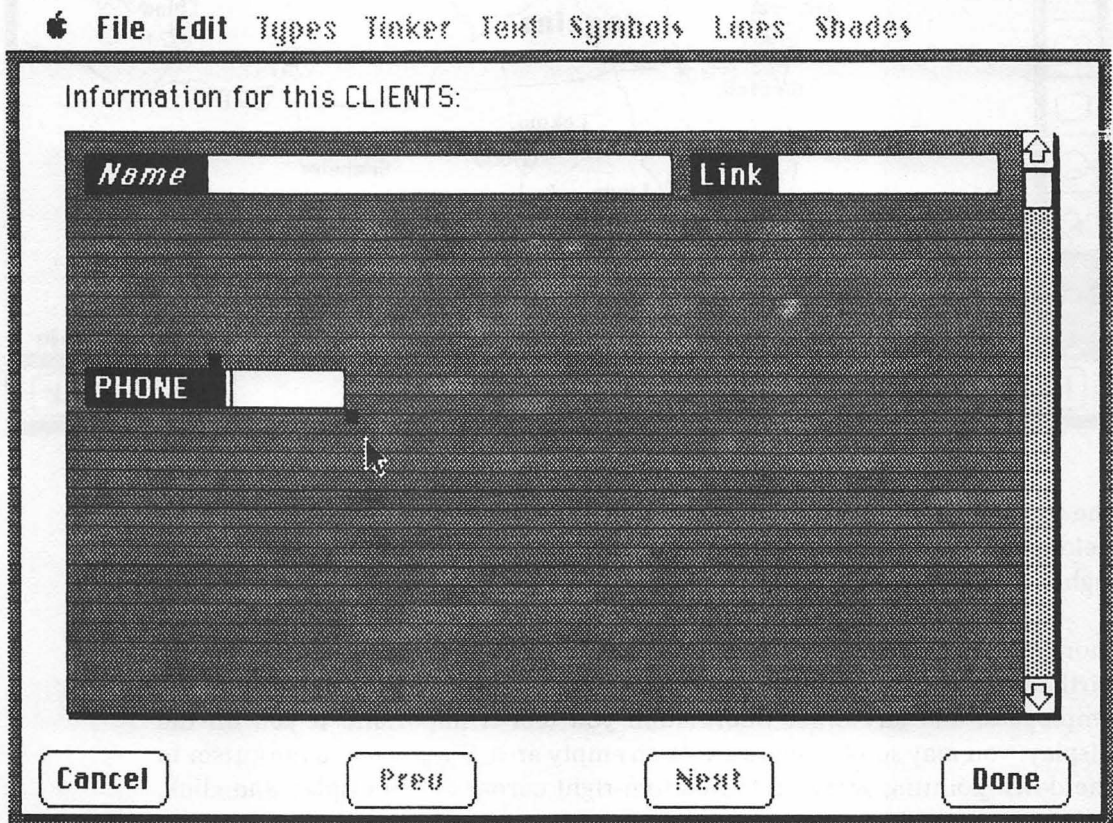
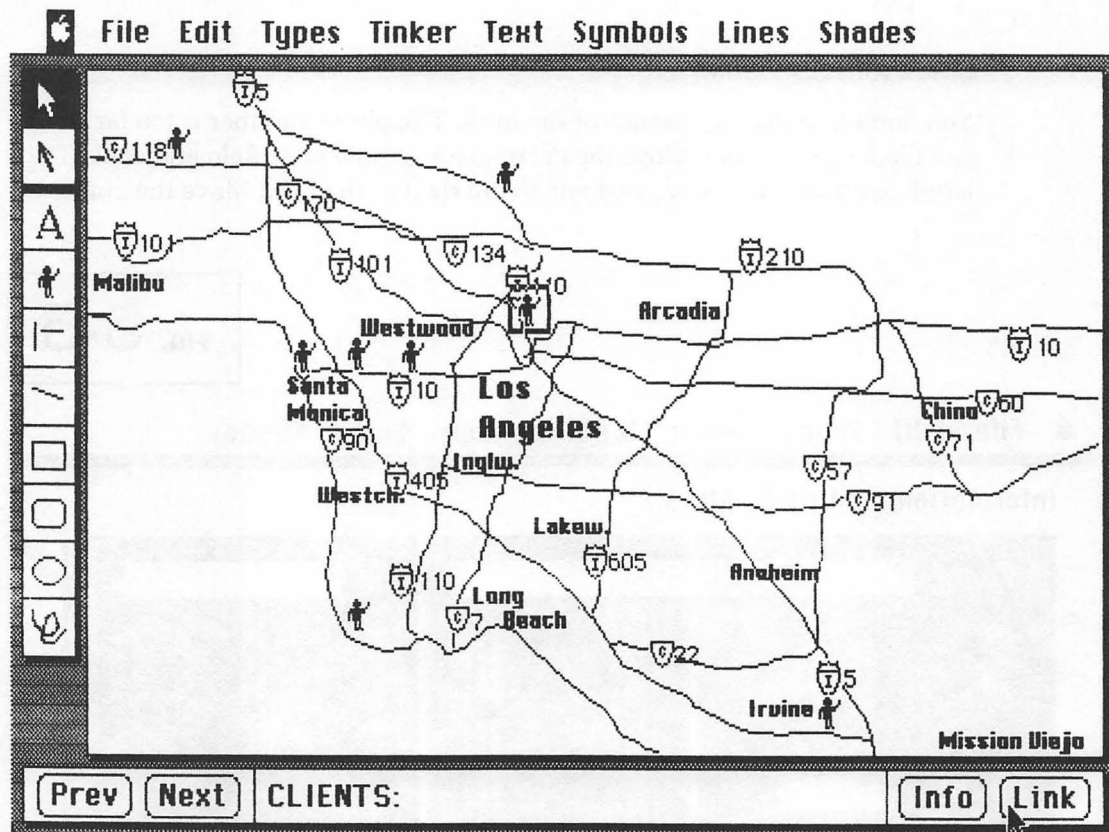


FIG. 5-6



the top handle. Click again to catch the handle, then move the cursor and the field to its new location, as shown in Figure 5-5. (What does the handle on the right do? Experiment to see.)

Similarly, add fields for a street address, city, state, and Zip Code. Is there more information on your present record? Feel free to add data-entry areas for birthdays, customer preferences, sales volume, sales in past years, number of employees, and any other information you feel is important. If you fill the display, you may scroll downward to an empty area. Simply move the cursor to the down-pointing arrow in the bottom-right corner of the display and click.

You can record approximately two screens of data for each client — about what you could put on a 4 × 6 file card.

Finished? Click the “Done” box. If you need to make changes later — to add, delete, or move a field — just select “Change Form” from the Tinker menu.

### MAPPING THE TERRITORY

Last, let’s locate clients and prospects on the map of the United States. The completed map will help in assigning sales territories, planning sales trips, and

FIG. 5-7a

The screenshot shows a software window titled "Highlight 'CLIENTS's meeting these conditions:". The window is divided into two main sections. On the left is a list of fields: Name, Link, zip, PRODUCT, and SALES. The "zip" field is selected with a black square. Below the list are two buttons: "is" and "is not", with "is" selected. Below these are four comparison operators: "=", ">", "<", and "--", with ">" selected. A text box contains the value "90000". A "Clear" button is at the bottom of this section. A "Choose other fields" button is below the "Clear" button. On the right is a list of conditions. The first condition is "zip is greater than or equal to 90000" with a black square to its left. This is followed by an "AND" separator. The second condition is "zip is not greater than or equal to 93600" with an empty square to its left. This is followed by another "AND" separator. There are two more empty rows, each with an empty square and an "AND" separator. At the bottom left is a "Cancel" button, and at the bottom right is a "Done" button.

Highlight "CLIENTS's meeting these conditions:

☐ Name  
☐ Link  
☒ zip  
☐ PRODUCT  
☐ SALES

☒ is ☐ is not

☐ = ☒ > ☐ < ☐ --

90000

Clear

Choose other fields

Cancel

zip is greater than or equal to 90000

AND

☐ zip is not greater than or equal to 93600

AND

☐

AND

☐

Done

FIG. 5-7b

**Highlight "CLIENTS"s meeting these conditions:**

<input type="checkbox"/> Name <input type="checkbox"/> Link <input type="checkbox"/> zip <input type="checkbox"/> PRODUCT <input checked="" type="checkbox"/> SALES	<input type="checkbox"/> zip is <input type="checkbox"/> greater than or equal to 90000
<input type="checkbox"/> is <input type="checkbox"/> is not <input type="checkbox"/> = <input checked="" type="checkbox"/> > <input type="checkbox"/> ≤ <input type="checkbox"/> -- <input type="text" value="\$10,000"/>	AND <input type="checkbox"/> zip is not <input type="checkbox"/> greater than or equal to 93600
<input type="button" value="Clear"/>	AND <input checked="" type="checkbox"/> SALES is <input type="checkbox"/> greater than or equal to \$10,000
<input type="button" value="Choose other fields"/>	AND <input type="checkbox"/>
<input type="button" value="Cancel"/>	<input type="button" value="Done"/>

so forth. Begin by choosing a map symbol to represent each client in the file. Pull down the Symbols menu, for a display of 20 predefined symbols. Or you could create your own symbols with the Symbol Editor (located on the File menu). For this example, however, let's use the symbol of a person in the upper-right corner. Click this symbol to transfer it to the fourth box of the graphics toolkit at the far left of the screen. To add a client to the map, move the cursor to the toolkit, click the person symbol, then move the cursor to the desired location on the map and click again.

Don't worry about locating each client's address precisely, particularly on a

map of this scale. If you need more detail, a Filevision technique called *linking* will allow you to locate your prospects on detailed maps of each specific area.

For example, many of my best customers are located in and around Los Angeles. I drew a map of Los Angeles on a disk in my office that I have linked to the U.S. map (see Figure 5-6). When I need an additional level of detail, I click the Link marker in the lower-right corner of the display to transfer to the more detailed L.A. area map. (You may want to stop now and create a map of some area that is of interest to you. Use the “New File” option on the File menu and the “Background” data type on the Type menu. Check the Filevision manual for details on the use of the drawing tools and the link command.)

FIG. 5-8

Print labels for highlighted "CLIENTS"s as follows:

Order printing based on:

1 2 3 4 5

1 2

Name  
Street  
City  
State

Paper: ☒ 11" ☐ 12"

Cancel Remove Field Add Field Done

**FIG. 5-9a**

**List highlighted "CLIENTS"s as follows:**

Order printing based on: **Name**

Page Header:

Page Footer: ☐ **Number pages**

Column layout:

Name	Company	Street	City
------	---------	--------	------

Cancel Remove Field Add Field Done

## ENTERING THE DATA

After you have located several clients on the sales map, you can begin to enter data for them. To enter data for a client, point to the corresponding symbol on the map and double-click. The entry form you created a moment ago will appear on the screen. You shouldn't have any trouble entering the data, but in case you do, here are a few hints.

After you fill in one field—the client's name, for example—use the "Tab" key to jump to the next field. When you finish entering the data for one prospect, click the area marked "Next" to advance to the next blank form. Use "Done" only when you finish entering a series of addresses.

## SEARCHING FOR PROSPECTS

Now it's time to use the file you have created. Suppose you are planning a trip to the Los Angeles area. You have only a limited amount of time, so you want to be sure that you call on all the prime prospects. You begin by "highlighting" these prospects on your area map.

Pull down the Tinker menu and select (click) "Highlight some . . ." to yield the display in Figure 5-7a. You have already used the options in the box on the left to specify that the Zip Code of a highlighted client must be greater than 90000 and less than 93600 (the Los Angeles area). Now, let's add the requirement that in order to be highlighted a client have sales in excess of \$10,000. To get the results shown in Figure 5-7b, touch the cursor in succession to the following options:

Sales  
is  
>

Then use the keyboard to enter the dollar figure:

\$10,000

When you return to the display, your prospects are highlighted on the map as in Figure 5-6 and you can begin to plan your itinerary.

## USING WILDCARDS


Let's look at another use for the "Highlight some . . ." command before we go on our trip. There is a Bob Mac—something I spoke to briefly on our last visit. I really should talk with him again, but Mac—what? I'm sure he's of Scottish descent, but that's not much of a clue. Fortunately, I can find him with Filevish's help. Again, I display the "Highlight some . . ." menu. This time I ask that Name is = Mac.. where I type the part of the name I remember, "Mac," followed by two periods. The periods stand for the characters I don't remember. In a moment, the names MacPherson and MacTavish are displayed on the screen. Bob MacTavish! That was his name.

## PRINTING THE RESULTS

Not only can you display your list of clients on the screen, but you can print them out in three different formats: Info, Label, and List. You can print all or

FIG. 5-9b

List highlighted "CLIENTS"s as follows:

Order printing based on:  

Page Header:

Page Footer: ☐ Number pages

Column layout:




FIG. 5-10

<u>Name</u>	<u>Phone</u>	<u>City</u>
Foster, John	818/360-5643	Pacific Palisades
Gantua, George	818/556-9093	Palos Verdes
Murray, Dave	805/962-3333	Thousand Oaks
Franks, Bill	213/549-0553	Westwood



some of the records (the latter by printing *after* you have used the “Highlight some . . .” command), and you can have the output ordered by Zip Code, dollar volume, or any other field that appears in each record.

Info format provides a reproduction of the form exactly as you see it on the screen. Label format includes on-screen rulers so that you can match the size of preprinted forms (Figure 5-8).

We need a list report in the form of a telephone directory for our trip to the West Coast. Choosing “Print list . . .” from the File menu yields the display shown in Figure 5-9a. After I select the data I want and rearrange the layout of the report, the screen looks like Figure 5-9b.

Several options are available for each list report. To see them, select “Print list . . .” from the File menu. You can specify how the output is to be ordered. Alphabetically? By Zip Code? By dollar volume? I chose city. You can specify what variables are to appear on the report and how wide each report column is to be. I chose name, phone, and city. You can also provide for a heading and a footing at the top and bottom of each page of the report. The result of my own choices, a list of phone numbers arranged by city of clients in the Los Angeles area, is shown in Figure 5-10.

## OTHER FILEVISION CAPABILITIES

We’ve actually just scratched the surface of Filevision’s capabilities. And our sample data file is only one of many ways that you can profitably put computerized data management to work in your office. In the next few sections, you learn more about some of Filevision’s advanced, almost futuristic capabilities and how you can apply them to your own business needs.

Because each item in your data base is keyed to a drawing, you can set up an inventory-control system based on the *exact location* of an item as well as the part number. (Details for setting up an inventory-control system are given in Chapter 7.)

A supplier can use Filevision’s Link command to tie several files together—orders, customers, and parts. Ditto for a mail-order operation out of your home. A secretary can track her correspondence on a drawing that resembles the typical filing cabinet (Figure 5-11). A realtor can itemize her listings on a map of the local area, then use the Link command to provide a floor plan with room-by-room details for each listing (Figures 5-12a and b). (Warning: This system works best in a tract that uses three or four standard floor plans.)

You can create an appointment calendar, sketching it on the screen by month, week, and day, and use it to maintain client and prospect information, record your activities for tax purposes, and maintain a tickler file of callbacks.

## Protecting Your Data

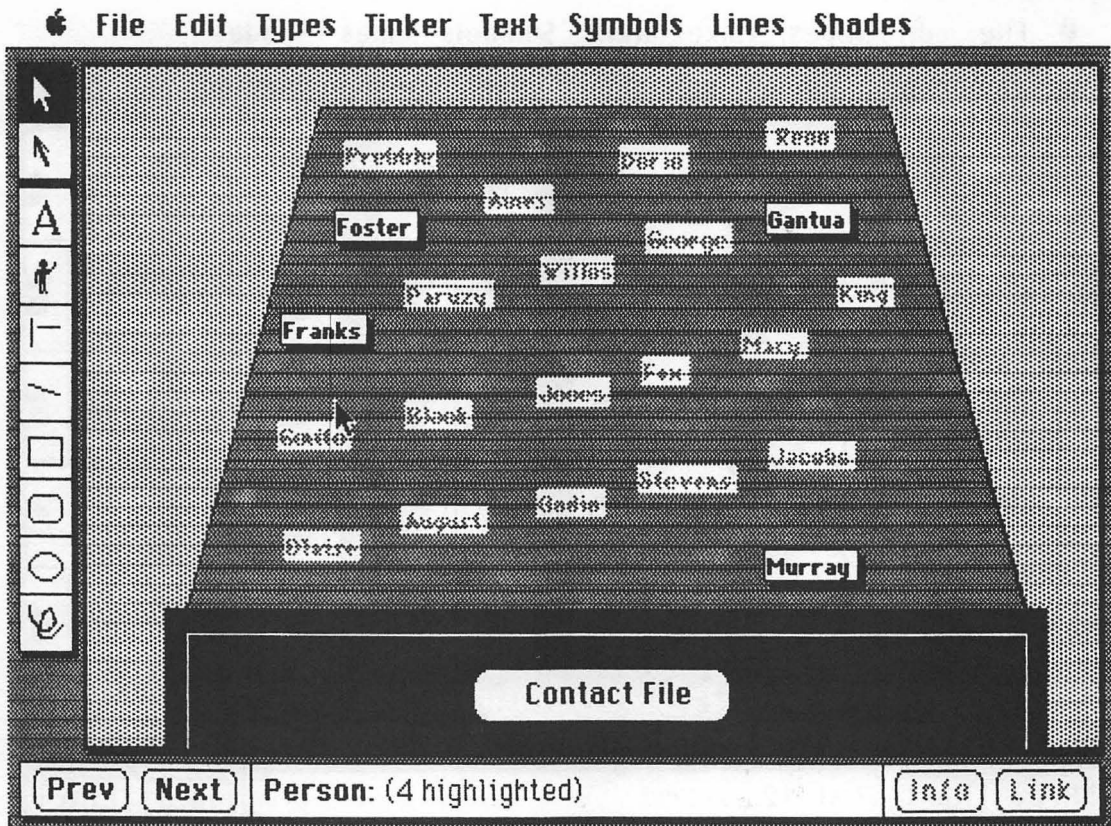
**WARNING:** A power failure or brownout will destroy the file you are working on. Unlike the other Macintosh programs you've studied so far, the information needed to extract information from a Filevision file is kept in memory until you "quit" the program. A power failure or even a brief interruption in the power flow will result in a loss of the memory's contents and the loss of the file. (The file will still be on the disk, you just won't have the "keys" you need to unlock it.)

There are three preventive measures you should take:

1. *Never turn off the power while you are working with Filevision. Always save the file you are working on and exit the program (Quit on the File menu) before you stop work.*
2. *Always work with a backup copy, never with the original. If you do not want to risk losing intermediate changes, back up your data disk after each use.*
3. *If you make almost hourly use of your data files—for order entry for example—purchase a backup power supply. (The cost is about \$400 for twenty minutes of reserve power.) Protect the Macintosh itself with a surge protector (about \$49). If you have heavy equipment elsewhere in the building, be sure your computer draws power from an entirely separate source. (Yes, you may have to change the wiring in your building. You may even need to have the local electric company run a new power line to your house.)*

You can develop a work-order control system so that work orders and planned maintenance no longer fall through the cracks. Your system can provide for planned maintenance—daily, weekly, bimonthly, or semiannual scheduling—up to six months in advance, plus work orders and equipment histories.

You can have a variety of different data types in each data base—up to 16 in all—to represent various categories of objects, such as resistors, capacitors, amplifiers, and rectifiers for electronics applications, and chairs, tables, sofas, beds, desks, and lamps for interior design. Thus, you can sketch a series of plans

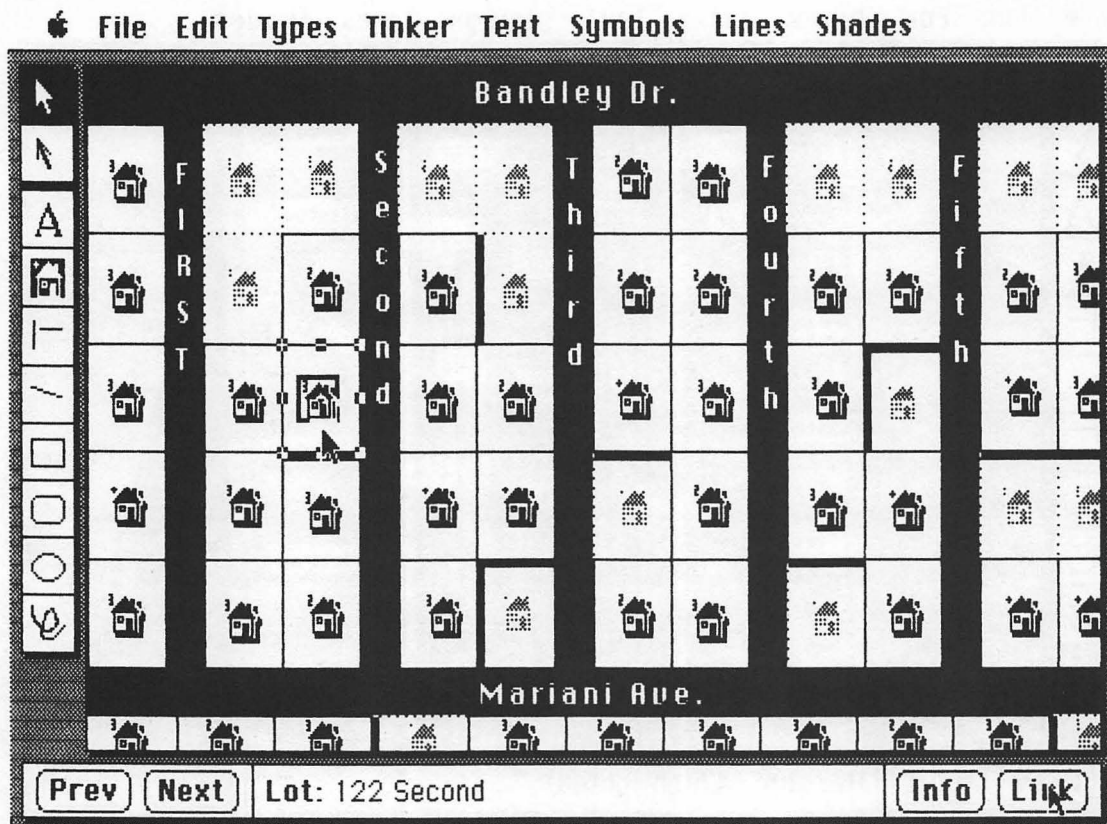


and cost them simultaneously. You can also rearrange a plan, such as move furniture from room to room, without affecting the underlying data base. And, of course, the Macintosh Copy command lets you store and recall both the old and new versions of your drawings.

### EDUCATIONAL APPLICATIONS

The teacher with a Macintosh in her home office or at school will find hundreds of educational applications for Filevision. With an hour's work at the computer, she can create maps of the region (point and click to display features of interest),

FIG. 5-12a



self-testing displays ("Can you identify each of the animals depicted here?"), anatomical charts, line drawings, and conic sections (Figure 5-13). The interactive nature of the display makes the Macintosh the perfect teacher's aid.

The Filevision Link command can be used to guide students through progressively more challenging material or to return them to a refresher course in the basics. Animation and blinking can be used to associate chord names with their positions on the piano keyboard (Figure 5-14). The dozen or more varieties of shading available (see the Shades menu) make it easy to label and identify geological strata. Hide and Unhide commands allow the same material to be used for both teaching and testing. It is even possible to strip an anatomical

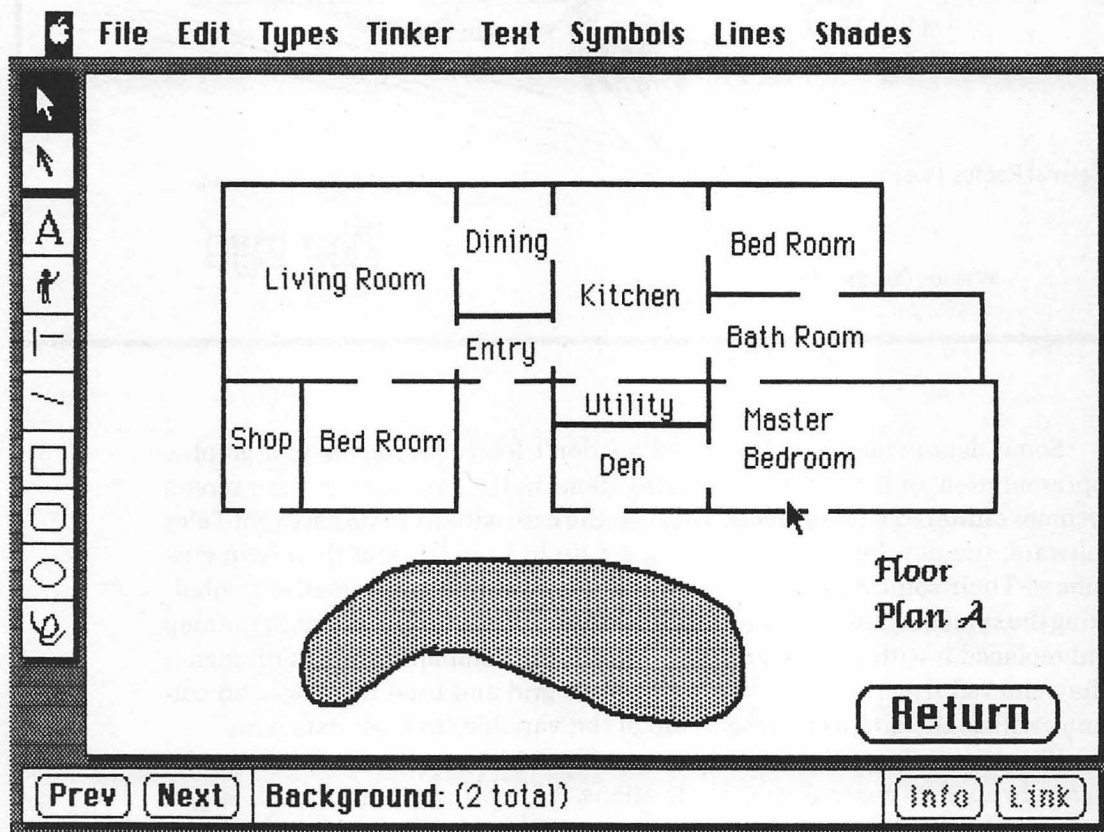
model layer by layer by successively transferring higher layers to the background (see Edit menu).

See Chapter 7 to learn more about Filevision's many and varied applications, including how to create drawings and symbols.

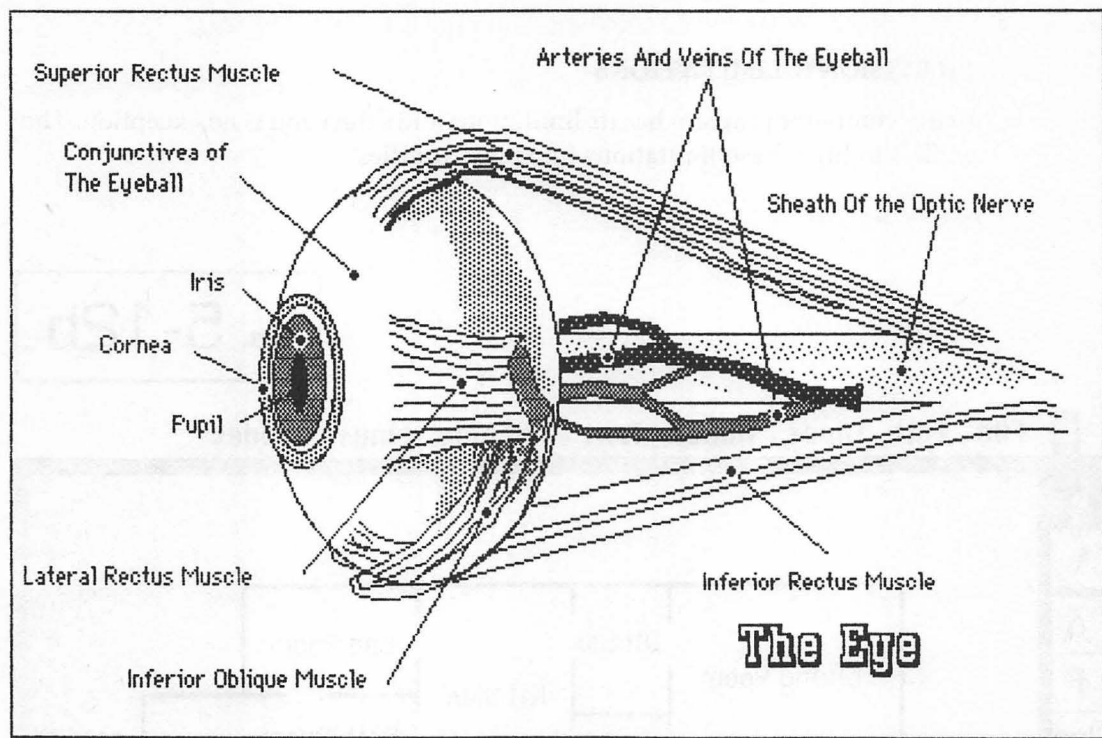
### FILEVISION'S LIMITATIONS

Every computer program has its limitations and Filevision is no exception. The trick is to turn these limitations into opportunities.

FIG. 5-12b



**FIG. 5-13**



Some data-management applications don't lend themselves to a graphic representation, or there may be so many items in the data base that the screen becomes cluttered with symbols. This was the case with the data base that Telos Software, the developers of Filevision, set up to keep track of their own customers. Their solution was twofold: First, they created new, smaller symbols using the symbol editor (see the Edit menu). Second, they did away with the map and replaced it with a grid using the "Show Grid" command on the Edit menu. They entered these new symbols within this grid and used the rows and columns within the grid to represent two of the variables in their data base.

Filevision is limited to 999 records per file, which may be too restrictive for many of your data-management applications. A file with only 999 records would certainly not hold the list of subscribers to my newsletter, "Laboratory Com-

puter Letter.” To overcome this limitation, switch to one of the many other popular file managers described in Appendix I.

Warning: With a larger data base, a hard disk is necessary; the small disk used on the Macintosh internal disk drive can hold only 500 to 1500 records. One alternative is to subdivide your lists. In the case of our subscriber lists, we use a system of subdivision (suggested by the post office) based in part upon Zip Code and in part upon state. The results are satisfactory now that we have an external as well as an internal disk drive.

Filevision can be somewhat frustrating for new users, particularly users like myself for whom freehand drawing is not second nature. Filevision has a large number of editing commands as well as a variety of different commands (depending on the situation) for erasing or undoing your work. Take the time to

FIG. 5-14

	A	A# B♭	B	C	C# D♭	D	D# E♭	E	F	F# G♭	G	G# A♭
Key:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Major:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Minor:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Maj. 7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Min. 7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Chord - Keyboard Mapper**

☐ Click buttons to find keyboard patterns

☐ Click diamonds to lookup key names

learn how to use these commands during your initial experimental period. Their use can be a big timesaver. You won't need to start over if you make a mistake — Filevision's editing commands often provide an "easy" solution. Experiment. Eventually, you'll find that your freehand drawings on the Macintosh are as professional as those of any commercial artist.

## **WHICH FILE MANAGER SHOULD YOU USE?**

Some of Filevision's limitations can be overcome only by switching to another file manager. For example, Filevision does not verify the data before they are entered into the form, so you cannot ensure that all five digits of the Zip Code will be entered or that the sample weights recorded by your technician lie between 100 and 500 grams. Without these checks and verifications, you may not be able to turn over the task of data entry to less-skilled members of your staff.

Although Filevision provides you with a running count of the number of objects of a given type (a must for inventory purposes), it will not sum over the group to provide you with a dollar volume for each component in inventory or a total sales figure for each item and salesperson in an order-entry data base. 1stBase, DB Master, and Overvue (see Appendix I) do have this capability.

Filevision does not lend itself to order entry because you cannot subtotal, compute tax and shipping, and total while at the keyboard. You can with DB Master, however.

If you have one of the applications described above, see Appendix I to help select the software that is best for your needs.



---

# Preparing a Mass Mailing

## 6

In this chapter, you learn how to increase your profits through mass (but personalized) mailings. Form letters and mass mailings can be used to advertise specific products, to reply to inquiries, to remind patients of appointments, and to keep your image before the client with birthday greetings and new product announcements.

The combination of MacWrite and MegaMerge allows you to create form letters, print mailing labels, address envelopes, and more. MegaMerge gives you the ability to take words, sentences, paragraphs, tables, and even pictures from one document and merge them into specific spots in several other documents. Include some last-minute art work on the form letter that accompanies your catalog—you don't have to wait to have special letterhead printed.

MegaMerge allows you to write one letter and then quickly personalize it for a series of recipients, with name, address, salutation, the product(s) they inquired about, and a personalized postscript. Several examples appear in Figure 6-1. You'll save time because the address you've typed for the inside address on the letter will be reprinted automatically on a mailing label.

Mail merging is done by typing special markers into the form letter where the personalized information is supposed to go (see Figure 6-2). In this chapter, you learn how to prepare a form letter and an insert list, how to generate a series of form letters, and how to produce the mailing labels that accompany them. You receive practical tips for creating effective form letters and learn how to use

## FIG. 6-1

Dear *Salut*:

Just a reminder to all our favored customers that we are now stocking the new, improved model RJB3 manufactured by Harbor Associates. Like all models in the Harbor line, the RJB3 offers . . .

Dear *Guest*:

Well, like it or not, John is going to have a fiftieth birthday and we'd like you and *Spouse* to join us on August 18th for a get-together at our . . .

Dear *Inquirer*:

We're sorry for the delay in shipping our latest report, "The Micro-Mainframe Connection." It was stop press waiting for some new developments from DCA and IBM. Now the report is at the printers, and we can promise you *Inquirer* that a copy will be in your hands no later than the first of the month.

Dear *Salut*:

House Bill 77865R4 is a matter of concern to all Americans, but it's of vital importance to those of us who are *Party*. Your good friend *Refer* has told us of your concern in this matter and we urge you to join *Her* with a contribution of . . .

Dear *Customer*:

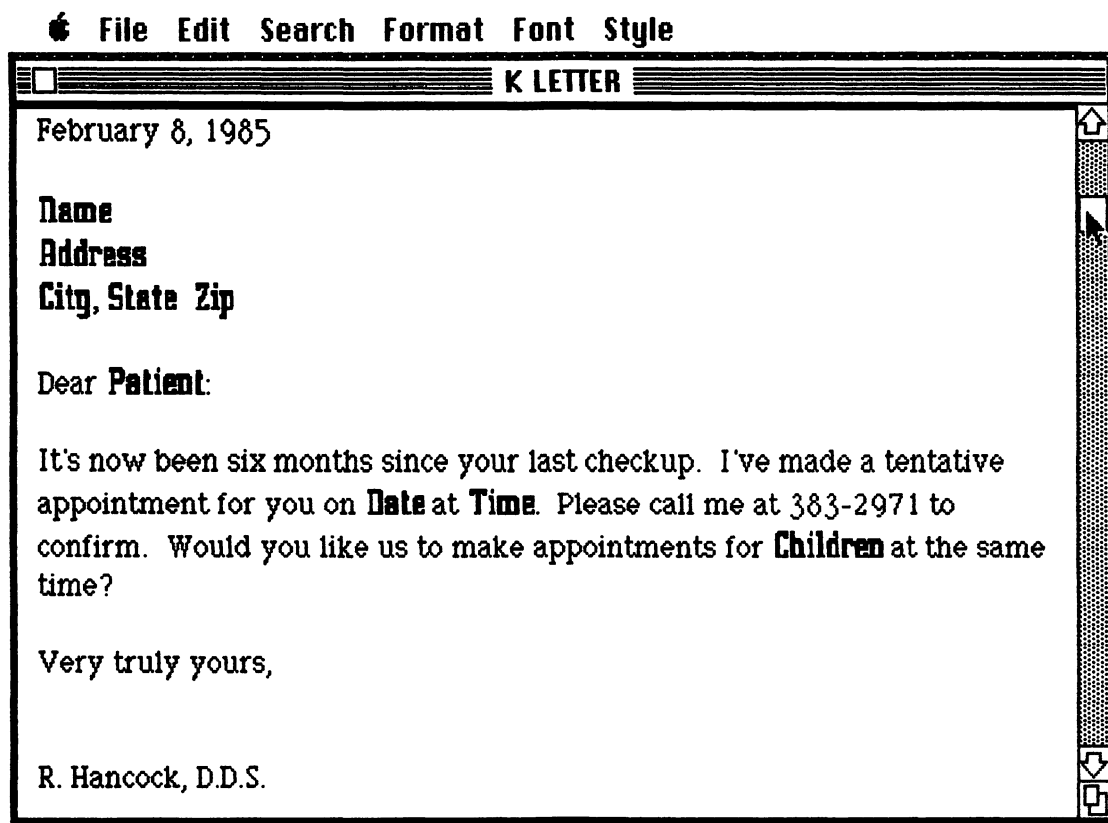
Just a little note to accompany our '85/'86 catalog. Say, didn't you like the *Gift* you received with your last order. We've had many raves about it. It's featured in this year's catalog on page XX. Don't forget, if you get the spoons on page 16, you get \$1 off each other item you order at the same time. That's right. You get . . .

MegaMerge's advanced features to cut the time of preparation. You also learn how to chain reports, overcoming the Mac's memory limitations to produce long documents from a series of short sections.

There are three steps in producing a mass mailing:

1. Create and maintain a list of prospects/clients or other potential addressees
2. Create the form letter
3. Print letters and labels

FIG. 6-2



In what follows, you learn to perform each of these three steps on your Macintosh quickly and productively.

## BUILDING A LIST OF PROSPECTS

As most of us who are in the mail-order business realize (and all of us who are successful at it), the secret of success lies in a *good* mailing list. There are many ways to get started in mailorder; new ways to attract customers are invented every day, but the best customers are still repeat customers. It takes just a little

FIG. 6-3

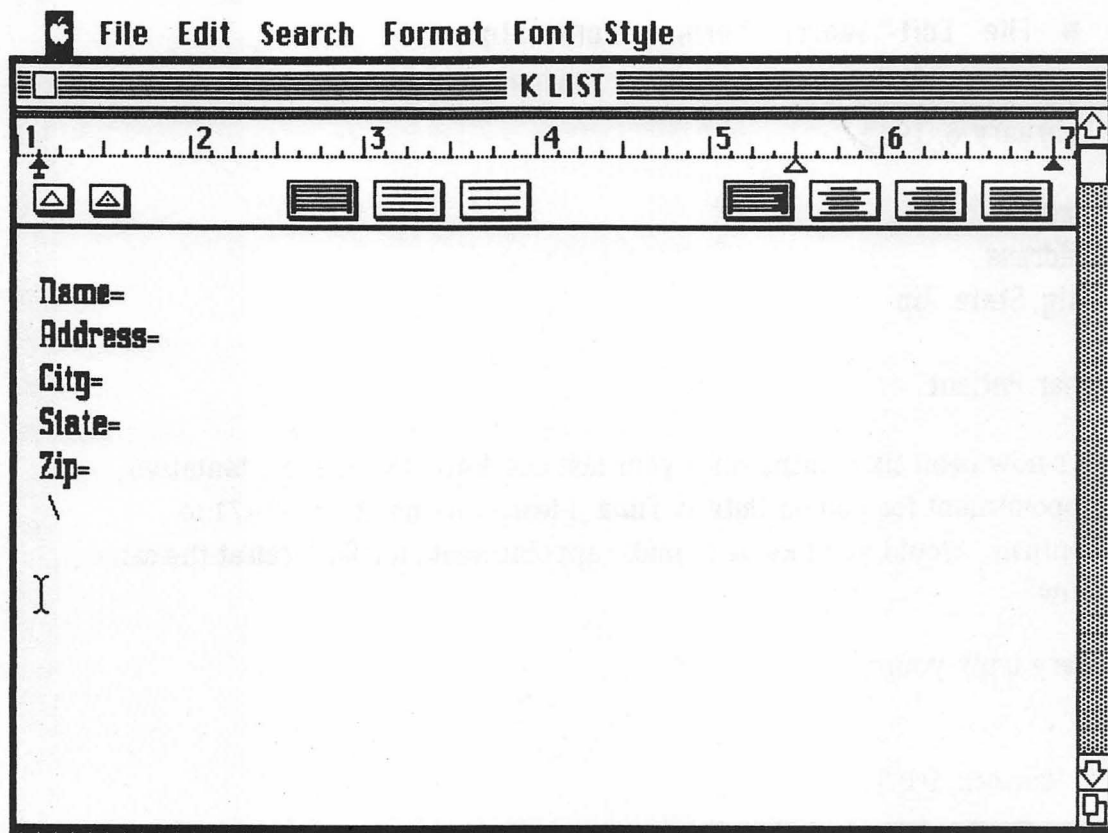
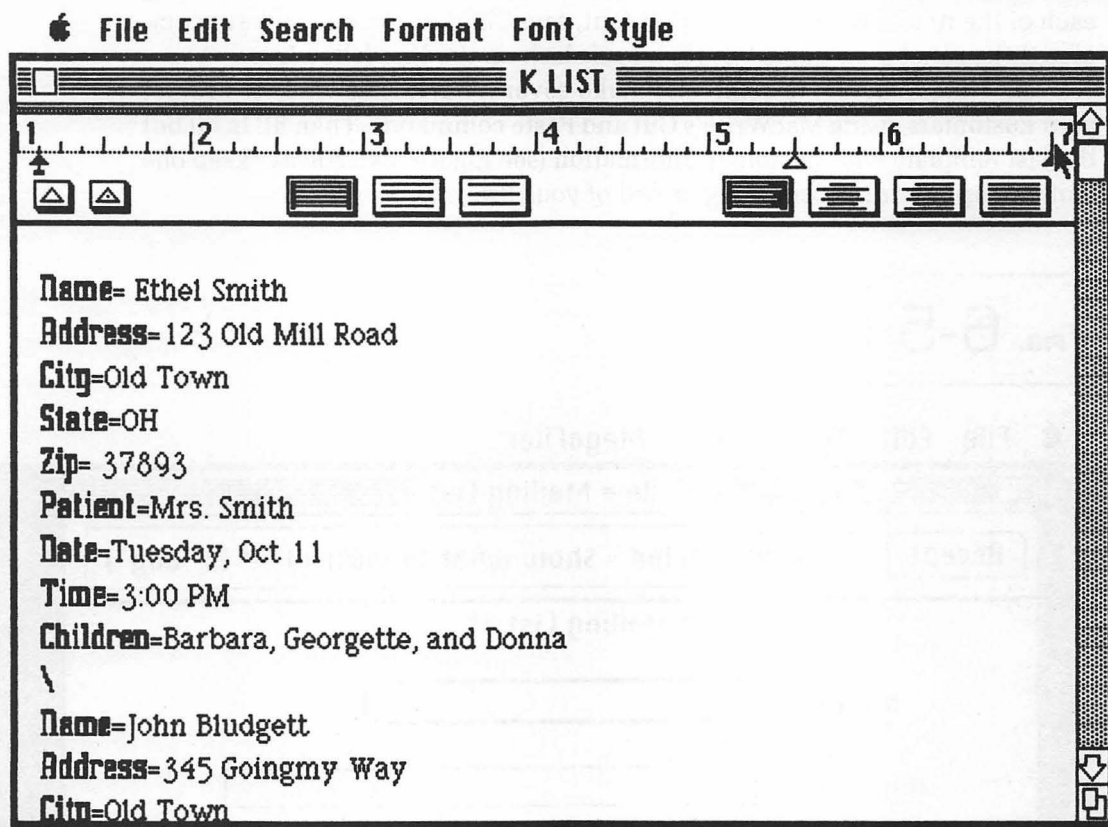


FIG. 6-4



effort to get an old and satisfied customer to buy again. And the Macintosh can help you to make the sale quickly and effectively.

Begin today using MacWrite or some other word processor to maintain a list of your customers and their preferences. The obvious starting point is with each customer's name and address. You may also want to include the date of the last order or appointment, the names of a client's children or spouse, or the amount of a "suggested" contribution. Take the time now to sketch one or two sample form letters. These will help you to determine what information you should collect.

You must create and use a template, as shown in Figure 6-3. Type the names

of the items you plan to include in the form letter one below the other in a column. Use a text font that you don't normally use in your correspondence for the names of the items, say, Athens. *The font you use for the item names must be different from the fonts you use in your text.* Insert an equal sign (=) following each of the item names using another font, say, Chicago. When you have completed the set of item names, enter a backslash on the line following.

After the template is complete, make several duplicates, one for each of your customers, using MacWrite's Cut and Paste commands. Then fill in all but the last template with customer information (see Figure 6-4). Always keep one blank template at the beginning or end of your list.

FIG. 6-5

File Edit Record List MegaFiler

File = Mailing List

Accept Cancel Find - Show what to match ("=" is "any")

**\*\* Mailing List \*\***

Name:

Address:

City:

State:

Zip:

Return Date:

The image shows a Macintosh menu bar with the following items: an Apple logo, 'MegaMerge', 'Edit', 'Letter', 'List', and 'Mergefont'. The 'MegaMerge' menu is currently open, displaying a help window.

#### HELP....

**MegaMerge is a program that takes two documents prepared by MacWrite, merges them together and prints them out.**

**Select a formletter document using the "Letter" menu.  
Select a mailing list document using the "List" menu.**

**Use the "Mergefont" menu to set the font used to type the merge commands. Remember, the font used to type commands in the "Letter" and "List" must match the Mergefont.**

**Use "Page Setup" and "Print Pages" just like MacWrite to print on standard paper sizes.**

**Use "Print Labels" to print on standard sized mailing labels**

**Chain "Letters" together by underlining their names.**

OK

### USING MEGAFILER AND MEGAMERGE

You may want to use a data-management program like Filevision or MegaFiler instead of a word processor to collect and collate the data you put in your customer files. A data-management program has at least two advantages over a word processor. It's easier to use, allowing you to turn the job of data entry over to less skilled and less motivated personnel. It can sort the lists for you — by Zip Code, for example — allowing you to take advantage of bulk mailing rates.

MegaFiler is a data-management program designed specifically for use with MegaMerge. As with Filevision, described in Chapter 5, MegaFiler lets you build your own data-entry form. A Find command lets you select a particular record

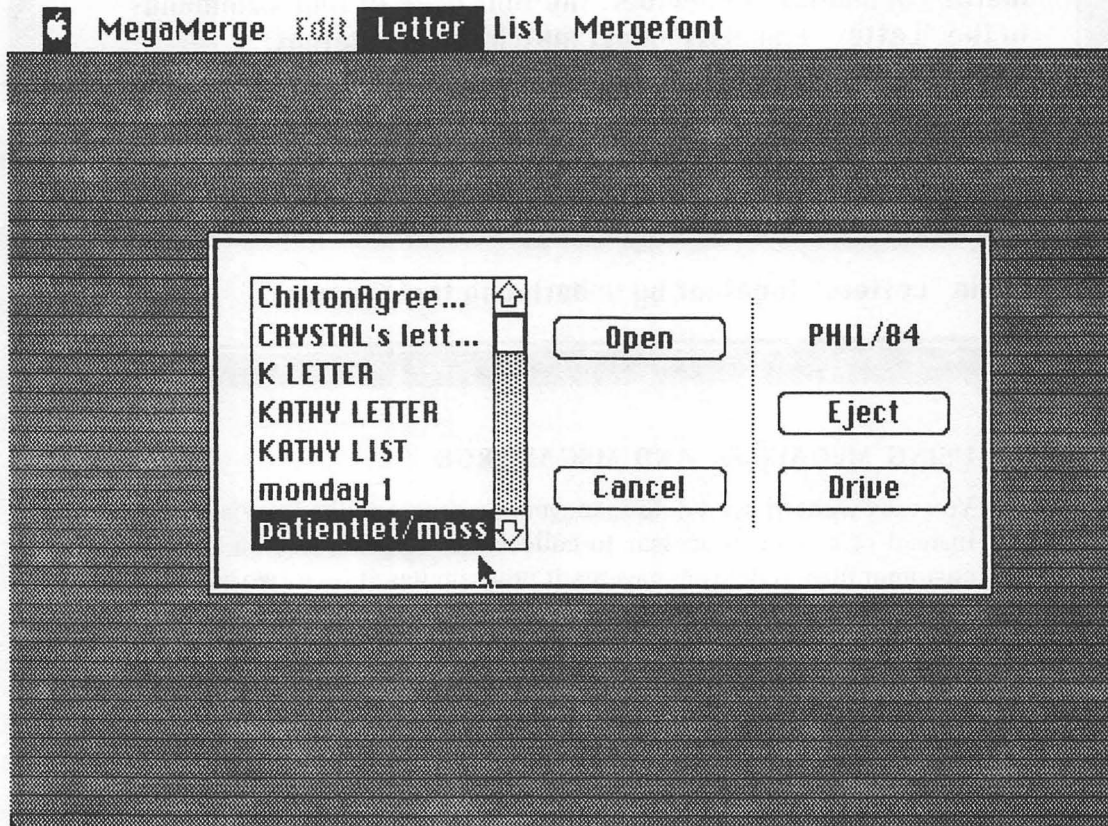
or records from the file (see Figure 6-5). You may sort the records (by Zip Code or last name) and then print them to a list file for use by MegaMerge.

(Hint: If you use MegaFiler to maintain your lists, always sort the records before you search through them with the Find command. Sorting can speed up the selection process ten times or more, depending on the size of the list.)


## CREATING A FORM LETTER

You can use MacWrite or any other word-processing program to create a form letter. The only requirement is that all the merge fields (Name, Address, Salutation) be written in a different font from the text itself, as in Figure 6-2.

FIG. 6-7





 **MegaMerge**   **Edit**   **Letter**   **List**   **Mergefont**

Letter = K LETTER	<input type="checkbox"/> List = K LIST
<p>February 8, 1985</p> <p><b>Name</b> <b>Address</b> <b>City, State Zip</b></p> <p>Dear <b>Patient</b>:</p> <p>It's now been six months since your appointment for you on <b>Date</b> at <b>Time</b> confirm. Would you like us to make time?</p> <p>Very truly yours,</p> <p>R. Hancock, D.D.S.</p>	<p><b>Name</b>= Ethel Smith <b>Address</b>=123 Old Mill Road <b>City</b>=Old Town <b>State</b>=OH <b>Zip</b>= 37893 <b>Patient</b>=Mrs. Smith <b>Date</b>=Tuesday, Oct 11 <b>Time</b>=3:00 PM <b>Children</b>=Barbara, Georgette, and Don \ <b>Name</b>=John Bludgett <b>Address</b>=345 Goingmy Way <b>City</b>=Old Town <b>State</b>=OH <b>Zip</b>=37893</p>

Whole books have been written about the preparation of form letters. My own view is that if you are writing a letter that will go to 5000 people (and bring in 40 to 80 sales) you should spend ten times as much time in its preparation as you would spend on an ordinary letter. Fortunately, since you are using your Macintosh to prepare the letter, most of the effort is mental. It will take you only seconds to revise the letter, but it may take you several minutes or hours to decide on the revisions.

**Hint:** It's a good idea to have several people read over your letters before you mail them out. Don't rush a mailing. The time you spend on a form letter can be as important to you dollarwise as the time you spend on the product or service itself.

## MERGING AND PRINTING A FORM LETTER

Once you've prepared a mailing list and a form letter, merging the two and printing the letter are virtually automatic. The three-step process is no more difficult than pressing three buttons in sequence. After entering the MegaMerge program, you have four menus to choose from: MegaMerge, Letter, List, and Mergefont (Figure 6-6). Select the "Open" option from the Letter menu, then select the name of your form letter from the file directory by double-clicking (Figure 6-7). Select the "Open" option in the List menu, and when the document selection box comes to the screen, select the desired list (see Figure 6-8). Last, pull down the MegaMerge menu and select "Print Pages." Note: Be sure to select the Cut Sheet option from the Print display (Figure 6-9) if you are using letter-head for your form letters. The result will look like Figure 6-10.

## PRINTING MAILING LABELS


You may already have created a label form with MacWrite. If not, a form called "Label Letter" is supplied on the MegaMerge disk for use with MacWrite. (If "Label Letter" doesn't quite meet your needs, it can be easily modified with MacWrite or some other word processor.) You print the labels with the same three-step process you used to print the form letters. First, select "Open" from the Letter menu; but this time, open "Label Letter." Open the mailing list you used for the form letters. Finally, choose "Print Labels" from the MegaMerge menu.

MegaMerge's dialog box (Figure 6-11) offers you a choice of two standard label sizes and either one or two across. Generally, you will use 3½ by 1<sup>5</sup>/<sub>16</sub> inch labels for display envelopes and 4 by 1<sup>7</sup>/<sub>16</sub> inch labels otherwise. For example, we often use a check-off reply card in our mailings with an option for "bill me" or "check enclosed." To save time for the recipient (and make it as easy as possible for him or her to say "yes, bill me"), we attach a 1<sup>5</sup>/<sub>16</sub> inch mailing label with his name and address to this card. To save time for ourselves in addressing the envelopes, we place the card at the front of the mailing where the address will be visible through the window envelope. With luck, the mailing label will see double-duty — going to the prospect and, we hope, returning with his order.

## "PERSONALIZED" FORM LETTERS

Up to now, the form-letter insertions have been rather simple ones, like names, Zip Codes, and dates. But there is nothing to prevent you from inserting entire paragraphs or reports. For example, suppose you want to use a form letter to let

FIG. 6-9

 **MegaMerge** **Edit Letter List Mergefont**

Letter = K LETTER		List = K LIST	
February 8, 1985			
Quality:	<input type="radio"/> High <input checked="" type="radio"/> Standard <input type="radio"/> Draft	<input type="button" value="OK"/>	
Page Range:	<input checked="" type="radio"/> All <input type="radio"/> From: <input type="text"/> To: <input type="text"/>		
Copies:	<input type="text" value="1"/>		
Paper Feed:	<input type="radio"/> Continuous <input checked="" type="radio"/> Cut Sheet	<input type="button" value="Cancel"/>	

<p>Dear Patient:</p> <p>It's now been six months since your appointment for you on <b>Date</b> at <b>Time</b> confirm. Would you like us to make time?</p> <p>Very truly yours,</p> <p>R. Hancock, D.D.S.</p>	<p><b>Patient</b>=Mrs. Smith</p> <p><b>Date</b>=Tuesday, Oct 11</p> <p><b>Time</b>=3:00 PM</p> <p><b>Children</b>=Barbara, Georgette, and Don</p> <p><b>Name</b>=John Bludgett</p> <p><b>Address</b>=345 Goingsmy Way</p> <p><b>City</b>=Old Town</p> <p><b>State</b>=OH</p> <p><b>Zip</b>=37893</p>
---	--

February 8, 1985

Ethel Smith  
123 Old Mill Road  
Old Town, OH 37893

Dear Mrs. Smith:

It's now been six months since your last checkup. I've made a tentative appointment for you on Tuesday, Oct 11 at 3:00 PM. Please call me at 383-2971 to confirm. Would you like us to make appointments for Barbara, Georgette, and Donna at the same time?

Very truly yours,

R. Hancock, D.D.S.

FIG. 6-10

FIG. 6-11

**MegaMerge Edit Letter List Mergefont**

Letter = Label Letter	List = K LIST
<b>Name</b> <b>Address</b> <b>City</b>	<b>Name= Ethel Smith</b>

**Print Labels**

**Label Size**   ☒ 3 1/2 x 15/16 "   ☐ 4 x 1 7/16 "

**Width**   ☒ One Across   ☐ Two Across

	<b>Date=Tuesday, Oct 11</b> <b>Time=3:00 PM</b> <b>Children=Barbara, Georgette, and Don</b> <b>Name=John Bludgett</b> <b>Address=345 Goingmy Way</b> <b>City=Old Town</b> <b>State=OH</b> <b>Zip=37893</b>
--	---

your district representatives know about recent changes in sales policies. A simple form letter won't do, for over and above those changes that affect all representatives, there are several changes that are unique to each region.

You would solve the problem in two stages. First, revise the form letter to the district representatives so that the concluding paragraphs look something like this:

. . . how much I appreciate your cooperation with these changes.

*Personal*

Very truly yours,

And then we revise the mailing list to look like this:

*Name*= Mac Jones

*Address*= 2333 First Avenue

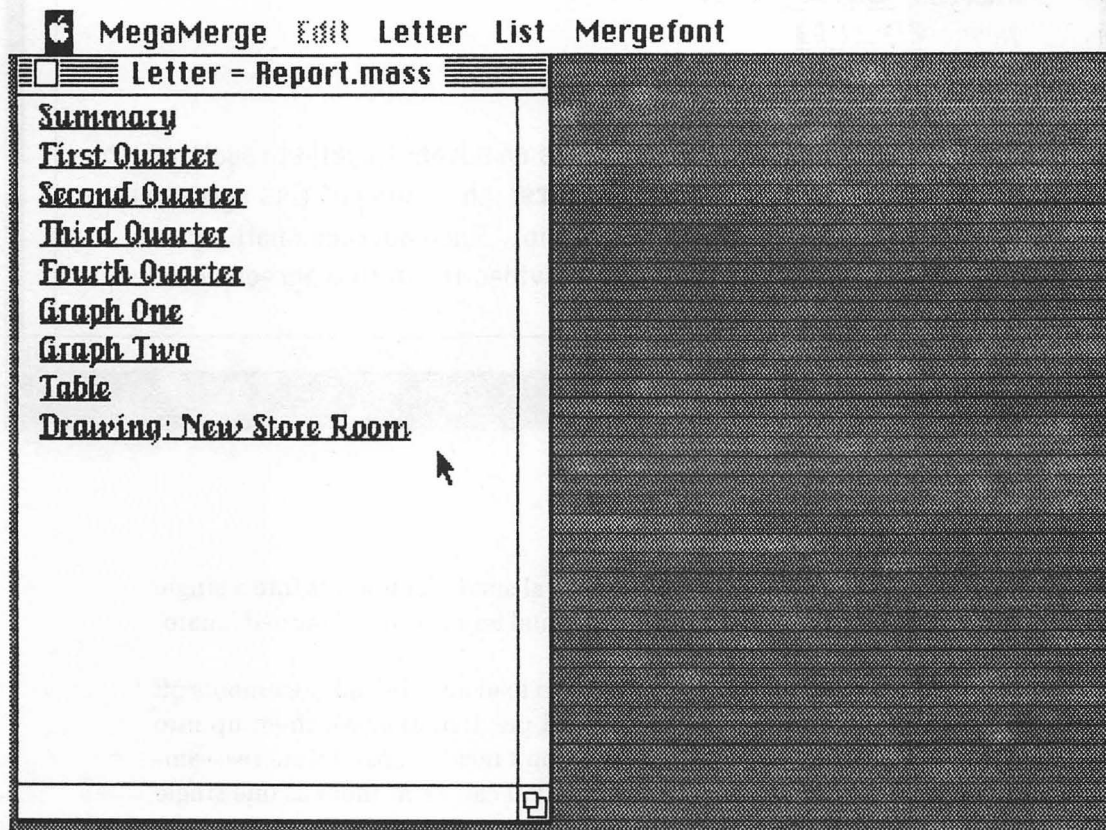
*Address2*= Los Angeles CA 91001

*Salutation*= Mac

*Personal*=

Region 21 has always been at the top in productivity. With the changes described above and your own plan to increase discounts to 15% on bulk purchases made before March 1, I expect we will see you at the top once more. Good work.

FIG. 6-12



Apple MegaMerge Edit Letter List Mergefont

Letter = ChiltonAgreement--Mass

Chilton Book Company Author-Publisher Agreement

Publication Agreement made the ~~Date~~ between Chilton Book Company of Radnor PA USA, hereinafter called "Publisher" and

~~Author~~

Whereas, Clause 1 Title

Now, Clause 11

Clauses i-vii

Publisher shall pay to the author as an advance against royalties, the sum of ~~Advance~~ payable as follows ~~First~~ on signing of this agreement and ~~Second~~ on delivery of the manuscript. Such advance shall be non-returnable except as otherwise provided for in this agreement.

## CHAINING REPORTS

MegaMerge can also be used to combine several small documents into a single long report and to build contracts and contractual letters out of "canned" material or boilerplate.

We all know how much time it can take to load and unload documents off disk. To save time with long reports, it's good practice to break them up into sections and edit one section at a time. You don't need to spend time reassembling them because, with MegaMerge's help, you can print them as one single document even though they are stored separately.

To chain several sections together and print them in a single step, simply type a series of chaining commands into the first or master document. For example, Figure 6-12 is the master document for an annual report.

The names of all documents to be chained are typed in the font used for merging and then underlined. Note that you may chain spreadsheet tables, graphs, and pictures as well as text material.

As a second concrete example of the chaining approach, below is a copy of Chilton Book Company's author-publisher agreement (Figure 6-13). Note that both mailmerge commands (like *Author* and *Title*) and chaining commands (like *Standard Clause i–vii*) are present. Both types of commands are in Mergefont; the distinction is that the chaining commands are *underlined*.

Good luck applying mailmerge productively in your business too.

---

# **Track and Control Your Inventory**

## **7**

In this chapter, you learn how to use Filevision and your Macintosh to prepare and maintain an inventory of parts and supplies. A mail-order house can use Filevision to track its stock by item, box, and bin, as can a parts supply house or a hardware store. An automobile dealer can track the location of every car on the lot and the equipment and accessories that come with each car. Ditto for a retailer or wholesaler of white goods—washing machines, radios, tractors, or small appliances.

And there are many less traditional applications. A coach can track his players' abilities and performance by their location on the field. A farmer can keep track of his dairy cattle and their milk production, stall by stall. Even if you have no immediate business application, you can use what you learn in this chapter to record the content of those mysterious boxes you have piled in your garage and up in the attic. Are you a book collector? records? tapes? stamps? Keep track of your collection item by item, album by album.

As the preceding examples reveal, an inventory is really only a simple extension of a data base, something you learned how to create and update in Chapter 4. The only distinction—and it is a small one—is that the inventory often has more levels or data types. For example, a parts supply house may keep track of its stock by room, rack, shelf, and item. A hardware store will have display areas, drawers and shelves, and items. An automobile dealer has lots and showrooms, automobiles, and an extensive two-page description associated with each automobile.



What about your own inventory? Stop now and try to conceptualize your data base. Do you keep your stock in more than one location? In several small buildings? In a garage? In what used to be a den or a family room? Are the items stored in boxes or bins within each room? Do you have several distinguishable items in each box, or a large but varying number of a single item? Do you need a lengthy description of each item, or do you just need to know the number of items?

You will probably require a data form for each item if only to keep track of its name (1" × ¼" screw), its price (3 cents), and its cost (1 cent).

## **BUILDING AN INVENTORY**

In this chapter, we consider the inventory problems of a medium-sized automobile dealer, one who sells parts as well as cars. This dealer has a large collection of new and used cars divided among a showroom and an upper and lower lot. He wants his salespersons to be able to guide customers quickly to those cars with the equipment and accessories the customer wants.

A two-screen data-entry form is associated with each automobile. The first screen (shown in Figure 7-1) contains basic information about each automobile similar or identical to that which appears on the window sticker—list price, model number, engine capacity, a blank field for options, and so forth. This display may be shown to the customer to whet his or her appetite before making the trek out to the lot. The second page, which the customer ordinarily doesn't see, contains additional information, such as dealer cost, that is helpful to the sales staff in adjusting the quoted price upward and downward depending on the customer's reaction.

A similar data structure would be used by any retailer or wholesaler who deals in large appliances.

Building the data base is a straightforward four-step process. First, after turning on his Macintosh and loading Filevision as in Chapter 4, the dealer draws a sketch of his lot, noting the three separate display areas. Accuracy is not essential, although it is advisable to draw each display area to scale in order to maintain its shape and general proportions. (A different scale may be used for each area.) Your drawing must be original; you cannot use the Clipboard or Scrapbook to copy images from other Macintosh programs.

You can use any of the drawing tools on the left of the Filevision screen to sketch in the background (see Figure 7-2). To save time, experiment with each of the drawing tools for a few minutes before you begin. If you want to duplicate parts of the background—sketching a second showroom, for example—you can simplify the copying process by drawing multipart objects that can be duplicated as a unit.



## Four Inventory-Building Steps

1. Conceptualize (rooms, drawers, and items)
2. Draw a picture
3. Locate typical objects
4. Create data-entry forms

FIG. 7-1

File Edit Types Tinker Text Symbols Lines Shades

Definition for this type:

Type-name		Automobile
VEHICLE ID		Link
NEW/USED	YEAR	Body
MAKE	Model	Engine
Color Ext	Color Int	Air Cond
		List Price

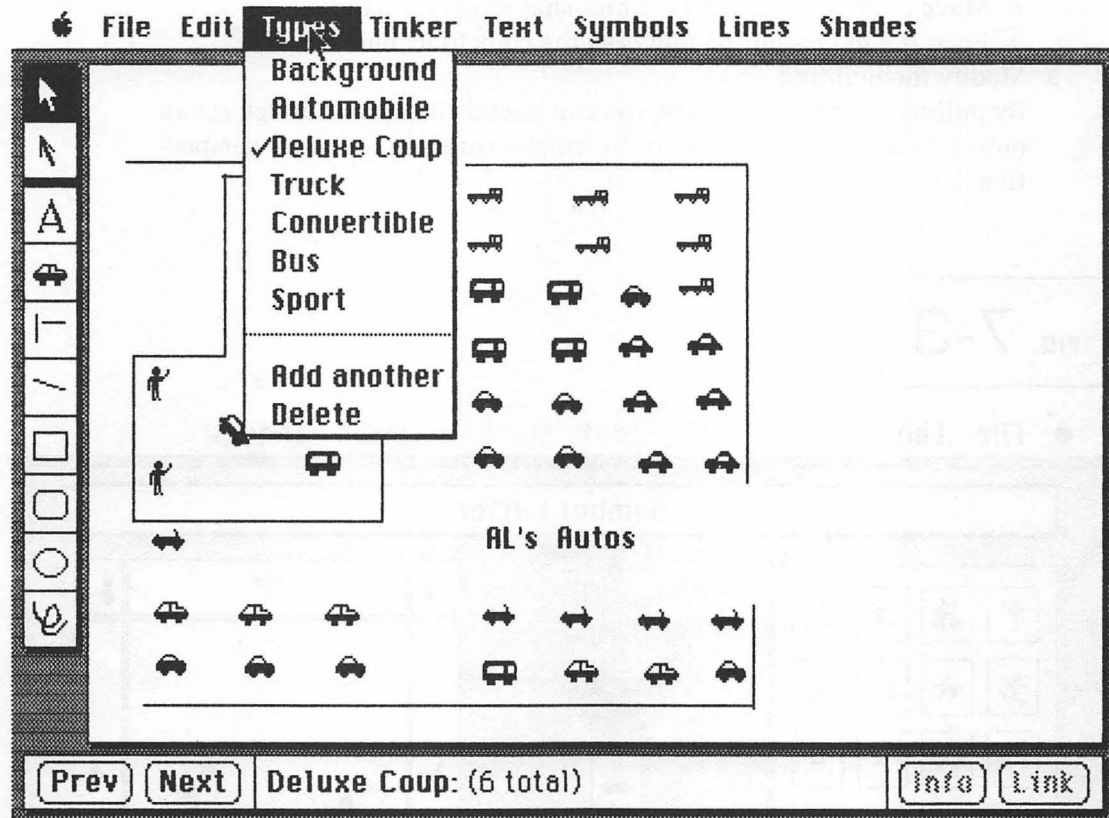
Cancel

Remove Field

Add Field

Done

FIG. 7-2



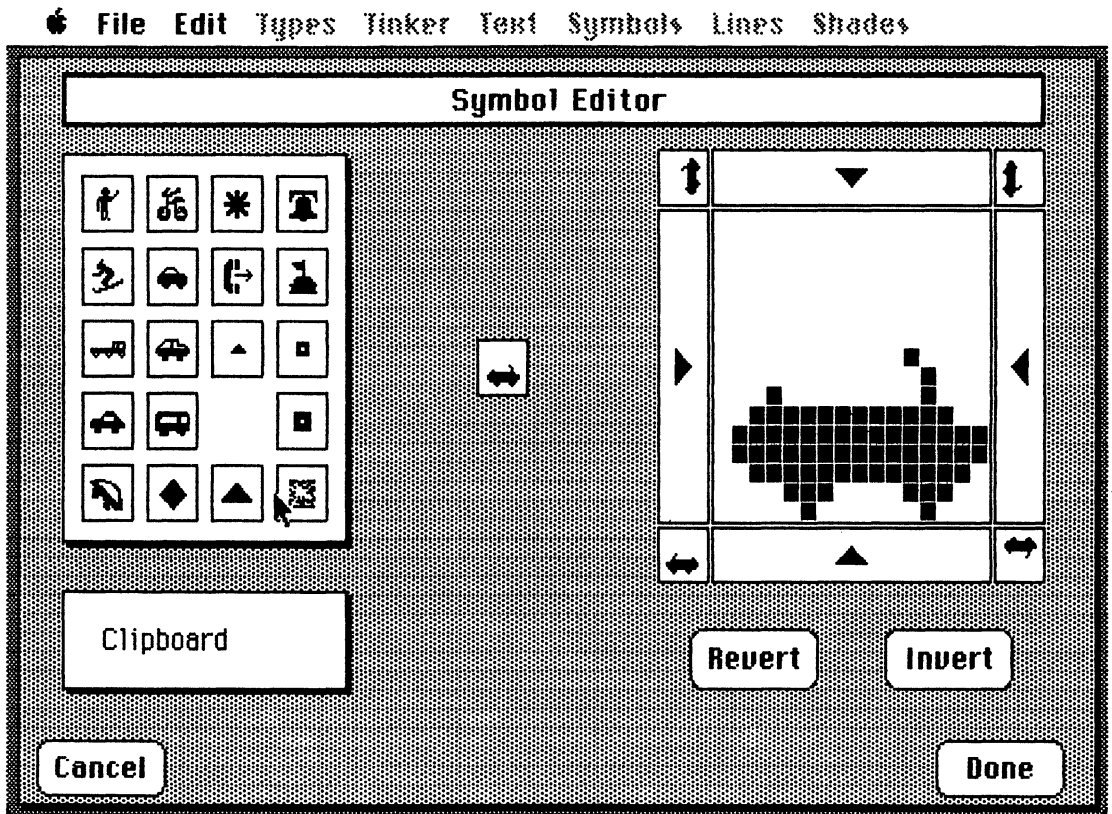
To draw an object like a building that consists of several parts, hold down the shift key before you draw each part. For example, if you want to duplicate a series of buildings, follow this three-step process:

1. Draw the original
  - a. Draw one side of the building.
  - b. Hold down the shift key and choose a drawing tool from the toolbox for the next element of the drawing.
  - c. Release the shift key.
  - d. Draw the next element, the roof, say, or the doorway.
 Repeat steps b, c, and d until the building is complete.

2. Make a copy
  - a. Click the building you've just created to select it.
  - b. Choose "Bind" from the Edit menu (to bind all the elements together for the move).
  - c. Move the pointer to the diamond-shaped center handle.
  - d. Press the mouse button and drag the copy to its new location.
3. Modify the building
 

By pulling on the side handles you can stretch, compress, or deform an object. You can even give your drawings a three-dimensional perspective.

FIG. 7-3



## MAKING COPIES OF AN IMAGE

You will want to make multiple copies of an image for most of your drawings. In this instance, the dealer wants to make multiple copies of a sedan, a sports car, a van, a convertible, and a truck.

You could make the original drawing with one of the tools at the side of the Filevision display. But I recommend that you use the symbol editor instead so as to reduce the amount of memory required to store each image. When you draw an object, it takes several hundred bytes of storage to store each of the copies. When you use the symbol generator, only the original takes up significant space. Each of the copies requires only two bytes of storage (for its horizontal and vertical screen coordinates).

Once you've created the original with the Symbol Editor (see Figure 7-3), copying it is a three-step process. First, pull down the Symbol Editor menu at the top of the screen and select the image of the convertible, as shown in Figure 7-4. The image will be transferred to the tool bar. Now point to and click the image on the tool bar. Last, move your cursor to each point on the drawing where you wish to locate a copy of the symbol and click.

## BUILDING THE DATA BASE

Building the data base is a two-stage procedure. First you create the form, then you or an employee completes a copy of the form for each item in inventory.

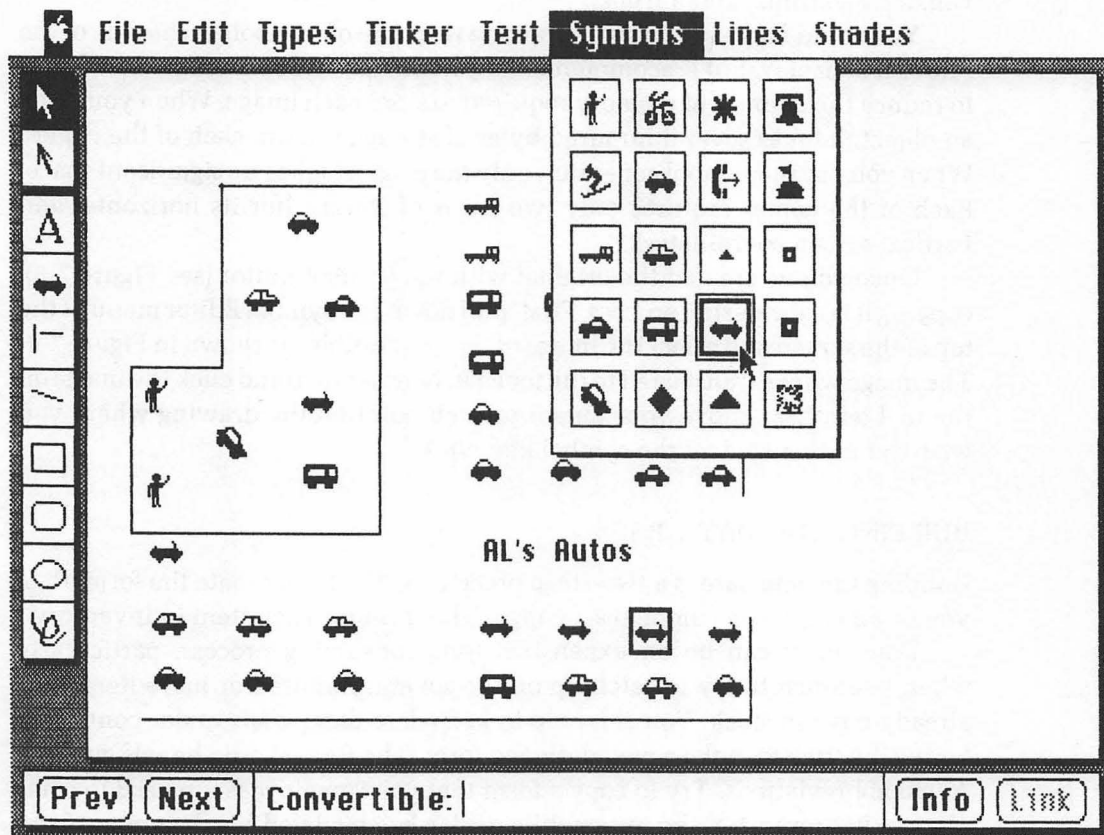
Data entry can be an expensive, time-consuming process, particularly when you must hurry to catch up on the several hundred or more items you already have in stock. You can help to keep data-entry costs under control by taking the time to make a well designed form. The form should be self-guiding. Avoid abbreviations. Try to copy a form that your employees are used to completing. In Figure 7-1, the automobile dealer has modeled his data-entry form after the window sticker.

Only the first page of this form is visible in the figure. By clicking the arrow in the lower right-hand corner of the screen, you can scroll down the display to reveal such other hidden items as preparation and delivery charges and original dealer costs. These are details that the dealer will use in his negotiations. In other applications, such as personnel or equipment maintenance, the second screen might be reserved for a record of performance.

## THE PARTS DEPARTMENT

The same four steps in building an inventory — conceptualize, sketch the storage areas, locate symbols, and record data — might be used to create and main-

FIG. 7-4



tain an inventory for the dealer's parts department. Again, the key to keeping data-entry costs under control lies in the conceptualization.

For example, the dealer has many parts that are purchased by the dozen but sold individually (such as oil filters). He may choose to represent each box or dozen as a single symbol on the screen and to use the data-entry form to record the number of items remaining in the box. Later, he can use Filevision's "Highlight" feature (on the pull-down Tinker menu) to highlight all empty boxes or all boxes that have dropped below the reorder quantity. (Figure 7-5 is an example of a salesperson using the Highlight feature to help locate a recent-model automobile for a customer.)

On the other hand, the parts manager may want to group all voltage regulators on one shelf so that he can use a simple two-stage process to retrieve the one he needs: first scanning the shelves until he finds the one holding the voltage regulators, then examining each regulator individually until he finds the model number he is searching for.

Note that the preceding paragraph is deliberately ambiguous. The parts man could be walking among the racks and shelves in the parts room or scanning the inventory on the Macintosh display. The operations are similar. The only real difference is in the time saved at the counter by scanning the display *before* walking back into the parts room.

FIG. 7-5

File Edit Types Tinker Text Symbols Lines Shades

**Highlight "Automobile"s meeting these conditions:**

☐ VEHICLE ID  
☒ Engine  
☐ NEW/USED  
☐ YEAR  
☐ Body

is is not

= > < --

Clear

Choose other fields

Cancel

NEW/USED is equal to USED

AND

YEAR is greater than or equal to 83

AND

Body is equal to 2 Dr

AND

Engine is

Done

## RACKS, SHELVES, BOXES, AND ITEMS

How you group items will determine how rapidly you can retrieve and update your inventory. Begin with an inventory of only a few select items, enough to give you a feel for how your computerized inventory should be organized. Go through the four steps described above for your mini-inventory, then try to use the inventory you've created. Expand slowly. Don't launch a total conversion to a computerized system until you're certain your groupings are appropriate.

If members of your staff will be entering the data, try a trial run with one of your employees. Choose someone "average," rather than someone who is superintelligent or poorly motivated. You may find that you have to go back and modify the forms you've created. Take the time. It is difficult, if not impossible, to modify a system once you are committed. The time you spend in careful preparation initially will pay off in greater turnover and reduced inventory levels.



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## **The Next Steps: Increasing Productivity 8**

You've come a long way since you first began to computerize your business operations. You've learned to use a spreadsheet for sales analysis, checkbook reconciliation, manpower allocation, financial planning, and engineering calculations. You've produced charts and graphs to illustrate your sales projections and accompany your reports. You've learned to use the Macintosh to simplify and organize your correspondence so that you can do much of it yourself without secretarial assistance. And you've learned how to use the Macintosh Clipboard to combine text, tables, and graphs in a single report.

You discovered dozens of applications for a computerized file manager, from a simple desk-top Rolodex to a complex data-management system for inventory control. And you learned how easy it is to combine word processing and computerized data management to make your mail-order operations more productive.

Still, as your business grows, you may outgrow the capabilities of the computer software you've reviewed here. For example, the electronic checkbook you built with your spreadsheet won't replace a true accounting system when it comes time to persuade potential investors of your business' worth. As others join your practice and the number of clients and projects grows, you may require a more formal way of scheduling activities than the simple manpower-allocation scheme. An appointment-scheduling program or a project scheduler may prove to be an absolute necessity.

You will find dozens of applications for communications software, from accessing an on-line data base to get the latest up-to-date information to building an electronic mail network to link your chain of growing businesses. Last but not least, you may find that you have to develop your own applications software. In this chapter, you learn how to get and how to apply the programs you need for a growing business.

## ACCOUNTING SOFTWARE

Are you making money? Which of your enterprises are most profitable? (That is, which are giving you a maximum return on the least expenditure of your time and capital?) Are your bills getting out on time? Do you have to borrow money to cover delinquent accounts? Do you know which of your customers are paying and which aren't? Are you paying your bills on time? Do you know which bills you should pay first? Will the bank give you a loan when you need it? How long does it take you to get your accounts in shape to go to the bank? Are you paying too much in taxes? How long will it take you to get your accounts in shape for your tax consultant?

If you can't answer these questions, or if the answers aren't satisfactory, a computerized accounting system should be your next software purchase.

You need accurate, up-to-date accounts to ensure that your business is truly profitable. Chapter 2 described how to use a spreadsheet to maintain a journal of expenses in order to track costs and reconcile your checkbooks. (It's particularly helpful at tax time.) Still, the spreadsheet journal is only a first step toward a true accounting system. Your checkbooks are under control, but you still don't know which parts of your business are really profitable? And will your reports persuade a banker or other potential lender or investor?

The spreadsheet journal (or journals) constitutes a "single-entry" book-keeping system. You track expenditures and income, but you don't know how the one relates to the other. (If it's hard for you to follow, it will be impossible for potential investors.)

You need an *integrated* computerized accounting system that will tie all your accounting data together. One good example is **Back to Basics** for the Macintosh.

Back to Basics is a labor-saving tool for preparing financial statements. Your banker, other potential lenders and investors, your CPA, and your tax adviser will accept the reports this double-entry accounting system produces. You and your co-investors and partners will use it to identify the principal sources of profit and loss. You'll use it as a planning tool, setting objectives and measuring performance with the figures they provide.

For further information on installing and using Back to Basics or a similar

computerized accounting system, see my book *Computerize Your Business* (Chilton Book Company, 1984).

## SCHEDULING SOFTWARE

There are two principal types of scheduling software — appointment schedulers and project schedulers. An appointment scheduler like **Front Desk** for the Macintosh is particularly valuable for consulting engineers, dentists, doctors, CPAs, attorneys, and others who wish to schedule and monitor the activities of all their associates. Front Desk allows you to zoom from one person's calendar to the next, to zip from a monthly view to a weekly view to a day, and to look at a composite view of your entire operation. (The last is a must when different practitioners use a common set of resources, like examining rooms or meeting rooms.)

Use your appointment scheduler to generate reports to measure and improve your productivity. How many hours did each individual in your office spend on revenue-producing activities last month? How many dollars did each individual bring in? What service and which resources generated the greatest amount of revenue? What profits are projected for future months?

Project schedulers (**MacProject** is a good example) are a boon to construction firms, engineers, and others who need to schedule the joint activities of several people who will be working on several projects simultaneously, say, a lead engineer, a senior engineer, and two junior draftsman. A project scheduler can cut project costs, reduce overhead, and put an end to the “hurry up and wait” syndrome that plagues too many once-growing businesses.

After each project has been broken down conceptually into a set of small interrelated tasks, computerized scheduling algorithms define a critical path. MacProject's display reveals the critical tasks along with their equally critical starting and completion dates. The manager is now able to swap personnel from one project to another and reschedule noncritical tasks without diminishing performance quality.

Many noncomputerized scheduling algorithms claim to produce the same salutary result. But the big advantage of the computerized method is that it is so easy to update and modify a schedule whenever the requirements change. (And, never fail, those requirements will change, usually on the day you first work out the schedule.)

If you're already using a computer time-sharing service to help you schedule construction, you'll find having your own scheduling software a big cost-saver. And because your own computer is so convenient to use, you'll use the scheduler more often, with greater savings as a result.

## COMMUNICATIONS SOFTWARE

One of the fastest ways to increase your productivity is with communications software. You'll be able to use your computer as a window to the world, gathering the latest stock-market quotations from an on-line time-sharing service, exchanging programs and reports with colleagues, even communicating with the corporate mainframe.

There are five basic ways in which a Macintosh equipped with communications software can give you increased value: (1) as a terminal to a time-sharing service, (2) providing point-to-point communications between you and another computer user, (3) electronic mail (this means unattended reception and transmission at off-hour rates—pictures and graphs too), and (4) distributed data processing, which means sharing the workload among micros or among micros and mainframes.

## IMMEDIATE ACCESS TO INFORMATION

Accountants, attorneys, engineers, physicians, scientists, stockbrokers, technical librarians, and other professionals use their computers to get immediate, up-to-date information from the world's most comprehensive data sources. They plug in their Macintosh to the telephone, dial the phone number of one of the more than 500 on-line data services, and, presto, they have the information they need. Telephone access to an on-line data bank gives the professional a competitive edge.

Some farmers use time-sharing services to get price quotations from markets thousands of miles away. These farmers are no longer dependent on local buyers. If the price is better in Corpus Christi, they ship their product to the Gulf. Their time-sharing service means bigger profits for them and lower prices for all consumers.

Among the most popular time-sharing services with Macintosh users are Agridata, Compuserve, Dialog, Dow Jones, and The Source. Compuserve and The Source also offer the advantage of electronic mail. The pharmaceutical firm Merck, Sharp, and Dohme rents a "mailbox" from The Source. Its staff in the field can communicate with the home office via the mailbox at a time and from a location of their own convenience. No more telephone tag between the East and West Coasts. No more lost briefings.

A manufacturer's representative uses an electronic mailbox as his office. He takes his Macintosh with him when he goes out on sales calls and phones in each evening to The Source with the day's orders and expenses. When he returns home, he plugs in the Macintosh to the phone again, "empties" his mailbox, and has his orders out the same day.

Consult Appendix I for capsule reviews of Macintosh communications software. For more advice on practical applications, see my book *Increasing Your Productivity Through Computer Communication and Networking* (Chilton Book Company, 1985).

Note: You also will need a telephone modem to modulate and demodulate the computer's signal so that it can be sent out over a telephone. The cost varies from \$80 to \$500. Recommended: A 1200-baud/300-baud Hayes command-compatible modem that supports autodial/autoanswer.

## DEVELOPING YOUR OWN SOFTWARE

The best word of advice about developing your own application software is "Don't."

It is not cheaper to write your own programs. Development costs can be astronomical. With commercial software, development costs are spread over many users.

Commercial software has three further advantages: First, most of the errors in the programs have been found and corrected, and your work won't be subject to recurring delays. Second, updates to reflect changes in the applicable laws or improvements in the program are usually available for a nominal charge. Third, buying your software allows you to preserve your flexibility. You can buy the services of many different kinds of experts without becoming an expert yourself.

If you still insist on doing some of your own programming, then you will need to purchase and use a programming language. There are many different languages and dialects for the Macintosh, each with its own advantages and liabilities. If you are a nonprogramming professional, use a language with which you are already familiar.

The newcomer to programming has six principal choices: Basic, Cobol, Fortran, Forth, Pascal, and C. Basic is an easy language to learn. There are many books of Basic programs on the market from which you can copy routines and entire programs. Microsoft's Macintosh Basic is particularly good for the beginner because you can view each step of the programming process as you edit and debug your programs.

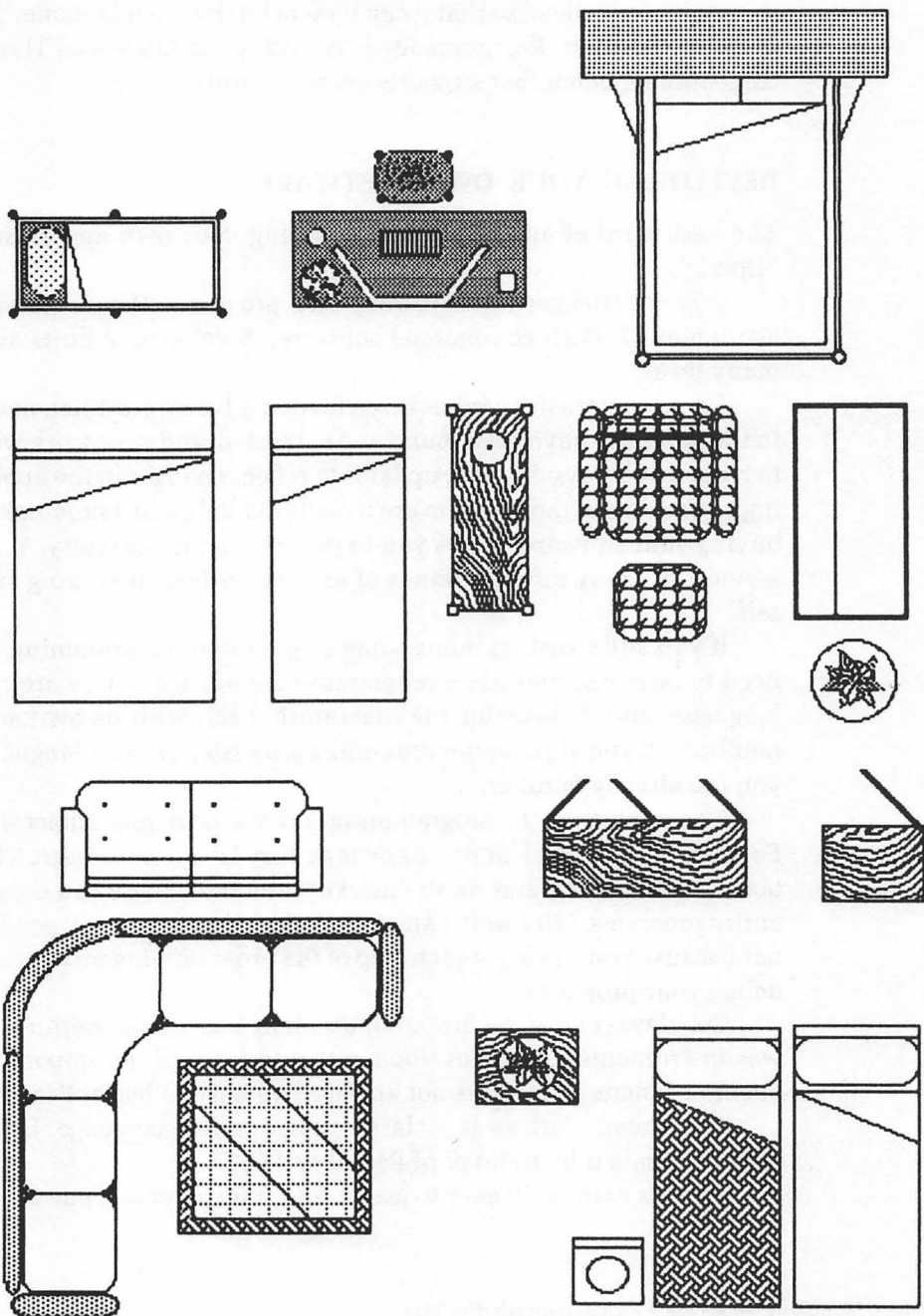
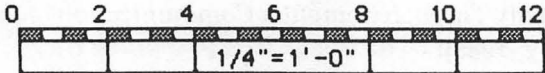
Cobol was one of the first computer languages (Rear Admiral Grace Hopper was instrumental in its development), and it is still an important mainframe business language, but it is not an easy language to learn. Pass it by.

Like Cobol, Fortran is a classic programming language. Unless you are a classicist, pass it by in favor of Pascal and C.

Forth is extremely easy to learn. And it is extremely powerful in the sense

**FIG. 8-1**

**Furniture 1 - 1/4"**



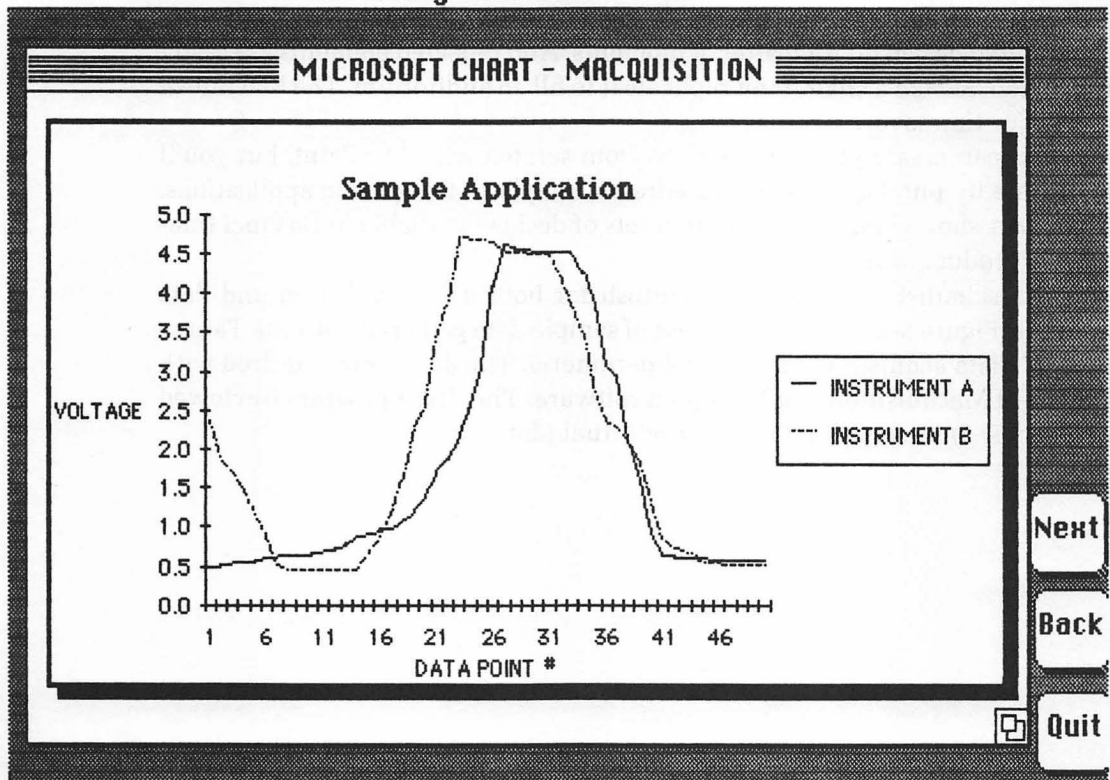
that one command can do the work of a hundred in some other language. It has a small but devoted following, particularly among the manufacturers of test equipment and laboratory instrumentation. Its chief drawback: There just aren't enough published program listings you can use as models for your own programs.

Pascal offers many advantages to professional software developers who work in teams. It is extremely structured, and this structure helps keep the team together. Unfortunately, this same insistence on structure can drive the beginner nuts.

Today, most software developers are switching to C. The reason is the ease

FIG. 8-2

PLOTTED ..... using Microsoft CHART



with which you can transfer your programs from one model of computer to another. You can develop a program on the Macintosh today and have it up and running on the IBM PC tomorrow. A good way to get started programming in C, quickly and profitably, is to read *Writing Business Programs in C Language* by M. Franz and P. Good (Chilton Book Company, 1985). A good book for everyone who wants to program, regardless of the language, is *Problem-Solving Principles for Programmers*, by William E. Lewis (Hayden Book Company, 1980).

## OTHER SPECIAL APPLICATIONS

Don't overlook the Macintosh's value in other specialized applications. For example, the Macintosh is of particular value to the designer, the graphic artist, and the engineer because it provides all the freedom of a sketch pad with all the convenience of a computer.

The Macintosh is the convenient way to lay out a new facility, an irrigation system, an orchard, or a garden plot. The results are smudge-free, and there is never a sign of an erasure. Designs are easily updated. While it could take from a half-hour to an afternoon to create an original design, changes made with computer-aided design take a matter of moments. And repeated elements are easily replicated. Sketch a chair, then replicate it to fill an auditorium. The Macintosh is a major timesaver.

You can create your own designs from scratch with MacPaint, but you'll save time by purchasing sets of predrawn templates for specific applications. Figure 8-1 shows one of a dozen such sets of designs available in *DaVinci Interiors*, a product of Hayden Software.

The scientist can use the Macintosh for both data acquisition and data analysis. Figure 8-2 depicts a line-plot of sample data gathered with the Taurus One/05 data acquisition and control peripheral. The data were acquired with the aid of Macquisition and Multiplan software. The Chart program (reviewed in Chapter 3) was used to produce the actual plot.



=====

# **Software for All Your Business Needs Appendix I**

## **SPREADSHEETS**

### **Jazz**

Lotus Development Corp.  
161 First St.  
Cambridge MA 02142  
617/492-7870

Requires 512K memory. Five functions in one: spreadsheet superior to Multiplan; graphics inferior to Chart; text editor comparable to MacWrite. Design your own forms to speed data entry. Communications a must for investors.

### **Multiplan**

Microsoft Corporation  
10700 Northup Way  
Bellevue WA 98009  
800/828-8088

A must program for almost any business application. Advantages include flexible formats, simplified data entry, time-saving defaults, iteration of circular references, named sections, sort function for data management.

### **Overvue**

Provue Development Corporation  
222 22nd Street  
Huntingdon Beach CA 92648  
714/969-2431

A file manager that functions like a spreadsheet. (Or is it vice versa?) Fields correspond to columns. Restrict data entry to letters only, numbers only, or even yes/no. Calculated fields. Template format is used for reports.

**Quartet**

Haba Systems  
15154 Stagg St.  
Van Nuys CA 91405  
818/901-8828

Four functions in one: all of Multiplan's spreadsheet features, including sort function for data management. Wordwrap simplifies entry of multiple lines of text. Graphs include pie charts, line graphs, and bar charts.

**TK!Solver**

Software Arts  
27 Mica Lane  
Wellesley MA 02181  
617/237-4000

Makes solving complex problems no more difficult than copying formulas out of a book. Solve simultaneous equations in explicit or implicit form. Units table simplifies engineering calculations. You may need help getting started.

**GRAPHICS****Chart**

Microsoft Corporation  
10700 Northup Way  
Bellevue WA 98009  
800/828-8088

Twenty-two types of graphs, including area charts, bar and column graphs, line graphs, pie charts, and scatter plots. Tremendous flexibility over style, text sizes, and positioning, yet amazingly easy to use.

**MacPaint**

Apple Computer Inc.  
20525 Mariani Avenue  
Cupertino CA 95014  
800/538-9696

A designer's toolbox, a painter's palette. Use to create letterhead and enhance your charts and graphs. Copying facility simplifies modular design. Stretch or shrink designs with ease. Edit in-the-large or pixel by pixel.

**DaVinci Interiors**

Hayden Software  
600 Suffolk Street  
Lowell MA 01853  
800/343-1218

For architects, retailers, and anyone responsible for laying out a store interior or a set of offices. More than a hundred predrawn images are included in this useful addition to MacPaint.

**WORD PROCESSING****MacType**

Palantir Software  
7701 Wilshire Place  
Houston TX 77040  
800/368-3797

Touch-typing tutorial program. Drills are geared, automatically, to specific problems. Train on standard or high-speed Dvorak keyboard.

**MacWrite**

Apple Computer Inc.  
20525 Mariani Avenue  
Cupertino CA 95014  
800/538-9696

Easy-to-use word processor lets you combine tables and graphics with text. Limited control over output. Supports only one model of printer. Can't produce mailing labels. Can't display or insert second file.

**Word**

Microsoft Corporation  
10700 Northup Way  
Bellevue WA 98009  
800/828-8088

Upgrade from MacWrite to Word when you need greater control over the format of your reports. Output can be directed to a modem or to one of a variety of letter-quality or dot-matrix printers. Bonuses: mail-merge, footnotes, glossaries.

**FILE MANAGERS****Filevision**

Telos Software Products  
3420 Ocean Park Boulevard  
Santa Monica CA 90405  
213/450-2424

Manage pictures and symbols as easily as text. Map sales territory, maintain inventory. Animation is an unexpected bonus. Won't compute totals or subtotals. Won't check data as they are entered.

**DB Master**

Stoneware Inc.  
50 Belvedere  
San Rafael CA 94901  
415/454-6500

Sophisticated file manager. Good for order entry; provides for computed fields. But data are not verified at time of entry. Wildcard search. Keyed storage means fast retrieval. Generate multiple reports.

**MegaMerge**

Megahaus Corporation  
5703 Oberlin Drive  
San Diego CA 92121  
800/358-8882

A bare-bones file manager. No edit checks during data entry. No calculated fields. Limited selection and report formatting facilities.

**1stBase**

Desktop Software Corporation  
228 Alexander Street  
Princeton NJ 08540  
609/924-7111

Easy-to-use file manager. Lacks checks and verifications. Will compute sum, average, min/max. Flexible report formats, good for mailing labels. Easy to combine several files into one.

**pfs: file & report**

Software Publishing  
1901 Landings Drive  
Mountain View CA 94043  
415/962-0191

Easy-to-use file manager. Lacks checks and verifications. Will compute counts and sums. Good for columnar reports. Has wildcard search.

**BUSINESS EXPANSION****Back to Basics**

MSA Personal Computer Products  
3445 Peachtree Road  
Atlanta GA 30326  
800/554-8900

General Ledger accounting systems. Windowing and calculator simplify transaction entry and setting up chart of accounts. Toll-free end-user support for 90 days. Excellent manual includes introduction to double-entry accounting.

**Electric Checkbook**

State of the Art  
3191-C Airport Loop  
Costa Mesa CA 92626  
714/850-0111

First step toward computerized accounting. Track expenses—assign checks to multiple accounts. Print your checks! Store info for bills you pay regularly. Automatic reconciliation.

**Front Desk**

Layered, Inc.  
85 Merrimac Street  
Boston MA 02114  
617/423-9041

Perfect for attorneys, doctors, accountants, architects, consultants, and others who need to schedule and bill for appointments. Schedule several staff members' calendars simultaneously. Zoom among daily, weekly, and monthly views.

**COMMUNICATIONS PACKAGES****HabaCom**

Haba Systems  
15154 Stag Street  
Van Nuys CA 91405  
818/901-8828

Autodial from stored telephone directory plus keystroke logon. Store communication protocols. Simplified transfer of files from computer to computer (text files only).

**Straight Talk**

Dow Jones  
P.O. Box 300  
Princeton NJ 08540  
800/257-5411

Communications package for linking with time-sharing services. Supports autodial. Store and reuse communication protocols. Rated fair for file transfer. Logon not automatic.

**MacLink**

DataViz, Inc.  
P.O. Box 1319  
Norwalk CT 06856  
203/866-4944

Software/cable combination lets you transfer data from an IBM PC to a Macintosh. MacLink converts Lotus 1-2-3 files to Multiplan, or Multimate files to MacWrite.

**MacPhone**

Intermatrix  
554 Satsuma Avenue  
North Hollywood CA 91601  
818/509-5868

A bare-bones file manager for telephone numbers. Can dial a touch-tone phone provided with the package, but cannot be used with a modem. Timer lets you track and control phone charges.

**MacTerminal**

Apple Computer Inc.  
20525 Mariani Avenue  
Cupertino CA 95014  
800/538-9696

Bare-bones communication package designed to work with Apple modem. Supports autodial and autoanswer. Lets you store and reuse communication parameters. Will not logon automatically. Supports attended file transfer.

**Macquisition**

Small Business Computers of  
New England  
P.O. Box 397  
Amherst NH 03031  
603/673-0228

Data-acquisition software for use with Taurus Lab front-end control unit. Lets you control collection sequence, trigger times, gains, number of samples, and sampling rate. Results are passed to Multiplan template for analysis.

**WRITING YOUR OWN SOFTWARE****Hippo-C**

Hippopotamus Software  
1250 Oakmead Parkway  
Sunnyvale CA 94086  
408/730-2601

Excellent for the beginner who wants to learn to program in C. Includes an editor, compiler, run-time interpreter, debugger (with easy-to-understand error messages), library, and on-line tutorial. No support for floating point numbers.

**Microsoft Basic**

Microsoft Corporation  
10700 Northup Way  
Bellevue WA 98009  
800/828-8088

Partially compatible with IBM PC Basic. Supports most of Macintosh's advanced features, including high-resolution graphics. Windows simplify program editing and debugging. Program I/O can be directed to Clipboard for easy file exchange.

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# **Increasing the Macintosh's Capabilities Appendix II**

Your Macintosh can be equipped with 128,000 characters (128 Kb) to 512,000 characters (512 Kb) of memory, and with one to four diskettes and hard disks. The standard configuration has 128 Kb of memory and one internal diskette that holds about 400,000 characters (400 Kb) of information.

Information that won't fit in memory must be stored on disk. But disk functions proceed at a much slower speed. The more memory you have, the fewer delays you'll experience. And you will be able to use more sophisticated programs, like Jazz, that won't fit in the confines of 128 Kb.

Each additional disk drive increases your ability to store and retrieve data. A hard disk drive not only holds more information than a diskette (5000 to 15000 Kb), but it can load and unload its data almost ten times as fast as the internal diskette drive.

You don't want to pay for more hardware than you need. On the other hand, unless you have all the hardware your business applications call for, you'll pay for the deficiencies with your time ten times over. Review your applications before you buy.

## **FOR ALL APPLICATIONS**

Two disk drives are a minimum for all business applications. If you have only the single internal drive that comes with the standard Macintosh, you'll spend

far too much time swapping disks in and out. Make a second disk drive one of your first purchases.

The exception that proves the rule is when you take your Macintosh on the road. On the road, weight and packing size are the overriding considerations. My CPA takes her Macintosh with her when she sees clients. She uses her computer to collect data and to make preliminary calculations. She says she can often eliminate as a result one or two trips back and forth from the client's office. She doesn't take any extra equipment with her—it would reduce the Macintosh's portability—but back in her office she keeps a hard disk for rapid loading and unloading of the data she has collected.

(Incidentally, if you're on the road a lot, a lightweight telephone modem for the Macintosh will allow you to communicate your results back to the office each day. A 300-baud/1200-baud autodial modem with Hayes-compatible command structure is recommended.)

## **FOR SPREADSHEETS**

128 Kb of memory is adequate for most spreadsheet applications: It corresponds to almost 256 rows of 10 columns each. Larger models usually can be handled by linking several spreadsheets together (see your Multiplan manual). Some CPAs and corporate accountants may want to expand to 512 Kb to handle large multidivisional models. (Warning: If you do increase the amount of memory, a hard disk is a must.)

A numeric keypad (available from Apple Inc.) will speed data entry.

## **GRAPHICS**

It can take several minutes to load a chart or a design on or off a disk. If you're a designer or a consulting engineer, additional memory and a hard disk will help you eliminate the delays.

## **WORD PROCESSING**

No extra hardware requirements here. In fact, a diskette is preferable to a hard disk for word processing because it makes it easier for you to organize your files. (Recommended: one diskette for every file folder you used to have. So buy your diskettes ten at a time. And purchase a diskette holder.)

## **DATA MANAGEMENT**

It can take only a few hundred records to exceed the 128 Kb memory capacity of the basic Macintosh (in part because almost two-thirds of the memory is taken up by the Macintosh operating system and the data-management software). You will need two hardware additions to maintain a larger number of records. Expand your memory to 512 Kb, and purchase a hard disk, since files this large exceed the capacity of a single diskette and otherwise can take five minutes or more to load.

## **ACCOUNTING AND INVENTORY CONTROL**

A computerized accounting or inventory-control system is really a data-management system at heart and has the same hardware requirements as a result. Before you buy accounting software for your Macintosh, expand your memory to 512 Kb and purchase a hard disk.



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