Macintosh™ Windows on Business

Earnings per Common Share

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<th>Year</th>
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<tr>
<td>1982</td>
<td>0.32</td>
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S. Venit and Diane Burns
Mac at Work
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International Business Machines Corporation: IBM, IBM PC
MCI Corporation: MCI Mail
Microsoft Corporation: Multiplan, Word, File, Chart

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DEDICATION

To Joe Venit
—who set me up in my first business when I was twelve
S.V.

To Karen Becker
—who helped me see the printed page as art
D.B.
ACKNOWLEDGEMENTS

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For any errors or omissions in the text, we, the authors, take full responsibility.
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Preface

This book is about every-day business. This book is also about an important tool for every-day business, the Macintosh computer. The authors, who are in business themselves, provide illustrations of daily business activities which you can perform with the help of the Mac. Hopefully, you'll not only learn useful tips for using your Mac more efficiently, but you'll also learn some useful tips for how to run your business more efficiently, too.

The Macintosh is at the forefront of the evolution of computers as tools which anyone can use, as simple as any other "tool" in the office or workshop. The Macintosh's relatively low price (as revolutionary as the $999 Ford automobile in 1913) and quick learning time make the computer more accessible than ever before. Capabilities which were once available only to the staff of large, well-equipped corporations are now within the grasp of small business owners and private individuals who are in the "business" of living in today's urban, industrial environment.

For instance, each of us maintains our own lists of things to do and schedule of appointments. The Macintosh (and appropriate software) makes the accomplishment of these tasks quick and easy. Managers responsible for scheduling people and projects, chief financial officers who prepare financial reports for the monthly board meetings, and public relation departments which produce annual reports and other
announcements will all find the Macintosh immediately helpful in accomplishing business goals in record time. And, if you are a small business owner wearing all these hats on any given day, the Mac will become your number one support staff.

Because the more mundane side of daily business tasks are accomplished by the Mac, you will find you have more time to be creative with your business. Many of the software applications—project planning, spreadsheeting with its "what-if" calculations, and drawing and diagramming programs, for example—can be used as real thinking tools that can help you help your business grow.

This book is especially aimed at the newcomer to the Macintosh. It could not have been written even one year earlier—before the revolution introduced by Apple's 32-bit family of computers. Until now, computers performed what seemed to be a limited number of functions, each with a different difficult set of instructions to learn. The new technology of the Macintosh not only brings presentation-quality graphics capabilities into the office at a very low cost, it makes learning how to use a computer as simple as opening a file folder. Now anyone can use a computer. Because we don't have to spend so much time showing you how to use your Mac, we've been able to give you some direction for what you can do with the it.

Not only does this new tool make the process of using a computer a lot simpler for everyone, it introduces for the first time the ability to assemble a complete business document into a single, coherent file. In other words, now you can copy a financial table and a bar chart directly into the text of your report, instead of printing each element of your report out piece by piece. Also for the first time, using a Macintosh and a LaserWriter printer, you can produce two- or three-column pages of text and graphics that are of almost typeset quality.
This is not a book about “computers.” If you are looking for information about the bits, bytes, and computer jargon side of life, you will probably find other books more informative. If you are looking for the lastest, “hottest” news on the Macintosh and its software products, you should look to current issues of magazines, such as MacWorld. On the other hand, if you are wondering how a Macintosh computer can help around the office, you will benefit by the practical examples, quotes and anecdotes you’ll find here.

The first part of this book shows simple, practical examples of creating the most common “building blocks” of daily business: memos, letters, reports, project plans, forms, lists of clients and products, and charts and graphs showing the financial condition of the company. The tools used in these examples include software packages available from Apple for the Macintosh as well as packages from another leading manufacturer of Mac business software, Microsoft. Even if you don’t have the particular software packages used in the examples, you can still benefit from reading these sections; they are written in general terms which are intended to illustrate techniques and short-cuts for accomplishing the end goal, namely, the production of the document being discussed. The last chapter in the first section shows how to hook your Macintosh up to the phone lines and communicate with another computer, or get access to information services such as CompuServe and Dow Jones News Retrieval.

The second part of the book presents examples which combine text and graphics into a single file to create a complete document: a set of presentation materials, a report, a business proposal. These chapters include practical tips and anecdotes about how to address your audience in these reports, as well as how to assemble them using a Macintosh.

We hope that this book will help you make a Macintosh as essential to your business as it is to ours!

January 1985
Introduction

Daily Business Applications
How to Use this Book
Equipment Requirements
Software Packages
Basic Macintosh Operations
The Oral Tradition
ToyTech proudly announces
A Grand Opening CELEBRATION!

Special prices on our very special toys

JAN. 3 - 5  9:00 - 6:30pm

MORE!!
Introduction

In any business-related endeavor, the tangible "evidence" of work is a piece of paper—an invoice, a sales report, a plan, an agenda, a list of clients, a contract, a script, a memo announcing the company picnic. Some of the earliest examples of the written word are inventory lists or bills of lading recording the exchange of animals and grains. Today our daily drill is no more or less important than the work done thousands of years ago with cuttlefish ink on papyrus—only the tools have changed.

The first typewriter, invented in 1868 by Carlos Glidden and Christopher Latham Sholes was the beginning of a "revolution" in office procedures. It made the daily paper products of any business clearly readable and much faster to produce than by handwritten lettering. Nevertheless, at the time there were those who asked silly questions like "What is it good for?", while others were afraid they would never be able to learn how to use it.

Less than ten years ago the first personal computers invited similar responses. As recently as one year ago we got an excellent deal on a "second hand" computer which we bought from a business owner who had never taken it out of its box. He said he didn't have time to read all the manuals about it, and the help he needed from a consultant would have cost more than the machine itself! If you fear finding yourself in the
same dilemma as this entrepreneur then you ought to know that microcomputers like the Macintosh are in the forefront of the drive to make computers as simple to use as any other “tool” in the office: a typewriter, a calculator, or a copy machine.

As with most revolutionary inventions, the product—a personal computer—was invented decades before the demand for it was felt among the populace. Even now you might be wondering exactly what a computer can do for you. Perhaps the best way to approach this question is to ask: What tasks are you now doing by hand that involve writing, totalling or sorting?

Do you keep a list of names and addresses of friends, customers and business associates? Do you ever send out a series of letters to these people? Do you track your monthly income and expenses? Do you project these figures into the future? Do you plan projects—if you have a certain number of steps to perform, in a certain sequence, do you know when you will be finished? Do you wish you had a reference library at your fingertips where you could look up the history of printing, the latest headlines, or the next flight to Tucson?

**Daily Business Applications**

This book presents practical examples of business documents which can be produced using an Apple Macintosh computer. With this tool, you are now able to produce all the essential documents for any business, including some which previously required the outside services of a typesetter and a graphic artist.

For instance, here is a typical scenario of what happens during the day in the offices of TAG Corporation, the fictional marketing company which appears in many examples in this book.

J.B. Morless, the president, needs to make a presentation to the board tomorrow. He begins by examining printouts of TAG’s latest financial statements,
• Year-to-date income & expenses
• Balance sheet as of latest quarter
• Current project plans
Based on this information, he needs to prepare:
• Next year's budget projections
• Charts & graphs for the presentation
One of the outcomes of this particular board meeting will be the preparation of materials to support an application to the bank for a commercial loan, including:
• Business Proposal
• Resumes
Meanwhile, the head of operations is busy reviewing TAG's current procedures, including:
• Production and inventory controls
• Business forms
• Flow-of-work analysis
Of course, all this important work is supported by the tireless efforts of the administrative assistant, who deals with the endless flow of:
• Correspondence
• Invoices
• Mailing Lists
• Newsletters
All of these key employees work with a Macintosh at their side.

How to Use This Book

Each chapter in this book begins with a description of the documents produced in that chapter, and a list of the software tools used. You need not read the whole book from beginning to end in order to get the information needed for your particular interests.

The instructions given in this book generally begin with "Open a New File". Most of the time we will assume that you have already used the tools enough to know how to make basic entries and correct your own errors. (An overview of basic Macintosh operations is given later in this Introduction.)
We will generally be discussing the contents of your business files, rather than the process of installing new software or editing files to correct errors and such. It’s a good idea to look over the manufacturer’s manuals on these products before trying the exercises shown here.

If you are teaching yourself how to use these products, it may take a little longer to learn the basics than it would if you had an experienced friend looking over your shoulder as you go along. One formula is to expect to learn a product fully in as many hours as you expect to use it each week. We hope this book will serve as a “friend” in giving you time-saving tips which you might not discover as quickly on your own.

After reading this introduction, you can jump right into whichever chapter addresses your immediate needs. What kind of document or file are you trying to produce today?

Equipment Requirements

This book will be useful to you whether you own a Macintosh with 128K of random access memory (RAM) and one 3½-inch disk drive, a FatMac with 512K RAM and two 3¼-inch disk drives, or a Macintosh XL with a hard disk. In any case, you will be able to use all the basic tools described in this book. Generally, the larger the memory (RAM) in your machine, the faster most programs will run. The larger your disk storage capabilities, the larger your documents or files can be.
If your business is very large, you have probably invested in a LaserWriter or letter quality printer. The major difference between printers is the appearance of the letters on the printed page.

With these output possibilities, high-quality documents which once required professional production assistance can be produced by anyone with a Macintosh!

Software Packages

It would be impossible and impractical to try to demonstrate every single product available for the Macintosh in this book. The appendix includes a list of business application software available for the Macintosh as of January 1985. We have selected some of the most popular products to illustrate the examples in this book.

The first part of the book describes how to use each of the major types of tools required for full business operation, including:

- Charting — Microsoft’s Chart lets you create pie charts, bar charts, line graphs and area graphs from tables of entered numbers. In addition, MacDraw and MacPaint are available for creating flowcharts and organization charts, or for enhancing the charts created by other programs.

- Project Planning — MacProject is one of the most powerful tools on the market for creating complete project schedules, including PERT charts, Gantt charts, cost projections and project summaries.
• Drawing — In addition to creating your own works of art, you can use *MacPaint* and *MacDraw* to create business graphics or to enhance files created by other programs. In particular, you'll see how useful these programs are for creating business forms such as purchase orders and invoices.

• Calculating — With Microsoft's *Multiplan* you can create "spreadsheets" with columns and rows of text and numerical entries which will automatically calculate new values whenever you change any number.

• Word Processing — With a word processing package you can type, edit and format text easily. In this book we'll see how *MacWrite* and Microsoft's *Word* can help you produce any business document.

• Filing — Microsoft's *File* is a simple database program which you can use to create lists of clients, lists of products or any other "file" of information.

• Communicating — With *MacTerminal* and a modem, you have access to many information networks such as *CompuServe* and *Dow Jones News/Retrieval*. You can also dial up other computers and share information. You can even send your text directly to your typesetter for production. The second part of the book describes how to assemble whole documents which are composed of parts created by different tools. For example, a business plan may be composed of text, tables and charts. With the Apple Macintosh, you can combine all these elements into one document easily.

**Basic Macintosh Operations**

Whether or not you have used any other computer, the Macintosh introduces a new technology which adds a mouse as a means for operating the machine, in addition to the normal keyboard. The mouse is a palm-sized object which, when moved around on your desk, causes a pointer to move around on the screen.
The mouse is used to move a pointer around on the screen.

Once you are pointing at an object on the screen—a word, a menu, a square, etc.—one or two clicks on the mouse will tell the computer what to do next. For example, to open a new file, you simply point at the tool you wish to use and click the mouse twice.

Double-click the mouse while pointing at a tool icon to open a new file.

Use the mouse to point at a word along the top line of the screen, then hold down the mouse button. A pop-down menu will appear, showing you the options available. Sometimes menu options are shown in grey, which means that those particular options are not available with the current screen selections.
Hold down the mouse while pointing at a word along the top line of the screen to see a pop-down menu.

To select an option on the menu, hold down the mouse button as you drag the mouse pointer down the menu. When you are positioned over the option you wish to select, simply release the mouse button.

In some programs, like MacPaint, MacDraw and MacProject, you can select objects on the screen by positioning the mouse pointer over them, then holding down the mouse button while you drag the mouse to a new position on the screen, then release the mouse button. Small black squares will appear around the object and you can use them to move or re-size the object.

Use the mouse to point at an object on the screen, then hold down the mouse button as you drag the object to a new location.
Every program used in this book has a pop-down Edit menu which lets you Cut, Copy and Paste from one part of the file to another. For example, to delete this paragraph from here and move it to follow the next paragraph, you would drag the mouse down the lines of this paragraph, then use the Edit menu's Cut option.

The paragraph disappears from the screen, and is saved in the Clipboard. Next, you would click the mouse at the location in the text to which you wish to move the paragraph, and use the Edit menu to Paste the paragraph from the clipboard. The paragraph will appear in the new location. The same paragraph will still remain on the clipboard, until it is replaced by new text which you Cut or Copy through the Edit menu.

The instructions in this book will assume that you are familiar with these basic features of the Macintosh.

One feature which distinguishes the Macintosh technology from all others which have preceded it is the ability to cut and paste from one type of program to another. For example, you can create a logo using MacPaint or MacDraw, then paste the logo into any text file.

The Oral Tradition

Most of us think of computers as machines which replace people. It is true that computers can perform certain functions which were previously done manually, and therefore they reduce the number of person-hours required for many tasks. On the other hand, it is also true that computers bring people together in a certain way.

From the beginning, information about computers and how to operate them has been passed along orally. In the past, when computers were difficult to learn, only one or two people in a large office would have the time and interest to actually read the manual which explained how the computer works. Everyone else in the office would go to these in-house experts when they had a question or a problem, and most problems could
be solved in a few minutes this way. An oral tradition began developing among computer users.

With a Macintosh, many programs are so easy to learn that you don’t need to read every page of the manual, but there is still one question which every Macintosh owner needs to ask regularly, namely: “What’s new?” This is the kind of question most of us are not accustomed to asking. After all, what major improvement is likely to make us buy a new screwdriver, or replace our portable television? Computers are quite different from these other tools in two important ways: new things are coming out for them every day, and you don’t have to replace your whole machine in order to enjoy the latest improvements. You ought to ask this question every time you go into your local computer store, and have it in mind whenever you are skimming through a computer magazine. Here are some variations on this question:

“What new time-saving tricks have you learned about the Macintosh and its programs?” You can learn a lot from others who use Macintoshes, and they may be able to learn something from you. It’s easy to miss things in the manual, especially if the program is so easy that you don’t read the manual completely. Furthermore, you may discover some tricks which are not even mentioned in the manual. This is the kind of information which is often exchanged at Macintosh Users’ Group meetings. There may be a Macintosh Users’ Group in your area. You’ll find that a few hours each month at these meetings can greatly increase your productivity.

“Is there a newer version of any of my current programs?” Many manufacturers let you get updates on their software for free once you’ve purchased one copy. It’s usually worth getting the newer versions, which should be able to handle all the files you created with the older versions and offer you new or improved functions. Unfortunately, you probably won’t get a
personal letter in the mail letting you know when a new version comes out, so you have to keep asking this question.

"What new programs are out now for applications which were not available before?" Maybe there's a task you still perform manually because when you bought your Mac no programs existed that could do that particular job. Keep asking! You'll be surprised at the new software which is announced every day.

Besides your own office mates, your local computer dealer, magazines, and people you meet at Macintosh Users' Group meetings, there's another good source of information about your computer and what people are doing with it: local and national information networks which you can dial up using your phone lines and your Macintosh with MacTerminal and a modem.

Finally, we hope that you will find this book a good source of helpful information. Remember, you need not read each chapter, only those which interest you. Happy computing!
Chapter 1 Charts

The Right Chart
Creating a Chart
Label Formats
Chart Sizes
Using MacDraw
Copying Data from Multiplan
Chapter 1 Charts

Whether your purpose is to clarify, simplify, stimulate, captivate, emphasize, summarize, persuade, or simply explain, there is no doubt that graphics add clarity. As an “information society”, we are handling more information than ever before, and the need for clear communication is stronger than ever. With all the incredible special effects that have become standard fare on television, most audiences find the average business presentation mundane and boring.

There’s no question that information presented visually is more easily understood and remembered than information presented verbally or in tables. Perhaps you have directly experienced the finding that meetings which include graphics are 28% shorter than meetings held without graphics. From the pages of Time magazine to your local 6 O’Clock News, complex relationships are easily conveyed with the use of graphics.

If you have ever tried to read a financial report which showed three columns and twenty rows of numbers—three years’ income and expense figures, for example—you will appreciate some of the tips in this chapter about making the important points more visual through charts. The quality of business operations, whether large or small, can be substantially improved with graphics. Not only do graphics enhance your communication with others, but graphics can make the information you handle in your business clearer to you.
Unlike columns and rows of information, charts give immediate visual impressions—you can easily see sudden changes in a series of numbers or seasonal variations over time.

On the other hand, if you have ever tried to draw a pie chart with seven categories—using a pen, a protractor, and a calculator to convert numbers to percentages and percentages to degrees—then you know why so few “in-house” financial reports have included graphic illustrations. Until now, charts and graphs have required a lot of time and patience to produce, even if you had all the tools of a professional graphic artist.

Perhaps your company is one of the few whose business relies on presentation graphics enough to purchase them from a professional graphic artist. Or maybe you use graphics enough that you have saved graphics expenses by hiring a full-time artist and supplying all the tools they need: a drafting table, a set of RapidoGraph™ pens, rulers, protractors, compasses, templates, plenty of glue and correcting fluid... Given enough advance notice, your in-house artist has probably managed to meet most of your demands—with a two-week delivery cycle!

Meanwhile, executives are finding that they are not enjoying the full benefits of computerization because of the form in which most data is delivered: pages of columns and rows of figures printed on wide paper without arrows or bold printing to highlight the bottom line. As long as computer graphics systems were priced from $50,000 to over $300,000, few could justify the investment—even though computer graphics can cut the cost of producing slides and charts by as much as 80%. (One company we talked to claimed that they were producing graphics on the Macintosh for less than ten dollars which would have cost over fifty dollars from an outside graphic artist!)

Now, with the Macintosh and a charting program like Microsoft's Chart, you don't have to be an artist or spend a fortune to create clear, accurate charts and
graphs in a fraction of the time it would take to create the same chart using traditional graphics techniques. This chapter will show you how to create pie charts, bar charts, line graphs, and area graphs, as well as give you some tips on deciding which chart will best illustrate your point.

The Right Chart

So you’re not a graphic artist and you’ve never drawn a chart before. You know what the facts are, and you want to use graphics to help illustrate your particular points of emphasis. Graphics improve communication in every department. What kind of chart will you use in this afternoon’s presentation? The type of chart you choose depends both on the type of information and on the point you wish to make.

For example, to illustrate last year’s sales by product category, you would enter the figures for each category in a two-column table.

Using a charting program like Microsoft’s Chart, you can view the results graphically and instantly as a pie chart, a bar chart, or a line graph with a few clicks of the mouse button. With a charting program, it’s much more fun to be fickle than it was with the old ruler-and-pencil techniques. No matter how mundane the information you’re passing on may seem, you’ll be surprised to see how effective your presentation can be with graphics.

There’s a chart type for almost every kind of information. The following examples will talk about charting using Microsoft’s Chart. Even if you don’t own that particular program, you can read through the next sections and still learn some important points about charting in general. We’ve found it takes practice for many of us to be able to see numbers and their statistical, logical, and meaningful relationship to each other in graphic terms. Once this graphic sense is developed, however, a new “tool for thinking” is in your hands.
In the Chart program, the Gallery menu allows you to see what variety of charts are available to you. If you have Chart running on your Macintosh now, take a moment and look through the Gallery menu to see what's there (or take a look the menu shown here).

The following bar chart, for example, draws attention to the fact that the largest sales category is "other"; while this may not be an interesting item of information unless we know of what the "other" category consists, there is plenty of useful information revealed in the chart. We are drawn to review the numbers along the X axis (the horizontal axis). Now we can see that the category "computer games" earned over $800 million last year. So, we can see the total sales amounts of each category, as well as which categories are larger than others and by how much.

On the other hand, a pie chart of the same data focuses our attention on a category which we barely noticed in the bar chart: the robotics category is exploded away from the rest of the pieces. The caption tells us why: robotics are expected to be the fastest-growing category in 1986. Suddenly its 17% share seems much more significant than it did in the bar chart, where it was lost as a "middle range" category.
Robotic toys are expected to be the fastest growing category in 1986 led by the QP Doll series of programmable robots.

Exploded Pie Chart highlights one category

As you can see, both charts “illustrate” the facts in this case. There is, however, a distinct difference between the two in how our attention is focused. You can see now why it’s important to know what point you wish to make.

Pie Charts

Pie charts are the best selection for graphs that show percentages of the “whole pie”. Usually a maximum of six or seven slices allows the labels and shading to be clearly visible. If your pie has any slices which are too thin for the shading to be clear, a horizontal bar chart is a good alternative.

You can label the pie slices with percentage figures or dollar amounts, or show the labels in a legend at the side of the pie. You can give one category emphasis by “exploding” it out from the rest of the pie. With Chart, these are simple selections under the Pie option of the Gallery menu.
By nature, pie charts capture values at a fixed point in time — to compare percentage distribution changes over time, a different pie chart must be drawn for each time period. Each type of chart has its own "gallery" of variations within each type. One of the really handy things about Chart is that you can create your own individual chart design. To copy a design from one chart to another, check Format Only in the dialog box under the Open command on the File menu. Chart will load only the format into the Macintosh's memory, and the current data is unaffected. Thus, Chart offers you a virtually unlimited selection of chart formats to choose from.

Horizontal Bar Charts

Horizontal bar charts are especially useful for comparing values of different categories during one time period. The same information could be displayed vertically, but by convention we tend to associate vertical bars with comparisons over several time periods.
Menu of Horizontal Bar Chart Options

Horizontal bar charts are especially useful when the names for each category (i.e., the entries down the first column of the data table) are more than one word long.

Vertical Column Charts

Vertical column charts are similar to horizontal bar charts in their format and purpose. One difference is
that it is easier to see comparisons over several time periods with vertical columns. In general, vertical column charts are used more often than horizontal bar charts. In fact, the term bar chart brings a picture of vertical columns to most people's minds.

Because columns or bars must be wide enough to show shading, the number of time periods you can show on one chart is limited. Information about many time periods becomes a candidate for a line graph.

Line Graphs

Line graphs, like vertical column charts, show values over time. However, line graphs are best for showing trends over time rather than for comparing a few values over a limited time period. With a line graph the number of time periods shown can be nearly limitless, making line graphs superior to bar charts for showing long-term trends with seasonal variations.

![Tag Corp. Sales History (Million$)](image)

*Line Graphs can show many time periods*

Also, with line graphs the number of categories shown is limited only by the number of different ways in which you can draw a line. Because of this last
consideration, line graphs can benefit more than the other graph types by color printing (an option not yet available through the Macintosh).

Area Graphs

Area graphs are often used in place of line graphs to represent volumes. For example, while a line graph shows the changing average price of a stock during an active period, an area graph might show the changing volume of shares traded weekly.

An area graph, or surface chart, emphasizes the size of, rather than the changes in, total amounts. It is most appropriate for illustrating data which changes gradually over time, rather than illustrating data with sharp rises and falls.

Let's see what an area chart can do to illustrate this paragraph, excerpted from TAG Corporation's third quarter financial report for 1985:

TAG Corporation's after-tax operating income was between $235 and $300 million in the first two quarters of 1984 prior to the acquisition of Moore & Moore. Since then quarterly income from TAG's traditional business has declined steadily
to a level just over $100 million in the third quarter of 1985. With quarterly income ranging between $140 and $240 million, Moore & Moore has more than doubled TAG's after-tax operating income during the first three quarters of 1985.

Acquisition Helps Stability

Scatter Diagrams

Finally, scatter diagrams are available on the Gallery menu of Microsoft Chart, but they are more often used in statistical analysis than in daily business.

Scatter Chart Gallery

Scatter Diagram plots individual points between two scales
They can be used to plot an individual’s test scores, for example, along two scales such as technical skill level and management skill level.

Combination Graphs

When a single chart is not enough, select a Combination graph from the Gallery menu. The Combination graph gallery offers four ways of combining two sets of data on one set of axes: a column chart overlaid with a line chart using the same scale (on the Y axis), a column chart overlaid with a line chart using a different scale, two line charts with two different scales, or an area chart overlaid with a column chart. You can combine other types of charts by adding an overlay chart to your main chart. Simply choose Overlay Chart Type from the Chart menu. Combination charts help dramatize your presentation by contrasting information.

Combination Chart shows relationship between two different data series
In general, the best graphs are those with the fewest elements. Whenever possible, consolidate months into quarters, quarters into years, years into decades. Consolidate minor categories into "Other". Use multiple charts if necessary, rather than try to show everything at once. Remember that graphics should bring clarity, not confusion. If the graphic doesn't make the point more obvious, either you're using the wrong chart format or the point shouldn't be made!

Creating a Chart

The next few paragraphs will outline the basic steps in creating a chart using the Chart program. Options on formatting charts are explained later in this chapter and in chapter 9.

After you open a new file, the first step is to enter the data you wish to graph. Each group of data is called a data series. For example, the income for our categories for 1985 is one series, the income for each category in 1986 is a second series, and so on. Both series can be plotted to show a comparison of each category from year to year. Choose the type of data you’ll be working

![Chart Program Interface]

Table of last year's sales by category entered in Chart
with from the Data menu. If you choose Sequence or Dates, Chart will automatically enter the numbers or dates down the first column of the data table in the increments you indicate. If you choose Text or Numbers as the data type, you can enter the categories in the first column yourself. After selecting the data type, you can enter the labels of the categories and their related values.

<table>
<thead>
<tr>
<th>Sequence</th>
<th>Date</th>
<th>Text</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Jan 1986</td>
<td>Games</td>
<td>17</td>
</tr>
<tr>
<td>2</td>
<td>Feb 1986</td>
<td>Sports</td>
<td>23</td>
</tr>
<tr>
<td>3</td>
<td>Mar 1986</td>
<td>Robotics</td>
<td>31</td>
</tr>
</tbody>
</table>

When you enter all your information, be sure to check Plot Series in the data box—you’ll see the data graphed automatically. Choose the type of graph you wish to use from the Gallery menu. Now your chart is ready to be fine tuned, saved to disk, or printed out. More charting tips are given later in this chapter and throughout the book.

Label Formats

The axis labels which appear on the chart are taken from your entries in the Data menu dialog box. You can change the text of these labels, as well as the type styles, through the Format menu.

In order to accomplish this, you must first select the text label on the chart itself—simply by pointing and clicking the mouse over the label to be formatted.

Then select the Format menu’s Text option. The dialog box lets you define the format of the label.
Text styles and formats available in Chart

While the label is still selected, you can use the Format menu’s Patterns option to frame the label in a border.

Remember, you can choose to load Format Only from the Open command on the File menu. Once you’ve perfected one chart and its label formats, you can use this option for all subsequent charts in the same set and thereby save formatting time.

Chart Sizes

One way of adjusting the final printed size of the chart is through the File menu’s Page Setup submenu. Set the page to print Tall, and the chart will...
automatically be sized to print about 5½ inches wide in the middle of an 8½ X 11 inch piece of paper.

Set the page to print Wide, and the chart will print out sideways on a page, 11 inches wide (including margins).

If these two options still don’t meet your needs, you can use the Chart menu to Select entire chart. The chart will then be framed with sizing squares just like those in MacPaint and MacDraw. You can change the size of the chart directly on the screen by pointing at one of these squares and holding the mouse button as you drag it in the direction of the desired size.

Enlarge the chart size by selecting the chart and dragging to the desired size

You can use this last option to enlarge the area of a chart if the labels do not fit properly along the axes, for example. You must use this option with caution, however, when making your charts smaller: some labels may be truncated or extended to two lines.

Using MacDraw

Because you can copy a chart created with Chart into a MacDraw or MacPaint file, you can enhance any chart with the shadings and other special effects available through the paint program. This capability is relatively new — revolutionary in some views!
In the annals of graphic anecdotes, there is a story of a courtroom contestant who wanted to illustrate the misuse of certain funds through a combination bar chart/line graph. As this story goes, he was using some "antiquated" computer technology where he had no control over the final appearance of his chart. He therefore devised an intricate series of steps to "trick" his program into printing the chart exactly as he wanted it, including running the same piece of paper through his printer several times. With a Macintosh, the same task could have been accomplished in less than half the time!

A chart enhanced through MacDraw and printed out on a LaserWriter

**Copying Data from Multiplan**

You can enter information to be graphed into Chart directly from a Multiplan spreadsheet file. The process may seem cumbersome at first, but the advantage is that you can "link" a spreadsheet to a chart — every time you change the data in your spreadsheet the chart will change also. Every time you open the Chart file that has been linked, it looks for the Multiplan file. If the spreadsheet file is not on the same disk as the chart file, you will be prompted to insert the appropriate disk.
The basic steps to copy Multiplan data into a Chart file are, first, to open your Multiplan file and select the portion of the spreadsheet you wish to graph. Use the Copy command to place the selected contents into the clipboard. Quit Multiplan and open a Chart file. Choose the type of series from the Data menu and then choose Paste or Paste and Link from the Edit menu to copy the data from the clipboard into the data series box. Paste does not permanently link the Multiplan file to the chart; Paste and Link does. In other words, every time you open a Chart file, the program will look for any linked Multiplan file and copy the latest data from it.

Chart follows certain rules when pasting data from Multiplan. If you are pasting more rows than columns or the same number of rows and columns, data will be copied column by column. If you are pasting more columns than rows, the data will be copied row by row. Each row or column becomes a new data series.

We’ve found this process to be slow and awkward—if, however, you will be changing your source data frequently in a spreadsheet, you will find this method helpful. Or you may find this method desirable when charting a long series of numbers into a line graph—five years of stock prices, for example. Experiment with it, and refer carefully to the Chart manual if you run into problems. Given the drawbacks of this technique, and the suggestion that the best graphics are those with the fewest elements, you may find it easiest to build each chart directly through the Chart program, rather than going through the steps outlined here for copying data from Multiplan, especially if you wish to copy figures from more than one part of a spreadsheet into the Chart program.

The appendix lists other charting aids available for the Macintosh, including Mesa Graphics’ Tekalike, which lets you paste graphics from mainframe computers to MacWrite and MacPaint.
We hope this chapter has given you some good ideas about how to start thinking graphically. Take a look at the information you handle in everyday business and you will surely find good cause and purpose for graphic communication.
Chapter 2 Projects

The Project
The Schedule
Critical Tasks
Milestones
The Task Timeline
The Resource Timeline
The Cost Schedule
The Project Table
Project Control
Chapter 2 Projects

How long will it take to build a solar home in the mountains of Virginia? How will the local Junior League chapter go about raising funds for the new children’s wing of the hospital? How soon will customers find Software System Associates’ newest game on the shelves of the local computer store? How late can a particular activity be started without affecting the final completion date of a project?

Questions like these have often worried those who are responsible for making anything happen on schedule. Of course, we’ve all worked on projects with deadlines. Sometimes the question is not “When will it happen?” but “How many items on our list of things-to-do can we accomplish in time?” or “Is this project feasible at all, given the time frame and current resources?” A planning tool like MacProject can help answer questions like these. MacProject is a comprehensive network-based planning tool, incorporating all the features of the PERT chart (Program Evaluation and Review Technique) or the similar CPM chart (Critical Path Method), plus the timeline features of the Gantt chart.

PERT charts were originally developed in the 1950’s to help coordinate the development of the Polaris missile. The PERT chart shows a series of events with estimated completion times for each task plus all the interdependencies between the tasks. With a PERT chart
the planner can ask “what if” questions such as “If a
certain event is completed by a certain date, how soon
can the next event be completed? How soon can the
project be completed?”

CPM charts were developed independently but at
about the same time as PERT. CPM charts are useful in
determining trade-offs between cost and scheduling for
a given project (i.e., How will the total project cost
change if the schedule is changed?).

While PERT charts clearly show relationships
between tasks, Gantt charts, showing tasks across a
timeline, are highly effective for displaying concurrent
time and resource usage and for showing clear start and
finish times for each task. *MacProject* creates Gantt
charts for you, by task or by resource.

While some project managers still work with a
calendar in one hand and a whip in the other, others
have found that they can throw the whip away by
involving the project team in the plans and gaining
consensus about the schedule. *MacProject* helps set
calendar dates for each step in a project and even
displays the cash flow of the project over time, as well
as producing clear, graphic presentations of the plan for
review by the team leaders.

**The Project**

_Scenario:_ You just got a promotion. As head of the
Retail Development Division of The Activity Group
(TAG) Corporation, your first priority is to orchestrate
your staff of ten in designing and opening the first store
in a planned series of ToyTech Shops. What do you do
now?

*Option 1:* Relax. You know what you’re doing. How
else did you land this promotion? Get out your note
pad and write down what tasks need to be done. Put a
name next to each task. Then issue a memo to everyone
letting them know what tasks they have been assigned
and when it’s due. Your project plan here is a simple
one.
Option 2. Be realistic. You’re lucky to be where you are, and you don’t know everything there is to know—yet. Take a stroll around the office and find out who your new crew is. Find out what their skills are and what they’ve been doing. Then go back to your desk and make a list of your staff. Next to each name, list the tasks that will make the best use of that person’s skills. Then call a staff meeting to discuss responsibilities. This kind of project planning involves your staff, but there’s no way to ensure that you have included all the necessary tasks and their dependencies, or estimated the project’s completion date.

Option 3. Calm down. Sit down with *MacProject* and sketch out your plan. While planning a project with pencil and paper is better than no plan at all, the real relationships between tasks can be hard to see. Task A may have to be completed before Task C begins, a simple enough relationship, but Task B, while it might be able to be started after Task A, must be completed before Task Z. With a package like *MacProject* you can simply sit down and sketch out the tasks, letting *MacProject* perform the job of keeping all the relationships straight. The rest of this chapter will help you go through the steps of planning a project.

The prerequisite for using planning tools like *MacProject* is simple enough. The project must be broken down into a series of sequential, dependent steps. You can make this list on paper, as in Option 1, or you can begin by making this list directly through *MacProject*, as in Option 3.

Option 2, on the other hand, begins with making a list of people, rather than a list of steps. Although Option 2 may be the most practical approach for you as a new division head, it does not meet the first requirement for an effective project plan: to break the project into a series of steps. If you are accustomed to simply giving assignments to people, you will need to develop the discipline of first listing all the tasks sequentially when planning with *MacProject*. Then you
can enter information about each task or step, including duration, resource assignments, costs, and so on.

Elements of Task Definition as viewed in MacProject: Task Description, Duration, Resources Assigned, Resource Cost, Fixed Cost/Income, Earliest Start Date, Latest Finish Date

The heart of the project plan is a diagram which shows the activities required to accomplish a goal. Each task is shown in a rectangular box. Review points, or milestones, are shown in boxes with rounded corners. Tasks which are connected by lines are dependent on each other; i.e., before any new activity can begin, all preceding activities on which it is dependent must be completed. This type of chart is commonly called a PERT Chart, or a Schedule Chart in MacProject.
The Schedule

One of the advantages of working with project planning tools is that these programs will calculate the completion date of the project for you. In *MacProject*, the earliest possible start date for each task is shown above the top left corner of each task box. This date is calculated based on two things: the duration that you assign to each task (shown above the top right corner of each task box) and the calendar of working days that you define through the Chart menu. If you forget to set up your own calendar for a project, then it will be automatically scheduled according to *MacProject*’s own assumptions: 5 days a week, 8 hours a day.

To create a project plan with *MacProject*, you need to create a Schedule, or PERT, Chart. To do so, open a new *MacProject* file and create the first task description by positioning the cursor near the left of the screen and dragging the mouse down and to the right. You’ll see a box grow as you do. When you release the mouse button, the box will show a date at the top left corner and a blinking cursor inside the box.

Type the task description. It’s a good idea to begin all projects with a task called “Start” (or similar) from which all other tasks will branch.

To create additional task boxes, you have two options. You can position the cursor inside the task box and drag the mouse to a free area on the screen, anywhere to the right of the first box. When you release the mouse button, a new box — exactly the same size as the first — will appear. Again, a blinking cursor appears inside the box and you can type the task description. You can build the entire schedule chart this way. This is a good method to use if you know in advance all the tasks in the project and how they fit together.

The second method is best if you want to use *MacProject* as you “brainstorm” the project — i.e., if you don’t know in advance what all the tasks are or how they fit together. To create each new task by this
method, simply position the cursor in any empty area on the screen and drag the mouse (just as you did to create the first task box), or select a task box and use the Duplicate option of the Edit menu to create boxes of the same size. You can move task boxes by clicking on the border of the box and dragging it to another location. By this method, you can create tasks all over the screen.

Remember, dependent tasks must be positioned to the right of those tasks on which they depend. To draw a line which shows which tasks depend on each other, position the cursor inside a task box and drag the mouse into the task box which must follow the first. A line will appear connecting the two.

Specify the time scale you want to use by selecting the Duration Scale option of the Dates menu. You can define project tasks in terms of minutes, hours, days, weeks, or months. The setting you select here will apply to all tasks in the project.

To set the duration for each task, select the task by clicking on it, and set the duration for that task by selecting the Show Task Info option of the Task menu.

The Task Info Dialog Box
Enter the duration and assigned resources in the Task Info dialog box. Press TAB to go to the next resource in the dialog box, press RETURN to go to the next task box on the Schedule Chart.

You may save time by drawing all the task boxes first, filling in only the task description as you go along, then using the Task menu to Show Task Info and enter durations and resources for each task in the project.

Finally, once you have set the calendar and task durations for the project, you can view the project's scheduled dates for each task. Use the Display Dates option of the Dates menu to select which dates you want to see on the Schedule Chart: early start, late start, early finish, and/or late finish.

Note that you can also display the assigned resources or the duration of each task. The rule here is that only one item of information can be displayed at each corner of each task.

Based on the information entered in the Schedule Chart, a simple menu selection will create Gantt-type charts of the activities across a time line: MacProject's Task and Resource Timelines. Any changes made to the Schedule Chart will be automatically reflected in the Timeline charts—you cannot make changes to these directly.

Based on the project start date, the time estimated per task, and the calendar of work days, MacProject will calculate the projected completion date of the project. In scheduling tasks, MacProject knows that an activity cannot begin until all activities on which it is dependent have been completed. Following this rule, the program calculates each task's earliest start date, latest start date, earliest completion date and latest completion date. You can "override" MacProject's calculated dates by entering your own "earliest start" or "latest completion" dates for some tasks.

For example, look at the ToyTech Store plan with the start date for each task as calculated by MacProject. You can enter these dates manually if you wish, and
override automatic scheduling. For example, if you want to order a certain toy before the wholesale price goes up in October, set the late finish date to be September 30.

Entering earliest start/late finish dates

The Schedule Chart may be printed out and distributed to the major participants in the project for review and input to the next version of the project plan, with new resource assignments, revised task durations, and detailed costing.

Critical Tasks

If the earliest completion date is the same as the latest completion date for an activity — i.e., if there is no "slack" — then the activity is considered "critical" to the timely completion of the whole project. If any activities which are critical are delayed, then the entire project...
will be delayed by the same amount of time. Such activities fall on the “critical path” of the project, which is automatically displayed in boldface lettering and lines.

Non-critical tasks are those which have some slack in the schedule — i.e., tasks for which the earliest completion date is different from the latest completion date. Tasks which do not fall on the critical path may be delayed to some extent without affecting the rest of the scheduled dates.

Milestones

A milestone is a task which has no duration, no resources, and no costs associated with it. For example, a review point in a project might be entered as a milestone. To identify a task as a milestone, select the task (click the mouse with the pointer at the task border) and then choose the Milestone option of the Task menu.

Milestones appear as tasks with rounded corners on the Schedule Chart. They are identified with diamond-shaped markers on the Task and Resource Timelines.

The Task Timeline

The Task Timeline shows each activity stretched out across the time scale for the whole project. Any changes made to the Schedule Chart will be automatically reflected in the Task Timeline — you cannot make changes to the Task Timeline directly, except to select the scale of the timeline itself.
The slack time for non-critical tasks is shown in grey shading on the Task Timeline, which is automatically created based on the information entered on the Schedule Chart.

The Resource Timeline

In addition to specifying the duration of each task, you can specify the name of the person responsible for that task. A task may involve more than one person (up to 6 with MacProject). Based on these entries, the
program creates a **Resource Timeline** showing each person's activities over time, such as the chart shown below.

The **Resource Timeline** may reveal that some team members will be idle while they wait for others to complete a task. You can add personnel to some activities to speed them up, or redistribute responsibilities amongst the team members. As in the **Task Timeline**, slack time is displayed as grey shading. Here also, any changes must be entered through the Schedule Chart, you cannot make changes to the **Resource Timeline** directly except to change the scale of the timeline.

**The Cost Schedule**

So you’ve completed your initial project entries, and you’re excited to announce the scheduled Grand Opening date at the next staff meeting. Your own staff greeted the news with much more enthusiasm than the CFO, who returned his copy of your project schedule with a brief note attached: “Cost schedule missing”.

**MacProject** provides two different tables for entering project cost estimates: the **Task Cost Entry** table and the
Resource Cost Entry table. These options are offered under the Chart menu. These cost tables appear on the screen with the list of tasks (or resources) drawn from the Schedule Chart—you cannot add tasks or resources to these tables directly. You can, however, enter dollar amounts in the columns provided on these tables.

Use the Resource Cost Entry table to list the rate of pay per unit of time for each resource involved in the project. The unit of time here is the one you selected for the duration unit of each task: a minute, an hour, a day, a week, or a month. You can view this table after you complete your Schedule Chart entries. Any resource entered through the Schedule Chart will automatically be listed here. You cannot add, delete or edit resource descriptions in this table, or in the Task Cost Entry Table, but you can enter text as notes anywhere on the screen.

In this case, the resources you entered in the Schedule Chart are all people, but they could also include other categories of information. A construction firm might pay a daily rate to rent a bulldozer, for instance, and this bulldozer rental would be entered as a resource on the Schedule Chart, and its rental rate would be entered in the Resource Cost Table.

<table>
<thead>
<tr>
<th>Resource Name</th>
<th>Cost/Week</th>
<th>Accrual Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 EM0</td>
<td>1000.00</td>
<td>Multiple</td>
</tr>
<tr>
<td>2 VP</td>
<td>0.00</td>
<td>Multiple</td>
</tr>
<tr>
<td>3 O'Leskey</td>
<td>1000.00</td>
<td>Multiple</td>
</tr>
<tr>
<td>4 Binet</td>
<td>800.00</td>
<td>Multiple</td>
</tr>
<tr>
<td>5 Davila</td>
<td>400.00</td>
<td>Multiple</td>
</tr>
<tr>
<td>6 Bunz</td>
<td>600.00</td>
<td>Multiple</td>
</tr>
<tr>
<td>7 Howard</td>
<td>400.00</td>
<td>Multiple</td>
</tr>
<tr>
<td>8 Moore</td>
<td>600.00</td>
<td>Multiple</td>
</tr>
</tbody>
</table>

The Resource Cost Entry Table

Use the Task Cost Entry table to list the fixed cost of a task, over and above any resource costs. For example, the cost of materials in building display shelves in the store can be estimated as a fixed cost, but the cost of the carpentry service (which would have
been entered in the **Resource Cost Entry** Chart) will depend on how long it takes to assemble the counters.

<table>
<thead>
<tr>
<th>Task Name</th>
<th>Fixed Cost</th>
<th>Fixed Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 START</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2 Define Concept</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3 List/Research Proposed Inventory</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>4 Define Display and Storage Space</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>5 Define Accounting System</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>6 Define Local Marketing Plan</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>7 Request Proposals from PR Firms</td>
<td>100</td>
<td>0</td>
</tr>
<tr>
<td>8 Request Proposals from Space</td>
<td>100</td>
<td>0</td>
</tr>
<tr>
<td>9 Develop Pilot Accounting System</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>10 Research/Find Space to Lease in</td>
<td>2500</td>
<td>0</td>
</tr>
<tr>
<td>11 Develop first 3-year budget</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>12 Allocate Funds</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>13 Implement Advertising &amp; Signage</td>
<td>5000</td>
<td>0</td>
</tr>
<tr>
<td>14 Order Inventory</td>
<td>25000</td>
<td>0</td>
</tr>
<tr>
<td>15 Hire Floor Staff</td>
<td>1000</td>
<td>0</td>
</tr>
<tr>
<td>16 Implement Space Design Contract</td>
<td>10000</td>
<td>0</td>
</tr>
</tbody>
</table>

**The Task Cost Entry Table**

The **Cash Flow Table** summarizes all the financial information you have entered for the project. If you are clear on the distinction between costs which are fixed and costs which will vary depending on the duration of each task, then you will know whether to enter an item as a resource or include it as a fixed cost. This way,

<table>
<thead>
<tr>
<th>Starting</th>
<th>Costs</th>
<th>Income</th>
<th>Ending</th>
<th>Cumulative</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/1</td>
<td>12200.00</td>
<td>0.00</td>
<td>1/29</td>
<td>-12200.00</td>
</tr>
<tr>
<td>1/29</td>
<td>10900.00</td>
<td>0.00</td>
<td>2/26</td>
<td>-23100.00</td>
</tr>
<tr>
<td>2/26</td>
<td>7400.00</td>
<td>0.00</td>
<td>3/26</td>
<td>-30500.00</td>
</tr>
<tr>
<td>3/26</td>
<td>54200.00</td>
<td>0.00</td>
<td>4/23</td>
<td>-84700.00</td>
</tr>
<tr>
<td>4/23</td>
<td>7600.00</td>
<td>0.00</td>
<td>5/21</td>
<td>-92300.00</td>
</tr>
<tr>
<td>5/21</td>
<td>3200.00</td>
<td>0.00</td>
<td>6/18</td>
<td>-95500.00</td>
</tr>
<tr>
<td>6/18</td>
<td>10600.00</td>
<td>0.00</td>
<td>7/16</td>
<td>-106100.00</td>
</tr>
</tbody>
</table>

**The Cash Flow Table**
The Project Table

The Project Table presents a consolidated summary of all activities, showing start and finish dates, resources and costs for each task. This table is created by MacProject based on your entries in the cost tables and on the Schedule Chart. You cannot make changes to this table directly.

<table>
<thead>
<tr>
<th>Task Name</th>
<th>Weeks</th>
<th>Earliest Start</th>
<th>Earliest Finish</th>
<th>Latest Start</th>
<th>Latest Finish</th>
<th>Fixed Cost</th>
<th>Resource Cost</th>
<th>Fixed Income</th>
<th>Resource 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 START</td>
<td>0</td>
<td>1/1</td>
<td>1/1</td>
<td>?</td>
<td>?</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2 Define Concept</td>
<td>1</td>
<td>1/1</td>
<td>1/15</td>
<td>?</td>
<td>?</td>
<td>0</td>
<td>1800</td>
<td>0</td>
<td>Loskey</td>
</tr>
<tr>
<td>3 List/Research Proposed</td>
<td>1</td>
<td>1/18</td>
<td>1/15</td>
<td>?</td>
<td>?</td>
<td>0</td>
<td>1800</td>
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<td>1/22</td>
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<td>?</td>
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<td>1/15</td>
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<td>2/12</td>
<td>1/28</td>
<td>2/25</td>
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<td>1/28</td>
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<td>3/12</td>
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<td>3/11</td>
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<td>6/3</td>
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<td>1600</td>
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<td>4/30</td>
<td>5/6</td>
<td>6/3</td>
<td>1000</td>
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<td>6/3</td>
<td>10000</td>
<td>0</td>
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</tbody>
</table>

The Project Table

The Project Table is useful as an overview of the entire project. Use it as a reference and as a “note pad” — accumulating hand-written notes about changed dates, costs, and resources — until you update the file during your next MacProject session.

Project Control

Project control, the underlying managerial function, begins with refining the initial project plan details, and continues with reviewing the difference between the schedule and actual performance over the life of the project. Review points may be identified on the Schedule as rounded “milestones”. At these review points, the project schedule may be updated to reflect
revised task duration estimates, personnel assignments, and start/finish dates. You can also enter the actual number of days it took for completed tasks and the days remaining to complete tasks in progress, and the scheduled dates for activities which follow will be adjusted accordingly.

Any changes made in the Schedule Chart will be reflected in the Task and Resource Timelines automatically. Each of these charts can be printed out, horizontally or vertically, on 8½ inch wide paper. You can preview pages before printing (through the Show Entire Chart option of the Layout menu), so you can manipulate the Schedule Chart to accommodate page breaks. Individual task rectangles or circles may be made larger or smaller for purposes of emphasis or aesthetics. Task and Resource Timeline Charts which span a long time period can be shortened by changing the scale of the time axis from one week to two weeks, one month or one quarter. You can also set the time line to one minute, 30 minutes, or one hour.

With MacProject, you can type additional text anywhere you like on the Schedule Chart. The charts created by MacProject can be copied into MacWrite or MS Word, merging the diagrams with the text of a full proposal or project plan narrative. The charts can also be copied into MacDraw, where borders, shading, and more text may be added for the final presentation.

For large projects, you might want to start with the overall plan, then break it into segments which you copy into sub-files and expand. In deciding "which way to go," you can show alternative plans by cloning and changing the first basic plan. With MacProject at your service, you may find that your needs for clearly documented "plans" expand to include simple office routines, such as end-of-month closing procedures, which go into an in-house training and reference manual.

The value of project planning is tremendous. Well-planned projects not only keep the project team happy, they are more likely to be completed on time and
within budget. There is no doubt that good planning tools improve the implementation of any project—large or small. And, as a manager of a project, summarizing the steps required to get something done can be, in and of itself, an exercise of great value. Once again, we can see what a tremendous "thinking tool" the Mac can be.

**ToyTech Shop**

**Pleasant Valley Mall Development Plan**

Schedule Chart enhanced through MacDraw

*MacProject* is easy to learn, either through the tutorial provided or simply by studying the excellent examples of project plans provided on the *MacProject* disk. These programs make the previously complex (or at least mysterious) task of planning a project simple. Don't let your Mac go without it!
Chapter 3 Diagrams

MacPaint vs. MacDraw
Flow Charts
Organization Charts
Floor Plans
Street Maps
Merging Diagrams with Text
There was once a company which grew so quickly, it had to move its offices three times in one year. New employees were being hired every week, and the chain of command seemed to change as often. To make matters even more complicated, they were constantly promoting people from within the company and moving them from one department to another. The whole thing came to a head one day when the president, J.B. himself, realized he didn’t know who was in some of the company’s key positions. To make matters worse, he had a board meeting the next day and, of course, the agenda included discussing the company's organization, as well as a discussion of the physical plant. The physical plant! Double-bad news—he hadn’t been able to find the CFO’s office on the third floor last Friday!

In the past, preparation of attractive, clear materials to present this kind of information took days or possibly weeks to prepare, depending on the back-log in the art department. Today, the Macintosh is able to produce all the floor plans and diagrams J.B. and his staff need—in less than a quarter of the time it takes to produce the same diagrams using manual drafting techniques.

The examples presented here include J.B.'s organization chart and floor plans, as well as other common charts and diagrams which can be created using MacDraw or MacPaint, though most frequently
we'll be referring to MacDraw. As in the previous chapters, even if you don't have the program you can still benefit from the following sections because they are designed to help you think about how to use these kinds of graphics in your own business. It can be quite revealing to draw a flow chart of a common procedure in your office. Why does an invoice go to Lucille's desk first, then to John's desk, then back to Lucille? By seeing the whole picture, you can often find ways to make operations more efficient. Graphics are indeed a "thinking tool" and a simple diagram can clarify relationships that are cloudy when information stored in our left brain is not matched by an image on the right side of our brain.

The basic techniques presented in this chapter can be extended to create a wide variety of graphic images, or to enhance the graphics created with Microsoft Chart and MacProject, as discussed in Chapters 1 and 2.

MacPaint vs. MacDraw

Almost everyone who has a Macintosh has the software program MacPaint. When the Macintosh was announced in January of 1984, its revolutionary capabilities were partly a result of the machine, and partly the wizardry of the MacPaint program. Thousands of artists have used the MacPaint "pen" to produce entire galleries of fine illustrations.

MacDraw, on the other hand, was released about a year later. It is essentially a sophisticated "clone" of the program LisaDraw, the drawing and drafting program on the Mac's big sister, the Lisa computer.

There are some differences between MacPaint and MacDraw that are important to understand so that you can make the best use of each. The most basic difference is that MacPaint sees what's on the screen as pixels (a pixel is one "dot" on the screen) and MacDraw is "object oriented"—i.e. it sees each circle, for example, as a circle, not as separate dots. So, while you can use MacPaint's Fat Bits to create the finest details in your
Illustration, *MacDraw* has a different kind of flexibility that is extremely important in designing forms and diagrams.

In *MacDraw*, for example, you can draw a circle, then place a rectangle on top of that circle. With a click of the mouse you can “grab” either the circle or the rectangle and separate the two objects. Both objects remain whole objects. At any point an object can be moved, made larger, smaller, or actually stretched to become a different shape. Also, text is treated as an object so you can change the font or style at any time, as well as the location of the text.

In *MacDraw* objects can be moved individually

In *MacPaint*, on the other hand, you can reshape and move objects but only while the object is originally selected or is not connected to any other object. And, if you draw a rectangle over a circle and try to separate the two, you will destroy part of the circle. Once you have put text in place and gone on to do something else on the screen, you cannot come back and change the font or style of the text with a simple menu selection. Instead, you must delete old text and re-type in the new font.
In MacPaint separating two objects destroys one of them

What these differences mean in practice is that *MacDraw* is generally best suited for most business applications if for no other reason than because it allows you to easily change your mind. There are other reasons, too, besides the ones we've already mentioned. For example, *MacDraw* has a **Show Size** command which lets you see the exact size (in inches) each object will be when printed out.

Of course, you can use *MacPaint* for any diagram but you need to plan the page layout more carefully before you begin—you can't design onscreen so easily as with *MacDraw*. *MacPaint* does excel at "fine tuning" a drawing, and at adding artistic touches. Fortunately, you can paste a *MacDraw* document into *MacPaint* and the two programs combined give you a powerful graphic tool. If your company logo, for example, contains many non-geometrical elements, it may be easiest to produce in *MacPaint*. Then you can paste it from *MacPaint* into the *MacDraw* file where you built your diagram or form. The final printout to the ImageWriter or LaserWriter printer will yield results that will impress the most skeptical of your crew!
Flow Charts

A flow chart is simply a diagram showing a sequence of steps. The concept was made popular by computer programmers who used flow charts to work out the sequence of steps to be written into a program. The same type of diagram is useful for charting sequences of manual tasks or procedures as well.

Flow charts can be especially useful for teaching routine activities to new employees, or for reminding you how to perform complex tasks that you don’t do often. Flowcharts, like project plans, can also be useful for coordinating activities between a number of people. For example, you can show the steps involved in processing a customer’s order.

One major difference between a flow chart and a project schedule (created with MacProject — see Chapter 2) is that project schedules force you to go always forward, whereas a flow chart can have branches which go back to a previous step. These backward-pointing branches usually occur conditionally; for instance, you could say “If there is not enough inventory on hand, enter a backorder.”

Backward Branching
Another difference between a flow chart and a project schedule is that a flow chart specifies only tasks and conditions for branching. No start times or durations are included.

Creating a Flow Chart

The following steps will allow you to create a flow chart quickly and efficiently. These are the steps for using the MacDraw program. A similar diagram could be created, however, using MacPaint.

Open a MacDraw file. Click the mouse on the Rectangle selection box, then draw a box at the top center of the chart area, large enough to include the first task description. You can use the Layout menu to display Standard Rulers if you like to be precise. This command causes rulers to appear on the top and left of the screen.

The Font menu is used to select a lettering size and style. Use the Style menu to select bold or italic type, to center the text, and in MacDraw only, to set single-space paragraphs.

With the rectangle still “selected” (i.e., framed in small black markers) type the description of the first activity. In MacDraw, you need not select the Text option; as you type, the text will appear inside the box, with the box edges serving as text margins. This ability to type text inside a shape is unique to MacDraw. Experiment with this feature—you’ll find it handy for a variety of applications.

If each task description is roughly the same length, you can duplicate the first box as many times as needed, then go back and select each box with the mouse, typing the task description directly in each. If task descriptions vary in size, or if you wish to use different types of task boxes (squared, rounded, and triangular, for instance) you can draw each box individually sized to fit each task description as you go along.
It's a good idea to keep the box as small as possible while including all the text. (If the white “fill” around the words overlaps the box border, you can grab the corner and make the box larger or use the Fill menu to set all text fill to None.)

Add more tasks which branch off from the central line where appropriate. You may need to re-arrange the main line to show the correct relationship between tasks.

Finally, use the Layout menu to Reduce To Fit and click the mouse on the Line selection box to add lines connecting task boxes. Add arrows to all lines if they do not all point downward and to the right.

Complex Layouts

One way of developing your charting skills is to diagram as many of your internal office procedures as possible. In doing so, you will find some charts more difficult than others. For example, it may be that the flow chart you need shows a circular cycle, such as the cycle of inventory depletion and re-stocking. Not only will it clarify relationships for you, but it will also make it infinitely easier to communicate to others in your organization.
In creating a flow chart with an unusual or complicated format, such as a circular pattern, build each activity box first, then move them into arrangement around the large flow circle. For large diagrams, use the Layout menu to Reduce To Fit, so you can see the whole diagram at once and re-arrange the elements on the page. You can draw the connecting lines using the arc shape or simply move each activity box into position around an oval or circular line. If the circular line appears to lie on top of the activity boxes, use the Arrange menu to Send to Back (i.e., position it behind the activities).

Arrange large diagrams in “Reduce to Fit” scale

You cannot add arrows to lines created with the Arc option by a menu selection. To add arrows to curved arcs, draw a triangle with the polygon icon, then use the Fill menu to shade it black.

MacDraw and MacPaint have feature called Auto-Grid which, when it’s ON, will line up objects on an invisible grid. Each “grid line” is eight pixels apart. By working with Auto-Grid ON, you will be assured of lining up all text and lines along a defined grid, but sometimes you may want more freedom to arrange text and lines in finer increments than the auto-grid option.
allows. For fine positioning, use the Layout menu to Turn Grid Off.

Organization Charts

An organization chart is a useful tool for announcing a business reorganization, for explaining your organizational hierarchy to a new employee, or for reviewing the overall division of responsibilities during a staff meeting. The chart itself may show individuals' names and titles, department names and managers, or corporate divisions.

Organization Chart

We could use the same steps to produce an organization chart that we used to create a flow chart, but J.B. might not be happy with the end product. In
flow charting, it's alright if all the boxes are different sizes. On the other hand, because of the uses made of Organization Charts — Board Meetings and such — we want all the boxes to be the same size, or we want the size of the box to reflect the level of the position rather than the number of letters in the person's name or title.

Furthermore, aesthetics may become an important factor in organization charts. For instance, drop-shadows — shadow-like outlines behind each box in the chart — will give your overhead transparencies or slides a more polished appearance and make your presentation more effective. For these reasons, we followed a slightly different sequence of steps in producing the organization chart shown here.

Producing an Organization Chart

Compare these steps to those suggested for creating flow chart. The first steps are the same:

Open a MacDraw file. Click the mouse on the Text selection box, then position the cursor at the top center of the chart area. Use the Layout menu to display Standard Rulers if you like to be precise. Use the Font menu to select a lettering size and style. Use the Style menu to select bold or italic type, to center the text, and set single-space paragraphs.

First type the longest name on the list, and on the next line type the longest title. The title here does not necessarily match the name — you are typing the longest words in order to determine the standard size for all the boxes on your chart. The name and title may by typed in two different type styles and sizes. Both lines should be typed under the Center option of the Type menu.

Draw a box around the name and title. Click on the text and set the Fill to None so the box can fit the text tightly.

If you want to drop-shadow every box, do that now. Use the Edit menu to Duplicate the first box. The second box will cover the first, but don't worry, simply
use the **Arrange** menu to send the shaded box to the back. Use the **Fill** menu to make the second box black or grey.

Select the whole box and the text as a unit and use the **Arrange** menu to **Group** them as an object. Then use the Edit menu to **Duplicate** it as many times as there are people.

Use the **Layout** menu to **Reduce to fit**, and arrange the boxes on the page as appropriate. Begin by setting up the widest line of boxes, and let all other lines fall from these. Before printing out, use the **File** menu to change to a **Wide** page format if necessary. Don't worry that all the boxes show the same name and title.

Use the **Layout** menu to return to **Normal size**. Use the **Edit** menu to **Select All**, and the **Arrange** menu to **Ungroup** all the grouped boxes. Now you can go through and click the mouse on each name and title, replacing them with the correct individual names and titles.

Here you can see that you have saved time by selecting the type font and style for these two lines only once — when you built the first box — rather than every time you type a new name or title. (For more tips on preparing presentations, see Chapter 9).

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**Floor Plans**

Large offices like J.B.'s make good use of floor plans to help employees and visitors find their way around. New or expanding offices work with informal floor plans to see how many workstations will fit in a given space. Fortunately, you don’t have to be a draftsman to produce a floor plan with *MacDraw*. 
The steps in creating a floor plan differ slightly from those in creating a flow chart or an organization chart. Whereas in a flow chart we used no standard, repeated symbols, and in an organization chart we created only one or two standard symbols which we duplicated many times, in a floor plan we create many different standard symbols for duplication.

For example, you can see that our floor plan uses one symbol for a chair, another for a desk, and two
more for shelving and partitions. What you might not realize by looking at the final printout is that the entire desk/chair/bookshelf unit is a single object, created by grouping the components. Grouped objects can be duplicated with a single click of the mouse.

Some objects in your floor plan may be candidates for the Arrange menu’s Rotate and Flip options.

Arrange menu’s Rotate and Flip options are useful in arranging some objects, such as workstations.

For precise measures, use the Layout menu to select Show size while you are building the floor plan. With Show size ON, you can see the exact measurements of each object as you build it. Also, you can see the size of finished objects by clicking the mouse on each object.

Street Maps

MacDraw makes drawing a street map so easy that you may want to add a simple map to the next office.
picnic invitation or storewide sale announcement. Including a street map in sales literature may encourage people to come to your location.

Street Map

The street map introduces one additional special feature which you did not encounter with any of the other charts or diagrams in this chapter: labeling vertically as well as horizontally. This is a simple menu selection, namely Rotate Left or Right options from the Arrange menu.

The street map is one of the only examples in this book where we use the smallest type sizes available (9 point).

Merging Diagrams with Text

Remember that you can use the Cut and Paste options of the Edit menu to paste figures from MacPaint and MacDraw into MacWrite or Microsoft Word.

Once pasted into a text file, you can shift the drawing left or right by adjusting the margin settings,
but you cannot type text on either side of it. *MacWrite* allows you to re-size drawings once they are pasted in from *MacPaint* or *MacDraw*, Microsoft Word does not.

You can position a drawing in a text file by adjusting the margins or setting the format a left, right or center.

You can also typeset figures and text directly from Mac disks. (See the Introduction to this book for details.)
Chapter 4 Financials

Sales Projections
Profit & Loss Projection
Cash Flow
Balance Sheet
Charting the Figures
Merging Tables with Text
Spreadsheets and Databases
A Note about SYLK Files
In any business, it's important to be able to measure success on the basis of more than simply the customers' smiles and the amount of cash in the bank. Even if the owners of a business feel good about their condition, based on some intuitive judgement, outside institutions like banks and the IRS demand careful proof of the company's success or promise. Towards this purpose, accountants have evolved certain routine ways to report financial condition such as the Balance Sheet and the Profit/Loss Statement.

With Microsoft's spreadsheet package, *Multiplan*, you can create profit/loss reports, future sales projections, loan payment calculations or other spreadsheets easily. A *spreadsheet* is any report with columns and rows of information. The entries may be *text*, *numerical values* or *formulas* which calculate values.

Computerized spreadsheets offer some remarkable advantages over the old hand-written columnar pad. The most obvious is that columns or rows can be totalled automatically by entering a formula in the TOTAL area. Also, once you've checked your formulas for accuracy, you can make changes to the other values on the spreadsheet and recalculate the totals in an instant with confidence that the calculated new values
will always be right. Furthermore, once you have created a spreadsheet format you can copy it and re-use it month after month, keeping all the titles and formulas and entering only the new information.

You can also perform calculations which you never would have attempted manually because they would have taken too long. For example, you can build a model to project future sales, then ask for projections based on different assumptions such as: “What if the price is $10 instead of $20?” “What if we sell twice as many?”

In this chapter, we first look at how four district sales managers approach the question of next year’s sales projections, including one example of “what-if” formulas. Next we view the CFO’s full Profit and Loss Projection, based on the sales managers’ projections and including a formula for looking up production costs based on production volume. Then several variations of Cash Flow Analysis are presented. Finally, the elements of a Balance Sheet are reviewed.
The figures entered in a spreadsheet can be used in a charting program, such as Microsoft's Chart to produce pie charts, bar charts, line graphs or other graphic representations of the figures. The spreadsheet figures can also be copied into text files created with MacWrite or Word, or into files or database programs such as Microsoft's File.

![Net Sales Chart](image)

Bar chart shows net sales

Sales Projections

As a District Manager in the Sales Division of The Activity Group Corporation (TAG), you are invited to join other regional managers in Las Vegas for the annual planning session to discuss the past and target the
future. As part of the preliminary handouts for the meeting, you have received the following reports in the mail:

- Last year's sales volume by quarter
- The CFO's preliminary sales projections for next year, by quarter
- Table and graph of last 3 years' sales/profits and one-year projection

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</tr>
<tr>
<td>East</td>
</tr>
<tr>
<td>North</td>
</tr>
<tr>
<td>South</td>
</tr>
<tr>
<td>West</td>
</tr>
<tr>
<td>TOTAL</td>
</tr>
</tbody>
</table>

| 1985 Projections (thousands) | 1st Qtr | 2nd Qtr | 3rd Qtr | 4th Qtr | 1985 |
| East | 144 | 150 | 150 | 156 | 500 |
| North | 108 | 115.2 | 104.4 | 124.8 | 452.4 |
| South | 180 | 192 | 178.8 | 205.2 | 756 |
| West | 204 | 216.4 | 190 | 226.8 | 847.2 |
| TOTAL | 636 | 675.6 | 619.2 | 712.8 | 2645.6 |

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<th>ANNUAL FIGURES</th>
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<tr>
<td>TAG Sales (thousands)</td>
</tr>
<tr>
<td>East</td>
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<tr>
<td>North</td>
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<tr>
<td>South</td>
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<tr>
<td>West</td>
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<tr>
<td>TOTAL</td>
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</tbody>
</table>

Preliminary Sales Reports

When you checked into your hotel room this morning, you were given a canvas bag containing a Macintosh and a disk with all the files used in the printed reports. You were told that you have four hours to review the materials and prepare for the first meeting, at which the summary reports would be revised based on input from you and every other regional manager. Which manager are you in the following scenarios?

North knows that he can count on his sales force to meet nearly 80% of their targeted sales volume. His strategy for projecting sales for his region is simple: Let
the CFO decide what North's target should be, and work backward from there. He looked at the CFO's projections and jotted a few notes on the memo pad provided by the hotel.

![Image of a mental spreadsheet]

The whole thing seemed too simple to need a computer or more than a few minutes thought. For North, this was more than enough preparation for the annual sales planning meeting; North liked to do most of his real planning during the group meetings themselves. He folded his notes into his pocket, then left his room to search for his old friend West. West knows that 80% of his region's sales volume come from 20% of his customers. He also knows that the economy is on an upswing, and his big customers are likely to increase their orders this year. He didn't spend much time looking at the handouts he had received. Instead, he prepared himself by looking over the summary reports on his top-20% clients. His own projections are based on the assumption that he can increase each major account's purchases by 20% in 1986 over 1985.
Building a Spreadsheet with Multiplan

Here are the basic steps in developing any spreadsheet using Multiplan:

1. Open a new Multiplan file. Type the row labels in the first column. Use the Format menu’s Column Widths option to make the first column wide enough to hold the widest label.

2. Use the mouse to return the cursor to the top of the second column and type the year: in this case, 1985. To help distinguish between this entry and other numbers on the spreadsheet (dollar values) use the Format menu’s Align Center option for this entry. Enter 1985’s dollar values down column two, pressing the RETURN key after each entry until you reach the TOTAL row.

3. To enter a formula for the 1985 TOTAL, position the cursor in the TOTAL row of column two. Type an equal sign, then type SUM(, then drag the cursor over the
figures in rows 2 through 7. As you do, a formula will appear in the TOTAL cell. Type a right parenthesis and press the RETURN key to complete the formula.

As an alternative, you can use the Edit menu's Paste Function option to create the SUM formula. After entering any formula, you must always press the RETURN key rather than using the mouse to move to a new cell. If you don’t press RETURN first, then the next cell you jump to will be added into the formula.

The TOTAL cell displays the results of the formula calculation.

After entering the TOTAL formula in column two and pressing RETURN, use the mouse to move to the top of the third column. Enter and center the year (1986) as you did in column two.

West assumed that he could increase each major account’s purchases by 20% in 1986 over 1985 figures. To create West’s spreadsheet’s formulas for projecting each account’s 1985 figures:

First, with the cursor in the second row of the third column, type an equal sign, then the number 1.2 (i.e., 120%), then an asterisk (Multiplan’s symbol for multiplication) then use the mouse to click row two, column two, and press RETURN.
To duplicate the formula for Account A to the other accounts' rows, drag the cursor down column 3, rows 2 through 7, then use the Edit menu to Fill Down. Press RETURN.

Use the Fill Down option to replicate a formula down a column.

One way or another, it's a good idea to check your formulas whenever you build a spreadsheet for the first time. Click the mouse in any cell down column three to see that the formulas created by the Fill Down option have all been replicated correctly. You can check this also by visually verifying the results of the calculations.

Use the File menu's Print option to print your spreadsheet out. Finally, you can Save the file or simply Quit the Multiplan program through the File menu. When you Quit, Multiplan will still offer you a chance to Save your file if you have not done so already.

<table>
<thead>
<tr>
<th>WESTERN DISTRICT</th>
<th>1985</th>
<th>1986</th>
</tr>
</thead>
<tbody>
<tr>
<td>Account A</td>
<td>167</td>
<td>200.4</td>
</tr>
<tr>
<td>Account B</td>
<td>142</td>
<td>170.4</td>
</tr>
<tr>
<td>Account C</td>
<td>116</td>
<td>139.2</td>
</tr>
<tr>
<td>Account D</td>
<td>66</td>
<td>103.2</td>
</tr>
<tr>
<td>Account E</td>
<td>53</td>
<td>63.6</td>
</tr>
<tr>
<td>All Other Accounts</td>
<td>142</td>
<td>170.4</td>
</tr>
<tr>
<td>TOTAL</td>
<td>706</td>
<td>947.2</td>
</tr>
</tbody>
</table>

Printed report
**Financials**

<table>
<thead>
<tr>
<th></th>
<th>1985</th>
<th>1986</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industry Total</td>
<td>7343</td>
<td>8700</td>
</tr>
<tr>
<td>TAG Total</td>
<td>2203</td>
<td>2784</td>
</tr>
<tr>
<td>Share of Market</td>
<td>0.300014</td>
<td>0.32</td>
</tr>
<tr>
<td>Eastern Total</td>
<td>490</td>
<td>619.22833</td>
</tr>
<tr>
<td>Eastern Share (%)</td>
<td>0.222424</td>
<td>0.222424</td>
</tr>
</tbody>
</table>

West had just finished entering his calculations into the Macintosh when North knocked on his door. “Let’s see if East wants to come with us” he suggested, as they headed off for the hotel lounge.

East was the newest of all the regional managers, but he was no dummy. He had spent the last week “researching” the industry — calling some of his old school buddies who were working downtown, trying to figure out what the competition was doing. This morning he spent another hour on the phone line, this time with his Mac hooked up by modem to the biggest industry database in the country. He now had what he considered a pretty good assessment of the sales volume for the entire industry over the next year. He expected TAG to gain an additional 2 points on their share of the whole market. The rest was simple.

![East's formula and results](image)

North, West and East were well into the second round of jokes and anecdotes before South finally found them in the lounge. By far the most methodical, and usually the most optimistic of the crew, South spent almost all of his four hours playing with *MacPaint* on the Macintosh. It wasn’t until the last twenty minutes that he got down to the business of actually projecting sales using *Multiplan*. His idea was simple enough, target sales to grow at a certain rate.
In South’s spreadsheet, the formula for the 1986 figures are based on the sales figures for the past year (entered in rows 7-10) and the targeted rate of growth (entered in row 3 column 1). When South enters the annual growth rate, the 1986 sales figures are automatically calculated for all districts (rows 16-19).

At that afternoon’s planning session, South’s approach was accepted by all. They agreed to target sales to grow at an annual rate of 20% during 1986.

<table>
<thead>
<tr>
<th>ASSUMED:</th>
<th>TAG 1986 Sales Projections</th>
</tr>
</thead>
<tbody>
<tr>
<td>1985 GROWTH RATE</td>
<td>20.00%</td>
</tr>
<tr>
<td>1985 Sales</td>
<td></td>
</tr>
<tr>
<td>(Thousands)</td>
<td></td>
</tr>
<tr>
<td>East</td>
<td>120 125 115 130 490</td>
</tr>
<tr>
<td>North</td>
<td>90  96  87  104 377</td>
</tr>
<tr>
<td>South</td>
<td>150 160 149 171 630</td>
</tr>
<tr>
<td>West</td>
<td>170 182 165 189 706</td>
</tr>
<tr>
<td>TOTAL</td>
<td>530 563 516 594 2203</td>
</tr>
</tbody>
</table>

| PROJECTED:        |                             |
| 1986 Sales        |                             |
| (Thousands)       |                             |
| East              | 144 150 138 156 588         |
| North             | 108 115.2 104.4 124.8 452.4 |
| South             | 180 192 178.8 205.2 756     |
| West              | 204 216.4 190 226.8 847.2   |
| TOTAL             | 636 676.6 619.2 712.8 2643.6 |

Final spreadsheet
Tips on Developing Complex Spreadsheets

Here are some good rules of thumb which may save you a lot of time and trouble when you are developing your own large spreadsheets and “what-if” models.

- Work under the Manual Calculation option of the Calculator menu while you are building the spreadsheet. Otherwise, under automatic calculation every formula on the spreadsheet will be recalculated immediately when you enter one new value. This can cause considerable delay when you are working on a large spreadsheet with a lot of formulas. Under Manual Calculation, you can make a lot of entries quickly, then use the Calculate menu to Calculate Now.

- To condense large spreadsheets as much as possible, select No Decimals from the Format menu and set Column Widths as narrow as possible to accommodate entries.

- Clearly separate the entered assumptions from the calculated values. One method is to put all your assumptions in the first column of the spreadsheet. For example, South’s Sales Projections showed the assumed rate of growth in a cell of its own, rather than “hiding” it inside the formulas of rows 16-19.

  This not only makes it easy to see what all the assumed values are, it also makes it easy to see which formulas reference your assumptions. “Assumed” values which appear in formulas should be referenced as absolute addresses (e.g., R3C1) rather than relative addresses (e.g., R[-9]C).

- Give frequently-referenced cells a Name for easy identification in formulas: when you select the Define Name option, Multiplan will find the most likely row or column heading as a name for the value(s). You can keep this name, or change it to any name you like—a shorter version, for instance. Names composed of more
than one word always use an underscore instead of a space to separate words. Once you give a cell or group of cells a name, you can use that name instead of cell addresses in formulas.

"Named" Range

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>PROJECTED:</td>
<td>1st Qtr.</td>
</tr>
<tr>
<td>14</td>
<td>1986 Sales (Thousands)</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>East</td>
<td>R1(-9) * (1+GROWTH*L.RATE)</td>
</tr>
<tr>
<td>16</td>
<td>North</td>
<td>R1(-9) * (1+GROWTH*L.RATE)</td>
</tr>
<tr>
<td>17</td>
<td>South</td>
<td>R1(-9) * (1+GROWTH*L.RATE)</td>
</tr>
<tr>
<td>18</td>
<td>West</td>
<td>R1(-9) * (1+GROWTH*L.RATE)</td>
</tr>
<tr>
<td>19</td>
<td>TOTAL</td>
<td>SUM(R1C2:R1C7)</td>
</tr>
</tbody>
</table>

You can give cell a name and use that name in formulas

- For spreadsheets which print as more than one page, use the Options menu to Set Page Breaks and logically group rows and columns on each page. For example, if you enter all your assumptions in column one, for example, you can Set Page Break after column two if you want to print out the results only, and not the assumptions themselves.
- To print only part of the spreadsheet, mark the cells you wish to print before you use the File menu to select Print. The dialog box offers you the option to Print Selection Only.

Dialog box lets you Print Selection Only
Profit & Loss Projection

Projecting sales is just one part of the larger picture: projecting the net profit (or loss) for the company as a whole. For this, the projections made by the marketing group are combined with projected General & Administrative (G&A) expenses. The essential difference between a Profit & Loss Statement and a P&L Projection lies in its purpose and use.

Projections serve as a means of communicating between departments, or between top management and operations. They can serve as a plan to be followed, educating company employees as to what is to be done and assisting them in doing it. They can serve as a standard against which performance can be measured.

Profit & Loss Projections are also a means for controlling the future expenses and income of a company if it is enforced as a strict guideline for managers in each responsible department. They can help extend the reach of top management by communicating downwards company objectives and activities, and guiding corporate operations.

Since the sales managers were projecting sales in dollars, the CFO had to answer an important question before he could project gross profits: How many units will TAG need to manufacture — and what will be the cost of this production? In the case of TAG, the CFO developed cost figures based on volume ranges and projected seasonal variations in price. These costs were entered into the spreadsheet as formulas which “look up” the costs in a table.

<table>
<thead>
<tr>
<th>Detailed P&amp;L</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>4</td>
</tr>
<tr>
<td>5</td>
</tr>
</tbody>
</table>

Cost of Goods Sold is determined by looking up the quantity sold in a cost table (Rows 4 & 5)
Of course, when the president gets this report along with a copy of the final disk files, he will test the figures against his own profit ratio expectations. With his Macintosh at hand, the president could see how much flexibility he could tolerate in the figures, rather than adopt his old “do or die” policy in targeting sales.

<table>
<thead>
<tr>
<th>Ratio Analysis</th>
<th>Actual</th>
<th>Projected</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1985</td>
<td>1986</td>
</tr>
<tr>
<td>Net Sales</td>
<td>2203</td>
<td>2643</td>
</tr>
<tr>
<td>Cost of Goods Sold</td>
<td>996</td>
<td>1195</td>
</tr>
<tr>
<td>Gross Profit</td>
<td>1207</td>
<td>1448</td>
</tr>
<tr>
<td>Sales Expenses</td>
<td>120</td>
<td>145</td>
</tr>
<tr>
<td>G&amp;A Expenses</td>
<td>500</td>
<td>550</td>
</tr>
<tr>
<td>Operating Profit</td>
<td>587</td>
<td>735</td>
</tr>
<tr>
<td>Other Expenses</td>
<td>47</td>
<td>50</td>
</tr>
<tr>
<td>Income Tax Provision</td>
<td>270</td>
<td>352</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Net Profit after Taxes</td>
<td>270</td>
<td>352</td>
</tr>
<tr>
<td>Assets</td>
<td>114800</td>
<td>120900</td>
</tr>
<tr>
<td>Tangible Net Worth</td>
<td>1406</td>
<td>1700</td>
</tr>
<tr>
<td>Return on Net Worth</td>
<td>0.192013</td>
<td>0.206824</td>
</tr>
<tr>
<td>Sales Margin</td>
<td>0.122547</td>
<td>0.133031</td>
</tr>
<tr>
<td>Productivity of Assets</td>
<td>0.008162</td>
<td>0.009064</td>
</tr>
</tbody>
</table>

The president’s formulas

While the Profit and Loss Projections show expected income and expenses over time, the Profit and Loss Statement shows categories and amounts of income and expenses extending over the past years, months or quarters. Income and expense categories for your company may differ from the ones shown here, depending on the nature of your business and the recommendations of your accountant.

Cash Flow

The “common sense” definition of cash flow is the difference in the cash balances of a company on two dates. For example, if a company has a cash balance of $750,000 on December 31, 1983 and $900,000 on December 31, 1984, we can say that there was a net cash
inflow of $150,000. Changes in cash and other "working capital" components are often detailed in annual reports. Use Microsoft's *Multiplan* on the Macintosh to create the cash flow system shown here.

![TAG Statement of Changes in Financial Condition](image)

Changes in Working Capital reported in Annual Report
It is a matter of debate as to whether certain operating data, such as "debt write-off" and "inventory on hand", should be included in a net cash flow statement. Three different definitions have been used for

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Income</td>
<td>$200</td>
</tr>
<tr>
<td>Plus Depreciation</td>
<td>$200</td>
</tr>
<tr>
<td>&quot;TRADITIONAL&quot; CASH FLOW</td>
<td>$400</td>
</tr>
<tr>
<td>Plus Other Expenses not affecting</td>
<td>$200</td>
</tr>
<tr>
<td>Working Capital (Deferred Taxes, etc.)</td>
<td></td>
</tr>
<tr>
<td>Less Other Revenues not affecting</td>
<td>($100)</td>
</tr>
<tr>
<td>Working Capital (Equity Earnings, etc.)</td>
<td></td>
</tr>
<tr>
<td>WORKING CAPITAL FROM OPERATIONS</td>
<td>$500</td>
</tr>
<tr>
<td>Less Increases in Accounts Receivable</td>
<td>($1000)</td>
</tr>
<tr>
<td>Less Increase in Inventory</td>
<td>($1000)</td>
</tr>
<tr>
<td>Plus Increase in Accounts Payable</td>
<td>$600</td>
</tr>
<tr>
<td>Plus Increase in Accrued Liabilities</td>
<td>$400</td>
</tr>
<tr>
<td>OPERATING CASH FLOW</td>
<td>$500</td>
</tr>
</tbody>
</table>

"Net Cash Flow" totals. It's important to be specific about which method you are using when reporting from a cash flow summary statement. We have used the third method, identified as "Operating Cash Flow."

You can create the year-end cash flow summary for your annual report by extracting the totals for each category from your monthly cash flow statements. Similarly, you can consolidate statements from a number of years to derive a Cash Flow History.

Cash Flow Projection

A Cash Flow Projection is essentially a table which shows when future income is expected and when payments are due out. If you have never projected cash flow, you may wonder why anyone would care to know exactly what their checking account balance would be on a particular day. There are at least three good
reasons for taking the time to project the cash flow for yourself or your company.

First, if you can predict when you will have a high cash balance and how long the balance will remain high, you can manage your cash wisely by putting part of it in short-term interest-earning accounts such as Certificates of Deposit. Many companies follow this practice, “sweeping” funds from one account to another as often as daily. With extremely high balances, this practice can earn hundreds of thousands of dollars in interest.

Second, if your income is based on an irregular sales pattern, you can use a cash flow projection to see exactly how soon you will need to close the next deal in order to keep up your regular overhead payments, or what volume of sales to target for the next period, or how much short-term borrowing will be needed. On the other hand, if you have had especially good sales this period, you can use the cash flow projection to see how long you can go on vacation. In either case, companies and individuals with irregular schedules of payments often rely on cash flow projections for planning.

Finally, a monthly cash flow projection is a standard part of any business plan or loan application associated with starting up or expanding a business. Lenders want to know that you have thought about the future carefully and when you will break even. Even if you are going to fund a new business entirely from your own savings, you probably want to know exactly how long it will be before you will start earning profits.

<table>
<thead>
<tr>
<th>Cash Flow Table from past Cash Flow Statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
Alternatively, you can project a Cash Flow based on past Profit & Loss Statements, but the Cash Flow Projections are usually shown monthly or weekly—perhaps even daily—rather than quarterly or yearly. Also, some categories are more accurately projected using formulas rather than projecting absolute levels. For example:

- “Payroll expenses” could be calculated as a percentage of “Gross wages” (usually 10-45%).
- “Repairs and maintenance” could include an allowance painting and decorating which occurs periodically, but might not show up every year.
- “Other” could include an allowance for the “unexpected”, or could be calculated as a percentage of the total of all other “known” expenses.

If you are a small business with more variable income and expenses, consider this daily tracking system. In addition to projecting routine monthly expenses, such as office rent and equipment lease payments, you can easily add unusual income or expenses by date under this system.

![Daily Cash Flow Tracking System](image)
Here, lines are deleted from the top of the spreadsheet as they occur—i.e., only the future is projected. New items are added in date sequence. Entries which repeat regularly, such as monthly rent, are moved from the top of the form to the bottom as they transpire. For example, when the rent is paid in October, the line projecting October’s rent is modified to show November’s rent and moved into sequence.

![Daily Cash Flow]

**Cash Flow Updating**

**Balance Sheet**

A Balance Sheet is statement of a company’s or individual’s financial condition at a single point in time—usually the end of a year or a quarter. The report is called a balance sheet because the first column must “balance” with the second column; i.e., the first column’s total always equals the second column’s total.

A balance sheet may seem short and simple at first glance, but in fact it can be the most difficult to understand of all financial reports. Because balance sheets are used by banks and investors as a measure of a company’s condition, they have sometimes been manipulated by clever accountants to make a company seem better off than it really is. The Securities and Exchange Commission sets stringent requirements for footnoting unusual items on the balance sheet in annual reports to stockholders.
The first part of a balance sheet shows all tangible "assets"—cash and resaleable property and equipment. The second part shows all claims against those assets—current and long-term debt (liabilities) plus stockholders' equity. Assets and liabilities are each divided into short-term and long-term categories.

<table>
<thead>
<tr>
<th>ASSETS</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash</td>
<td>5,701,000</td>
</tr>
<tr>
<td>Short-term Investments</td>
<td>2</td>
</tr>
<tr>
<td>Receivables</td>
<td>3</td>
</tr>
<tr>
<td>Securities</td>
<td>4</td>
</tr>
<tr>
<td>Long-term Investments</td>
<td>5</td>
</tr>
<tr>
<td>Real Estate</td>
<td>2.6</td>
</tr>
<tr>
<td>Equipment</td>
<td>2.6</td>
</tr>
<tr>
<td>Other Assets</td>
<td></td>
</tr>
<tr>
<td>TOTAL ASSETS</td>
<td></td>
</tr>
</tbody>
</table>

Assets portion of balance sheet

Short-term assets are those holdings which can easily be converted to cash, whereas long-term assets may take longer to sell. For example, stock which is publicly traded on the stock exchange is considered readily convertible to cash. On the other hand, stock held in your Uncle Jack's fertilizer delivery business may be harder to liquidate, unless other members of the family are willing to buy it from you. Furthermore, the exact value of an asset such as stock is harder to determine than the exact value of a debt.

This distinction between long- and short-term is more straightforward for liabilities: Short-term liabilities are debts which must be paid within one year (12 months), long-term liabilities are due more than one year from the date of the balance sheet. Some long-term

<table>
<thead>
<tr>
<th>LIABILITIES &amp; STOCKHOLDERS' EQUITY</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Payable to Banks</td>
<td>6</td>
</tr>
<tr>
<td>Accounts Payable &amp; Accrued Expenses</td>
<td></td>
</tr>
<tr>
<td>Accrued Employee Salary &amp; Benefits</td>
<td></td>
</tr>
<tr>
<td>Long-term Debt</td>
<td>7</td>
</tr>
<tr>
<td>TOTAL LIABILITIES</td>
<td></td>
</tr>
<tr>
<td>Stockholders' Equity:</td>
<td>8</td>
</tr>
<tr>
<td>Common Stock</td>
<td></td>
</tr>
<tr>
<td>Retained Earnings</td>
<td></td>
</tr>
<tr>
<td>STOCKHOLDERS' EQUITY</td>
<td></td>
</tr>
<tr>
<td>TOTAL LIABILITIES &amp; EQUITY</td>
<td></td>
</tr>
</tbody>
</table>

Liability portion of balance sheet
debts will be identified on the balance sheet as "current long-term debt"—i.e., that portion of the long-term debt which is payable within the next twelve months.

"Equity", for individuals, proprietorships and partnerships is often calculated as the difference between the value of your assets and your liabilities. In this case, it is usually called "net worth" and your balance sheet will balance by definition. For corporations which are not traded publicly, the value of the owners' stock may be a combination of actual cash contributions from investors and some imputed value assigned to the founders by vote of the stockholders.

For publicly traded corporations, the valuation of stockholders' equity is more controlled: At the time of going public, the stock value of the company may be determined by taking some multiple of the tangible net worth. For example, a company with tangible net worth of $100,000 may decide that it is really worth $1,000,000 (a multiple of 10), and thereby offer 100,000 shares of stock at $10. Once the stock is on the market, its actual value will rise or fall according to the price people are willing to pay for it. From that point on, stockholders' equity will be the sum of all monies received by the company from sale of stock, plus all assigned and unassigned treasury stock at par value, plus retained earnings (net profits after taxes which have been accumulated in previous years and not distributed as dividends).

"Goodwill" may appear as an asset on a balance sheet in the case of selling a business, for instance, or determining the value of stock which has not been traded on the open exchange. From the seller's point of view, goodwill is the intangible value which accrues from building a solid base of happy, loyal customers—the residual, lasting effect of advertising and service quality. From the buyer's perspective, goodwill is a plug item on the balance sheet when you are paying more for the company than the assets are really worth. Goodwill as an asset has no value when a company goes bankrupt and sells all its tangible assets in auction.
Charting the Figures

You can use Microsoft's Chart to create graphs directly from information entered on a Multiplan spreadsheet. Detailed instructions for copying the data from Multiplan to Chart are given in Chapter 1.

![Net Sales Chart](chart.png)

Net Sales

Chart derived from Multiplan data

Merging Tables with Text

You can copy information entered on a Multiplan spreadsheet into MacWrite or Word. Simply select the area of the spreadsheet you wish to copy, use the Edit menu to Copy the information onto the Clipboard. Quit Multiplan, open a MacWrite or Word file, and use the Edit menu to Paste the information into the text. Finally, select a type style and size the data before you set tabs to arrange the data in columns on the page.

![Balance Sheet](balance_sheet.png)

Balance Sheet as of December 31, 1985

<table>
<thead>
<tr>
<th>ASSETS</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash</td>
<td>5,701,000</td>
</tr>
<tr>
<td>Short-term Investments</td>
<td>2 34,080,000</td>
</tr>
<tr>
<td>Receivables</td>
<td>3 6,163,000</td>
</tr>
</tbody>
</table>

Set tabs in MacWrite to arrange Multiplan data in columns
Spreadsheets and Databases

You can copy information entered on a Multiplan spreadsheet into a database or file program such as Microsoft File. Select the area of the spreadsheet you wish to copy, then use the Edit menu to Copy the information onto the Clipboard. Quit Multiplan, open a File file, and set up a form which provides a field for each column of copied data. Be sure to identify fields as text or number fields. Finally, use the Edit menu to Paste the information into the datafile.

Values which were calculated by formulas entered on the spreadsheet will be copied into the database as numeric values only. You can create new fields to calculate these values if your file program allows formulas.

Similarly, you can copy records from a database into rows on a spreadsheet. Values which were calculated by formulas entered in the database will be copied into the spreadsheet as numeric values only. You can re-create the formulas to calculate these values if you wish.

A Note About SYLK Files

You may have noticed that when you Save a file using Microsoft's Multiplan (and other Microsoft products) the dialog box offers the option of saving the file in either Normal or SYLK format.

SYLK format is a “standard” format which Microsoft has developed in order to convert files from one program to another: Multiplan files to Word files, for example. Since the Macintosh version of these programs handles the conversion for you, you don’t have to be concerned about SYLK formats for working on your own machine.
The SYLK format would, however, be required if you wish to transfer your Multiplan (or Word) files from your Macintosh to an IBM PC, for example, over the phone lines. Multiplan files which are saved in "normal" Macintosh format cannot be used by the IBM PC version of Multiplan; SYLK format Multiplan files, on the other hand, can be telecommunicated from your Macintosh and used by most Microsoft products on many other machines.

If you are interested in seeing what a SYLK file looks like, try saving one of your Multiplan files in SYLK format. A SYLK file is stored as ASCII characters; you can view the SYLK file using MacWrite or any other word processing program.
Chapter 5

Text

Memos
Envelopes
Letterhead and Logos
Form Letters
Report Formats
Complex Formats
Resumes
Printing Options
Merging Text with Other Files
Even in this day of electronic communications, most of us still conduct our businesses on paper. Contracts, reports, memos and letters are an integral part of daily business. The printed page is vital and your business can benefit from producing high-quality letters as much as it does by producing high-quality products or services. Whether you use an ImageWriter printer with dot matrix printing, a character printer with “letter quality” printing, or a LaserWriter with almost “typeset quality” output, you can produce beautiful printed copy with your Macintosh.

We have selected the examples in this chapter because they are common to most businesses and because they each illustrate different formats. We start with a simple memo, then we produce a letter with an envelope, then we produce a series of form letters—each with the same text but a different addressee. Finally, we look at the various formats you can use to prepare resumes and reports.

It's easy to produce these and other business documents using the tools demonstrated this chapter: MacWrite and Microsoft Word.

The format of a document is, essentially, the arrangement of the words on the page. For instance, a typical letter might be formatted “flush left” and “ragged right”. This means that the left margin of the text is straight and the right margin is uneven, but within a right margin setting. If the text is “justified”,

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rather than ragged right, then all lines end at the right margin setting precisely.

Since each paragraph can have a format of its own, and since most documents are constructed of more than one paragraph, more than one format may be defined within a document. You will find that the tools used in this chapter make it easy to set up and change paragraph formats as you go along.

Of course, there's more to a document than the format -- namely the content. Unfortunately, this chapter does not show you how to write, except to remind you of the "seven virtues of good business letters": they should be short, neat, clear, direct, sincere, grammatical, and forceful.

Memos

The typical memo uses the simplest format of all document types. To produce the one shown here, simply use the "default" format, i.e., the format which MacWrite or Word provides for you until you select a different one. The default format for these and most other text processing tools is: flush left, ragged right, with approximately one-inch margins.
A memo with ruler line shows MacWrite's initial format

Four steps are required to produce this memo: open a new MacWrite file, type the memo, print it out, and exit or (optionally) save the file. These steps are summarized here for MacWrite; the same basic steps apply for Word, though the menu titles may differ.

Open a new file and start typing as you would on a typewriter except you don't have to press the RETURN (i.e., carriage return) key at the end of every line. MacWrite automatically fits the text within the margins. Press the RETURN key at the end of each paragraph, or whenever you want to end a short line.

To print the memo, select Print from the File menu. (For longer documents, it's a good idea to Save your file periodically while you work, especially before printing the document). A dialog box lets you set the print quality (high, standard, or draft), page range, number of copies, and paper type (continuous feed or cut sheets).

Print dialog box
For this particular memo and other simple, one-page documents, no particular settings or selections are required. Be sure the printer is ON and the paper is inserted properly before you click OK. MacWrite expects the top edge of the paper to be just covered by the paper guard mechanism on the printer (the bar with black rollers). The text automatically prints out with 1 ¼-inch margins, unless you have specified otherwise by adjusting the margins on the ruler line.

Envelopes

To produce a single letter with an envelope (as opposed to a series of form letters), use this simple technique: type the letter as the first page(s) of the file, type the envelope address as the last page of the file. Addresses normally appear in the middle of an 8 ½-inch wide envelope, so before typing the address set a tab a few inches to the right of the left margin. The tab settings appear as triangles on MacWrite's ruler line. MacWrite places one for you automatically at the 5 ½-inch mark. You can move this to another position by positioning the mouse pointer over it and holding the mouse button as you drag the mouse to the new position—for example, the 4-inch mark on the ruler line—then release the mouse button. (You can get more tabs from the boxes at the lower left on the ruler line: plain trangles are flush-left tabs, trangles with dots inside are decimal tabs.)

Ruler line shows tab positioned at the 4-inch mark

Next, position the cursor at the end of the text of the memo (or letter) and use the Format menu to Insert Page Break. Then type the address, pressing the TAB key at the beginning of each new line.
When you go to Print from the File menu, be sure to select Cut Sheets, rather than continuous feed paper. This way, the printer pauses after printing the first sheet of paper (the memo or letter) and asks you to insert the second sheet (the envelope) before continuing to print. The first time you print an envelope, the address may appear too high, too low, too far left, or right. Develop your own standards for positioning the tab on the ruler line and for positioning the envelope in the printer.

As normal procedure, you could print a second copy of the letter itself (not the envelope) for your own files, then modify this same file to produce your next letter. In other words, save a printed copy of the letter for reference and re-use the same file on the disk to produce other letters. This way, the file is always saved under the name “Letter/Envelope” and you keep your disk free of unnecessary files.

**Letterhead and Logos**

If you are using your own pre-printed letterhead stationery, you may need to skip a few lines at the top of each letter file to allow space for your letterhead and logo on the paper. It's a better idea to start with a few blank lines in the file than to simply position the print
head below your logo when positioning the paper in the printer, especially if your letter is longer than one page.

If you are not using letterhead stationery, you can type your company name and address as part of the file to be printed. You can even design your logo using MacPaint or MacDraw and paste into your letter file. To do this, first create your full letterhead with logo and company name and address using MacPaint or MacDraw. While still in MacPaint or MacDraw, use the Edit menu to Copy the entire letterhead design into the clipboard.

Then Quit MacPaint or MacDraw and open a MacWrite or Word file—either a new file or a letter which you have already typed. (If you are using a single disk drive, you may need to change disks during this process, but the Macintosh operating system copies the clipboard from one disk to the next for you.) Once in your text file, position the cursor at the top of the file and use the Edit menu to Paste the letterhead design from the clipboard to the top of your letter file.

The letterhead here—or any other drawing pasted from MacPaint or MacDraw into MacWrite—is a single object, like a letter of the alphabet: you can select the
whole thing with a single click of the mouse, and cut it or copy it to other locations in the text, and you can move it left or right by adjusting the margins. In MacWrite (but not Word) you can even re-size the object using the same techniques as in MacPaint or MacDraw. You cannot, however, change individual words or characters within text which has been pasted from a drawing program into a text file.

Form Letters

Form letters were once easily recognized as photocopied "standard" letters, often with the addressee’s name and address typed directly onto the photocopy. As soon as you opened one of these you realized that a) you were one of many people who were getting the same message, and b) it was either a rejection notice or a request for money.

With the advent of the microcomputer, growing volumes of form letters are now "personalized": the entire letter is printed as an original, including your name and address. Now when you open your mail you may not realize, at first, that the letter you are reading is being read by hundreds of others. What this means for businesses who use form letters is that your message stands a much higher chance of being read by your audience.

Ideally, you are printing your form letters onto continuous-form paper, which can be pre-printed with your logo and company address. Many office-supply outlets now offer this service. Alternatively, you can use an automatic feeder for individual sheets of stationery. In the worst case, you will need to Print using Single Sheets, and stand by during the printing process to insert each new sheet, clicking OK to print each letter.

Similarly, you can print a series of envelopes easily if they are designed for continuous feed, or you can print a continuous stream of addresses on mailing labels. Otherwise, you need to position each envelope in the printer as called for.
Unfortunately, at the time of this writing MacWrite alone cannot automatically produce form letters by merging a letter file with a series of names and addresses. If MacWrite is the only text program you have, you can still produce a series of letters in this make-shift manner: type the letter with the first addressee’s name and address, then print it, change the name and address, print again, etc. This technique is labor-intensive (compared to any automatic merge process) and the list of names is not saved for re-use.

In order to be able to produce a series of letters automatically, you need to purchase a different text program, such as Word, or a list-handling program which works in conjunction with MacWrite, such as MegaMerge. Here in this chapter we look at the steps involved in printing a series of addresses with Word.

Word is a text processing program which includes merge capabilities. That is, you can create both your list of addresses and your form letter, and print out the series of letters using Word alone.

Two different files are involved in producing a series of form letters: one file contains the text of the letter itself, and another file contains all the names and addresses to which the letter will be sent.

First, prepare the file that contains all the names and addresses. On the first line of the file, type a list of all the fields which appear in each record. Each field should be separated by a comma or a tab. Remember that a record is simply all the information pertaining to a single addressee, for example:

first name, last name, company name, street address, suite number, city, state and zip.

Type each name/address record on a line of its own. Set margins wide enough to accommodate the longest record, and press the RETURN key at the end of each record.
Separate each field of the address with a comma. Include a comma or tab for every field, even if some of the records do not have information for every field. If any field must have a comma within it (e.g., “Fun Things, Inc”), the entire field must be framed in quotation marks.

List of addressees must follow strict rules in order to be used to print mailing labels or form letters

In order to print out a series of mailing labels or form letters, a second file must be created in addition to the list of addressees. This second file contains the letter or defines how the addresses are to be printed. For example, a file which prints mailing labels should look something like this:

Mailing label print file
As you can see, each element of the address is listed by name and framed in special brackets. The opening bracket is created by pressing the Option and Backslash keys simultaneously. The closing bracket is created by pressing the Option, Backslash and Shift keys simultaneously. A file to print a series of form letters through Word should look something like this:

![Form Letter](image)

To print a series of letters or address labels with Word, use the File Menu to Print Merge from a file which has been prepared with field names in brackets, such as the one shown above. With Word you can insert special instructions in any print file — allowing you to add personalized salutations or closing for each letter, for example, or to select the addresses you want to use.

You can also use the merge feature to print your mailing list on plain paper, easy reference as a phone list (if your file includes phone numbers), or as a membership list for your club or association. For other applications of merge-printed lists, see Chapter 7.

### Report Formats

If memos and letters are all you ever produce, you probably don’t need to know anything more about formatting than that MacWrite and Word will do it all for
you. However, if you need to produce longer documents here are a few more tricks to make the process simple, and the finished product more pleasing.

A simple series of paragraphs is very easy to type. Complex formats are too time-consuming to produce using conventional typewriters. This may be why this unexciting format has turned up in so many business documents.

However, documents which are quick in production often make for rather slow reading compared to those which use changing type styles and paragraph formats to show emphasis and to distinguish between levels of content. With computerized text processing, new formats are developing which make reading or referencing a document easy.

The quickest way to dress up a dry format is to take advantage of the wide variety of type styles available with the Macintosh technology, but don't go wild using every font available. For business documents, it's a good idea to stick to one type style throughout the text, varying size to distinguish between heading levels. If you include graphics, follow the common practice of using a different type style in the illustrations and figure titles from the one you use in the text itself.

In addition to varying type sizes, you can vary paragraph formats to make it easy for the report. People who don't have time to read the entire document will appreciate being able to skim for summary sentences throughout.

With MacWrite, paragraph formats are set by adjusting the margins and tab settings along the ruler line. In setting up standards for common documents like letters or monthly sales summaries, stick to a single ruler line which includes all the tabs you need for the document. For longer, more complex documents, use the Format menu's Insert Ruler option whenever you change to a new format within the text.
MacWrite’s ruler line symbols

MacWrite’s ruler line also lets you set paragraph indentation, select single, 1 1/2, or double spacing between lines, and set paragraph lines to be flush-left, flush-right, centered, or justified (i.e., flush-left and flush-right).

The version of MacWrite released in early 1985 (ask your dealer for your free upgrade if you have the earlier version!) lets you select 6 lines per inch for printing on forms or labels which expect this conventional measure. If you do not select this option, the number of lines per inch will depend on the style and size of type you select. If you do select this option, you will need to select type sizes of 12 points or less; otherwise, lines of large type will write over each other (and you can see this on the screen when you make this selection).

Word offers a greater number of options than MacWrite for defining the format of your document. This makes Word more truly a writer’s tool, but the tradeoff is that Word is more difficult to learn at first.

Like MacWrite, Word uses a ruler line which you can view by selecting Show Ruler from the Edit menu. You can set tabs along this ruler line by first selecting Tabs from the Paragraph menu, then selecting options in a dialog box. Here you have not only flush-left and decimal tabs, but also center and flush-right tabs. Word also offers the option of creating a tab leader, i.e., a dotted line, dashed line, or solid line preceding every tabbed entry. Finally, you set the tab by specifying its position in inches along the ruler line.
In addition to using the ruler line and tab settings, you can use Word’s Paragraph menu to set spacing between lines and to position the text on the left, right, centered, or justified. The Formats option is used to specify line indentation, to set extra space before or after a paragraph, to keep lines of a paragraph together on a page, and to set a fixed line height.

One of the miraculous advantages of producing documents on a computer, rather than a typewriter, is that you can create running headers and footers which appear on every page. Use of headers and footers is especially appropriate in producing reports, so readers can easily see what section they are reading or skip to one particular section.

With MacWrite, headers and footers are entered through the Format menu’s Open Header and Open Footer options. You can enter more than one line of text for your headers or footers.
Word lets you enter a header under the Document menu's Running Head submenu of options. You can specify whether this running head appears at the top or bottom of the page, whether it prints on the first page, and whether it prints on odd or even pages only.

**Complex Formats**

If you work frequently with long documents or complex formats you have probably developed your own system for making the production process simple and efficient. Here we offer some tips collected from professional writers and word processing experts.

- Sometimes it is easiest to type all the text first, and do all the formatting afterwards. What this means in practice is that you spend the first part of the job working only on the keyboard, the second part working mainly with the mouse. This approach is especially handy if you are dividing the work between two people: a high-speed typist (who may know the keyboard but doesn't know the text processing package you are using) and a format specialist (who is familiar with the capabilities of a complex program like Word).

When working by this method, after the words have been typed you can globally change the entire document to the most common format first, then work on exceptions. In addition to formatting, this second stage could include copying other files from MacPaint, MacDraw, Multiplan, MacProject, etc.
• In producing a very long document, you may need to divide it into small sections which you save as individual files. Early versions of *MacWrite* limited the size of each text file to no more than eight pages, and *Word* files were similarly limited by the size of your Macintosh's memory. Later versions of these programs take advantage of larger memory and extra space on your disk, allowing you to create longer files. Nevertheless, it's a good idea to keep your text files small whenever possible. When you print any text file, these programs create a duplicate called a print file on the disk. In other words, you will always need to have free space on your disk equivalent to the size of the largest file you are printing from the disk. (This limitation is not so significant if you are working with a hard disk.)

**Resumes**

Finally, the example of a resume illustrates working with some unusual paragraph formats. A well-arranged resume is easy to read. The format you choose depends upon the amount and type of information you are presenting as well as on presentation.
The recommended practice is to limit your resume to one or two pages. It is also a good idea to leave lots of "white space". The general rule which derives from these two conflicting aims is that it is better to cut words and be succinct, rather than cram one page from margin to margin with long descriptions of your qualifications.

Some employment agents recommend that you print your resume on a high-quality character printer such as a daisy wheel printer, rather than on a dot-matrix printer such as the ImageWriter. On the other hand, with an ImageWriter you can select different sizes and styles of type for different sections of your resume. Use a LaserWriter if you have access to one. Select only one type style and stick with it throughout; use italics and bold sparingly (only in section headings, for instance).

Printing Options

The type of printer you are using can affect your decisions about how to format and produce your documents. For example, if you are using an ImageWriter dot matrix printer, you will probably want to print all final copies using the high resolution option. If the dot-matrix look of ImageWriter printout is still too informal for your business, you can hook your Mac up to a letter quality printer.

Letter quality printers offer standard typewriter fonts, and they cannot print out graphics. These printers can use carbon ribbons and produce crisper, darker letters than the ImageWriter with a fabric ribbon. These printers generally require an additional software program—a printer driver, which converts the Mac's bit-mapped characters into the more traditional ASCII codes. Some of these programs include additional features, such as the ability to queue several documents for printing sequentially one after another. Also, some letter quality printers can be used with Word without additional software. Check with your dealer before you
buy a letter quality printer to find out if you need additional software.

A LaserWriter printer offers the best of both worlds: high quality printing as well as graphics and different type styles. The only drawback of laser printers is their price, though this is offset by the fact that you can hook many Macs up to one LaserWriter for simultaneous use. If your office can afford it, it's well worth the investment for the quality of output.

**Merging Text with Other Files**

As mentioned briefly in this chapter, using the Macintosh you can create graphic images, such as a logo, using *MacPaint* or *MacDraw*, then copy that image into a *MacWrite* or *Word* file to create your own letterhead. You can also copy from *MacProject*, *Chart* and *Multiplan* into *MacWrite* or *Word*. Tabular information from *MacWrite* or *Word* can be pasted into a *Multiplan* spreadsheet. Examples of merging text with tables of figures, charts and diagrams are included in the chapters which discuss each of these other programs.
Chapter 6 Forms

Creating a Form
Filling in a Form
Sales Orders and Invoices
Credit Memo
Account Statement
Purchase Order
Forms vs. Files
Chapter 6 Forms

Perhaps the business document that most often comes to mind when we say "paperwork" is the blank form that inevitably must get filled out. Forms, however, serve a very important function in daily business operations. They are simply an organized format for gathering information needed to run the business efficiently.

The Macintosh lets you design forms that suit your need, either to create forms that never existed or to modify an old form that your business has long since outgrown. Using MacDraw you can produce your own customized forms.

These forms may be printed out as blanks and filled in by hand, or they may be filled in on the screen and printed out. For example, as an alternative to a cash register, you might use your Mac at the front counter of your store to produce an invoice every time a sale is made. Or, based on an insight discovered by flow charting some internal office procedure, you might create a new form that will easily track a part of your inventory that was previously lumped in the "Miscellaneous" category.

Whether you have a LaserWriter printer with several Macs attached to it or one Mac with an ImageWriter printer, you can use completed forms as a source for typing input to your spreadsheet or database files. (See also Chapter 7, Lists, for automated
processing examples). From inventory to invoicing, forms can help you run your business more efficiently.

Forms created using *MacDraw* can include your logo or trademarks and use a greater selection of type styles than allowed by *MacWrite* or *Word*.

**Logo Examples**

In designing any form, first ask yourself: what is the final size desired? While it is possible to reduce or enlarge a form after it has been designed, it can be time-consuming if you have to re-size all your type style selections.

In selecting a form size, ask yourself how you will be using the form. If, for example, you want to photocopy the form and fill it in by hand, then fit the form to your printed paper—usually 8 ½” X 11”.

If you want speedy on-screen entry for each transaction, then design the form such that the entry area is confined to one 6 ½” X 3 ½” area on the form—the area visible on the screen. The rest of the page can include a promotion for your store, conditions of warranty, or terms of sale.

If you want to use windowed envelopes to mail copies of this form to your customer, position your company address and the customer’s address to match the position of the windows in the envelope.
If you want to take the “master” printout of your blank form to a printer or copy shop for reproduction, you can save printing costs by printing more than one form on a single sheet. For example, you can make the form 8 1/2” X 5 1/2” and fit two forms on each 8 1/2” X 11” sheet. Most printers have paper cutters which can slice all the pages in half for you.

With MacDraw you needn’t be limited by the conservative tradition of pre-printed universal forms. Your customized forms can include artistic touches consistent with the style of your business.
Creating a Form

To create a form with MacDraw on the Macintosh, open a new MacDraw file and use the Layout menu to Reduce to Fit. This gives you a view of the entire 8 X 10 inch print area. Use the rectangle icon option to mark out the edges of your form. In the example shown here, the form is 5 X 8 inches. Change the Fill from White to None so you can see the grid lines underneath.

Layout area marked with a rectangle

Use the Layout menu to return to Normal Size and design the form. Begin with the title of the form. Fields composed of a title and one blank line may be created using keyboard characters, including the underscore character.

A series of lines or columns can be created using the vertical and horizontal line icon. Draw one line first to the desired length and thickness, duplicate it once and position the duplicate far enough from the first line to allow room for the information to be entered. Once you position this second line, subsequent duplicates will
automatically position themselves the same distances apart.

![Invoice form diagram]

**Duplicating lines in a series**

If you have trouble positioning lines or text exactly where you want them, you can use the Layout menu to Turn Grid Off. With the grid ON, you move objects at intervals of 8 pixels, or about 1/16th of an inch; with the grid OFF you can position objects at finer intervals, but it may be more difficult to get exact alignment between objects without using the Arrange menu’s Align Objects option.

You can save time by duplicating and changing words whenever possible. In this example, the “Sold to” text and lines were simply selected, duplicated, and moved. Then the word “Sold to” was changed to “Ship to” in the duplicate.

```
SOLD TO:  

SHIP TO:  
```

"Sold to" text and lines were duplicated and modified to create "Ship to" area.
To create a section for entering rows and columns of information, such as quantity, description, unit price and total, use the Layout menu to Reduce to Fit. Use the rectangle to outline the area and, as before, select the Fill pattern None. Duplicate a series of horizontal lines using the same techniques described above for the "Sold to" name and address lines.

Outline a subsection of the form for rows and columns

On most forms the vertical lines are best handled a little differently from the horizontal lines: draw the first vertical line and duplicate as many as you need, then position them varying distances apart to accommodate the different types of information.

Drawing vertical lines
Use the Layout menu to return to Normal Size and type the headings for each column. The simplest method is to type all the headings as one line of text.

Meticulous designers may prefer this more time-consuming alternative: type the first heading, using the Style menu to Center it, then duplicate the first heading several times, and position each duplicate exactly in the center of each column. Then click the mouse on one column heading at a time and change the duplicated word.

Now you can be certain that each column heading is centered within its column. To be absolutely sure that all the headings are also aligned with each other horizontally — especially if you are working with the grid turned OFF — you can select all the column headings and use the Arrange menu’s Align Objects option to Align Tops.

Alignment dialog box

To select more than one object at a time, you can either “lasso” the objects with the mouse pointer, or hold down the Shift key as you click the mouse pointer on each object.

Finally, add your company name and logo. If you have drawn this before, you can copy it in from another file and reduce it to fit the space on your form. You can open the second file while the form is still on the screen.
Select the logo which already exists in one file, use the Edit menu to Copy it into the clipboard. Then use the File menu to Close the logo file and re-activate the window showing the form you are building. Here, use the Edit menu to Paste the logo into the form file.

If the objects you are selecting are not already grouped as a single object, it's a good idea to use the Arrange menu to Group them immediately after pasting the objects into the file. After positioning and sizing them appropriately, you can always Ungroup them if you wish to make detail changes.

In this example, the form is designed to be 5 X 8 inches so two will fit on one 8½ X 11 inch printed page. The print shop will cut the forms in half. Two final steps are required to create a "camera-ready" master for the printer.

First, use the File menu's Page Setup option to set the printer to print the page Wide rather than Tall.
Then use the Layout menu to Reduce to Fit, use the Edit menu to Select All, use the Arrange menu to Group Objects and the Edit menu to Duplicate the form. Position the two forms next to each other on one page. It’s a good idea to use the File menu to Save your form before you Print it.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>US Legal</td>
<td>International Fanfold</td>
<td></td>
</tr>
<tr>
<td>Orientation:</td>
<td>Tall</td>
<td>Tall Adjusted</td>
<td>Wide</td>
</tr>
</tbody>
</table>

Page Setup dialog box

Filling in a Form

There are basically three ways of filling in a form:

1) You can fill in the variable information on each form by hand. All you need to do is print out one blank form and take it to a printer or copy service to reproduce as many copies as you need.

2) You can display the blank form on the screen and fill it in using MacDraw before you print it out. If you choose this approach, there is one more step which
makes this process easier: enter a bullet (press the Option Key and the number 8) or an asterisk in each field that will be entered on-screen. The data you enter stands out most clearly if it is in a different font from the form labels. To enter information in a field, simply click the mouse on the bullet or asterisk and type the data.

3) For forms with many rows and columns of entries, you may choose to build parts of the form using MacDraw (logos, headings, etc.) then paste these parts into the MacWrite or Word file where you then will enter the variable data. This method offers two advantages:

It is easy to fill in large forms using the tabbing capabilities of a text processing program. MacDraw has no tabbing function, so you are slowed down by switching from keyboard to mouse repeatedly as you fill in the form.

Text typed in MacWrite and Word can be copied into a spreadsheet or database file. Text typed in MacDraw cannot be manipulated by other programs.

Form to be filled out using MacWrite
The two primary disadvantages of working with a form in *MacWrite* or *Word* are that you cannot type new text in an area of the form which has been pasted into *MacWrite* or *Word from MacDraw*. This means, for instance, that you cannot build a grid of lines to create rows and columns in *MacDraw*, then fill in that grid using *MacWrite*. Create only the unchanging parts of the form with *MacDraw*, such as the logo and boxed column headings. You cannot drop vertical lines down areas of the form to be filled in as text.

The process of copying drawings from *MacDraw* to *MacWrite*, as described elsewhere in this book, involves selecting the drawing in *MacDraw*, using the **Edit menu to Copy** it onto the Clipboard, then opening a *MacWrite* file and using the **Edit menu to Paste** the drawing into the text file. If you are pasting more than one drawing into a text file, use the Scrapbook feature to collect all the elements from your *MacDraw* files before entering the *MacWrite* file.

### Sales Orders and Invoices

A Sales Order form records a request from a customer for your products or services. If payment is collected at the time the order is placed, then the Sales Order (or a second copy of it) also serves as the Invoice and Receipt.

Essential fields on a Sales Order can include:
- Date of order
- Order number
- Customer's P.O. number
- Customer's name, address, phone and account number
- Bill-to address, if different from the Ship-to address
- Quantities ordered, item descriptions, unit prices and totals
- Total order value, discount, tax, and total amount due
- Method of payment: cash, C.O.D., Charge (account number)
- Customer’s signature, accepting order and acknowledging delivery
- Salesperson’s ID
- Standard message, such as “Thank you”
You may want to add columns for QTY SHIPPED and QTY BACK-ORDERED. If so, three copies of the form may be called for: one as the customer’s invoice and receipt, one for your invoice file, and one for your unfilled orders file.

Your customized Sales Order form can include descriptions and prices for your most commonly ordered products, to save time during order entry.

An Invoice looks exactly like the Sales Order form, but it is usually mailed to the customer after the order is placed and delivered. You can add information which was not known at the time the order was placed, such as delivery date and method. You can also include the terms of payment applicable to each customer, and an explanation of finance charges.

You can create a series of similar forms easily. Build your first form and save it under its own name. Then modify the form and use the File menu’s Save As option, giving the file a new name. This creates a second file on the disk; the first file remains unchanged.

You can mail the Invoice out in duplicate, so the customer can keep one copy and return one copy with payment, or include instructions for returning part of the form (see Account Statement, later in this chapter). You can purchase continuous form computer paper that is 2 or 3 part carbonless paper.

Credit Memo

One or two additions to your Sales Order form converts it to a Credit Memo, noting that the amount shown is a credit for returned merchandise, or a billing correction. You can easily copy and modify your Sales Order file to make the Credit Memo a completely different form, or print it on a different color of paper so there is no chance for confusion in the accounting.
department. The Credit Memo includes an area for referencing the original Sales Order/Invoice number, and may include a place for a signature authorizing the credit.
Account Statement

Account Statements summarize each customer's account, including the balance forwarded from the previous statement, recent payments received, and current-period invoice totals.

Account Statement
In this example, the Account Statement is set up so the customer can return part of it with the payment, and keep part for their own records. The addresses here are lined up for a windowed envelope to be used in making the payment.

Addresses match windowed envelope

Your Account Statement form may need to include a complete breakdown of finance charges as required by Federal Regulation Z. Your attorney or accounting firm can tell you if this regulation applies to you.

The Finance Charge is computed by applying a "Periodic Rate" of 1.2% per month which is an Annual Percentage Rate of 16% applied to the Previous Balance without deducting current payments and/or credits appearing in this statement. Account Balance must be paid within 30 days to avoid additional finance charges.
Purchase Order

Purchase orders are customized forms for ordering products or services from other companies. Notice that the Purchase Order looks much like a Sales Order, but it adds a line for an approval signature and it does not include a final total.

---

**TAG**
The Activity Group Corporation
668 Market Street, Suite 68
Los Angeles, CA 90017
PHONE (415)123-4567

**VENDOR:**

---

**Account #:**

---

<table>
<thead>
<tr>
<th>ORDER NO</th>
<th>ORDER DATE</th>
<th>ACCOUNT NO</th>
<th>AUTH BY</th>
<th>PURCHASE ORDER #</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHIPPED VIA</td>
<td>DATE SHIPPED</td>
<td>TERMS</td>
<td>METHOD OF PAYMENT</td>
<td></td>
</tr>
<tr>
<td>QTY ORDERED</td>
<td>QTY SHIPPED</td>
<td>ITEM NUMBER</td>
<td>DESCRIPTION</td>
<td>UNIT PRICE</td>
</tr>
<tr>
<td>DELIVERY INSTRUCTIONS:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**THANK YOU**

---

**Purchase Order**
Forms vs. Files

Whether you are completing each form by hand or on screen, you will probably want to save the information entered on some forms into a data file.

The next chapter, Lists, offers some tips and alternatives for accomplishing this.
Chapter 7 Lists

What's a Database?
Selecting a Database
Customer List
Inventory List
Copying Your List to Other Programs
Chapter 7 Lists

We all keep lists of one kind or another. The most common is a list of names with addresses and phone numbers, whether they be family or friends, clients or suppliers. Another common list is a list of the checks written, along with check number, date, payee and amount. You might have a list of all the equipment and valuables you own, with serial numbers and appraised market value or residual value after depreciation.

Some businesses keep lists of invoices with invoice number, customer name, and total amount due. When they receive payments, they check off the invoice listing in their credit ledger and transfer the amount from "Receivables" to "Cash In".

If you have more than a few employees, then you probably have a list showing how much you have paid to each in wages or salary and how much you have withheld for taxes, insurance, pension funds, etc. Retail businesses maintain price lists and product inventories.

These familiar lists are the stuff of which a computer database is made. A database program helps you define your list, and get the information you need from that list. Hundreds of hours of work can be saved by using the Mac to help you maintain the lists you use every day.

It is important to understand how easy it is to use a database to help you in your daily business. We discuss what special features databases offer you, then
we give you some tips on how to select the best
database program for your needs.

After going over the basics, we demonstrate two
lists which are common in business, yet which are very
different. We build a simple name/address/phone list
which we sort by zip code and print onto address
labels. Then we show some of the differences between
that simple kind of list, and an inventory list, which
includes mathematical calculations.

For purposes of demonstration, we use the
program called File, by Microsoft. Even if you don't have
the File program, you can still benefit by looking at the
following examples. They are designed to give you a
taste of what is possible with a database program. Once
you get an idea of how a database program works, you
can take a more informed look at the forms and files
you use in your daily business.

What's a Database?

A database is a filing system. Almost anything you
now store in a filing cabinet is a candidate for
conversion into a database on your computer. In fact, a
simple database program is sometimes called a filing
program.

For example, one of the drawers in your filing
cabinet might be labelled “Invoices.” Inside the drawer
there are a series of file folders, perhaps one for each
month. Inside each file folder is a series of invoices in
numerical order. Each invoice shows the same categories
of information, though the contents of each category
differ from one invoice to the next: invoice number,
customer name and address, list of products ordered,
and total value of the order.
A database is a filing system with new names for each component

In a computerized database, each invoice (or name) is called a record, and each category of information is called a field. The database is the collection of all invoices. With your Macintosh you can sort your data almost any way you wish and group it into categories for subtotalling. For example, you can get a list of all invoices in numerical order, you can sort your invoices in date sequence and ask for subtotals by month, or you can re-arrange your invoices in alphabetical order by customer name and calculate the total amount owed by each customer.

You can search through your file for a name or part of a name. In just a few seconds you can find the records for ToyTech Shop, Pleasant Valley ToyTech, and TAG Corp. (ToyTech Division) — three related records which might have taken hours to locate searching by hand through an oak filing cabinet.

Most database programs let you search for words
Using a database package, you can print your lists out in many different formats. You can even get totals and subtotals for different categories.

Database programs offer many options for printing out reports.

In addition, some database programs offer the ability to enter your own formulas for calculating values, similar to functions provided by spreadsheet packages.

Formula: quantity in stock * wholesale

Some database programs let you enter formulas to calculate values.

Although the two have certain functions in common, a database is not a spreadsheet. For instance, most spreadsheet packages include some sorting capabilities, but none have the searching capabilities which are essential to database management. You can't easily print mailing labels directly from a spreadsheet file of names and addresses, nor can you easily print out a list of all invoices with automatic subtotalling of net due per customer. You may be using a spreadsheet program to handle information which would be more manageable with a database program.

Sophisticated database programs are called relational
databases, because they have the ability to pull, or relate, information from one database into another. With a relational database, you might have one file that contains your client's addresses, and another invoice file which, by simply entering the account name or number you enter, "pulls" the addresses from the address file onto each invoice. There are relational databases for the Mac, but File is not one.

A relational database will let you build an invoice file in which you enter only the product name and quantity, and the database program itself then calculates the invoice total based on information it gets from a price list in another file or in another part of the database. The program might even go into the inventory file and automatically deduct the quantity ordered from the inventory total for each product shown on the invoice. Instead of buying a database package, you could buy an accounting package which is already designed to do inventory maintenance and invoicing. In other words, a database program is not an accounting package, though some database programs can handle most of the functions required for business accounting.

Selecting A Database

When you decide to buy a database package you will find that of the many types of software applications available for the Mac — word processing, project planning, spreadsheets, etc. — there are more databases to choose from than any other type of software. Everything from simple mailing list programs to sophisticated database systems are available, and finding the program that's right for you can be tough. We've said generally that with a database program you can sort, subtotal, search, and print out your files any way you wish. In practice, some database programs are more flexible than others in handling these basic functions. You can't always discover the Achilles' Heel of a package before you buy it, but there are certain guidelines you can follow that will help you narrow down your choices.
In looking for a database package, it’s important first to know what your own needs are. How much information will you want to store in your database? How much will you want to manipulate the data? Do you expect your information needs to grow with your business; will you want to add new fields to your files over time? Do you want to be able to use the Mac’s full range of type styles? Will you want to include graphics with your data?

If you will use your database primarily for a mailing list, how large will it be? Do you want to print only mailing labels, or do you want to print form letters or invoices as well? Do you want to know simply who your customers are, or do you also want to know the current account balance for each? Do you want to sort by name only, or by zip code also?

For example, when shopping for a database or file program you might ask: “How many records can this package handle?” If you have a mailing list with 10,000 names, then you’d better be sure the database package you buy is not limited to smaller file sizes. A related question is: “How big can each record be?” Will you be limited to name, address and phone number only, or can you also store date of birth, current account balance, detailed transaction histories, etc.?

The size of any database will be limited by your equipment as well as by the software package you buy. You will be able to maintain much larger databases on a hard disk than on a 3½” floppy diskette.

How complex is the information you wish to store? A simple list would show only one address and phone number for each name, a more complicated list would allow two addresses per name (home and office, ship-to and bill-to, etc.). Some database programs will not allow two records for the same name. You would have to decide whether you wanted to store John Smith’s office address or his home address, because you could not keep both — the second John Smith entry would automatically replace the first.
Will you want to frequently search for names or words? Will you want to sort and re-sort the data? If your files are very large, this processing will be slow and tie up your Mac for hours.

One of the drawbacks of early database programs was that once you designed a file you could never change that design. In other words, once you created a phone list, for example, you could not easily go back and add a full address for each name. Be sure that the package you buy lets you add or remove categories in your lists easily.

If your main need is to send bulk mailings to sales contacts, make sure the program can produce all the fonts and graphics you need. We know of one unhappy car salesman who simply wanted to maintain regular correspondence with his 200 or so customers. He bought a powerful database package that had many calculating and sorting functions; however, it did not take advantage of the Mac's fonts. It wasn't much fun to send letters in the "draft-quality" Geneva font!

The Mac offers some really unique features that make it a pleasure to use—fonts, pop-down menus, and the ability to "point and click" with the mouse. Some programs utilize these features more than others, and it's important to choose a program that you find easy to use.

Make sure the program can at minimum perform the tasks you have in mind for it. Don't buy a database program without first thinking about your own work and what you need to accomplish.

Customer List

The file in this example can be used to print mailing labels or a phone list. We begin with such a list in order to demonstrate a simple sequence of steps involved in creating and using a database. The steps here show you how to build an address list and print it
out onto 8½ X 11 inch paper first, then onto mailing labels, sorted by zip code. The examples use Microsoft’s File, but they offer plenty of good tips for designing a database using any program.

<table>
<thead>
<tr>
<th></th>
<th>NAME:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mildred Pierce</td>
<td>Mildred’s Diner</td>
</tr>
<tr>
<td></td>
<td>STREET:</td>
<td>#1 Ocean View</td>
</tr>
<tr>
<td></td>
<td>CITY: STATE: ZIP:</td>
<td>Carmel CA 94949</td>
</tr>
<tr>
<td></td>
<td>PHONE:</td>
<td>647-1234</td>
</tr>
<tr>
<td></td>
<td>DATE OF LAST PURCHASE:</td>
<td>Jul 8, 1985</td>
</tr>
<tr>
<td>2</td>
<td>Johnny Carson</td>
<td>Carson’s Cars</td>
</tr>
<tr>
<td></td>
<td>STREET:</td>
<td>123 Main</td>
</tr>
<tr>
<td></td>
<td>CITY: STATE: ZIP:</td>
<td>Blue Hills NH 01010</td>
</tr>
<tr>
<td></td>
<td>PHONE:</td>
<td>657-0294</td>
</tr>
<tr>
<td></td>
<td>DATE OF LAST PURCHASE:</td>
<td>Sep 10, 1985</td>
</tr>
</tbody>
</table>

Address List

Building an Address List

The first step in setting up any database, large or small, is deciding what information each database file will contain. In the case of a simple customer file, you need to determine things like “Should the list contain a company name for each person?” or “Should each record have a space for one phone number or two?” While many programs, including File, will let you add a new item of information (a new field) to your list, it will save you time in the long run to plan out as much as you can first.

With any database, the first step is to create the form through which the data will be entered. In this case, we are not talking about pieces of paper — like the forms described in the last chapter (though a paper form could provide the source information for a database). The database form not only arranges and
labels information on the screen, but also defines the type of information which will appear in each field: text, numbers, dates, or pictures. (You can include pictures created with MacPaint or MacDraw in some databases, including File.)

To create a new data input form choose New from the File menu. Type in a new name for the file.

Opening a new data file

The first screen which appears in the File program is where you’ll create the data input form by defining the different fields of information your list is to contain. Type in the name label of each field. For a customer list, we begin with the field label “Last Name”. After typing in the label File asks you to define the type of data that will be typed into that space. In the case of names,
addresses (combination of numbers and text), titles, and descriptions, we want to define Text as the data type. If you define a field type as Number, only numbers and a few punctuation marks can be entered. If you have any question about the type of data, choose Text, as it will accept any character from the keyboard (except graphics).

After you’ve chosen the type of data for the field, the field label appears at the top of the screen. This is where you’ll enter the data, once you have completed designing your form. You can change the length of a field by grabbing the right side of the box on the form and dragging it to the left or right.

Follow the same procedures for the next fields: First Name, Company Name, Street, City, State, Zip and Phone Number. When you have entered all the field labels, you’re ready to input your data.
Lists

File allows you to enter data into your file through one of two different forms. The way it initially appears on the screen in the List Helper format. This format is similar to a spreadsheet - the information you must enter is listed in rows and columns. As an alternative, you can enter the information in the Vertical Form format, a format similar to a paper form you might fill out.

<table>
<thead>
<tr>
<th>LAST NAME</th>
<th>FIRST NAME</th>
<th>COMPANY</th>
<th>ADDRESS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foley</td>
<td>William</td>
<td>Toys 'N Stuff</td>
<td>3467 Narragansett</td>
</tr>
<tr>
<td>Nara</td>
<td>Elias</td>
<td>Gladstone Games</td>
<td>954 So Hill Blvd</td>
</tr>
<tr>
<td>Smallcombe</td>
<td>Debra</td>
<td>Debra's Dolls Unlimited</td>
<td>4129 Passhecho</td>
</tr>
<tr>
<td>Wong</td>
<td>Simon</td>
<td>Chee Lee Games</td>
<td>234 Stockton St.</td>
</tr>
<tr>
<td>Aikens</td>
<td>Lisa</td>
<td>Aikenwood Leisure</td>
<td>1661 Kirk Street</td>
</tr>
<tr>
<td>McClave</td>
<td>Jimmy</td>
<td>Fun Things, Inc.</td>
<td>7665 Church St.</td>
</tr>
<tr>
<td>Nelson</td>
<td>Karen</td>
<td>Nelson's Sports</td>
<td>2233 Post Street</td>
</tr>
<tr>
<td>Granados</td>
<td>Aura</td>
<td>GameTime</td>
<td>23467 8th Street</td>
</tr>
</tbody>
</table>

You can enter data in the List Helper (left) or the Vertical Form (right)

In the beginning, it's easiest to use the List Helper format for most data entry. List Helper arranges the data with each row showing all the fields in one record. You can see many records on the screen at once. If your records run off the right side of the screen you can select Vertical Form to see all the fields arranged one on top of the other. This arrangement makes it easy to enter data but you can view only a few records at a time.

You can re-arrange the data fields to print out in any order or location you like, as long as List Helper is turned OFF. To do this, select Vertical Form and Show Form from the Form menu. You will see two windows. Click on any field you want to move in the form window and drag it to a new location. You can drag
fields into the grey area of the form if you want the information to remain in the file itself but not display on the screen or print out when you are editing or printing records. You can also drag the field labels into the grey area.

**Printing Mailing Labels**

You could, for example, arrange the fields from the Customer List in a mailing label format. This would be a good alternative if you don't have a text merging program, like Microsoft Word or Megahaus MegaMerge (used with MacWrite), for printing out mailing labels. However, your labels will not look quite as good using this method — there may be a lot of blank space left between first and last names, for example, if the first name is short. Text merging programs usually compensate for this.

`Field labels are positioned in grey area of form so they will not print out`

*File* offers a convenient way to use your list with the text merging features of Microsoft's *Word* (see Chapter 5 for more details). From the *File* menu, select
Save Records As to choose the option for saving your database records in a format that Word can use, namely a file in which the fields in each record are separated by commas.

![Save Records dialog box](image)

The Save Records dialog box offer the option of saving records in a format for text merge with MS Word.

Printing Reports

All database and filing programs let you print out your information in a report. Some programs offer greater flexibility in the report format than others. Some reports let you position data fields on the printed page wherever you want, while other offer only one or two options. For maximum flexibility in defining your printout formats, some database programs require the help of an additional program called a report writer.

Further, most programs will give you totals for certain fields, or perform other calculations. File offers only a columnar, or “Table” format for printing out your list. You can, however, perform certain mathematical calculations on various fields. This function is most helpful when dealing with financial or statistical data, which we’ll discuss in the Inventory List section.

To create a report, choose Report from the Organize menu. The report formatting area appears in the lower half of the screen. Fields can be manipulated the same way as the fields on the form: click the mouse on any field and drag it into the appropriate columns on the report worksheet (Sort, Not Sorted, or Not Shown). Fields that you do not want to appear on the report should be dragged to the Not Shown column.
You can **Preview** the report on the screen if you wish, or simply request the printed **Summary Report** through the **File** menu’s **Print Report** option.

**Sorted**

<table>
<thead>
<tr>
<th>COMPANY</th>
<th>TELEPHONE</th>
<th>FIRST NAME</th>
<th>LAST NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aikenwood Leisure</td>
<td>802/981-9128</td>
<td>Lisa</td>
<td>Aikens</td>
</tr>
<tr>
<td>Chee Lee Games</td>
<td>415/876-9235</td>
<td>Simon</td>
<td>Wong</td>
</tr>
<tr>
<td>Debra's Dolls Unlimited</td>
<td>415/458-9574</td>
<td>Debra</td>
<td>Smallcombe</td>
</tr>
<tr>
<td>For Kids Only</td>
<td>219/967-4650</td>
<td>William</td>
<td>Nelson</td>
</tr>
<tr>
<td>Fun Things, Inc.</td>
<td>305/986-1604</td>
<td>Jimmy</td>
<td>McClave</td>
</tr>
<tr>
<td>GameTime</td>
<td>813/749-0923</td>
<td>Aura</td>
<td>Granados</td>
</tr>
<tr>
<td>Gladstone Games</td>
<td>813/872-9126</td>
<td>Elias</td>
<td>Nosra</td>
</tr>
<tr>
<td>Langley Games &amp; Toys</td>
<td>803/927-8600</td>
<td>Robert</td>
<td>Langley</td>
</tr>
<tr>
<td>Nelson's Sports</td>
<td>305/234-8945</td>
<td>Karen</td>
<td>Nelson</td>
</tr>
<tr>
<td>Toys 'N' Stuff</td>
<td>617/436-2395</td>
<td>William</td>
<td>Foley</td>
</tr>
</tbody>
</table>

**Records processed:** 10  **Records to process:** 10

**Sorting**

One of the most important advantages of putting your lists on the Mac is that you can use **File** or some other database program to sort your records. You can
arrange your file in order by any field — by last name, company name, or by zip code. You can arrange your file in different ways by a simple click of the mouse.

In *File*, simply choose the **Sort** option on the **Organize** menu. A window will appear which shows each field in your form. Simply click on the field by which you wish to arrange your records.

Click in the field which you want your list sorted by

*File* arranges your records in ascending (A,B,C or 1,2,3, etc.) or descending (Z,Y,X or 10,9,8, etc.) order. To change from ascending to descending order, simply click on the field in the Sort window. In our example, we arrange the list alphabetically by company name.
Graphics

One of the unique features of using File (and some other database programs) on the Macintosh is the ability to include pictures in each record. These pictures must be created using MacPaint or MacDraw and pasted into the appropriate fields of each record. With File you can make the field box on the form as wide and deep as needed to accommodate the picture.

Microsoft File can include pictures pasted in from MacPaint or MacDraw

Inventory List

Finally, this inventory example includes two fields with calculated entries: the total sale value of an inventoried product equals the quantity on hand times the list price per unit, the insurance value of an inventoried item equals the quantity on hand times the replacement value per unit.
The report from the inventory file shows the total value of the entire inventory. This includes the list price total as well as replacement value total.

Copying Your List to Other Programs

Using the Macintosh's **Copy** and **Paste** commands, you can copy the records created with Microsoft **File** into Microsoft **Multiplan**, **Word** and **MacWrite**.

Records copied into **Multiplan** will be arranged with one record per row, one field per column.

Records copied from **File** into **Multiplan**
You can also copy from *Multiplan* into *File*. If you have been using *Multiplan* to manage information which would be more appropriately stored in a database, you can still build an instant database by coping rows and columns from *Multiplan* into *File*. You need to set up a form in *File* with a field name for every column of information you are copying from *Multiplan*.

Records copied from *File* into *MacWrite* or *Word* may require additional tab settings in order to arrange the information in columns.

![Data copied into MacWrite can be arranged in columns with the proper tab settings](image)

You can also copy text, numbers or drawings from *MacWrite*, *Word*, *MacPaint* or *MacDraw* into *File* — one field at a time. You cannot build whole records by copying from these programs.
Chapter 8 Telecommunications

The Basics
Mac to Mac
Mac to IBM PC
Mac to IBM Mainframe
Information Services
Chapter
8 Telecommunications

The world is getting smaller. Not so long ago, three thousand miles seemed far away and you had to plan days ahead to get a packet of papers delivered on time. Now, with your microcomputer hooked up to a phone line, you can exchange messages, business reports, and published information all over the world within minutes.

For example, you can transfer information easily from one Macintosh to another over the phone lines, including graphics! Of course, if you're not in a hurry you could simply mail disks of your files to the other offices which use Macintoshes. But what if the other offices are using Apple IIe's or IBM PC's? These other machines don't use the same disks as the Mac. Even if they have 3 ¼-inch disk drives, other types of computers can't read the information directly from a disk produced on the Macintosh.

Using a telecommunications package like MacTerminal you can send information from the Mac to any other computer equipped to receive data over a phone line. You can send text files created with MacWrite to another computer, which in turn can use its own text processing program to read, edit and print the files you send. You can even send text to typesetting shops for phototypeset output—as we did with this entire book!
Files created with certain programs—Microsoft’s *Multiplan* and *Chart*, for instance—can be transmitted from a Mac to an IBM PC and be manipulated further using the IBM version of *Multiplan* or *Chart*. You can even hook up to an IBM mainframe computer and use your Mac as a terminal to read or edit files in the main computer, or to copy parts of files from the main computer into your Mac and edit or print them out with *MacWrite*.

Local and national networks are springing up everywhere, offering access to on-line “bulletin boards” and electronic mail services at prices that are competitive with more traditional methods of communication. On-line newsletters can be updated daily, so the latest entries are instantly available to readers. Electronic mailboxes can be password-protected, so only your employees can read the notes in your company’s mailbox.

Finally, there are many information services available which offer access to on-line libraries, news summaries, stock prices, airline schedules, “bulletin boards” and games. Typically these services require an initial subscription fee which entitles you to a password and a few hours of free time, after which you will be billed according to the number of minutes you use the service each month.

Your Macintosh can access these other computers and the vast pools of information offered through commercial information networks. All you need is a compatible modem, and a communications software package like *MacTerminal*.

If you have never telecommunicated before, it’s a good idea to look over the manuals provided with your communications package before hooking up your modem. As in previous chapters, you need not have the *MacTerminal* program to benefit from reading the following sections. If you are new to telecommunications, be sure and start with the following section which will familiarize you with some of the terminology and concepts involved.
The Basics

Whether you are communicating with another Macintosh, an IBM PC, an IBM mainframe, or an information network, there are certain basic steps involved which are common to all telecommunications procedures. In a nutshell, you need to hook up your Mac to your modem, hook your modem into your phone line, and start up your telecommunication program. We review these steps here before discussing specific applications.

The Modem

A modem is a piece of hardware—usually a plastic or metal box about the size of a book—which translates signals from the computer into a form which can be sent over phone lines, and translates incoming messages back into computer signals. In order to communicate between two computers over phone lines, both must be attached to the phone line through a modem.

A modem is a small piece of hardware required at each end of the phone line for communication between two computers.

There are many different models of modems which can be hooked up to a Macintosh, and there are several different telecommunications programs which run on the Mac. You must be sure that the telecommunications package you buy can run with the modem you select—some telecommunications programs work with only a few different modems.
One of the main differences between modems is the speed at which they can transmit or receive information. If you send large files often enough, then you will save phone line charges by transmitting at high speeds. On the other hand, if you use telecommunications for many short requests (for instance, if you are a travel agent checking flight schedules throughout the day) then you won't notice much difference between high-speed and low-speed transmissions. High-speed usually means that data will be transmitted at 1200 baud, or at the rate of 100 to 120 characters per second. Low-speed modems usually send data at 300 baud, or 25 to 30 characters per second. High-speed modems generally cost more than low-speed modems.

Telecommunications Packages

In addition to a modem, you need to have a telecommunications program in order to send or receive information over the phone lines. It is through the telecommunications program that you actually set the speed for the modem, along with other settings which we describe next.

Example Session

The steps in setting up your equipment and telecommunicating are almost the same no matter what type of modem and telecommunications package you have.

First, attach the modem to the port marked with a small telephone icon in the back of the Mac. A second wire from the modem plugs into your phone line. You may need to disconnect your telephone to attach this wire — so it's a good idea to wait until you are ready to dial before making this connection. Finally, a third wire plugs your modem into a standard electrical socket for power.
Next, start your telecommunications program. This program (in this case we are using MacTerminal) makes it easy for you to set the "switches and dials" which make your system compatible with the one you will be dialing up. These settings, called communication parameters, define how your data will be transmitted and received. MacTerminal prompts you for this information from the Compatibility Settings menu.
The essential information here includes \textit{baud rate} (speed of transmission), number of \textit{bits per character} (7 or 8), \textit{parity} (odd, even, or none), and \textit{handshake} (how the flow of data between computers is regulated). All you need to know about these settings is that they must be the same at both ends of the line. If you are dialing up an information service or mainframe computer which receives many calls, then the operator at the other end can tell you what settings to use. If you are dialing up another microcomputer, then you must agree with the operator at the other end as to what settings to use.

\textit{MacTerminal} also provides a menu of \textbf{File Transfer Settings} which make it easy for you to send whole files which you have created using \textit{MacWrite}, \textit{Multiplan}, etc., and a menu of \textbf{Terminal Settings} which you can use to make your Mac act like machines such as the DEC VT100, and the IBM 3278, or a TTY (teletype). These menus are discussed in the following sections where they apply. For now, let’s assume that all your settings are correct and that you are ready to dial up or receive a call from another computer.

If you will be receiving data over the lines, but you don’t want to save that data, use the \textbf{Commands} menu to set \textbf{Don’t Record Lines Off Top}. Under this option, information which comes in over the phone lines will be displayed on the screen line by line, and as the screen fills up the oldest lines will roll off the top of the screen—you must read them while they are visible on the screen, because they will not be saved. Otherwise, \textit{MacTerminal} will accumulate lines into a file as they roll off the top of your display screen, and you can read that file or print it out at any time.

Use the \textbf{Phone} menu’s \textbf{Phone Settings} option to enter the phone number (if you are dialing out) or to set the number of rings before your modem answers (if you are receiving a call).

If you expect to be telecommunicating to the same number repeatedly, you can save all the settings made during the first telecommunication session under a unique file name, such as “Dow Jones”. Whenever you
want to connect to that number again, simply open the "Dow Jones" file instead of starting from scratch with a new MacTerminal file. The MacTerminal disk comes with a few such files which have already been set up for specific types of communications, including Mac-to-Mac, AppleLine, and Commercial Services.

If you wish to save your settings, it's a good idea to do that now, before making the actual connection. Finally, with all the settings saved, use the Phone menu to select Dial or Wait for a Call.

Information services and communication networks have special numbers which are answered only by computer. If you dialed one of these numbers yourself, you would be greeted by a series of electronic beeps. If you dial one of these numbers through your modem, the beeps will be translated into messages which appear in English on your terminal screen.

If you are dialing up an office which does not have lines devoted exclusively to telecommunications, then you may need to call them first and use your own voice to let them know that you are ready to telecommunicate. Then they need to set up their own computer and modem so it is ready to receive the call from your computer. If a human voice answers a call from your modem, you may need to hang up and dial again.
Once connected to the other computer, you can “chat” with the operator there (typing your messages through your keyboard), you can send or receive files, or you can view and edit information stored in the other computer’s files. Some examples of these procedures are given in the next sections.

When you are finished communicating, use the Phone menu to Hang Up. Remember to re-connect your own phone, if necessary, so you can receive calls normally when you are finished.

Mac to Mac

There are two different ways that your Mac can communicate with other Macs. If you are considering using several Macs in your office, you may want to connect them together in what is called a “local area network”. If the Mac with which you want to communicate is in another building, another part of town, or another state, you’ll need to use the telephone lines to communicate.

Networks

A network, also known as a Local Area Network (LAN), is a system for allowing several microcomputers to share common resources. Resources may include files and/or hardware such as hard disks or printers. Networks consist of cables to connect the various computers and hardware, and software to help direct the “traffic” on the network.

Networks are an essential part of the office environment. They allow several people to input to or edit the same file without having to physically pass a diskette around the office. By allowing several machines to share the same hardware, an office can realize a tremendous cost savings. For example, several Macs can share the same LaserWriter printer, connected by
Apple’s AppleTalk Personal Network. The distance that two machines can communicate over a network varies from system to system.

Telecommunicating Mac to Mac

While networks are good for connecting Macs within the same area, you need to communicate over the telephone lines when longer distances are involved. Your *MacTerminal* disk comes with a file already set up for you called **Mac-to-Mac**. If you are dialing another Macintosh, all that is required is that both Macs open this *MacTerminal* file, with one machine set up for dialing and the other set up for answering the phone.

Mac-to-Mac File Transfer settings
If you are sending files to another Mac, you can include drawings created with *MacPaint* or *MacDraw*. If you are sending files to another computer, you can send text only — no pictures.

You can send pictures to other Macs

**Mac to IBM PC**

If you are communicating between a Mac and an IBM PC (or any other non-Mac microcomputer), the settings are a little different than with Mac to Mac communications. If the PC with which you are communicating uses the XMODEM protocol, you can set the File Transfer Setting for **Transfer Method** = XModem. If the other computer does not use XMODEM protocol, then you must be sure that the File Transfer Settings show **Transfer Method** = Text and **Remote System** = Other.

<table>
<thead>
<tr>
<th>File Transfer Settings</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Transfer Method</strong></td>
</tr>
<tr>
<td><strong>Remote System</strong></td>
</tr>
<tr>
<td><strong>Delay Between Chars</strong></td>
</tr>
<tr>
<td><strong>Delay Between Lines</strong></td>
</tr>
<tr>
<td><strong>Retain Line Breaks</strong></td>
</tr>
<tr>
<td><strong>Word Wrap Outgoing Text</strong></td>
</tr>
</tbody>
</table>

Mac to IBM PC File Transfer Settings
You can send text files created with *MacWrite* or Microsoft *Word* if you **Save** them as **Text Only** (an option offered by both these programs during their own save process). You can send the words only — special type styles and format settings such as margins and tabs get stripped out. However, any text processing program available on the receiving computer can open these text files and edit or re-format them.

ROASTED CHICKEN

One 3-4 lb. Whole Fryer
5 Tablespoons Garlic & Herb Butter
Salt & Freshly Ground Black Pepper to Taste

Rinse the chicken and pat dry with paper towels. Chicken should be at room temperature. Preheat oven to 450°. Loosen but leave intact the skin from the

Text is transmitted to other computers without special type styles or format settings

Files created using *Multiplan* or *Chart* can be telecommunicated from the Mac to other machines which use these programs if they are saved and transmitted under the SYLK format, a choice under the **File** menu’s **Save** options for these programs. (SYLK files are explained in Chapter 4.)

Files saved under Microsoft’s SYLK format can be telecommunicated to other computers which use the same programs

You cannot send *MacPaint* or *MacDraw* files to any computer except another Macintosh.
Mac to IBM Mainframe

"Mainframe" is a term applied to large computers, usually managed by a staff of computer operators and residing in a dust-free room of their own along with various attachments such as large disk drives, tape drives, and printers. People from other offices can access the mainframe through terminals — monitors and keyboards which are wired directly to the main computer or which communicate with the computer over the phone lines. One of the most familiar examples of a terminal hooked up to a mainframe is the type used by an airline ticket clerk to make or verify your reservation. These terminals consist of a monitor and a keyboard; the "computing" function is performed in the mainframe computer.

If your company uses an IBM mainframe for processing corporate files, you can use your Mac like a terminal to access the main computer and view or edit information stored there. You can also collect information from the mainframe into your Macintosh, then disconnect from the mainframe and use the Macintosh's own programs to process and edit the information.

In order to hook up to an IBM mainframe, you need MacTerminal plus an additional piece of hardware called "AppleLine" — a 3-pound 12"X11"X2" plastic

An AppleLine translates information between the Mac and an IBM 370 mainframe
box—which translates information between the Mac and the mainframe. You don’t need a modem if your Mac is in the same building as the mainframe. If it isn’t, you need a modem in addition to the AppleLine in order to dial up the mainframe over the phone lines.

The procedure for connecting to your company’s mainframe, including passwords and file access codes, will be set up and published by your own data processing department. Once hooked into your computer, you will find many standard function key operations available through the Keyboard menu of the AppleLine file provided on the MacTerminal disk.

In addition, you can use MacTerminal’s Cut and Paste options to copy information from the mainframe into the Clipboard and, later, into other Mac programs like MacWrite or Multiplan. You cannot transfer large files from the IBM to the Mac. The amount of information that you can send or receive is currently limited by the size of the Clipboard or the Scrapbook, which is determined by the amount of space left on the disk. To transfer large files, you may need to cut and paste the file in smaller pieces.
Information Services

There are a variety of commercial information networks that offer online databases. *The Source, Dow Jones News/Retrieval* and *CompuServe* are some of the largest in the country today. What are these commercial information services and what can they do for you?

Commercial information services use large mainframe computers to store and manipulate just about every kind of information you can imagine. Some, like *Dow Jones News/Retrieval*, specialize in certain kinds of information. *Dow Jones* is an excellent source for financial news, including the text of the *Wall Street Journal*, through which you can search for information from any article printed in that paper over the last several years. *The Source* and *CompuServe* are more general-purpose services, offering you the latest news, weather, and sports from major newspapers, the flight schedules for all the major airlines, current stock quotes or commodity listings from all the country’s major exchanges, electronic mail, on-line encyclopedias, free software, disk space to store your own files, and access to many games — instantly!

You can connect your Mac to these commercial services through the telephone lines. Even though these large computers may be located thousands of miles from you and your Mac, you can often reach them by dialing a local telephone number in your area.

To find out about a commercial information service, you need to write or call the service for a start-up kit (see Appendix). For a small sign-up fee, you will be given the telephone number to dial in your area, and a secret password that you must type into the computer in order to have access to the service. You are charged for the service by the amount of time you spend online. Most services charge under $10 per hour for non-prime-time (evening) use.

For example, to dial up *CompuServe*, you hook up your modem and start your telecommunications program as previously described in this chapter. After
dialing the local number for CompuServe, you will be asked (i.e., a message on the screen will prompt you) for your User ID — an account number which you will be given when you sign up for the service the first time. Next you will be prompted to enter your secret password — a code which protects you against unauthorized use of your account. Finally, the screen will display the opening menu of the service, from which you can branch in whatever direction you wish.

CompuServe's Opening Menu

Any information which displays on your screen can be saved in a file on your disk for later reference. With the Command menu's Record Lines Off Top option selected, MacTerminal will automatically accumulate lines into a disk file as they roll off the top of your display screen, and you can read that file or print it out at any time.

If you don't want to save the information, use the Commands menu to set Don't Record Lines Off Top. Under this option, information which comes in over the phone lines will be displayed on the screen line by line,
and as the screen fills up the oldest lines will roll off the top of the screen—you must read them while they are visible on the screen, because they will not be saved.

In the beginning, you may find it convenient to print out all of your interactions with the information service, and use them for later reference. This way, you will be able to return to a section of the service’s database quickly, without having to figure out all over again the proper menu selections or page numbers (used by some services).

Electronic Mail

Another service available through these networks is electronic mail. It presents one of the most exciting capabilities available in the new world of telecommunications. You can send important documents across the country in seconds, and at a lower cost than most overnight express mail carriers.

You can send a document file to someone who uses the same commercial service as you. Every user of these networks has a “mailbox”. When you first log on the service, you will be notified if you have any mail waiting. If, for example, you have offices in several different cities, you may want to sign up each office on CompuServe.

One of the largest electronic mail services is offered by MCI Mail, through whom there are a variety of delivery options for your mail. Business associates who are registered with MCI Mail can stay in close communication: as soon as you send a file from your Mac, it is instantly in their “mailbox” and they can retrieve the document at any time. They may simply read the file onscreen, or print it out. This may be especially helpful in dealing with suppliers with whom you place frequent rush orders. This option, however, requires that all parties involved check MCI for their mail regularly.
You can also telecommunicate a letter or document that will be delivered in the form of a printed letter. For instance, Federal Express and the United States Post Office can deliver printed copies of any document that you telecommunicate to them from your computer. Similarly, MCI will print out a hard copy of your document on a high-quality laser printer for delivery to the address you specify. You can indicate delivery within 4 hours (if addressee is in certain major cities), delivery overnight, or delivery by first class mail.

![MCI Mail interface](image)

Sending a letter on MCI Mail

The role of telecommunications in everyday business is growing rapidly. As more and more people use computers to help them perform daily business tasks, communications via computers will continue to play an increasing role in all of our lives.
Chapter 9 Presentations

Compiling Exhibits
Artistic Touches
Overhead Transparencies
Slides
Handouts
Chapter 9 Presentations

The purpose of preparing charts, diagrams and tables is to communicate information to others. The first part of this book showed you how to create the basic ingredients of your communication. This chapter offers some ideas on how to put the finishing touches on your graphics to prepare for your presentation to a group.

You can make overhead transparencies from the Imagewriter printouts of your graphics by running them through a copy machine which can reproduce on clear acetate, or you can make transparencies directly through the LaserWriter. You can make slides of your graphics by sending a disk with your files to a slide service bureau which offers this service or by taking a photograph of them with your 35 mm camera. Finally, you can use the same disk files to create printed sheets to hand out to your meeting audience.

With animating software you can even prepare a series of images for display on your Mac screen (or through a larger video projection), and have the series "play out" automatically on the Mac screen. (See Appendix for list of animating packages). In this chapter we'll begin by reviewing the sources of material for your presentation, then we'll see what extra touches can be added to make a polished presentation.

"Let us in no way minimize the opportunity, or the danger, involved. The 30 minutes an executive spends on his feet formally presenting his latest project to corporate superiors are simply and absolutely the most important 30 minutes of that or any other managerial season."
—Walter Kiechel III
Fortune Magazine
Compiling Exhibits

A full presentation set will probably include some exhibits which are mainly verbal—topic announcements or bulleted lists of points. You can use *MacPaint* or *MacDraw* to create these topic summaries using a full range of typefaces and sizes.

![1984 Sales Review](image)

![1985 Openings and Projections](image)

*Topic summaries created with MacDraw and printed on a LaserWriter*

In addition, your exhibits may include files created using *Multiplan, Chart, MacProject, MacDraw* and *MacPaint*. Look at the printouts from these programs, and decide whether you want to use them exactly as they are, or add your own finishing touches through *MacDraw* or *MacPaint*.

Though *Chart* in particular offers many formatting and design options, the drawing programs *MacDraw* and *MacPaint* allow greater flexibility than *Multiplan, Chart* or *MacProject* provide on their own. *MacDraw* and *MacPaint* offer a wider variety of type styles, more freedom in selecting fill patterns and drop shadows, and unlimited sizing options for your charts and diagrams.
The dimensions and proportions you select for your printed charts may be affected by the final form in which they will be presented. For example, if you will be presenting your charts as slides or overhead transparencies then you want the words on the charts to be large enough to be seen when projected before your audience. A larger size of type is called for in charts intended for projection than in those prepared for printed reports. The Chart program offers more options for setting type sizes than Multiplan or MacProject, but none of these programs offers types as large as 48 points, offered by MacDraw and MacPaint. If you find the charting program's options too limited, you can copy the chart into MacDraw to get larger type or different type styles.

Multiplan offers two options only for sizing — tables can be printed out Tall or Wide. You cannot select type size directly through Multiplan, but Multiplan tables can be copied into MacWrite or Word files for additional type size and style options (see Chapter 4). The LaserWriter can produce crisp, readable lettering down to 3-point type — smaller than the smallest lettering on most business cards — but be careful in trying to reduce large tables down to fit small spaces; stay with the larger, 10-12 point sizes if you expect everyone to be able to read your tables. Generally, tables with many rows and
columns of entries do not make very good projected images unless they are converted into a graphic explanation through Chart.

The Chart program by Microsoft allows you to select the type size and style for your chart labels, and you can select from several styles of borders to frame your charts (see Chapter 1). With Chart you can also adjust the size of the chart directly—up to 8½ X 11—using the same techniques that you use in MacDraw or MacPaint to change size. Finally, you have the option of printing the charts out Tall or Wide. If you copy the chart into MacDraw you have infinite possibilities—including producing charts larger than one 8½ X 11 page.

Charts created with MacProject can be printed out either Tall or Wide. You can use the Timeline Scale to adjust the width of the Task Chart and Resource Chart, but only the Schedule Chart can be manipulated directly to fit your printout or aesthetic (see Chapter 2).
Artistic Touches

If you decide to enhance your charts by copying them into MacDraw, there are some simple rules to remember:

- **Be consistent.** For example, if you are going to drop-shadow one pie chart, you ought to drop-shadow all your pie charts and probably your bar charts and project schedule charts as well. Use the same size lettering for all charts of equal importance and for all elements of equal importance within the charts.

Four types of exhibits treated for “consistency”:

- **Be simple.** Don't go wild using every type style available. A busy, complicated drawing will distract your audience and weaken your impact. Graphic artists tend to stick with only one typeface and no more than three sizes throughout a chart. Use the same one or two type styles throughout the entire presentation.
- **Use upper- and lower-case lettering.** It is easier to read than all caps; use boldface or size for emphasis rather than typing anything in all caps.
Charts created with Chart and MacProject can be enhanced through MacDraw

Overhead Transparencies

If your presentation will be shown using an overhead projector, here are some restrictions to bear in mind when you create your graphics:

- Overhead transparencies are usually 8½ X 11 inches, but the image itself should measure no larger than 7½ X 9 ½ inches. Some transparencies come with opaque borders which frame the image at exactly 7½ X 9 ½, in which case the image itself should be slightly smaller.

- The original for an overhead transparency should be easy to read from ten feet away (i.e., slightly further away than the distance yielded by the formula for slides, below). For most audiences, this means that important words should be no smaller than 36- or 24-point size.

For overhead transparencies, an 8.5X11 inch image should be easy to read from ten feet away.

Overhead Transparency Proportions

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Presentations

- When it comes time to set up your transparency projector in the board room, there's a simple formula for determining how far away the farthest chair should be placed from the screen for viewing: Multiply the width of the projected image by six. For instance, if the projected chart is three feet wide, no one should be seated farther away than eighteen feet.

18 Feet

Formula for positioning projector

Overlays

If you are using overhead transparencies, you can make overlays for some of the charts. In other words, one transparency might begin by showing only part of the information. During the presentation, a second transparency will be laid over the first to show additional information. It's easy to make overlays with the MacPaint or MacDraw.

Create the full image as it would appear with all overlays down. Save the file this way! Then, use the Edit menu to Select All and Copy the entire image into the Clipboard. Next, use the Layout menu to Reduce to Fit and Paste duplicates of the full image onto the new pages — as many pages as there will be transparencies in the set (the first transparency plus each overlay). You can use the Layout menu to adjust Drawing Size (i.e., add more pages to the drawing file, one for each transparency).

In the first copied version, delete the parts of the image which do not appear on on the first overhead. In
the second copied file, delete everything except that which is to appear on the first overlay, and so on with other overlay files.

**Slides**

For large audiences, or a presentation that has to travel a lot, you may want to use slides rather than overhead transparencies. If so, here are some useful pointers:

- 35mm slide frames usually have a 35mm X 24mm clear window. Projections of this image will always be in this proportion. It’s a good idea to design your graphics to take advantage of this 3:2 proportion.
- For slides, if the original image can be read easily from a distance of eight times its height, then it will probably project well. An 8.5 X 11 inch image should be easy to read from seven feet away. For most audiences this means that important words should be no smaller than 18- or 24-point.

**Handouts**

Depending on your audience and the purpose of your presentation, you may want to distribute copies of your exhibits to the audience. They can make notes on these papers as you give your presentation, and review the handouts later to study or remember what you said. You can, of course, simply make photocopies of your overheads or slide images and distribute the set as
handouts. Alternatively, you can create a text file with additional notes about your presentation, or create a detailed report, and merge the graphic images with the text where appropriate.

Charts created with Chart, MacProject, MacDraw and MacPaint can be copied into MacWrite and Word text files
Chapter 10 Annual Reports

A Simple Quarterly Report
An Expanded Annual Report
LaserWriter Typesetting
Electronic Typesetting
Chapter 10 Annual Reports

Any business with more than one or two stockholders and past the start-up stage needs to report its business status regularly to its owners. The traditional vehicle for this communication is the quarterly or annual report. The annual report is usually a glossy PR-type brochure. It's often typeset and printed in color on good quality paper, and includes some narrative explaining the company's view of itself within its industry.

We have already seen, in the chapters in Part I of this book, how to create the basic elements of any report: tables, text, charts and diagrams. Here we pull all these elements together into one document. Though we focus on only two reports in this chapter—an informal quarterly report and a more formal Annual Report—you can use the tips in this chapter to produce any business report.

The Report in this chapter was created using MacWrite, MacDraw, Microsoft Multiplan, and Microsoft Chart on the Macintosh. We review the procedures for printing the Annual Report out through a LaserWriter and for typesetting the entire Annual Report from disk files using MacTerminal to telecommunicate the text to our typesetter through the modem (See Chapter 8).
A Simple Quarterly Report

The backbone of quarterly and annual financial reports is the Balance Sheet—a breakdown of the company’s asset value matched against its liabilities and stockholder's equity—and related notes about the company's current status.

Balance Sheet as of December 31, 1985

<table>
<thead>
<tr>
<th>ASSETS</th>
<th>Notes</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash</td>
<td></td>
<td>5,701,000</td>
</tr>
<tr>
<td>Short-term Investments</td>
<td>2</td>
<td>34,080,000</td>
</tr>
<tr>
<td>Receivables</td>
<td>3</td>
<td>6,163,000</td>
</tr>
<tr>
<td>Securities</td>
<td>4</td>
<td>131,000</td>
</tr>
<tr>
<td>Long-term Investments</td>
<td>5</td>
<td>250,000</td>
</tr>
<tr>
<td>Real Estate</td>
<td>2,6</td>
<td>25,079,000</td>
</tr>
<tr>
<td>Equipment</td>
<td>2,6</td>
<td>1,097,000</td>
</tr>
<tr>
<td>Other Assets</td>
<td></td>
<td>16,787,000</td>
</tr>
<tr>
<td>TOTAL ASSETS</td>
<td></td>
<td>$89,288,000</td>
</tr>
</tbody>
</table>

LIABILITIES & STOCKHOLDERS' EQUITY

| PayabletoBanks                | 6     | 18,599,000    |
| Accounts Payable              |       |               |
| &Accrued Expenses             |       | 8,251,000     |
| Accrued Employee Salary & Benefits |   | 4,131,000     |
| Long-term Debt                | 7     | 1,375,000     |
| TOTAL LIABILITIES             |       | $32,356,000   |

Stockholders' Equity:

| Common Stock                  | 8     | 405,000       |
| Retained Earnings             |       | 24,171,000    |
| STOCKHOLDERS' EQUITY          |       | 24,576,000    |

TOTAL LIABILITIES & EQUITY

|               |       | $89,288,000   |

The categories shown on a Balance Sheet are explained in detail in Chapter 4. All you need to add to the Balance Sheet created in that chapter to make it complete for a quarterly report is the text which goes
with the note numbers shown in the second column. To do this, use MacWrite or Microsoft Word. Work with a simple single-spaced, left-aligned paragraph format to create the notes shown here.

Notes to Financial Statement

NOTE 1. Summary of Significant Accounting Policies: The financial statements include the accounts of TAG Corporation and Moore & Moore, Inc., which was merged into the TAG Corporation upon acquisition in March 1985.

NOTE 2. Short-term investments and property and equipment purchases are made with the advice of Hannah P. Marks & Company, a financial management firm.

NOTE 3. Receivables as stated here do not include internal cost accounting related to TAG purchases of inventory from the Moore & Moore Division.

NOTE 4. Securities include investments carried over from Moore & Moore.

Notes to Statement of Financial Condition

Use Microsoft Chart to illustrate some of the points in the notes, as appropriate.

Chart enhanced through MacDraw
As Chairman of the Board, you ought to add a cover letter with more remarks about the company's current position and future goals. In a simple quarterly report, the notes and message from the chairman may be the only text which goes with the Balance Sheet. In an annual report, the message from the chairman introduces the longer text in the body of the report.

December 21, 1985

To Our Shareholders:

Fiscal 1985 was the tenth year of operation for TAG Corporation. It was a year of transition, in which TAG acquired Moore & Moore, a toy manufacturing firm. This merger has enabled us to develop ToyTech Shops in twelve shopping malls this year, launching TAG's entry into the retail toy market.

Net Sales increased from $275 million in 1984 to $378 million in 1985, due in large part to the introduction of the QP Doll robot series, which yielded over $50 million in this first year of sales.

We appreciate your confidence, and look forward to seeing you at the annual meeting.

For the Board of Directors

J.B. Morless
Chairman

A Message from the Chairman (printed on a LaserWriter)

The pages in this quarterly report are printed individually using the tools which created them: Multiplan, Chart, and MacWrite. The next sections of this chapter show how several files can be combined into one document file for continuous output through a LaserWriter, or (alternatively) how text can be telecommunicated to an outside service for typesetting.
An Expanded Annual Report

There are two significant differences between a quarterly report and an annual report:

- The Annual Report usually includes some statements about the company's history and future direction as intended by the Board of Directors and management, whereas the quarterly report merely states and annotates the financial status of the organization.
- The Annual Report is often a glossy, typeset, printed document, whereas the quarterly report may be a brief printed brochure or a photocopied document.

With the Macintosh and the right accessories, it is possible to produce a complete Annual Report with graphics and typeset text. Here we demonstrate two ways of achieving this: using MacWrite and a LaserWriter printer, or using MacTerminal and your local typesetting shop.

In all, eight individual files are ingredients to this Annual Report.

Files comprising the Annual Report

As with the quarterly report, you can print out each element of the Annual Report using the program which created it: MacWrite (or Word), Multiplan, Chart, and MacDraw. As an alternative, you can paste all the elements of the report into one file and work with
special formats such as two-column text. Which option you select depends in part on the method you will use to produce the final "camera-ready" version (i.e., the version you would take to the local printer for mass production).

- If you are using MacWrite and MacDraw, you can print the final copy on a LaserWriter printer, which prints at higher resolution than the dot-matrix printer. If you use the Times and Helvetica typestyles available through the LaserWriter, your report will look as good as any typeset report to the average reader.

- If you do not have access to a LaserWriter, or if you want to use type styles other than Times and Helvetica, you can transmit the file to a typesetter, using MacTerminal and a modem. Under this option, you will need to print the charts and graphs out separately and paste them into the typeset text by hand (i.e., by traditional graphic production methods) where appropriate.

- You can print the final copy at high resolution on the dot-matrix printer. This option is available whether you use MacWrite or Word. Both these programs let you paste charts and drawings into the text itself, so you can print out the entire report as one document on the ImageWriter. Remember that the output quality of the ImageWriter (or any other dot matrix printer) is not appropriate for most annual reports. This may be adequate for owners of small businesses and their bankers or backers.

**LaserWriter Typesetting**

If you are using MacWrite, MacDraw, and a LaserWriter printer, you can paste your text and graphics together into one file and print the whole Annual Report out as one document which has the appearance of being typeset — i.e., the text and graphics will be less "jagged" when viewed at close range, and the spacing between letters will be finer than with an ImageWriter printout. You will not need to use
scissors and glue to paste the charts into the stream of text, as required by the procedure described in the next section (Electronic Typesetting).

In order to print your report out through a single file, you can either paste your text and graphics into a single *MacDraw* file, or you can paste your charts and graphs into a single text file. Let's look at the differences between these two options.

If you want *MacWrite* to lay out your pages for you, including running headers and footers, you can paste all your charts and graphs into the text file. In this case, you must decide what size each chart will be before copying the chart into the text file. (In fact, you can change the size of drawings after they have been pasted into *MacWrite*, but in practice it is best to size the drawings while they are still in *MacDraw* where you can make fine adjustments to type size and styles.) With Microsoft *Chart* you adjust the size of the chart directly on the screen (see Chapter 1). *Charts* can also be sized through *MacDraw*.

Merge the *MacDraw*, *Multiplan* and *Chart* files into the *MacWrite* file to create one full document file. You can move the graphic to the right or the left within the text file by adjusting the margin setting for the graphic "paragraph."
Using this approach, you can go back and make major changes to the text easily — MacWrite will automatically re-paginate all the pages for you. However, you cannot edit the charts and graphs once they have been pasted into the text file, and you cannot print two-column text directly through MacWrite.

To paste text into each column, **Copy** the text from the MacWrite file into the Clipboard, then open the MacDraw file, select the rectangle which frames the column into which you are pasting, and **Paste** the text from the clipboard into the column. If the text is too long to fit on the page, you can **Cut** the overflow to the clipboard and **Paste** it into the rectangle in the next column.

If your Annual Report text is very long, this paste-up process may take a considerable amount of time and thought — it's a good idea to have the text finalized before you go these steps, since major changes will require another major paste-up session. However, by pasting the text into a MacDraw file, you will have greater flexibility in editing and re-sizing your charts and graphs at the last minute.

If you expect to do very much formal document production as required by the Annual Report, you may find it more efficient to work with the help of programs written specifically to help you lay out pages for the LaserWriter, such as PageMaker by Aldus Corporation.

Using MacWrite and MacDraw, you can print your report out directly to a LaserWriter, including all the graphics exactly as you pasted them up on the screen. All of the type styles and graphics look crisp with the LaserWriter's 300-dots-per-inch resolution (compared to the ImageWriter's 120-dots-per-inch). What's more, the LaserWriter offers true Times and Helvetica type styles — if you use these two type styles exclusively,
your entire document will have the appearance of a typeset document for most readers. (I've known some professional typesetters, graphic artists, and printers who were unable to detect the difference!)

**Electronic Typesetting**

Whether you use *MacWrite* or *Word* to create your text files, if you don't have a LaserWriter you can transmit your text to any typesetting shop which accepts text files over the phone lines. You’ll discover that by telecommunicating the text, you save the typesetter’s time (and therefore some of your money) because they don’t have to type the words for you — all they need to do is type the codes for type styles and formats. (If you plan to typeset your files regularly, you can learn to type these extra codes yourself before you send the file to them.) You also save some time in proofreading and correcting errors. The words will be typeset exactly as you typed them — if they were error-free when you sent them, they should be error-free when you get them back from the typesetter on glossy, phototypesetting paper.

Most typesetters will not be able to reproduce your Macintosh type styles exactly, so you will need to select other type styles from the typesetter’s catalogue. For formal reports, as most Annual Reports are, typesetting through an outside service is a must (unless you have a LaserWriter). Unfortunately, most typesetters cannot handle computer graphics directly, so you may need to resort to scissors and glue to paste up the final report.

You can give graphics which are printed on an ImageWriter a crisper look by printing them out larger than the desired final size, and getting photostats of them at the reduced size. Photostats are made by lithographers who can photograph your original printout and develop the images — in any size you wish — on glossy, photo-sensitive paper.
Chapter 8 offers some examples of attaching your Mac to the phone lines (through a modem) and using *MacTerminal* to send a file to another computer.

Finally, whatever method you use to produce the first full original of your report, you will probably be taking it to a printer to be reproduced. You choice of paper stock and ink colors will be the final “dressing” in the production.
Chapter 11 Business Proposals

The Summary
Current and Future Business
Marketing & Financing
Management
Financial Statements and
Projections
Resumes
Proposal Cover
Chapter 11 Business Proposals

From the beginning of time, men have been cutting deals. For thousands of years, careful investors have insisted on being shown that the deal had been well thought out and was likely to succeed before putting up the money to capitalize the project. Badly designed pyramids or inadequately-planned palaces would not get the money needed for such vast projects. Today the sponsors of great ideas are kind uncles, venture capitalists and banks.

You occasionally hear stories of an all-star management team with a proprietary product and a ready market writing a winning plan on the back of a damp cocktail napkin. Told correctly, the stories would go on to say that the “stars” still had to go back and write a formal plan before they got their cash.

Most companies prepare a business plan so that everyone involved can have a common view of the business goals. The process of writing a business plan requires a lot of careful thinking about your business. Unfortunately, many small businesses never bother with a formal (i.e., written and neatly summarized) business plan until they need money for expansion or transition.

One of the features that distinguish the Business Proposal from other reports is that the Business Proposal is the beginning of something, rather than a summary of what has already occurred. After completing a Business Proposal, you still have a sense

"The primary problem in writing a business plan is making it comprehensive and shaping it for the reader for whom it is intended — the prospective investor with five minutes to read it."
— Joseph R. Mancuso
"It's a fact of life that most small companies with sales under $25 million just plain don't have written business plans.... Many businesses fly blind. Some businesses in manufacturing don't even know what their costs are going to be."
— Howard Miller
Peat Marwick

of urgency about it ("If only they will read it...") rather than the sense of relief that follows writing a status report, for example. The specific purpose of the business proposal is to help you win an interview with the reader.

For this reason, it is especially important to consider your audience in writing a Business Plan. If, as Mancuso suggests, you are writing for the five-minute reader, then the graphic capabilities of your Mac will help you make your point. You need to show clearly and concisely what your product is, what the current market for that product is like, income/expense projections, your team's skills, and how much money you need.

The Business Proposal format presented in this chapter can be carried over easily to many different kinds of financial reports for clear, effective presentation.

In this chapter we start with the proposal summary as an example of text, and then look at examples of the ingredients to the proposal which can be prepared using the graphics capabilities of the Macintosh.

The Summary

"The first 30 seconds (of reading a proposal) are about as important as those first few seconds of eye contact when people are romancing."
— Bill Lanphear
Early Stages Company

The summary is the single most critical section of the entire Business Proposal. It is the first section which anyone reads. An investor's or loan officer's decision about whether to read the rest of the document is often made within the first five minutes.

The summary should include highlights from each section of the proposal: the characteristics of the business and the industry, the terms of the deal, the financial condition and caliber of the people participating, and the unique features of this deal.
General Description

ToyTech shops will be located in urban shopping districts and suburban shopping malls offering a unique selection of high-tech toys and games. TAG Corporation's research experience has shown that sales will run approximately 24 percent computer games, 17 percent robotics, 7 percent sports-related games, and 6 percent board games, with the other 47 percent in modelling sets and educational toys and games.

Due to their location in busy commercial areas, ToyTech Shops will derive most of its business from affluent urban professionals. During the holiday seasons, contests and sale "specials" will be offered to create business volume.

ToyTech Shops will be moderate in size: approximately one thousand square feet. The store design would utilize state-of-the-art display fixtures, and walls and counters will be painted with designs by Mikayo of Japan.

The first ToyTech Shop will open in Pleasant Valley Mall, Burbank, California. Store hours will be Monday through Saturday from 11:30 A.M. until 9:00 P.M. daily.

Summary Page of Business Proposal

Use MacWrite or Word to produce the summary shown here. There are two important things to note about this format, which carry throughout the text of the proposal:

- Don't use every type style available—pick only one or two and stick with them throughout the text. For example, if you select two sizes of New York type for the text—12 and 14 point—and use these two fonts throughout the proposal, using Geneva type only for figure text and titles.
• Don't try to pack as many words as might fit on one page just to save paper — use wide side margins, let some pages end short. "White space" on a page gives the eye relief and makes the text seem less formidable.

Current and Future Business

Include a section of narrative text which describes your current business and how your business will change during the proposed expansion or transition. Use bulleted lists to show your range of products and your major clients or market segments. You can illustrate the major events in your history and plans using MacProject. (See Chapter 2 for details on using this program.)

![ToyTech Shop Development Plan](image)

Page of Business Proposal, from Project program

Note that the time scale on the Task Chart is in months here, making the chart more concise and therefore suited to the five-minute reader. The same chart may be printed with a finer scale — weeks, for example, for the project manager and for proposal readers who ask for more detail.
Marketing & Financing

The Marketing and Financing sections in particular will benefit from the inclusion of charts which summarize the narrative and highlight the important points.

The Marketing Plan section should show your "intelligence" about the competition and the overall market, as well as a description of your own strategy. The important numbers shown in each graphic illustration are mentioned in the narrative which references the chart.

Management

Some readers will jump ahead to the Management Team section immediately after reading the summary — before going through the (usually longer) sections describing the business itself and the marketing strategy. For the five-minute reader, this section can include graphic illustrations which show the organization chart.
In the section describing your management team, highlight some of the experiences detailed in the resumes at the end of the proposal, but focus on each team member's actual role in the future of this venture.

![Organization Chart]

Organization Chart

In the organization chart and in expense projections, include planned hires—but don't bother describing future draft choices in the narrative—real people whose identities cannot be divulged. You may be convinced that the right people will be ready when you need them, but professional lenders and investors have already seen too many such promises fall through. They want to know who is actually working with you now.

Financial Statements and Projections

Don't try to impress the reader with pages of computer-generated projections and financial statements with long-term forecasts down to the penny. Generally, readers expect to see projections of major categories for Sales and Cash Flow, quarterly for five years and monthly for the first year or so.
Resumes

The resumes at the end of the proposal may take any form: biographical narrative, chronological by categories (education, job history, publications and awards, etc.), or skills-oriented.

**Resumes**

J.B. Morless

Maria Brandonis

Ron Turnbull

**Summary Resume Format**

**Detailed Resume Format**

Some proposals which involve many different parties — some limited partnership proposals, for example — may reduce every participant's biography into a condensed-format paragraph, in the style of Who's Who and other dictionaries.
Proposal Cover

Proposal covers produced with *MacPaint* or *MacDraw* can include your company logo and other "special effects". Will yours look so good that the loan officer asks how much time and money it took to produce? He'll be amazed at how quickly and efficiently you can work with a Macintosh.
Appendix

The following listing represents a partial directory of business products available for the Macintosh. This is not intended to be a comprehensive survey, as the number of new products available for the Mac is increasing at a staggering rate, and an exhaustive survey would be a book in itself. It should, however, offer some useful information for the new Mac owner embarking on the journey of purchasing software. We have included a brief description of each product and the manufacturer's suggested list price where appropriate. Before you make your final purchase decision, the information here should be supplemented with your dealer's advice or by product reviews which you can find in magazines.

Business Graphics

Animation Toolkit
Ann Arbor Softworks, Inc.
308½ S. State St.
Ann Arbor, MI 48103
(313)996-3838
Suggested List Price: $49.95
Lets you construct animation sequences from images which are created in an environment similar to MacPaint's Fat Bits.

MacDraw
Apple Computer, Inc.
20525 Mariani Ave.
Cupertino, CA 95014
(800)538-9696
Suggested List Price: $125
Object-oriented drawing program. Creates flow-charts, diagrams, illustrations, etc.
**Maccessories Professional Type Fonts**  
Kensington Microware, Ltd.  
251 Park Avenue So.  
New York, NY 10010  
(212)475-5200  
Suggested List Price: $99  
Contains licensed fonts (such as Helvetica, Optima) for Imagewriter in sizes 12 to 72.

**Microsoft Chart**  
Microsoft Corp.  
10700 Northup Way  
Bellevue, WA 98004  
(206)828-8080  
Suggested List Price: $195  
Creates different chart types: pie, bar, area, column, line, scatter, combination. Charts can be customized.

**Slide Show**  
Maghum Software  
2115 Devonshire St. –337  
Chatsworth, CA 91311  
(818)700-0510  
Suggested List Price: $59.95  
Creates a continuous running “slide show” of Mac screens with 16 special effects.

**SoftForms**  
Artsci  
5547 Satsuma Avenue  
North Hollywood, CA 91601  
(818)985-2922  
Suggested List Price: $39.95  
Helps produce a variety of business forms using MacPaint

**Tekalike**  
Mesa Graphics  
P.O. Box 506  
Los Alamos, NM 87544  
(505)672-1998  
Suggested List Price: $250  
Allows viewing of graphics generated by mainframes. Compatible with Tellagraph, Precision Visuals.

**Database**

**DB Master**  
Stoneware Incorporated  
50 Belvedere St.  
San Rafael, CA 94901  
(415)454-6500  
Suggested List Price: $195  
Max. number of records per file is limited only by disk capacity. Max. number of fields per record-100. Up to 10 fields can be sorted on simultaneously.
**Desk Organizer**  
Warner Software, Inc.  
666 Fifth Avenue  
New York, NY 10103  
(212)484-3070  
Suggested List Price: $250  
This filing cabinet and appointment calendar runs along with other applications and can be called up at any time.

**Factfinder**  
Forethought, Inc.  
1973 Landings Drive  
Mountain View, CA 94043  
(415)961-4720  
Suggested List Price: $150  
Creates a factsheet which stores data in a common bank.  
Keyword queries.

**Filevision**  
Telos Software Products  
3420 Ocean Park Blvd.  
Santa Monica, CA 90405  
(213)450-2424  
Suggested List Price: $195  
Allows you to draw a picture and link data to it. Max number fields per record-30.

**Helix**  
Odesta  
3186 Doolittle Dr.  
Northbrook, IL 60062  
(800)323-5423  
Suggested List Price: $395  
Includes word processing, mailmerge, and spreadsheet. Data is stored in a common bank, accessed according to user criteria. Record and field size limited by disk.

**Main Street Filer**  
Main Street Software  
One Harbor Drive, Suite 304  
Sausalito, CA 94965  
(415)332-1274  
Suggested List Price: $249  
Includes mailmerge. Max. number of records per file-approx. 1000. Max. number fields per record-36. Sorts on up to 8 fields simultaneously.

**MegaFiler**  
Megahaus Corporation  
5703 Oberlin Dr.  
San Diego, CA 92121  
(619)450-1230  
Suggested List Price: $195  
Creates files thats use the MegaMerge program to create mailmerge.  
Up to three different files can be open at once.
Microsoft File
Microsoft Corp.
10700 Northup Way
Bellevue, WA 98004
(206)828-8080
Suggested List Price: $195
Creates files that use the Word program to create mailmerge. Data transfer to Multiplan and Chart. Max. number of fields per record-1,024.

Omnis 2
Organizational Software Corporation
2655 Campus Dr. -150
San Mateo, CA 94403
(415)571-0222
Suggested List Price: $195
Includes mailmerge, report generator. Max. number fields per record-120. Sorts on up to 9 fields simultaneously.

OverVUE
ProVUE Development
222 22nd St.
Huntington Beach, CA 92648
(714)738-0746
Suggested List Price: $295
Spreadsheet-type format. Max. number characters per field is 62. Max. number fields per record-64.

PFS File
Software Publishing
1901 Landings Dr.
Mountain View, CA 94043
(415)962-8910
Suggested List Price: $125
Max. number fields per record-3200. Uses cut and paste with other Mac applications.

1stBASE
DeskTop Software Corporation
228 Alexander St.
Princeton, NJ 08540
(609)924-7111
Suggested List Price: $195
Relational database. Includes mailmerge, calculations. Max. number fields per record-100.

Finance

Back to Basics Accounting System
Peachtree Software
3445 Peachtree Rd., NE
Atlanta, GA 30326
(800)554-8900
Suggested List Price: $195
Comprehensive general accounting system. Includes general ledger, several reports and journals. Generates checks, balance sheet.
CheckMinder
Haba Systems
15154 Stagg Street
Van Nuys, CA 91405
(818)989-5822
Suggested List Price: $69.95
Prints checks and sorts checks. Records payments and deposits.
Multiple checking accounts allowed.

Electric Checkbook
State of the Art, Inc.
3183-A Airway Avenue
Costa Mesa, CA 92626
(714)850-0111
Suggested List Price: $79.95
Generates list of tax deductible expenses, allows entry of income,
expenses.

Home Accountant
Continental Software
11223 S. Hindry Ave.
Los Angeles, CA 90045
(213)410-3977
Suggested List Price: $99.95
Allows 50 monthly transactions. Prints checks and includes loan
amortization.

Ledger
Chang Labs
5300 Stevens Creek Blvd.
San Jose, CA 95129
(408)246-8020
Suggested List Price: $99.95
Displays a small company's income, expenses, assets, liabilities,
estimated profits, and menu-prompted entries of payments.

MacInTax
Software
400 Mobile Avenue, Bldg. D., Suite C
Camarillo, CA 93010
(805)388-2626
Suggested List Price: $70
Allows preparation of Form 1040 and 8 additional forms
and schedules.

Tax Wizard
Gamma Productions
817 10th Street, Suite A102
Santa Monica, CA 90403
(800)851-9009
Suggested List Price: $65
Allows preparation of Form 1040 and 20 additional forms
and schedules.
Market Manager PLUS
Dow Jones Software
P.O. Box 300
Princeton, NJ 8540
(800)257-5114
Suggested List Price: $199
Maintains up to 26 stock portfolios. Automatically assigns prices to your portfolios from the Dow Jones Current Quotes database.

Personal Financial Planning
Apropos Software, Inc.
64 Hillview Dr.
Los Altos, CA 94022
(415)948-7227
Suggested List Price: $29.95
6 Modules @ $29.95, plus Real Estate Prop. Planner $49.94, Life Ins. Planner 39.95.

Information Services

CompuServe
CompuServe Information Service
5000 Arlington Center Blvd.
Columbus, OH 43220
(800)848-8199
General information service including electronic mail, on-line news, weather, stock quotes, and a large variety of Special Interest Groups.

Dow Jones News/Retrieval
Dow Jones Company
P.O. Box 300
Princeton, NJ 8540
(800)257-5114
Financial information service. Includes stock quotes, text search of Wall Street Journal, investment services.

The Networkers 3500 Market St., # 103
San Francisco, CA 94131
(415)550-1710
Online consultants answer Mac questions. Mac online newsletter includes extensive product reviews.

The Source
The Source Company 1616 Anderson Rd.
Reston, VA (800)336-3366

Integrated

Jazz
Lotus Development Corporation
161 First St.
Cambridge, MA 02142
(617)492-7171
Suggested List Price: $595
Combines word processing, database, communications, spreadsheet, and graphics.
Printer Drivers

Hanzon Universal Card
Hanzon Data, Inc.
18732 142nd Ave. NE
Woodinville, WA 98072
(206)487-1717
Suggested List Price: $129.50
Connects Mac to Epson printers.

Mac Epson Connection
Assimilation Process
20833 Stevens Creek Blvd.
Cupertino, CA 95014
(408)446-0797
Suggested List Price: $89
Connects Mac to Epson printers.

Mac Daisywheel Connection
Assimilation Process
20833 Stevens Creek Blvd.
Cupertino, CA 95014
(408)446-0797
Suggested List Price: $99
Allows the Macintosh to print with any popular daisy wheel (letter quality) printer. Includes disk and cable.

Sales

Communication Edge
Human Edge Software Corporation
2445 Faber Place
Palo Alto, CA 94303
(415)493-1593
Suggested List Price: $195
Helps improve your written and spoken communications.

Mind Prober
Human Edge Software Corp.
2445 Faber Place
Palo Alto, CA 94303
(415)493-1593
Suggested List Price: $49.95
Helps you understand and predict the behavior of others.

Sales Edge
Human Edge Software Corp.
2445 Faber Place
Palo Alto, CA 94303
(415)493-1593
Suggested List Price: $250
Helps improve your approach with individual customers.
The Negotiation Edge  
Human Edge Software  
2445 Faber Pl.  
Palo Alto, CA 94303  
(415)493-1593  
Suggested List Price: $195  
Prepares you to work through and successfully complete negotiations.

Scheduling

Desktop Calendar  
Videx Inc.  
1105 N.E. Circle Blvd.  
Corvalis, OR 97330  
(503)758-0521  
Suggested List Price: $89  
Calendar and appointment book. Sounds alarm through Mac’s speaker.

Habadex  
Haba Systems, Inc.  
15154 Stagg St.  
Van Nuys, CA 91405  
(818)989-5822  
Suggested List Price: $199.95  
Provides monthly overviews and day-at-a-glance scheduling. “Things To Do” List.

MacProject  
Apple Computer  
20525 Mariani Ave.  
Cupertino, CA 95014  
(408)996-1010  
Suggested List Price: $125  
Project planning including critical path, resource allocation, Gantt charting.

Spreadsheets

Multiplan  
Microsoft Corp.  
10700 Northup Way  
Bellevue, WA 98004  
(206)828-8089  
Suggested List Price: $195  
Well-known spreadsheet which works with Microsoft’s Chart.

TK! Solver  
Software Arts, Inc.  
27 Mica Lane  
Wellesley, MA 2181  
(617)237-4000  
Suggested List Price: $299  
Sophisticated spreadsheet system adapted for the Mac.
Telecommunications

Habadex Plus Com for Macintosh
Haba Systems
15154 Stagg Street
Van Nuys, CA 94105
(818)989-5822
Suggested List Price: $139.95
Habadex scheduling program combined with telecommunications.

Data Talker/Mac-3270
Winterhalter, Inc.
3853 Research Park Drive
Ann Arbor, MI 48106
(313)662-2002
Suggested List Price: $1095
Allows the Mac to emulate the IBM 327/3277, 3274/3278, 3275, and
3276/3278 interactive terminal systems.

Straight Talk
Dow Jones Software
P.O. Box 300
Princeton, NJ 8540
(800)257-5114
Suggested List Price: $79
Used with Dow Jones News/Retrieval and other information
networks.

Word Processing

MacWrite
Apple Computer
20525 Mariani Ave.
Cupertino, CA 95014
(800)538-9696
Apple's word processing program uses fonts, cut and paste
capabilities.

Microsoft Word
Microsoft Corp.
10700 Northup Way
Bellevue, WA 98004
(206)858-8080
Suggested List Price: $195
Pop-down menus simplify this version of a sophisticated text
processing program designed for IBM PCs and other DOS-based
systems. Includes merge capabilities.
Miscellaneous

**AgDisk Agricultural Programs**
Harris Technical Systems
624 Peach St.
Lincoln, NE 68501
(402)476-2811
Suggested List Price: $95
Multiplan templates designed for management of feed and finances for crops, cows and swine.

**Construction Estimator**
Reston Publishing Company
11480 Sunset Hills Rd.
Reston, VA 22090
(703)437-8900
Suggested List Price: $69.95
Used with Multiplan to calculate construction costs.

**Electronic Pad**
Rune Enterprises, Rune Software
80 Eureka, Suite 214
Pacifica, CA 94044
(415)355-4848
Suggested List Price: $395
Integrated Computer Aided Design and engineering package.

**Expert Ease**
Human Edge Software Corporation
2445 Faber Place
Palo Alto, CA 94303
(800)624-5227
Suggested List Price: $295
Builds decision trees based on your experience and knowledge.

**Machinery Management**
Harris Technical Systems
624 Peach St.
Lincoln, NE 68501
(402)476-2811
Suggested List Price: $170
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**MacLink**
DataViz, Inc.
P.O. Box 1319
Norwalk, CT 6856
(203)866-4944
Suggested List Price: $95
Links Mac to PC files.
Microsoft Basic
Microsoft Corp.
10700 Northup Way
Bellevue, WA 98004
(206)828-8080
Suggested List Price: $150
An adaptation of BASIC-68000. Compatible with all standard versions of Microsoft BASIC, allowing for easy migration of applications.

Omni-Reader
Moulthrop Sales, Inc.
7080 Commerce Drive
Pleasanton, CA 94566
(415)463-0450
Suggested List Price: $
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PageMaker
Aldus Corporation
616 First Avenue, Suite 400
Seattle, CA 98104
(206)467-8165
Page composition for the LaserWriter.

Swine Management
Harris Technical Systems
624 Peach St.
Lincoln, NE 68501
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Think Tank
Living Videotext, Inc.
2432 Charleston Road
Mountain View, CA 94043
(415)964-6300
Suggested List Price: $145
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S. Venit and Diane Burns are computer consultants who also design and write technical and training materials for corporations and small businesses in the San Francisco Bay area. Among their many other books are The SuperCalc® Primer and Practical Finance for the TRS-80® Model 100.

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