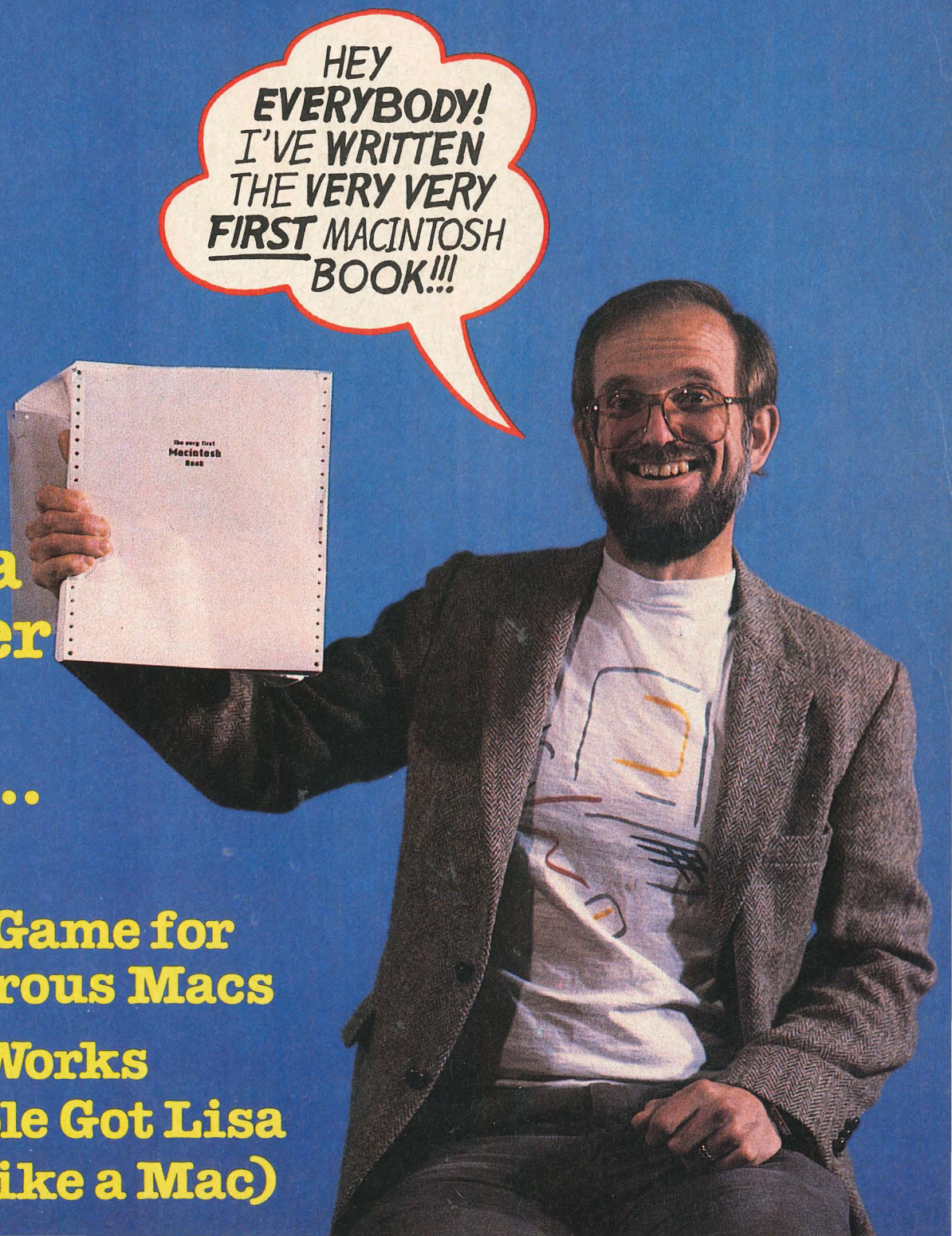
ST.MAC

Volume 1 May 1984 $2.00



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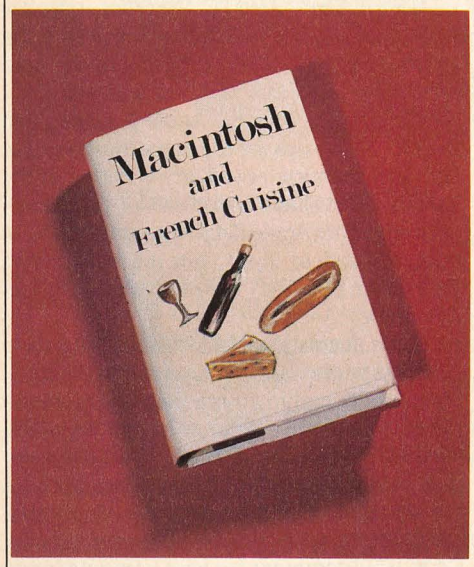

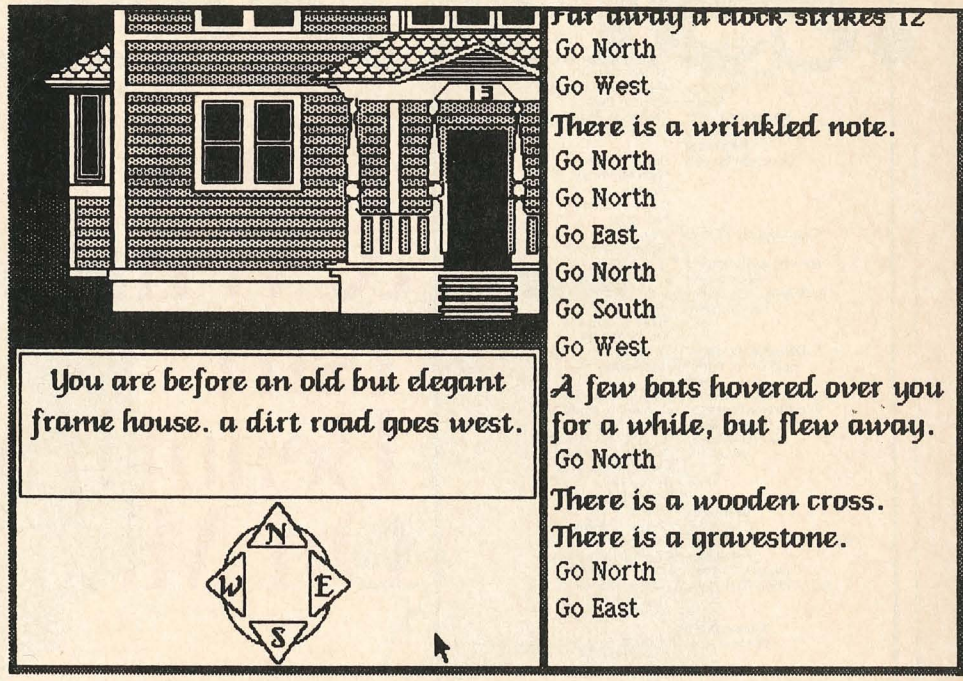

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VIEWPOINT

Black & White Isn't Beautiful On Mac

Color. It's the stuff of reality.

At an intersection, red tells you to stop, green means go. If all the lights were the same color, they'd be meaningless. It's the fact that they have color that allows lights at an intersection to communicate to drivers.

In the business world, color metaphors abound—mainly the one about the ubiquitous bottom line. Either it's red or it's black. That tells the story completely. No need to get into the intricacies of decimal points, size of deficits, or amounts of retained earnings. It's either red or black.

Nature communicates the same way. Plants turn green in the spring, variegated colors in the fall. Even were mankind so primitive as to have no calendars, no memory, no meteorological knowledge, nature would still be signaling seasonal changes by its use of color.

Nobody films in black and white anymore except for effect. That's because the real world—the world we can see, hear, smell, touch, feel—that world has color. So black and white is for effect only.

The Apple IIe has color, the IBM Personal Computer has color, even the lowly VIC-20 has color. But Macintosh has no color. It's black and white in a color world.

Why? You can get variable answers to that question from people in the Mac group at Apple. Some will say that the cost of color would have priced the Macintosh higher than Apple wanted to price it. Can that be true? Especially when it's known that not even Apple knew what the final price would be until just a couple of months ago? How did someone know it was too expensive?

Color was too expensive for IBM also. But at least IBM PC buyers get the chance to spend the money to get color if they want to. The color is there on the Apple II and on the IBM PC, but it's not even an option on the Mac.

The other common answer is that the Mac group had to choose between resolution and color. No color monitor will keep up with Mac's 512-by-390 resolution. So a choice had to be made—resolution or color. The resolution is neat. Apple's assertion that it's so good you won't even miss the color is almost true. But you always do.

What Apple has forgotten, or perhaps didn't ever know, is that color communicates. It communicates in real, tangible forms as well as subliminally. Why are most print ads in magazines now in color? Because information in color ads is retained 30 percent better than the same information in black-and-white ads.

Why are minicomputer companies manufacturing color terminals? Because efficiency and accuracy are enhanced by the use of color in terminal displays.

If black and white is beautiful, why are Apple's ads for Macintosh in color? Why is the company's apple logo the colors of the rainbow? Why aren't they in black and white?

The reasons why the Apple II outstripped the TRS-80 in sales are too numerous to recite. Let's just mention one. Early versions of the Tandy product had no graphics or color. Early versions of the Apple II did. The graphics were primitive and in lo-res, but the color made them seem positively works of art next to Tandy's output.

Apple seems to think (with IBM and most other computer manufacturers) that the minicomputer is nothing more than an electronic piece of paper. We write in black and white, we Xerox in black and white, so we can compute in black and white. That's nonsense double damned. The minicomputer is a visual medium, not an extension of the written one. Go to your computer (or your computer store if you don't have a computer). Turn your computer on. What are you looking at? Paper? It's a screen, it's visual, and if you're intelligent enough to be reading this, it's probably in color.

Color communicates. Do you buy black bananas at the grocery store?

Who should buy a Macintosh? Everybody. It's the neatest computer since Babbage. Then we should all write protest letters to Apple.

Lots of people bought Model T Fords. Henry Ford, everyman's car manufacturer, made the people's car and he believed black cars were good enough for everybody. But the real world changed his mind. You can hardly buy a black Ford of any model today.

Steve Jobs is bidding fair to become the Henry Ford of personal computers in the sense that his products have changed microcomputing and people's outlook on microcomputing just as Ford's innovations changed car manufacturing and people's attitudes toward personal travel. It's too bad Jobs can't take one page out of Ford's book without repeating the mistake first. In this day and age, color isn't an option. It's a necessity.—A.T.

Maccessories™!

The Maccessories SWIVEL
is a light weight, durable lazy susan that fits neatly under your Macintosh. The SWIVEL revolves a full 360° and lets you adjust the viewing angle of your Macintosh™ with the touch of a finger.

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The Maccessories SURGE SUPPRESSOR
protects your Macintosh against power problems. Its circuitry stops surges and spikes, and filters out aggravating line noise. Simply replace your Macintosh power cord with the Maccessories SURGE SUPPRESSOR and you're ready to go.

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If you like the Maccessories we've come up with so far, wait till you see what we've got in the works.

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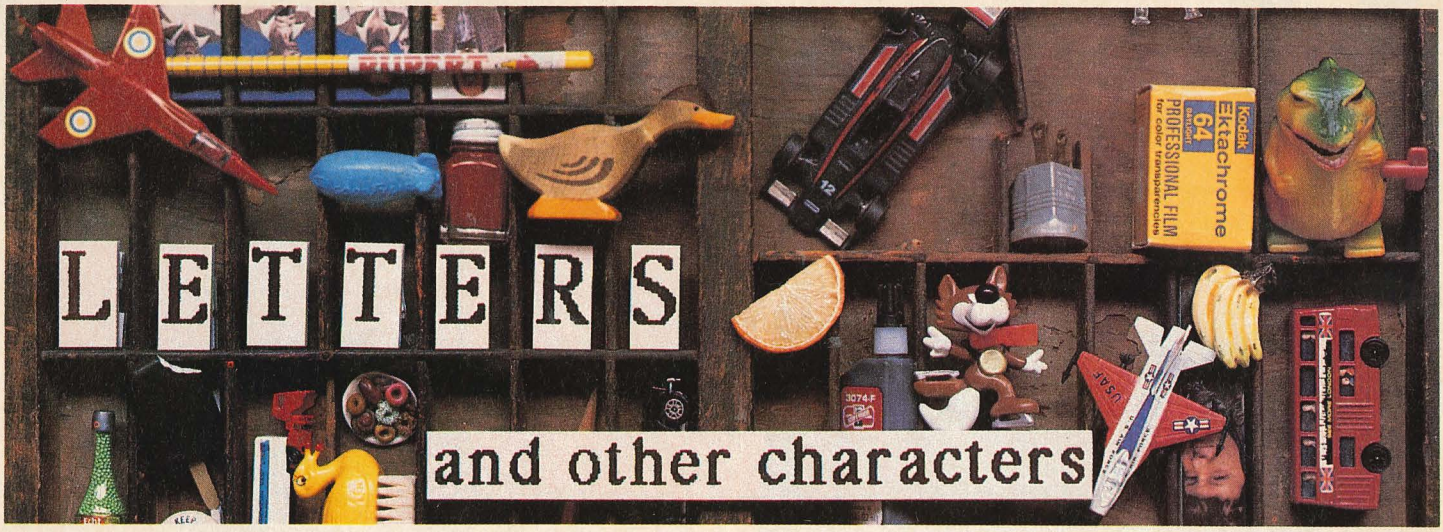


The Name of the Game

Now that the Macintosh is appearing in fifteen hundred stores around the country, it is safe to say that a lot of people will buy one (or two). As happened with the original Apple and the IBM PC, whole new industries will grow up around the Macintosh. Secondary suppliers will flourish. A lot of people will spend money, and a lot of people will make money.

While pondering this truth in my dimly lit and marginally heated house, I came to the conclusion that the Macintosh offers incredible opportunities for those people willing to risk their money and be the first out with goodies for the Mac. I also realized that the names chosen for all the new products will be mightily important to their success.

In the next few months, we will be deluged with new items that no self-respecting Macintosh owner will want to be without. There will be enormous efforts made to market these products. Even more enormous will be the efforts of advertising people to come up with new names that somehow promote a relationship between their new products and the Macintosh. Apple started it all with *LisaDraw*, *LisaWrite*, and so forth. Now we are offered *MacPaint* and *MacWrite*. The old fruit metaphors have run their course: Prepare for an invasion of Scots.

We are going to have to gird our linguistic loins because soon there will be MacThis, MacThat, and MacEverything. There will be a MouseTrap, a MouseHouse, and probably quite a few MouseDroppings (are you reading this, candymakers of America?). Well, I'm all for it. Some of the new products will be awful, no doubt. The names chosen for them will boggle your mind and offend your sensibilities, but the mental anguish caused by all the pathetic attempts at puns and humor will at least make the whole business seem a bit more human. And fun.

There are obvious add-ons, peripherals, and software that the Mac needs. Hard disk drives, a color monitor, and a daisy-wheel printer come to mind immediately. We can expect MacDisks and Blended Scotch Daisy Wheels.

Similarly, there will be an enormous outpouring of new software. Some of it will be pretty frivolous, fluffy, but lucrative stuff. The first person to market a really good game for the Mac will have to make bank deposits with a front-loader. I predict that the name of the first really successful Macintosh game will be *Coming through the Rye*. The first really successful word processor will be called *MacHack*. Too much to believe? Wait a few months.

There are other items that Mac owners will want, but for some reason Apple isn't supplying (yet). These items are low-tech. Or close to low-tech, anyway. I have come up with a list of things that no Mac owner will want to be without, and have also suggested some appropriate names for them. If you want to take me seriously and produce one or more of these, then more power to you. But be assured I claim no responsibility for the success of any of these things. How you spend your spare time and spare change is your business.

1. As you may have noticed, the Sony disks used with the Macintosh are not the same size as the 5-inch disks used by nearly everyone else. This means that unnumbered disk holders designed for the 5-inchers are too large. The world is crying for disk caddies in the correct size. They will be called such things as MacCadette (little caddy, get it?) and Bonny Wee Caddy. It will get worse.

2. One of the truly neat things about the Macintosh is that you can carry it around (well, sort of). Apple supplies a carrying case, but what all America wants is a roomier case with space enough for a second disk drive and a numeric keyboard. Canvas is okay, but leather is classier. Include some pockets on the outside and make one pocket big enough to slide in a skinny briefcase. The whole thing should fit under the seat of an airliner. Sooner or later (probably sooner) someone will put such a bag up for sale. Marketing this will be no problem. By calling it the "Lead On MacDuffle Bag," every mail order catalog outfit in the U.S. will want to sell them. Good concept, great name. I told you it would get worse.

3. Continuing on our luggage theme: I am surprised that the hikey, bikey, healthy crowd at Apple missed this idea. Sierra Club types with a nose for profit are designing backpacks for the Macintosh right now. Real easy sloganeering with this product: MacPack, MacBackPack, MacKnapSack, and so on. Students will love them. The Laddie MacBackPack will be blue, and the Lassie MacBackPack will also be blue, because the people who buy knapsacks believe in equality. Different colors would be MacTacky.

4. The incredible ability the Macintosh has for drawing things will create a large market for art-type add-ons. Within a month someone will be selling a piece of window glass just the size of the area covered by the Macintosh mouse. This is for people who want to trace designs onto the screen. Placing the original under glass keeps it from moving around as the mouse is moved on it. It will be a cheap way to avoid buying a digitizer (for a while). Window glass is pretty inexpensive; so to make any money on this item it will be better to put some kind of frame around the glass. Obviously the first of these will be called MouseTrap, but salespeople interested in university markets will want it to be called a MacSkinner box. Amazing.

5. IBM has a SmartDesk; what will the Macintosh have? Let's face it—you can't go leaving your Macintosh just anywhere or on top of just any old piece of Goodwill furniture. You need a desk that deserves the Macintosh. Don't worry; someone will design one. And they will come looking for you. It will be manufactured from Scots pine, be the color of a Scottish heath at sunset, and be designed to fit in Baskerville Hall. Only Scrooge McDuck will be able to afford one.

We are also due for a deluge of Macintosh books. The most likely title to hit the bookstores is, of course, *Of Mice and Macs* (but you don't really want to hear about it). Obviously Bonny Peter McWilliams will write a book about the Macintosh. Otherwise his ancestors will haunt him all his life. It will have a plaid cover.

As I said, I'm all for this stuff. I have even come up with a name for all these advertising neologisms: MacSniglets. Sniglets, for those of you without the benefit of a certain cable television program, are new and more or less made-up words. MacSniglets are words made up to describe products for the Macintosh. We will be seeing a lot of MacSniglets in the future.
Richard Whitten
Vermillion, SD

All Systems Go

After I had my Macintosh only two days, it experienced a system failure that necessitated a trip to the local Apple distribution center. I refused to take it to a dealer, as I knew they didn't have the tools to open the back at that time. The Apple people required a little persuading, but after I mentioned that we have three Apple IIs and are interested in expanding to hard disk operations via Lisa's ten-megabyte system, they obliged, putting in a new board that same morning. Needless to say I was very pleased with their service, although somewhat apprehensive about the sudden system failure. We have never had a II Plus failure, after three years of operation—disk drives included, and with daily use.

I was wondering if you might address yourself to these questions in upcoming issues:

Is it going to be possible to upgrade to higher RAM levels? If so, when?

When will networking become available? We would like (ideally) to network several Macs together in our office, all connected to a ten-megabyte hard disk. Hopefully such a system would allow multiple users different applications, simultaneously.

Why does the System folder take up over 200K of RAM? Seems like a lot, especially on a 400K total storage disk.

I understand that there will be 800K drives available soon. From Apple? When? And will Apple offer trade-ins for owners of the 400K drives?

It seems as though the Sony drives are not that much faster than the Disk II drives. It may just be that they're delivering a lot more material. I would be interested in some discussion of this.
Richard F. Hayhurst
Rolling Meadows, IL

Lisa Queries

We certainly do agree that Mac is the most innovative personal computer development since the Apple II. My presumption of commercial success for the Macintosh leads to my interest in Lisa 2, which appears to offer all of the capability of the Mac plus other options that are important to me. At the moment, all attention is (deservedly) on Mac, and I am impatiently awaiting more information on Lisa 2. Your article by Chris Lincoln certainly helped, but it also raised some questions.

Your article stated, "The addition of Macintosh ROMs makes the Lisa 2/10 compatible with Macintosh software...In Macintosh emulation mode (MacWorks), the Lisa 2/10 will not support the ProFile, the built-in hard disk, or Apple's daisy-wheel printer." That leads to three questions:

Is it only the Lisa model 2/10 that runs Macintosh software?

Is it Macintosh ROMs or the MacWorks boot disk or both that are required to provide Lisa 2 with emulation capability?

Is there any reason to hope for future support of the Lisa 2's hard disk under Macintosh emulation mode, or is it fundamentally unachievable?

While I'm on a roll, here are some more questions that were inspired by Mr. Lincoln's excellent article:

Is there any way (now or planned) to move Macintosh text or graphics files into the Lisa environment (or vice versa)? Are the files at all compatible if they were to be transported?

Regarding the difference between Macintosh and Lisa 2 screen dimensions (512 × 342 versus 720 × 364), how are Macintosh graphics images mapped into Lisa 2 displays? Is a Macintosh pixel the same shape as a Lisa 2 pixel? Does a Macintosh circle appear round when displayed on the Lisa 2?

Does Macintosh software automatically take full advantage of the additional RAM in the Lisa 2? Under MacWorks on a Lisa 2, what is the improvement in text file size of a *MacWrite* document that can be edited?

What is the ratio of graphics image size on the Macintosh screen versus the Imagewriter output? Same question for the Lisa 2 screen versus the Imagewriter. Is there any zoom or compression graphics dump software available or planned that would allow control over Imagewriter image size relative to Macintosh image size (a la *Zoom Grafix* from the Apple II world)?

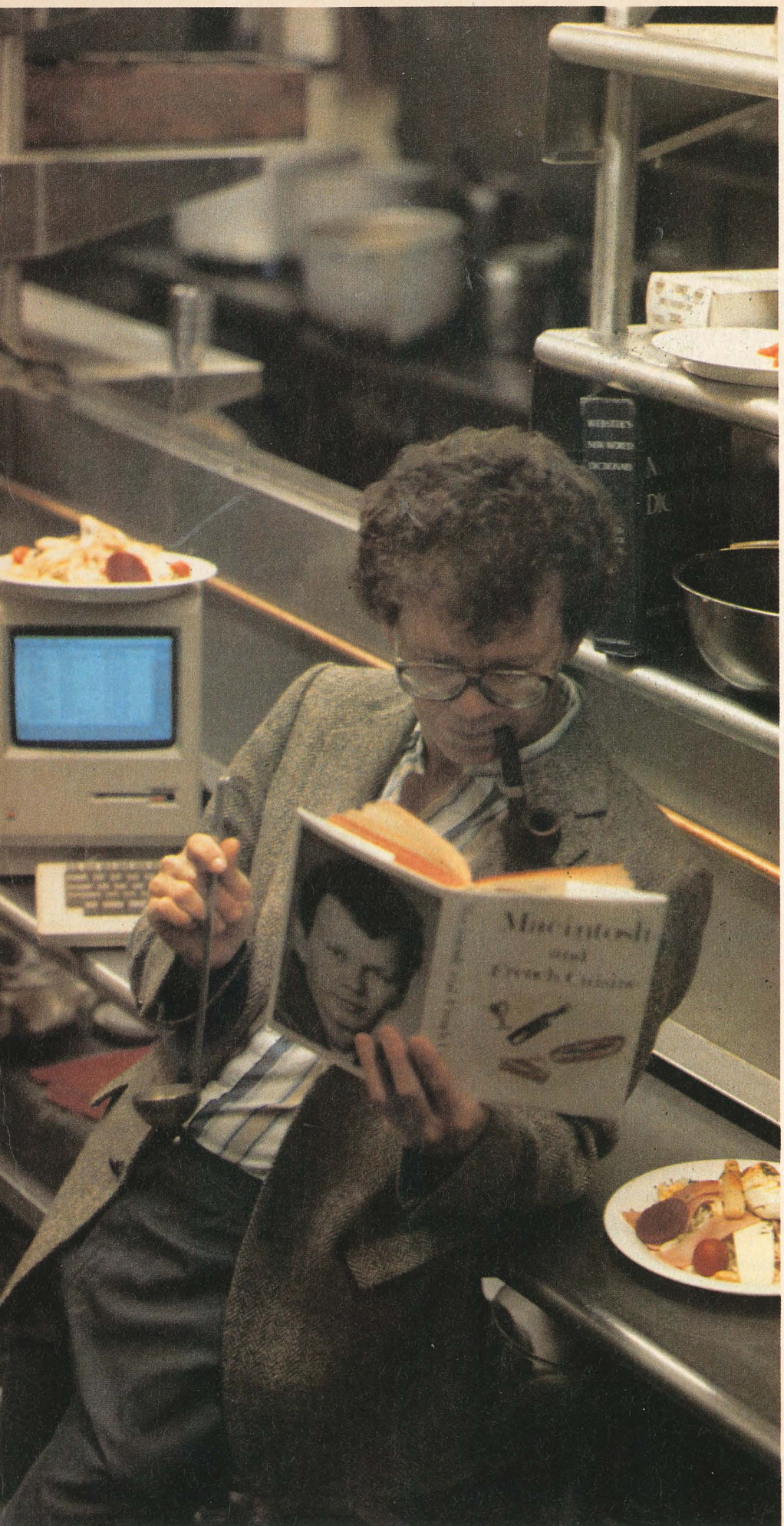
I understand that the upgrade from a Lisa to a Lisa 2/10 involves a power supply change of some sort. What is involved in the upgrade from a Lisa 2 to a Lisa 2/10 if one were to want to add the ten-megabyte hard disk later?

I'm sure I won't be the only person who will appreciate answers to these questions. I know quite a few Apple dealers who will!
C.J. Thompson
Anaheim, CA

Advice to Apple

I agree with your evaluation of Apple sales techniques. They definitely need improving. The IBM PC and PCjr are what they are only because of IBM sales techniques and strategies, not because of the machines themselves. Perhaps your magazine can get this information to the Apple management before the market does.
Lawrence O. Guillory
Lafayette, LA

ST.Mac would like to hear your reactions to articles as well as your views about the world of personal computing. Send your opinions, queries, suggestions, and solutions to ST.Mac, Box 7041, North Hollywood, CA 91605.



The Sixteenth Annual Bibliography of Computer-Oriented Books lists 1,056 titles from 206 different publishers—and the list is not complete. The number of new titles is expected to increase by 70 to 80 percent by the end of 1984. That's a lot of books, and a lot of writers and publishers working hard to supply information they think is necessary or desired.

Informal surveys indicate that the average microcomputer owner buys nine to twelve books about that computer within six to nine months after purchase.

If Apple makes its projected sales of 350,000 Macintosh computers in 1984, and the same book-buying patterns prevail, the estimated book sales will have publishers rubbing their palms together and giggling with anticipation.

Maybe you've decided you want to write one of those books and do some hand rubbing and giggling yourself. Where do you begin? How do you decide what to write about? How do you interest a publisher in your project? How do you select a publisher? How do you negotiate a contract? How do you plan the book? How do you work with the publisher through the review, production, and design tasks the publisher requires?

Deciding What To Write About

Your first step should be to analyze the existing market by surveying the bookstores in your area. You should also ask your local librarian to show you where to find and how to use *Books in Print*, *Forthcoming Books*, and *Supplements to Books in Print*.

You'll find basic categories of books—how to use your computer directly to program or create graphics, for instance. How to use software for that computer—*VisiCalc*, *WordStar*, *dBase II*. Books about the computer itself—its design, its features, and how to get it up and running. Even technically detailed descriptions of the microprocessor and operating systems. Books on how to program in Basic, Pascal, and assembly language. Books on applications—general business, word processing, file management, accounting, graphics—using the programming languages, the software and hardware created for the computer you favor, or a combination of all of these. And, of course, books on games that can be created or bought to run on that computer.

Your survey will give you a good idea of what books publishers have already decided were worth the effort and expense to bring to the marketplace. But "published" and "sold" are two different words, and for good reason: They mean two different things entirely. If all the books published became books sold, publishing would not only be fun, it would be profitable. More about this later. For now, ask the store manager which books sell the best, and ask the librarian which kinds of books are most requested. You're interested here in both individual titles and categories of books.

Planning the Book

Pick a subject you know a lot about—not

How To Become a Computer Book Author

By Gerald P. Rafferty

just *something*, a lot. The best books contain about 25 to 30 percent of what an author knows about a subject. These are literally filled with information. When an author who writes a book knows only something about the subject, the book contains so much air as to create breezes and sometimes winds that either lull the reader to sleep or whip the reader into a fury that results in the book being hurled at the nearest cat. If the content value of many of the computer books presently available is any indication, cats could become an endangered species.

A good technical book might have a breeze factor of 3 or 3.5 (so it shouldn't be too dense) but definitely a wind factor of 0.

Also, pick a subject you know how to teach or make clear to someone else. Simply stating what you know about a subject may be a wonderful experience for you but a deadly bore to a reader. Remember Psychology 101? The subject was interesting, you were filled with enthusiasm, but the instructor made it a grueling experience and you vowed never to take another class taught by that person. It's the same thing with books. Readers remember.

Your survey has shown you one of two things. Either people are publishing in your chosen area or they are not. Both conclusions can be good or bad. If there are only a few books on your chosen subject, maybe there's room for another. If your book would treat the subject in a fresh, innovative way, then you have a good chance. If there are many books on your subject, your chances are slimmer. In either case, a publisher could help you decide whether or not to go ahead with the book. If there are no books on your subject, it may mean that no publisher has considered it worth the financial risk to bring one out. Or it could mean that there are books under contract but not yet produced. Or that no one has yet thought about doing a book on that subject. Or that no one really cares. Again, a publisher could help you decide whether or not to continue.

Generally speaking, publishers, like other companies, create products they know something about how to produce and market. You wouldn't expect Apple to suddenly start producing cars, even though most cars today have computer components. Similarly, you wouldn't expect a publisher who has a line of easy, breezy, hundred-page how-to books laced with cartoons to be interested in publishing your seven-hundred-page definitive treatment of the 68000 microprocessor. Or vice versa.

Your survey has shown you what is and isn't out there and who's publishing in what areas. *LMP* (*Literary Market Place*, published by Bowker and available at your local library) or *Writer's Market* (published by Writer's Digest Books) will give you more details about publishing companies, including the names and addresses of the people you'll want to contact. Now you're ready to pick a publisher, or two, or three; but first you need something to talk with the publisher about.

Writing the Proposal

With the proposal, you're asking a publisher to invest considerable resources of staff, money, and time in producing and marketing your book. So you want to make the proposal as complete and convincing as you can. The listings in *Writer's Market* will tell what various publishers expect in a book proposal, ranging from a simple query letter that states your idea and asks if the publisher is interested to a complete manuscript.

A good proposal that would present your book idea clearly and completely would include the following:

1. An outline of the entire book.
2. A detailed table of contents, giving all the subsections you can think of for each chapter.
3. A sample chapter, preferably not the first—pick chapter 3 or 4 where you're already into the meat of the subject.
4. Samples of your previously published work.
5. A comparative analysis of your book to an existing book, showing how yours would be different and better. If there are no books on your subject, pick a book on a similar subject and show how your book would be like or unlike the existing book.
6. A brief biography stating your expertise in your subject.
7. A report on the state of your manuscript. Is it complete or just outlined? Include your projection of when it will be completed.

That's a pretty big package, and there are cases of contracts being signed on a lot less. A phone call, sometimes. But as the farmer answered when asked why he was carrying a two-by-four to go out to talk with his mule, "First I have to get his attention!"

By all means include a self-addressed, stamped envelope (SASE). Although some publishers would cheerfully argue the point, publishing really is a business and postage and envelopes cost money. So, if you expect to see your proposal again, don't make it a financial burden for the publisher to return it to you.

There are stories of would-be authors who think that not including SASEs makes it harder for the publisher to say no and that if the proposal stays on a desk longer its chances for a yes are increased. Maybe. And maybe someday pigs will fly.

Inside the Publishing House

Manuscripts and proposals undergo a scrutiny in a publishing company that would make a six-month search for a new home seem like impulse buying. An editor reads and reviews the material; decides whether the author is up to the task; analyzes the potential market and the competition; determines

whether the book would fit into the company's product line; estimates the editorial, production, manufacturing, and marketing costs; mixes in a heaping amount of instinct and feel for the author, manuscript, and the market; stirs or shakes to taste; and decides yes or no.

If no, your SASE is used. If yes, the project is brought to the publisher or publishing committee for presentation, defense, and decision. This may take months or days or hours and may take twenty people or one person, but the intensity of the scrutiny is the same. Once a positive publishing decision is reached, the editor contacts the author to discuss a contract.

Each publishing house has a staff that performs certain functions. These are some typical task or job descriptions:

Publisher/general manager: decides the overall publishing program and goals for the company and usually approves all contracts.

Editor: solicits, acquires, develops, and edits the manuscripts that will satisfy the publishing program and company goals.

Production manager: designs, copy edits, produces, and oversees the manufacturing of the books.

Marketing and advertising personnel: get the public to buy the book.

Fulfillment personnel: get the books to the buyers.

Finance and administration personnel: tend to the accounting and business functions of the company.

In very small organizations each of these functions may be one part of one person's mind; in very large organizations there may be hundreds of people performing these tasks. When everything is working perfectly, all these functions are performed in unison and your book is selected, contracted, developed, edited, produced, marketed, distributed, sold, and paid for. Then you receive your long-awaited royalty check.

Sometimes the specific goals set for different tasks generate conflict between them. For instance, a production manager would be hard pressed to produce a five-hundred-page, four-color book with a potential market of a thousand copies that had to sell for $5.95.

Elements of the Contract

A publishing contract is simply an agreement stating *who* is to do *what*, *when*, at what *cost*, and for what *reward*.

Under *who* is the publisher and you. Or you and a coauthor (or two, or three), an illustrator, or a programmer. It's rare to find one person with enough technical knowledge of a particular subject, be it computers, biology, investments, or car repairs, who also has the skill to communicate that knowledge to a novice in the subject.

Writing on any subject is a difficult and disciplined profession. Writing about computers is especially tricky because you're trying to educate an already literate reader who has little or no knowledge of the subject. So take pride in what you know, but don't be afraid to get help where you need it.

Many book proposals are turned down because, while a publisher may think that the idea for the book is a good one, the sample chapter indicates that too much editorial effort would have to go into the manuscript to make it a readable book. Again, publishing is a business that operates within tight margins. If there's any hint that a product would require extra commitment of the publisher's resources in editing, development, or production (and the publisher is working with a sharp pencil), the proposal will be turned down. A loss to everybody.

If you've never written a book before, consider whether, among your friends and business associates, there is someone who could help. Or you could suggest to the publisher that you'd be willing to collaborate with a professional coauthor who would share the work and the royalties. If Aristotle will forgive the paraphrase, having a contract and an advance does not an author make. There are many more people who would like to have written a book than there are those who could actually write one.

Establishing a Word-Count Figure

Under *what* is the manuscript. Most contracts state a book's size in words. This makes sense. Publishers are in the word business. You count K, publishers count words. So how many words does it take to make a book? Publishers have different formulas to determine this, and a lot depends on the design of the book. But here are some general guidelines.

A standard book page is 6 x 9 inches. On that page will appear about forty-two to forty-five lines of about seventy characters each. That gives about three thousand characters a page. Using an average of six characters per word, that makes about five hundred words per page.

Production managers count all this in picas (there are six picas to an inch) and points (there are twelve points to a pica), but you don't have to know too much about that. A standard typewriter page has about sixty to sixty-five characters per line and twenty-four lines double-spaced on a page, or about two hundred and fifty words. Thus, it looks like a two-hundred-page book would be about a hundred thousand words, or four hundred manuscript pages. That sounds good. Very technical. Clear. Neat. But it's much too simple for publishers.

That book page also allows space for artwork, photos, subheads, footnotes, program listings, appendixes, indexes, and so on. Most publishers include all these things as part of a manuscript, and because they have to be counted someplace, they count them in with the words. The contract for the two-hundred-page book may still be written for one hundred thousand words, seventy-five thousand of which will be words and twenty-five thousand will be artwork, subheads, and other items.

So while you have a *megabyte* of information on a disk file that includes words and graphics, a publisher has a hundred thousand

words. The book's design can alter these counts radically, from two thousand to five thousand characters a page. This often happens when a manuscript is too short or too long. That's why standard issue for all production managers is a stretching rack and a bucket of Vaseline and a hammer.

The variance in word count and book size may seem unscientific, a bit like trying to count ice cubes in a pot of boiling water, but good production managers are very quick and accurate at this. And you should know a little about it, too, because you'll be committing yourself to a certain amount of work with that word-count figure in the contract. Remember that artwork, photos, appendixes, indexes, and table of contents may be considered a part of the manuscript and thereby your responsibility. If you don't supply these things as part of your manuscript, the publisher will have to pay extra to include them in the book and consequently can and should charge these costs against your royalties.

Setting Up a Schedule

Under *when* is the schedule. Professional writers consider ten manuscript pages to be a good day's work. That's about two or three thousand words. And that's straight writing, no editing. Most professionals agree that you should write it out first, let it sit for two or three days, then go back and do your editing. If you have someone close to you who can read your material and tell you the truth, so much the better. Robert Townsend in *Up the Organization* advised company presidents to always have someone close by to tell them occasionally that they were full of it. Writers need this kind of tough love, too.

Well, ten pages a day should get a four-hundred-page manuscript done in forty days. Unfortunately, about the only place where things get done in forty days and forty nights is in the Bible. In the real world we have jobs, spouses, kids, colds, and bills. All that stuff. And a good computer book has more than words. You need time to think about art, photos, appendixes—all the things that will make your book complete and useful for your readers.

A good schedule is a realistic schedule. You and the publisher may want the book written in two or three months, but other demands on your time may require six to eight months. Be realistic. The publisher is committing many resources and working hard while you're writing: further analyzing the market, planning marketing and promotional programs, scheduling staff and money, buying paper and scheduling time at a printer, and turning down other contracts because your book is in the works. When a manuscript is late and production has to be rushed, all costs increase and you may miss the optimum marketing launch and lose sales.

If you think you could write two hours a day—let's say early in the morning before going to your other job (most writers work best in the morning after the subconscious mind has had a chance to work on the book during sleep)—build the schedule around that. Add another 25 percent for emergencies and relaxation and you might have a reasonable schedule.

But the work doesn't end with manuscript delivery. Your publisher will most likely send your manuscript to the editorial production staff and to outside reviewers. Sometimes this happens piecemeal as the chapters are being written. The people who read your manuscript will comment on its completeness, accuracy, and writing style, and will sometimes compare your work to existing books. These comments will be given to you with your publisher's advice as to what you should work on or leave alone.

There's a phrase in every publishing contract, the gist of which is "delivery of a manuscript acceptable for publication." Many a dream ship has crashed on the rocky shores of this phrase. You've had a great relationship so far. Lots of encouragement, high expectations, all doors were open to you, and suddenly there's a Marine at the gate telling you your papers are not in order. And you know how lovable Marines can be.

In every contract is the phrase "delivery of a manuscript acceptable for publication." Many a dream ship has crashed on the rocky shores of this phrase.

The Production Process

The publisher has invested a lot in your project so far, but it's nothing in comparison to the hard costs of production, manufacturing, and marketing that are about to be spent on your book. And this is the publisher's last chance to take a supercritical look at that investment. If there's anything that could make your manuscript better, it must be done now. Once your manuscript is approved for production, the fun starts.

So you thought you knew something about grammar and syntax, did you? Wait until a good copy editor gets into your manuscript. You'll learn things about the language and your manuscript that you didn't know weren't there. Illustrations and photos that don't work with text, spelling inconsistencies, paragraphs that were perfectly clear to you are now challenged. Some of your favorite phrases will be cut because they hamper instead of help the book's progress. Accept this professional criticism with grace. These editors are on your side, working very hard to help make your book the best it can be.

After editing, your book will be typeset. If you've prepared your manuscript on disks, it may not have to be typed again. Not much money is saved by going from computer disks directly to typesetting—new technology has a way of gobbling up expected cash savings—but it does save time.

After typesetting you'll receive galley proofs to read. Although it may seem that the production manager has now chained you to the oars of a Roman slave ship, that isn't where the word galley comes from. Galleys were the metal trays that held the hot metal type before photocomposition was developed, and the name stuck.

Along with galley proofs you should see the final photo selections and illustrations for a last check. Then your book will be made up into page forms and you'll be asked to prepare an index. If you don't know how to prepare an index, let the publisher do it and charge the costs against your royalties.

When all corrections have been made and all the pieces are in place, your book is printed. This whole process used to take about nine months, and the author-giving-birth analogy was accurate. Nowadays, things can be done a bit faster, depending on the publisher, the expertise of the production people, and the cooperation of the author.

The Cost of Doing Business

Under *cost* is the budget, and this is usually the complete responsibility of the publisher. This is the cornerstone of the author/publisher relationship. You supply the manuscript and the publisher supplies the money and other resources to produce the book and the expertise to market and sell it. According to the annual *Industry Statistics* put out by the Association of American Publishers, most publishers operate at between 5 and 15 percent net income before taxes. That's a pretty slim margin.

Where does all the money go? Manufacturing is the biggest expense. That's the cost of typesetting, paper, printing, and binding. Then comes marketing, general and administrative, editorial and production, royalties, and fulfillment; finally, there's net income before taxes. The income disposition of a typical publishing company is illustrated in the

Income Disposition of a Typical Publishing Company

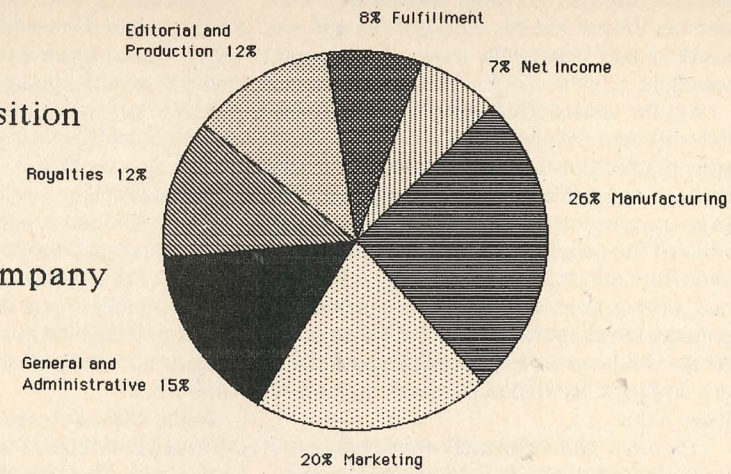


figure above.

Usually all costs associated with the completeness of the manuscript, such as photos, permissions, typing, or research, are the author's responsibility. If these costs are considerable, most publishers will give an author an advance against royalties to help with the manuscript creation. Stories abound in the industry and the press of huge advances given authors on meager outlines or book proposals. Some of the stories are actually true.

Advances against Royalties

Advances are an accepted cost of doing business to most publishing companies. Advances are essentially long-term, interest-free loans from publisher to author. They were started years ago when an author needed living expenses and working cash during the one, two, three, or more years it took to go from manuscript draft to bound books. With today's working schedules of three to nine months, advances have become less of a necessity and more of a token exchange of cash that supposedly expresses commitment.

Advances are usually calculated as a percentage (25 to 30 percent) of what the publisher would expect to pay you in royalties during the first year of sales. If royalties are 10 percent of list price on a $15.95 book with estimated first-year sales of 10,000 copies, that's $15,950; 25 percent of that is about $4,000.

Some people think that if the $4,000 is given as an advance, the publisher will be more willing to push the project through the review and quality stages to recoup the advance. And that may have happened with many of the books on bookstore shelves today. But a reasonable publisher faced with review comments indicating more needed work on a book would not invest an additional $70,000 to $90,000 to get back the $4,000. The one who'd get something back is you, and that would be the manuscript.

Under *reward* are all the good things that should happen to you and your publisher after the book is printed and sold. Number one is that you are the author of a book. Regardless of what writing you've done in the past, being the author of a book is a major milestone. Your brainchild exists! That's a big thing.

Promotion and Distribution

You may be asked to help market your book through interviews, autographing parties at bookstores, or appearances on talk shows. Oh, yes! You work even after your book is printed. You may get calls from agents or other book or magazine publishers. Everybody likes to be wanted. And if all goes according to plan, you and the publisher will earn money from your book. So, how is the money earned and how much do you get?

Too slowly and never enough.

Pick the most complicated maze on your Macintosh Guided Tour disk. Tricky? That's a piece of cake compared with getting a copy of your book from printer to reader and getting the money from reader to publisher, not to mention getting the money from publisher to you.

Computer books are usually sold through direct mail, magazine advertising, shows and conventions, retail trade bookstores, computer stores, software stores, mass market discount stores, and newsstands. Most retail outlets buy books from wholesalers and distributors, who in turn buy books at discount from the publisher. Money and books fly through these distribution channels with the lightning speed of a caterpillar competing in a marathon.

To give you an example.

Books roll off the presses February 1, 1984. Through advertising and salespeople and lots of marketing savvy, the publisher gets a local bookstore buyer aware of the book. The buyer likes the book and, being a bold sort, goes all the way and orders five copies, knowing that three can be returned for full credit if they don't sell. But the order may not go directly to the publisher; usually it goes to a distributor or wholesaler. The local bookstore doesn't want to do the paperwork required to deal directly with five hundred or so different publishers. If the distributor has the book in the warehouse, the order is processed; if not, the book is ordered from the publisher. Finally, sometime in April, a customer—your reader—buys a copy of your book.

The bookstore manager pays the distributor sometime within 30 to 60 days; the distributor pays the publisher—another 90 to 120 days. The publisher collects the money and tallies the figures for a royalty statement—usually issued twice a year, sometimes quarterly; the publisher makes an allowance for returns at full credit because everybody in the system has the right to do that and the publisher can't pay royalties on books that may be returned. And you, by now the hand-wringing, expectant author, may get a royalty check in time to buy a Christmas turkey—that is, if enough books were sold to offset the amount of your advance.

This is a tortuous process at best, but when it happens thousands and thousands of times you have a success.

Royalties are usually calculated in one of two ways: as a percentage of the retail price of the book or as a percentage of actual cash

Computer Book Publishers

Addison-Wesley Publishing Company
6 Jacob Way
Reading, MA 01867
(617) 944-3700
Contact: William Gruener

Ballantine Books (Random House)
201 East Fiftieth Street
New York, NY 10022
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Contact: Ed Walters

Robert J. Brady Company
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Contact: David Culverwell

William C. Brown Company Publishers
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Dubuque, IA 52001
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Contact: Robert Stern

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Osborne/McGraw-Hill
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Berkeley, CA 94710
(415) 548-2805
Contact: Karen Hansen

Prentice-Hall
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Contact: James Fegen

Quality Software
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(818) 709-1721
Contact: Sandy Pierce

Random House
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(212) 751-2600
Contact: George Rosato

Reston Publishing Company
11480 Sunset Hills Road
Reston, VA 22090
(703) 437-8900
Contact: Ron Powers

Howard W. Sams & Company
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Indianapolis, IN 46268
(317) 298-5419
Contact: Bill Oliphant

Softalk Books
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North Hollywood, CA 91605
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Contact: Paul Mithra

Sybex
2344 Sixth Street
Berkeley, CA 94710
(415) 848-8233
Contact: Jim Hill

John Wiley & Sons
605 Third Avenue
New York, NY 10152
(212) 850-6000
Contact: Theron Shreve

received (ACR) by the publisher. Royalties on retail price usually range from 5 to 12 percent. Royalties on ACR usually range from 12 to 20 percent.

Taking the previous example, a 10 percent royalty on a $15.95 book would be $1.59. ACR is a little different. Bookstores usually buy books at discounts from 40 to 48 percent off list price, depending on volume. Distributors buy books from publishers at discounts of 50 to 58 percent. The bookstore buys the $15.95 book for $9.25, a 42 percent discount. The distributor buys the book from the publisher for $7.65, a 52 percent discount. The $7.65 becomes the ACR by the publisher, and a 20 percent royalty would give you $1.53 per book. The royalties are about the same. But if your publisher sells more books directly to readers and collects the full $15.95, a royalty percentage of ACR looks a bit better.

Subsidiary Rights

Subsidiary rights, such as video or educational versions of your book or translations, can be a good source of additional income for you and your publisher. Your publisher is probably the best one to negotiate the sale of these rights. A publisher would be able to sell subsidiary rights on a whole list of books more easily than negotiating on a book-by-book basis. Your contract will state that you'll get a percentage of these sales. But if you try to retain those rights for yourself without the knowledge or wherewithal to sell them, everybody loses.

Some publishers will not sign contracts for limited rights. It gets to be too much of a hassle to exclude a few titles from broad subsidiary rights contracts. When you get to be a bestselling author, agents will call you and try to represent you. Agents are supposed experts at negotiating contracts for a fee, currently around 15 percent of what you'd earn. But few agents would even bother with a first-time author, so you're probably better off establishing a good working relationship with your publisher.

> Money and books fly through distribution channels with the lightning speed of a caterpillar competing in a marathon.

Small or Large Publisher?

Should you sign with a small or large publisher? To many first-time authors, this is a moot question. You sign with the one who wants to do your book. Any publisher you sign with should meet certain criteria, though.

The publisher should be able to supply you with good editorial, design, and production support, and should have the ability to present the book to the marketplace successfully. Good editorial and production support will help see to it that your book is clearly written, is free of errors, has good illustrations that support the text, and has program listings that work (whether they're part of the text, on disk, or both). A small publisher with a staff of two or three professionals can often do all this just as effectively as a larger one with a staff of twenty.

Good marketing support will see to it that your book is well advertised and gets through the distribution channels as efficiently and smoothly as possible. Broadly speaking, a large publisher will do this better than a small one, but there are dangers. A large publisher will have many more books to sell, some of which may even compete with yours; and advertising budgets can get dissipated over an entire list. The sales force of a large publisher will quickly pick up on the hot new titles and put most of the sales effort into the titles that bring large commission checks.

Because many retail stores order through distributors, your book, if it's on a hot new subject, could stand just as good a chance of being on the bookstore shelf, regardless of the size of the publisher. If a large publisher has six hundred titles and a small publisher has twelve, the bookstores may stock three of each. Also, there have recently been distribution contracts signed between small and large publishers wherein the large publisher markets and distributes the books from a small publisher. There are success stories on both sides.

Armed with a little information, you'll be able to ask the right questions when deciding which publisher to choose. Most important, publishing is a very personal business, and the best relationship will be with the person from whom you feel you have a strong commitment and mutual trust. Every large publisher was at one time a small publisher who had good books and worked hard to succeed. And it's having good books and working hard that makes any publisher, large or small, successful.

The Next Step

Other authors are a great source of information about publishers. Ask for the names and telephone numbers of authors who've written books for the publisher you're considering and talk with them, using this article as a guide for questions.

This has been, of necessity, a broadstroke survey of a complex subject. Just about every area touched on here deserves a Fat Bits look. And there are complete books on each of these subjects. The aim here has been to equip you with enough information to continue researching the field or to start work on your own book proposal.

Have fun.

Paperback Mac

The Apple Macintosh Book
By Cary Lu
Microsoft Press; 383 pages; $18.95

When a new microcomputer is released, some number of books about it show up on the shelves. The more important the computer is perceived to be, the faster the books appear. In the case of the Macintosh (as with the IBM PCjr), several books hit the shelves shortly after the Mac itself did.

One such book is *The Apple Macintosh Book*. Written by Cary Lu, former technical editor of *High Technology*, it is a beginner's guide for owners and prospective owners of the Macintosh. Its threefold purpose is to help you decide whether to buy a Mac, to aid you in using it once you've got it, and to show you what to expect for the Mac in the future. For the most part, the book fulfills that purpose, thanks mostly to Lu's solid technical background and well-honed writing skills.

The book itself is divided into four major sections, comprising a total of thirty chapters. The first section, relatively brief, gives a general introduction to the Macintosh, as well as directions for taking it out of the box and setting it up. The various sketches of the Mac by artist Rick van Genderen are a refreshing change from the usual black-and-white photos.

The second section starts with a chapter on how to use the Macintosh—basically a summary of the different functions you perform to do anything with the Mac. Each successive chapter deals with a particular type of application (word processing, graphics, and so on), discussing what software is available and giving actual point-and-click examples. A few interesting problems crop up here.

First, all software discussed is either from Apple or from Microsoft. This doesn't reflect some inherent bias on the part of the author or the publisher; it's just that these are the only firms that currently offer applications. Lu even makes a point of stating that future editions of his book will discuss products from all manufacturers as they become available.

Which brings up the second problem: Not all of the packages discussed have been released, and some won't appear for at least a few more months. Since there *are* other software developers with Mac products due for release, shouldn't at least some mention of their work be made? It would be interesting to know what kind of effort was made along those lines. Another concern is that the description of, say, Microsoft's *Word* given in the book may not jibe with the finished product when it is finally released.

The third section turns from software to hardware, discussing the Macintosh and its various peripherals, existing and planned. Lu clearly states the two major shortcomings of the Mac—too little RAM and too little disk space—and recommends correcting both as soon as possible. Other chapters discuss disk drives, printers, modems, and so on. Lu does an excellent job of pointing out different options and throwing in helpful hints. Two of the more interesting chapters in the book are found in this section, one comparing the Mac user interface with other operating systems and another offering blow-by-blow comparison of the Mac to the IBM PC. In both situations, as elsewhere in the book, Lu manages to present a balanced viewpoint while still conveying enthusiasm about what the Mac does well.

The last section contains various odds and ends, including tidbits that Lu says he couldn't logically stick in anywhere but that he didn't want to throw away (bravo!). The topics include use of the Macintosh by the handicapped, an excellent discussion of the problems involved in getting information from one computer to another, and the pinouts of the different ports on the Mac's back. This section will be of most interest to Mac users who have previous computer experience.

Taken all in all, Lu has done an excellent job. His writing is clear, his examples and illustrations myriad, and his ability to teach impressive. Ironically, though, the Macintosh is so easy to use that anyone with previous computer experience may find large portions of the book unnecessary. Even so, you may still find enough useful information to justify the purchase. And if the Mac is your first computer, or if you are seriously considering buying a Mac, then this book will definitely give you a good enough feel for the machine to make up your mind.—By Bruce Webster

Presenting the Macintosh
By Merl K. Miller and Mary A. Myers
dilithium Press; 119 pages; $5.95

Introducing the Apple Macintosh
By Edward S. Connolly and Philip Lieberman
Howard W. Sams & Co.; 188 pages; $12.95

Every time a hot new computer appears on the market, publishers race to be the first to do a book on it. Sometimes this means publishing a book about a machine the book's author does not yet thoroughly understand.

With the Macintosh, this danger is especially grave because the machine is so different from its predecessors. On an IBM, for example, you might duplicate a file with the command *copy a:review.text b:*. On the Mac, no command is necessary. You just move an icon from one place to another with the mouse. The difference is obvious to the user, but it is hard for a writer to explain in words.

Another problem is this: The manufacturer, who knows more about his machine than any outsider, always does his own user manual and provides a copy free with every machine. And the Mac manual is about as self-explanatory as they come.

Of course, you *can* write an "introductory" book for people who are interested in the machine but don't own it. That is the approach taken by the authors of *Presenting the Macintosh*. The publisher says on the cover, "*Presenting the Macintosh* introduces you to the new generation of personal computers. Find out if you want to be a part of it." If you already know, forget it.

In 119 pages, *Presenting the Macintosh* addresses such elementary questions as "What is a computer?" and "What is word processing?" It gives simple descriptions of the machine, the operating system, and the desktop. It devotes a chapter each to *MacWrite* and *MacPaint*. The final chapter, entitled "MacFuture," describes various MacProducts and plugs forthcoming MacBooks by the MacPublisher.

The book concludes with the neighborly invitation, "If you buy a Macintosh, please share your experiences with us." There follows an eleven-page glossary, with terms like "desktop computer," which is defined as "a complete computer system designed to fit on a desktop."

Physically, *Presenting the Macintosh* has the earmarks of hasty publishing. The illustrations are screen photographs rather than printouts. (This seems a strange waste of the machine's capabilities because the Mac produces excellent printouts.) The cover is garish. The binding on the review copy seems ready to disintegrate.

Offered at $5.95, and marked "General Interest," *Presenting the Macintosh* seems intended as an impulse buy, the sort of book you might pick up in the supermarket. If you know next to nothing about computers, it might be a good investment, although it does not succinctly convey the difference between the Macintosh and other microcomputers. (For that, you will need a demonstration at your local computer store.)

Introducing the Apple Macintosh is a kettle of fish of a different color. The authors describe it as "a tool that will help your transition from a slow-paced, desktop-bound, muddled worker to a fully productive knowledge worker ready to compete in the eighties." (In the *nineteen* eighties, not the eighth decade of your life, you slow-paced, desk-bound, muddled worker!) They approach this goal, basically, by duplicating information from the Macintosh manuals.

Of course, that's not all there is. But that's the meat of it.

Chapter after chapter is devoted to matters already dealt with by Apple Computer. The machine is described, and the operating system is discussed. The reader is informed that not all windows are made of glass and not all mice like cheese. *MacPaint*, *MacWrite*, *Multiplan* and Microsoft Basic each get a chapter. (Microsoft Basic is misleadingly referred to as "MacBasic.")

The last chapter promises "a mountain of software" that is "rapidly becoming available." Few programs are actually named—*Multitools*, *1-2-3*, *Sargon III*, *dBase III*, and a couple of others. The publishers manage to plug themselves not once but three times. Appendixes offer a few technical details on the 68000, the mouse, the disk drive, and the disks. Finally, there is a "MacGlossary" (*Aieee!*) that uses very many words to define very few.

For a paperback, *Introducing the Apple Macintosh* is physically attractive. The printing is crisp. The illustrations are prolific and reasonably sharp. (However, many of them seem thrown in to fill space rather than to tell you about the machine.) The binding is durable. This product looks good on the shelf.

Unfortunately, *Introducing the Apple Macintosh* is the sort of book that spends a lot of time on the shelf. It weighs in at 188 pages, compared to 160 for the Macintosh manual—and the manual has more pictures. Some of the difference is new information, but much is verbiage. You might say that Apple's manual is the picture, while *Introducing the Apple Macintosh* is the thousand words.

The Macintosh manual is designed as a tutorial. The language is concrete and specific. *Introducing the Apple Macintosh*, on the other hand, reads more like a textbook. The language is abstract and rather general. The "introduction" is in places very hard for the newcomer to understand.

For instance, in Chapter 2 you can read, "Clicking in a structured document selects either the cell beneath the pointer, the position between two adjacent cells, or the corner of four cells. The latter two selections are insertion points and are represented by blinking vertical or horizontal bars." If you are an old hand, you don't have to be told that. If you are a newcomer, it's all garbage. ("Clicking," for example, is not really defined until Chapter 3.)

If you own a Macintosh, you would be better off sticking to the manual than investing $12.95 in *Introducing the Apple Macintosh*. If you don't own a computer, shelling out $5.95 for *Presenting the Macintosh* would get you some basic information at a reasonable price.—By Forrest Johnson

Macintosh! Complete
By Doug Clapp
Softalk Books; 329 pages; $19.95

Early in 1983, Apple Computer provided a few established authors with the opportunity to meet and work alongside the Macintosh research and development team while the Mac was being created. Doug Clapp was one of those writers, and many of Clapp's thoughts and experiences from that time can be found in *Macintosh! Complete*.

The book's contents are divided into six main sections. These are titled Introduction; Operation (the general operation of the Mac); Software (current and future applications); Programming (previews of MacBasic, Macintosh Pascal, and other languages); Hardware (preventive maintenance and in-depth discussions of ROM and the Motorola MC68000); and Epilogue (hints, tips, and advice).

The section organization aside, *Macintosh! Complete* progresses in a manner more intuitive than hierarchical. This flow of presentation, as well as the mixture of information for beginners and experienced users in most of the chapters, gives the book a relaxed, casual feeling. Although some may find the book's loosely structured approach somewhat confusing, it also encourages readers to explore what interests them without feeling that they've somehow violated the author's purpose.

Macintosh! Complete provides a cozy, intimate view of the author's personal experience, as well as a passel of sometimes important, sometimes just interesting, information. Even the most harrowing technical facts seem benign when described by Clapp. He writes to put the reader at ease from the first line of his introduction: "Welcome. Come on in, have a seat, put your feet up, get comfortable; we've got much to discuss and explore." Beginners, especially, may appreciate this attitude. In fact, quite a bit of the book addresses the first-time user's needs; Clapp even notes those sections that beginners should approach with caution.

Does this mean, then, that Clapp has forsaken the experienced computerists who will be buying Macs? Not at all! The author is not immune to the techier facets of Apple's new product; his later chapters explore Burrell Smith's hardware wizardry, Donn Denman's revolutionary brand of Basic, and Bill Atkinson's cunning and compact ROM routines.

There is something in *Macintosh! Complete* for everyone. The curious will get a taste of the Mac without having to buy it. The new Mac owner will get a jumping-off place, and the in-depth information will continue to be a valuable reference later on.

Products that publishers rush to market in the hope of "being first" or of filling an information gap can suffer mistakes, inaccuracies, and product changes that damage their integrity. *Macintosh! Complete* is no exception.

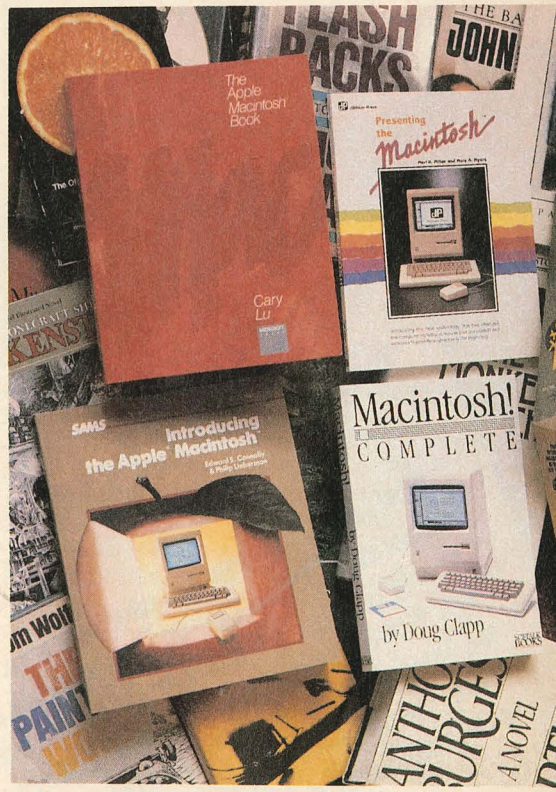
Although one can overlook occasional misspellings and errors of grammar and syntax (one would, of course, rather not overlook them), there are certain types of errors that can prove frustrating to the novice.

For instance, on page 105, Clapp notes, "The only time you need to initialize a disk is...before you first use the disk."

This reference is unclear, especially since the current Macintosh operating environment automatically recognizes an uninitialized disk and, using an alert box, asks if you would like to initialize it. Therefore, this sentence may confuse the reader as to when and how disk initialization should take place.

Of course, a new user will discover that the first time he inserts a blank disk into the drive. More lasting confusion may be caused by the discussion of write protection on page 106, in which Clapp rhetorically asks, "What disks should be write-protected? As a rule, any program you purchase should be write-protected...."

Past experience with other computer systems might indicate that write protection is the correct way to protect the reader's software investment. However, until we have second disk drives, and as long as application programs can be backed up by the user (as *MacWrite* and *MacPaint* can), it's more convenient to save data files onto the program disk than onto a data disk. Under those conditions, you shouldn't write-protect your disks (but do back them up).



Also worth mentioning is the fact that several of the application programs described by Clapp are not only not for sale yet, but were also still being modified even as the book was being printed. Some are still being developed. One hopes that, in preparing a later edition, the author will take a close look at those sections that could be misinterpreted or that no longer relate to the current software market and update his information.

Despite its rough edges, *Macintosh! Complete* is recommended reading for novices as well as experienced computerists. Clapp has crafted an interesting and provocative snapshot of the Macintosh personal computer.—By Dennis James

BLYTE

WE REGRET TO INFORM YOU THAT YOUR TREATISE ON THE USE OF CONSTRUCTION CONTINUATION ON THE MC68010 BY USING PREFETCH QUEUES, WRITING DATA INTO DISPLAY MEMORY, AND SPECIFYING MASK-REGISTER CONTENTS WITHOUT REQUESTING DMA WRITE TRANSFER (FIGURE 1), WHILE SIMULTANEOUSLY STORING COMPILED MODULES ON A SECONDARY STORAGE DEVICE, IS A BIT TOO SIMPLISTIC FOR OUR READERSHIP AT THE PRESENT TIME.

exit

Thanks for sending us your article. We liked reading it. We are giving it back to you. Here are some things to remember when you write an article. Don't let the words go off the edge of the paper onto the back; just go down to the next line. Print your name and address on the first page. Print your article, using a pen (press down)! Or you can give it to your mom and ask her to type it for you on a typewriter. Then have her take it to the post office and ask the postman to put the right number of stamps on the envelope for you.

creative confusing

First, using (X-1)*64, we took your article and downloaded it to a TRS-80 from an Apple II, having to poke most of the graphics characters into VIDRAM while emulating call -958. Then we dumped it to a PET using shifted reverse to cancel the inverse video. Then we did it all over again, backwards. And it was still lousy.

Out Cider

The voice on the phone sounded urgent and excited. He wanted me to be the first to know about his new idea. He believed it could revolutionize the home computer field. Over lunch the next day at a small sidewalk cafe in Vienna, he sketched out his theory for me, which he called "Relativity." Yes, that man's name was Albert Einstein. I had to tell him, gently, that his theory had no application whatsoever to home computers. That was seventy years ago. Today, I must tell you the same thing about your article.

InfoWorlt

The Newsweekly for Microcomputer Users

When I sit down with an article submitted for publication, I know that it has to **grab me right away**. I may be biased, but that's **just the way I am**. And there was something about this article—some **indefinable quality**—that told me: "Hey, you know you'd rather be **covered with parrot dung** than publish this. It just **isn't your style**." So I tossed it aside and took a drive into the mountains to **clear my head** and ponder this puzzle. Sitting in a half-lotus position on the hood of the **Maserati**, it came to me: You should be more sparing in your use of **italics** for **emphasis**.

How To Become Rich And Famous Writing For Computer Magazines

By Andrew Christie

What you have here is the most dynamite individual communication aid since movable type. You're going to get serious. You're going to write.

What a neat computer you bought. You can draw with it. You can balance your checkbook with it. You can design a sewage treatment plant with it. You can snoop around inside other people's computers with it. You can make greeting cards with it. And now that you've got all that out of your system, you know, as you always knew, deep in your heart, what you're going to settle down to *really* do with it. What you have here is the most dynamite individual communication aid since movable type. You're going to get serious. You're going to write.

You've never actually done this before. Maybe a little in high school; maybe a creative writing class in college; maybe more than that. But you sense, at this point, that if you batted out ten manuscript pages on how you spent your summer vacation and mailed them off to *Esquire*, you probably wouldn't find a check in the return mail, unless your name was Irwin Shaw. And you would probably get the same response if you devoted those ten pages to a loving explication of your evolving relationship with your Macintosh.

But a computer magazine...ahh! They just might be interested. You might even be able to sell them twenty pages on how you spent your summer vacation with your Mac.

Yes, we are what is known, still, as specialty publications. We'll look at specialized material the general-circulation magazines won't consider. That means you have a good shot at getting a computer-related article in print. That doesn't mean we're easy. We have requirements, and they're much the same as the requirements of the general-circulation 'zines. (That's magazine writer talk. They can also be called "mags," or "books," to equally impressive effect.) These requirements are well known to professional free-lance writers, but for those of you just jumping in, we'll take this opportunity to go over them. In addition to the following, remember that each magazine has its own particular requirements. Write to your chosen magazine (its address appears in the masthead) and ask for a copy of its writer's guidelines. This will give you all the specifics, right down to grubby little details like how much money you'll get.

Now let's take a look at a few of the things you'll need:

A Printer

Self-explanatory. Make sure it will give you a double-spaced manuscript (one blank line space between each line of print), a feature either embedded in the printer code or selectable from a menu of your word processing program. When editors open a big manila envelope and a twenty-page single-spaced manuscript falls out, they break out in hives, dimming your chances of publication. If you don't have a printer and your bank account is

Get MacLiterate!

The Apple Macintosh Primer By William B. Sanders, Ph.D

Here's the easiest way to get acquainted with the Apple Macintosh Computer!* The concept. The mouse. Menus. How to set up and use the system. How Mac can help you in home, school

and business applications. Plus special chapters on MacPaint and MacWrite. Written in plain English, The Apple Macintosh Primer has everything you'll need to become MacLiterate! Now only $9.95!

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still breathing heavily from your initial system purchase, you can still use a good old typewriter. Make a copy of the manuscript and send the original. Editors start twitching and moaning when they open a big manila envelope and a thirty-page, gray-looking, scratchy, streaky photocopy falls out.

There is one other item you'll need in this technical category:

A Data Disk

If you do have a printer, you should also have this; also self-explanatory. However, along with your data disk you'll need:

Another Data Disk

Copy your article file onto this disk, put it in a sturdy disk mailer (available at your local stationery store) with return postage on it, place it in the envelope with your printed manuscript, and write "Magnetic Media—Do Not Bend—Do Not X-Ray!" all over the envelope. The grateful editors will pounce upon your disk and soon have your story shuttling between modems, whizzing over telephone lines, laden with typesetting codes, becoming an historic part of modern-day telecommunicated computer publishing.

Provided, of course, that they want to publish your story.

Look at an Issue of the Magazine

Look at two of them. This way, you may see editorial patterns developing. You may also get an idea of what readers the magazine is aimed at. You will see if your article would fit in, and, if not, you can start thinking of a magazine that it would fit into.

Write Mainly in the Third Person

You can count on the fingers of one hand the number of great books, and even trashy bestsellers, written in the first person. This must mean something. Assume the omniscient position and stay there as much as possible. "You" and "we" will do in a pinch, but even when you're writing about a personal experience, the fact that your name is at the front of the article is usually reminder enough that it's you who is telling the tale.

The Visual Element

Everybody likes to look at pictures. Remember one of the first things you did with your computer? Right! So illustrate your story with breathtaking examples of the graphics capabilities of the Mac and/or Lisa. These should, of course, have some bearing on the content of the article. If you're a fair hand with a camera, photographs of relevant people and places are also a good idea.

Brass Tacks

The writer's guidelines you get from a magazine should spell out your rights as the author of your work and the magazine's rights as its publisher. To this end, many magazines require you to sign contractual agreements with frightening terms in them like First North American Serial Rights. The user-friendly publications of Softalk Publishing don't mess with this. We will simply notify you of your article's acceptance for publication. We have first publication rights, after which all rights revert to you, the author.

None of this information, however, will do you any good at all unless you have:

An Idea

This is the most important part. Getting back some of the money you lavished on your computer system does not qualify as an idea. Nor does calling up highly sensitive editors and asking them what they think you should write about. You must:

Go Find a Story

Say you have a Mac and you're using it to design a proposed underground amusement park in Carlsbad Caverns, as well as to do the cost analysis and the environmental impact study, but you can't write your way out of a moist tea bag. Find somebody who can, and who will listen to your story. They'll get rich; you'll get famous. (Also, after the story is published, offers will come pouring in to you from underground national monuments across the country asking you to please design their amusement parks, too. No lie.) Conversely, if you're the one who has grasped the fundaments of written communication and your friend is the one with the Mac and the peculiar ideas, you can get rich and your friend can be famous.

Anyway, that's what ideas are about. Once you get one, tell the magazine about it. This is called a query letter, and it should include a statement of your theme, subject, and treatment plan. If you've ever written something, include a copy of it. The editors will let you know if they'd like you to go on to develop your idea into an article.

Persevere

Are you wavering in your determination to see print? Think there are too many rules and roadblocks? Too many obstructions to your creative flow? Are you depressed and frustrated? Don't be. Many magazines depend on free-lancers. Here in the twin black forty-story towers of Softalk Publishing, for instance, one can easily become isolated from the real world. It's not easy to constantly monitor the pulse of the industry when so much of our time is spent making multimillion-dollar deals over lunch, or taking calls from harried executives while tooling our Porsche Turbos around the Far East, scouting locations for Spielberg's next biggie and ordering quick transfers of cash to numbered Swiss....

Whoops! That's not Softalk Publishing—that's MCA/Universal. Little mistake there. Which brings us to:

Verification

Get your facts straight. Lie to a magazine once and you're dead meat. Even if they catch you making a simple error of fact—a wrong date, a misspelled name—it won't do wonders for your reputation as a trustworthy and reliable writer. If you can't verify a reference, don't try to fudge it. Put a note in the margin. This is a signal to the copy editors to start earning their pay. Which brings us to:

Illustrate your story with breathtaking examples of the graphics capabilities of the Mac and/or Lisa. These, of course, should have some bearing on the content of the article.

Digressions

Make them as infrequently as possible, and only if they have at least a tangential bearing on your ostensible subject.

Now where were we? Oh, yes:

We Love Free-lancers

Computer publications are about the real world of real users really using their computers. That's why we like to hear from you. Take Macintosh magazines, for instance. Here we are, a clutch of magazines about a family of computers that nobody (cosmically speaking) has yet, and for which there is, as yet, very little in the way of programs. We're all looking for information. We want to print what you have to say. Really. It's a seller's market.

Which means that if you can find the stories to tell, and follow the rules, you could become (realistically) moderately well off and fairly well known writing for computer magazines.

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68000 Questions

By Andy Hertzfeld

Q: Will there be more than one level of Undo when the 512K Macs become available?

A: The number of levels of Undo that are present is completely up to the discretion of the current application. The user interface suggests that an application provide one level of Undo, but that is motivated more by programming and user interface considerations than by memory limitations. We can expect to see some applications that provide multiple levels of Undo (even on 128K Macs) as the market evolves.

Q: How many different fill patterns does Mac support?

A: Since a fill pattern is specified by eight bytes (or sixty-four bits), the number of fill patterns equals two to the sixty-fourth power, or over sixteen billion mathematically unique patterns. Realistically speaking, many of these will be indistinguishable from others.

Q: What is the difference between Microsoft's version of Basic for Mac and Apple's version?

A: Microsoft's Basic for Macintosh is a fairly vanilla version of their standard Basic that has been minimally modified to take advantage of Mac's unique features. It has the advantage of being highly compatible with Basic programs written for other machines but does not really take advantage of the Macintosh environment.

Apple's MacBasic is quite a different story. Donn Denman, the author of MacBasic, was given the freedom to design a Basic from scratch to take full advantage of Mac's power and features. MacBasic is capable of running multiple programs at once and provides symbolic labels and procedure names (line numbers are optional) and various structured programming constructs. It lets Basic programmers take advantage of Mac's User Interface Toolbox, allowing them to easily write programs with the Macintosh look and feel.

Q: What is the Resource Manager?

A: The Resource Manager is one of the cornerstones of Macintosh's ROM-based User Interface Toolbox. It was designed and implemented by Bruce Horn, a member of the Mac software team. It provides a way for applications to separate their code from the data it uses, keeping the data (like prompt strings, menus, or icons) in a separate, structured part of the file. This allows the data to be edited by a utility program that doesn't need any specific knowledge of an application.

Since all of the language-dependent parts of an application are resources, an application may be translated to another language in a matter of hours by a nontechnical translator without access to the source code. Similarly, a user with this utility program can customize the prompts and phrases in an application to suit her particular tastes.

The Resource Manager proved to be so useful that many other parts of the system used it in one way or another. Desk accessories, code segments, fonts, icons, windows, menus, controls, and dialogs are all kept as resources.

Q: Does Macintosh software automatically take full advantage of the additional RAM in Lisa 2?

A: It depends on the application, of course, but most programs benefit from the additional memory when running in the MacWorks environment on the Lisa 2. Generally speaking, programs will swap less and have more data space available. Some programs have a fixed data space and will not be able to take full advantage of the extra memory space. An example is *MacPaint*, which will still keep its documents on disk even though they fit into memory. It may become possible later on to use a RAM-disk driver in the Lisa 2 environment to overcome this problem.

Q: What is the ratio of the graphics image size on the Macintosh screen to the Imagewriter output?

A: The Imagewriter offers two different aspect ratios, and Macintosh uses them both. It has a seventy-two-square-dots-per-inch mode, which is very close to the Macintosh display screen, that is used by *MacPaint*. It also offers a mode with unsquare dots but more horizontal resolution that is used by *MacWrite*, since it is slightly better for text. The Imagewriter also offers a high-resolution mode, achieved by making two passes over a single line.

Q: Does the Macintosh ROM include any floating point routines?

A: No, there are no floating point routines included in the Macintosh ROM, but there are some included as part of the system. Two floating point packages are included in the System resource file and are swapped into memory as necessary. The first is an eighty-bit floating point math "engine" that conforms to the IEEE KCS numeric standard, which ensures that numerically oriented applications are transportable to different machines. The second package contains common transcendental functions. Both are excellent implementations (small and fast!) written by Jerome Coonen, the Macintosh software manager (and the "C" in the "KCS" standard).

Got a question? We'll try to answer it in this column. Send queries to 68000 Questions, Box 7041, North Hollywood, CA 91605.

Habadex: Calling the Desktop To Order

By Chris Lincoln

What a treat—to examine a new, soon-to-be-released software program for Macintosh. Mac is changing the way we view personal computing. Over the next few months, dozens of new programs will become available for Mac, and most will be radically different from what we have come to expect from personal computer software.

Habadex, from Haba Systems, is a set of desktop computer tools that look and act like several we already use on our conventional desktops: calendars, address books, Rolodexes, and so on. *Habadex* is probably the first of many programs we'll see on the Macintosh that are tangible, logical extensions of the desktop metaphor. But *Habadex* is the first program to take the desk accessories idea and develop a full-blown application around it.

This is more a preview than a review of *Habadex*. The version of the package on which this article is based is prerelease, and some of the descriptions that follow are likely to change in the finished software. Some of the menu entries and some of the screens shown in this article may be slightly different in *Habadex*'s initial release, planned for early May.

Searching and Sorting

Habadex is a medium-power database with report-generation capability. With it, you can search for and sort your information in a variety of ways and produce an equally varied number of lists or reports about the data. *Habadex* allows the printing of standard or custom mailing labels and also provides for mail-merge form letter production using *MacWrite* (or other word processors as they become available for Mac).

Habadex is also a memory telephone with quick dial capability. With Haba's optional adapter ($50), you can connect Macintosh to your Touch-Tone telephone and dial any number in your *Habadex* directory directly with MCI or Sprint numbers inserted.

Habadex can produce monthly and daily schedules of appointments, meetings, travel plans, and other engagements. These commitments can easily be added, deleted, and changed. *Habadex* also has the familiar to-do list, as well as travel planning features. In addition, *Habadex* provides expense accounting. And, if all that weren't enough, *Habadex* also has general directories of both area codes and zip codes.

The Habadex Menus

All these features present themselves in the striking fashion of Macintosh and Lisa. The visual cues are familiar and powerful. When the *Habadex* disk is first inserted in the drive, two items appear on the desktop—a directory and an appointment diary. Across the top of the screen, Mac's menu bar has the usual Apple menu along with the File and Edit menus. The File menu allows new information to be added and deleted from the database. The Edit menu provides the standard cut, copy, and paste functions of other Mac and Lisa programs.

The next menu is the Dial menu, which has three entries—Dial Direct, Dial O.C.C. (for "other common carrier," such as MCI or Sprint), and Re-Dial. To use the dialing features of *Habadex*, you must purchase an adapter from Haba that is connected to your Touch-Tone telephone, the wall jack, and the Macintosh audio output at the rear of the machine. With the Mac multivoice sound generator, it is possible to generate millions of pure tones; thus, Mac can dial virtually any telephone anywhere.

Habadex dials directly if Direct Dial is chosen from the menu; if O.C.C. is chosen, *Habadex* inserts the series of numbers required by the O.C.C. that you have previously entered using the Setup menu. The Re-Dial selection allows the last number dialed to be repeated easily. The *Habadex* dialer will accommodate up to fifty characters and can include pauses dictated by the O.C.C.

Naturally, the dialer could dial a modem as well, but at this time *Habadex* does not have any terminal communications features. In a later version, Haba plans to include a window dialer in the Apple menu so that the dialer can be called up from within another application (*MacPaint* or *MacWrite*, for example) and a number found and dialed without having to shut down the other application. Apple apparently plans to license a "slot" in the Macintosh Apple menu for a nominal fee, and *Habadex* may be the first program to take advantage of this.

Next to the Dial menu is the Arrange menu. It is used to sort the directory by last name, first name, company, zip code, category, or account; there are also two miscellaneous fields.

The Print menu lets you choose between printing lists (database reports), mailing labels, and form letters (using names and addresses from the directory). Everything except the calendars can be printed from Haba-defined standard lists and labels or from just about any custom list or label format you can design.

Last, there's a Setup menu for entering O.C.C. numbers. Simply enter your area code along with your MCI number, and *Habadex* remembers when Dial O.C.C. is chosen from the Dial menu.

The Directory

The directory itself looks like the old semi-reliable tabbed phone book. The phone book has alphabetic tabs along its edge, as well as several wide "buttons." Depressing any of the alpha tabs displays a quick-reference list with room for two phone numbers for each entry recorded under that letter. If a numeric sort, say Zip Code, were chosen from the Arrange menu, the phone book tabs would change to numbers rather than letters.

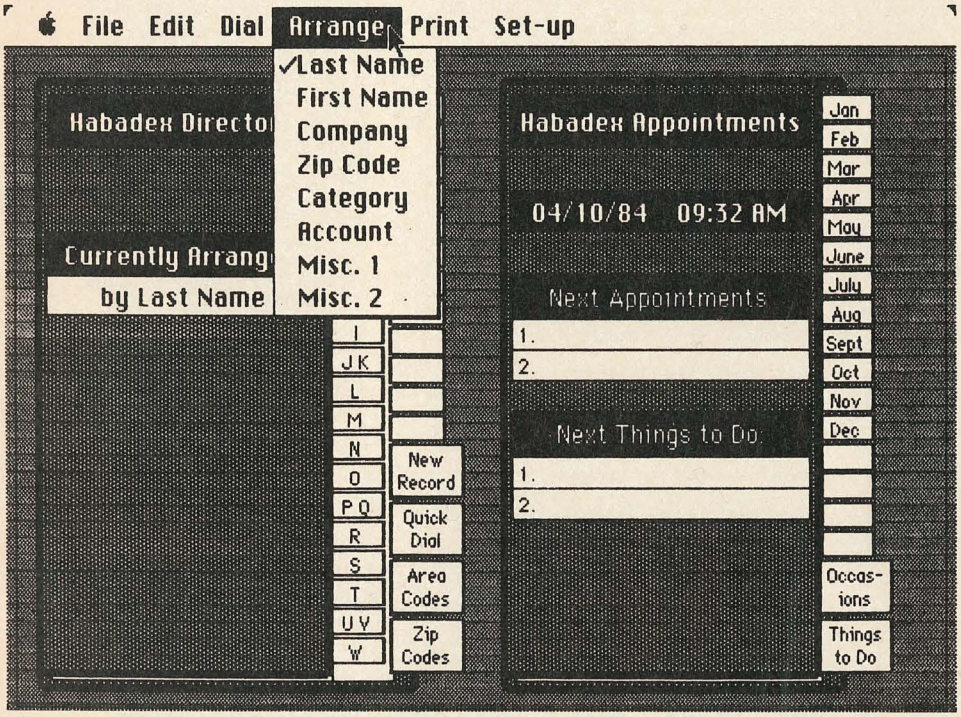
When the number of entries expands to fill a page, you can use the Next and Previous buttons to flip through the pages of the directory. To dial, simply point and click to select the phone number and pull down the Dial menu to choose a dialing method. To "zoom in" on a record, point and click and choose Zoom from the File menu. *Habadex* will locate the individual record and display a screen with the details of that record. A blank record screen is displayed when the New Record button is pressed on the front of the directory.

The fields of the record appear as boxes in the window; each has the field name on the left highlighted in black. The process of rearranging the fields of the records is insanely easy. Simply point at the black field name and

hold the mouse button down, dragging the field on the screen to wherever you like. In a later version, *Habadex* will allow the fields to be renamed (perhaps even combined) and resized by dragging the mouse while holding the right edge of the field box.

Habadex will accommodate records of about 360 characters, enough for most "personal" databases (*personal* meaning that set of information we keep at our fingertips for quick reference, not lengthy histories of the civilized world or two-year account records).

There are two buttons on the directory, labeled Zip Codes and Area Codes. Zip Codes displays a subset of the national zip codes showing the ranges for each state. Area Codes displays the national area codes. (It would be an interesting development if Haba Systems allowed these directories to be customized by the user.) There is also a Quick Dial button that pops up a list of ten often-dialed numbers along with space for Police, Fire, Pizza, and so on.



The Arrange menu is used to sort the Habadex directory, which appears on the left of this screen. The appointment book is on the right.

The Appointment Book

Habadex is also an appointment book. On the right side of the desktop is the diary. It has the look of an appointment book and has tabs for the months of the year along its edge. On the cover of the diary are windows that list your next two appointments for that day and your next two things to do. The appointments change in the window as *Habadex* checks the Macintosh clock and compares it with the time logged for your appointments. This is an excellent use of the clock, and the diary makes extensive use of the Macintosh date/day timer.

Pointing and clicking one of the month tabs causes a Month-at-a-Glance screen to pop up for that month. In each day, the first two appointments are displayed, along with a line for travel that day. If you want to zoom in on a particular day, simply point and click at that date and the detail of the day's activities appears.

The first column is labeled Time, the next is called Glance, and the third column is named Comments. The ten-character Glance field is for the classification of the engagement (meeting, lunch, game, speech, and so on) and the Comments column permits descriptions or details of up to forty characters.

On the lower half of the daily form are lines for travel and expenses. There are several lines for expenses; the amounts are entered in the Glance field. To delete an appointment, expense, or travel item, just double-click the mouse on the Glance field for that entry.

Habadex provides for complete printing of the daily and monthly calendars, as well as printouts of daily and monthly schedules. There is a "P" shown in the calendar and daily windows that, if clicked, proceeds immediately to print the designated calendar. A range of schedules can be printed by selecting the range of days to be printed. Printing of expense reports is handled in the same way as printing of the various calendars and schedules.

There are several buttons on the outside of the diary. They do just what they say—Things to Do pops up a to-do list with twenty-plus lines. The Occasions button produces a simple window for recording annual calendar events like birthdays, anniversaries, and shareholders meetings.

Improvements

It's probably too early to be suggesting improvements, but there are a few things that would make this great program even better. It would be nice to have a Week-at-a-Glance level of display for the calendar. Also, there should be some way, when at the Month-at-a-Glance level, to see if a day is becoming overbooked or full. Perhaps as more entries are made on the daily schedule, the day of the month or week at a glance would take on a darker shade or have a count displayed in the day box.

It would be nice to be able to see and correlate scheduling information for several people and to have the ability to search several persons' daily schedules for the time when all could meet together. A version of *Habadex* on the Lisa or on a 512K Mac could no doubt do this.

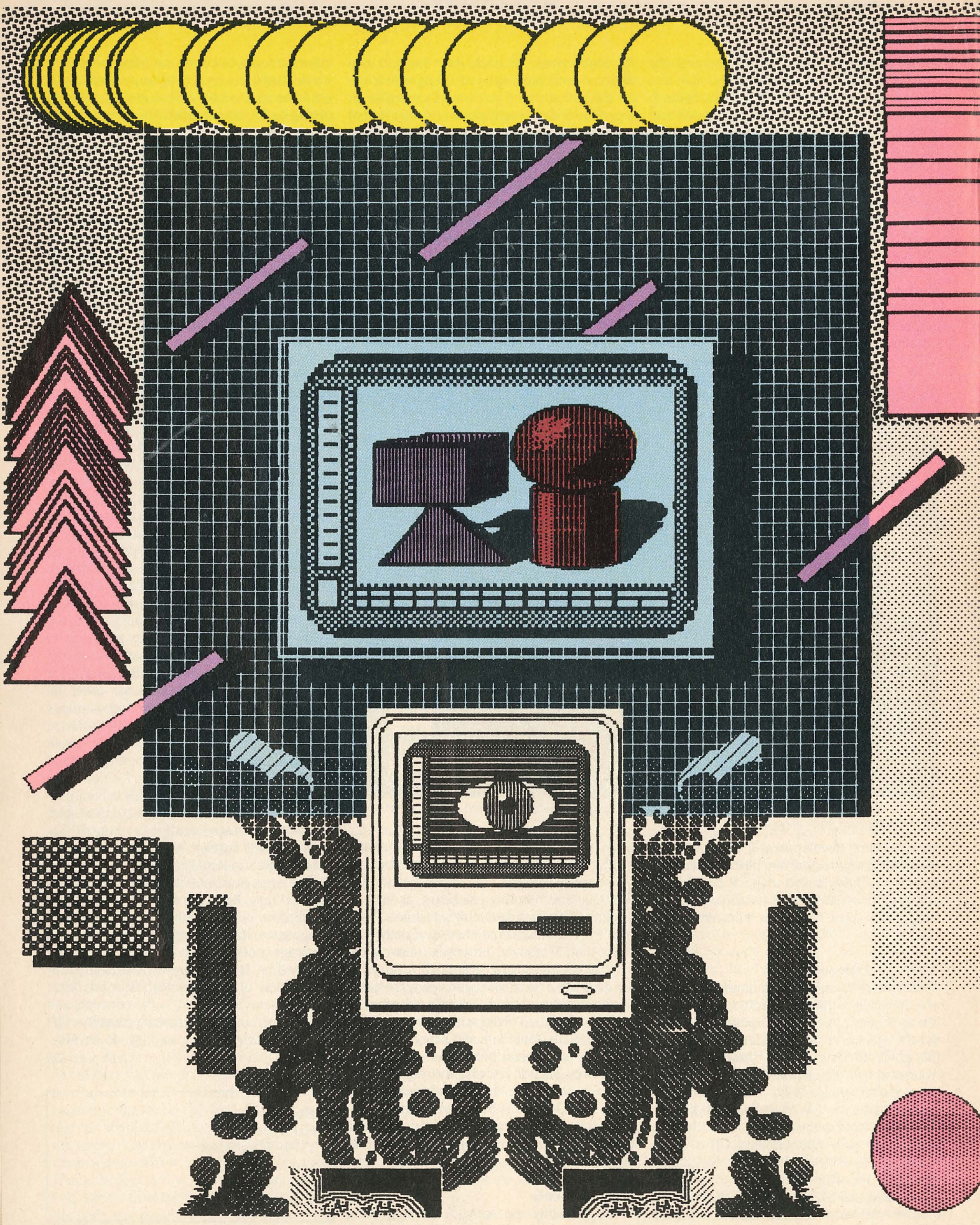
Of course, simple terminal emulation with send/receive of text files would be a welcome addition to the dialing capability of *Habadex*. (This is already planned.) In their preliminary documentation, Haba Systems mentions the possibility of enhancing the reporting features of the database to include calculation of field totals as well as table and label reports. The other enhancements, such as the ability to rename and resize fields, are a must. It might also be possible to tie the to-do list feature to the calendar system in such a way that things not completed on one day are carried over to the next automatically and to have items like birthdays from the Occasions list appear as they should in the daily and monthly calendars.

In all, *Habadex* makes very good use of the Macintosh clock/calendar and the sound generation ability for dialing. But wouldn't it be a kick if small voice routines could be included to advise you of your appointments and such? Apple has already commissioned a developer for such work on the Macintosh and will license the routines to developers at a small cost.

Another interesting possibility is the inclusion of *Habadex* with some kind of intelligent hardware package. And it is hoped that *Habadex* will support hard disks for larger, even separate, databases.

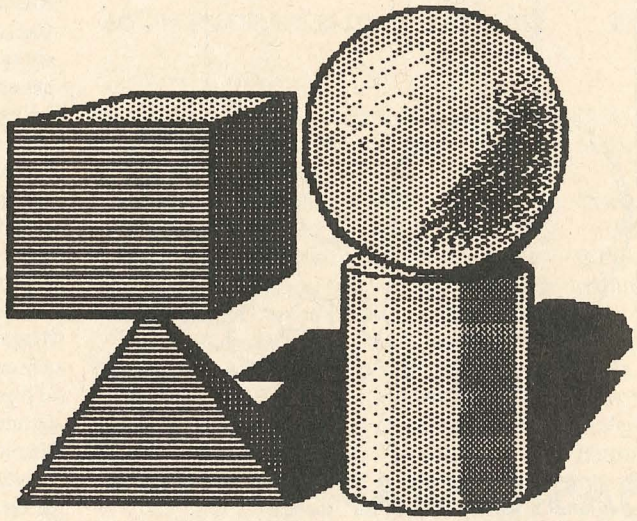
But enough about improvements. In its present form, *Habadex* is a program of outstanding utility. *Habadex* is very Macintosh. It is a program that will begin to define what the "new age" software that is written for Macintosh will be. It shows great consideration for the subtlety of the Macintosh user interface. Haba Systems has "got it"—the concepts and notions surrounding Macintosh come through as clearly in *Habadex* as they do in *MacPaint*.

Habadex
Haba Systems
15154 Stagg Street
Van Nuys, CA 91405
(818)901-8828
$195



By CRAIG AND NANCY CALSBEEK

Renaissance Mouse



BUILDING BLOCKS

It's nearly time to let your mouse loose and unleash the artist within you. But before venturing into the world of art and graphics, let's take a brief detour and talk about those two things that bring the world into focus—our eyes. As our visual link to the world, our eyes treat us to all the things we take for granted every day.

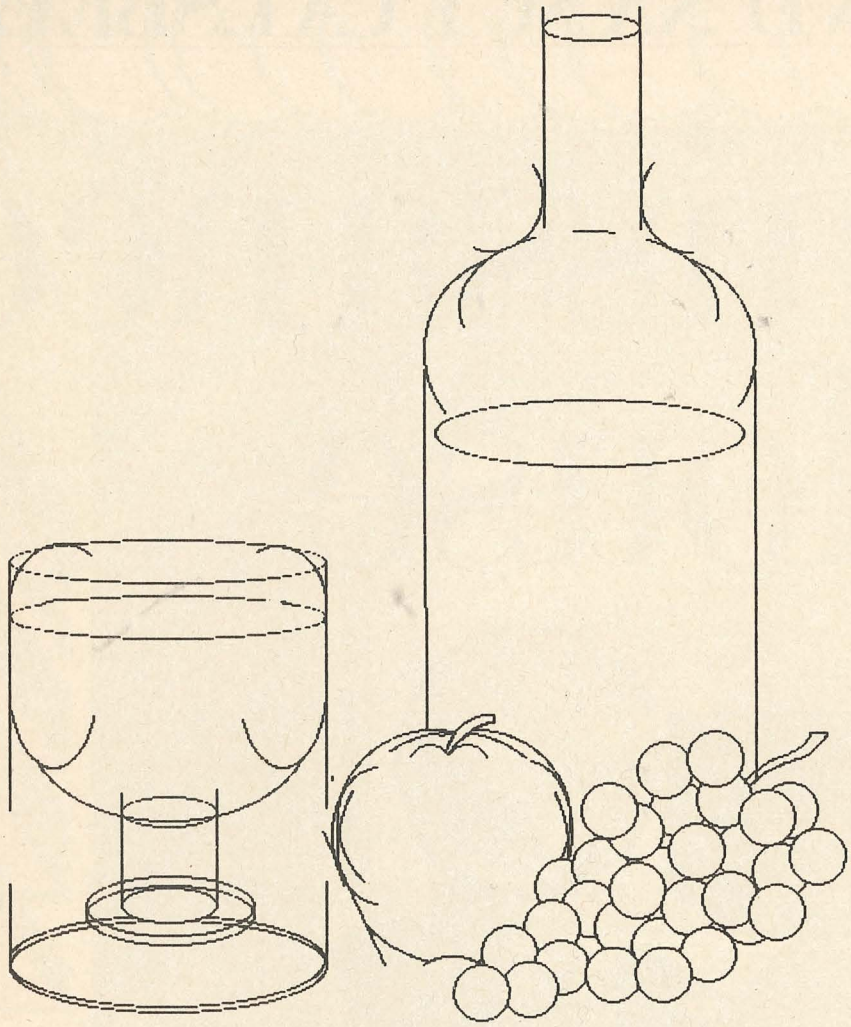
I've Got Vision (Who Could Ask for Anything More?)

Our physical ability to see is pretty well developed when we are born, but our ability to grasp and interpret what we see is not. Vision is like a language that has to be learned. Studies have shown that the initial development of human vision seems to begin with a response to something bright. Even very young infants blink when a bright light is shone in their eyes. Other research illustrates that babies show more interest in an actual object, such as a ball or block, than in a flat, two-dimensional picture of that object.

Studies also indicate that a sense of depth and form begins to develop early in humans and could even be an innate response. As an infant grows, he learns that a large object across the room is not the same size as a small object nearby. This knowledge requires direct experience with scale and distance—something that is purely a product of time. With his eyes alone, an infant is capable of knowing that a rock is heavy, that a cat is soft and furry, and that a red hot ember in the fireplace should not be touched.

The eyes work in unison to give us these visual clues of depth and distance. Roughly two and a half inches apart, they register images that vary ever so slightly. The brain records the dissimilarity of the images and translates a sense of distance between you and different objects.

Together with the eyes, the brain analyzes and processes this large mass of data from the outside world, enabling you to cruise through the day with relative ease. The brain's



USING BASIC SHAPES

computer, dubbed the "visual cortex," sorts out the images received by the eye's retina and, from its memory bank, recalls what, where, and how an object relates in size to the things around it.

The eyes, the brain, and the emotions work in conjunction to organize incoming data and help you to react to the elements of your environment. Drawing heavily on past experience, the brain uses its knowledge of the relative sizes and distances of known objects to put other, perhaps unfamiliar, objects in perspective.

The contour or outline edge of an object is a clue to its depth in a given scene. We assume that an unbroken contour line describing an object places that object in front of another object that has a broken contour line. Light and shadow on an object give valuable clues to its angles, curvature, and relative depth.

Three for Two 'n' Two for Three....

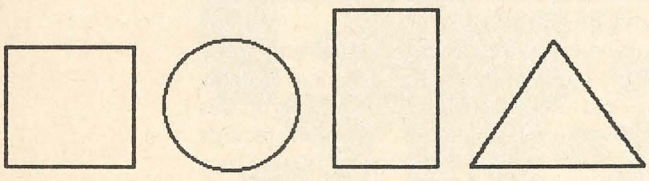
We all see things differently. The goal of this series is to help you transfer onto a two-dimensional surface your interpretation of the three-dimensional world around you.

The materials we'll be using are simple—just the Macintosh or Lisa and the mouse as an input device. The Imagewriter printer is almost a necessity, but you can get by without it if you must. Your printouts will be very important, however, when you're using the full page format in *MacPaint* because they'll help you to get some sense of the finished piece. The whole page presented on the screen using the Show Page option leaves a lot to be desired.

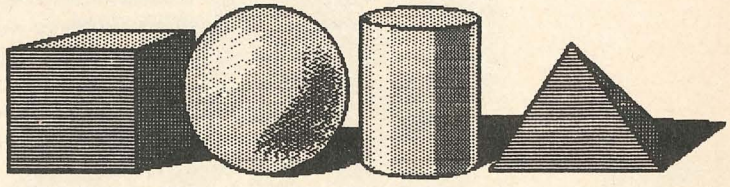
For starters, you might just try scribbling, using all the different brushes available. Doing this will get you acquainted with all the effects you can create with the different sizes and shapes of brushes. The effects you can achieve are endless. Remember, drawing is a skill, and being aware of the process is more important than the end result. So don't get too frustrated if what you're drawing doesn't look like anything. Also, for the time being, limit your drawing to the window you're viewing. We'll work with the whole-page format later.

Scribbling comes very naturally to all of us, and you should feel rather comfortable with it by now. If you don't, grab the phone and call a friend. This is guaranteed to produce results. When you are on the phone you are not overly concerned with what you are drawing. As a result you are relaxed—some of your best doodles have probably been done with a phone in one hand.

Remember to keep your hand loose on the mouse and relax your fingers. Gripping the mouse and moving very precisely has its place, but it's not here. This more relaxed, informal kind of activity helps you to draw just for the fun of it. Also, make sure you have a smooth surface for your mouse. A Formica table or desk top seems to be ideal; it does make a difference.



BASIC SHAPES



BASIC SOLID SHAPES

I Got a Line on You

Line quality is very important in traditional realistic art. This is ordinarily achieved by applying more or less pressure on your drawing tool. Well, you can try doing that with your mouse, but it just doesn't seem to work the same way. There's an array of lines available in *MacPaint* that you could never get with pen, pencil, or brush. These are achieved by combining different combinations of brush sizes and pattern choices. Draw lightly by choosing a thin line and a light pattern. Draw heavily by choosing a large brush and a dark pattern. Draw straight lines, wavy lines, short and long lines. With a line alone, you can define an object and show what kind of environment it is in. A line is visual shorthand for what we really see in color and value.

Shaping Up Is Hard To Do

Now let's familiarize ourselves with some of the basic shapes hidden in almost everything you'll want to design or draw. All visual reality is basically made up of shapes—solid or spatial. Some simple shapes, such as geometric shapes, are easily seen. Rectangles, cubes, triangles, and circles are instantly recognizable and useful in setting up basic drawings. These geometric shapes are all on one plane and are easy to deal with.

There are five basic solid shapes: the cube, sphere, cylinder, cone, and pyramid. Look around you and you'll see that these shapes represent, alone or in combination, the basic foundation for solid objects.

The cube has six square sides, of which only three can be seen at any given time. The sphere, which is represented in drawing as a circle, can be dissected to represent an elipse. A right cylinder's ends are circles of equal diameter, and the line down the center is parallel to its sides. The cone is drawn by taking a cylinder and keeping the bottom as a circle, then drawing the diagonals as converging lines meeting at the center of the top imaginary circle. Most pyramid shapes we draw have four or more sides, but there can also be three.

Practice drawing these shapes from the examples given. Save them to disk with a title like "Building Blocks." We will use them later to show how they can be found in common things.

Engrained in Brains Are Images of Planes

Every solid object is made up of planes. These planes are affected by light and by the viewpoint from which they are seen. This is a particularly important concept for the creation of computer-generated images. Since geometry can be reduced to mathematical formulations, programs can be written that enable the computer to reproduce faithfully all the natural laws to which objects are subject.

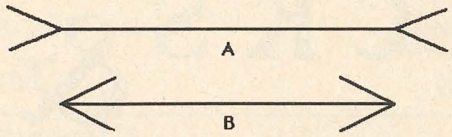
A surface plane is any flat or level surface. Every surface can be described with these planes. Even a curved surface such as a sphere can be reduced to a million flat planes. The changes of plane on a cube are abrupt, while the changes on a sphere are very gradual. This is mentioned here to provide you with a way of looking at the objects you are attempting to draw. If you can take a simple object and set it up in front of you and really see how it's broken up into the basic shapes we've been talking about, you will have a better grasp on how the object can be faithfully reproduced.

Any object around your house or office can be used to create your own still lifes. You can erase any of your construction lines with the eraser or with your choice of brush size and the white pattern selection. These shapes are literally at your fingertips, because the ability to draw basic shapes is built in to the *MacPaint* software. Choose the circle, or the square/rectangle, and let 'er rip.

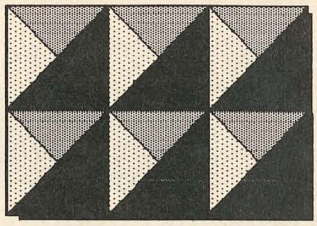
Drawn To Be Wild

It may not be apparent at first, but drawing is the basis for all of the graphic arts. Drawing requires all the elements that are essential to good design—even if your only demand on the Mac is creating a pie chart once in a while or an interesting little image to break up a letter to a friend. Drawing defines form, depth, and perspective; it allows you to compose and render your view of the world. And remember, it reflects your vantage point and nobody else's.

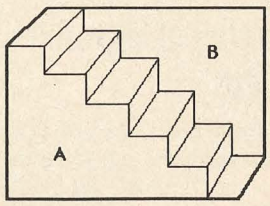
OPTICAL ILLUSIONS



IS THE LENGTH OF LINE A EQUAL TO LINE B ?



ARE THESE CONCAVE OR CONVEX PYRAMIDS ?



WHICH SIDE IS NEARER YOU, SIDE A OR B ?

Clicks & Pointers

The Niceties of Microsoft Basic Text

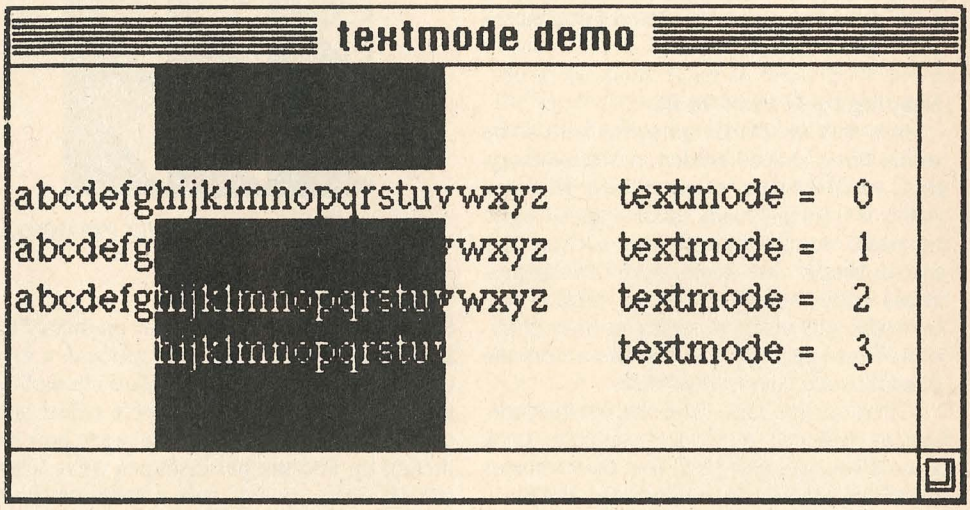
One of the problems with Microsoft Basic on the Mac is that it acts too much like Basic on any other computer. Another of the problems is that it doesn't act enough like Basic on any other computer. For instance, under what circumstances is it advantageous to have a program printout run off the right side of the screen and disappear instead of wrapping around to the next line? Also, for some applications proportionally spaced type looks really nice, but for others it can be a real problem. There are times when you want all the characters to be the same size, even if it doesn't look as nice. It makes it much easier to make things line up.

One of the places this causes a problem is in Dennis Brothers's *Mac Terminal Emulator Program*, written in Microsoft Basic and available on CompuServe. There, in fact, the problem is more pronounced than usual. Because the program takes in and processes one character at a time instead of whole lines, it loses the Mac's inherent ability to "remember" how large each character is. As a result, hitting the backspace key only erases part of a character from the screen.

The following commands will alleviate this problem in *Mac Terminal Emulator Program* and other Basic programs that would do better running on a simple eighty-column computer terminal than on Mac's bit-mapped screen. They make the Basic output window emulate a standard computer screen by using nine-point Monaco, which is smaller than the standard twelve-point New York and monospaced, and establishing line wrap at the eightieth character:

```
CALL TEXTFONT(4)
CALL TEXTSIZE(9)
WIDTH 80
```

Of course, complete control over text size, style, font, and placement is possible with these and other commands and parameters. *Call textface(N)* controls the style of the lettering. Here are the values for N and the attributes they result in:



0 normal
1 bold
2 italic
4 underline

By adding the values for N together, you can get combinations. For instance, *call textface(7)* gives you boldfaced, italicized, underlined text. Shadow and outline don't seem to be supported.

Call textmode(N) changes how the text appears against the background. For instance, printed text normally erases whatever is underneath it. This is textmode(0). *Call textmode(1)* allows text to be superimposed on a graphics background without otherwise damaging it. In textmode(2), text is printed in black if the background is white and white if the background is black. Textmode(3) is white text, which is only visible on a black background.

Finally, to position the text, use *call moveto(X,Y)*, with X and Y being the coordinates of the text measured in pixels from the upper left corner of the output window.

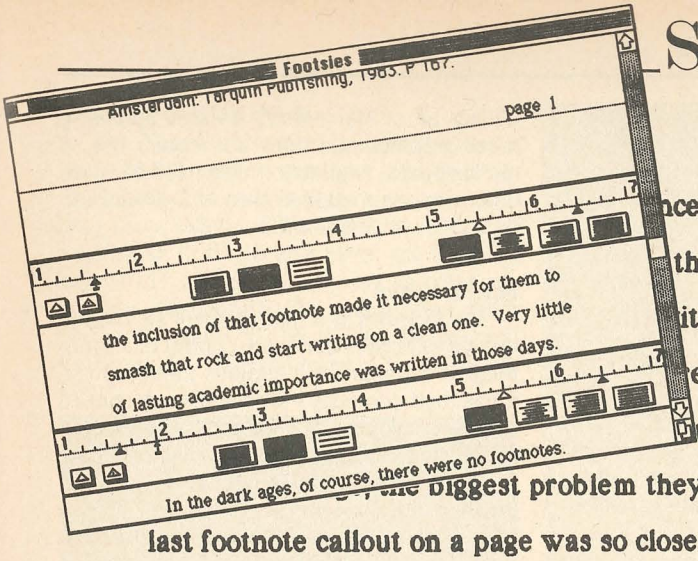
The calls listed in Appendix E of the Microsoft Basic manual are nice, but not too well explained. Sometimes you just have to experiment and see what comes of it. Nothing you learn will go to waste. Since these are calls to the Macintosh ROM routines, you'll be using the same ones when a real Macintosh language comes along.

MacWrite Footloose!

There are reports that a future version of *MacWrite* will include superscript, subscript, and footnote capabilities. Not a bad idea for a computer marketed so heavily toward college students. While the superscripts and subscripts are impossible now, footnotes can be included in a paper with some effort. Here's how:

Write the story in its entirety, keeping footnotes at the end. Call out the footnotes with a number in parentheses. When the paper is finished—that is, entirely finished except for the footnotes—follow these steps for each page:

1. Count the footnotes that appear on the page.
2. Go to the end of the document and highlight those notes that match that page's callouts.
3. Count the number of lines of the page that are taken up by those notes. Cut or copy them onto the Clipboard.
4. Count the same number of lines from the bottom of the page plus one. Remember that if the paper is double-spaced but the footnotes are single-spaced, each page line will equal two footnote lines.
5. Insert a return at the beginning of the



…nce the dawn of time. …their students use …ith a reasonable way …e them, the …aves of papyrus(2). …, the biggest problem they had was when the last footnote callout on a page was so close to the bottom that

1. Huntley Quinton, Roman Schooldays. Eugene, Oregon: Blab, Babble, and Jabber Press, 1979. P. 78.
2. Red Reader, Scholastic Methods Before Anybody Cared, Amsterdam: Tarquin Publishing, 1983. P 167.

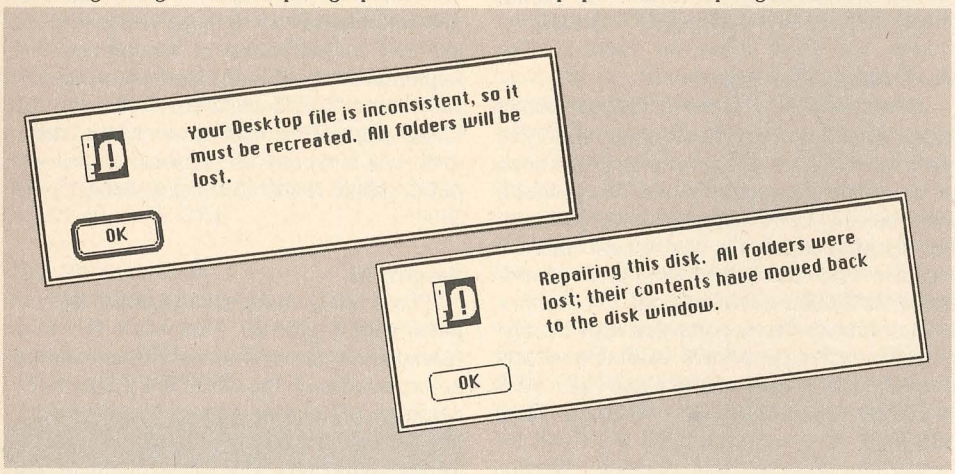
line you counted up to.

6. Type in a line of underscore characters to denote the beginning of the footnotes.

7. Paste the footnotes in on the next line. You will probably need a new ruler to style the footnotes with. You will also need a new ruler at the top of the next page where the text resumes. If the text resumes in the middle of a paragraph and you have been using paragraph indents, you will need yet another ruler at the beginning of the next paragraph to reinstate the indents.

8. If the last footnote callout on the page is forced to the next page by the insertion of its footnote, you will have to break that footnote to the next page in order to move the callout back to the original page. This was very difficult before we had word processors. With word processors, it's still difficult.

If this all seems too difficult, you might consider putting all the footnotes at the end of the paper and accepting a B+.



False Alarm

These two alert boxes have been causing consternation in high places. The one on top is from a prerelease version of the Finder; the other is from the released version. They are functionally the same message. They appear whenever a disk with one version of the Finder is popped out of the disk drive and a disk with another version is pushed in in its place (and perhaps at other times when a directory has been damaged). Different versions apparently keep track of subdirectories in different ways, or something like that. More succinctly, one Finder doesn't know what the other Finder is doing.

What happens when you click OK is that any files you had stored in a folder (such as a System Folder or a duplicate of the Empty Folder) are returned to the desktop (the main directory), as the newer of the two boxes says. The older box tried to get the point across in such a perfunctory way that a lot of people thought it meant that all files would be lost instead of folders.

If some folks had taken the trouble to look up instead of taking Chicken Little's word that the sky was falling, they wouldn't have gotten so worried. Files are safe; only folders will be lost. And folders are easy to replace. So relax. Click OK. Don't worry. The Finder is trying to help you.

Macintosh Disk Drive

Apple Computer has announced the release of their long-awaited external disk drive for the Macintosh. The drive handles Mac's 3 1/2-inch disks and and has a capacity of 400K. $495. Apple Computer, 20525 Mariani Avenue, Cupertino, CA 95014; (800) 662-9238.

Unix Cobol and Fortran

Ryan-McFarland has introduced two programming languages that run under either Xenix or UniPlus+. RM/Cobol is a GSA-certified 1974-version Cobol compiler that creates portable software and provides record and file locking for multiuser activity. RM/Cobol also has multikey index files with alternate and duplicate keys and has an interactive debug during program execution. Each screen is user-customizable. $1,250.

RM/Fortran is an error-free full-level Fortran-77 with the popular Fortran extensions. It creates high-optimized object code, symbolic names up to thirty-one characters in length, and supports Hollert and hexadecimal forms of constants. $1,250. Ryan-McFarland, 609 Deep Valley Drive, Rolling Hills Estates, CA 90274; (213) 541-4828.

Cyborg

Cyborg is a classic text adventure with a brief skill game hidden in the plot. The main character is a futuristic part man, part robot lost in a forest and in desperate need of food and power. Available in May or June; $34.95. Sentient Software, Box 4929, Aspen, CO 81612; (303) 925-9293.

The Calendar

Hayden Software is releasing a Macintosh version of its IBM personal time management program. Tentatively called *The Calendar*, the program allows users to scan an on-screen calendar for available times, enter appointments, maintain notes for each appointment, and print copies of daily, monthly, and yearly schedules. The user can also update the calendar, cancel appointments, and display or print the revised schedule. Available in May or June; $50. Hayden Software, 600 Suffolk Street, Lowell, MA 01853; (800) 343-1218.

Professional Tax Planner

Professional Tax Planner for the Lisa enables financial professionals to examine up to five alternatives for a single tax year or projections of up to five successive years. The program automatically calculates alternative minimum tax, ten-year averaging, investment interest, expense limitations, and charitable contribution limitations. *Professional Tax Planner* also produces five reports that can be displayed on-screen or printed. Available second quarter; $350. Aardvark/McGraw-Hill, 1020 North Broadway, Milwaukee, WI 53202; (414) 225-7500.

How To Use Your Apple Macintosh

How To Use Your Apple Macintosh is a disk-based training program designed to take the buyer step by step through basics such as plugging in the machine, as well as advanced uses such as solving complex problems. $75. American Training International, 3770 Highland Avenue, Suite 201, Manhattan Beach, CA 90266; (213) 823-1129.

Millionaire

Do you have what it takes to make a quick million in the stock market? Find out with *Millionaire*, an investment simulation that represents market fluctuations on a weekly basis and includes investment tips. The game fully utilizes all of Macintosh's features including hi-res graphics and does not require use of the keyboard. Available in May; $59.95. Blue Chip Software, 6744 Eton Avenue, Canoga Park, CA 91303; (213) 346-0730.

MacManager

MacManager is a management simulation that gives players complete control of a hypothetical company and requires them to maximize their company's profits through shrewd decision-making. The program lets players see production, observe plant capacity, and monitor physical inventory rather than only showing them numbers on the screen. Available in May; $49.95. Several *MacManager* enhancements are now being developed. Harvard Associates, 260 Beacon Street, Somerville, MA 02143; (617) 492-2999.

Mac Disk

Mac Disk is a hard disk storage system that provides from five to forty megabytes of storage, depending upon the model. All models will be shipped with the necessary cables, adapters, and software. Five-megabyte, $1,995; ten-megabyte, $2,395; fifteen-megabyte, $2,795; twenty-one-megabyte, $3,295; thirty-two-megabyte, $3,995; forty-megabyte, $4,495. A twenty-eight-megabyte streaming tape backup system will be available in a later release. Davong Systems, 217 Humboldt Court, Sunnyvale, CA 94086; (408) 734-4900.

The Candy Apple IEEE 488

The Candy Apple IEEE 488 is a Macintosh user interface used in laboratories for the testing and measurement of equipment. It is AppleBus-compatible and implements the Intel 8291A and 8292 integrated circuit set. The Candy Apple IEEE 488 comes in the Macintosh style and color and has its own external power supply. Available in May; estimated price: $400.

Sargon III

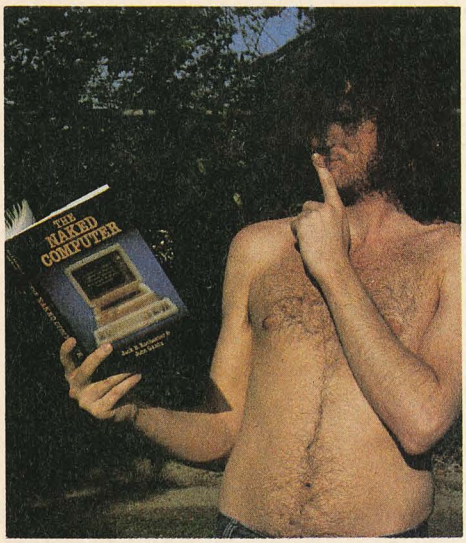
Play a timed chess match against the computer with *Sargon III*. The Apple II version played good, fast chess, and this version can be expected to do the same. The program also contains 107 classic games of the past that highlight brilliant maneuvers from important tournaments or simply teach valuable lessons from less-well-known matches. Available in late May; $49.95. Hayden Software, 600 Suffolk Street, Lowell, MA 01853; (617) 937-0200.

Game of Chance

Mac Slots combines two different games on one disk, the first a replica of a slot machine and the second a replica of keno. Both games are completely mouse-driven and take surprising elements into account when determining a player's performance. The number of cocktails a gambler drinks changes his performance, and if the player goes to the restroom surprising things await. $77.77. Soft-Life, 2950 Los Feliz Boulevard, Suite 103, Los Angeles, CA 90039; (213) 660-7940.

Computer Trivia Book

The Naked Computer by Jack Rochester and John Ganz covers computer industry trivia, anecdotes, and mind-bogglers including the true story behind Eliza, the computer that multiplied 12 by 12 and never got anything except 143, and the RCA Bizmac, a computer so large that its operators had to wear roller skates. 335 pages. $15.95. William Morrow and Company, 105 Madison Avenue, New York, NY 10016; (212) 889-3050.



The Naked Computer exposes readers to computer trivia.

Multiuser Accounting System

Business Accounting Control Systems is a five-module accounting set for Lisas running the Unix operating system. The BACS family includes *General Ledger*, *Payroll*, *Accounts Receivable*, *Accounts Payable*, and *Order and Inventory Management*. The system also accommodates four Macintoshes connected to a Lisa as dumb terminals. American Business Systems, 3 Littleton Road, Westford, MA 01886; (617) 692-2600.

Disk Storage Case

Micro Disk Minder will hold up to thirty-six 3 1/2-inch disks. $27.95. International Datawares, 910 George Street, Santa Clara, CA 95050; (408) 988-5594.

Micro Disk Minder and the traditional filing system it replaces.

IBM-Compatible Kits

PC-Basic Developer's Compiler allows users to run most IBM PC programs on Lisa and Macintosh. It includes a communications package, RS-232 cable, and an IBM-compatible Basic compiler. Source code of any BasicA program—as long as you do not use peeks, pokes, or machine language calls—can be transferred through the cable to Mac or Lisa, recompiled, and run within the office environment. This version allows the sale of code. $1,000.

PC-Basic compiles programs to tight machine code for strong software protection, can be linked to Pascal programs, and can integrate with Lisa's office environment. The included communications package helps in transferring data and text files. This version is for use on only one machine. $250. Communications package only; $100. Pterodactyl Software, 200 Bolinas Road, Suite 27, Box 538, Fairfax, CA 94930; (415) 485-0714.

Lisa Medical Biller

Lisa MediCard is a small-office medical billing application that runs under the Lisa operating system. The system features a complete monthly private patient billing system and can also instantly prepare standard American Medical Association claim forms for subsidized patients. The system integrates with all Lisa office tools, which enhances the creation of collection letters. $349.95. CMA Microcomputer Division, 55722 Santa Fe Trail, Yucca Valley, CA 92284; (619) 365-9718.

Macintosh Forth

MacForth is an interactive Forth development system that is based on Multi-Forth, an established Hewlett-Packard product. MacForth features extensive trace and debug capabilities, user-specified error handlers, access to most Macintosh Toolbox items, a comprehensive thirty-two-bit environment including thirty-two-bit stacks and default data structures, and a computer-aided instruction course, *Going Forth*, which leads users through writing their first MacForth program. Other features include user-definable menus, extensive use of the Macintosh QuickDraw routines; integer, square root, sine, and cosine functions; and a relative graphics drawing capability that can be rotated, scaled, and relocated relative to any starting point. The MacForth file system supports up to twelve currently opened, assigned files simultaneously. MacForth Level 1 comes with a single license and CPU. $149. MacForth Level 2 comes with an assembler and advanced graphics as well as the single license and CPU. $249. MacForth Level 3 is a developers' kit that includes a 350-page manual; trace, debug, and snapshot capabilities; and the right-to-execute license for 250 copies. $2,500. An additional right-to-execute license with a minimum of 100 copies, $5 each copy. Creative Solutions, 4801 Randolph Road, Rockville, MD 20852; (301) 984-0262.

RealWorld's Lisa Accounting Software

RealWorld Software has introduced a fleet of programs designed for small businesses with either Unix or Xenix. *Accounts Receivable* handles both open item and balance forward customers; allows sales transactions entry, editing, and posting, with edit list and journal; and allows on-line customer inquiry.

Accounts Payable is designed for the accrual method of handling accounts payable, provides maintenance and lists for the vendor file, and allows entry, editing, and posting of new payables, adjustments, cancellations, and prepaids, with edit list and journal.

General Ledger handles up to thirteen accounting periods, supports multiple profit centers, and allows general journal transaction entry, editing, and posting, with edit list and journal. *General Ledger* also allows transaction details to be kept for a year if disk space is available.

Payroll maintains and lists an employee file, handles both hourly and salaried employees, calculates different pay frequencies, and can prepare multistate payrolls. *Payroll* also processes a variety of special deductions and earnings and prints payroll checks and the check register.

Inventory Control allows inventory costing by standard cost, average cost, and LIFO or FIFO methods, provides flexible pricing methods and automatic price change capability, and has a multiwarehousing capability. *Inventory Control* also prints the price list, stock status, inventory value, purchasing advice, usage, and a physical count worksheet.

Order Entry/Billing requires the RealWorld *Accounts Receivable* and *Inventory Control* and a hard disk. The system allows orders to be invoiced on entry or held as open orders for later billing, automatically adjusts inventory in the *Inventory Control* system as a result of the order entry and billing process, and automatically feeds billing information to the RealWorld *Accounts Receivable* system. *Order Entry/Billing* also has full back order retention, handles credit memos, and prints invoices for all orders billed.

Sales Analysis tabulates and prints reports on sales analysis by customer, by customer type, customer sales volume, account salesperson, state, item, item category, and item sales volume. All modules, $695 each. RealWorld Software, Dover Road, Chichester, NH 03263; (603) 798-5700.

Lisa Database

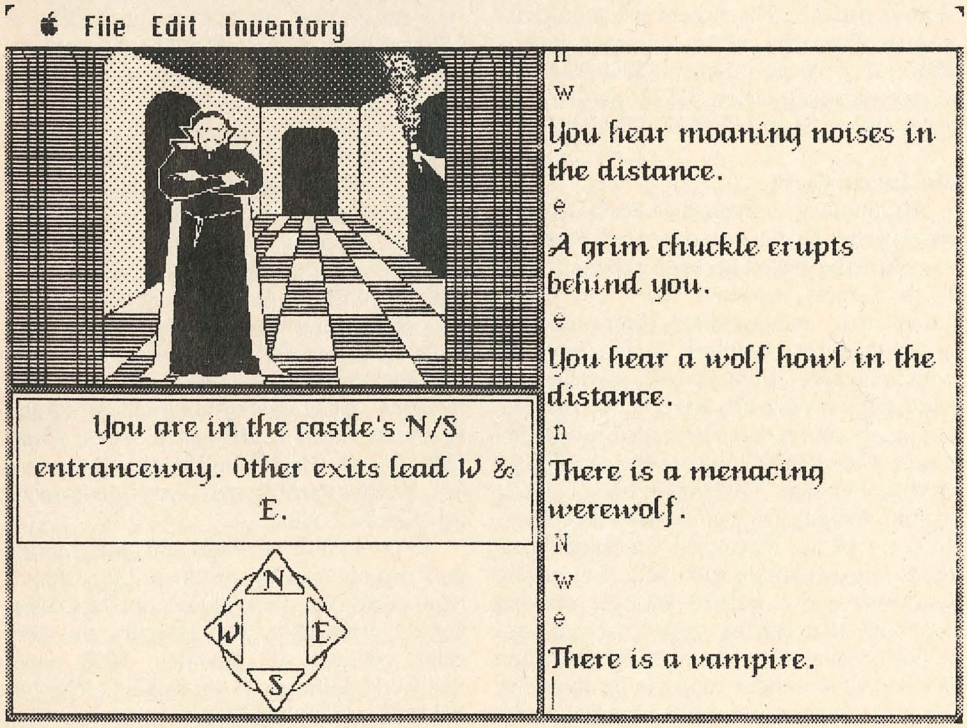
IDOL is a database manager and program development tool that lets users develop their own customized business applications. Designed for both novice and experienced computer users, *IDOL* features a data dictionary system that accepts up to 999 files and a selector dictionary that allows users to design up to ninety-nine separate menus. $595. SMC Software Systems, 1011 Route 22, Bridgewater, NJ 08807; (201) 685-9000.

Please address announcements of new Macintosh and Lisa products and services to MarketWatch, Box 7041, North Hollywood, CA 91605.

Transylvania

Mac's First Adventure Is a Ghoulish One

By David Durkee



If you have a Macintosh and you're itching to do something besides write, paint, and plan, *Transylvania* may be just the ticket. *Transylvania* won't give you anything productive to do, but it will fill hours with enjoyable diversion.

Transylvania is one of a genre of games called adventures. The first adventures were all text on a bare computer screen. The computer gave you a description of your location in a fictional universe, complete with objects available and places to go. You instructed the computer through two-word commands, like "climb tree" or "get sword" or "go north," as to what you wanted to do.

You were required to solve puzzles to progress toward a goal, which was often as simple as collecting treasure. Sometimes the puzzles were of a semantic nature—you had to figure out the exact words the programmer selected that would allow you to accomplish something obvious. The puzzles occasionally revolved around thinking of a two-word way to say things that were more naturally expressed in three or four words.

As adventures became more popular, their development took two different directions. Some adventure writers focused on improving the verbal capacity of their programs, with the result that struggling for the right word was no longer a part of puzzle solving; the computer knew several synonyms for each object it kept in its list. In addition, using only two words was no longer a restriction because the better games could also understand adjectives and prepositional phrases. And, finally, the puzzles to be solved were more realistic: After all, your ability to enter a building shouldn't hinge on whether you choose to call it a house, a shack, a cabin, or a hovel.

Other adventure writers left the game's verbal abilities pretty much as they were but added pictures. Each location in the gaming universe had a picture, and each object that was part of the game was a modular part of that picture. If the object was present, it would be drawn in on top of the background. If it was somewhere else or in the possession of the adventurer, it would be left out. Sort of like icons. Because the pictures took up so much of the screen (and the disk space), text was kept to a minimum.

The main point of contention between text and graphic adventure writers was whether a picture was worth a thousand words. As it happens, pictures rarely took up that much space on disk, but they did take up more space than the hundred or so words they actually replaced. The best graphic adventures are typically less complex and involving than the best text adventures.

Transylvania, a graphic adventure from Penguin Software, is a good game for the beginning adventurer. It's fun, familiar, and not too hung up on word choices. Nor is it extremely difficult. However, it's not that easy to map; that is, when you go north and then south, you may not end up in the place you started in. A northward path may curve to the east, so you have to go west to return to your starting point. On the other hand, there are none of the useless mazes full of identical "twisty little paths" that some programmers like to include just to be annoying.

The creatures and environs of *Transylvania*

are recognizable to those of us who've spent any part of our childhood watching old horror movies. We know how to kill a werewolf and what a vampire fears most (no, not the Red Cross blood drive). Kissing sleeping princesses and frogs gets us only derision (wrong mythology), so we are unprepared for a meeting with an alien being. What movie is that from? *The Wolfman Meets E.T.*? And what are all these penguins doing here?

It's hard to say too much about the plot without giving away some of the fun, so let's look at the execution instead. *Transylvania* was translated from the Apple II, and while it has been enhanced with some Macish conventions, it is essentially the same game. The picture window appears to be the same size in pixels as it was on the Apple: It takes up about a quarter of the Macintosh screen. Scrolling up the right-hand side are the player's transactions with the computer. This section is nicely done: All the computer's messages are in Mac's Venice font and the player's commands are in New York, making them easy to distinguish.

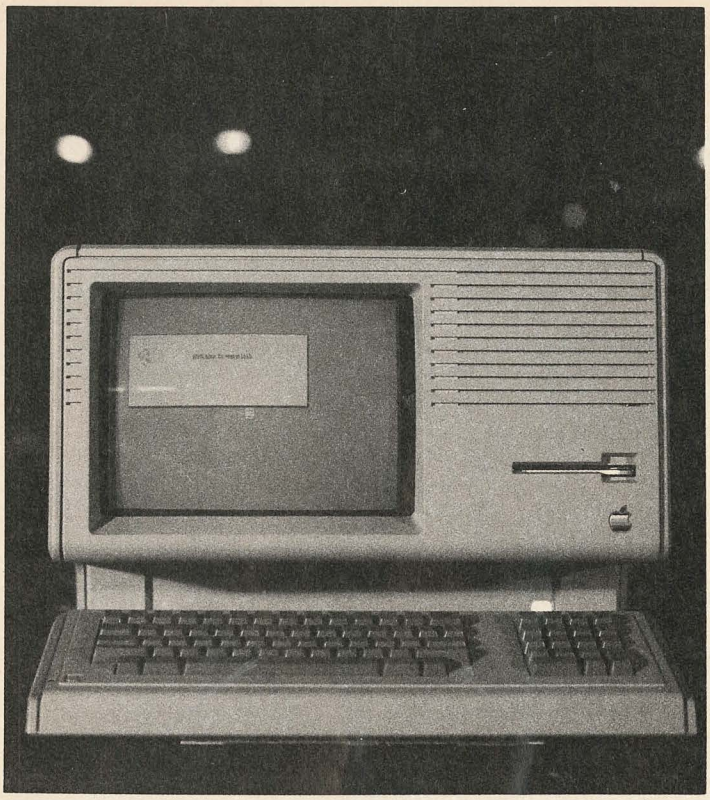
Beneath each picture is its description, which doesn't scroll with the rest of the text, and beneath that is a four-point compass. You can use the mouse and the compass to move around or you can type in the directions. Since other commands must be given using the keyboard, the compass is probably unnecessary.

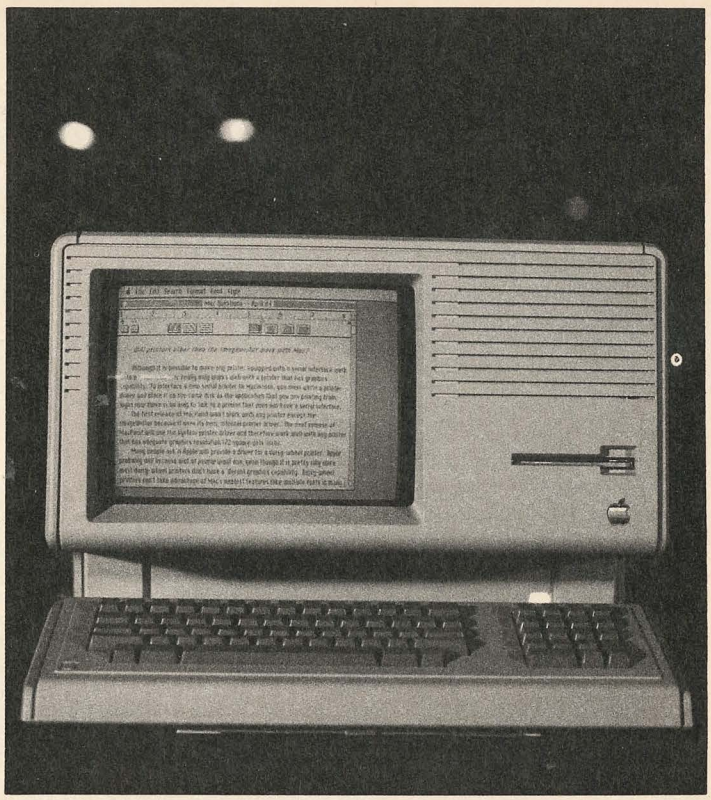
Inventory—the command that lists the objects the adventurer is carrying—is available only as a pull-down menu. Load and save options (you can save your progress in a game and then return to that point later) also reside in a menu. As many as five plays of the game can be stored at once.

There are a lot of ways that the Macintosh can enhance the adventure genre. It's just as well that Robert Hardy didn't get carried away with all these possibilities; if he had, we'd still be waiting for the Mac's first real game. Nevertheless, there's no reason that future adventures couldn't feature a mapping utility (perhaps as a desk accessory) with a printing option, text that you could save and scroll back to, the ability to copy messages from the computer onto the Note Pad, objects that could be moved around with the mouse and that would only work when put in the right place, and much more. Or what about a 360-degree scrolling view of each location? Or perhaps....

Or perhaps we'll just see what comes along.

Transylvania
By Antonio Antiochia. Translated for the Macintosh by Robert Hardy.
Penguin Software
Box 311
Geneva, IL 60134
(312) 232-1984
$39.95





Lisa Works Double Time

By Doug Pollack

Now that a lot of the fanfare accompanying Apple's introduction of the Macintosh has begun to die down a little, people are beginning to realize that the Mac is more than an appealing, innovative, and well-thought-out machine. It's also a component of a family of thirty-two-bit MC68000-based Apple products known collectively as the Apple 32 SuperMicros.

Included in this product line are the Macintosh, the Lisa 2, the Lisa 2/5, and the Lisa 2/10. The element that ties this family together, however, is MacWorks. MacWorks is the vehicle for upward compatibility of software across these products—something that's sorely needed to lend credibility to a consistent and coherent product line and to give it a fighting chance at solving real problems in a variety of business environments.

So What's MacWorks?

Apple's MacWorks manual describes MacWorks as the "Macintosh Environment for the Lisa System." What this means is that you can take the Apple 3 1/2-inch MacWorks disk, load it into any of the three Lisa 2 systems, and then use the majority of Macintosh software off the shelf, with no changes necessary.

As Lisa product manager Randy Battat puts it, "MacWorks lets you effectively turn your Lisa into a big Macintosh. You can use most or all of the same software but get the advantages of a bigger screen, bigger memory, and options to expand in the future, both in hardware and in software."

Doug Pollack is a member of Apple's newly created Apple 32 division and formerly the hardware product marketing manager for Lisa.

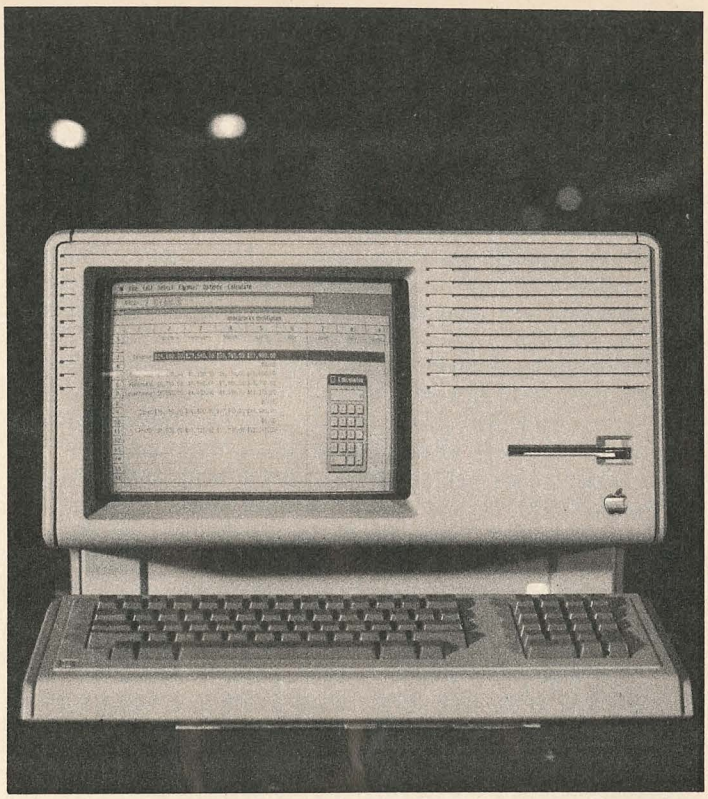
A Lisa with MacWorks allows you to take advantage of the Macintosh software explosion, yet provides you with the flexibility of Lisa's own integrated application environment.

Why did Apple decide to provide Lisa owners with the ability to run Macintosh software on Lisa? Well, with Macintosh, Apple hopes to re-create the scenario that occurred with the Apple II. The success of the Apple II can be credited in large measure to the totally open architecture of the machine, good dissemination of technical information for software and hardware developers, and a strong retail acceptance of the product through technological leadership and innovation. This combination resulted in the Apple II being a high-volume machine with a long life cycle and tons of software support. Understandably, Apple would like to see Macintosh walk down the same path.

MacWorks is the glue that binds together Apple's thirty-two-bit family of products. It provides the software compatibility that's needed for a viable product line and makes the Lisa 2 machines even better and more flexible than the original Lisa.

A Little Background

MacWorks was the brainchild of one of the many talented software engineers who inhabit the cubicled halls of Apple Computer. A large contingent of individuals at Apple back in the summer of 1983, including top management, believed that compatibility between Apple's MC68000-based products was critical. The technical issues involved in achieving such compatibility were complex—even overwhelming at times—and a consensus decision on the right way to go about it was not easy to arrive at. Jeff Parrish, at that time a member of the Lisa division's software group, felt he could create a workable solution



MacWorks Gives Lisa the Soul of a Mac

through a Macintosh environment that would run on the Lisa. Parrish took his proposal to Wayne Rosing, who was at that time the general manager of the Lisa division. Rosing gave him a quiet but distinct charter to begin working at his idea.

Parrish spent the next couple of months talking to and working with both the Macintosh software group and a number of his cronies in the Lisa software lab. The outcome of these interactions was a crude but effective demonstration that Lisa could and would run Macintosh software. At this time (September of last year), Parrish was able to show a bouncing balls application that was created during Macintosh development running on the Lisa.

Rosing was so pleased with this giant step forward that he asked Parrish to bring his demonstration to the next Apple board of directors meeting, where he was given an enthusiastic go-ahead to finish his work—and fast—on what was then called Mac-a-Like.

Concurrently, a group of hardware types were working a bit of their own magic to integrate a 3 1/2-inch disk drive and an optional ten-megabyte hard disk into the Lisa. This would provide the physical means for compatibility with Macintosh disks. The Lisa 2 products (then code-named *Pepsi* after the new management influence of John Sculley that was guiding Apple's direction) and the key MacWorks software were turned around in record time.

What Parrish and a small group of others had to deal with in the creation of MacWorks was how to make a Lisa look like a Macintosh to any random piece of Macintosh software designed by independent software developers. While this is clearly a great simplification, there were a number of pieces to be fitted together:

First, Parrish needed to take the contents of the copyrighted Macintosh ROM, containing the heart and soul of Macintosh, and have MacWorks load them into a segment of Lisa's RAM memory. Then he had to make the Macintosh Finder—which comes with all Macintosh applications—believe that it was where it was supposed to be.

Next, Parrish had to implement the "ROM patches" that were being made to reflect last-minute changes to the Macintosh ROM code. These needed to be made taking into account the specific hardware environment of the Lisa, as well as the Macintosh Finder, which was still undergoing last-minute changes by the Macintosh software team.

And third, the hardware-specific low-level software (serial drivers, for example) had to be written to provide the appropriate I/O and the like for Macintosh programs when talking to the Lisa hardware.

Once all of this had been done, the environment had to be tested with as much final and prototype Macintosh software as could be found. The result was a set of guidelines that were provided to Macintosh software developers. These guidelines outlined the basic do's and don'ts of writing software that would not only work on all of the Apple 32 SuperMicros but would do the right thing with windows. Basically, developers were asked not to try to circumvent the appropriate ways of interfacing with the Macintosh Toolbox, and this meant that they shouldn't assume any hardware specifics for their software.

As you might expect, some bugs and inconsistencies came to light during this time. But the result is that a lot of the software for the Macintosh will be even better and more bug-free than it would have been, because developers have taken the time to look at it on Lisa and make sure that everything is working properly.

Using MacWorks

There are two ways to get MacWorks. First, everyone purchasing a Lisa 2 system (the entry-level Lisa product that retails for $3,495)

will receive not only MacWorks but also *MacWrite* and *MacPaint* bundled with the machine.

For those who buy either the Lisa 2/5 or the Lisa 2/10, MacWorks (with *MacWrite* and *MacPaint*) is available separately for $195. Apple made this an option for the 2/5 and 2/10 so that consumers could purchase the appropriate environments for their use instead of having to spend a lot of extra money for operating system software. (Lisa provides users with a number of choices. They can use Macintosh software, the Lisa Office System software—which requires a hard disk and a megabyte of memory—or the Unix operating system. Both the Xenix and UniPlus+ operating systems are available on Lisa from Santa Cruz Operation and UniPress respectively.)

MacWorks is available through all of Apple's retail dealers carrying Lisa and Macintosh, as well as through the Apple National Account Sales Representatives to qualified accounts. Apple expects MacWorks to be available through its distribution channels by mid-April.

MacWorks comes with a user manual that looks and reads a lot like the Macintosh manual except that most of the hardware references are eliminated. To use MacWorks, all you do is put the 3 1/2-inch disk into Lisa's drive, turn Lisa on, and tell it to boot from this drive (by hitting the Apple key and the 2 key simultaneously as soon as you hear the first audible click).

After loading MacWorks, Lisa ejects the disk and you see on the screen just what you would see if you had powered up a Macintosh without a disk in the disk drive, namely a disk icon with a flashing question mark. At this point, your Lisa is a Macintosh for all intents and purposes. You can insert your application and get to work.

Because Lisa has two serial ports, just like a Macintosh (in fact, both are driven by the same Zilog SCC chip, giving you RS-232/RS-422 compatibility), you can use one port for the Imagewriter printer and the other for a modem (or a remote computer connection) just as you can with Macintosh. The printing and communications will work just fine; the hardware differences are transparent to the user. The only difference is that Lisa requires a twenty-five-pin connector and Macintosh needs a nine-pin connector, so you have to use a different cable—that's it.

The MacWorks Difference

Is Lisa 2 with MacWorks just like a Macintosh? The major question that most people have when looking at Lisa with MacWorks is, will everything work *exactly* the same on Lisa as on Macintosh? And the answer is that, while most software will function the same on Lisa as on Mac, there are several differences—some good and others of possible concern—that a prospective buyer should know about.

First, the aspect ratio on the Macintosh display (the ratio of horizontal pixels per inch to those displayed vertically) is not the same on Mac as on Lisa. Macintosh has an even number of dots in both directions, whereas Lisa has more dots across per inch than down. What this means is that Macintosh software used on Lisa makes both text and graphics look taller than they appear when displayed on Macintosh.

When you're dealing with most business applications, such as word processors, spreadsheets, and database managers, however, this does not cause any inconvenience whatsoever because of the nature of the way you work with and view these applications. Where you do notice the distortion, and where it can affect the quality of your work, is with certain graphics applications, such as *MacPaint*. The dimensions of objects on the screen will be stretched vertically compared to how they will look when printed. This results in circles that look like ellipses and squares that look like rectangles.

However, in a program like *MacDraw*, in which you can use rulers on the screen to measure objects, you'll get on paper what the rulers tell you on the screen. So if you draw a circle using *MacPaint*, say, and you make sure it's a circle by using the shift key, even though it looks like an ellipse on Lisa, it will print as if it were created on Macintosh as a circle.

If you're interested in doing freeform graphics, where the "what you see is what you get" fidelity is particularly important, *MacPaint* on Macintosh is the way to go. But for more structured graphics, such as those created with Microsoft's *Chart*, the Lisa 2 provides some real pluses. The larger screen allows you to see more of a larger graph or to display the graph and data series side by side prior to printing.

The next difference has to do with sound. Macintosh has some very special sound capability in hardware that produces full four-voice sound and gives Mac the capability to reproduce speech. Lisa does not generate sound in anywhere near the same way. Tones on Macintosh come out as beeps on Lisa. So if sound plays a big part in the selection of your computer, Macintosh is clearly the only way to go.

The last major difference has to do with the external disk drive for Macintosh. The Lisa 2 doesn't at this point support this drive as an add-on. This situation has resulted because there's a distinct price advantage to buying the Lisa with a hard disk. The Lisa 2/5, at $4,495, costs only $1,000 more than the Lisa 2 and comes with five megabytes of hard disk storage in the Apple ProFile. The external 3 1/2-inch disk drive for Macintosh costs $495, and an interface card for Lisa 2 would have to cost in the $300 range. It's Apple's feeling that customers who otherwise would have to spend $795 to use this external 3 1/2-inch disk drive on Lisa would rather spend the additional $205 and have a five-megabyte hard disk. So while the first release of MacWorks cannot use this hard disk, Apple engineers are working to add this capability to the next release.

The MacWorks Advantage

While Lisa will not do everything just the same as Macintosh, MacWorks on Lisa 2 does provide some tangible benefits to the Lisa user. Whereas Macintosh is a 192K system, with 128K RAM and 64K ROM, Lisa comes standard with 512K RAM. This means that you have approximately an extra 320K of memory to play with. For applications where all of the data needs to be in memory to run (such as *MacWrite*), this allows you to have much larger documents. Whereas *MacWrite* on Macintosh gives you about eight to ten typed pages for a document, a Lisa 2 with *MacWrite* gives you approximately eighty

pages to work with.

This also translates to a 50 to 60 percent larger model in *Multiplan*. (This difference would be even larger if *Multiplan* were not limited to 64K of memory for more data, independent of how much memory you have.) And many other Macintosh applications will be able to use this extra 320K of memory for more expansive documents, models, databases, and the like.

The memory advantage also gives you some less tangible but equally important benefits. While Lisa's processor does use a five-megahertz clock rate compared with Macintosh's eight-megahertz rate, many applications may actually run faster on Lisa. Because more of the application can often be stored in memory on a Lisa at any one time using MacWorks, it does not require as frequent disk access to swap in pieces of the application as they are needed. So, with certain applications that tend to be larger and more complex, you can get your work done even faster on Lisa.

And, because the Lisa screen is bigger than the Mac screen (twelve inches diagonal versus nine inches diagonal), you can see more of just about any document at once, giving you a larger window into your Macintosh world. This is great for the serious number cruncher and others who appreciate the convenience of seeing more of what they are working on.

Third-Party Products with MacWorks

Getting back to what seems to be the question most often asked by those considering the purchase of a Lisa 2, will all third-party hardware and software products designed for the Macintosh work on a Lisa 2 with MacWorks? The answer, per Randy Battat, is "Yes, if they do it right."

Doing things right allows developers to take advantage of additional sales of their Macintosh products to users of the Lisa 2 line, which is being aggressively promoted by Apple. And with the strong response from dealers to the new Lisa 2 products, everything seems to point toward compatibility for the majority of software and hardware developed by third parties.

For example, the people at Apple have tested a number of prerelease versions of both their own and independent software developers' products for Macintosh running under MacWorks on Lisa. These products include Macintosh Pascal, Microsoft Basic, *MacProject*, Microsoft's *Chart* and *Multiplan*, *MacDraw*, and *MacTerminal*, to name a few. In addition, all members of the Macintosh Development Team receive a copy of MacWorks and any required documentation at the same time that they get their Lisa 2 upgrade kits for their development machines.

What's Next?

With MacWorks laying the foundation for compatibility between Macintosh and Lisa, the obvious question is, what can we expect next from the company that brought us Lisa Technology? Apple expects to enhance MacWorks to support both the ProFile on the Lisa 2/5 and the internal ten-megabyte hard disk with the Lisa 2/10. This should offer a rich hard disk environment for Macintosh software because it would allow the use of Lisa's direct parallel interface, enhancing the speed of transferring information.

When you look past the support of Lisa's hard disk, things get a bit more fuzzy. Full compatibility between Macintosh applications and Lisa Office System applications would seem a desirable but unlikely goal; Apple has not stated its specific intentions for future MacWorks enhancements. The company may try, at least, to provide data compatibility between some of its own applications on Lisa and Macintosh, such as between *LisaDraw* and *MacDraw* applications. For now, though, all of this is just blue sky.

One thing seems relatively certain, however. The advantages that MacWorks provides to business professionals—especially those who don't require extensive freeform graphics and high-fidelity sound—clearly outweigh any disadvantages associated with MacWorks on Lisa 2. And it does provide a real extension of Macintosh capabilities when used with the mainstay business applications—word processing, spreadsheet analysis, information management, business graphics, and communications—that are so important to most of us.

TELECOMMU

By Matt Yuen

Your Modem Needs Software, Too

Ever take a really good look at a modem? Looks weird, right? Where are the switches? Where are all the controls? How do you work this thing?

Modems have very few moving parts. That's because they don't expect to receive instructions from humans, but from the computer instead. Well, fine. Let them be that way. Even without keyboards, levers, knobs, or cranks, it's still possible for us to manipulate modems.

Hello, Anybody in There?

One way to make a modem work is to "talk" to it through the computer's keyboard. Though modems aren't nearly as intelligent as computers—and we all know how much intelligence it takes to understand commands like catalog, dir, copy, load, and save—there are ways of telling a modem what to do. With an Apple II and a Hayes Micromodem II, control-A tells the modem that the next thing you type will be a command for it, and typing control-Q tells it you want to dial a telephone number. Control-Y tells the computer to reset, control-X takes you out of the modem "mode," and control-Z hangs up the phone.

If that's not complicated enough, then consider Apple's modem. Here are some commands it understands:

```
atl
at d xxxxxxx
m0
a/
```

Crystal clear, right? The command atl tells the modem to do a self-check to make sure things are working; at d xxxxxxx tells the modem to dial a phone number, where xxxxxxx is the number; m0 is the command to turn off the modem speaker; and a/ tells the modem to repeat the previous command. Granted, typing *atl* is a lot easier than typing *do a self-check*, and *a/* is easier than *repeat previous command*, but there's no point in turning simple tasks into complex ones.

Actually, typing things like atl and a/ is nothing compared to what you'd have to do to tell the computer to retain the information it's receiving from the modem, or to switch from pulse dialing to Touch-Tone. For that kind of hard stuff there are terminal programs.

A terminal program (also called a communications program or a com program) is software that helps you tell the modem what to do. Retaining certain information that comes into the computer by modem and letting other information just go by are functions controlled by terminal programs. Receiving and sending files between computers is controlled by terminal programs. Converting the Lisa to work like a mainframe terminal is also a function of a terminal program.

Terminal Illness

Terminal programs are strong stuff when it comes to playing around with computer communications. Right now, *LisaTerminal* and *MacTerminal* are the terminal programs for their respective machines. If you've never used a modem before and want to find out how important terminal programs are, just go up to anyone who participates in Mac discussions on CompuServe or The Source and say, "So tell me, what's the word on *MacTerminal*?" You'll probably find out more information than most of the people at Apple know.

Before we get into specifics about *LisaTerminal* and *MacTerminal*, it would help to know why they're called terminal programs.

Information that's going from one computer to another via telephone lines travels like passengers on a train. Because computers can act either as points of origin or as destinations for information, they're referred to as terminals, just as Grand Central Station is a terminal for trains. A terminal program, then, is software that lets the computer function as a terminal.

Two words often used in describing terminals are *smart* and *dumb*. Dumb terminals are those whose sole purpose in life is to manipulate other computers. An example would be the terminal an airline agent uses to book reservations and write tickets for passengers. This kind of machine is hooked up to a much larger computer and does nothing but let the agent communicate with it. Without the main computer, the dumb terminal is useless.

Smart terminals are machines that do what dumb ones do, but they can also compute. A Mac with a modem is an example of a smart terminal. It can call or receive calls from other computers, but it can do all kinds of stuff by itself, too.

Dumb terminals will always be dumb, forever depending on a computer someplace else to make them functional. Smart terminals have all the niceties of computers, but they can also act as dumb terminals. In fact, one of the functions of *LisaTerminal* is to make the Lisa function as a mainframe terminal.

Memory Motel

One of the most valuable features of a terminal program is its ability to take information that comes in and route it to an area of the computer's memory known as the *buffer*. Though it sounds rudimentary, this function isn't built into the modem. The modem knows only how to receive information and send it to the screen or a printer for you to see. A terminal program can open the computer's

NICATIONS

memory so it can hold information to be read later.

Memory and *buffer* are two of those words Apple wanted to get rid of when it invented Lisa; instead of "retaining data in memory," *LisaTerminal* "remembers" what comes in. It doesn't seem like such a big deal until you actually sit down and start playing with the modem. Suppose you're logged on to another computer, getting the latest news stories. Everything comes across one line at a time. Pretty soon, those lines start disappearing off the top of the screen. Unless you have a way to keep that information somewhere, it's gone forever.

LisaTerminal refers to information that has disappeared as "lines off top." Pretty descriptive, huh? Well, that's exactly what they are—lines off the top of the screen. The program has the option to either "remember" or "forget" them. Why would we want the computer to remember them when we can just read them as they come in?

At a transmission speed of 300 baud (baud is the unit of measure for the speed that computer information travels), information comes in at thirty to forty characters per second, which is just about right for most people to read comfortably. If you get behind, it's usually possible to stop the flow of data long enough for you to catch up, but that just means the computer has to be on the phone longer. As a result, the phone bill goes up, as do charges if you happen to be logged on to a subscription service like the Dow Jones News/Retrieval Service.

A *capture* feature puts all transmitted information into the buffer. Translation: It remembers stuff. With a capture feature (or in LisaTerms, "with lines off top remembered"), you can let the computer receive all the information you want without interrupting it and then read it after logging off the remote system. If the information is something you'd like to refer to later, you can save it on a disk or print it for permanent record.

That's All It Is

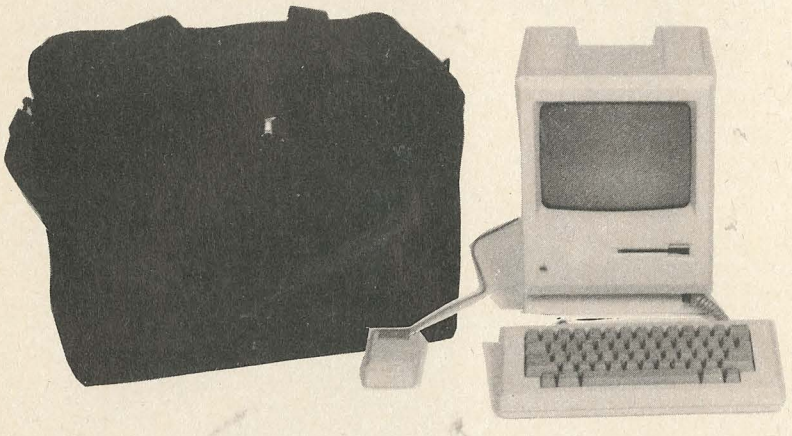
So that's a terminal program, huh? Not so tough; it receives information, stores it, puts it on disk, and sends information. Now that we have that cleared up, let's take a look at *LisaTerminal*.

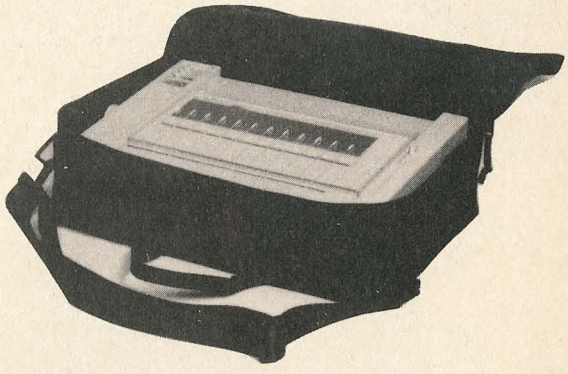
As easy to use as *LisaTerminal* is supposed to be, there are some parts of the manual that comes with it that raise more questions than they answer. Even people who are experienced at using terminal software for other computers may find *LisaTerminal*'s format a bit confusing. Besides, big, thick manuals are a hassle to go through (even *LisaTerminal*'s whopping fifty pages or so, if you don't count the appendixes). So, what follows is an overview focusing on how to use the program.

The first thing to do is let the Lisa know we're plugging a modem into its backside (ouch). Either serial port (A or B) will do; take note, though, that the Lisa development group designed port A specifically to deal with modems. However, port B will work with most modems, just in case port A is already being used. Here's the whacky part: Even though port A was designed for modems, it won't work at 3600 baud. On the other hand, port B lets you use any speed provided by *LisaTerminal*. Hmmm.

To tell the Lisa that there's a modem in one of the ports, click twice on the Preferences

You Chose the Right Computer Now Get the Right Carrying Case





MacPak» the deluxe, quality pack. We use a combination of masonite the thick high-density foam and heavy Cordura® to make it shock and weather resistant. Pockets for accessories, papers and manuals are included and we left room for an extra disk drive and modem. The pack can be carried by shoulder sling, like a suitcase or by hideaway backpack straps. Can be carried on airlines as carry-on luggage. Black, Navy Blue, Grey & Burgundy. **$79.00** (add $5.00 for shipping).

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MacBag essentially the same construction as the MacPak, but without the backpack strap. Can also be carried by shoulder sling like a suitcase. Black, Navy Blue, Grey & Burgundy. **$69.00** (add $5.00 for shipping).

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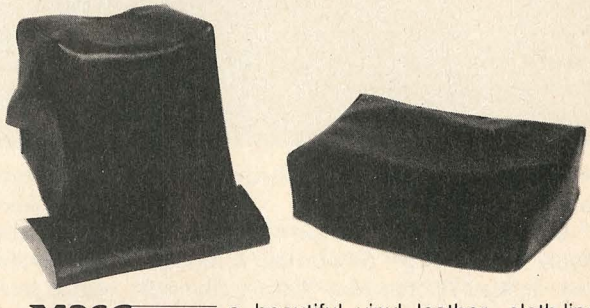

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icon to open the Preferences window. Under the header Connectors, click the box in front of whichever serial port the modem is plugged into. When you do that, several options will appear; click the box that says Remote Computer. Having done that, close the Preferences window and forget about it.

The next task is to figure out what kinds of systems you'll be calling most frequently. Different computers communicate in different ways (parity, handshaking, baud rates), and the computer that's placing the call is the one that has to match the communication style of the other. That means if the remote computer you're going to call communicates only at 300 baud, you'll have to communicate at that speed also—no slower, no faster.

As is the practice with other Lisa software, it's a good idea to set up *LisaTerminal* stationery pads for each remote system you plan to call. It's simple.

Walk This Way

Tear off a piece of paper by clicking twice on the LisaTerminal Paper icon. Give the paper a name and then click on it twice to open it. Now's the tricky part.

Right now, the program is already set to communicate a specific way; the settings that automatically come with it are called default settings. Let's take a look at them. From the menu called Setup, located at the top of the screen, open the dialog box called Computer Compatibility. Look at all that junk. Here's what it means.

Connector. Simple; this tells you to which serial port *LisaTerminal* thinks the modem is connected. If it's wrong, change the setting by clicking the other box.

Parity. This has to do with checking whether data arrives intact. The setting depends on what the remote system wants. When in doubt, ask an official-looking person in charge of the remote computer what the parity should be (even, odd, or none). If things go fine during transmission, don't mess with it. If you see rectangular boxes on the screen, it means the parity setting is wrong. The easiest thing to do is to try different settings until those boxes disappear; it shouldn't take too long—there are only three possible settings.

Handshake. This is one of those terms that don't sound like what they really mean. Handshaking is the way computers tell each other whether they're ready to receive data. Sometimes if you're receiving great amounts of data, the buffer will become full. At this point, your computer has to have some way of telling the sending computer to stop sending data while you're saving the information that's in the buffer (remembered lines off top) to a disk.

Xon/Xoff is a setting that lets the Lisa and the remote computer talk to each other; the Lisa can tell the remote computer when to stop sending data and when it's okay to start sending more, and vice versa. If the remote doesn't recognize the Xon/Xoff method of stopping and starting, you should set Handshaking to "none."

Baud Rate. As mentioned before, this is the speed at which data flows back and forth. Find out how fast the remote system communicates and set your baud rate accordingly. Some systems will wait and find out what your baud rate is and then adjust to it, but most of the time you'll have to adjust to the other system.

Modem. This is easy; if you have a Hayes 1200 or Hayes 300 modem, click the appropriate box. If you don't have either, click the box marked "Other."

Dial. If you have either of the Hayes modems mentioned above, you can use this option. Clicking "As the Document is Opened" means *LisaTerminal* will automatically dial the remote system as soon as you click open the document. The other option is to use the phone menu. The phone menu lets you dial the number when you're good and ready.

If you're using any modem other than a Hayes 300 or 1200, don't worry about this setting.

Terminal. The remote system will have to know how to treat your computer. The Lisa does well at imitating a DEC VT100. Not sure about when to select the others (VT52 and TTY)? Don't worry; if you need to select one of those, you'll know.

Duplex. This is one of the most confusing terms. When you type at the keyboard, the characters go to the remote computer without displaying themselves on the Lisa's screen. Sometimes you can see what you type because the host computer sends back the characters after it receives them. If it doesn't send them back, then you see messages the remote sends, but you don't see what you're typing. Full duplex is the usual way to go, since most systems do send back characters they receive.

If you can't see what you're typing, switch to half duplex. Half duplex puts characters to the screen as you type them. But if the remote sends back what you type, you'll see two of everything. A simple message like *Girls just wanna have fun* will look like *GGiirrllss jjuusstt wwaannnnaa hhaavvee ffuunn.*

When in doubt, use full duplex.

Auto New-Line. This puts the cursor at the beginning of the next line down when the return key is pressed. Normally, hitting return puts the cursor back to the beginning of the current line. That's because most remote systems automatically put the cursor on the next line when you hit return. If the remote system does this, then setting Auto New-Line to "on" will cause double-spacing. Leave it set to "off." If hitting return puts you at the beginning of the current line, change it to "on."

Communication. Now there's a vague term. If you select the On-Line option, that means you're ready to communicate with the remote computer. The other option, Local, means you want to fiddle with *LisaTerminal* without having to be connected to a remote system. Be careful; clicking Local while you're communicating with another system will disconnect you from it.

Tender Loving Care

Next on the Setup menu is a dialog box called Comfort, which lets you set up how the screen looks. Most of the options in it are self-explanatory: Lines Off Top (remember or forget them), Tab Ruler (hide or show), Columns Per Line (80 or 132), Margin Bell, Cursor (block or bar), and Background (white or black).

Don't worry too much about what the ruler and status lights are for; we'll get to them next month. Wraparound asks, "When the cursor gets to the end of a line, do you want it to go to the next line automatically, or what?" If you're working in eighty columns, then the character that comes after the eightieth character will appear at the beginning of the next line if you have wraparound on. If it's set to "off," then characters will pile up on each other at the end of the line. You won't be able to read what comes in.

Auto Repeat does just what it sounds like: It prints a character repeatedly if you hold the key down.

The final box on the Setup menu is Custom Functions. Don't worry about these for now.

Once you have everything set up, save the document. With the document's icon activated (it should be dark), go to the File/Print menu and select Make Stationery Pad. This will take the document you just finished customizing and turn it into a stationery pad. Now, whenever you want to call that particular system, just tear off a sheet from the pad and you're ready to rip.

There's a lot more to using a modem than just dialing the phone.

The stationery pad keeps the same name you gave the document when it was first ripped from the LisaTerminal Paper. You can change it to the name of the remote system it's configured for, or you can leave it. All sheets of paper you tear from the pad will be set up to work with that particular system.

A final bit of warning: Using *LisaTerminal* to interact with remote systems gets a little confusing if you've never used a terminal program before, or if you're used to the way terminal programs work on traditional microcomputers like the Apple II or IBM PC.

Next time, we'll look at how to send and receive stuff with *LisaTerminal*, as well as with *MacTerminal*. That is, if the winds are right and the planets are lined up correctly.

MISCELLANEA

A Colorful Development

Micrographic Images Corporation is developing a peripheral for Macintosh and Lisa that will color users just the right way—that is, about 256 colors per pixel. The device will allow the display of any of the 256 colors simultaneously in high screen resolution with sixty-four levels of gray, yielding a palette of more than sixteen thousand colors. Various configurations of the system will include a graphics tablet, real-time camera digitizer, and auxiliary video output for use with video projectors or large screens.

The Mac version, which is 20 by 20 by 4 inches, will sit alongside the Mac, with the RGB color monitor on top, and will be connected to the Mac through the RS-422 high-speed port. At least two types of resolution will be available: 640 by 480 and 1,260 by 960. The graphics output will require a separate noninterlaced color monitor, with the Mac screen used as a command monitor. Though this output will not be NTSC-compatible, the version for Lisa will offer NTSC compatibility. Company president Janek Kaliczak expects the price of the box alone, not including the necessary monitor or software, to cost about $2,000. Micrographic Images Corporation, 19612 Kingsbury Street, Chatsworth, CA 9131l; (818) 368-3482.

Mac Steals the Show at the Faire

"I just want to thank you for such a neat little machine. You deserve happiness!"
—enthusiastic Mac owner to Burrell Smith

"Happiness will be seeing great software for the Mac."
—Burrell Smith

Apple's thirty-two-bit baby was the star of the show at the Ninth West Coast Computer Faire, held March 22–25 in San Francisco. The company had twenty demonstration stations on the floor, continual hands-on classes elsewhere in the building on clicking and pointing, and a ten-foot-high model Mac to demonstrate mouse magic; the crowd around it was never less than three people deep.

Programming paragons Bruce Horn and Steve Capps were on hand, posing as just another pair of Apple working stiffs, showing interested onlookers demo versions of *MacDraw*, *MacProject*, and MacPascal. Attempting to blend into the crowd, none too successfully, were Mac hardware designer Burrell Smith and programmer Andy Hertzfeld.

The interest and attention generated by the Mac made the show for Hertzfeld. "I went to the first one of these fairs, when the Apple II was introduced," he said. "The last few were somewhat boring, but this year's show is as exciting to me as the first one."

Smith was almost as enthusiastic. "There hasn't been as much here as I'd hoped, but what there is lives up to the dream. The developers are learning a lot; it's a new way of thinking."

A handful of new products for Mac and Lisa were presented at the show in various stages of completion.

Receiving perhaps the most enthusiastic reception was the graphic adventure game *Transylvania*, from Penguin Software. Robert Hardy's rewrite of the popular Apple II program took him three months; he did some of his programming in a courthouse awaiting the call for jury duty. Penguin was at the show in force, one of the few top software vendors to exhibit.

Sir-tech Software also had a booth to demonstrate their prototype of the Mac version of the fabulously popular Apple program *Wizardry*. They hope to have it available for the Christmas season.

Pterodactyl Software showed its program that compiles IBM PC Basic so that most programs will run on Mac and Lisa.

Artsci showed its hardware-software combination MagicPhone, soon to be out, pending approval by the Federal Communications Commission. Features include automatic dialing of sixteen numbers and timing of telephone call length.

MacForth, by Creative Solutions, is now available and is a comprehensive programming environment in the Forth language.

Apple's own 300-baud and 1200-baud modems were sold at discounted "show prices" by several mail order vendors. Different accessory kits of cables and manuals make them usable with the Apple II, Apple III, Mac, or Lisa.

Videx Corporation previewed its desktop calendar program that's in the works for the Lisa 2. It's expected to be available the third quarter of the year.

Nexa Corporation showed its professional scheduling/client billing system for Macintosh. The package, which will interface with *Multiplan*, will be out this summer.

Multiplan Woes

Is your copy of *Multiplan* a bit, well, *unpredictable*? Or could it be that something's wrong with your Macintosh? Nope, it's *Multiplan*. Microsoft's spreadsheet program is afflicted with a number of bugs and at least one "fatal error" (a fatal error is one that can't be recovered from).

Microsoft is aware of the problem and has stopped all shipments of *Multiplan*. A new, hopefully bug-free version of *Multiplan* should be available by the time this note reaches print. Although it's unclear how *Multiplan* purchasers will receive updated copies, Microsoft assures us that all *Multiplan* purchasers will receive new, free *Multiplans*. See your dealer for details.

Reminds us of a journalistic maxim: Write in haste, repent at leisure.

Career Decisions

It's tough being a public figure (we assume). It's tough being an author (we suppose). Consider Peter Norton: After justified fame as an IBM PC programmer and author, Norton had to consider his future. With the glut of IBM PC books reaching tidal wave proportions, what was the "Next Big Thing" for Peter Norton?

Norton, it seems, decided the Next Big Thing was the IBM PCjr and decided to become the wizard of Juniordom. The result was a three-book contract with Microsoft Press for Junior books.

Well, you take your chances in this business. We still like you, Peter, but that new Rolls may just have to wait a bit longer.

The Numbers Shuffle

Okay, so it's not important, but we thought you'd like to know anyway. Here's what you do:

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(123,454, say). Type on the Note Pad, or in *MacWrite*, or in a "Get Info" box. Now select the number and cut it to the Clipboard. Now, open up the calculator.

Since the calculator is now the frontmost "window," choosing Paste from the File menu will slam your number onto the calculator. Do it.

Notice what happened? Not only was the number pasted onto the calculator, but the buttons flashed (as if they were being clicked) and the calculator beeped.

Is this important? Of course not. We admit it. But it does show that the Mac designers paid exquisite attention to detail—and obviously had a lot of fun making Macintosh.

Every Microsecond Counts

It's tough to suggest ways to improve Macintosh, but we finally have one: Spin the drives a bit longer.

Macintosh, granted, is a speedy machine. But quick hands can coax even more speed from Macintosh. By making selections rapidly, it's possible to "stay ahead of the drive"; in other words, to choose new commands before the disk drive stops spinning. Because it takes time for the drive to come up to speed before reading or writing information, quick selection of disk-based commands delivers a perceptible increase in speed.

Apple, of course, could have written software to spin the drives a bit longer before "powering down" after commands. But they didn't. Some of the Japanese MS-DOS computers, however, do use this trick to increase performance. Now, if we may offer a suggestion for the next update of Macintosh....

One More Suggestion

Well, there is one more (tiny) suggestion we'd offer to Apple. It's about the Command key. You know, the key with the cloverleaf symbol, located to the left of the space bar.

The Command key looks suspiciously like what are called control keys on other computers. Control keys are held down while a second key is pressed. The "control key combinations" (as they're called) are used to give—yup—"commands" to the computer. Many programs on other computers (*WordStar* springs to mind) make extensive use of control key combinations for a multitude of commands.

Control keys, though, aren't usually found to the left of the space bar. Typically, they're placed where Apple put the Macintosh caps-lock key (next to the letter A).

So here's the suggestion: Reverse the positions of the caps-lock and Command keys. Fast typists could then take advantage of "control key–like" combinations without the contortions of holding down the Command key (with their little fingers) while striking another key.

Maybe this is all Apple's way of nudging us to grab the mouse. That's okay: We like grabbing the mouse. But couldn't we have our cake and eat it too, just one more time?

Filenames Revisited

Some of our readers took exception to a statement in last month's editorial. The sentence in question stated that filenames can be up to 255 characters in length. "No, they can't!" was the most frequent response.

"Yes, they can, too," is our dignified rejoinder. It seems that the Macintosh operating system software (held in ROM) does indeed provide for filenames of 255 letters. The point that may have been missed is this: The filename includes both the drive name and the name of the filename. Thus, the filename "This is my favorite MacWrite disk : And this is my favorite file on the MacWrite disk" is a valid filename. The words to the left of the colon identify the disk, and the words to the right of the colon identify the file.

So there. (Don't you miss those great filenames like "ACCNTSRC.DTA" and "MYSPRSHT.DIF" and "LTRTOMOM.TXT"? Oh, you don't?

Behind the Bomb

An alert box you might never see begins, "Sorry... a serious system error has occurred," then goes on to suggest either restarting your machine or "attempting to resume the current application, if possible."

That's clear enough. But what about the note in the corner of the alert box that reads thus: ID = 2?

Well, the "ID" stands for identification, and the numbers (1 through 24) represent system error codes. Useful information for program developers who want to know what's going wrong. For the rest of us, knowing what the numbers mean won't help much, except to satisfy idle curiosity (and impress our friends: "Oh, yeah, that's a trap error").

Idle? Curious? Okay....

1. Bus error
2. Address error
3. Illegal instruction error
4. Zero divide error
5. Check trap error
6. Overflow trap error
7. Privilege violation error
8. Trace mode error
9. Line 1010 trap error
10. Line 1111 trap error
11. Miscellaneous hardware exception error
12. Unimplemented core routine error
13. Uninstalled interrupt error
14. I/O core error
15. Segment loader error
16. Floating point error
17. Package 0 not present
18. Package 1 not present
19. Package 2 not present
20. Package 3 not present
21. Package 4 not present
22. Package 5 not present
23. Package 6 not present
24. Package 7 not present

Hard-luck users say ID 2 and ID 4 are the most common causes of system crashes. We've also heard that codes 17–24 aren't yet implemented, but were stuck in to have a few extra codes when "Big Mac" arrives.

It's the little things....

Mac's Color ROMs

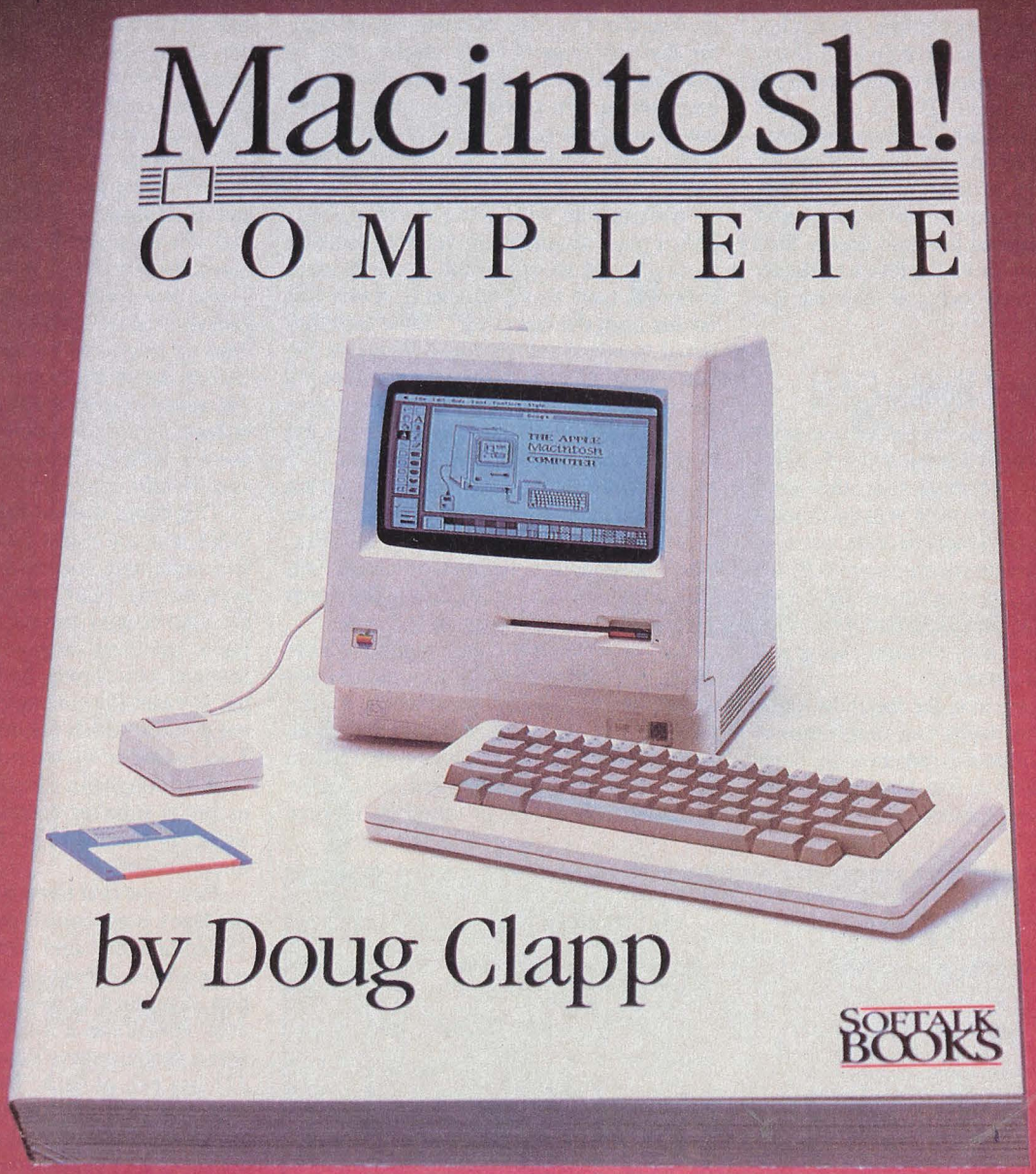
Well, the *ROMs* aren't pink or blue, but what's inside them offers intriguing possibilities for those thirsting for color. Investigation shows that the ROMs have built-in routines that allow eight foreground and eight background colors. Apple spokespeople say that the color routines are present to enable easy use of color printers. Others think that the color routines are a hidden clue to Mac's colorful future.

Mac and Lisa User Groups

Lisa Technology aficionados in northern California's Bay Area can share information, meet with experts, and buy computer-related merchandise at discount when they affiliate with two recently formed organizations.

The AppleLisa Association began late last year and has close to a thousand members, about half of whom are software development professionals. The group publishes a magazine, *Icon*, containing news, reviews, product announcements, letters, and tips. The group intends to be a clearinghouse for all information on the Lisa family (and may soon change its name to reflect the broadening of the scope to include Macintosh). *Icon*'s editor, Sid Hymes, says the group has ready access to the decision makers at Apple. Membership costs $40. For information, write to AppleLisa Association, Box 634, Santa Clara, CA 95052, or call Hymes at (415) 392-2800.

The Macintosh Users Group was started in February and is a national organization and a member of International Apple Core. Knowledgeable speakers from Apple and elsewhere are scheduled to address monthly meetings. The group has a newsletter, *MacMeet*, and the National Gallery, collections of graphics routines available on disk and in hard copy. Public-domain software developed by group members is available for sale, with blank disks offered at a discount. Special-interest groups focus on business, programming, graphics, games, education, music, and computer networking. Membership is $30. For information, write to Macintosh Users Group, 1077 Vallejo Street, San Francisco, CA 94133, or phone Stan Guidero at (415) 432-9713.



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Icon Bits

What's an icon? According to Apple's internal documentation, an icon is "a 32-by-32-bit image that represents an object, a concept, or a message." The 32 by 32 dots offer a total of 1,024 dots for icon-building.

Of course, a limited number of dots means a limited number of different icons. In this case, the number of potential icons would be a figure of several hundred digits. That should be enough potential icons to satisfy most software developers, at least for the next few months.

Build-It-Yourself Modem Cable

For those of you who've already scooped up an Apple modem but can't find a cable, we present here a cobble-it-together-yourself cable. (Yup, that's right; you can't use a standard computer-to-modem cable, because Apple uses a different connector on both the modem and Mac.) You'll need two DB-9 male connectors, some five-conductor cable (four will do; skip pin 6; keep reading), some solder, and a bit of patience.

A few words are in order about the cable diagram. The Mac needs only three connections to the phone port to run correctly, those being the transmit data line, receive data line, and ground wire (a reference point for all other signals). Those signals are found on pins 5, 9, and 3, respectively, of the Mac phone connector. (Incidentally, you may have noticed that the point of reference for naming the data lines is the computer; that is, transmit data refers to the data the Mac is transmitting. The modem is actually *receiving* that data.) But if the Mac needs only three wires, what is the rest of the gar*bage* for?

Well, to start with, while the Mac needs only three lines, the modem wants more. In particular, all modems, the Apple modem included, have an input (that is, a line that comes from the computer) called Data Terminal Ready. Data Terminal Ready is the computer's way of telling the modem it's connected and ready to go. Mac doesn't have a line dedicated to the DTR signal, so the cable simply connects the modem's DTR input to a constant twelve volts that is on the Mac connector; that at least says the cable is plugged in, probably correctly. (Incidentally, the Apple modem can supply its own DTR signal when needed; simply flip down DIP switch 3 on the back panel.)

Now as to the weirdness at pin 7: Carrier detect is a signal generated by the modem to let the computer know when it (the modem) has made a successful phone connection with a remote modem. (A modem can unambiguously tell when it has successfully connected to another modem because it will hear the constant, precisely regulated tone, known as the carrier, generated by the other modem.) Again, the Mac doesn't have an input dedicated to the carrier detect signal; in fact, the only available input the Mac has is a MacUnique signal that Apple has dubbed HSC, for high-speed clock input. (In electronics, a "clock" simply refers to a regularly repeating electrical signal.)

You might have heard that Mac's I/O ports can run at up to one million bits per second, and now you know the key to that high-speed operation: Feed in a high-speed clock on pin 7. For low-speed operation, the Mac can generate its own clock, thank you, which frees up that input for another use. By connecting that input to the modem's data carrier detect output, it will be possible in the future for software to determine when a connection with the remote modem has been successfully completed.

That takes care of the five wires in the cable, but you might be curious about the four remaining unconnected pins. Taking it from the top, pin 1 (on the Mac connector) is called chassis ground; it's somewhat similar to the third, or ground, lug on a three-prong electrical plug. In the Mac's case, that pin is internally connected to pin 3, the signal ground, which means we can leave pin 1 unconnected on the cable.

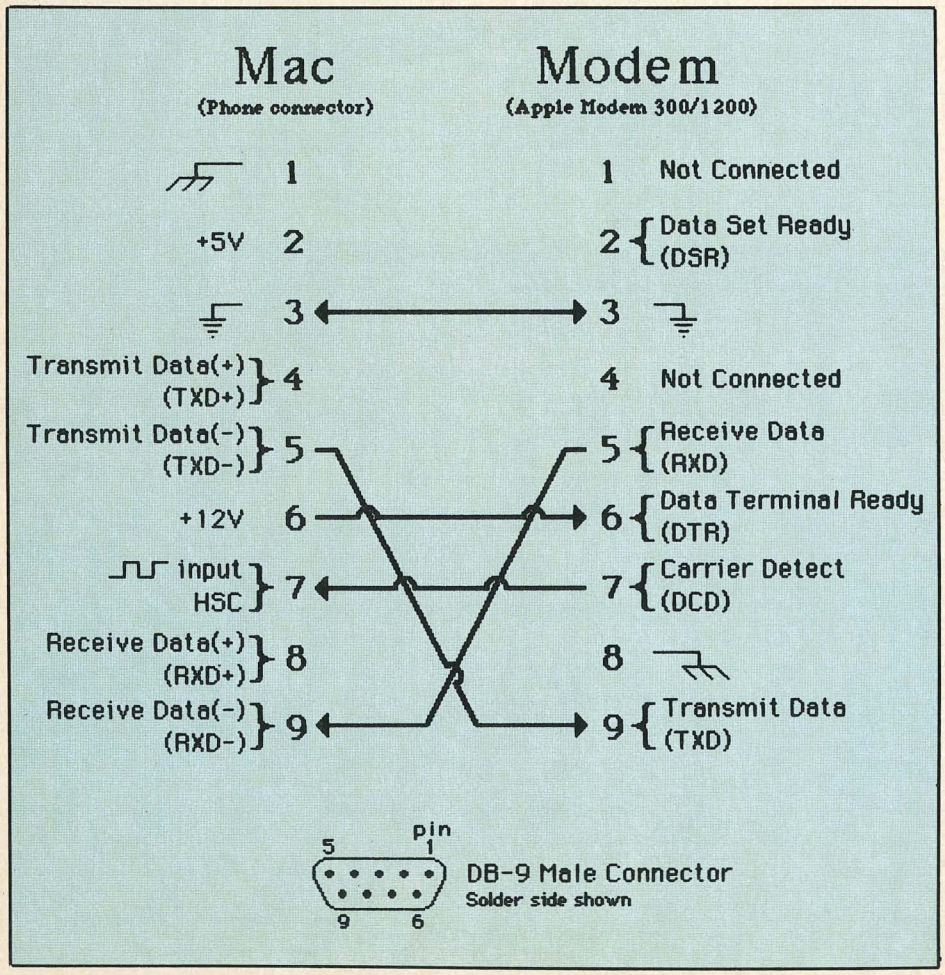
Pin 2 supplies a constant five volts, much as pin 6 supplies a constant twelve volts; we've no use for it, so that pin too is left unconnected.

Have you ever been confused by hearing the Mac's ports sometimes being called RS-232-compatible and other times RS-422-compatible? There's really only one important difference between those two standards: RS-232 has a single transmit data line and a single receive data line, whereas RS-422 has two of each. The second transmit data line is always the inverse of the first; the second receive data line is likewise always the inverse of the first receive data line.

While that might sound like a waste, it turns out that transmission schemes using such *double-ended* signals can be made to run far faster than systems using *single-ended* signaling schemes. RS-422 was meant for higher-speed transmissions than RS-232, so it uses double-end signaling (also called "differential" signaling). Relatively speaking, modems run at a low rate of speed, so RS-232's low-speed and signal-ended transmission scheme is quite sufficient. Since RS-232 is single-ended, pin 4, always the opposite of the data on line 5, is not needed in this cable.

You'll note that the transmit data line needed for RS-232 is labeled Transmit Data(+) and is on pin 5; the data on pin 4, labeled Transmit Data (−), is always the opposite of the data on pin 5, and would be needed only in an RS-422 system. The same thing goes for the inverted receive data line, pin 8.

Happy soldering!—Kevin Goldstein



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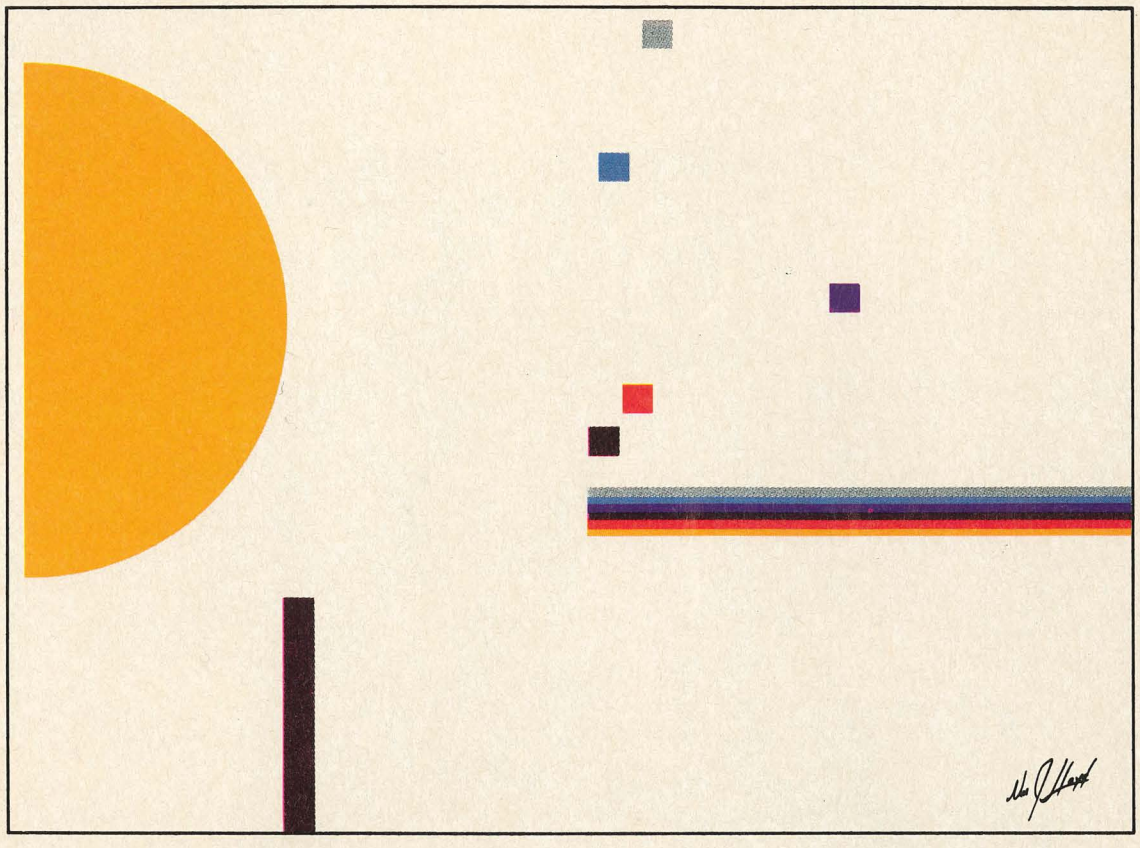

Would da Vinci have settled for a Crayon?

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ADVENTURE

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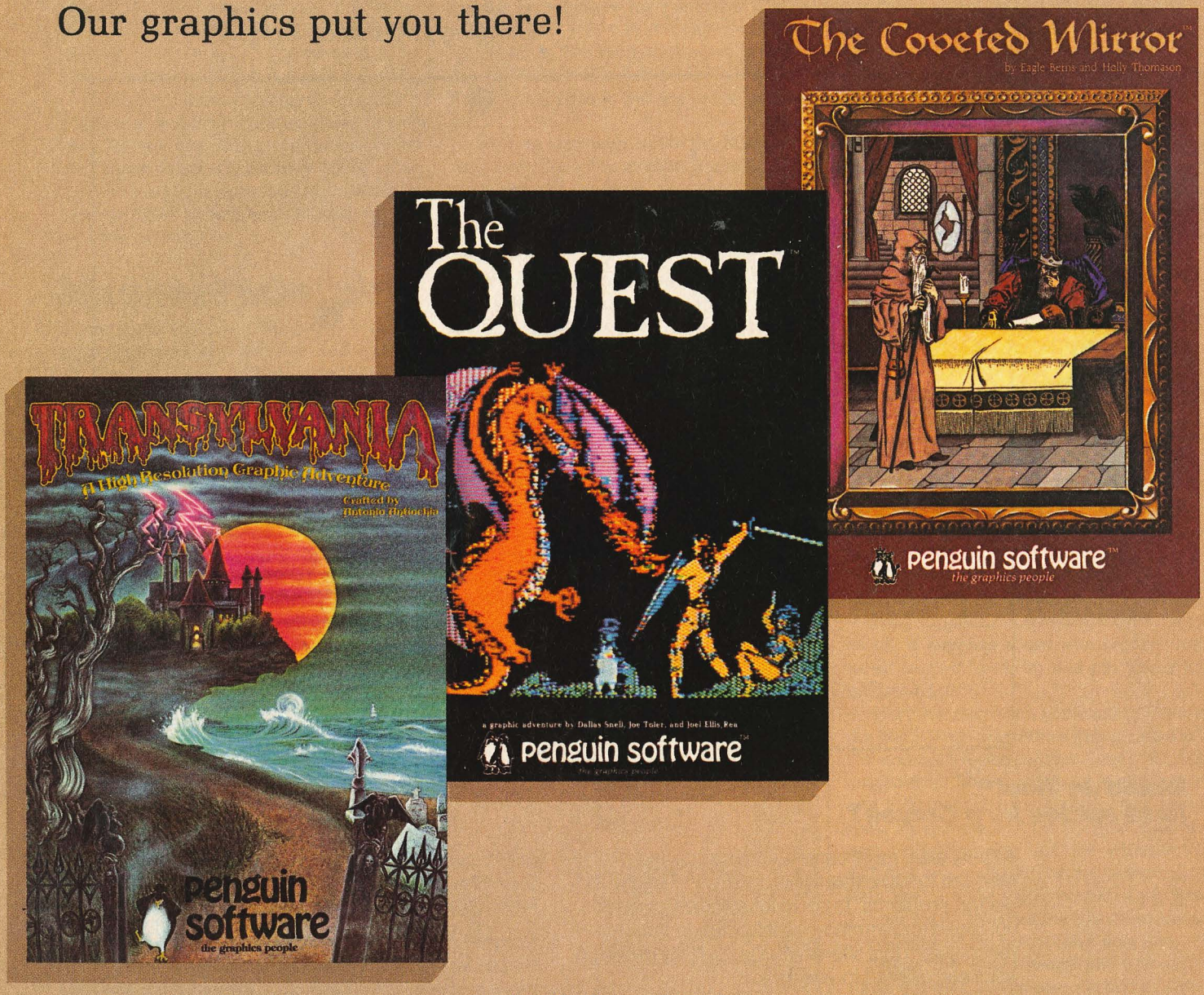

Thoughtful prose and stunningly detailed graphics by some of the best computer artists bring life to the Penguin Software adventure series. Whether in the beautiful detail of Transylvania, the expanse of The Quest, or the animation throughout The Coveted Mirror, our graphics make you feel like you're there, experiencing the adventure as you play.

The Penguin adventures are or will be available on disk for the Apple II series, Atari home computers, Commodore 64, IBM PC, and Apple Macintosh.
Double-sided 5¼" disks are $34.95, and Macintosh disks are $39.95.
Graphics created with The Graphics Magician.

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