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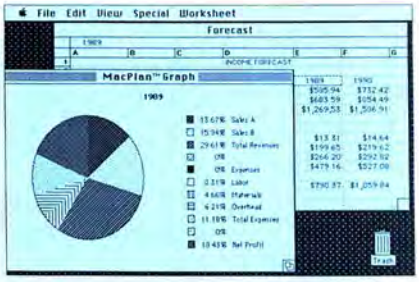

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Robert Forras, MacTimes

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John Sculley, Apple Computer, Inc."

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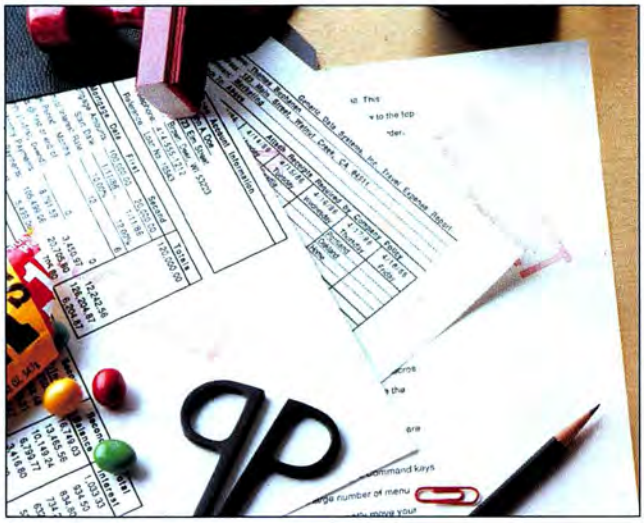

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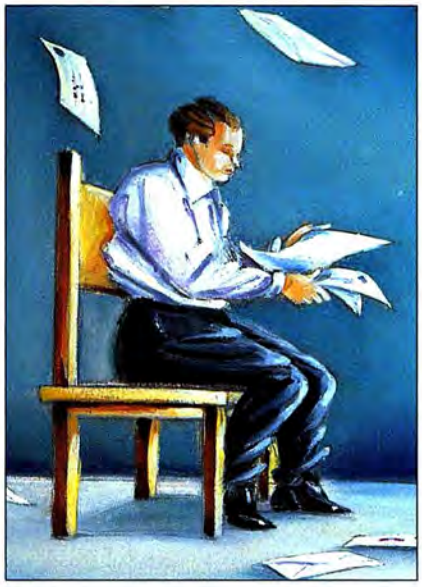

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Thought For The Month: "The simplest schoolboy is now familiar with facts for which Archimedes would have sacrificed his life."—Ernest Renan, 1823-92

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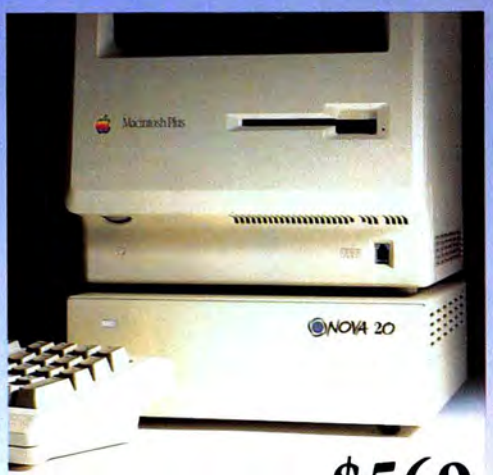

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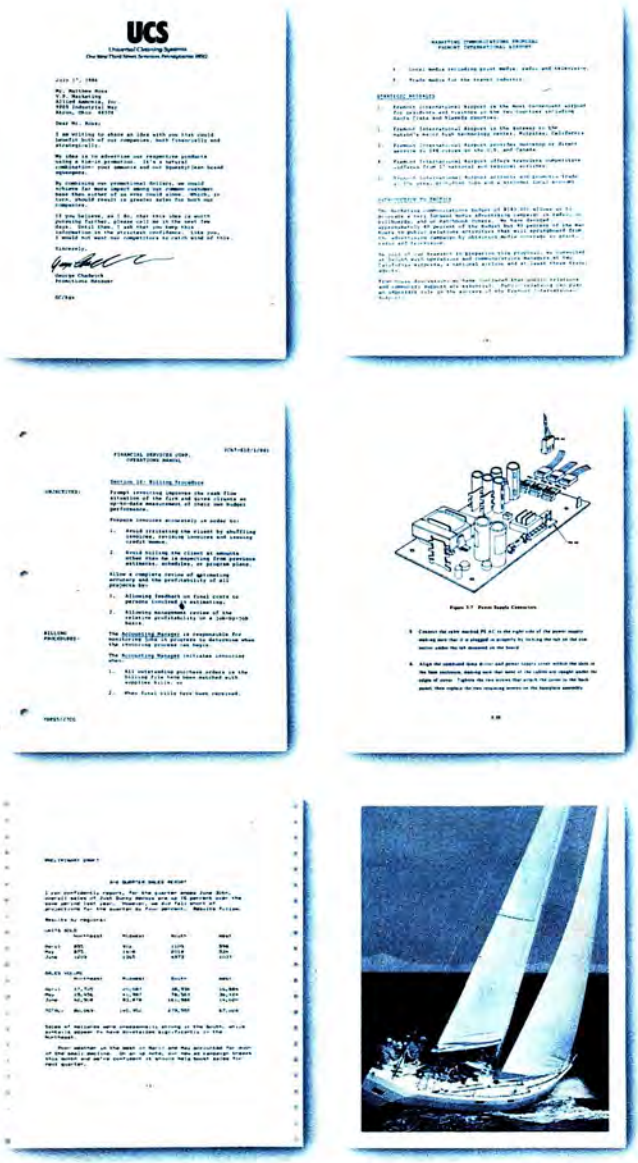

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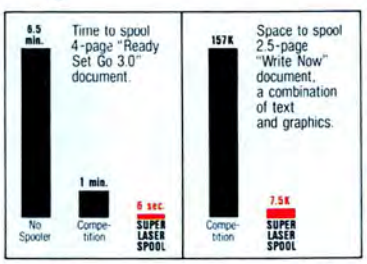

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But don't take our word for it. Software Digest, a leading consumer organization, rated Back to Basics number one in overall usability when compared to products costing as much as $995 and, for the past two years, Back to Basics has won the *A+ Magazine Software of the Year Award* for Macintosh business accounting systems thanks to the votes of over 20,000 Apple users.

No Experience Required

Back to Basics assumes you're an expert in only one business—your own.

- Installation of Back to Basics is painless — read only seven pages in the manual and *spend 30 minutes* using our screen menus.
- If you need to brush up on your accounting, use our accounting primer and tutorial, written by Harvard Business School Professor, Robert N. Anthony, plus our business section on how to handle everyday accounting dilemmas.

$199

Back to Basics Accounting System became a best seller priced at $525. Now, as a result of reduced expenses, we are able to offer all three modules — General Ledger, Accounts Receivable and Accounts Payable — in a complete set for just $199.

Proven Power

Peachtree has long been the first name in accounting software and the powerful features we've included in Back to Basics prove we understand what you're looking for.

- Complete integration of General Ledger with Accounts Receivable and Accounts Payable.
- Single transaction entries up to $999,999.99 and year-to-date totals up to $21,000,000.
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- Void transaction facility automatically creates reversing entry.
- *More than 30 reports* can be viewed on screen or printed.

Macintosh Specific

Back to Basics was written specifically for the Apple Macintosh, not simply converted from another computer version. It uses the Macintosh interface (mouse and visual icons) for system operation and groups functions into on-screen "file drawers" for organization and ease of use.

Back to Basics was a featured accounting system in Apple's initial ads for the Macintosh and is backed by Peachtree's outstanding support, labeled by *InfoWorld* as "the finest in the industry". Support is available as you need it, at a nominal charge directly from Peachtree or through our network of local authorized support centers.

Money Back Guarantee

When you purchase Back to Basics directly from Peachtree Software you're protected with a 30-day, money back guarantee (an option even the most expensive accounting products don't offer).

If you're not satisfied, simply return the complete product in saleable condition within 30 days and your purchase price will be promptly refunded. For full details, call the toll-free telephone number below.

Invoicing Coming Soon

Back to Basics Invoicing will soon be available for the Apple Macintosh at an introductory price of $95.

Hardware Specifications

- IBM Personal Computer, PC/XT, PC/AT with two floppy disk drives or one floppy disk drive and a hard disk.
- Apple II+, IIe, IIc, IIgs with 128K and two disk drives or hard disk.
- Apple Macintosh 512K or Plus with two disk drives or hard disk.

Features That Made Back to Basics A Best Seller

GENERAL LEDGER
- On-line help displays Chart of Accounts.
- MTD and YTD show on income statements.
- Allows automatic Journal entries.
- Check processing and printing capability through Cash Disbursements
- Optional cost of sales ranges.
- User modifiable Chart of Accounts included.
- Allows up to 3 checking accounts.
- Up to 10 departments with separate income statements.

ACCOUNTS RECEIVABLE
- Calculates receivables on balance forward basis.
- Prints statements and mailing labels.
- Allows automatic posting to General Ledger.
- Accepts partial payments.
- Calculates finance charges.
- Up-to-date customer information can be scrolled for review at any time.
- Customer ID's can be alpha or numeric.
- Verifies customer credit limit.
- Calculates up to 3 sales taxes per entry.

ACCOUNTS PAYABLE
- Up to 10 vendor payment terms.
- Calculates cash discounts.
- Accepts partial payments.
- Automatic posting to General Ledger.
- Prints vendor mailing labels.
- Up-to-date vendor information can be scrolled for review at any time.
- Customer ID's can be alpha or numeric.
- Prints computer checks or processes hand-written checks.
- Invoices automatically or manually selected for payment.

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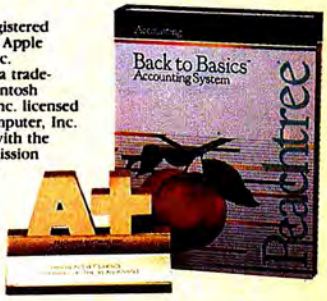

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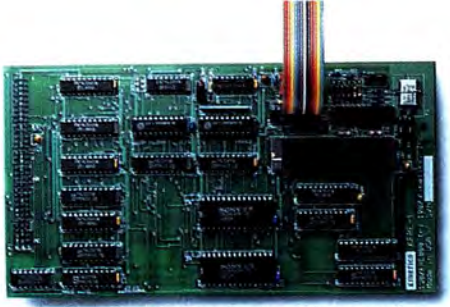
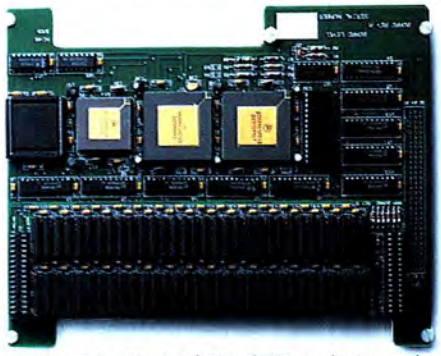
Macintosh SE. The perfect place to start building—equipped with a built-in 20MByte hard disk (or a second internal floppy) and one internal expansion slot.



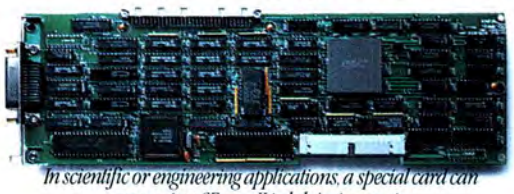
Plug a card into the SE and make a quick connection with mainframes and networks.



Floor it. In a Macintosh SE, a 68020 accelerator card gives you license to exceed the speed limit.

Add a 5.25" disk drive, and (with the right card) you can use information created on IBM or compatible PCs. Or run MS-DOS programs.

A new keyboard, re-designed for the new generation of Macintosh computers.



In scientific or engineering applications, a special card can connect an SE or a II to lab instruments.

The new AppleColor™ High-Resolution RGB monitor can create brilliant hues and true gray scale on your Macintosh II. In finely-detailed 640 x 480 pixel resolution. Also available: a 12" monochrome monitor.

How to build your

You've heard about them. You've read about them. By now, you've probably even seen them.

Our latest leaps in technology, the new Macintosh™ SE and Macintosh II personal computers, have been getting their share of press.

But to add to what you may already know, we'd like to tell you more about their most powerful feature: expandability.

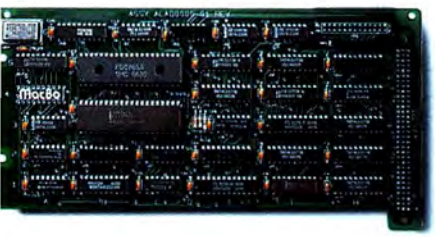
It's something we made possible by adding expansion slots. So you can easily customize your Macintosh to meet the demands of any business.

You can, for example, set up a system that's perfect for major-league number crunching. Or add features to give you even greater power for Apple Desktop Publishing, like displays as big as 21 inches.

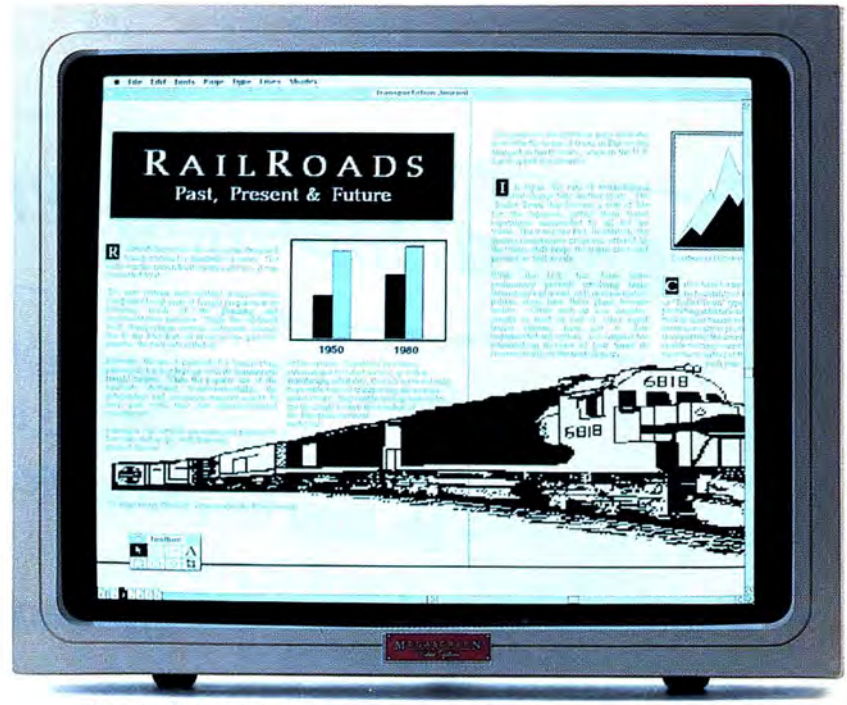
The SE sports one expansion slot. While the Macintosh II takes the idea of expansion to the extreme—with six 32-bit NuBus slots. Which have the good sense to configure themselves, and require you to do nothing more than plug in the options of your choice.

Such as an 80286 co-processor card that lets you run programs written for MS-DOS computers. And a video card that produces near-photographic images

Presenting the Apple Extended Keyboard. Complete with 15 programmable function keys, as well as separate cursor and numeric keypads.



Via the expansion slots, you can add an AST co-processor card to either the SE or Macintosh II.

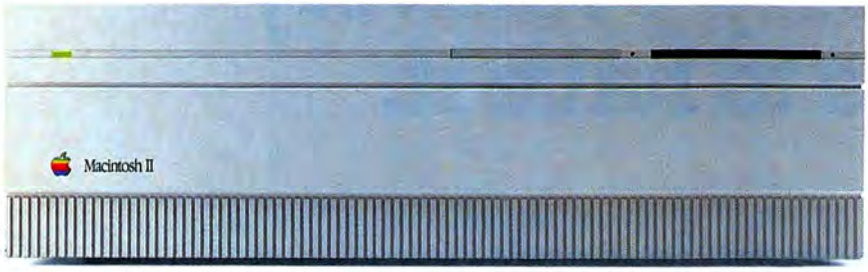


With either the SE or the II, a large-screen monitor (available from other manufacturers) can give you the big picture. And show you up to two pages at once.

Using one of the II's six slots, you can tie into the company mainframe or an office network like Ethernet.

If you lose it, you can't use it. The Apple Tape Backup 40SC safeguards the work on your hard disk. Pronto.

Build yourself a power station. The Macintosh II has a lightning-fast 32-bit Motorola 68020 processor, a 68881 co-processor and six NuBus expansion slots.



The Macintosh II Video Card can generate colors 256 at a time, at up to eight bits per pixel. Using a palette of over 16 million colors.

own Macintosh.

from a palette of over 16 million colors.

The new Macintosh computers are built to be customized in other ways, too.

You can set up your SE with up to four megabytes of memory, so it has the power to run the most sophisticated programs. And configure the II with up to eight megabytes of memory on the main board, or a walloping 1.5 gigabytes using the expansion slots.

As for storage, there's plenty. With either computer, you get the option of an internal hard disk. Or an external one that can store up to 80 megabytes.

You can also choose between two keyboards. One of which has 15 function keys that come in handy when delving into special applications.

And as you might expect, we've done more than just give you a very good way to build the Macintosh of your dreams.

We've also arranged to make sure you have the perfect workshop: an authorized Apple® dealer.*

Where you can get some expert assistance choosing your options.

So all you have to do is stop in. And get to work.

The power to be your best.™

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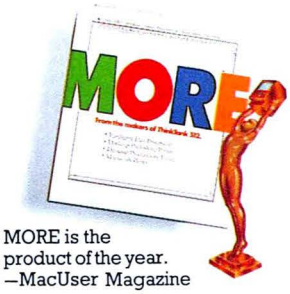

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by Neil L. Shapiro

Aprés Moi, le Deluge...

Letters, letters, letters! My desk, never the cleanest spot in town to begin with, is overflowing with response to my previous editorials on why Apple needs a Consumer Evangelist. So many of you were moved to write that I decided to use this month's column to respond informally. (You'll notice that reader comments appear in italic, while my comments appear in straightforward roman type. This is just so you don't confuse them with the letters column.) So, herewith, The Reaction.

JOEL BEACH, HOLLIDAYSBURG, PA: *I wonder if the words "working relationship" have any meaning to your Editor at Large.... Everybody is in business to make money.... Your Editor has an Apple taste but a Commodore mentality.... Why does Mr. Shapiro feel that he should be able to nickel and dime six different dealers and still remain in their good graces? Had your editor gained a friend at one of the dealerships I'm sure he could have acquired his modem cable. But his abrasive approach caused all the local dealers to tell him in effect to "go shit in his hat." You would think the message would sink in....*

EDITOR-AT-LARGE: OK, I grant that dealers are in business to make money. But I feel that if a dealer makes his money by doing repairs that are not needed, by overcharging or by scrimping on support time, that the consumer has a right to scream. I also do not think you should have to make a friend to buy a modem cable. Besides, I was as obsequious as any forelock-tugging, desperate consumer could be when I was talking to these modem-cable-retentive cads. It didn't help. And I don't own a hat, thank you.

BENJAMIN A. ISGRO, WAHIAWA, HI: *I was a first time computer buyer and purchased a Macintosh on Nov. 21, 1986. I visited four Apple dealers.... I found them to be very impatient with the new computer buyer. They somehow expected me to be completely familiar with their products and software.... I was made to feel that I was privileged to even be in their store.... I purchased my computer from the dealer I felt was the least abusive. What a choice!*

E-A-L: And it's a choice that we all, as consumers, should not have to make. If Apple established a Consumer Evangelist to call, such dealers could be quickly weeded out or educated in sales and support as more and more people from the area in question called in with questions that a dealer should have answered.

WILLIAM S. D. READ, CHARLESTON, SC: *Neil L. Shapiro makes some valid points in his tirade against dealers. Although I agree with some of his points, I disagree with others.... A Macintosh is easy to set up and use, but some of the problems that appear in everyday use of the machine can require quite a bit of experience to solve. As a dealer, the greatest problem I face, daily, is people with questions and problems.... It is discouraging when I have to help someone that I know bought his equipment elsewhere — and will continue to do so in the future.... Mr. Shapiro hit the target when he suggested that Apple set up a "Consumer Evangelist." There is a dire need for a department.... One bad Apple (dealer) does not spoil the whole bunch; but it sure does not help the reputation of others or of Apple.*

Any dealer that refuses or is unable to upgrade such things as System software is, in my opinion, guilty of dealer malpractice.

KAREN STOLPER

E-A-L: William, you sound like the sort of dealer I sympathize with. You seem interested in helping people out and yet have to make a living. One thing I would suggest is to adopt a little "Apple Evangelism" into your own sales philosophy. How many people that you have helped, who bought equipment elsewhere, became good customers of yours? I'll bet quite a few. The opportunity to help is also the opportunity to "evangelize" or to sell your own store and service as a real alternative. It's interesting that you do see the need for a CE, but you're not the kind of dealer who would likely have to worry about a call from Cupertino.

DANIEL CHAUCER, MIDDLE VILLAGE, NY: *Neil Shapiro...was right on. My experience with local dealers matches his own and I, too, have opted for mail order and not because of price.... I have still to find a dealer who will let me upgrade anything and that from dealers with whom I have spent a considerable sum.... The usual answer is: "We do not have the latest version," or, "We do not have the time."*

E-A-L: Any dealer that refuses or is unable to upgrade such things as *System* software is, in my opinion, guilty of dealer malpractice. Apple Computer counts on their dealer network to keep their customers upgraded to the latest products. If some dealers fail, Apple stumbles. If enough dealers fail, Apple could well fail. You need a Consumer Evangelist to call....

DON WIUR, DIX HILLS, NY: ....*"Go back to where you bought it to get service." It becomes a matter of how far (literally as well as figuratively) one is willing to go to stand up for one's principles. It's just not worth it to me to travel great distances to get the service I should be getting around the corner...*

E-A-L: See William Read's letter above. I do think it is necessary for people to realize that dealers do have a gripe in that support of a non-buying public is wearisome. But dealers also need to realize that support is often a two-way street. Had you, for example, met a friendly dealer in your area perhaps you would be buying at least software and peripherals locally. As you were never met halfway, it seems this was never an option. It's an equation wherein both sides lose. But dealers could at least try to better balance it.

VERNA SCHAFFER, KAUAI, HI: *I'm so sorry Mr. Shapiro didn't continue his quest for a "good" Apple dealer to the island of Kauia...we would have been more than happy to sell him his modem cable.*

DAVID V. JAMAN, GARDINER, NY: *We're writing to let you know that at least one*

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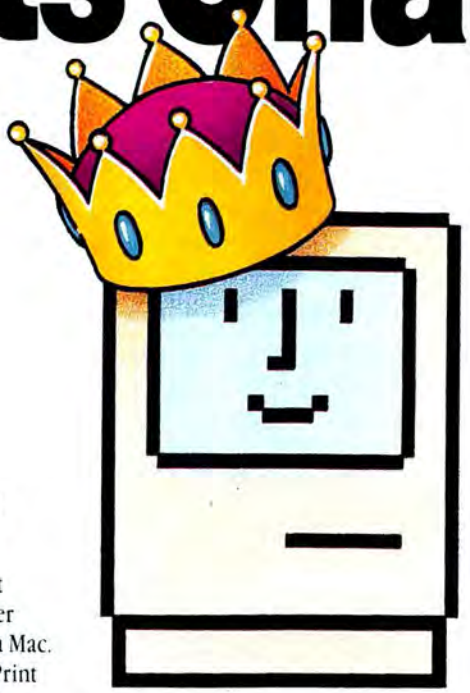

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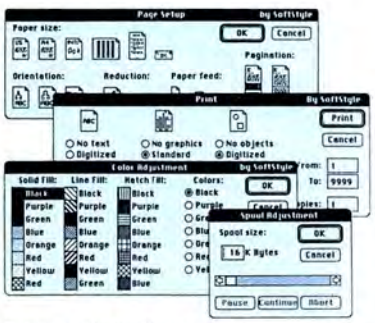

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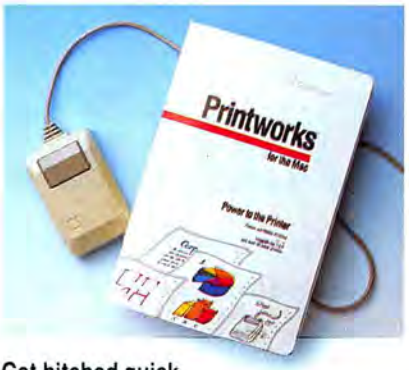

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Apple dealer that matches your ideal of a dealer does exist and may be worth a trip to Newburgh, NY!

R. THERON, CORONA, CA: *Perhaps you should come to California.... Out here, they (dealers) are cutting the prices right and left on the big ticket items. And if you tell them you have seen it at, for instance, the store across town for less they will come down in price to match it....*

NATHAN R. KEITH, LACEY, WA: *When you live in the big city you get big city service! Come here to the northwest and you will get good service, a discount, a smile and the appearance that the sales people only have you to wait on....*

E-A-L: OK, OK, OK, I give up, uncle! Really, the editorials were never meant to say that all Apple dealers are less than gems. I know many people, and knew them before this response, who are very pleased with their local dealerships. Frankly, I think that Apple probably has better dealers on the whole than most computer companies. But my point is, what happens to the person who does not have access to a "model dealer"? I think that there are enough people who do have legitimate complaints and who cannot find a dealer worthy of their business that Apple needs to help coordinate things at the consumer level. My suggestion of a department called the Consumer Evangelist would not be of much use to the thousands of happy Apple customers. But there are also many customers who are not happy. We can't just tell them, "Cheer up, other people have it better than you."

FELIX LEDESMA, BROOKLYN, NY: *I was delighted to read your editorial.... I bought a Mac Plus from [deleted] as part of a Lisa trade-in. The HD-20 went bad and I brought it in for repairs under warranty. It took a month and four days and approximately 15 telephone calls to get the HD-20 back. I consider this kind of service completely unacceptable.*

E-A-L: Computers such as the Macintosh are often crucial to a person's business or livelihood. The sort of service delays and obfuscations your letter described make the point that service can be a lifesaver — or a killer. Obviously you would not buy another computer from that dealer. I hope you would buy another Mac somewhere, though, if the need should arise. But how many customers like you are going to blame Apple rather than the dealer? Apple needs to protect their market by protecting their customers.

ROBERT C. HUNT, SANTA ANA, CA: *How gratifying to know that I am not the only one who thinks that the average Apple*

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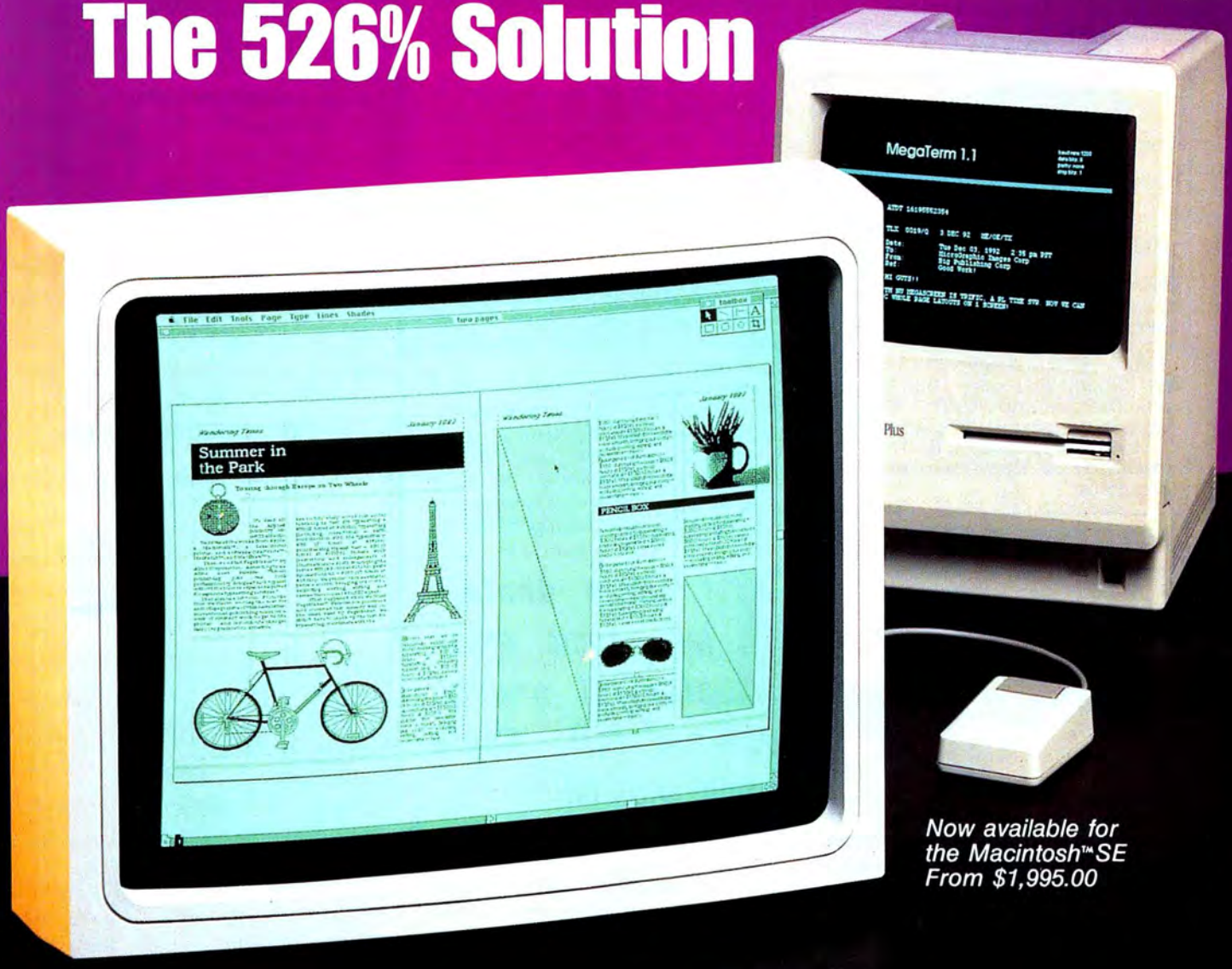

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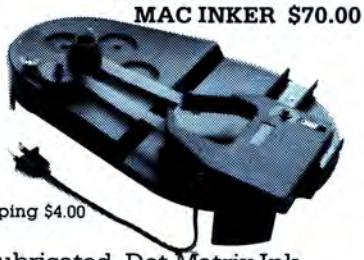

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dealer would summarily starve if forced to work in a competitive environment.... On top of [a] blanket of ignorance, throw a liberal splash of disinterest in anything but a major sale, and a cast iron sign asking, "Did you buy your machine here?" The last is particularly galling.

E-A-L: It's pretty galling to me, too. As we've seen above there are, indeed, dealers who realize that support now may lead to sales in the future. But, overall, it seems that many dealers assume an adversarial relationship to anyone who is not already one of their major customers. This is not the type of corporate attitude that, from what I know, Apple wants to see their dealers evince. I think it would surprise many people at Apple to learn just how many dealers really do have that "cast iron sign."

MIKE O'BRIEN, LAKE OSWEGO, OR: *I can certainly sympathize with your unpleasant experiences with the Apple dealers in your area. I used to get the same treatment from IBM dealers. However, one of the many pleasant surprises that came with my switch to a Mac was excellent dealer support....*

If some dealers fail, Apple stumbles. If enough dealers fail, Apple could well fail.

E-A-L: Yep, I've no doubt that Apple dealers are at least as good — on the average — as any other company's dealers. And I'm glad that your Apple locals are better than Big Blue's. But Apple has a better computer overall than IBM. They should have a better overall dealer network so that everyone who buys a Mac will feel as you do!

E. LERNER, ROCHESTER, NY: *Hurrah for your comments concerning dealerships! It seems to me that once the big expense of buying the computer is finished with, the dealers are not much interested in the little stuff like repairs, supplies, etc....* (Ed: Reader Lerner then explains how she avoided a $50 repair bill thanks to a repair tech who explained how she could solder in a $4 keyboard switch by herself.) *The reason why a 15-minute procedure costs so much is that there is a $50 minimum no matter what.... I think this is highly unfair, especially since I bring the machine to the repair center....*

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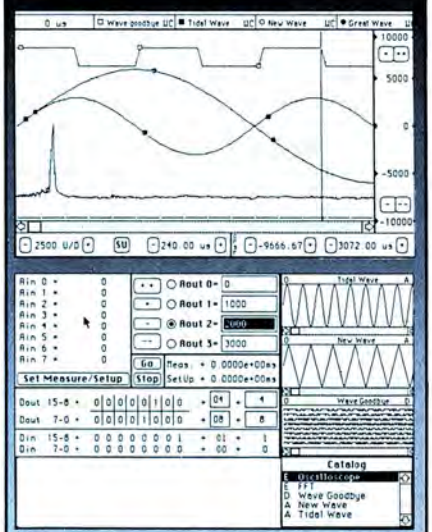

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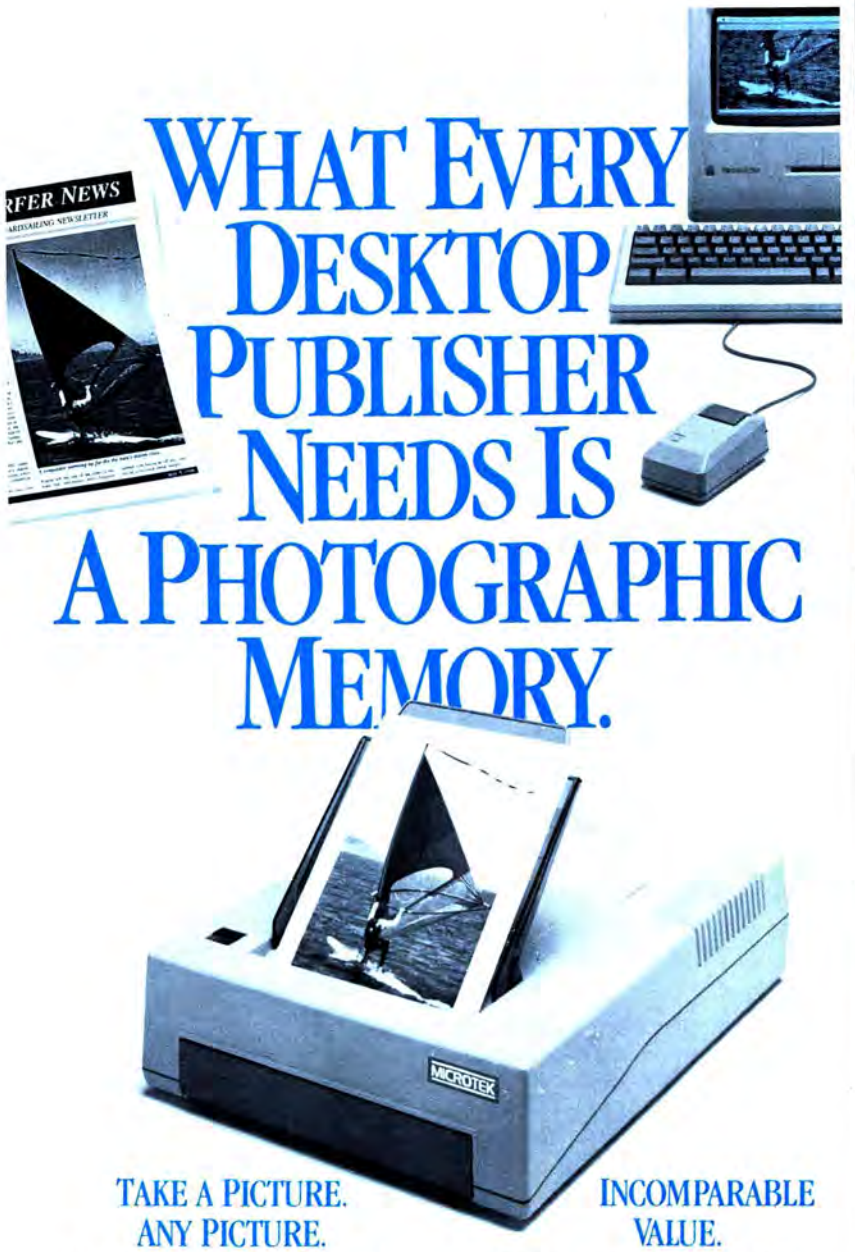

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E-A-L: Your complaint on repair pricing was echoed by a number of people. It seems that there are many repairs which are charged at rates that are not really reflective of the labor involved. Of course, this is true of all computer brands and also in many different areas of consumer electronics. Still, wouldn't it be nice if it could be different with Apple?

JAY JASON BARTLETT, MIAMI, FL: *...I am very upset with you as a journalist, professional and computer user, regarding your whole damaging editorial... If I could sell my inventory at Mac Connection prices I would have the biggest store in Miami... I am not an Apple dealer, just an independent software store.... You should be very proud of yourself to know so much about computers, and of course you knew it all when you first turned on your Apple II, 10 years ago (remember the * prompt)?.... I spend half my day...helping people.... Sometimes they haven't even spent a dime in my store. Most customers are happy... one even sent a nice big plant for the store. The plant had a retail value of $85 but she probably "got a deal" through Plant Connection.*

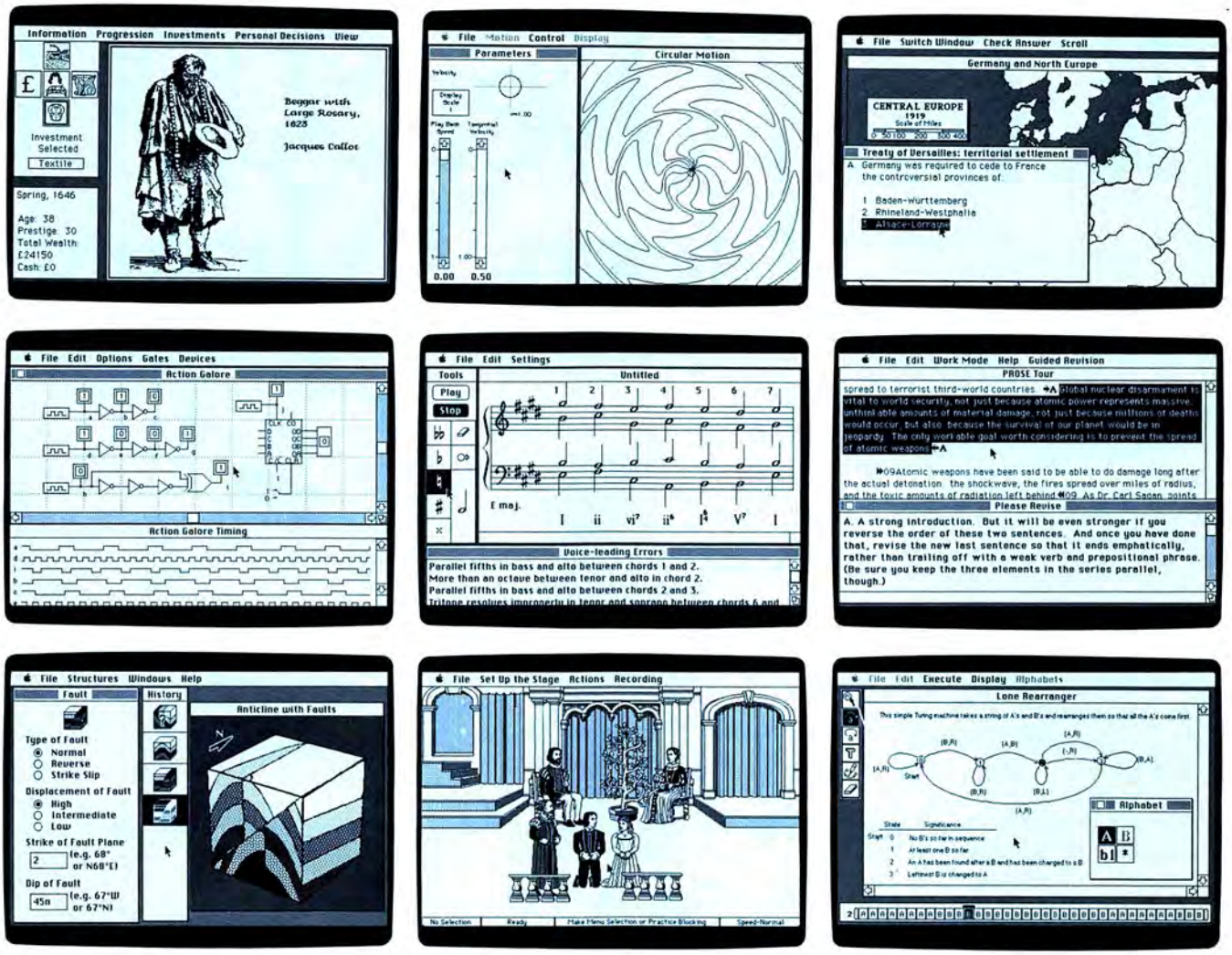
E-A-L: The first time I saw the asterisk prompt on my old Apple II, I called my local dealer and he told me it was not a very good machine anyway and why didn't I trade it in on an Ohio Scientific? You have the right idea, if you can support people through a purchase — hardware or software — it makes sense for them to buy from you at a fair price even if it is higher than mail order. Again, it is the dealer who does not give support, or who gouges his customers, on whom the Consumer Evangelist should be sicced. May your plant never wilt.

All of the above comments are just representative of the volume of mail that I've received. It's been exciting to hear from all of you, and I much appreciate your comments.

I think that what we've both shown is that a Consumer Evangelist is really needed — but that certainly not all dealerships are at fault. I am confident that Apple Computer will always strive to be the "best" computer company there is, in support of their customers as well as in their hardware design.

We'll continue to watch this issue.

[*Editors' Note: Due to the great interest Neil's recent columns on dealers have sparked, we will be awarding recognition to the best and worst dealers we hear of. Send your kudos and horror stories to The Consumer Evangelist, c/o* MacUser, *25 West 39th Street, New York, NY 10018. Please include all the details, gory or otherwise.*]



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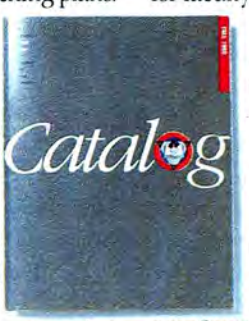

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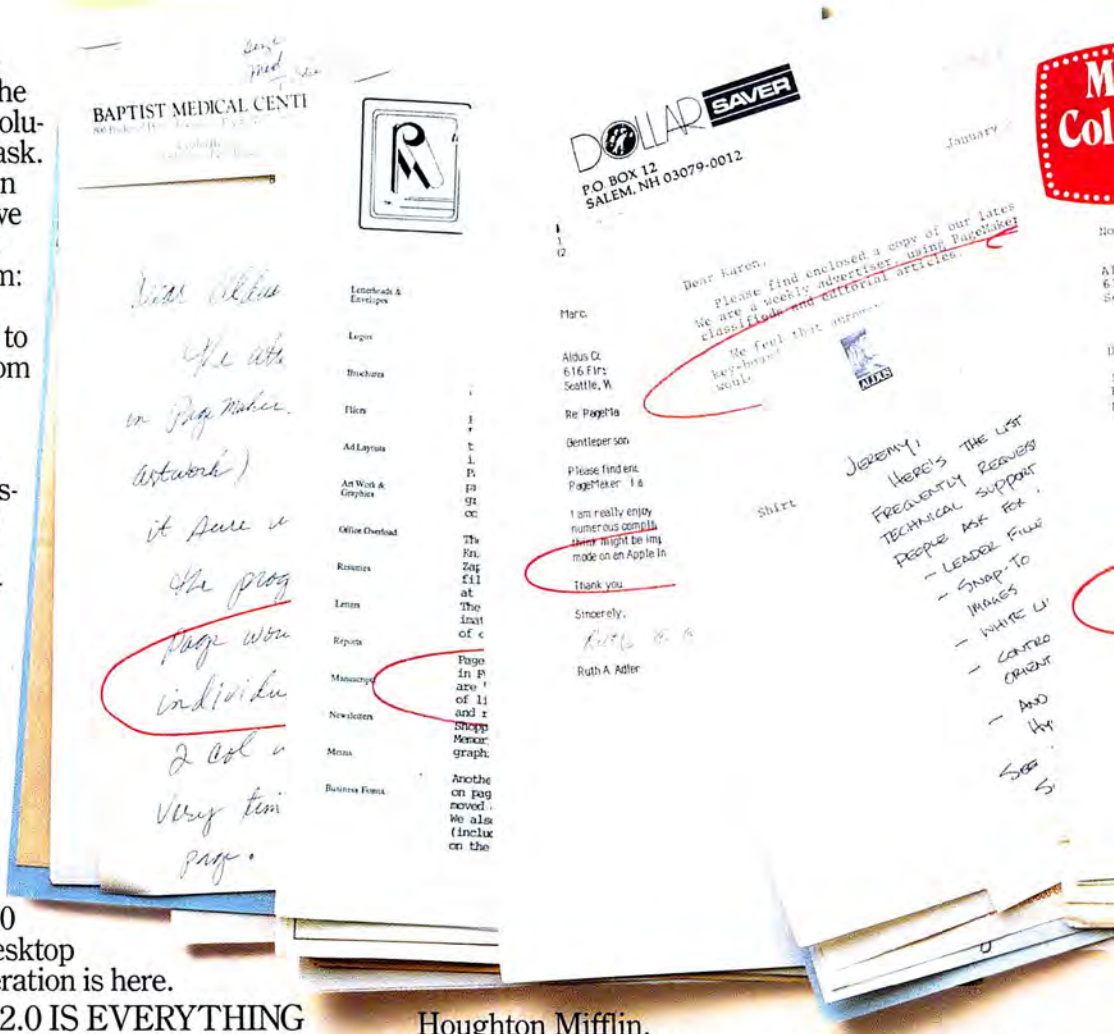

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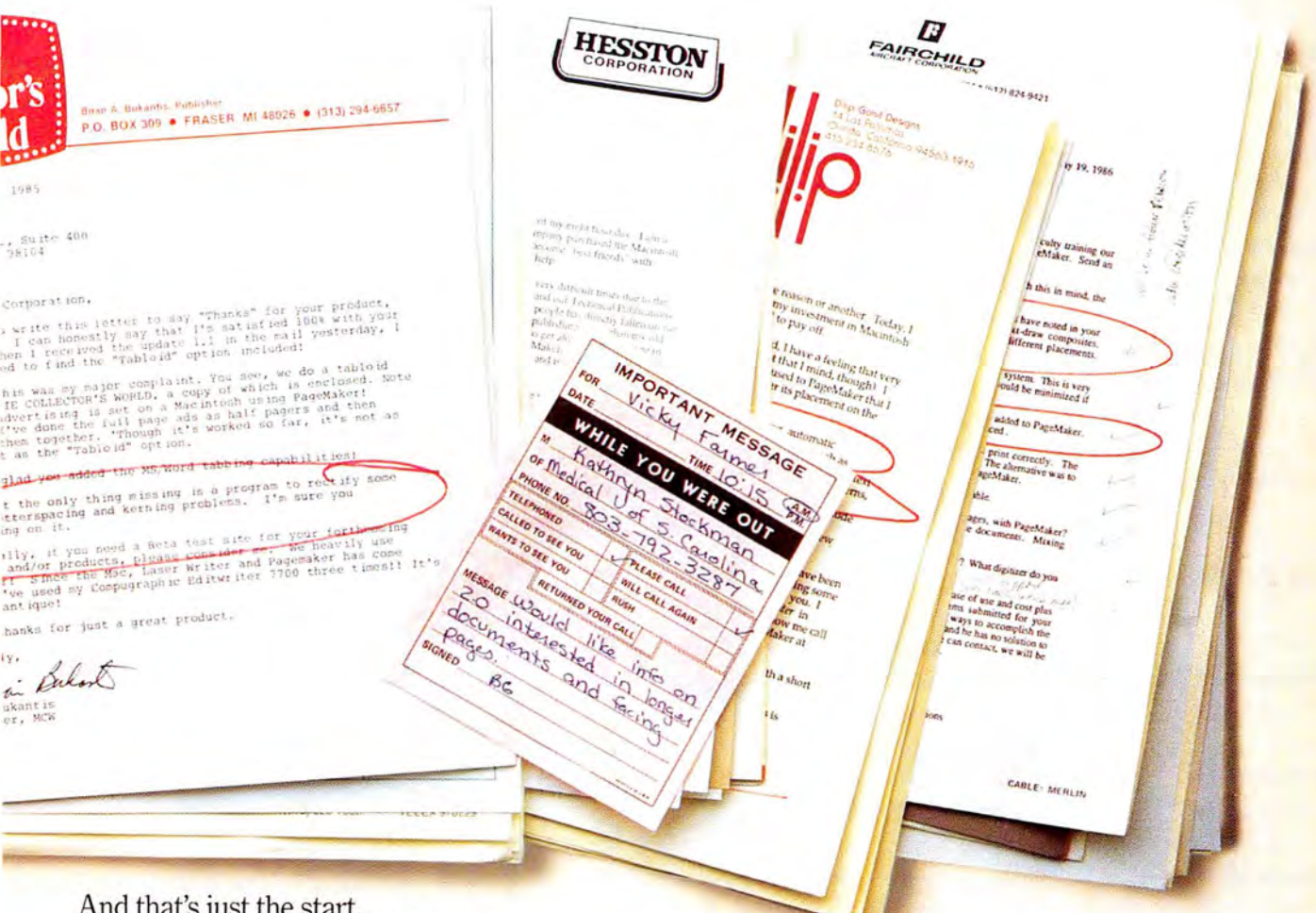

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Steven Bobker

We're always happy to hear from our readers (well, almost always), so keep sending your comments to Letters to the Editor, MacUser, *25 West 39th Street, New York, NY 10018. All letters become the property of* MacUser *and we reserve the right to edit any letters that we print.*

WHAT'S WRONG WITH THIS PICTURE?

It's puzzle time. In the February *MacUser,* MindWorks has an ad for their *MindWrite* word processor that shows a document displayed on the Macintosh screen, with printed output right next to it. The headline reads, "WHAT YOU SEE IS WHAT YOU GET."

I found seven differences — how many can you find?

1. The text is displayed in Geneva, but printed in Times.
2. None of the displayed and printed lines break in the same place.
3. The headline is displayed in all caps, but printed in upper and lower case.
4. The headline is displayed about half an inch from the left margin, and printed about three inches away.
5. The screen shows one paragraph under the headline; the printed page shows two.
6. The screen contains an underlined heading, "Innovative Features," that does not appear on the printed page.
7. On screen, the paragraph numbers are to the left of the paragraph; on the printed page, they line up with the body of the paragraph.

Sort of makes you wonder, doesn't it?

DANIEL P. B. SMITH
BOSTON, MA

MUSICAL NOTES

The brief description of *Professional Composer* in the Music section of MiniFinders states that the program is "aimed at music professionals." It doesn't quite hit the target, though.

Professional Composer does an adequate job for simple music: few staves, the same meter in all staves. The more staves in a document, the slower the program becomes, either for entering or processing notation. A document of, say, 20 staves, 22 measures is practically unmanageable. Differing meters in different staves — a common feature of contemporary concert music — cannot be done.

The program has severe problems with (1) printing copy that exceeds standard-length pages; (2) entering text other than lyrics; (3) positioning dynamics and other symbols.

In repeated contacts during the past year — by letter and by telephone — Mark of the Unicorn has been sympathetic, but has refused to provide information on what changes are being considered and when they will be released. It is, thus, still an open question whether the program will ever truly be a professional tool.

FRANK LEWIN
YALE UNIV. SCHOOL OF MUSIC

I also understand that the program has more ways of losing work than Mozart has notes. On the other hand, more than one professional musician of my acquaintance actually uses Professional Composer, *finding it useful even with some serious bugs. When we called Mark of the Unicorn recently, they assured us that a beta version of an upgrade does exist, and might even be on the market by the time you read this. By the way,* PC *does do nice lead sheets.* — LK

PIRACY IS PASSE

I like to think of myself as the average Mac user. Every day I use my Macintosh for word processing, *MacPaint*-ing, spreadsheeting or playing games. I love my mouse and can't understand why anyone would want to pay twice or three times as much for an inferior computer just because it's made by IBM. I have, in the year and a half I've owned my Mac, spent hundreds of dollars on software, hardware and publications, and have never pirated a piece of software.

For this reason, I can't understand Neil Shapiro's concern about software piracy. I am a university student, and I'd guess that there are a lot of Macs in the community, but I don't know of any cases of software piracy. It seems whenever anyone gets a copy of a new game, they're too busy playing it to copy it, much less give it away. Most people I know have the attitude, "I paid for it; so can you." Maybe this makes Mac users more responsible than other computer users, as I prefer to think, or maybe I just haven't met the ones doing the piracy.

Sure, I'd love to have a copy of *Dark Castles* gratis — who wouldn't? But I couldn't play a pirated copy without feeling guilty, and if I bought a copy, I wouldn't think it was fair to me or the publisher if someone else got a copy from me. I think most users keep buying even when they can copy — even copy protected stuff; I've never seen a copy protection scheme that hasn't been broken by someone.

So come on, Shapiro; give the rest of us Mac users a little credit.

M. STEVEN MCCLANAHAN
CHICO, CA

It's good to hear from a "legal" software user. I was pretty much assured of the absence of piracy at your university until I reached the second-to-last paragraph. Surely those people aren't cracking copy protection just to keep their fingers limber? — LK

On the other hand, many people "crack" only to be able to use the program easily off their hard disk. — SB

THE MICE HAVE IT

You award MiniFinder mice too generously. It's mouse inflation!

The business accounting software package that deserves five mice has not yet been released. *Insight* may rate four. The rest should get a maximum of three.

THEODORE A. KRAUSS, CPA
WESTPORT, CT

I more or less agree. And now that we have ½ mice, I think you'll find our ratings more discriminating.—SB

BY DEFAULT

I've just finished Philip C. Russell's terrific article "Dressing Your Mac For Success" in your February 1987 issue. As I use a variety of software products for a variety of purposes, I'm impressed by the frustration inherent in default settings, such as pre-checked menu items and control buttons, check boxes and radio buttons. In my opinion, the inability of the user to adjust the default settings constitutes one of the greatest inconveniences in using the Mac.

For example, I use a typewriter for good correspondence, driven by a Mac Port Adaptor with GDC Softwork's *Print Link.* To work correctly, the document must be set up in 12 point Monaco, yet every time I open *MacWrite* to start a new document, the default font is

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Your data is in jeopardy every time you use your hard disk. Why? Because if an application presents the dreaded bomb, the power flickers, or your hardware fails, you can damage your disk directory. Over half of the HFS formatted hard disks in daily use have some directory damage. Eventually this will cause you to lose from one to all of your files. The only way to prevent data loss is to have a second (backup) copy of your files.

DiskEnsure will make you feel safe and secure. Use it as needed to make backup copies of your files to 400K or 800K floppies - even large or "invisible" files that the Finder cannot copy to a floppy. With DiskEnsure's unique desktop interface you can specify backup by volume, folder, or file and exclude specific files from the backup. Subsequent volume backups are performed incrementally. This means that it only copies those files that have been modified since the last backup and removes those files from the backup disks that have been deleted from the hard disk.

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will keep your drives running at peak performance.

The more you use your floppy or hard disk the slower it becomes. Why? Because as you use a disk, the files on it become more and more fragmented. All disks are divided into a number of areas called blocks with each block holding as little as 1/2K of data. The Macintosh stores files by breaking them into block-size pieces and writing them into unused blocks wherever they are available. Over time, virtually every file can be scattered around in different places. Starting applications, opening documents, sorting databases, and compiling programs all become slower and slower because your drive has to move its head from block to block as it retrieves the pieces of your files.

DiskExpress puts maximum performance back into your disk. It gathers all the pieces of files and puts them into contiguous blocks. Then your drive head need only move to the beginning of a file where it can continue to read sequentially. All the unused blocks are also placed together so that MacServe users will no longer suffer from the "disk too fragmented" message when attempting to create new volumes. It supports floppy and hard disks with either MFS and HFS formats running on Macintosh XL, 512, 512E, Plus, SE, and II.

Bonus Features: Finds media and directory errors, recovers missing blocks, compacts the desktop file, and secures deleted data.

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Please circle 240 on reader service card.

Geneva and I must reset the dialog boxes for printing.

It would be great if Phil Russell could do an article telling us how to change these various default settings. I think this would have universal appeal.

Keep up the great work!

FLACCUS M. B. STIFEL
PITTSBURGH, PA

My MacWrite *defaults to Helvetica. Default font settings in properly written Mac applications are easy to change. Look for any one of several public domain-type applications and desk accessories. In fact, you'll find both an application and a DA called* DefaultFont *either of which should do the trick. Check out your local user group or bulletin board.* — SB

MONEY MANAGEMENT

You listed *MacMoney* as your Editors' Choice for best home accounting program in your January issue. The program I was using could use some improvement, so I inquired at Survivor Software about their program, and asked if I could use preprinted checks I'm currently using. All seemed fine, so I ordered *MacMoney*.

When the program arrived, I was anxious to try it out. As soon as the program opened I knew I had been taken for a ride. *MacMoney* is *Mac Home Accountant*.

I am disappointed in *MacUser* and Survivor Software for not informing me about the program being the same, and I'm out $50 since software is not returnable.

GARY MACNAUGHT
LOMBARD, IL

It looks as if you didn't get much further than the opening credits, or you would have discovered that while MacMoney *is a version of* Mac Home Accountant, *it is not by any means the same program. In fact, more than 30 changes have been made in the original program in response to user input. We think it is much improved and worth every penny of the upgrade cost. For a more detailed look at the changes, see "Banking on Your Mac" on page 94 in the May 1987 issue of* MacUser. — LK

TABLET COMPATIBILITY

Your article "Test Drive" about second generation SCSI hard disks motivated me to finally make a decision regarding which one to purchase. When I called to place my order I was told that the graphics tablet I use would not be compatible with a hard disk. I'm confused.

I have a 512E and have *MacBuffer* and *MacViz*. What problems will this cause — and any advice? a speedy response will be appreciated since I'm raring to go.
LIZLA WEISBERGER
HAUPPAUGE, NY

The people you spoke with probably meant the tablet wouldn't work with hard disks that connect to the serial port. It should be fine with a SCSI unit. Hope this clears up the confusion. — SB

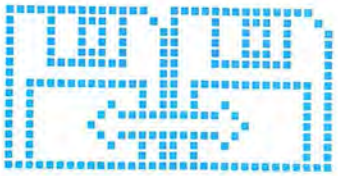
SHAREWARE VS. PUBLIC DOMAIN

The Tip Sheet in your March 1987 issue refers to the shareware disk cataloging program *Disk Librarian* as public domain. *Disk Librarian* was written and copyrighted by John Goldin of Little Bit and released as shareware, and in its latest revision, *DiskQuick*, it is a commercial program available from Ideaform, Inc., 908 East Briggs, Fairfield, IA 52556; (515) 472-7256. With regard to the hint in the Tip Sheet, it is no longer necessary to hold down the mouse button to keep the hard disk from being processed.

Software that is public domain is free, not copyrighted, may be freely copied and distributed, and no royalties are owed to the author. In contrast, most software released as shareware *is* copyrighted by the author, the author retains all rights to restrict its distribution and is owed a royalty by those who use the program.
MICHAEL PORTER
PRES., IDEAFORM

PAYMENT PAST DUE

I am the author of a shareware program (*Star Trek Plus*, in MS-BASIC) and would like to share with you and your readers an interesting observation. First off, I, as many other shareware authors, "enjoy" returns on investment of fractions of percent. It would be embarrassing to admit how many registered users there are of my program, considering the fact that *any* contribution is considered a registration. The fact I would like to point out is that over 90 percent of the people who have registered claimed to have obtained the program from Educomp Computer Services of Cardiff by the Sea, in California. When I first saw my program listed in their catalog, I was unsure as to how I felt about their using my shareware material for distribution. They do compensate for distribution of the product (through a free five-disk offer), but most of all, if the caliber of people who do business through Educomp are those



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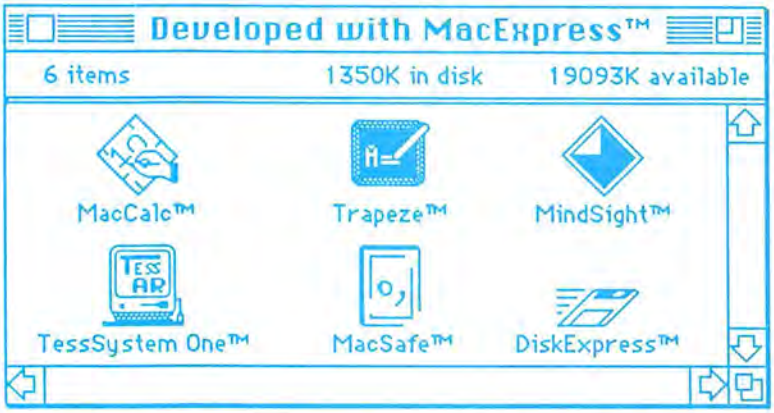

MacExpress implements the main event loop, menu handling, panels, views, splitting, scaling (1-2000%), resizing, setting aside of windows and desk accessories into icons, and much more. Best of all, it is written in lightning fast assembly language and only occupies from 15K to 34K. MacExpress is used in conjunction with Pascal, C, or 68000 assembly, and is more that a simple library or skeletal program. Its powerful features are being used to develop many more applications from major software companies. Join the programmers world-wide who are using MacExpress.

MacExpress supports the entire Macintosh family including the Macintosh SE and Macintosh II. There are currently versions for MPW Pascal, MPW C, LightspeedC, Lightspeed Pascal, and TML Pascal.

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who actually comply with the shareware philosophy, then more power to both parties. And where are the contributions from those who spent $10 or so to download programs from BBSs?
RON BUTCHER
LIBERTYVILLE, IL

OH, WHAT A LOVELY WAR (GAME)

I recently purchased a Mac Plus and have been busily using it for business. Occasionally, I'll use it for games and entertainment. Recently I read your April 1986 article "Designer Battles" (I'd gotten several back issues). I'm intrigued with *The Ancient Art of War;* however, I'm interested in whether anyone has published any software based on WWII battles. I used to play Avalon Hill games like *PanzerBlitz,* and would love to play them on the computer with or without the computer as an opponent. Any information you have would be appreciated.
CHRIS SANDERS
NEW YORK, NY

Try Electronic Arts' Patton vs. Rommel; *that should fill the bill. As far as we know, none of the Avalon Hill games are out in Mac format.* — LK

VENDOR KUDOS

I want to thank you for your policy of refusing to accept advertising from a vendor or company that gives inferior service. I hope it is also your policy to print letters that tell of exceptionally prompt and reliable service. I have shifted from one vendor whose advertising you now refuse to Programs + and I have had nothing but fast, helpful and courteous service.

Would it be appropriate to require all software advertisers to state in their ads whether or not their products are copy protected? Doing so would save me the trouble — and Programs + the cost — of a telephone call before I order.

I note that Borland and Think Technologies include such statements in their advertisements. Both these companies — among others — are to be commended for having sensible licensing agreements that make it easy for honest users to abide by their agreement.
FRANK M. STEWART
PROVIDENCE, RI

While we cannot require advertisers to mention copy protection in their ads, we do agree that it is important information for the potential buyer and user — which is why we take note of copy protection or the lack of it in the MiniFinders section and Updates in New on the Menu. — SB

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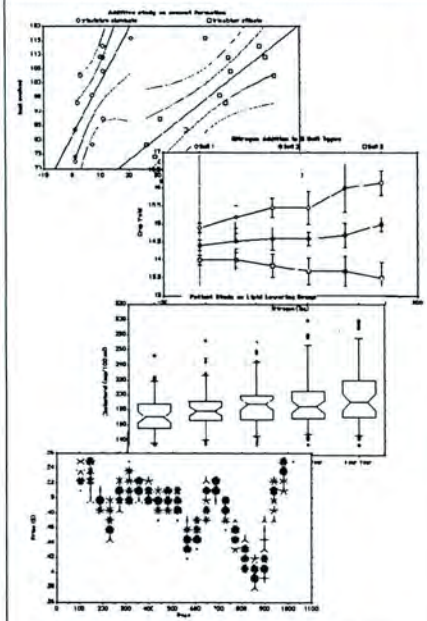

StatView 512+ offers statistical and graphic power that cannot be matched by any other Macintosh application, and ease-of-use that cannot be matched by the mainframes. Descriptive, comparative, nonparametric, and multivariate analyses are performed with 18 point precision and are complemented by bar, pie, and line charts, plus box plots and scattergrams. Powerful data handling, transformation and recode facilities make this a professional's tool.

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An Important Message To Every Mac User Who Does Not Have A Degree In Computer Programming

Let's face it; sooner or later you'll want to do something that your Mac just won't do. It's not its fault, the Mac only does what its programs allow it to do. Here's your chance to do what you want. Create your own programs!

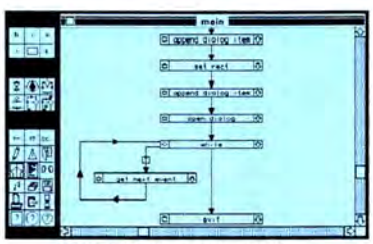
It used to be that you had to spend hundreds of dollars and several months of study to even begin to program. You almost had to have a degree in computer programming. No more! Programming a Mac can be as easy as using one.

VISUAL PROGRAMMING

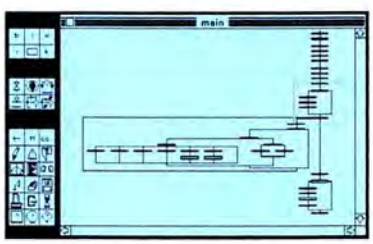
The idea is to use the visual power and intelligence of the Mac to make it easy to program. You program visually and the Mac interacts with you, keeping you on the right track. Thus the name Visual Interactive Programming™ or V.I.P. for short.

V.I.P. is a totally new type of language where a graphic interface replaces a text editor. Traditionally, programming is done by typing program statements into an editor following rigid rules of a language's arcane syntax.

Visual Programming, on the other hand, is done by pointing, clicking and entering expressions and arguments into elements of an on-screen flowchart.



V.I.P.'S Graphic Editor



Zoom View of Flowchart

A V.I.P. program is composed of graphic elements which can be cut, copied and pasted. The program is automatically structured with classical logic forms such as *if...then...else* or loops such as *while...do* and *for...next*. These are presented graphically. **The program becomes visual!**

Creating a V.I.P. program is simply a matter of clicking on logic form icons and procedure class icons to choose desired procedures. V.I.P. provides more than 180 pre-compiled toolbox procedures to greatly simplify programming.

BEGINNERS LOVE IT

V.I.P. , an interpreter, provides immediate feedback; as such, it's ideally suited for beginners. They can be creating programs with full Mac features 30 minutes after opening the package. V.I.P. is also great for programmers, skilled in other high level languages, who are seeking a painless introduction to the Mac.

EXPERTS ARE AMAZED

V.I.P. forms the nucleus of a powerful and versatile development system.

External procedure sets, available as separate products, facilitate specialized tasks such as spreadsheets, databases and vertical applications.

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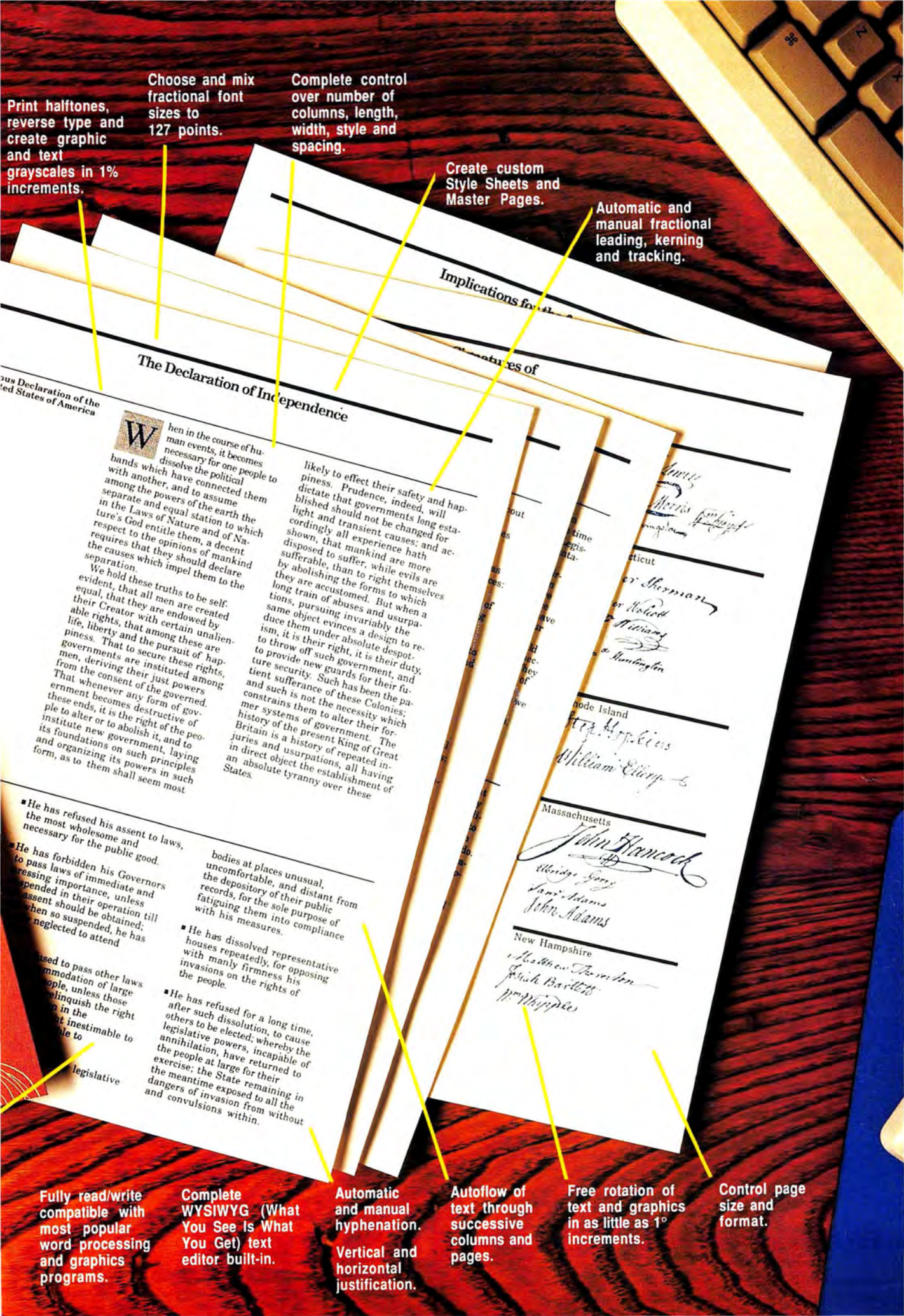
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We hold these truths to be self-evident, that all men are created equal, that they are endowed by their Creator with certain unalienable rights, that among these are life, liberty and the pursuit of happiness. That to secure these rights, governments are instituted among men, deriving their just powers from the consent of the governed. That whenever any form of government becomes destructive of these ends, it is the right of the people to alter or to abolish it, and to institute new government, laying its foundations on such principles and organizing its powers in such form, as to them shall seem most likely to effect their safety and happiness. Prudence, indeed, will dictate that governments long established should not be changed for light and transient causes; and accordingly all experience hath shown, that mankind are more disposed to suffer, while evils are sufferable, than to right themselves by abolishing the forms to which they are accustomed. But when a long train of abuses and usurpations, pursuing invariably the same object evinces a design to reduce them under absolute despotism, it is their right, it is their duty, to throw off such government, and to provide new guards for their future security. Such has been the patient sufferance of these Colonies; and such is not the necessity which constrains them to alter their former systems of government. The history of the present King of Great Britain is a history of repeated injuries and usurpations, all having in direct object the establishment of an absolute tyranny over these States.
He has refused his assent to laws, the most wholesome and necessary for the public good.
He has forbidden his Governors to pass laws of immediate and pressing importance, unless suspended in their operation till assent should be obtained; when so suspended, he has neglected to attend
bodies at places unusual, uncomfortable, and distant from the depository of their public records, for the sole purpose of fatiguing them into compliance with his measures.
He has dissolved representative houses repeatedly, for opposing with manly firmness his invasions on the rights of the people.
He has refused for a long time, after such dissolution, to cause others to be elected; whereby the legislative powers, incapable of annihilation, have returned to the people at large for their exercise; the State remaining in the meantime exposed to all the dangers of invasion from without and convulsions within.
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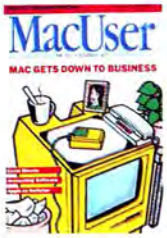

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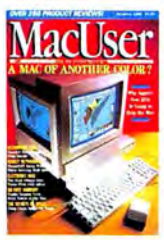

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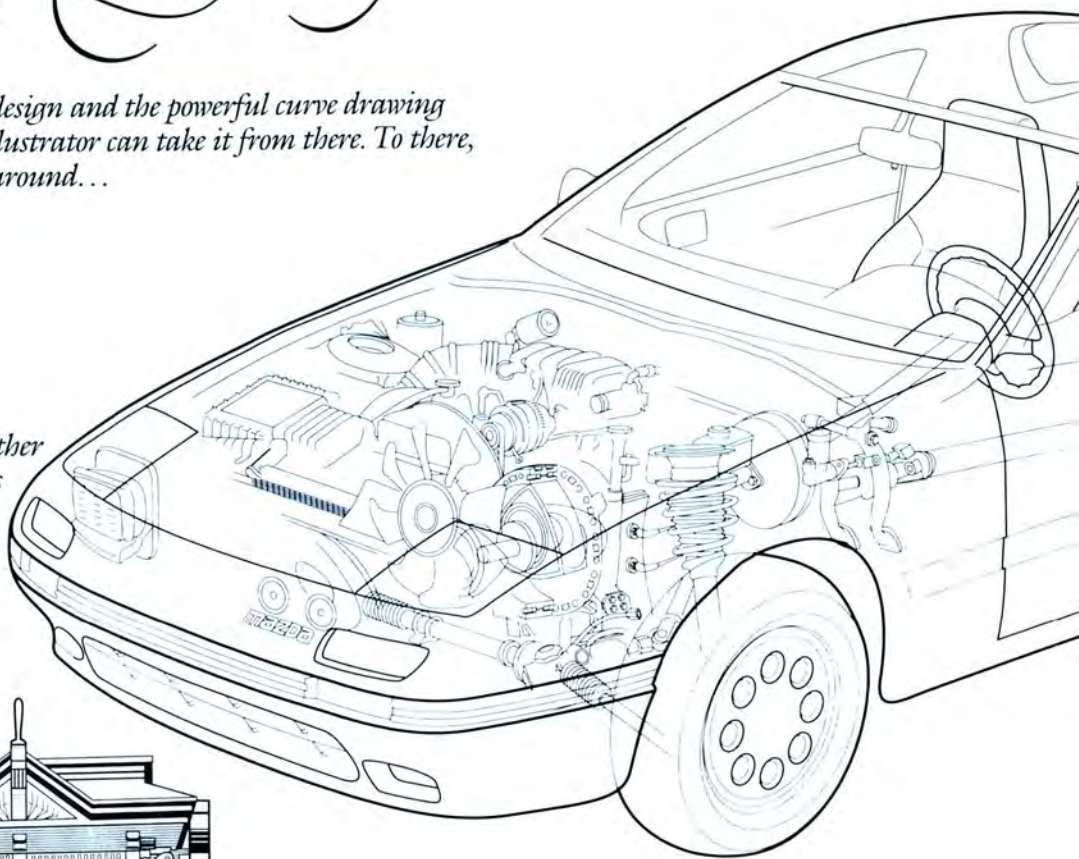

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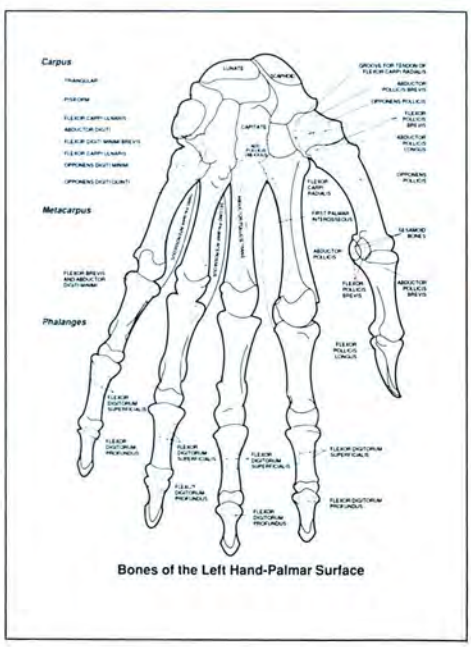

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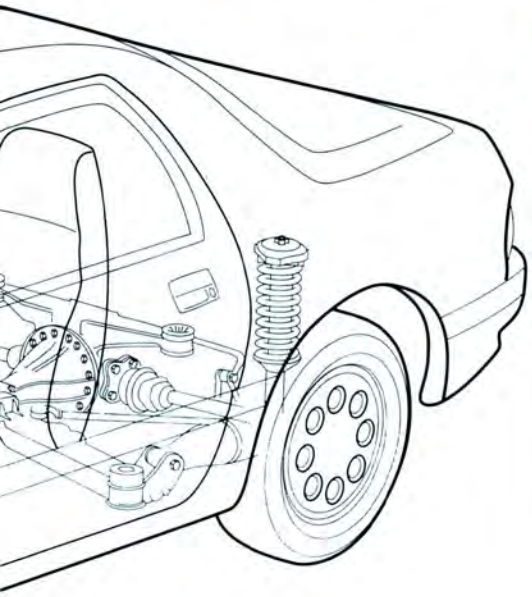

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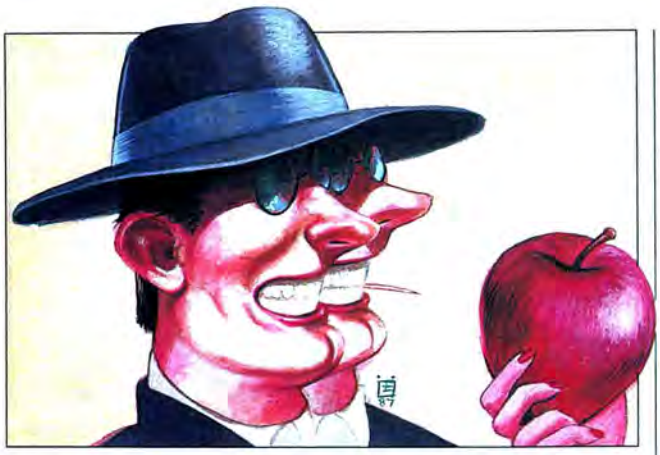


TONY LIMUACO

Appleworld's a Stage

Apple's announcement of the new Macs at Appleworld in February was accomplished with as much hoopla as was commensurate with their burgeoning corporate image. There were the requisite speeches from just whom you'd expect. (And just as you'd expect, Jean-Louis Gassée was witty and Mr. Sculley was less than exciting.) The video adjuncts to the speeches were clever and entertaining. And the whole thing took place on the infamous Michael Jackson/Universal stage — popping light bulbs and all.

However, we must never forget — as Apple apparently never does — that every silver lining has a cloud.

It is, after all, in the nature of speeches to be a bit overwhelming, if not boring, over a long period of time. Most journalists (and others who often find themselves in these situations) tend to play little mental games to pass the time. I count things. In this case I decided to count the number of times the speakers thanked everyone from developers to dealers without mentioning the press. They got 100 percent. Very consistent.

On the exhibit floor, there was a bit more excitement. The new Macs have been running through the rumor mill for so long that their actual appearance was almost anticlimactic. Third party products held a few more surprises.

The first thing that hit the eyes was big screens. (That's BIG screens.) And color. And a new definition of high resolution. The next thing was speed. This was good, since there was a fair amount of new stuff to see and you could see it in half the time. Or less.

Still, it was not, as you might guess considering the source, an occasion of unreserved congratulation and transport. Especially — if you'll forgive me for alluding to this again — among the journalists. One would not want to say that journalistic access was restricted. The visas were good for both days.

And in that context, my favorite comment of the show. There we were (journalists, that is) discussing the somewhat anomalous distribution of the other major Mac magazine. (Hint: It's bigger than a breadbox.) Anomalous given that the rest of us had been told that no magazines, major or otherwise, were to appear. "Well, Louise," said a nameless colleague, "they didn't say anything about company newsletters." — *LK*

Driving Further

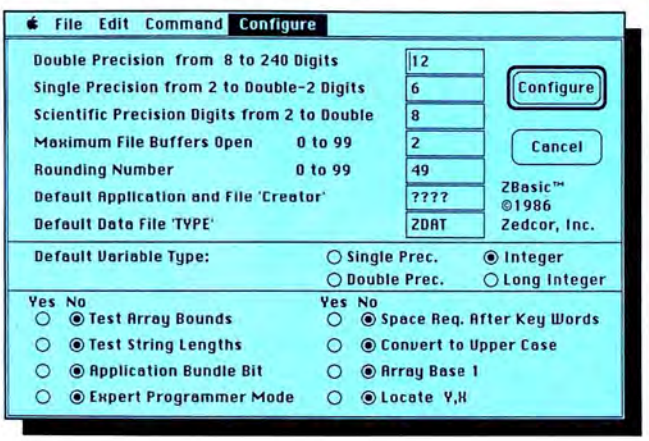
The Mac SE will allow you to have two internal disk drives. That's one disappointment in not being able to upgrade an existing Macintosh to a Mac SE. However with most things, when Apple does not allow for upgrading, third-party companies will provide solutions. Custom Computer Co. is one of those companies providing the two drive solution for existing Mac owners.

The MacDouble D-D/1600 give, users the ability to place a second, front-mounted, internal drive in their 512 Enhanced or Mac Plus. Special EMI shielding allows the MacDouble D-D/1600 to work smoothly. If you own one of the older Macs and would like to obtain the additional portability for your second floppy drive, this might be the solution.

To get this upgrade, you must send Custom Computer your Macintosh for about a week. The price is $600. Remember that you must start with a 512E or a Mac Plus, though. Custom Computer also recommends that you install an internal fan. They'll do it for $125 at the time of the floppy installation. Custom Computer Co. can be reached at 3601 Parkview Lane, Suite 1-C, Irvine, CA 92715. (714) 786-3418. — *DS*

ZBASIC, ZBetter

My December 1986 *MacUser* review of *ZBASIC* found particular fault with the level and quality of the documentation. Since that article was written, *ZBASIC* has gone through two design changes and now is at version 3.03. Version 3.02 added a 32-page addendum to the *ZBASIC* manual. It addressed many of the problems in the earlier documentation. For instance, more examples of how to use *ZBASIC*'s powerful verbs are included. A section on the use of *RMaker* (included with *ZBASIC*) has been added as well. This section includes step by step instructions for creating an icon for your *ZBASIC* application. Other omissions or bug fixes are listed, along with a short explanation of what the feature is and how best to use it. This continues with the one-page addendum to version 3.03. Bug fixes are explicitly listed, showing some refreshing candor. But, because it *is* an addendum, the organization of the information is still not optimal. A completely rewritten manual, including the addenda material, will be offered in the future.



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	Time required to format a 5-page Word file.	Time required to format a 5-page MacWrite file.
BackPrint	16 seconds	44 seconds
MacMate!	2 minutes, 8 seconds	9 minutes, 28 seconds
MacSpool	5 minutes	7 minutes, 40 seconds
MaxPrint	2 minutes 33 seconds	2 minutes, 58 seconds

- Queue up an unlimited number of pages from different documents to be printed in succession
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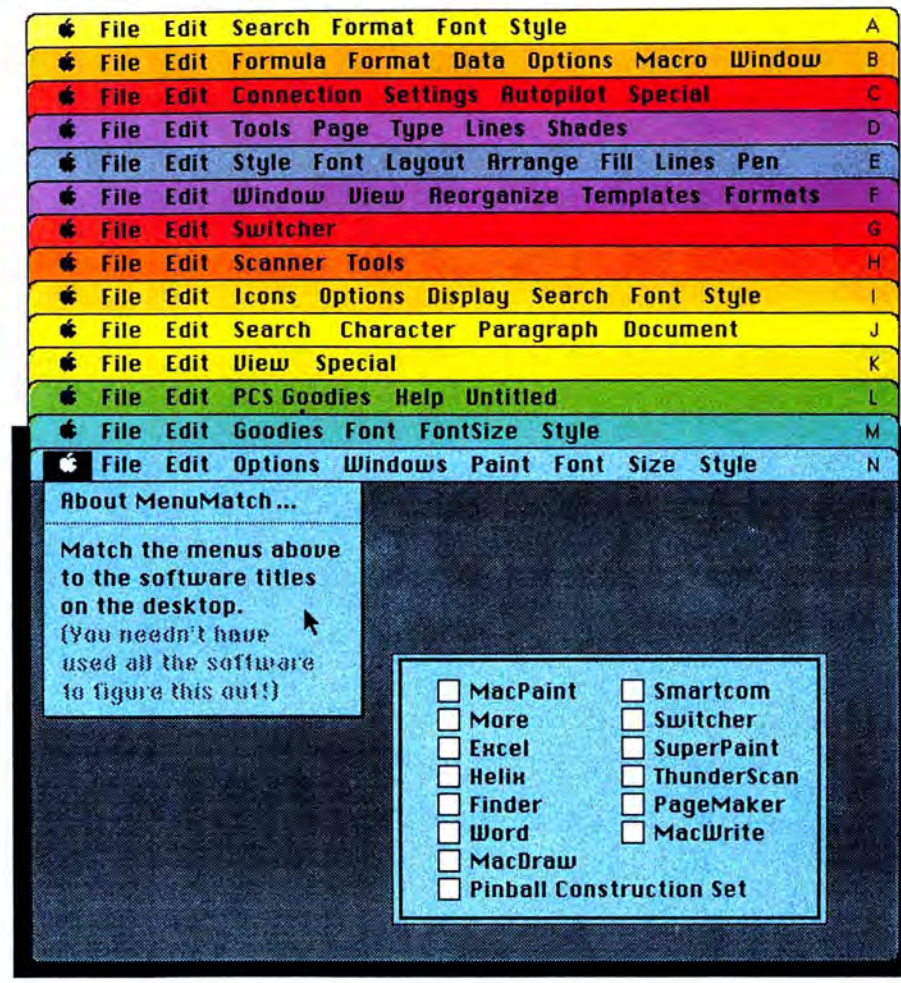
The language was also upgraded. The configuration screen has been totally changed, with additional useful parameters available. The memory used by a program can now be observed with the public domain *Memory Monitor* desk accessory that is now included. One really major change is that HFS support has been added. An example program to find a file's full path name is included. Other changes include greatly improved window refresh commands, printer enhancements, support for 128K ROM Toolbox calls, better handling of direct keyboard input to a program, additional USR routines to speed program execution and the addition of a four-voice sound function. This lack of sound capability in previous versions was a major limitation, especially for game programmers.

Zedcor seems to be committed to continually improving their product. The complete programming environment they provide contrasts markedly with the segmented interpreter/compiler approach of Microsoft. It is a fast and efficient environment that meets the needs of the BASIC programmer without forcing unnecessary disk swapping, a feature is important to the programmer without a hard disk. At less than a quarter of the combined price of the Microsoft system, it is also an astonishing value. — *Larry Loeb*

MenuMatch

by Michael Waitsman; color by Chris Mulligan



This should be fairly straightforward, if not particularly easy. Just match up the menus at the top to the software at the bottom. We'll have the answers here next month — if we figure it out.

RUMOR MANAGER

Now that the Mac II and Mac SE has been announced, and in the case of the SE even available, there's lots of speculation about the next Mac. Most of the "advanced" thinking has it that there's a super workstation machine, an enhanced Mac II, coming. And so one is. But much nearer is a strange little machine. This small box is basically an enhanced SE without a monitor, keyboard or any input/output devices other than connectors. It does have multiple connectors and outputs for all of the popular Apple and third-party big screen monitors, plus the memory and power on the regular Enhanced SE. The price is anyone's guess (no one got the Mac II and SE prices right in advance), but we've heard $1995. That seems about right. . . . The game market will continue its astonishing reversal with 15 new games due by the first of July. Surprisingly enough, only about half will have color support. . . . Word processor sales will continue at their disappointing pace. . . . Slide makers, programs that create ViewGraph and 35mm slides from the screen, will be easily available, affordable and popular in the remainder of the year. They'll pass scanners in terms of numbers of units sold by Christmas. . . . We've been testing a real portable Mac — 4 pounds, 1 800K drive, a large bubble memory and a 600 X 480 TFT screen. The "what to do with the mouse" problem is solved by a built-in trackball. This handcrafted machine may never see it to market though, as it doesn't seem possible to build it in any quantity at any price other than exorbitant. Still, it's real neat. . . . Reports of bootleg Mac II's continue to abound. It seems that some of the ROMs and other proprietary "got loose," and some hardware hackers have put together a whole bunch of "Near Macs." The one we've seen had a 24-MHz 68020. . . . August 1st is the release date of the best Mac word processor ever. Mark your calendars and remember you heard it here first. . . . Question, not rumor: Where are all those printers that were seen in prototype in the last half year? None have made it to market and it looks like the only one that still has a chance is the Business Writer from Apple, the $1000, 24-pin dot matrix unit with built-in PostScript support. . . . The prototype ball-shaped "hover disk" that we described several months ago continues to impress in performance tests. The bulky nitrogen-powered stabilization system has been replaced with a smaller system that uses room air. While the unit isn't stable enough to trust our office network to yet, its 409 megabytes sure make it an attractive candidate.

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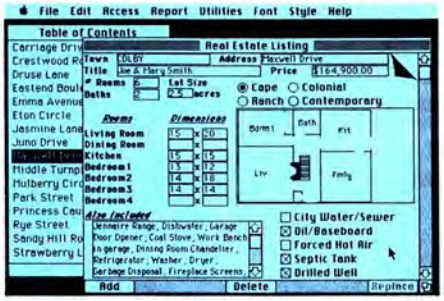

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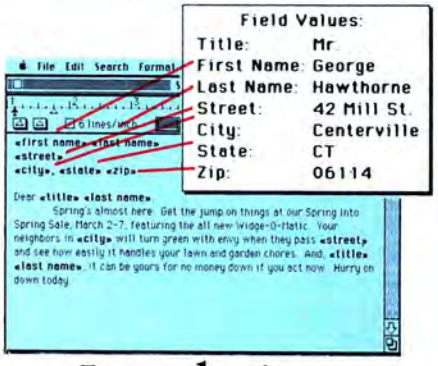

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Sliding In First

As a Macintosh owner, you have already heard about Desktop Publishing, Desktop Communications and Desktop Productivity. The newest Apple "Desktop" term is Desktop Presentation. Desktop Presentation is using the computer to prepare business presentations. The number of people doing presentations without a computer is huge, and thus, as was the case with Desktop Publishing, the Macintosh opens up a market that is potentially in the tens of millions.

The first program to really address the need of users who need to produce effective visuals was *MORE*. With its bullet options, you can go from an outline to an attractive presentation in seconds. On the heels of *MORE* comes *PowerPoint*, a software package from Forethought, makers of *FileMaker Plus*. *PowerPoint* is a simple, yet powerful presentation creation application. You combine text and graphics in multiple windows (slides), and organize the material sequentially. The program provides a limited *MacDraw*-type environment with good word processing capability to allow for input of words and shapes. Slides are then organized in outliner fashion. After completing the presentation, *PowerPoint* will run through an on-screen "Slide Show," with you controlling the direction and speed of the changing slides.

PowerPoint produces the three most common presentation tools: slides (on paper), overhead transparencies and handouts. It is available from Forethought, Inc., 250 Sobrante Way, Sunnyvale, CA 94086, (800) MAC-WARE, and retails for $395.

What if you need real 35mm slides? No problem. Presentation Technologies, Inc. recently announced the ImageMaker, a device that attaches to the printer or modem port and allows the Mac to output 35mm slides. In addition to the hardware, ImageMaker comes with the *ImageMaker Mac Driver*, a *Chooser* selectable output driver that makes producing slides as simple as selecting Print.

Even though the ImageMaker will not print bit-maps and fonts, a utility is included that allows you to re-map standard Macintosh fonts to the ImageMakers fonts. ImageMaker will also allow you to produce color slides, even if you don't have a color display. You simply tell the machine to substitute a color for any particular pattern. Slides can be produced on various types of film, giving you some flexibility in determining quality and costs per slide. The retail price of the ImageMaker hardware is $4995, while the *ImageMaker Mac Driver*, which is required for Macintosh use, retails at $149. You can contact Presentation Technologies at 743 N. Pastoria Ave., Sunnyvale, CA 94086, (408) 749-1959. — *DS*

UPDATES

Programs, like people, change over time. To get the most out of your programs, you should be using the most recent versions. Here's a list of the current version number (as of press time) of many popular programs. The version number of a program can usually be found by running the program and checking the About... item at the top of the Apple menu.

Apple System software is special. Unless you have a 128K Mac, you should be running *System* 4.0 and *Finder* 5.4 (128K owners should continue to use *System* 2.0 and *Finder* 4.1). If you don't have the latest *System* and *Finder* you can get them along with the versions of other Apple software, free from an authorized Apple dealer. Be sure to bring in a blank disk or two.

The meanings of the codes in the right column are as follows: CP or NCP, copy protected or not; +, known to be HFS compatible; -, known not to work under HFS; S, shareware (try before you buy software); and 5, requires at least 512K of RAM.

Acta	1.2	NCP,+
Aztec C	1.06H.1	NCP,+
Back to Basics	1.03	NCP,+
Balance of Power	1.03	CP,+
BatteryPak	1.23	NCP,+
Business Filevision	1.1	CP,+
CalendarMaker	2.2	NCP,+,S
Chooser	3.0	NCP,+
ColorChart	1.3	NCP,+
ColorMate	2.1	NCP,+
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ComicWorks	1.0	NCP,+
ConcertWare+	3.1	NCP,+
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Copy II HD	6.4	NCP,+
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Easy3D	1.01	NCP,+
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ExperLogo	1.1	NCP,+
Fedit Plus	2.0	NCP,+
FileMaker	1.0	NCP,+
FileMaker Plus	2.0	NCP,+
Filevision	1.0	CP,+
Finder (MFS-128K)	4.1	NCP,+
Finder (HFS)	5.4	NCP,+,5
FlashBack	1.4	NCP,+
Flight Simulator	1.0	CP,+
FONTastic	2.7	NCP,+
Font/DA Mover	3.4	NCP,+
Fontographer	2.1	CP,+,5
Front Desk	3.0	CP,+
FullPaint	1.0	NCP,+,5
Gato	1.42	CP,+
Hard Disk 20	1.1	NCP,+
Hard Disk Utility	2.0	NCP,+,5
Helix	2.0r11	NCP,+,5
Helix, Double	DH1r35	NCP,+,5
HFS Backup	2.0	NCP,+,5
HFS Locator Plus	1.4	NCP,+
ImageWriter	2.3	NCP,+
ImageWriter, AppleTalk	2.3	NCP,+
InTalk (was inTouch)	2.1	CP,+
Jazz	1A	CP,+,5
Just Text	1.1	NCP,+,5
Laser Prep	3.1	NCP,+
LaserWriter	3.1	NCP,+
Lightspeed C	2.01	NCP,+
Lightspeed Pascal	1.0	NCP,+
Lode Runner	1.0	CP,+
Mac-3D	2.0	CP,+
MacASM	2.0	NCP
MacBase	1.0	NCP,-
MacBillboard	4.01	NCP,+,S
Mac C	5.0	NCP,+
MDS	2.0	NCP,+
Mac Disk Catalog II	2.1.1	NCP,+
MacDraw	1.9	NCP,+
MacDraft	1.2a	CP,+
MacGolf	2.0	CP,+
MacInTalk	1.1	NCP,+
MacLabeler	2.2	CP,+
MacLightning	2.0	NCP,+
MacLink	1.14	CP,+
MacMoney	2.02b	NCP,+
MacNosy V2	2.41	NCP,+
MacPaint	1.5	NCP,+
MacPalette	1.0	CP,+
MacPascal	2.1	CP,+
Mac +][	3.0	NCP,+
MacProject	1.1	NCP,+
MacProof	2.0	NCP,+
MacServe	2.1	CP,+
MacSpec	1.3	CP,+
MacSpin	1.1	CP,+
MacSpool	2.1	NCP,+
MacTerminal	2.0	NCP,+
MacTools (MFS/HFS)	6.3	NCP,+
MacWrite	4.5	NCP,+
Mac Zap Copier	4.2	NCP,+
MailManager	1.0	CP,+
Measure Test	6.3	CP,+,S
MicroPhone	1.0	NCP,+
Micro Planner Plus	5.7	CP,+
MindWrite	1.0	NCP,-
miniWriter	1.3	NCP,+,S
MockPackage+	4.3.4	NCP,+,S
MORE	1.00A	NCP,+
MS BASIC	3.0	NCP,+
MS Chart	1.0	CP,+
MS Excel	1.03	NCP,+
MS File	1.02	CP,+
MS Fortran	2.2	CP,+
MS Word	1.05	CP,+
MS Works	1.0	NCP,+
Multiplan	1.1	CP,+
MusicWorks	1.1	CP,+
myDiskLabeler	2.11	NCP,+
Omnis III Plus	3.22	CP,+
OverVUE	2.0d	NCP,+
PackIt III	1.2	NCP,+,S
PageMaker	1.2	CP,+
PictureBase	1.1	NCP,+
QUED	1.51	NCP,+
Quick & Dirty Util., Vol. 1	1.6	NCP
Quick & Dirty Util., Vol. 2	1.0	NCP,+
Rags to Riches	3.0	CP,+
Ragtime	1.0	CP,+
ReadySetGo	3.0	NCP,+
Record Holder	2.1	NCP,+
REdit	1.2	NCP,+
Red Ryder	9.4	NCP,+,S
Reflex	1.0	NCP,+
ResEdit	1.1d	NCP,+
Sargon III	1.0	CP,+
SideKick	2.0C	NCP,+
Silicon Press	1.1	NCP,+
Slide Show Magician	1.3	CP,+
Smartcom II	2.2B	NCP,+
SoundCap	4.3	CP,+
SpellNow	1.0	NCP,+
Spellswell	1.3	NCP,+
StatView 512+	1.0	NCP,+
StatWorks	1.2	NCP,+
Studio Session	1.2	CP,+
SuperPaint	1.00	NCP,+,5
Switcher	5.1	NCP,+,5
System (MFS-128K)	2.0	NCP,+
System (HFS)	4.0	NCP,+
Tempo	1.1	NCP,+
ThinkTank 512	1.3	NCP,+
Thunder!	1.0.1	NCP,+
ThunderScan	3.2	NCP,+
TML Pascal	2.01	NCP,+
TMON	2.585	NCP,+
Top Desk	2.1	CP,+
TurboCharger	2.0,RevD	NCP,+
VersaTerm	3.0	CP,+
VersaTerm Pro	2.0	NCP,+
VideoWorks	1.1	NCP,+
Word Handler	1.6	NCP,+
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Latest Dungeon Accommodations

Dave Valiulis' article on *The Dungeon of Doom* (*MacUser*, January '87) has generated a significant volume of mail from readers. Apparently, a lot of people can think of no better way to spend time than traipsing around in subterranean damp being ambushed by maniacal weirdos. And since some of you seem to have had trouble getting *Dungeon*, here's the latest information — courtesy of Dave.

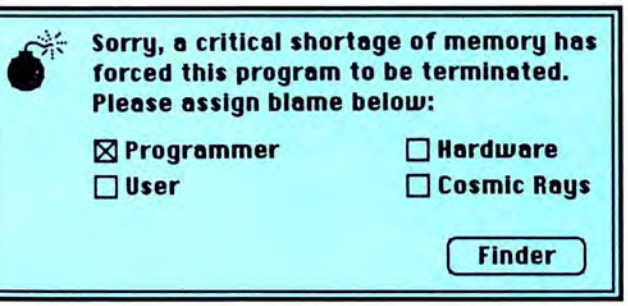
You can no longer get the game directly from the author, John Raymonds, although it can still be found on various BBSs and electronic services. Raymond says he has a new, improved sequel called *The Dungeon Revealed*, for which he is seeking commercial backing. This one won't be released as shareware, but he hopes to be able to provide some kind of "upgrade" to registered users of the original *Dungeon*. How that will work will depend on the eventual publisher. A registered user, by the way, is one who actually paid the author for the game. You might want to bear that in mind. — *LK*

TONY LIMIACO

DIALOG BOX OF THE MONTH

This amusing dialog box will (hopefully not) appear if your Macintosh runs out of memory while using SuperMac Software's new backup utility, *DiskFit*. *DiskFit* will luckily stop a serious system error before it occurs. Just seeing that bomb icon, no matter where it appears, is enough to make any Mac user shudder. It seems that those cosmic rays will do it to you every time.

Have you stumbled on any unusual dialog boxes lately? We're always interested in seeing them. Share them with us by sending them to MacUser Dialog Box, 25 West 39th Street, New York, NY 10018.



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Up To Speed

TONY LIMBACO

To all you "old Mac" owners wondering if you've suddenly been left with an expensive doorstop on your hands: don't despair. You can't upgrade to a real SE, but you may be able to end up with something even faster.

TurboMax, from MacMemory, is a performance accelerator for the 512 and Plus. Its bottom line is speed—MacMemory is predicting a 200 percent increase — but there are a number of surprising extras, too. Such as an additional 1.5M of RAM and an optional 68881 math co-processor. TurboMax also adds a 50-pin SCSI port to the 512.

The whole thing just snaps onto the Mac's motherboard, while the new power supply and a bracket for the optional 20 or 40M hard disk replace the current internal drive bracket (you get to keep the drive, too.) And there's also a small piezo fan. All this and a two-year warranty to boot. TurboMax should be readily available for around $1300 ($1700 with 68881) by the time you read this. If you need more information, get in touch with MacMemory at 2480 North First Street, San Jose, CA 95131; (408) 922-0140.—*LK*

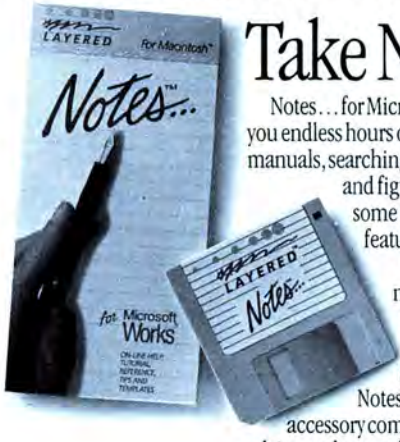
BUG OF THE MONTH

A new bug recently came across our desks that is so blatant, it easily won our choice for this month's Bug of the Month award. The new version of *Excel*, 1.03, has introduced a number of problems that were not in the older version. Among the bugs, this one is a real killer. Be sure to avoid it.

Simply put, *Excel* has a tremendous problem with printing non-LaserWriter fonts on the LaserWriter. After creating a document (*Excel* defaults to the Geneva font), if you select PAGE SETUP... from the File menu and click the Font Substitution off you are looking for lots of trouble. You then select PRINT... and, lo and behold, you are staring at a not-so-friendly bomb with a little "ID=02" in the corner. The only known workaround for this is to make sure you always have Font Substitution on.

For discovering this bug, Kevin James of Coral Springs, Fl. will be receiving a $25 check. Send any bugs that you may have stumbled upon to Bugsy, c/o MacUser, 25 W. 39th St., New York, NY 10018. Always remember to include all of the gory details, including *Finder/System* versions, what additional DAs, etc., and exactly what you had to do to have the bug rear its ugly head. — *DS*

How to get the works out of Works:



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How to get Microsoft Word to talk:

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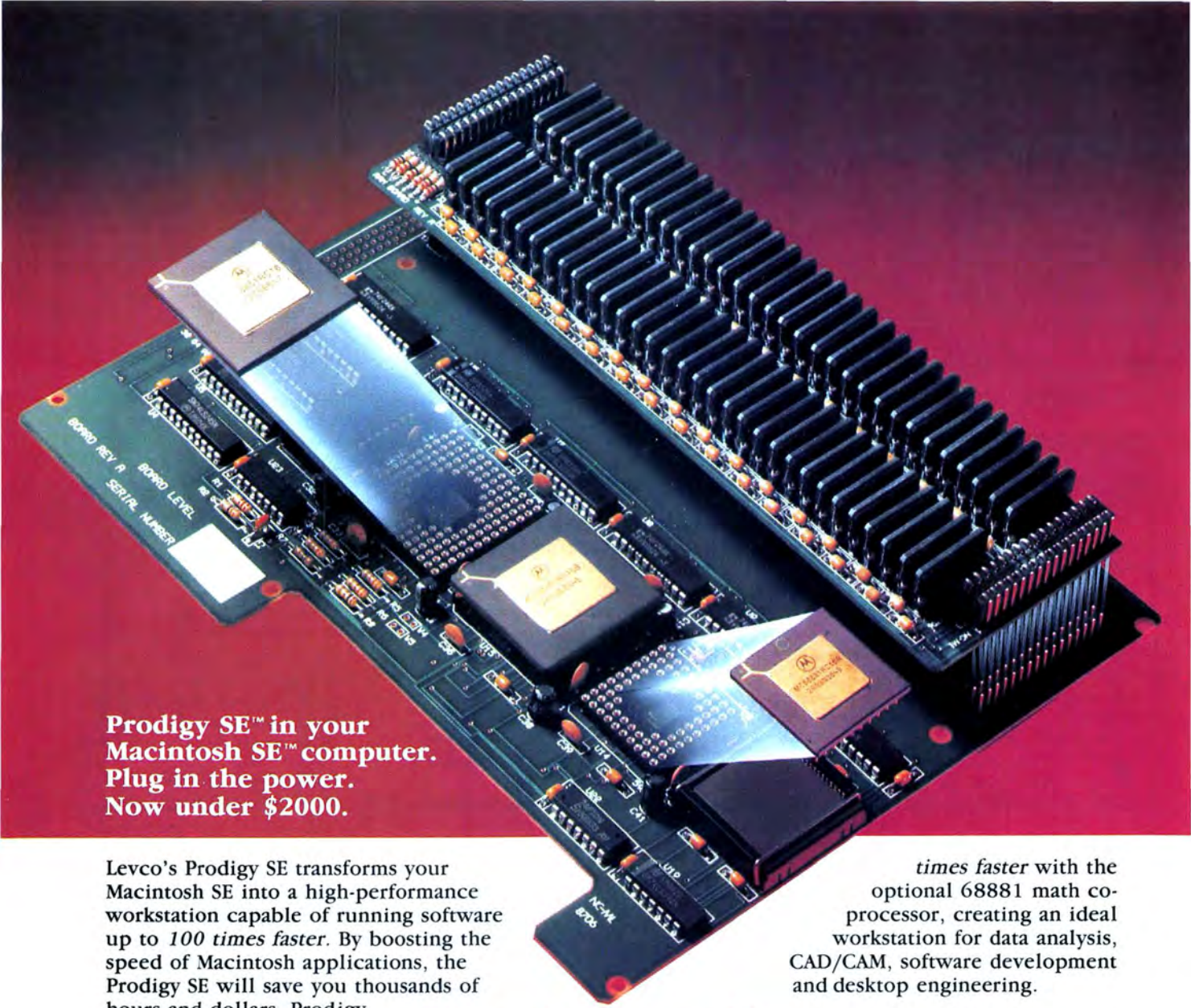

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by Robert R. Wiggins

Opening Pandora's Box

The Open Mac is here. The Holy Grail of the Mac user has been found. The messiah of the Mac world has arrived. The press is impressed. Investors have invigorated Apple's stock. Not since the initial introduction of the original Macintosh way back in 1984 have the jungle drums been pounding so loudly. The natives are dancing with celebratory glee. Slots! NuBus! Keyboards! 68020!

But wait, there's more! Color! After all the wailing and gnashing of teeth about the lack of color on the Macintosh, the open Mac turns out to be the color Mac as well. So amid all this jubilation, why am I uneasy?

The Macintosh began life with the concept of ease of use. The slogan was "the computer for the rest of us," meaning those of us who couldn't, or didn't want to, learn the vagaries of a command line interface. If you wanted a Macintosh, you went to the store and bought one. No decisions. You took it home or to the office, took it out of the box and plugged it in. The hardest parts of setting up a Macintosh were running the cable to the printer and/or modem and hooking up the mouse. And when AppleTalk was introduced, it was not much harder to set up than the printer. This simple purchase decision, easy set-up and visually oriented interface sold a lot of Macintoshes. This was how Macs turned up in art departments and other areas of companies that had never had computers before.

This was not an accident. The Macintosh team worked long and hard to make the Mac as easy to use as possible. Steve Jobs fought for and won a closed architecture, which means that every program knows exactly what to expect, since all Macs are exactly alike. And in areas that might change in the future, the Macintosh team worked out guidelines for programmers and flags that could be checked to find out things like screen size or memory size. Jobs and the Macintosh team had seen the problems that could arise from an open, slot-oriented architecture both in their own Apple II and in the IBM-PC, and wisely went in the other direction.

Then came the Macintosh Plus. More memory, more disk capacity, more ROM and a SCSI interface for adding peripheral equipment. The business user still had a simple choice, since the 512E was not that much cheaper. The Macintosh Plus and LaserWriter Plus teamed up to sell many more systems into the business market. And they were still simple to set up and simple to use. The new file system in the new ROMs caused some program incompatibility problems, and this was the source of more than a little annoyance to the business user, although this was overcome by new versions of most of the offending software. The peripherals which had previously used amazing and sometimes bizarre schemes to attach to the Mac could now use the SCSI interface, simplifying their installation and use.

Will the Macintosh user wanting to use Excel end up facing the problems of the IBM user wanting to use Lotus 1-2-3?

Now along comes the Macintosh II. The choices are harder. Which monitor to buy? Which keyboard? How much memory is enough? Do I need any add-on cards? Do I really need color capabilities? The set-up is a little more complicated, too, although still not too hard. And what about program compatibility? At the time I am writing this, there are rumors floating around that only 80 percent of existing software will run on the Mac II. While this figure may be inaccurate, there are sure to be some programs that need reworking to take advantage of the larger screens or to fix incompatibilities with the 256K ROMs, the 68020 processor or the faster clock speed. And what of future incompatibilities? Will the Macintosh user wanting to use *Excel* end up facing the problems of the IBM user wanting to use *Lotus 1-2-3*, facing pages of instructions and special set-up programs to run based on what expansion cards are in the machine?

Don't get me wrong. The Macintosh II has a lot to recommend it. Some people are calling it the "AT-killer," referring to IBM's popular PC-AT. The Mac II has the power to leave the AT in the dust (even the Plus beat the AT in several benchmarks). But the open Mac resembles the IBM-PC too much for my taste. From the large footprint with the detached monitor to the expansion slots, this machine seems more IBM-like than Macintosh-like. Admittedly this will make the Mac II more attractive to some business users, and with the MS-DOS coprocessor will likely gain Apple a toehold into the companies that have an MS-DOS standard. Add to this the rumors that IBM's new line of PCs are *not* going to be compatible with current models, and Apple may find itself with a bigger share of the business market than anticipated.

There is a problem, though, that could keep the Macintosh II from making the inroads into corporate America that Apple hopes for: dealers. Apple does not have a direct sales force. I've said it before and I'll say it again: corporate MIS departments do not want to deal with the shortcomings of retail outlets (and if you've been reading Neil Shapiro's editorials the past several months you know what some of these shortcomings are). The well-dressed, smooth-talking, knowledgable IBM marketing representative will win many a sale over even a good local dealer. And pity the small businessperson, who is now at the mercy of the dealer when trying to buy a Macintosh, just as he's been in the past when trying to buy an IBM-PC. Since the dealer is likely to be more conversant with the IBM line, the unsure small businessman may find himself leaving the store with an IBM or clone instead of the Macintosh he intended to buy.

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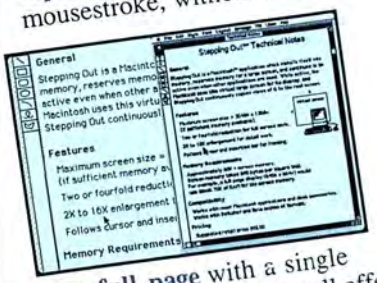

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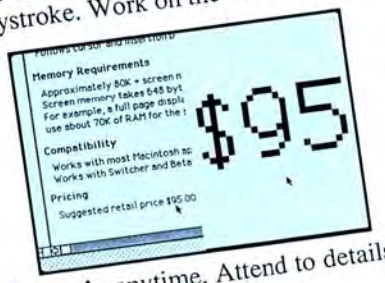

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Apple has made a good business decision with the Macintosh II. This is the product to compete with IBM head-on, no fooling around. But in opening the Macintosh, they've opened the same Pandora's box that IBM did, allowing all of the evils of an open architecture to invade the Macintosh world. The problems of configuring the machine so the buyer can get what is needed without getting far more than is needed (or can afford). The problems of dealers. The

There is a problem that could keep the Mac II from making corporate inroads: dealers.

problems of incompatibilities among add-on cards and between add-on cards and programs. There are those in the IBM world who would say most of these problems are actually advantages. That's why they're IBM users. I'm a Mac user, and proud of it. And I fear for my future, and the future of "the rest of us."

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Top Desk:—the view desk accessory that allows multiple *MacWrite* files to be opened (and copied from) is alone worth the price for *MacWrite* users. And there are some other nice desk accessories, too.

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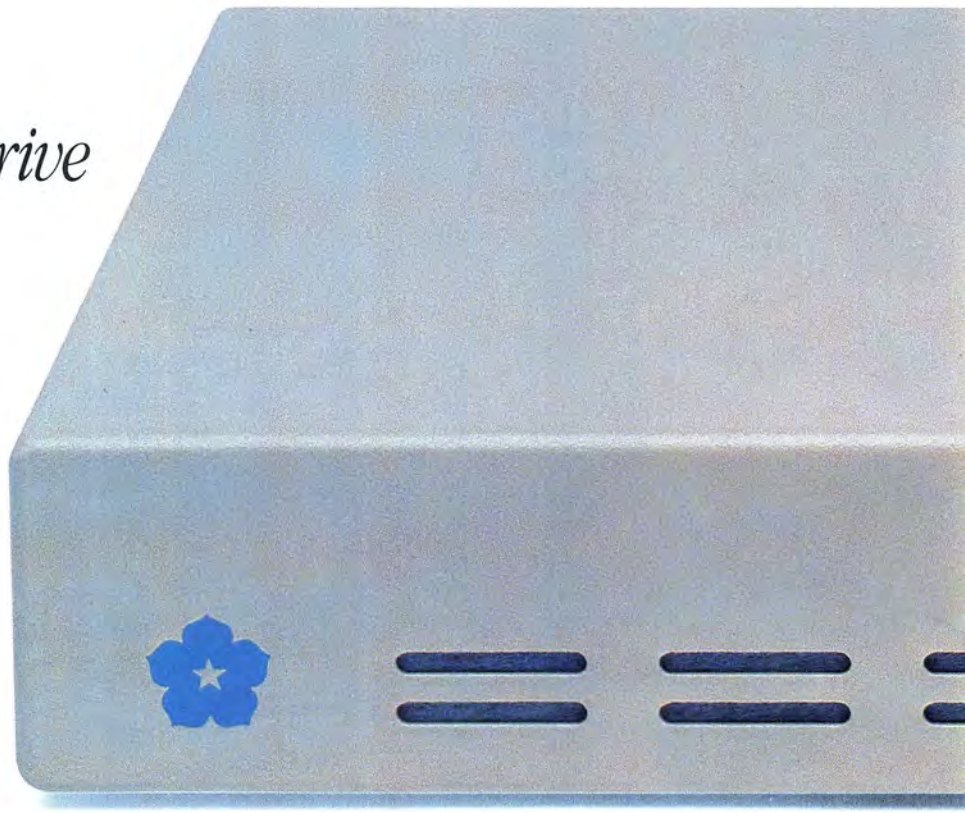

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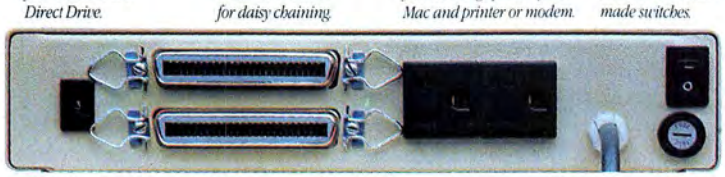

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by Michael D. Wesley

Son of Jazz

It was only about a year ago that there was serious speculation in the Macintosh community that some of the major third party developers were giving up on Macintosh. Microsoft dropped its plans to publish a Macintosh Library of products developed out of house. Software Publishing killed off its Mac line. Rumors were heard from other quarters that this company and that company had decided they couldn't make any money in the Mac arena and were going to stick to or move over to IBM PC products.

There was also considerable concern that other big players — seen as essential to the Mac's acceptance by the business community — had decided to stay out. Ashton-Tate remained quiet for a long time and several other companies said they were maintaining a "wait and see" attitude on Macintosh.

One company that jumped on the Mac bandwagon early but appeared to be a casualty of the machine's early struggles was Lotus. Remember those great early ads with Bill Gates of Microsoft, Fred Gibbons of Software Publishing and Mitch Kapor of Lotus voicing support for the new Apple wunderkind? Those ads were important for establishing Macintosh as a serious machine, but very little software came along with them.

Still, Microsoft and Lotus were there with major product entries long before many other companies. Microsoft debuted *Excel* and Lotus took out an expensive media campaign, including some silly television advertising, to launch *Jazz*. *Excel* was a stunning success and Microsoft's other products fared extremely well. While *Jazz* sales were okay, they were far short of what Lotus expected. But then, that's partly because Macintosh sales were far lower than Lotus had been led to believe they would be.

Jazz was designed to meet the needs of the market that Apple anticipated reaching with Macintosh — yuppie managers in big corporations. Apple never anticipated the *real* market for the machine, the small business. Lotus listened perhaps too closely to Apple's early evangelism and basically designed the wrong application for the machine. *Jazz* was criticized heavily for not having macros, perhaps the most identifiable feature of Lotus' phenomenally successful PC product, *1-2-3*, and for trying to do too much in a single product, thus weakening each of the individual applications. But then, neither Apple nor Lotus correctly anticipated that the Mac user would want power — and lots of it.

In defense of *Jazz*, you have to concede that Lotus was hamstrung by the constraints placed on them by the Macintosh hardware. As Adam will tell you, *Jazz* was "shoehorned" onto 400K disks, and the program was segmented which led to much of the slowness and cumbersome operation that people noticed with *Jazz*.

Anyway, with the sales of *Jazz* nowhere near what was expected, Lotus was viewed as a certain dropout. It was pretty much assumed that Lotus would bow quietly out of the Mac market,

doing just occasional maintenance updates of *Jazz* but nothing more. Until recently, a very quiet Lotus did nothing to dispel such beliefs, even though Adam Hertz and other members of *Jazz*'s design team voiced support for the product and for Mac.

Then something rather extraordinary happened at the AppleWorld conference in Los Angeles in March (I mean, besides the Mac II). Lotus broke months of silence, and a company tradition of not pre-announcing products, and previewed a new Macintosh program code-named *Galaxy*. Although *Galaxy* is clearly built on the back of *Jazz*, what Lotus has here is an incredibly powerful, truly integrated program whose individual applications can stand their own against the best single-use products. And, not only does *Galaxy* have macros, but much more — a fully programmable command language that virtually makes it possible to custom design each application or automate operations on several applications at one time. And *Galaxy* reads *1-2-3*, *Symphony*, and SYLK (*Multiplan* and *Excel*) files, a feature noticeably lacking in *Jazz*.

The command language in *Galaxy* is similar to that found in *Symphony*. Logically, (given the importance Apple is placing on connectivity between Macs and IBM), Lotus has decided to keep as much consistency between the PC and Mac products as possible, yet is sensitive to the problem of diluting the Mac-ness of *Galaxy*. Although a command language is not something one would think of as Mac-like, the truth is that it puts real power in the hands of the sophisticated user, but at the same time never has to be dealt with by the casual user.

A GALAXY BEYOND

Galaxy combines six applications, a spreadsheet (which is the core of the product), data base, word processor, business graphics and communications (all found in *Jazz*) and forms, a new module for forms processing. Each of the five *Jazz* applications has been made more robust, more powerful and easier to use than in *Jazz*. Although *Galaxy* is not going to be marketed as a power spreadsheet, since it is actually much more, the spreadsheet in *Galaxy* is as capable as *1-2-3*'s, according to Adam Hertz, which would make it no slouch. And you can now link spreadsheets, a very important inclusion. The graphics component offers many more options than *Jazz* and is optimized for color.

The word processor takes a unique approach to style formatting, which looks interesting, and the communications module, always considered the weakest link in *Jazz*, has been beefed up.

The forms application lets you custom design forms, a la *FileMaker Plus*, pulling information from spreadsheets, word processed documents or data bases into a form. This gives *Galaxy* some of the power found in *Reflex* and other relational data base products.

Hot View, the feature in *Jazz* that lets you dynamically link data from other applications to the word processor, has also been expanded and now has real power. In *Galaxy*, virtually all of the applications can be dynamically linked to one another, so data in one place automatically updates related information someplace else. By providing these dy-

TONY LIMUACO

namic links, *Galaxy* becomes a much more intelligent application than *Jazz*.

LANGUAGE OF THE STARS

The real power of *Galaxy*, though, is the command language, because it lets the true power user have tremendous control over the applications, and it provides a platform for third party companies to write *Galaxy* macros and programs, as has happened with *1-2-3*. This will let almost any user have access to the power of the command language without having to learn it.

To give you an idea of what this language means, consider the possibility of a programmable word processor. When I was watching the *Galaxy* word processor demo, I heard Adam mention something about searching on attributes. My ears immediately perked up, because this is something I want desperately in a word processor. I told Adam that I would buy a copy of *Galaxy* with my own money (well, it's the thought that counts) if he could include a macro that would let me search a document for all instances of, say *Galaxy*, and underline them, or find all instances of MacUser.

Adam giggled, and in about one minute had written two short lines of very clear code into a worksheet macro. The language resembles spreadsheet formula syntax, and is very easy to follow so it shouldn't be difficult to learn. Anyway, Adam created a document in the word processor, entered some nonsense text sprinkled with occasional occurrences of "MacUser", then executed the macro. What to my wondering eyes: this two-line macro from the worksheet leaped into the word processor, scanned the document for occurrences of MacUser, underlined them, then popped out and returned control to the word processor. And it did all this very quickly, even on a Mac Plus (Adam claims, and I believe him, that the the process is blindingly fast on a Mac II).

I'm getting sort of jaded looking at phenomenal, innovative programs, but I have to admit that *Galaxy* looks impressive as hell. I haven't had a chance to sit down and work with it yet, but on first glance Lotus seems to have an awesomely powerful product on their hands, filled with what Adam Hertz calls PUFs and PUFettes (Power User Features and Featurettes).

It's good to see Lotus not only staying with Macintosh, but actually coming out with an extraordinary product. Don't short change this product when it comes out. Son of Jazz is worthy of a long hard look.

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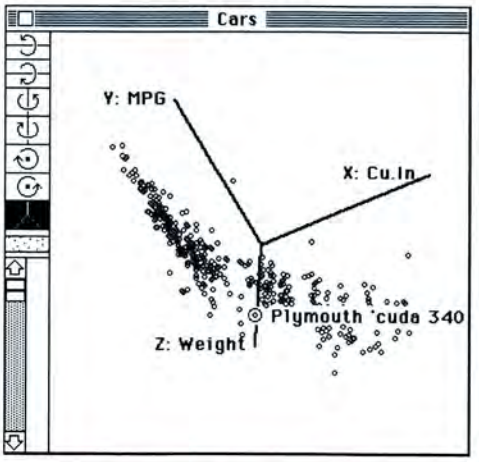

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HyperDrive was the first hard disk to be installed inside the Macintosh—and it gave the Mac unprecedented increases in speed and capacity.

Now General Computer extends these increases to the Macintosh SE with a new internal hard disk—HyperDrive FI/40.

Given its heritage, it should come as no surprise that HyperDrive FI/40 is extremely fast. Once installed, an FI/40 will speed power-up time by 57%. Load Microsoft's Excel two times faster. And Aldus' PageMaker three times faster.

These and other reductions in work time are matched by a correspondingly vast increase in the capacity for work. An FI/40 will enable the Mac to store the data that would otherwise occupy an astonishing 14,000 pages.

But all this isn't to say that HyperDrive's elevated performance is denied those who prefer an external hard disk.

HyperDrive FX/20 and FX/40 provide the same speed and capacity to any Macintosh with an SCSI port. And like all internal HyperDrives—which is to say unlike any other hard disk—the FX drives come with a complete array of software.

Including a back-up program that lets you make quick back-up copies of your data onto diskettes. LaserWriter and ImageWriter print spoolers that queue up documents for your printer, so you can go on to other jobs while your printer is printing. And a security program that protects your files from unauthorized entry.

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Unlike other networking software, HyperNet allows a direct, virtually uninterrupted flow of information between users. Without need of a dedicated Macintosh to run the network. Or a network administrator to maintain it.

In fact, HyperNet doesn't even require

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Macintosh Plus,
HyperDrive FX/20

Macintosh SE,
HyperCharger 020

HyperDrive. It works with any Macintosh and any hard disk made for the Macintosh. Not to mention all the software compatible with AppleTalk.

Which means you can take full advantage of multi-user programs for electronic mail such as Think Technologies' InBox. Or powerful database managers such as Blyth's Omnis 3.

The resulting network provides a flexible and fully compatible complement for people who use AppleShare. And for people who don't, HyperNet provides an extremely fast, easy-to-use network on its own.

INTRODUCING TWO NEW EXPANSIONS OF THE OUTERMOST LIMITS.

If you bought the Macintosh because it delivers "the power to be your best," then more power should make you even better.

That's the mission of the two newest additions to the General Computer family—HyperTape 40 and HyperCharger 020.

HyperTape 40 may not make diskettes obsolete, but it can greatly decrease your dependence on them.

Plugged into any Macintosh with an SCSI port, HyperTape can back up the equivalent of 50 diskettes of data onto one compact 40-megabyte cartridge. HyperTape can be programmed to back up automatically—even when you're away from your Macintosh. And you have the peace of mind that comes with knowing your documents are stored using the most advanced and reliable method for protecting data from accidental loss.

Even greater economies of time and effort are available through HyperCharger 020—a powerful enhancement board which, installed inside the Macintosh SE, delivers the processing prowess of the Macintosh II.

A Macintosh SE thus equipped not only runs most software up to an incredible four times faster. HyperCharger's optional floating point co-processor also allows it to handle financial modeling, statistical analysis, and other tasks which ordinarily would require a much larger, more complex and more expensive computer. And since HyperCharger is internally installed, the SE remains as compact and portable as before.

In sum, no other family of peripherals leaves the Macintosh so thoroughly equipped for superior performance. Or so thoroughly qualified for a career in business.

For a detailed review of those qualifications, stop by an authorized General Computer dealer, where you can see a demonstration of our complete family of products for the Macintosh. For the name of a dealer near you, call (800) 634-9737.*

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by Doug Clapp

Excel-lent And Cheap

It's hard to be amazed after awhile. After a few years of topper after topper, it's easy to be blasé. Sure, the new Macs are cool; yeah, that's a great game; sure, that's an interesting idea for an application; yep, that's fast alright. Slots? Sure. Whoopie-ding.

It's not like the old days when plain old BASIC (on pre-Macintosh computers) was just so neat.

But the juices ran last week. Buried in a pile of predictable press releases was something really neat.

It was a catalog. Not fancy; just ten laser printed sheets stapled together. Taped to the catalog was a sample disk.

The catalog was from Heizer Software. It's called the *Excellent Exchange Catalog*. It's the neatest thing I've seen in months.

It began like this: Ray Heizer, an engineer by trade, once had an Apple II and *VisiCalc*. He soon had *VisiCalc* jumping through hoops. Naturally, he became a Mac enthusiast and, soon after, an *Excel* enthusiast. By this time, he'd amassed a heavy-hitter's collection of engineering worksheets.

Heizer went to Microsoft and said "Are you going to market worksheets for *Excel?*" Microsoft said "No." So Ray Heizer began Excellent Exchange: "The Clearinghouse for *Excel* Authors and Users." It works like this: Heizer Software markets the products, and the individual *Excel* authors support the products. Each product comes with the author's phone number and support hours.

The products are templates, worksheets, data bases, charts, function macros or command macros. In all, about 250.

So far, so good. What makes the Excellent Exchange exceptional is quality, prices and enticement after enticement.

The products — whether templates, tutorials, macro collections or whatever — are amazing. How about a full set of accounting macros and templates: everything from receivables/payables to customer/supplier data bases and payroll? Or 16 full-powered business templates? How about a Zip Code worksheet/data base that assigns state names and abbreviations based on Zip Code?

There are four education products: grading, attendance, even multiple-choice test macros. Eight engineering products, including one that computes the clearance or interface between two non-parallel straight pipes (or lines) in a three-dimensional space. I'd love to have that. I'd never use it; I'd just like to know it's in the disk case. I'd guess Ray authored that one.

I could go on. And will. Twelve financial products: everything from Acquisition Analysis to Bond Pricing to Time Weighted IRR. And, of course, one for Modified Time Weighted IRR.

And 12 more that deal with investments. And seven math crunchers. And six for manufacturing.

From what I can tell, these aren't slapped-together-in-an-afternoon products. Love, care, expertise and much time went into them; it shows.

Even liberal-arts majors will find something they like — assuming they like *Excel*. There's a disk label template.

And a font catalog (that includes a "keystroke to character" converter).

Or how about this: the familiar *Puzzle* desk accessory in "fully functional *Excel* form"?

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Don't like bridge? How about a World Country data base? The 30-plus fields of this data base detail the people, geography, government and economies of over 160 countries. And it's updated every two months. (And there's a State of the Union data base, and one for senators and representatives, and one for Presidents. The presidential data base has over 40 data fields and a "full set of sorting, extract and criteria macros." Doesn't that sound fun!?)

I'll stop in a minute, promise. Eighteen under "personal." That doesn't count the five-program "Personal Financial Planning" set. It includes Asset Management, Insurance Analysis, Education Financing Analysis, Tax/Cash Flow and Estate Analysis.

And there's a Real Estate category, and Sales, Scientific, Statistics, Taxes — a complete set of 1986 templates should be ready as you read this — and...more! A raft of tutorial programs. Utilities, including a great Mailing Label Macro. A Baseball Picker for gamblers. Slide Show Macros for *Excel* slide shows with adjustable time and "wipe."

Coming up strong on the inside is "WorksXchange": templates for *Microsoft Works*. Only four products now, but expect more.

I'll stop now. But there's more.

Now for the good part. Prices. Cheap. Most are in the $2 to $20 range; you'll find great things for $6 or $8 or even $3 or $4! The accounting modules are more expensive: the Sales/Receivable Journal is $30; the General Ledger is $25. Like I said, cheap.

You'll need to tack on $2 for each disk and another $3 for postage and handling for each order. Still cheap.

Here's one of the most expensive. For $30 you get Stocks with Increasing Dividends. I quote: "500+K data base of about 370 NYSE, ASE & OTC stocks having 10-year history of increasing dividends as of about June 15, 1986. Over 45 fields of data and statistics prepared by a trader with 15 years of successful experience. Annual spring update policy will be announced in a future catalog."

If that's what you like, you won't mind paying $30 to get it.

Heizer keeps the pot boiling. If you order, you'll get a free program of the month. There's a regular tip sheet with "hints, wild ideas and sound routines contributed by users." There's a sample disk, which contains the catalog and some awesome demos. Oh yes: demos. Many products have a protected demo version. Demos cost $2. The two bucks are deducted if you buy the product.

In all, Heizer has come up with a remarkable mix: carefully winnowed Good Stuff, shareware prices, user access to authors, great author royalties (50%!), and mail order selection.

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GARY HOVLAND

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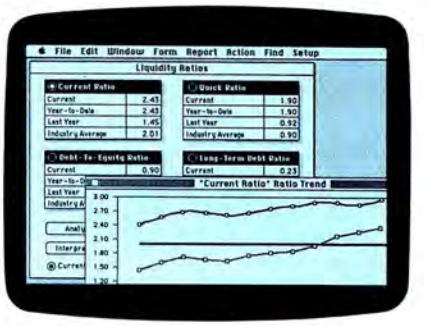
Insight goes on to define and analyze your financial information and suggests possible actions to take. For example, Insight lets you know that your current ratio – your short-term assets compared with liabilities – is good and getting better for a company like yours. Yes, you could use a loan. But because Insight



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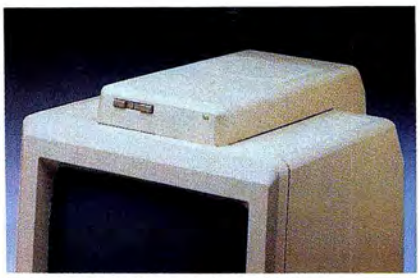

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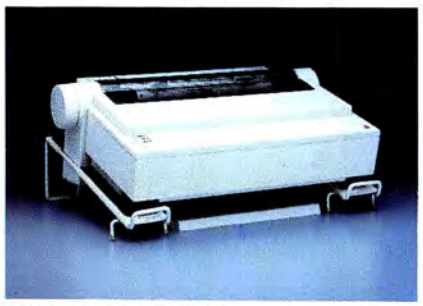

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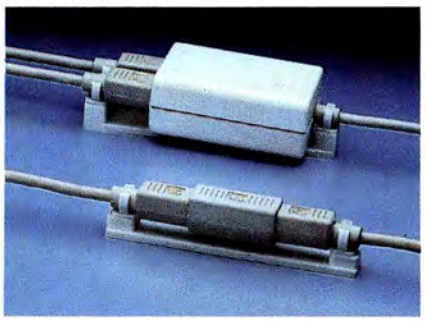

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QUICK CLICKS

YOUR PERSONAL POET

★★★½

List Price: $9.95. Published by Door Openers, Inc., 775 East Greg St., Sparks, NV 89431. (702) 359-8200. Requires 512K+. Not copy protected.

FRANK LUSK

Now Mac users can create their own personalized greeting cards, with a little help from *Your Personal Poet*. Door Openers, Inc. has come up with this rather unique idea for using your Mac. Creating your own greeting cards has never been this much fun — or as easy.

The most interesting part of this program is probably the support material. Along with your *Personal Poet* disk there are also a simple instruction sheet and four greeting cards and matching envelopes. The greeting cards cover an assortment of occasions, some more specific than others. If you run out, regular blank greeting cards will do.

If you're like me and hate reading directions, then this is a program for you. Simply insert the disk and double click on the poet icon, and the program will take you through your creations step by step.

Your Personal Poet arrives at that absolutely perfect greeting by asking a succession of questions, the first being how many people the poem

is for. *Personal Poet* enables you to write your poem for up to nine people. This lets you create a poem for any group from an entire family to a newlywed couple, or just for your mother. The program then asks a variety of questions including who the poem is for, where they live, what their personal traits are, whether it's for a male or female (if the sex is obvious the program will skip this question), what type of poem is wanted and the subject of the poem. You are also given the choice of your poem being Limerical (light and amusing) or Free Verse (serious and sentimental).

The choices for subject matter of the poem are not what anyone would call limited. You can pick from a long list of subjects ranging from Happy Birthday to You Turn Me On (Risque). There are even some that you can personalize even further, for example, Happy 27th Birthday.

To further personalize your poem, there are three trait menus. *Personal Poet* asks you to enter the most descriptive trait and the secondary trait of the person or persons the poem is about. Some of the choices are quite amusing; you might want to mention that the person is sexy or well dressed, and see what happens.

Don't worry if you have decided to change one of your answers, after all questions are answered you are shown a list of your choices. If you are not satisfied with one or more of your answers you can simply change them. *Your Personal Poet* will show you the two poems created, and you can print out one or both of them.

A major drawback of the program is that it cannot be used with the LaserWriter. Every time I tried to run the program, I had to go to the Chooser and choose the ImageWriter. The numerous times that I forgot to do this, my Mac reminded me by bombing. If things like this don't bother you,. then this clever program is well worth the investment. — *JH*

MGMS: PROFESSIONAL CAD FOR MACINTOSH

★★★½

List Price: $799. Published by MICRO CAD/CAM, 5910 Noble, Van Nuys, CA 91411. (818) 376-6860. Requires Mac 512K+. Version 2.07 reviewed. Copy protected.

MGMS (Micro Graphics Manufacturing Station) Professional CAD for Macintosh is a computer assisted drafting software package. *MGMS CAD* has been created primarily for mechanical engineering applications, although it is also appropriate (but not widely used) for architectural drafting.

Advanced CAD users and engineers will find *MGMS CAD* very complete and may be amazed by some of its capabilities. *MGMS CAD* offers more than 200 functions. The commands are simple and straightforward for someone with extensive CAD background and expertise, but may not be appropriate for a novice or mid-level user.

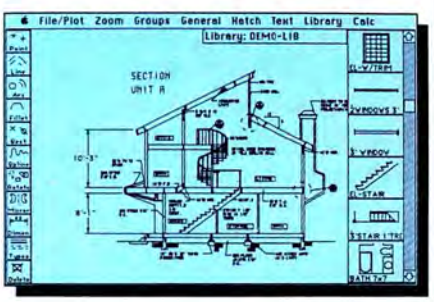
Some of the powerful tools in *MGMS CAD* include GROUPING (groups can be shown or hidden), DIMENSION (allows several locations of text on the dimension) and LIBRARIES, which displays large icons of stored parts on the right side of the screen, making it easy to find and choose a required part. A feature called PROJECTION POINTS is an excellent tool for views construction in mechanical drawings (I have previously only seen this feature in mainframe CAD applications). *MGMS CAD* also allows PICT format files to be pasted onto drawings, a very important capability.

MGMS is very different from other CAD packages in the way it handles some basic operations. For example, a drawing can only be reduced if it has previously been stored as a library part. This requires a couple of extra steps if you suddenly realize that your design has become larger than the page size. It is difficult at first to deal with the program's coordinate system, but you can place objects with the mouse as well as by coordinates.

Any size grid can be used for drawings. *MGMS CAD* accepts graphics input from the keyboard in cartesian absolute, cartesian increments, polar absolute or polar increments. Calculations are automatic for all tangency points. A drawing can have up to 48 distinguishable layers and a number of symbol libraries, limited only by available storage. *MGMS CAD* can output drawings in standard A through E sizes, either to an ImageWriter, LaserWriter or to a variety of pen plotters.

The *MGMS CAD* manual is fairly easy to read and user-friendly, although quite technical (semi-technical is a good description). I tested their telephone support extensively and it was very good.

Two valuable accessories are included with the program. The *Geometry Analyzer* lets you quickly



find perimeters, areas, centers of gravity and moments of inertia for selected objects, saving a lot of calculation time. The *IGES Transliterator* allows you to convert *MGMS CAD* files to IGES format files and vice-versa for transmission to minis and mainframes.

The first release of *MGMS CAD* was shipped with a hardware key, but versions since 2.02 have a software copy protection scheme. The software allows you to make a backup copy either to a floppy or hard disk.

MGMS CAD is reasonably priced at $799, compared with other Macintosh CAD packages and especially compared to similarly capable packages for the MS-DOS environment, which can cost $2000 a pop. Overall *MGMS CAD* is one of the most powerful CAD packages seen for the Mac so far, but look for the introduction of the Mac SE and MAC II to spawn a number of new programs as well.—*Ernesto Moran*

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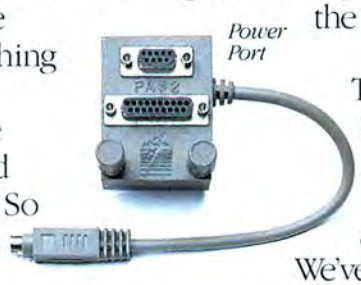

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STEPPING OUT ★★★★½

List Price: $95. Published by Berkeley System Design, 1708 Shattuck Ave., Berkeley, CA 94709. (415) 540-5536. Not copy protected.

Stepping Out, truly one of the most phenomenal utilities to appear for any microcomputer, is a low-price substitute for a big screen. If you were wondering how long it would be before those large screens came down in price, don't worry. Try *Stepping Out.* It's a software solution that gives you close to all you could want in a large screen, and more at a fraction of the cost.

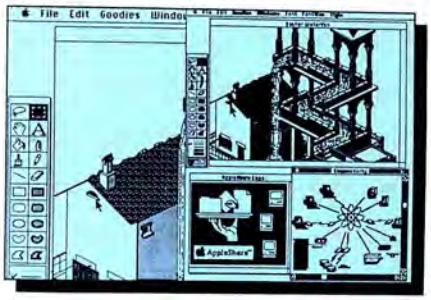
Berkeley System Design calls *Stepping Out* a screen extender. Simply, it allows you to "step out" of your 9-inch Mac screen into a larger virtual display screen. It allows you to have the same features as a large display (e.g., multiple and full page windows), but you still work on your regular Mac screen. With *Stepping Out* you select the size of the virtual screen you want to work on, with memory being the limiting factor of the screen size. In addition to the ability to work on a large screen in 9-inches, you gain on-screen enlargement and reduction capabilities.

As soon as you launch the application, you get to choose the dimensions of your virtual screen. As you type in various dimensions, *Stepping Out* immediately shows how much memory the virtual screen will use. The basic overhead for using *Stepping Out* is 80K, and setting up the equivalent of a Radius Full Page Display (640 X 864) uses an additional 70K of memory.

Returning to the *Finder,* you immediately notice that you no longer see the disk or trash can icons. Your 9-inch screen provides you with a smaller view to your virtual screen. If you move the mouse to the right or bottom edge of the screen, the entire view will shift. To assist you with moving around the virtual screen, *Stepping Out* has a reduction feature that allows a simultaneous overview of the larger, mostly hidden screen. This overview makes maneuvering around the virtual screen easy.

Supplementing the reduction feature, *Stepping Out* has full enlargement capabilities. You can magnify a portion of the virtual screen anywhere from 2 to 16 times. The enlarged view will be on the right side of your screen, while a portion of the regular screen will be at normal resolution on the left. The magnified view will shift as you move your mouse outside its area. And you can work in the enlarged area. Have you ever wanted FatBits in *MacDraw?*

The small manual briefly discusses every feature, but a lot of questions on usage simply aren't discussed in the manual. The manual does list the sizes of some common large screens. It is mostly through trial and error that you will



determine which configurations are best for you.

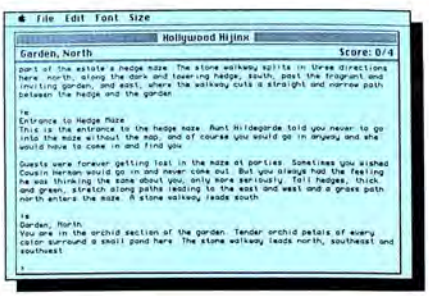
The problems with *Stepping Out* are far and few between. The cursor flickers slightly and you lose the "zooming" effect when opening windows in the *Finder.* In addition, it is fairly easy to "lose" dialog boxes when your view doesn't display the current dialog and you know it's somewhere on your virtual screen. *Stepping Out* has eliminated one potential problem related to typing in the virtual screen, however. As you begin to type, your view will immediately shift to display the insertion point (wherever it may be).

At $95, *Stepping Out* is an inexpensive and powerful utility that almost every power user shouldn't be without. No matter how much anyone attempts to explain the wonders of it, it must simply be seen to be believed.—*DS*

HOLLYWOOD HIJINX ★★★★

List Price: $39.95. Published by Infocom, 125 CambridgePark Dr., Cambridge, MA 02140. (617) 492-6000. Copy protected.

There is something awfully familiar about an Infocom game that asks players to navigate a maze, search a beach, control a robot and find ten hidden treasures. Even if it's not called *Zork 1987, Hollywood Hijinx* might as well be; Dave Anderson has managed to create a text adventure that would fit perfectly into the *Zork* series. Never mind that a huge Hollywood estate has been substituted for the Great Underground Empire, or that the puzzles all rely on thoroughly modern contrivances—*Hollywood Hijinx* is a return to the grand adventure game style of yesteryear.



The plot is as contrived as they come: your uncle Buddy Burbank and Aunt Hildegarde have passed away, leaving you to inherit their estate, Hildebud. There is only one stipulation: to inherit, you must spend a night at Hildebud and find ten items related to Uncle Buddy's films. And Hildebud is rumored to be haunted.... So much for the storyline. Aside from some footsteps you hear sneaking around every few turns, the game is basically a matter of figuring out where Burbank hid his chachkas.

This is not terribly difficult, as the puzzles are entertaining but not notably complex. It only makes sense to look in the safe, for instance, as it does to dig at a spot indicated on a map. A staircase leading to the beach is missing some steps, but you've got a pair of skis. Anyone care to guess how to get past that obstacle?

Simple is not always bad, however, and in this case it works quite well. Anderson has a highly creative bent, and his puzzles frequently have deviously funny solutions. In addition, there are enough puzzles to keep even the best of adventurers busy for a few hours; in this respect, it is much like *Wishbringer,* another fine but simplistic game.

There is little more to be said about a game this basic. The typical Infocom one-liners are funny more often than not; the text wouldn't win a Pulitzer, but it is above average as far as interactive fiction goes; the game's ending is surprisingly good, and it brings the adventure to an appropriately madcap conclusion. It takes a certain taste to appreciate *Zork*-style adventures, though, and I'm far from certain that this one will find a large audience. People seem to be going more for the broad humor of a *Leather Goddesses of Phobos* or the sheer mass of a *Trinity* than the old-fashioned straightforwardness that comes through in *Hollywood Hijinx.*

Still, *Hollywood Hijinx* is a finely wrought and good-hearted game; it may not have the scope of some of Infocom's better works, but it has all the spirit. You could do a lot worse.—*Charles Ardai*

RAMSNAP ★★★★

List Price: $59.95. Dove Computer Corporation, 1200 North 23rd St., Wilmington, NC 28405. (800) 622-7627; in NC (919) 763-7918. Mac Plus required. Not copy protected.

Another RAMdisk application? Yes. And a pretty good one, too. I've never used *RamStart.* I didn't like the fact that it soaked up all the files on the startup disk without giving me a chance to pick and choose. I didn't like the idea of having different startup disks for different RAMdisk configurations. And I didn't like the idea of writing scripts to make the program useful in combination with a hard disk.

RamSnap improves in all three areas. It has much more flexibility, allowing you to select precisely those files you want copied to the

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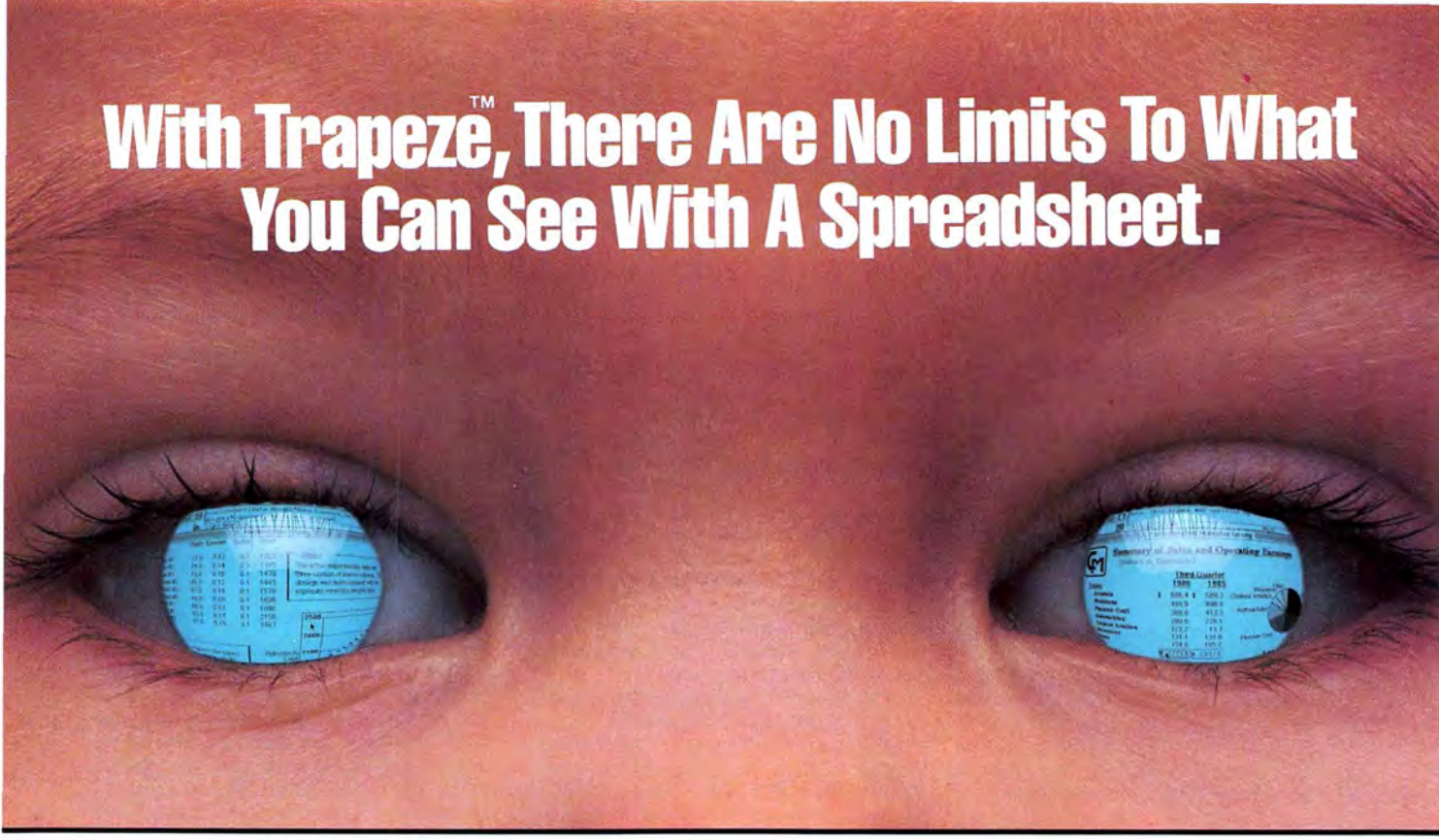

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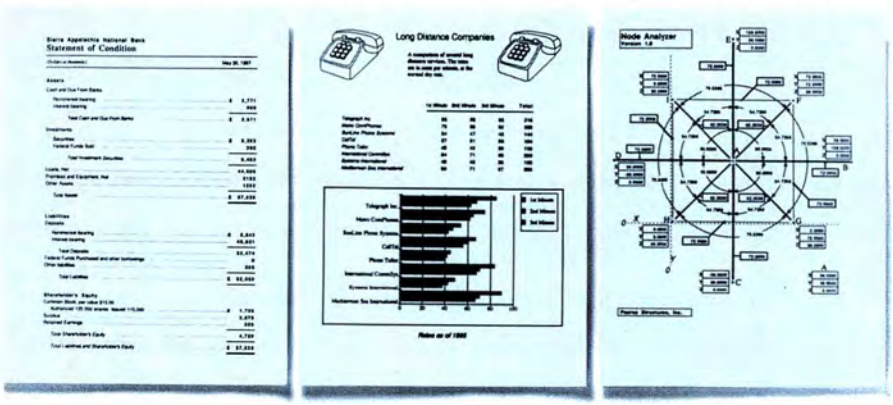

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Revision 1.1 Available In May '87
Mac II Version In Summer '87

Minimum system requirements– Macintosh 512K with external drive or enhanced Macintosh 512K.
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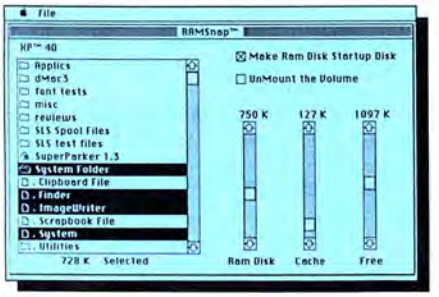


RAMdisk, no more no less, from any folder or combination of folders on a disk. You can even select an application to launch automatically after being copied to the RAMdisk. And if you select the *System* file as one of the files to be installed on the RAMdisk, the "Make Ram Disk Startup Disk" option is automatically checked. You can deselect it if you choose. The interface that allows you to do this works much the same way as the standard HFS file dialogs.

As you select files to be copied to the RAMdisk, you are shown a running total of the amount of space they require. This allows you to tailor the size of the RAMdisk efficiently. And as you slide the appropriate scroll bar to set aside RAM for your RAMdisk, a companion scroll bar decrements, indicating how much memory is left for running your applications. There is a third scroll bar as well. This one lets you set the size of a RAM cache. Dove recommends that if you use *RamSnap*, you use this RAM cache rather than the one available from the Macintosh Control Panel. Again, as you increment the amount of memory assigned to the RAM cache, you get immediate feedback on the amount of RAM remaining for applications.

Dove has also made it easy to create and store multiple configurations. Once you establish a configuration you like, you save it as a *RamSnap* file. If you don't enter a name, the name *SnapStart* is assigned automatically. Whenever *RamSnap* is launched, *SnapStart* is automatically implemented. If you want a particular configuration to always load automatically on startup, you simply store that configuration as *SnapStart* and set *RamSnap* as the startup application. If you change your mind, simply change the name of the *SnapStart* file. You can also override the *SnapStart* configuration by holding down the Option key during startup.

There is also one more great feature. When you bomb a program, there are usually two buttons, "Resume" and "Restart," but Resume never does anything. With *RamSnap*, it does. In most cases, you end up back at the *Finder*.

The documentation is pretty good. In *RamSnap*'s case, the interface is intuitive enough that you don't really need the manual anyway.

All that's left to complain about is the price, which is a little high. It's a great utility, but there are high-powered word processing and graphics programs around that cost only $50 to 60 more. If price is no obstacle, get *RamSnap*. I think you'll like its performance. Otherwise, hunt for a good discount—or stick with shareware.—*Henry Bortman*

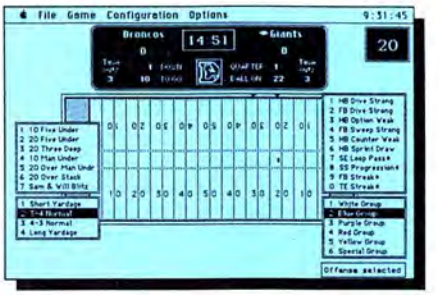
NFL CHALLENGE ♜♜♜

List Price $99.95. Published by XOR Corporation, 5421 Opportunity Court, Minnetonka, MN 55343. (612) 938-0005. Requires 512K+. Not copy protected.

NFL Challenge is a game that simulates coaching and watching professional football. Popular for some time on the IBM PC, *NFL Challenge* on the Macintosh makes excellent use of the Mac's graphics and user interface to provide an interesting and challenging pastime.

NFL Challenge comes on two disks, one containing the program and system files, the other nearly 400K of team and playbook statistical data. The disks are not copy protected. Not only are you authorized to make a backup copy of both disks, but the program even comes with an extra set of printed labels for them. *NFL Challenge* can also be copied to a hard disk (how nice!) with no complications and no key disk requirement.

To begin *NFL Challenge*, you select any two NFL teams to play against one another, one as the home team and the other away. Although all the game's operations can be handled via mouse, there are also user definable keyboard options. Either team can be coached by a human or by the computer, thus there are several options of play: two people against each other;



one person against the computer, or you can watch the computer play against itself, which can help you learn strategy.

NFL Challenge loads in statistical data for the teams selected, including player information, tendencies, strengths and weaknesses. A field is displayed, with a game clock that records four 15 minute quarters, a 30-second clock and a scoreboard. A coin toss determines which team will be kicking off.

Once the game begins, you coach a team on both offense and defense. Play selections are made from a pre-defined offensive or defensive playbook. The game comes with laminated playbooks that diagram all 26 defensive plays and 61 offensive options available. The choices are displayed on screen and selection can be made either from the keyboard or with the mouse. Each formation and every play has strengths and weaknesses, and as you play you begin to learn which plays are most successful against a certain offense or defense.

When both an offense and a defense have been selected, the display changes to a full screen overhead view of the field and the play is executed in animation with O's representing offense and X's the defensive players. Passes can be complete, incomplete or intercepted; the quarterback can be sacked or can scramble; and runners can try to attack the open hole.

The player has no control over the actual play itself, though. The computer determines what will happen based on the teams playing, the players in the game and the offensive and defensive plays that have been called. (You can't steer the ball carrier with the mouse, for example). Penalties and injuries are thrown in at random intervals to make things interesting.

NFL Challenge may not be as good a simulation as *Mac Pro Football* (see *MacUser*, March, 1987) and its price is pretty steep. But it is a lot of fun to play and it offers some things other games don't. For instance, there is a book describing NFL football terms and concepts, and the two playbooks have excellent information about the risk of a play versus its potential gain. The design of the game makes it a good learning/teaching tool for budding coaches and players. —*MDW*

DISKFIT ♜♜♜♜½

List Price: $79.95. Published by SuperMac Software, 950 N. Rengstorff Avenue, Mountain View, CA 94043. (415) 964-9694. Requires 512K+ or higher, hard disk. Version 1.01 reviewed. Not copy protected.

Even though I have been preaching the virtues of backing up files for years, I rarely take my own advice. I have been fortunate (knock wood) that I haven't yet suffered a catastrophic hard disk crash, because until very recently I never backed up my hard disk. It was too painful, too much work and the results were never great. It took a product like *DiskFit* (actually, it took *DiskFit* itself) to get me to back up on a regular basis. *DiskFit* is simple and painless to use, it doesn't require a dozen boxes of blank floppies and it's smart, so I don't have to be.

QUICK CLICKS

The first time you back up your hard disk with *DiskFit*, the program creates a "SmartSet" of floppy disks. Once you name the set, the program automatically names and sequentially numbers each floppy disk as you insert it. Files are copied very quickly (about 5 minutes for each 800K disk) from hard disk to floppy. You can watch the progress on screen—a small window lists each file name as the file is being copied. If a file has to be split across two floppies, *DiskFit* remembers and will rejoin the file in a restore procedure.

DiskFit will not let you write over a disk you have already created in a SmartSet. If you try, the program will simply tell you that the disk is not needed now, and ask you to insert another disk for copying. If you insert a disk that already has files on it, *DiskFit* will warn you that it is about to be erased and let you change your mind.

If you run out of floppy disks before the backup process is finished, you can quit at that point and resume at the same place another time. *DiskFit* will remember where you left off copying.

The initial backup process took about 45 minutes to back up just under 10 megabytes, on 16 floppy disks. But the intelligence of *DiskFit*, and its greatest speed advantage, comes into play during incremental backups—when all you want to do is save changes made since the last backup. The program scans each floppy and only updates files that have been modified since the last backup procedure. This saves a tremendous amount of time and makes regular backups fast and simple.

If you lose, misplace or damage one of the disks in a SmartSet, simply tell *DiskFit* the disk is missing when you are asked for it. *DiskFit* will remember what files it contained and recreates the disk.

You can create multiple SmartSets with *DiskFit*. This option lets you alternate back up sets and provides an extra level of safety.

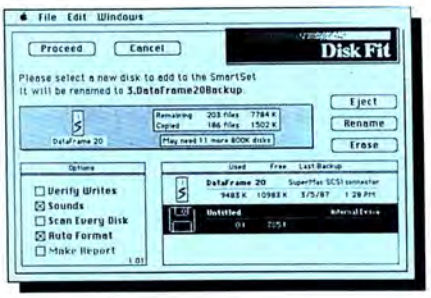
DiskFit offers a number of options as you back up, including verifying each file as it's copied. Although this slows down the copying process, it is one way to assure yourself that each file has been copied correctly.

You can also use *DiskFit* to back up from one hard disk to another. The back up dialog box shows all mounted volumes, tells you how much space is available on a second or third hard disk and pumps files into the disk until it runs out of space.

In the event of a major crash, or if you need to clean off your hard disk and replace everything later, the Restore process is as simple, and nearly as fast, as the backup. *DiskFit* simply prompts you for each numbered disk in sequence from your SmartSet.

The *DiskFit* manual is small but well done, and easy to follow, although it doesn't talk about backing up from one hard disk to another. It does include a section on backup strategies that is well worth reading.

DiskFit is so easy to use and well designed that it may be the program that gets you to do regular backups on your hard disk—making it more than worth the price.—*MDW*



SIDEKICK 2.0

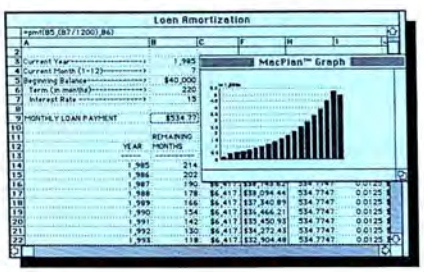
List Price: $99.95. Published by Borland International, 4585 Scotts Valley Drive, Scotts Valley, CA 95066. (800) 255-8008. Not copy protected.

SideKick 2.0 is a new version of an old friend from Borland International. This is one case where the sequel is better than the original.

The two *SideKick* disks contain 11 desk accessories that make up a complete set of programs for managing everything from your daily schedule to your budget. And because the programs are desk accessories, you can use them while working in other programs.

SideKick's desk accessories include:

- *Area Code Lookup*: type in a telephone area code and *Lookup* will match it with a location and time zone. This accessory would be better if it worked the other direction as well, but it is still quite useful;
- *Calculator+*, a full functioned calculator with electronic paper tape to record your calculations;
- *CalendarBook*, a daily appointment book with day by day and week-at-a-glance views;
- *MacClock*, a 1.5" by 1.5" analog clock with sweep second hand;
- *MacDialer*, a telephone directory and autodialer that keeps track of time and charges;
- *MacPlan*, a new addition — a 50-row by 20-column spreadsheet that does graphs, too;
- *MacTerm*, a telecommunications program that supports MacBinary XModem and ASCII upload and download;
- *NotePad+*, a text editor that can create, edit, and save files up to 32K in length;
- *Outlook*, a new outliner that supports both text and graphics;
- *QuikSheets*, an editable set of lists, including a to-do list, expenses, credit cards and multiple reminder alarms;
- *ReadiPrinter*, a simple background printer that only allows draft quality printing.



SideKick 2.0 also comes with seven applications to support the desk accessories, including a conversion program that can turn *Habadex*, *MacPhone* and some text files into *SideKick* format files, an editor for creating and editing *QuikSheets*, and a printing utility that lets you turn your telephone directory into mailing labels or mailmerge files.

If you've already used *SideKick* 1.0, you'll be familiar with all the programs except *Outlook* and *MacPlan*.

Outlook is a full-featured outliner, comparable in utility to the other outlining desk accessories, *Voilà* and *Acta*. Unlike *Acta*, *Outlook* allows the pasting of graphics into its outlines. Text cut from *Outlook* pastes cleanly into word processors, making it an ideal mate for *MacWrite* or *Word*.

Unfortunately, *Outlook* is the largest desk accessory I've ever seen, weighing in at a hefty 133,110 bytes. That means you'll only be able to use it if you have lots of disk space.

The other newcomer is *MacPlan*, formerly *Click-On Worksheet*. *MacPlan* is a simple, but useful, spreadsheet, with a full complement of arithmetic and financial functions. It even does bar and stacked bar charts, pie charts and line graphs. *MacPlan* is not *Excel*, but if you need to do some quick calculations or create a chart, it's quite handy. The only thing wrong with *MacPlan* is that if you close its window, you'll lose all your work — *MacPlan* doesn't ask you if you want to save first.

Of the remaining desk accessories, I find *MacDialer* most useful. It keeps a directory of all the people you call, and will dial their numbers automatically through a modem or the optional *PhoneLink* accessory. Once you get through to your party, *MacDialer* will time the call, and even calculate the charges. The length of the call, relevant charges, and any notes you make are logged to disk for future reference.

Borland has put this collection together from a variety of sources. The varied origins of the *SideKick* desk accessories are betrayed by the lack of a consistent user interface. The programs Borland wrote in-house are not quite as elegant as those they acquired from third parties, but all do their job well, and there's no doubt that *SideKick* 2.0 represents a remarkable value.

The American Heritage Dictionary defines a sidekick as "a close friend and follower with whom one shares adventures." *SideKick* 2.0 from Borland International is one friend and follower I wouldn't want to be without. — *Léo Laporte*

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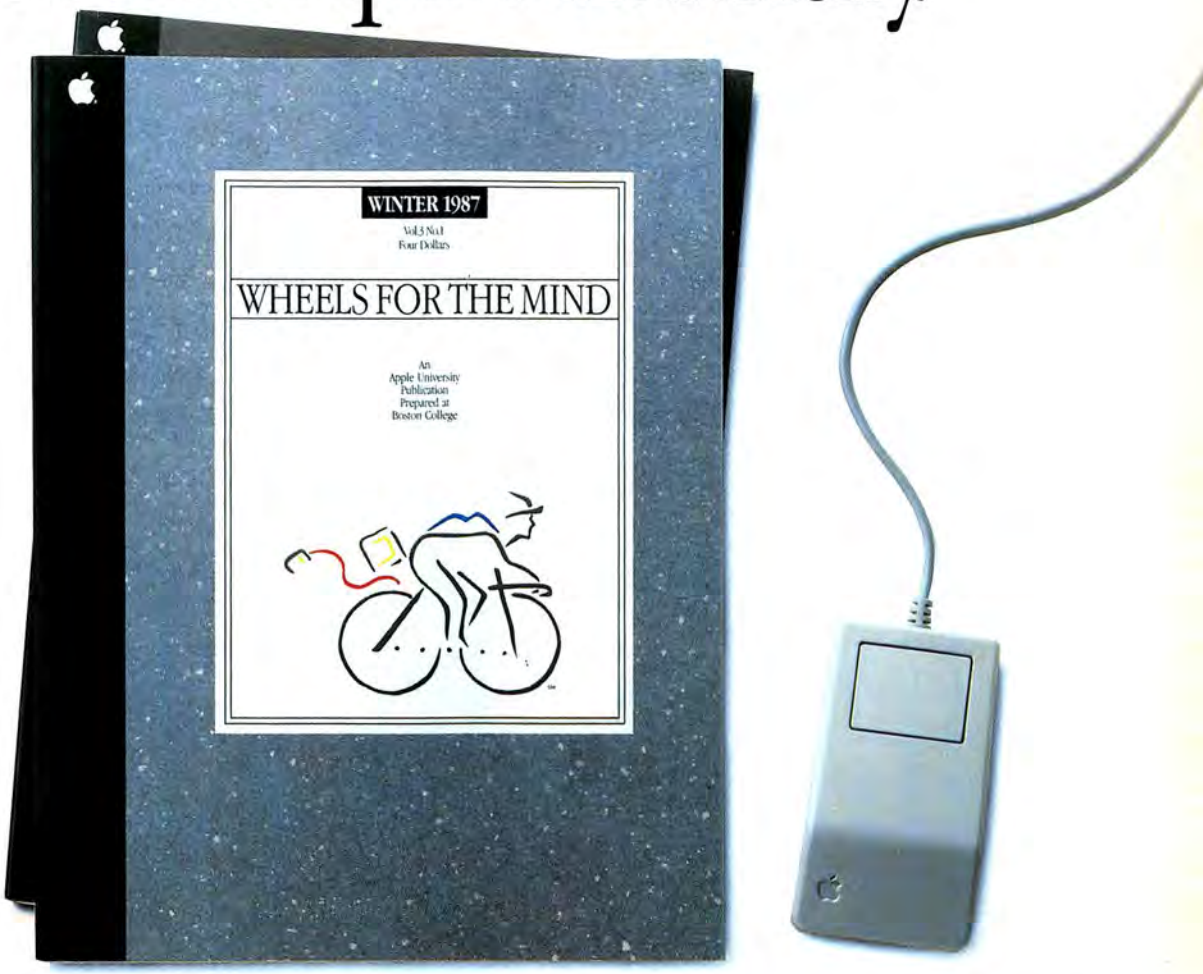

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QUICK CLICKS

BATTLE STATIONS ★★★★

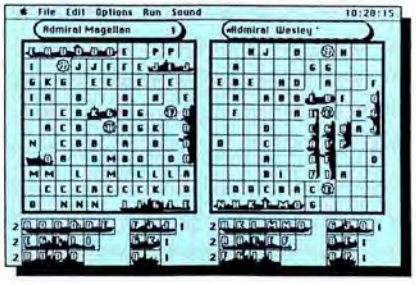
List Price: $30. Published by Timeline, Ltd., PO Box 60, Ypsilanti, MI 48197. (313) 483-3939. Requires 512K+; runs on SE. Version 1.1 reviewed. Not copy protected—free upgrades provided to registered owners.

Battle Stations is a deceptively simple and interesting game based on the pen and paper game of *Battleship*. Two players arrange five ships of different sizes on a playing grid. They then take turns trying to locate the opponent's ships by firing salvos to specific squares on the grid. The player who sinks all five of the enemy's ships first is the winner. Simple, right? Wrong. There are several levels of strategy involved, especially if one of the players is your Macintosh.

As with pen and paper *Battleship*, players must deploy their fleet within a confined area, in this case a grid of 11x11 small squares. The fleet consists of an aircraft carrier that occupies six consecutive squares; a battleship (5); a cruiser (4); a destroyer (3); a PT boat and a submarine (2 squares each). Each player can also plant three mines anywhere on the board. The ships can be laid out horizontally, or rotated with a double click to lie on a vertical path.

Once a fleet has been deployed, the ships disappear from the board. Play continues blindly on two separate grids, making it possible for two people to play against one another. The ships' positions can be displayed at the end of the game, but not during play. Each player gets nine shots per turn—a considerable number that can rack up hits very quickly. At the end of a salvo, the hits are recorded on graphics of the ships below the playing board.

Strategy enters the game at several levels. The first, of course, is the deployment of the ships and mines. Ships need to be placed where they are least likely to be detected, while mines should go where your opponent is most likely to fire. Although there are several ways to approach ship deployment, the small manual recommends spreading your ships out when playing against the computer. This is a good suggestion to follow because the Mac plays an excellent game of *Battle Stations*, and zeroes in on ships very quickly using close bursts of shots. If several ships are bunched together, a lucky first shot can lead to total destruction in two or three turns.



(Note, however, that the computer often bunches its ships in one place.) The placement of mines is especially important, because hitting a mine ends a player's turn, regardless of how many shots have been fired.

The second level of strategy is where and how to fire. First you have to locate ships, then hunt them down and go for the kill. Because you don't know which of the shots are hits until the end of a turn, it often helps to cluster your shots to narrow down a boat's location.

The final level of strategy is a bit more intriguing. The number of shots available to each player is a factor of the number of live ships still remaining. The aircraft carrier, battleship and cruiser each allow you two shots, while the three smaller ships are worth one apiece (totaling nine, the opening number for both players). Killing your opponent's ships reduces the number of shots he can fire on the next turn. Likewise, your shots decrease when your ships are sunk.

Battle Stations is deceptively interesting. The first time you play it, you may not find it very exciting. You will probably be killed quickly, but learning how to beat the computer is intriguing. The game makes excellent use of Mac sound and graphics, and even has an online help facility.

Since you can play a full game of *Battle Stations* in five or ten minutes, it makes a nice break from work, and it's a game you can come back to again and again.—*MDW*

MACSNAP PLUS 2 ★★★★

List Price: $399. Dove Computer Corporation, 1200 North 23rd St., Wilmington, NC 28405. (800) 622-7627; in NC, (919) 763-7918. Hardware.

Dove Computer Corporation produces, among other products, a full line of upgrade kits for both the Macintosh 512K and Macintosh Plus. The MacSnap Plus 2 memory upgrade is a set of four SIMMs, each containing 256-kilobit chips—1 megabyte in all—which piggyback onto the existing memory boards in a Macintosh Plus. The result is a Mac Plus with 2M of available RAM. Once you've tried one, you won't be able to live without it.

Having an extra megabyte of memory around considerably eases some of the frustration of working with *Switcher*. With 2M, you can run *PageMaker*, *SuperPaint* and *Word* simultaneously—with the *Finder* thrown in for good measure—with no performance degradation in any of the programs. Or you can create a RAMdisk, put a large *System* file on it, and still run a memory-hungry program like *Cricket Draw* comfortably.

There's really not much to say about a memory upgrade beyond how nice it is to have the extra memory around. Either it works or it doesn't. In the case of MacSnap, it works. I've tested it for several months with no sign of a problem. An important question with RAM upgrades is "Does it overheat?" MacSnap doesn't. Dove pays particular attention to this question, selecting only those RAM chips with the lowest power ratings for inclusion on their boards. The result is that the Plus 2 only boosts the power consumption of a Mac Plus from a little over 9 watts to a little under 12 watts. (Their other models, including their 4M upgrades, use even less power than the unadorned Macintosh Plus.)

MacSnap is user installable. While the instructions are generally quite easy to follow, they were originally written for a Mac 512. There is a Mac Plus supplement stuck inside the installation manual. Although a sticker on page 21 of the installation manual tells you to skip the next four

pages if you have an 512E, nothing in the main manual points you to the supplement if you have a Mac Plus. You have to find your way on your own, once you get to where the instructions stop making sense for your machine.

Since the Plus 2 uses 256K chips, once it's installed a Mac Plus cannot be upgraded further unless you remove the Plus 2. Dove makes other 2M upgrade kits that use 1-megabit chips, which allow you to later upgrade to a full 4M. These cost more than twice what the Plus 2 costs, but should be considered if you intend some day to upgrade beyond 2M.

MacSnap comes with RAMdisk and print spooler utilities, and a User Manual that has an excellent discussion of strategies for partitioning memory for optimal use of both the RAMdisk and *Switcher*. I particularly appreciated their oft-repeated caution not to put data files on a RAMdisk. Also enclosed is a $10 discount coupon for Dove's own RAMdisk product, *RamSnap*.

MacSnap Plus is not compatible with any of the existing big screens or internal hard disks, and probably won't be. For that, you have to get the more expensive upgrades that use the 1-megabit chips—they take up less room.

I heartily recommend this product if you're looking for an inexpensive upgrade and 2M is as much as you'll need.—*Henry Bortman*

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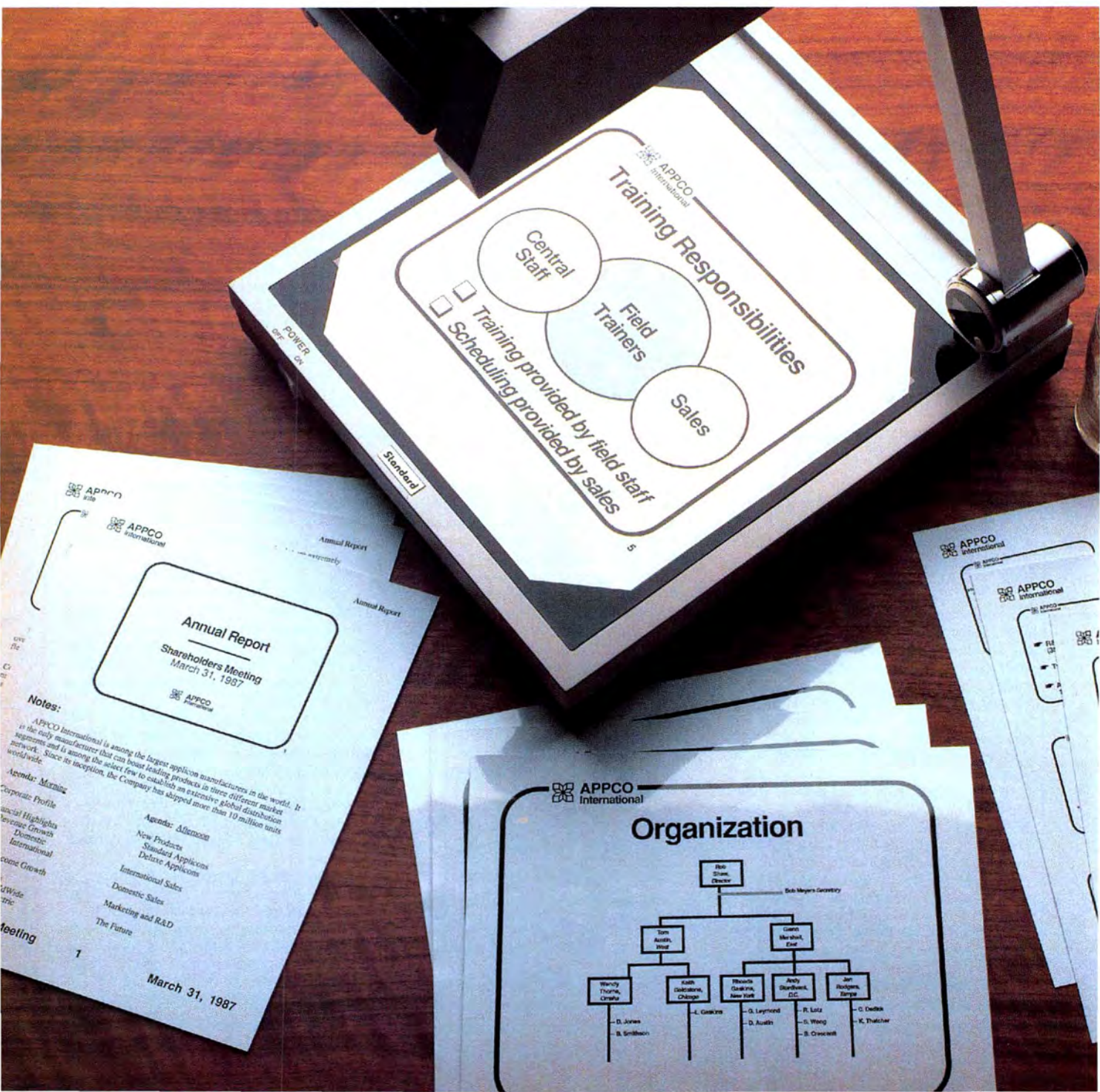

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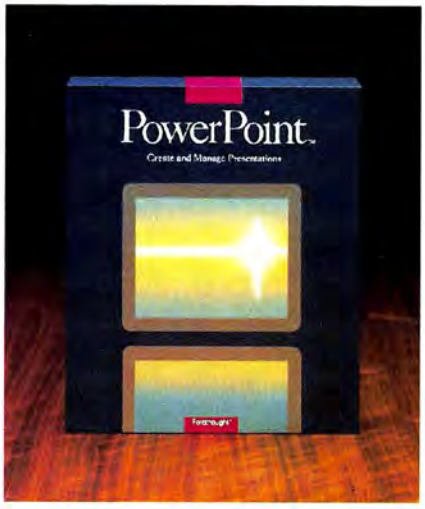

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On the Flying Trapeze

Trapeze is a totally new approach to spreadsheets. Are you ready for it?

BY ROBERT R. WIGGINS

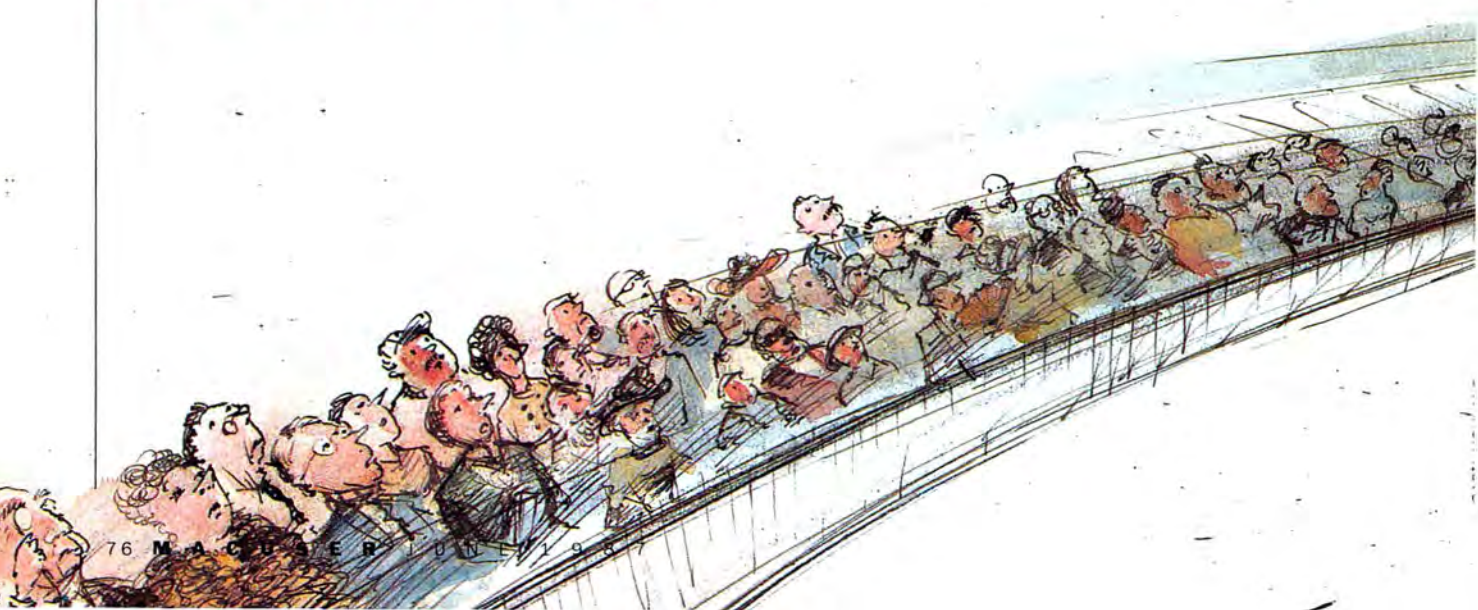
WHILE IT MAY NOT BE WITH THE greatest of ease — and sometimes you may feel like you're working without a net — you will definitely feel daring if you take a flyer on *Trapeze*. *Trapeze* is billed as the "spreadsheet without limits," which is true and false at the same time. *Trapeze* is not exactly a spreadsheet, but it can provide some of the same functions and even functions not possible in a standard spreadsheet. And while it removes some of the limits on a standard spreadsheet user, it imposes limits of its own, sometimes being unable to easily accomplish what a spreadsheet could do without blinking.

MENTAL BLOCKS

The basic building block in *Trapeze* is the aptly named block. *Trapeze* worksheets start out as completely blank workspaces upon which blocks are placed. There is an invisible grid, which can be adjusted, and that the blocks automatically align to, similar to *MacDraw*.

Getting started with *Trapeze* requires more thought than starting a standard spreadsheet. First, you have to place blocks where you want them on the page. You accomplish that feat by selecting the special block placement cursor from the Cursor pop-up menu.

There are lots of cursors in this program. The arrow cursor is the normal selection cursor, the blank block is the standard block placement cursor, the little file cabinet is the data base block placement cursor, the block with the folded corner is the text block placement cursor, the block with gray lines in it is the graphic block placement cursor, the small block with the arrow is the block movement cursor and the small block in a bigger block is the block resizing cursor. Confused? It gets worse, but you will get the hang of it eventually, and some of the cursors can be selected from the keyboard which makes life easier. After you've selected the cursor for the function you want to perform (placing a normal block), the cursor will change to represent whatever function you can now perform. You then click where you want the block to go, and it will appear as a single



cell block (with the default cell size specified in the Setup option under the Sheet menu), automatically aligned to the invisible grid. If you missed where you wanted it to go, just select the block movement cursor (or hold down the Option key when selecting the block).

To make more cells in the block, just mouse down with the selection (arrow) cursor inside the block and drag down and/or right and more cells will appear. Keep in mind that these cells need to be related, since formulas in *Trapeze* work on blocks, not individual cells.

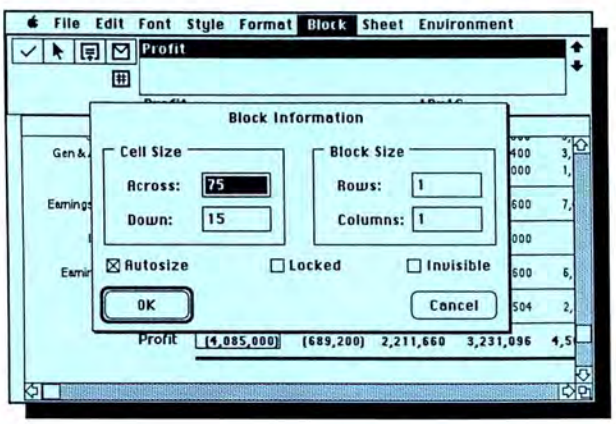
After you've got your block all pretty, you'll want to name it if you intend for any other block to be able to reference it in a formula. If you look at the Edit Box pop-up menu, you should see a little envelope showing, which means the edit box is expecting a name to be typed in. If it's not an envelope, you need to select it off the pop-up menu. Then just type in a meaningful (to you) name for this block and hit Return.

There's another icon in the Edit Box pop-up menu, a block with quote marks in it. This allows you to attach comments to blocks. These can come in handy when coming back to a worksheet later.

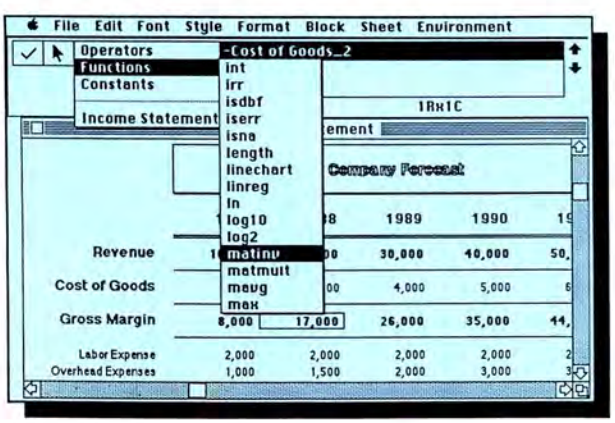
If you are a heavy spreadsheet user, Trapeze takes a lot of getting used to, and just plain doesn't do some things that other spreadsheets do.

Now that your block has a name, and perhaps a comment, you'll want to put information in it. There are two ways to do this, either enter it yourself or use a formula. To enter the data yourself, you need to select the contents icon (a block with an arrow pointing into it) from the Edit Box pop-up menu, if it's not already showing. You can then type in numbers or text, which will go in the selected cell, hitting Tab or Return to move to the other cells in the block to enter information in them.

Entering formulas in *Trapeze* is where the fun starts. Let's assume you have defined a 1 X 5 (one row by five columns, or five cells total) block called Revenue and a 1 X 5 block called Expenses, and have entered numbers into the cells in each. Now you can place a block named Profit which will subtract Expenses from Revenue (don't bother to size it, something amazing is about to happen). Select the formula icon in the Edit Box pop-up menu and the Formula pop-up menu immediately to its left will become active. Pop up the Formula menu and you will see the name of your worksheet at the bottom. Select it (but keep the mouse button down), and the cursor will turn into a rightward pointing arrow. Slide the mouse to the right, and another menu will pop up, with the names of the blocks defined in the worksheet. Slide down to "Revenue" and let go of the mouse, and "Revenue" will appear in the formula in the edit box. You can now repeat this, selecting "Operators" instead of the worksheet, sliding right and then down to the minus sign and releasing. Once more to the worksheet to pick up "Expenses" and your formula is done. (If this seems a bit cumbersome, you can just type in "Revenue—Expenses," but that's not nearly as much fun). Hit Return and your "Profit" block grows to 1 X 5 and contains the results of the formula.



Use the Block menu to change the cell sizes (which are given in pixels), or to turn off the autosizing feature. Blocks can also be made invisible or locked to prevent changing the information they contain.

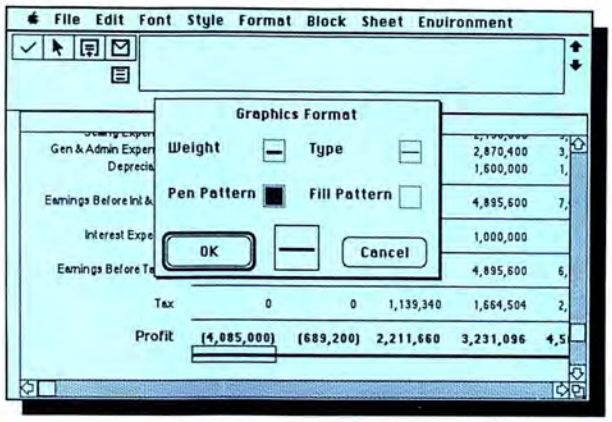


The formula pop-up menu takes full advantage of *Trapeze*'s multi-level pop-up menu structure, allowing full access to the long list of functions.

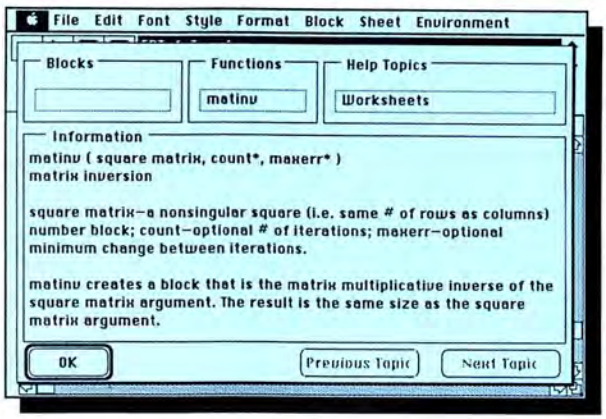
OF MATRICES AND MEN

What just happened? *Trapeze* does something that in mathematics is called matrix arithmetic. (For you mathematicians, this is a simplified discussion that addresses how *Trapeze* does it, not the real thing). Let's call a 1 X 1 block (a single cell, containing a single number) a *single cell block* (also known as a *scalar*). And let's call a 1 X n block, where n is greater than 1, a *row block* (also known as a *vector*), and let's call a n X 1 block, where n is greater than 1, a *column block*. And finally, let's call a

m X n block, where both m and n are greater than 1, a *table block* (also known as a *matrix)*. Arithmetic operations (+,-,*,/) on two single cell blocks yield a single cell block, for example, 5*7 = 35. Arithmetic operations on a single cell block and a row or column block yield a block of the same orientation (row or column), for example, 5*{7 5 8} = {35 25 40}. Arithmetic operations on two row blocks or on two column blocks yield a block (of the same kind) with the length of the longer one, for example, {1 2 3}*{10 20 30 40} = {10 40 90 NA} (the NA is what *Trapeze* does). Arithmetic operations on a column block and a row block yield a table block with as many rows as the row block and as many columns as the column block. *Trapeze* calls this "autosizing." In most cases, autosizing will produce a block the size you would have wanted anyway, but for those occasions when it doesn't, there is a resize function and blocks can also be explicitly marked for no autosizing.



Clicking on a graphics block yields the Graphics Format dialog, where all of the options are available as pop-up menus (the squares of dotted lines indicate where the pop-up menus are). Lines, boxes and ovals with varying line thicknesses and different fill patterns can be created and placed behind other blocks.



General help is available under the "Help Topics" pop-up menu as well as specific help for the various built-in functions under "Functions." The "Blocks" pop-up menu is a multi-level menu that shows a list of open worksheets, then the blocks within a worksheet. When a block is selected, the block size, type, formula (if applicable) and block comments are shown.

FUNCTIONS AND MORE FUNCTIONS

Trapeze comes with an outstanding set of built-in functions. There are the standard mathematical functions, such as square roots, arithmetic progression, geometric progression, and modulo division. There are block and cell attribute functions for determining size or types of blocks, whether values exist or are in error, for getting row or column numbers, and for counting cells. There are block rearrangement functions changing block sizes or shapes, transposing rows and columns, and filling blocks.

Charting with *Trapeze* is done with functions also, so there are functions for creating bar, column, line, pie and scatter charts, as well as calculating histogram values.

Trapeze has a set of conversion functions, such as character to ASCII, number to character, and radians to degrees. There are a large number of date and time functions for getting exactly the format you want. There are string manipulation functions. And there are the standard financial functions such as future value, internal rate of return and net present value; and the standard logical functions of and, not, or and exclusive or (xor).

Because formulas operate at the block level, there are functions to extract cells, columns and rows from blocks, as well as selection functions that work on a block or cell basis. And because blocks can be matrices, there are matrix and modeling functions like matrix inversion, matrix multiplication and linear regression.

Rounding out this rather impressive list of functions are the statistical functions for taking averages, calculating standard deviations, variances and the like; and the transcendental functions such as sines, cosines, pi, *e*, and logarithms.

JUST PICTURE THIS

Trapeze's big advantage over other spreadsheets is its graphics capabilities. Pictures can be placed on the sheet, or special graphics blocks can be used for lines, boxes and dots in various combinations. And since *Trapeze*, like *MacDraw*, has "planes," you can place blocks behind or in front of other blocks.

For instance, you could design an invoice form in *MacDraw* or *MacPaint*, then paste it into *Trapeze*. It will automatically go to the "back" so that as you lay out the blocks to contain the text and numbers, they will overlay the picture. This feature could also be used to put logos or letterheads on spreadsheets.

Trapeze also allows each block to be in any font, size or style. This lets you draw attention to totals by putting them in bold or in a larger size.

SO WHAT'S NOT TO LIKE?

With all this capability — graphics layout, varying fonts and styles, many built-in functions, block autosizing — what could possibly be wrong with *Trapeze?*

To begin with, it's not easy to learn and use right away. It takes some time to become accustomed to all the different cursors and pop-up menus and/or learn the key equivalents. This is one Macintosh program where reading the manual is definitely in order. And while the manual has an excellent tutorial and

(continued on page 181)

BECKER
QUARTZ
Generic Data Systems, Inc. Travel Expense Report
Thomas Buchanen
123 Main Street, Walnut Creek, CA 94511
Marketing
Attach Receipts Required by Company Policy
Account Information
Mortgage Data
Totals
Balance
Interest
Principal
Monthly Payments:
Total Payments:
Total Interest:
Start Date:
Reference: Loan No. 10543
Brown Deer, WI 53223
Thursday
Portland
Oakland
Friday
Wednesday
Tuesday
Seattle
Home
results out of Excel to further groom them
for presentation, you might like to know
little more about the Copy comma

The Secrets of Excel

The most powerful spreadsheet becomes even more powerful when you use this collection of pro techniques and undocumented features.

EXCEL! MORE THAN A YEAR AGO, Microsoft set the Macintosh world on fire with this spreadsheet, the most sophisticated ever devised. The ease of use, the "feel" of a spreadsheet was suddenly as much an issue for users as sheer speed or pure power.

As easy as *Excel* is to use, some of its most friendly and intriguing features are not so clearly documented. Here we'll explore some of the subtle features of *Excel*, along with some that are genuinely undocumented.

ANATOMY OF A NUMBER

My favorite way of using *Excel* is to make the best use of the basic worksheet tools before turning to macros. Think of the following basic worksheet features first: number formats, worksheet functions, range names, arrays, data tables, multiple windows, and the FIND function. As you build your first worksheets in *Excel*, you'll notice the wealth of built-in number formats but you may not realize that you can greatly expand the library of available number formats by following a few simple rules.

The simplest way to think of number formats is by using the following "anatomy chart." The number format is text made up of three parts, each separated by a semicolon:
{POSITIVE;NEGATIVE;ZERO}

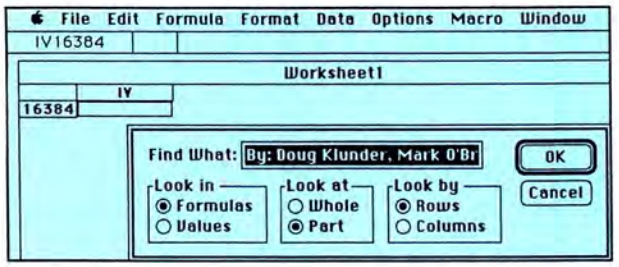
You don't even have to declare each part of the format to use a number format. For example, a format with no semicolons, such as {0.00} will automatically appear with a negative sign where applicable.

Text can be used in number for-

BY LOUIS BENJAMIN

RICK MULLER

From the new and improved message department: If you canceled a save, or your disk ran out of space during a save with the old *Excel*, a warning message came up. Turns out the message wasn't clear enough, so here's the new message. This should remove any need for a skull and crossbones on future versions.



Developer Names revealed! Here's a neat trick. As soon as you open *Excel*, select cell IV16384, and hold down SHIFT-COMMAND-J. You'll get this message. Click and drag inside the text box, and the message scrolls to reveal everybody.

mats to further embellish the information in your worksheets. The format {0.00 "Over"; 0.00 "Under"} will appear empty when the cell's value is 0, but will show positive and negative variances using descriptive text, which stands out more clearly than your basic "+" and "-" signs.

If you use only text in a format, you can get some very interesting results. {0.00 "Over";0.00 "Under";" < OK"} helps make the previous format perfectly clear. Be aware that most built-in formats in *Excel* pad the right side of the format with a single space. For example, the positive value of the above format contains a space between close quotes and semicolon.

You can also create formats such as {;;"OK"}, which only registers on the screen when the cell's value is 0.

Incidentally, there's a difference between a blank cell and one with a 0. Format a blank cell as just shown, then type in a 0. Finally, clear the formulas using the CLEAR command in the Edit menu. As you can see, using number formats can be more versatile than the IF function. In addition, number formats offer an alternative way to hide cells with numerical values.

COMING INTO RANGE

The next ability the seasoned *Excel* user will master is range names. Range names easily increase the flexibility of a worksheet, by freeing the user from remembering the exact grid locations of key data in the worksheet. In addition, incorporating range names in formulas generally makes conceptual testing of those formulas easier.

{=REVENUE-EXPENSES} conveys more information than {=A10-A5}. If you name all of row 5 as "EXPENSES" and all of row 10 as "REVENUE," then each gross profit formula {=REVENUE-EXPENSES} will read its columnwise position to know *which* revenue and expense figures to use.

Range names are more constrained than Macintosh file names. I generally try to keep my range names short, so that formulas are shorter. But, most important, range names can't have spaces in them. If I want a range name that looks like two words, I generally use an underline character (TWO_WORDS) or a period (TWO.WORDS) as a space holder.

Imagine a large number of range names on the same worksheet. You can organize the range names into logical groups by using a scheme of prefixes and suffixes. Since *Excel* sorts the range names in the dialog box, naming the ranges accordingly can ensure that desired groups of range names come together. If you need to group several entry areas, for example, you might name them in the following fashion:

ENTRY.COSTS
ENTRY.GOALS
ENTRY.SALES

Using the names "COSTS.ENTRY," "GOALS.ENTRY" and "SALES.ENTRY" would have a very different effect. Of course, you might really want all goals-related ranges to group separately from all sales-related info. In that case, this second protocol for naming ranges would be most effective.

The best thing about range names, though, is that range names expand and contract, carrying cell references with them. {=SUM(GROUP1)} might mean the same thing as {=SUM(A1:A5)}, until you decide that group 1 ought to be G1:G5. The advantage of range names becomes more obvious when you have several formulas referring to the same range, and want to redefine the range used in the reference. If your formulas refer to the range *name,* all you need to do is select the new range and choose DEFINE NAME from the Formula menu; otherwise, you'll have to find each formula that refers to A1:A5 and rewrite the formula.

Range names do not have to signify contiguous solid blocks of cells. {ENTRY_CELLS}, for example, might be 20 cells scattered about the worksheet. Using the GOTO command, the user can be guided to just the cells intended for data entry.

The PASTE NAME menu option is helpful. Names can be pasted when linking two worksheets together, saving you from having to memorize more range names. To use this feature, start your formula by using an "=" sign. Now, activate the worksheet containing the external reference. Pull down the Formula menu, and choose PASTE NAME. Select the name you wish to paste, and it will be added to the formula bar with full reference notation. Complete the formula in any way you like.

For housekeeping purposes, *Excel* lets you have access to the range names it assigns. Note that the name {PRINT_RANGE} is included in your DEFINE NAME dialog box after

you've chosen the SET PRINT RANGE option. The ranges called PRINT_TITLES and DATABASE work the same way. To remove titles, or cancel the print range, you need only open the RANGE NAME dialog box and delete or amend the reference.

We'll discuss macros a bit further on, but you should be aware that range names are by far the best way to refer to areas of worksheets when using macros. It clarifies what the macro is doing at the same time that it makes the macro more adaptable to changes in the topography of your worksheet. You'll appreciate this better the first time you create a macro that uses absolute cell references, and then insert a couple of new rows.

Once you begin to create increasingly larger worksheets, it becomes more useful to find a means to get around the worksheet quickly and efficiently. If you use range names in your worksheet, you can use GOTO in the Formula menu to get around. However, an equally powerful and free-form method of getting around exists: the FIND function.

Using this function, you can locate *all* references to the range {A1:A5} in the earlier example far more easily, which simplifies the task of changing them. FIND can be used to locate text, partial text and values (within labels, for example), in much the same way that *MacWrite*'s FIND... function does.

Excel tends to make certain cell references absolute (adding "$" characters before the row and column designations), when you might not want them to be. You can edit the formula to excise the offending dollar sign, but there's another way. COMMAND-T allows you to change cell references from relative to absolute in a simple fashion. I wondered why the letter "T" was used, until I realized that the command *transforms* absolute references to relative, and vice-versa.

Once you start to use range names, you might want to move a formula without moving the range name that it occupies. Cutting and pasting won't do the trick. Copying the formula requires making the reference absolute. Or does it?

An alternative is to change the formula to text temporarily by simply removing the "=" sign. You can then copy the formula to multiple locations and re-activate it by adding the "=" sign back on. Since you didn't cut the formula, the original location retains its name.

Ever have the problem of wondering just how many rows a selection will add to your worksheet? Well, keep an eye on the formula bar next time you click and drag. Just before you release the mouse button, you'll see the dimensions of the selection.

Tired of dragging the mouse all over the screen to make a selection? Don't forget that you can combine shift with a mouse click to select everything between the active cell and the cell you click on next. In that fashion, you can make use of the scroll bars and even the window panes to quickly select large areas. Shift also works with the GOTO and SELECT LAST CELL menu options. COMMAND-GOTO can create complex noncontiguous selections. Simply hold down the Shift or Command keys prior to clicking the "OK" button.

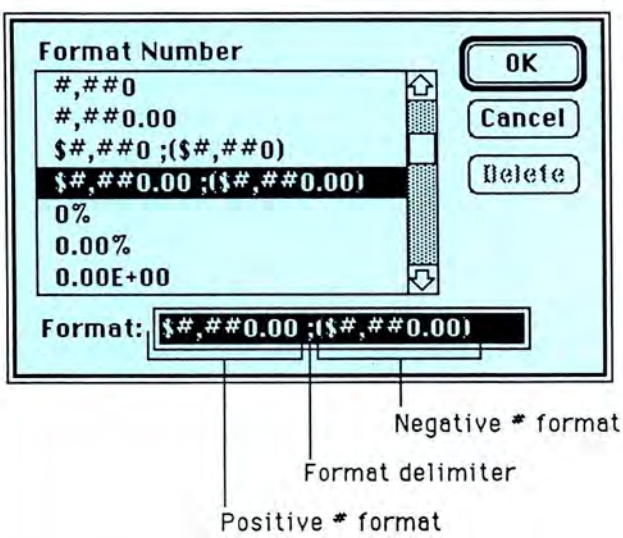
As you know, many of the most useful menu options have command-key equivalents. What you may not know is that the dialog boxes that some produce *also* have command-key equivalents:

The PRINT, NEW, ALIGNMENT, STYLE, BORDER, CELL PROTECTION, SERIES, and DISPLAY menu choices all bring up dialog boxes that translate command plus the first letter of the option as a click on the radio button or check box. In dialogs where the letter "C" is needed for a function other than "cancel," COMMAND-PERIOD will get you out of the dialog. Otherwise, both combinations serve the same function. COMMAND-O can similarly select "OK," in addition to the more traditional Return key.

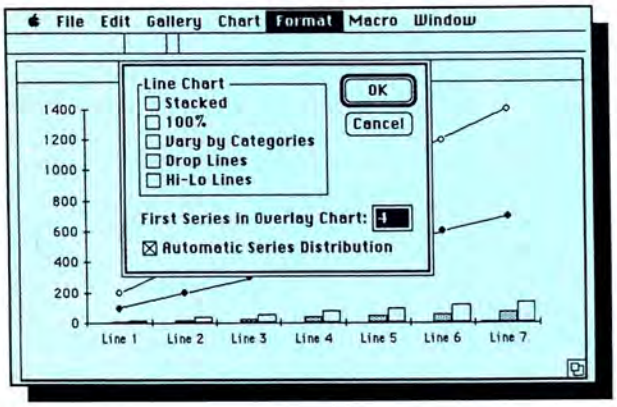
Windows may be activated easily enough by clicking on any part of them, and you can "float" any window to the active position by using COMMAND-M or SHIFT-COMMAND-M. This command shuffles each window to the top of the stack in forward or reverse order, even if the window is not visible, and without mousing to the Windows menu.

Sometimes, you want the window active, but not in harm's way. This is particularly true of macro sheets, and, perhaps, lookup tables such as price sheets. A window can be hidden by clicking its upper left corner and dragging it to the lower right corner of the screen. The only indication that the worksheet is loaded is that its name remains in the Windows menu. Macros come into play again here, since the MOVE command can be used to automatically hide windows as they are loaded.

The Shift, Option and Command keys help modify a large number of menu functions. If you frequently move your results out of *Excel* to



Typical number format illustrated. This particular format has no special format for 0's. Note that #'s are soft place holders, while 0's are always displayed.



Controlling the characteristics of overlay charts is simple with this dialog box, located under the Format menu. Note the First Series... box. Series 1 to 3 are part of the Main Chart.

further groom them for presentation, you might like to know a little more about the Copy command. The normal Copy command moves rows and columns of numbers to the Clipboard separated by carriage returns and decimal tabs.

If you hold down the Shift key before choosing the Edit menu, you'll notice that the phrase COPY PICTURE now appears. You get a *MacPaint*- and *MacDraw*-compatible screen shot, which can be much larger than the active window, and which includes row and column headings.

GET THE PICTURE

Excel features the most functional parts of *Chart* in a seamless fashion. But a number of capabilities of the charting function are less than totally obvious.

One of the first things to know about is the way that *Excel* translates data in the worksheet. The key to mastering charts in *Excel* is understanding the chart's Series feature. If you simply select a block of data and pick NEW CHART from the File menu, *Excel* will format everything according to its defaults. It will assume that values for each of its data series run along the longest dimension of the data array.

For example, if you select a block of data 7 rows deep by 5 columns across, *Excel* will chart your data so that each line's label shows on the bottom axis. The assumption is that you want more data points in each data series, and fewer data series. Each data series is represented by a label along the bottom (X) axis.

The chart's Paste Special dialog box tells you a lot about how data is formatted, both by default, and how much control you have over the use of your data. Copy a range in your worksheet and immediately choose NEW CHART, a blank chart appears, instead of a preformatted one. Using PASTE SPECIAL at this point will give greatest control over the initial look of the chart.

Blank lines are plotted second, so the strategy for plotting noncontiguous data series is to establish the chart with one block of data, then add additional points by copying the worksheet data, activating the chart, and using PASTE or PASTE SPECIAL.

The last major rule of *Excel* charting is that categories are always displayed along the horizontal (X) axis, and values along the vertical (Y) axis. You can easily change the category grouping from rowwise to columnwise, but axis-flipping is another story. If you need that sort of control, copy the finished chart, paste it into *MacDraw,* and really tweak its appearance.

In cases where I have available space and need to generate charts regularly, I allocate a set of cells organized to produce an optimum chart using the default formats. Once I have cleaned-up the chart for maximum effect, I either use the MAKE DEFAULT format option, or SAVE the chart file, so that reopening it will update along with new data.

Once data points are added to the chart, you might still want to control some features of positioning, patterns and more. Again, the SERIES function is key. Clicking on any data element of the chart activates its series formula in the formula bar. The SERIES function has several key parts, each of which can be manipulated, just as worksheet formulas can. In fact, whole series can be added directly!

The SERIES function follows this format:

=SERIES({"NAME"}, {CATEGORIES REFERENCE}, {VALUES REFERENCE},{PLOT ORDER}). The series name is the label that will appear in the Legend box. The categories reference specifies the range of text in the worksheet that will be used for the categories (X-axis) tick mark labels. The values reference indicates the group of cells that form the data points in the particular category group. Finally, the plot order controls positioning and display of the data series.

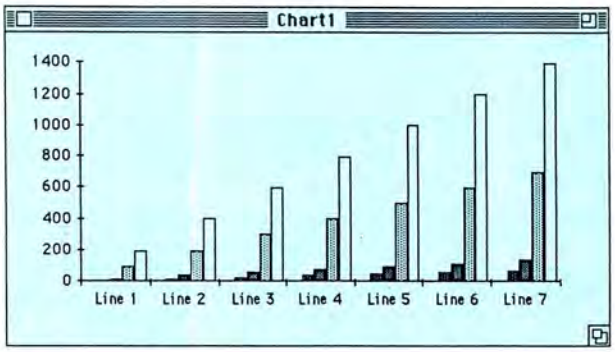
The series with plot order #1 rules. Regardless of other category references in other series formulas, the chart's display is always determined by the references contained in series 1. As a result, changing which series is designated #1, or changing the categories reference in series 1, changes the rest of the chart. In overlay charts, plot order determines which categories are drawn with the main chart style, and which are drawn with the overlay style.

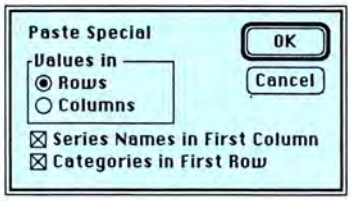
You can quickly redefine the appearance of an overlay chart by changing the plot order of its component series. In addition, choosing OVERLAY CHART from the Format menu allows you to control how many series appear in the main chart group by specifying the lowest number series in the overlay chart.

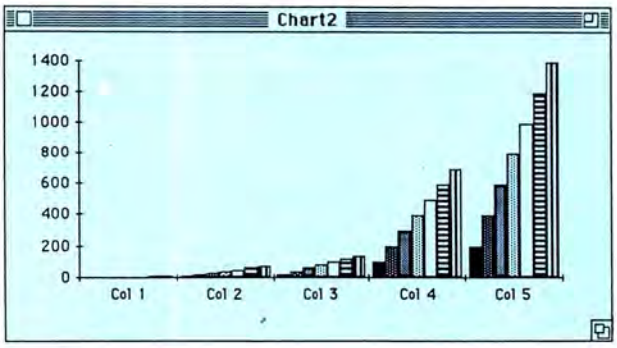
Ever have the problem of the axis line getting in the way of a data series you want to activate? You can resolve the problem by turning off the axis display temporarily. To do so, choose AXES from the Chart menu, then deselect MAIN CHART AXIS in the category axis box. Once that is done, clicking in the blank space caused by a zero value will still activate its series formula.

MACRO MANIA

Well, I've held off tackling macros long enough, so it's now time to take







Same data, two ways: Choosing how data series are assigned to categories changes the look of the chart. Assignments normally follow default guidelines, but can be changed by using PASTE SPECIAL when creating the chart.

a look at what is potentially the most rewarding part of learning *Excel*. Designing macros relies upon a solid knowledge of spreadsheet basics.

Macros have a lot in common with those instructions you find on the side of drink mix packages. The idea is to convey a precise sequence of events in such a way that everything comes out right every time. But people can interpret "fuzzy" syntax and come up with the appropriate connotation. Computers, for now, can't.

The Microsoft solution was to create a series of commands that very closely mimic the wording of the menu options you normally use in *Excel*. In addition, an ingenious recording feature significantly reduces the amount of code you might need to write from scratch. It's a good idea to get in the habit of recording as much of the macro as you can, then manually clean it up.

A macro sheet looks like a worksheet, but it's not. Macro sheets default to displaying the formulas that each cell contains, while the worksheet shows values. Most important, though, the macro sheet does not recalculate in the fashion that a worksheet does. When a macro is called, each cell in the string of macro instructions between the start of the macro and the next RETURN() or HALT() statement are recalculated one at a time. Only those cells encountered during the execution of the macro are recalculated, so it's not a good idea to try creating mini-analyses in your macro sheet. Macros can create temporary worksheets as needed, anyway.

Unfortunately, it's very easy to create what is known as "Spaghetti Code," the kind of macro instruction set that meanders all about the macro sheet, and is painful to trace when problems arise. It's a good idea to follow a formalized layout when you create your macros, much the way that good outlines follow rules for indentation.

With that in mind, here are my favorite style and design guidelines for storing and creating macros:

- Always title your macros. Doing so allows you to visually trace the instruction flow as you read the text of your macro.
- Name your macro so that the title is included. That way, you can insert a new instruction directly below the title without having to redefine the macro.
- Use bold text to distinguish titles from in-line comments.
- Use plenty of comments. You'd be amazed at the things you forget after a while.
- Be modular. Macro sequences should be small, discrete packets of instructions, not long and twisted things. (A macro called Update might call a macro for opening files, another for formatting and still another for printing. The open, format and print macros could easily be called by a number of other macros, as well.)

In this way, you can get more than one use out of a single macro. If you're really clever, you can make the same macro behave in a number of different ways, depending on the value of certain cells.

Modular macro design also makes it easiest to test small pieces of your code. I generally place my subroutines (macros that are called by other macros) in columns adjacent to the instruction that called them. In that way, I can scan horizontally to see any related set of macros. Remember that you can use all of the worksheet formatting options on macro sheets, so things like typestyles and borders can be used to greatly enhance readability.

Try as often as possible to use macro calls and returns/halts, rather than GOTO's. GOTO's can derail the best macro schemes around. Here's an example. GOTO(MACRO.

(continued on page 183)

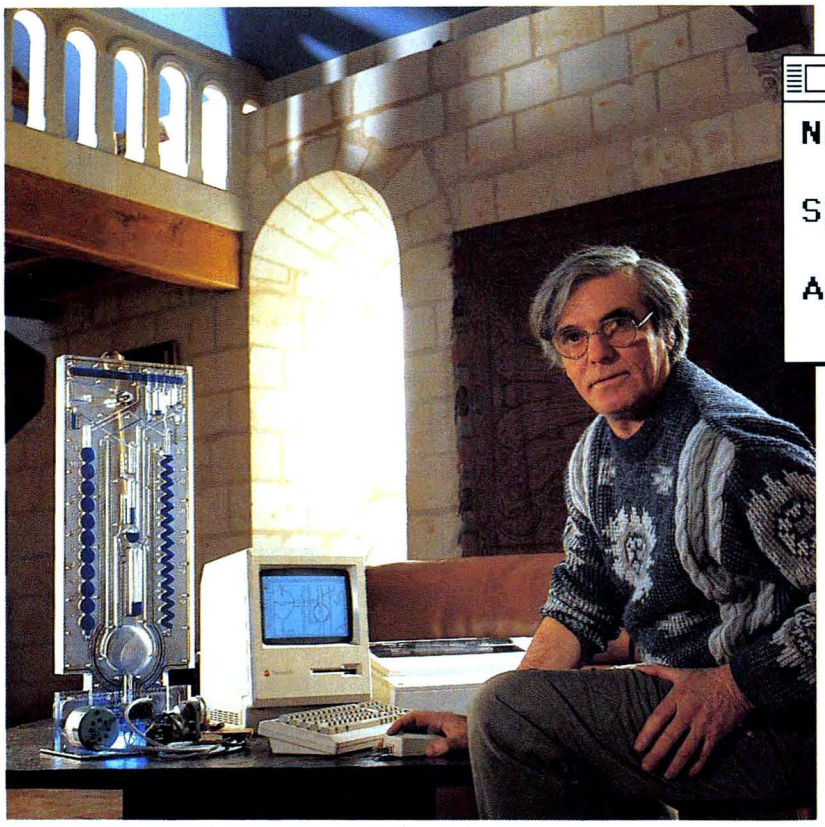
When you want

SOFTWARE

NCP denotes not copy-protected.
CP denotes copy-protected.

Affinity Microsystems ... NCP
Tempo *(power user's macro utility)* ..... $55.
ALSoft ... NCP
DiskExpress *(maximize disk performance)* 27.
Altsys ... NCP
FONTastic *(create your own fonts)* ..... 27.
FONTastic Plus *(advanced font editor)* .... 49.
Fontographer *(Laserwriter font editor)* ... 245.
Ann Arbor ... NCP
FullPaint *(open four documents at once)* .. 53.
Batteries Included ... NCP
The Mac BatteryPak *(9 desk accessories)* 27.
Thunder! *(50,000 word spelling checker)* .. 29.
Isgur Portfolio *(investment manager)* .... 105.
Berkeley System Designs ... NCP
Stepping Out *(requires 512k)* ..... 64.
Blyth ... CP
Omnis 3 Plus ..... call
Borland International ... NCP
Sidekick 2.0 ..... 59.
Reflex *(information management analysis)* 59.
Turbo Pascal *(HFS compatible)* ..... 59.
BPI Systems ... NCP
General Accounting *(full-featured)* ..... 129.
BrainPower ... NCP
StatView *(statistics package)* ..... 35.
Graphidex *(DA graphics organizer)* ..... 75.
Designscope *(electronic circuit design)* .. 129.
StatView 512+ *(req. external drive, 512k)* ... 179.
Bravo Technologies ... NCP
MacCalc *(easy to use spreadsheet)* ..... 85.
Broderbund ... CP
Print Shop *(create cards and memos)* ..... 39.
Geometry *(over 350 problems!)* ..... 64.
CAMDE ... NCP
Nutricalc *(diet & nutrition analysis)* ..... 49.
Nutricalc Plus *(dietician's delight)* ..... 175.
CasadyWare ... NCP
Fluent Fonts *(two-disk set)* ..... 29.
Fluent Laser Fonts *(Vols. 1-15)* ..... *each* 48.
Central Point Software ... NCP
Copy II Mac *(includes MacTools)* ..... 20.
Challenger Software ... NCP
Mac3D *(3D graphics, CAD features)* ..... 119.
Chang Labs ... CP
Rags to Riches Ledger or Payables ..... 125.
Rags to Riches Receivables *(req. 512k)* ... 125.
Rags to Riches Three Pak ..... 299.
Inventory Control ..... 243.
Professional Billing ..... 243.
Cortland ... CP
TopDesk *(7 new desk accessories)* ..... 34.
Creighton Development ... NCP
MacSpell+ *(spell checker, req. 512k)* ..... 52.
Cricket Software ... NCP
Statworks *(statistical package)* ..... 77.
Cricket Graph *(multiple windows)* ..... 127.
Cricket Draw *(advanced draw capabilities)* 177.
Data Tailor ... NCP
Trapeze *(spreadsheet, reqs. 512k)* ..... 173.
DataViz ... NCP
MacLink Plus *(transfer Mac/IBM data)* .... 159.
Desktop Graphics ... NCP
DrawArt *(MacDraw artwork, req. 512k)* .... 28.
DrawArt Vol. 2 *(MacDraw clipart, req. 512k)* 42.
DrawForms *(requires MacDraw)* ..... $30.
Digital, etc. ... NCP
Turbo Maccountant *(GL,AP,AR,Payroll)* ... 262.
Dove Computer ... NCP
RAMSnap *(RAM Disk/Disk Cache)* ..... 36.
Dow Jones ... CP
Market Manager PLUS 1.5 ..... 159.
Dreams of the Phoenix ... NCP
Day Keeper Calendar ..... 35.
Quick & Dirty Utilities ..... *each* 35.
Twelve-C Financial Desk Accessory ..... 35.
Dubl-Click Software ... NCP
World-Class Fonts! Vol. One or Vol. Two .... 28.
World-Class Fonts! *(both Volumes)* ..... 49.
WetPaint Vol. One or Vol. Two ..... 29.
WetPaint Clip Art *(both volumes)* ..... 49.
Calculator Construction Set ..... 39.
Electronic Arts ... CP
Deluxe Music Construction Set 2.0 ..... 63.
Enabling Technologies ... NCP
Easy3D *(create solid 3D objects)* ..... 69.
1st Byte ... CP
Speller Bee or First Shapes ..... 27.
KidTalk or Mathtalk ..... 27.
Smoothtalker *(speech synthesis)* ..... 27.
Forethought ... NCP
Factfinder *(free-form info organizer)* ..... 49.
FileMaker *(custom forms & reports)* ..... 79.
FileMaker Plus *(feature-packed database)* 159.
FWB Software ... NCP
Hard Disk Backup *(protect hard disk info)* .. 38.
Hard Disk Partition *(speeds up hard disk)* .. 38.
Hard Disk Util *(program backup)* ..... 56.
Great Wave Software ... NCP
KidsTime *(educational, ages 3-8)* ..... 28.
TimeMasters *(learn about time, ages 4 & up)* 28.
ConcertWare+ *(music composition)* ..... 29.
ConcertWare+ MIDI ..... 75.
Hayden Software ... CP
Hayden:Speller *(for Word & MacWrite)* ..... 27.
MusicWorks *(songs for your Mac)* ..... 29.
Home Design *(NCP)* ..... 49.
Score Improvement for the SAT ..... 59.
Score Improvement: Achievement Test .... 59.
VideoWorks *(animation)* ..... 59.
Ideaform ... NCP
MacLabeler *(print disk labels)* ..... 29.
DiskQuick *(catalog floppies & hard drives)* .. 29.
Imagine ... NCP
Smart Alarms *(DA reminder system)* ..... 38.
Impulse ... NCP
Comic Strip Factory *(create cartoons)* ..... 65.
Industrial Computations ... NCP
Powermath *(equation solving tool)* ..... 59.
Infosphere ... CP
LaserServe *(network software)* ..... 65.
MacServe *(network software)* ..... 175.
Innovative Data Design ... NCP
Paste-Ease *(requires Paint program)* ..... 35.
MacDraft *(new updated version, 512k)* .... 159.
Kensington ... NCP
Type Fonts for Text *(16 new fonts)* ..... 29.
Type Fonts for Headlines *(req. 512k)* ..... 41.
Laserware ... CP
Laserworks *(requires 512k, Laserwriter)* ... 229.
Layered ... CP
Notes for...Excel, Microsoft Works,
or PageMaker ..... *each* 42.
Legisoft/Nolo Press ... NCP
WillWriter 2.0 *(prepare your own will)* ..... 31.
Linguist's Software ... NCP
Tech *(1000 different symbols)* ..... $59.
FOREIGN LANGUAGE FONTS
MacCyrillic ..... 39.
SuperFrench/German/Spanish ..... 39.
MacHieroglyphics, MacKana/Basic Kanji,
MacSemitic/Coptic/Devanagari, MacKorean,
MacGreek, MacHebrew ..... *each* 59.
SuperGreek New or Old Testament ..... 79.
MacGreek/Hebrew/Phonetics ..... 89.
LaserGreek ..... 79.
LaserFrench/German/Spanish ..... 79.
LaserCyrillic ..... 115.
Living Videotext ... NCP
ThinkTank 512k *(outline processor)* ..... 99.
More *(outlines, windows, & tree charts)* .. 158.
Lundeen & Associates ... NCP
WorksPlus Spell ..... 39.
MacMemory ... NCP
MaxRam & MaxPrint *(Ramdisk, spooler)* .. 33.
Magnum ... NCP
Natural Sound Effects ..... 27.
Natural Sound Cable & Editor Disk ..... 89.
McPic - Volume 1 or Volume 2 ..... 29.
The Slide Show Magician 1.3 *(CP)* ..... 35.
Microsoft
Flight Simulator *(the Mac takes flight, CP)* 32.
Learning Multiplan and Chart *(2 disks, CP)* 39.
Basic Interpreter 3.0 *(NCP)* ..... 64.
Chart 1.02 *(42 chart styles, CP)* ..... 72.
Multiplan 1.1 *(63 col. by 255 rows, CP)* ... 105.
Word 1.05 *(word processor, CP)* ..... 110.
File 1.05 *(flexible data manager, NCP)* ... 111.
Basic Compiler 1.0 *(NCP)* ..... 119.
Fortran 2.2 *(compiler, NCP)* ..... 169.
Works 1.0 *(integrated tool, NCP)* ..... 189.
Excel 1.03 *(power spreadsheet, NCP)* ... 224.
Word 3.0 *(word processor, NCP)* ..... 239.
Miles Computing ... NCP
Mac the Ripper *(req. Paint program)* ..... 27.
Orchestra of Fonts Vol. 4 *(30 different fonts)* 27.
Mindscape ... CP
The Luscher Profile *(personality profile)* ... 24.
The Perfect Score: SAT ..... 47.
ComicWorks *(create your own comics)* .... 48.
GraphicWorks *(newsletters, ads, posters)* 48.
Monogram ... NCP
Forecast *(tax planning)* ..... 40.
Dollars & Sense *(home, small business)* ... 81.
New Canaan MicroCode ... NCP
MDCFinder *(requires 512k)* ..... 20.
Mac Disk Catalog II *(requires 512k)* ..... 31.
Odesta ... NCP
Double Helix *(relational, custom menus)* 275.
OWL International ... NCP
Guide *(hypertext, free-form info)* ..... 79.
Palantir ... CP
MathFlash, WordPlay or MacType ..... 26.
General Ledger or Accounts Receivable .. 49.
inTalk *(communication to emulation, NCP)* 99.
PBI Software ... NCP
Icon Switcher *(customized icons)* ..... 14.
HFS Locater *(DA organizer for HFS)* ..... 26.
HD Backup *(supports MFS, HFS)* ..... 29.
Personal Computer Peripherals ... NCP
HFS Backup ..... 34.
ProVUE Development ... NCP
OverVUE 2.0 *(power-packed database)* .. 149.
Mail Manager Template ..... 29.
Personal Finance Template ..... 29.

Real Time.



Contest Winner #7

Name: Bernard Gitton,
Les Rosiers, France

System: Mac Plus
(and an Apple II)

Applications:
Designs liquid clocks.

Go with the flow.

Bernard Gitton's workshop occupies an 850 year old chapel on the banks of the Loire in France. (That alone makes him a winner in our opinion). There he designs clocks on his Mac. They don't have hands, LED displays, quartz crystals, gears, or springs. Because, in these elaborate timepieces, water marks the flow of time with the same patient persistence as the ancient river outside.

Monsieur Gitton's clocks can be found all over the world: in Berlin, Sao Paulo, Paris, Tokyo, and soon (we hope) in Marlow, NH. They range from about 6 ft. to about 40 ft. high.

In each one, a simple hydraulic pump brings fluorescent colored water to a glass ball at the top. From there, the fluid flows into a shallow bowl which, when full, tips a pendulum device, thereby determining the rate at which the water will continue on through an elaborate series of siphoning tubes and spheres. Filling, so to speak, the hours and minutes of every day.

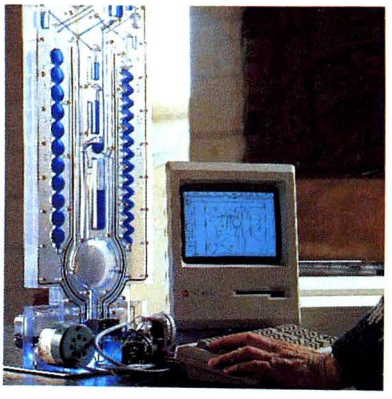
It's actually more complicated than that, but do you really want to know?

Micro seconds.

Bernard Gitton uses *MacDraw* to outline the plan, and *MacDraft* to detail the complex electronics, mechanics, hydraulics, and even the shapes of the glassware itself. *MacPaint* and *Ready-Set-Go* help produce detailed drawings of each clock.

But, much as he loves the Mac, Bernard has decided to go into head-to-head competition with Apple. He recently created a hydraulic "calculator" that can perform binary additions. He claims that it is the "the slowest computer in the world; it adds two numbers of 4 bits in 22 seconds!" But, we imagine, it does so more beautifully than any micro on earth. Voila! N'est-ce pas?

Et toi (if we may be so familiar)? How do you use your Mac to pass the time? Your story could be worth $500 in free add-ons and software.



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Personally Designed

Here's how to select the right desktop publishing software for each project.

BY EZRA SHAPIRO

IF YOU VIEW DESKTOP PUBLISH
ing as an extension of word process
ing, it's a wonderful technology
Give a typist a Macintosh and a lase
printer and you can throw the ol
Selectric away. You can also toss th
software editors typical of dedicate
word processors, CP/M systems an
early MS-DOS machines. The abilit
to manipulate typefaces, graphic im
ages and text in a single, comprehen
sive environment has revolutionize
the nature of document production

But what if you compare deskto
publishing to the tools of the graph

ic designer? How does the technology measure up? Is it really faster, more flexible, more convenient? Should the artist at the drawing board throw away the rubber cement and razor blades and get a Mac? Or are page layout programs still too limited to replace the non-computerized graphics studio?

As a former publication art director turned Macaholic, I find I regard desktop publishing software much the same way an ant regards a picnic; I just love the stuff. However, comparing what I can do on a drafting table with ancient technology to what can be accomplished on a Mac, I can see that desktop publishing still has a long way to go. No single program has all the bells and whistles I want for heavy duty graphics production; even the most complete packages has glaring deficiencies. I liked all I tried, but to do a wide variety of projects I'd have to use several different software packages, and probably return to the drawing board to tweak the final output.

That's not necessarily bad, but it does mean that you have to be careful to pick the right program for a particular job. The trick lies in knowing which product does what best, and what features are needed for a specific project.

To help find the right package for any particular job, I constructed the two tables reproduced here. The top of Table 1 lists five basic project categories: business reports, books and manuals, newsletters, magazines and advertising design. Each category has special needs, but on the whole the list represents a progression from simple to complex. The

left edge of the table lists features found in desktop publishing packages. Rating the applicability of features to project categories resulted in a grid that told me what was needed. Table 2 has roughly the same list of features down the side, but substitutes the names of several desktop publishing packages for the project categories.

Now, by comparing the two tables side by side, I could pick the program that had the most strengths for an individual task. This methodology is brutally simple, and it can be applied by anyone to match software to needs. I used broad, general guidelines for my project categories; the strategy can be even more effective if the criteria used on the first chart are based on real jobs.

ABSOLUTE REQUIREMENTS

The feature lists start with a few items that are absolute requirements. Any page makeup program has to be able to handle text and graphics, either imported from files or through the combination of Clipboard and Scrapbook. It should be possible to reposition all elements on a page (text, headlines, pictures, rules) as independent "objects" so you can slide them around and try out new layouts. Text has to be reformatted to changing column widths, and you've got to be able to "flow" your copy from one column — or page — to another. You need rudimentary editing (at the very least); there are always little details that have to be fixed — a caption added, a typeface changed, a picture resized. And because the Mac screen does not (yet) display a whole page, you need several views of your layout: actual size, reduced, full page and enlarged. Every desktop publishing package on the market does all this acceptably.

When you begin to expand this basic list to cover convenience features, the differences among programs start becoming obvious. Most page layout programs are excellent for designing books, manuals, reports and suchlike. Once you've determined your basic format, it's repeated over and over with only slight variations. The way you handle illustrations, chapter headings, footnotes and so on, will be the same from page to page. Further, you probably will be able to survive without a wide variety of typestyles, leading in half-point increments, overlapping text and other fancy tricks. You need to be able to pour your text into your layout the way you'd pour concrete into a mold.

Newsletters and magazines are usually a bit more sophisticated. The layout changes from page to page, dimensions are tighter (and hence more critical), and you generally use more illustrative material and a wider selection of typestyles. However, you're still using a standardized grid that rarely changes, and you can make do with a restricted toolkit. The key requirements here are good import facilities, precision control and quick repositioning of elements.

When you start dealing with posters, advertising, business cards and other materials where visual impact is of utmost importance and small details can change the entire effect of a piece, it's a different ball game. Individual jobs are rarely longer than a single page, and you don't need massive word processing power to generate small blocks of text. But you need extemely precise tools for fine-tuning layouts and as many special effects as you can get.

MATTERS OF TEXT

Some programs only allow you to import raw text files; if you've prepared your copy with *MacWrite*, *Word* or one of the new word processors, you'll lose all your formatting. If you intend to get into desktop publishing with a clean slate, you're safe, you can construct your elements to match the requirements of your layout software, but if you've got existing material that you want to reuse, you'll have to be careful.

I'm convinced that a good desktop publishing package should be able to deal with text in all three major file formats (formatted *MacWrite*, formatted *Word* and plain text) or be compatible with *Switcher*, or have built-in word processing capabilities; it would be best to have all three options. One way or another, you should be able to *work* with your text, zipping in and out to make changes of any degree of complexity.

Hyphenation is another thorny issue. Every time you change the width of a block of text, do you want to have to rehyphenate it? This is particularly important if you're working with narrow, justified columns.

The ideal system would be a page layout program with an integrated word processor that magically linked two views of a document, so you could flip between full-screen word processing in one typeface and the final layout in another. You could edit in something easy on the eyes like 12-point New York, but have the newsletter appear in 9-point Times — which looks fine as output but is horrible on the screen. I don't think this would be tough to implement, but I have yet to see it in any package.

TOOLS FOR LAYOUTS

The more complicated the layout, the more you need the ability to select a group of objects and work with them as a group, copying, moving, deleting, whatever. Once you've built a region out of lots of tiny elements, it's a real pain to have to reposition them one by one.

A good collection of rules (lines) in varying weights is a must. It would be helpful to be able to build a menu of my own custom rules, but group select is an acceptable second choice.

Also useful is an on-screen scrap area, so you can experiment with different elements without having to paste back and forth from the Clipboard or a Scrapbook DA.

A snap-to-grid system of some sort is absolutely necessary, so you can align objects without having to trust your eyes to measure teeny dimensions. My choice is for a grid that can be customized by the designer, rather than one based on squares (like graph paper). With custom grids, you can set up a rigid layout format that reduces the number of decisions and the potential for mistakes. For example, you can define a grid region at one corner of the page for an illustration and a caption. The designer will know that

Table 1: Project Needs

	Business Reports	Books & Manuals	Newsletters	Magazines	Advs & Fliers
Integration					
Word processing	✍ ✍	✍ ✍	✍ ✍ ✍	✍ ✍	✍
Auto hyphens	✍	✍	✍ ✍ ✍	✍ ✍ ✍	✍
Soft hyphens	✍	✍	✍ ✍ ✍	✍ ✍ ✍	✍ ✍ ✍
Simple calc	✍ ✍ ✍	✍ ✍	✍ ✍	✍ ✍	✍
Full spreadsheet	✍ ✍ ✍	✍	✍	✍	✍
Drawing tools	✍ ✍	✍	✍ ✍	✍ ✍	✍ ✍
Painting tools	✍	✍	✍ ✍	✍ ✍	✍ ✍ ✍
Type					
Multiple fonts	✍ ✍	✍ ✍	✍ ✍ ✍	✍ ✍ ✍	✍ ✍ ✍
Custom sizes	✍	✍	✍ ✍	✍ ✍	✍ ✍ ✍
Kerning	✍	✍	✍ ✍ ✍	✍ ✍ ✍	✍ ✍
Letterspacing	✍	✍	✍ ✍ ✍	✍ ✍ ✍	✍ ✍
Auto leading	✍ ✍ ✍	✍ ✍ ✍	✍ ✍ ✍	✍ ✍ ✍	✍ ✍ ✍
Custom leading	✍	✍	✍ ✍	✍ ✍	✍ ✍ ✍
½ point leading	✍	✍	✍ ✍	✍ ✍	✍ ✍ ✍
Layout					
Multiple columns	✍	✍ ✍	✍ ✍ ✍	✍ ✍ ✍	✍ ✍
Object orientation	✍	✍	✍ ✍	✍ ✍	✍ ✍ ✍
Linked frames	✍	✍	✍ ✍ ✍	✍ ✍ ✍	✍ ✍
Group select	✍	✍	✍ ✍ ✍	✍ ✍ ✍	✍ ✍ ✍
Snap grid	✍	✍	✍ ✍ ✍	✍ ✍ ✍	✍ ✍ ✍
Non-square grid	✍	✍	✍ ✍ ✍	✍ ✍ ✍	✍ ✍
Rule weights	✍	✍	✍ ✍ ✍	✍ ✍ ✍	✍ ✍ ✍
Boxes and borders	✍ ✍	✍	✍ ✍ ✍	✍ ✍ ✍	✍ ✍ ✍
Graphics scaling	✍ ✍	✍ ✍	✍ ✍ ✍	✍ ✍ ✍	✍ ✍ ✍
Oversize pages	✍	✍	✍	✍	✍ ✍ ✍
Transparent object	✍	✍	✍ ✍	✍ ✍	✍ ✍ ✍
View sizes	✍	✍	✍ ✍ ✍	✍ ✍ ✍	✍ ✍ ✍
Scrap area	✍	✍	✍ ✍ ✍	✍ ✍	✍ ✍ ✍
Other features					
Text import	✍ ✍ ✍	✍ ✍ ✍	✍ ✍	✍ ✍ ✍	✍
Graphics import	✍ ✍	✍	✍ ✍ ✍	✍ ✍	✍ ✍ ✍
Switcher compat	✍ ✍	✍	✍ ✍ ✍	✍ ✍ ✍	✍ ✍ ✍
PostScript	✍	✍	✍ ✍	✍ ✍	✍ ✍ ✍
✍=Helpful					
✍ ✍=Desirable					
✍ ✍ ✍=Essential					

any time a graphic image is needed, it will go in that spot. Because grids can be overridden, this is not as constricting as it sounds; it's equivalent to printing a batch of layout boards to your specifications.

No page layout program today gives you the ability to capture measurements. Let's say you really like the horizontal spacing between two graphics blocks and you want to use that spacing between two vertical items, such as a headline and body copy, or a picture and a caption. On the drafting table, you'd use a ruler or a pair of dividers to get the exact dimension and then slide things into place. On the Mac, you've either got to try to align by eye — which is never very accurate — or note the coordinates from a status box or ruler line, subtract, and then try to jockey the other set of items into the correct relationship while monitoring the position indicator and performing rapid mental comparisons. I'd further appreciate automatic vertical centering functions; trying to position tiny type between two rules can be a ferocious test of eye-hand coordination.

TYPE CONSIDERATIONS

Desktop publishing software is just beginning to add "kerning" to its vocabulary. Kerning simply means taking out space between letters. Applied broadly, you can kern an entire block or document to cram more type into a smaller area and give your finished product a dense feel and a darker "type color." On a letter by letter basis, kerning can be used to make certain letter combinations easier to read; classic examples are the "W A" and "T o" pairs. You can tuck the second letter in under the overhanging part of the first, so the reader doesn't encounter an unsightly gap in the middle of a word. Kerning becomes more important as you work with larger type sizes, such as banner headlines. (If you examine typesetting in advertising, you'll notice that many art directors kern headlines so tightly that the letters are touching, or almost touching.) Many commercial typesetting systems kern automatically; that is, they recognize problem letter pairs and adjust the spacing accordingly. I expect that automatic kerning will be added to the next generation of desktop publishing programs, but for now you have to do it manually — if your program lets you kern at all.

The opposite approach, letterspacing, adds small amounts of space between letters. It can also be employed to give output a more professional look. When creating narrow

justified columns, you often wind up with a couple of hideous lines containing only a few words and vast gaps of space between them. By judiciously adding letterspacing, you can stretch out the type for a more pleasing appearance. This is also a rare feature, but becoming more common.

Adjustable spacing between lines of type (leading) can give lighter or darker type color, and help you tailor your text to a specific space. If your software allows you to add leading in half-point units, you've got as much freedom as you would with most professional typesetting equipment. For truly exotic effects, you need some method to send PostScript code to your printer.

I also have a gripe with the Mac typesetting environment that has nothing to do with desktop publishing; it's inherent in the design of LaserWriter typefaces themselves. I frequently use small caps instead of lowercase letters to give a more elegant feel to smaller headlines or to titles inserted in text. Small caps are somehow more formal than italics. Unfortunately, the Mac cheats on this by merely using the next smaller type size. If you mix small caps with caps on the Macintosh, the full-size capital letters appear bolder. True small caps require a completely redrawn typeface — smaller, but with line weights the same as in the larger alphabet.

HARD COPY

If you need a large or even moderate number of copies of a document, have it printed. Depending on the size of the run, it's both faster and cheaper than using your laser printer; it's certainly more convenient. Everything is fine if you're working on a standard 8½- by 11-inch sheet, but if you're going for an odd size, you've got trouble. Only a couple of programs allow larger sizes, and no program provides crop marks for smaller items. What are crop marks? They're hairlines drawn at the corners of a piece of artwork that indicate the final trim width, very much like the lines used to mark the dimensions on a blueprint. Crop marks shouldn't touch the "live" area of a layout, so you can't draw a box around it; a tiny slip by the printer, and you'd wind up with a fuzzy black edge on your handbill or business card.

If you're interested in using a second color, you're going to have to pay the printer to make two masks for your layout, one for each color. It would be easy enough to do this with the computer, except for one little detail — the absence of register marks. These are small symbols that look like crosshair targets. They're placed outside the edge of the live area, in exactly the same spot on each page. When printers make the negatives used to produce plates in photo offset printing, they align the register marks so they don't have to guess where the two colors fall on the page. The cost of having a printer add register marks is slight, but printers have been known to make mistakes; you'd be safer if you could do it yourself.

THE PROGRAMS, AH, THE PROGRAMS

Table 2 details half a dozen programs with desktop publishing features. This is not a comprehensive list, nor will it be valid for long — upgrades are in the works for many of these products, and new competitors are emerging at an extremely rapid rate. The next six months should see the best features spreading from product to product, and the addition of many new features. However, the chart points out the differences among programs in the general category and can serve as a good index when matched against your own particular requirements.

MacWrite is not really a desktop publishing product per se, but I've included it as a control since it represents the common starting point for all the more sophisticated programs. With *MacWrite*, you can use Mac typefaces and include bit-mapped graphics, but that's about it.

Microsoft *Word* 3.0 is typical of the new generation word processors, incorporating many features that were once considered the domain of standalone products, such as outlining and a direct interface to PostScript. Its primary strengths are in the text-handling area. Though you can work with multicolumn layouts, you can't see them on screen in anything but a static view. I'd recommend it if you work with large amounts of text, with complex formatting needs but simple layouts.

PageMaker 1.2 is the granddaddy of page layout software, and it defined the state of the art when it was introduced. Surprisingly, it is still the program that most closely matches the technique of paste-up artists; it's obvious that *PageMaker*'s designers really studied graphics studios when they built the product. It has the widest selection of rule types, customizable grids and a pasteboard area that lets you stash elements off the page, but still in plain sight. Aldus supplies its own laser driver, so your printer won't choke if you use a huge assortment of typefaces. But *PageMaker* 1.2 lacks hyphenation, kerning and group select.

ReadySetGo! 3 integrates a good quality word processor — a growing trend in this arena. Kerning and letterspacing are supported. *RSG3* seems best suited for multicolumn formats on an 8½- by 11-inch sheet

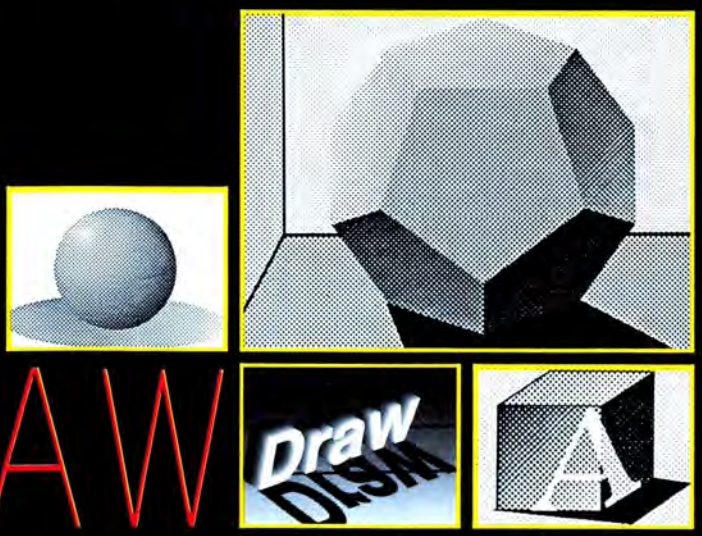
Ragtime adds a spreadsheet to the mix of tools. The spreadsheet is good, but will probably disappoint *Excel* afficionados, as it lacks macros, graphics and data base functions. *Ragtime* will produce newsletters nicely, and the computational ability gives it an edge in the creation of self-calculating business forms.

GraphicWorks 1.0, the business version of *ComicWorks*, is an advanced paint program that handles text well enough to move the product into the desktop publishing category. You can perform nice tricks with overlapping objects, both text and bit-mapped graphics, and the program has a decent grid system for creating advertising, flyers, storyboards and so on. Remember, though, that the central engine is a paint program, not a word processor, so this product is better at one-shot projects than at office automation tasks.

LOOK BEFORE YOU LEAP

Before you can begin to evaluate desktop publishing software, you

ACHIEVE THE ULTIMATE.



You've probably felt the frustration. All of that graphic power just waiting to be tapped, without software to unleash the potential. Frustrate no longer – Cricket Draw is here.

cricket DRAW

Runs in color on the Mac II!

Please circle 132 on reader service card.

Cricket Draw is an object-oriented drawing program that brings a whole new dimension to the WYSIWYG environment.

WYSIWYG is great but the end result is limited by the Mac's display resolution (approximately 5,000 dots per square inch). Cricket Draw, through the magic of PostScript,™ lets you take full advantage of the LaserWriter's superior resolution of 90,000 dots per square inch. The final product is sensational artwork that will bring a new level of professionalism to your work. With Cricket Draw **WYGIBTWYS** (What You Get Is Better Than What You See).

Unrestricted Creativity. Cricket Draw liberates your creativity by providing an unprecedented range of tools, like tilting and free rotation of any object. You can shade with a gray scale (0-100%), create shadows, fountains (graded tints), starbursts, grates, and smoothed curves. And that's just the beginning.

Precisely set type then add any of a number of special effects. Place type on any arbitrary path, rotate, tilt, shade, shadow – the possibilities are limitless.

Achieve Your Ultimate. Settle for nothing less than your ultimate. It's within your grasp with Cricket Draw.

Requires Macintosh Plus or New ROMS

cricket software *Anything Less Isn't Quite Cricket*

30 Valley Stream Parkway
Great Valley Corporate Center
Malvern, PA 19355
(215) 251-9890 1-800-345-8112

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LaserWriter is a trademark of Apple Computer Inc.
PostScript is a trademark of ADOBE Systems, Inc.

Table 2: Programs

	MacWrite	Word	PageMaker	RSG 3	Ragtime	GraphicWorks
Version	4.5	3	1.2	3	1	1
Integration						
Word processing	✓	✓	no	✓	✓	✓
Auto hyphens	no	✓	no	✓	no	no
Soft hyphens	✓	✓	no	✓	no	no
Simple calc	no	✓	no	no	no	no
Full spreadsheet	no	no	no	no	✓	no
Drawing tools	no	no	no	no	no	no
Painting tools	no	no	no	no	no	✓
Type						
Multiple fonts	✓	✓	✓	✓	✓	✓
Custom sizes	no	✓	✓	✓	✓	limited
Kerning	no	to 1.75 pts.	no	✓	no	no
Letterspacing	no	to 1.75 pts.	no	✓	no	no
Auto leading	✓	✓	✓	✓	✓	✓
Custom leading	no	✓	✓	✓	✓	no
½ point leading	no	✓	✓	no	no	✓
Layout						
Multiple columns	no	✓	✓	✓	✓	✓
Object orientation	no	no	✓	✓	✓	✓
Linked frames	no	no	✓	✓	✓	no
Group select	no	no	✓	✓	✓	✓
Snap grid	no	no	✓	✓	✓	✓
Non-square grid	no	no	✓	(a)	no	no
Rule weights	-	-	15	14	4	5
Boxes and borders	no	✓	✓	✓	✓	✓
Graphics scaling	✓	✓	✓	✓	✓	✓
Oversize pages	✓	✓	✓	no	no	✓
Transparent object	no	no	✓	✓	no	✓
View sizes	1	2	5	5	2	6
Scrap area	no	no	✓	no	no	no
Other features						
Text import (1)	T,M	T,M,W	T,M,W	T,M,W	T	no
Graphics import (2)	Clipboard	Clipboard	M,P	M,P	M,P	M
Switcher size	128K	384K	512K	min 192K	432K	400K
PostScript	no	✓	no	✓	no	no
Copy protected?	no	no	yes	no	yes	no
(1) T=text M=MacWrite W=Word 1.05				(a) Custom grids in regular pattern		
(2) M=MacPaint P=PICT						

have to understand your needs, both current and future. The first question to ask yourself is simply this: Are you a writer or a designer? If you're primarily someone who produces text — a business person, an academic, an author — chances are good that *any* design program is a step up from what you're accustomed to. The capabilities of Macintosh word processors and page layout programs will significantly improve the appearance of your output, and you won't notice the limitations of the software for a long time, if ever. On the other hand, if you're used to the flexibility of the drawing board, and you regularly produce a wide variety of different types of design, you'll find that desktop publishing software will be a welcome addition to your production environment, but it won't replace all your old tools. How useful the software will be depends on the degree to which you can automate repetitive tasks, the fit of particular programs to specific operations and the amount of freedom you need as a creative artist.

It's still easier to do a crayon sketch with a crayon and a piece of paper than it is to try to simulate one using a computer. On the other hand, you're better off with a computer if you're attempting to draw a perfect circle. That sort of thinking has to go into any analysis of desktop publishing. The more flexibility and creativity you require, the more constricted you're going to feel by the Macintosh environment. While desktop publishing can elevate a typist to the level of a junior designer or assistant art director, it can reduce a senior professional to frustrating amateurism. That's not meant as a swipe at desktop publishing; you can certainly do spectacular things with the programs covered by this blanket category. However, computerizing *any* process imposes certain restrictions, and you have to ask yourself whether you can live with those limitations. Perhaps the best solution is to keep your options open; push your word processing and design tools as far as they will go, but don't tell your traditional typesetters and graphics suppliers to take a hike just yet.

EZRA SHAPIRO IS A FREELANCE AUTHOR AND COMPUTER EXPERT. HE WRITES FREQUENTLY ABOUT MANY SUBJECTS AND IS THE AUTHOR OF A BOOK ABOUT A SUBJECT, SOON TO BE PUBLISHED.

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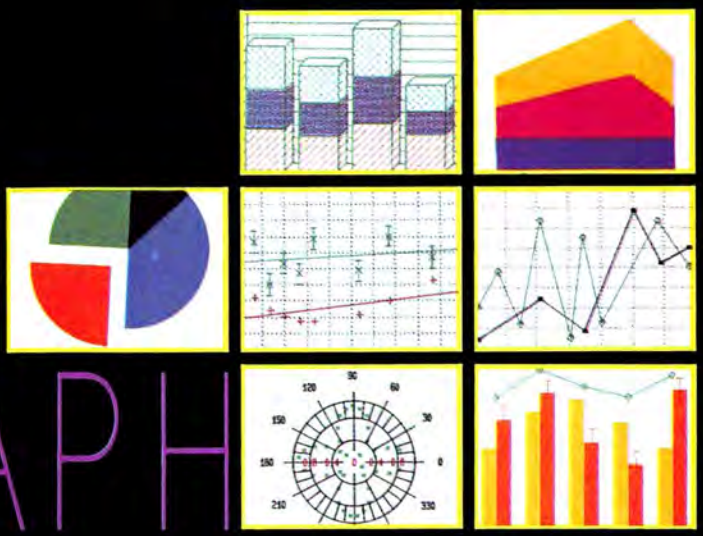

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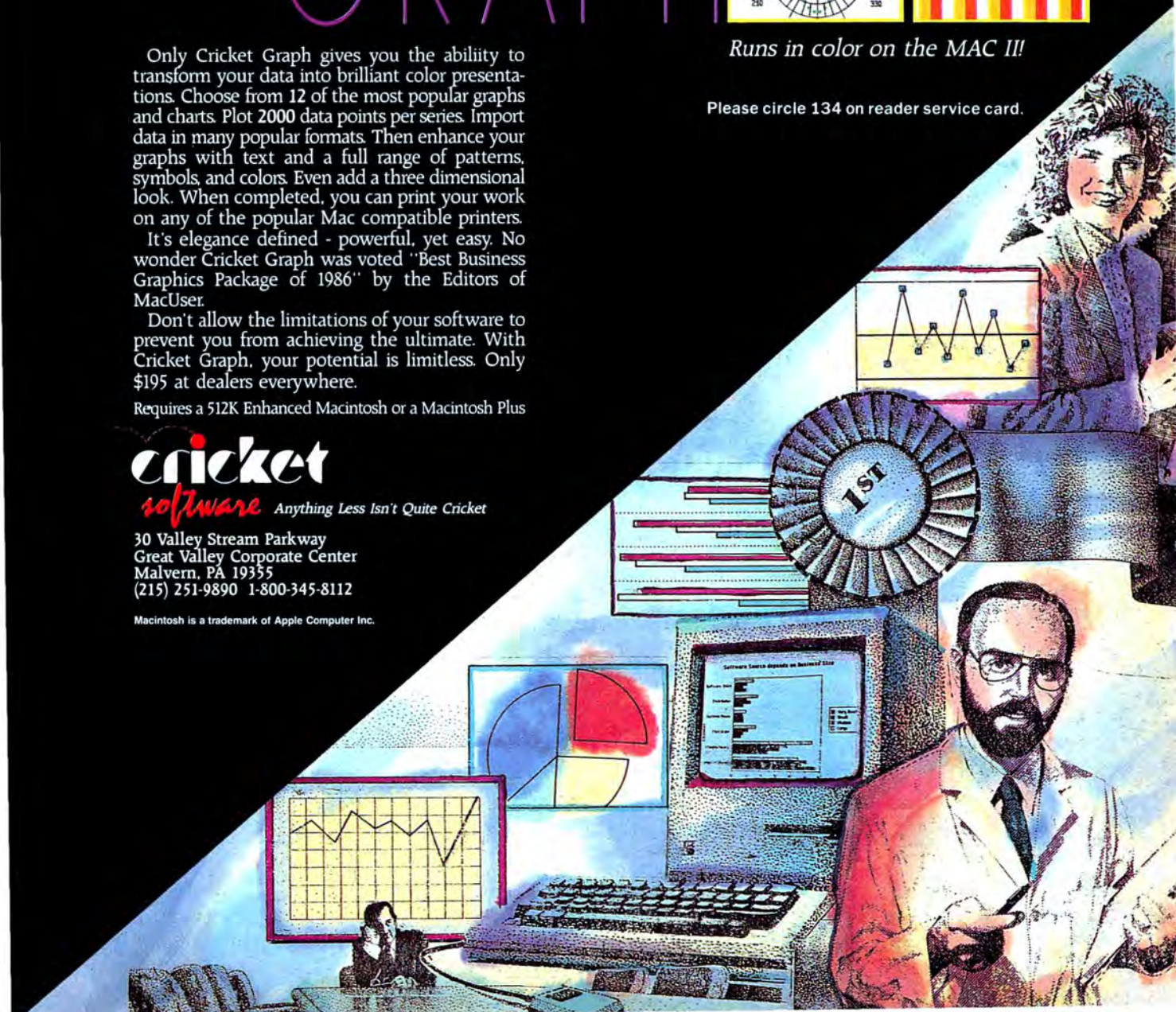

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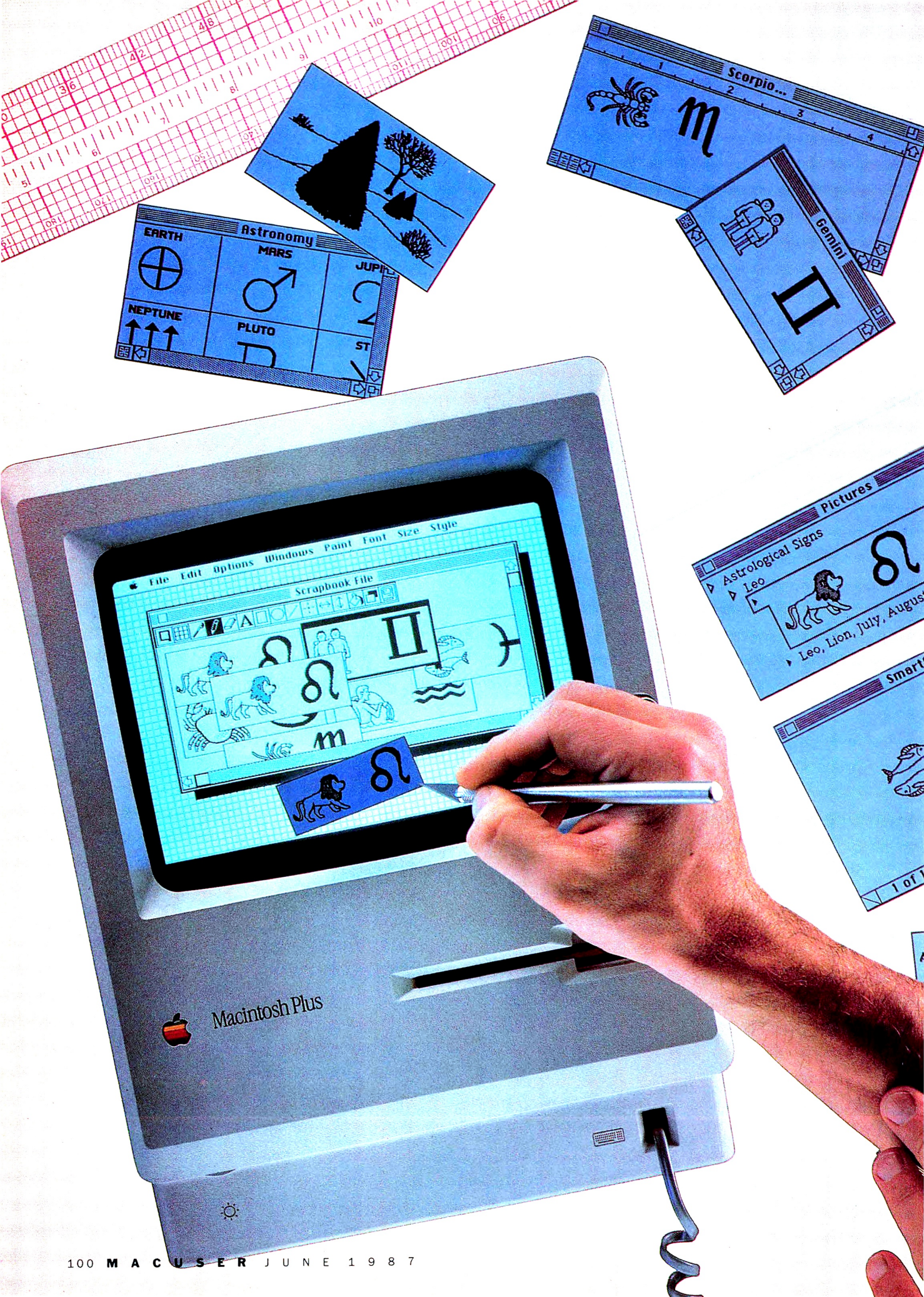
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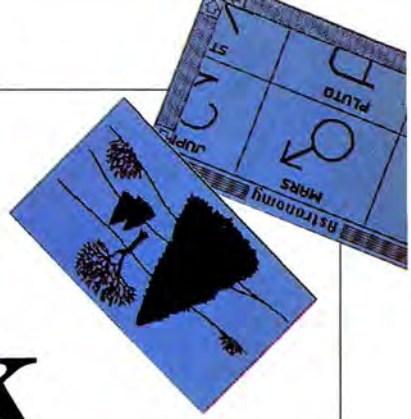
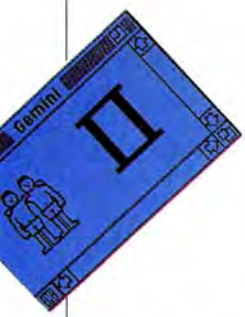


Let's Talk Scrapbooks



Getting right to the point: it's time to scrap the Scrapbook.

BACK IN THE BEGINNING (1984) IT was revolutionary. A convenient, always accessible place to store graphics and text. Now, in 1987, its drawbacks seem obvious. The Mac, like many of its users, has grown more sophisticated, but the Scrapbook is suffering from arrested development. And while Apple may be sticking with the original Scrapbook, that doesn't mean you have to be stuck with it; there are other desk accessories you can use instead.

Some of the desk accessories described here are minor enhancements to the Scrapbook, and some are major replacements. Still others weren't meant to serve primarily as picture handlers, but since they can store graphics, they might serve your needs if you already have them under the Apple menu.

Each accessory has its strong points and drawbacks; pick one based on your individual needs — system size and your software budget, for instance.

I'll also mention right up front that I was personally involved in two of these products; in one case as a documentation writer, and in another as software designer. In fact, it was that involvement that made me aware of the options available these days in graphic storage, and led me to look around for other programs that could replace the Scrapbook.

WHAT'S WRONG WITH THE SCRAPBOOK?

The Scrapbook's limitations become obvious if you work extensively with graphics. When you're deciding on a replacement, ask yourself if you need any of these features, and if the replacement provides them. (Keeping in mind that, beyond the basic necessities of life, need is a relative term.)

Here, in the order of the features chart, are the things to look for in *your* Scrapbook. The Scrapbook handles one and only one file: the Scrapbook file in your System folder. Your Scrapbook replacement might access Scrapbook-format files or its own files, but you shouldn't be confined to only one file at a time. You should be able to create your own graphics files by saving a current file under another name, or by starting from scratch and pasting things in.

It's handy to have the desk accessory automatically open a file instead of starting with a blank window. But, it's even handier when you can specify just which file is the default; and it's best if you can specify a different default file based on which application you're using at the time you open the accessory.

The Scrapbook has a one-size window that shows only part of a large graphic. It's not adjustable, and certainly not enlargeable. What you need is a window or page that you can resize to the size of the screen if necessary, and a way to scroll the picture if it's larger than the screen. Viewing the page in miniature helps for the large pictures. And, for a final touch — can you see more than one picture at a time?

To find something in the Scrapbook, you have to flip through its pages. It can be tedious, and if the Scrapbook is full, finding a particular page can be difficult. There are better ways available if you don't feel like browsing. How about giving each picture a title, and just telling the accessory to find something with that title? Or, even better, how about a list of descriptive keywords attached to each page so you can search for those words? This same text area can be used to make comments about the picture, like where you got it, or when you last used it in your newsletter. An automatic cross-referencing system (other than using the comments area) to refer you to related pictures is a special touch.

Once you've found the picture you want, what choices do you have

BY SHARON ZARDETTO AKER

JOOK LEUNG

about copying it? The original Scrapbook limits you to copying the contents of the entire page, no matter what its size. What you want, at a minimum, is a selection rectangle; at best, a lasso. Another special consideration is the matter of scaling: Can you copy a reduced version of the picture to the Clipboard?

If you also use your Scrapbook to store text; can you select part of the text to copy, or do you have to copy the whole page? Does the accessory just store text, or can you edit it, too? Finally, does it store formatted text, so if you paste in a paragraph containing a single bold word, when you copy it out the bold word is still there?

A final, and important consideration: Can you change the picture at all, within the accessory? With one notable exception, all the accessories are storage and retrieval systems only.

I know I said editing was a final consideration, but here's one more anyway: Can you print the contents of your Scrapbook?

SCRAPBOOK ENHANCEMENTS

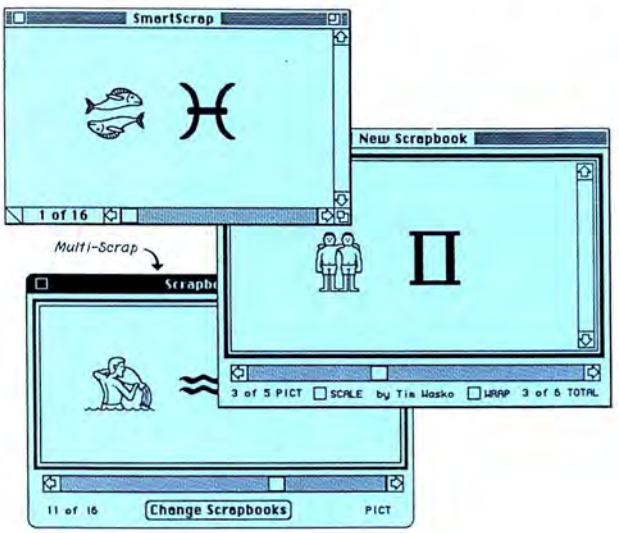
One of the first Scrapbook replacements that showed up was *Multi-Scrap,* and it's still around as shareware. *Multi-Scrap*'s only enhancement over the original is that you can access different files; but, that may be all you need (and the price is right!).

New Scrapbook is another shareware offering. With *New Scrapbook,* you can select a portion of the displayed picture with the selection rectangle; and, the selection is automatically copied to the Clipboard without using the Copy command. You can scale the picture down to see the whole thing if it's larger than the window, but a copy operation stilll copies it in the original size to the Clipboard.

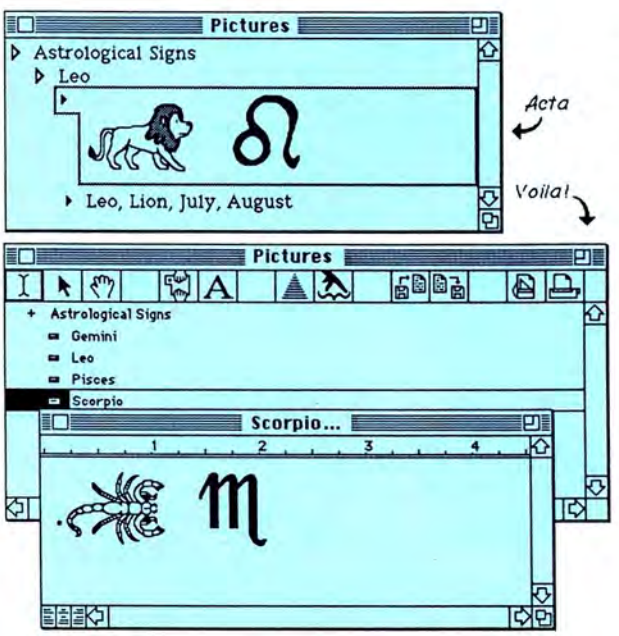
SmartScrap is a major replacement for the Scrapbook from the *Glue* people (not Elmer's, Solutions International). It addresses the major shortcomings of the standard Scrapbook: you can access different files and copy a selected portion of the page.

SmartScrap lacks a search function according to titles or keywords, but you can construct a table of contents that gives a pictorial guide to the contents of the file. Unfortunately, it can take up to five minutes (!) to construct a table of contents for a large file; and, you have to reconstruct it each time you want to see it. It takes less time to do it the old-fashioned way: flip through the pages.

SmartScrap stores text, although the words lose their formatting and can't be edited. You can, however, select portions of the text to copy to the Clipboard. If you paste a text/graphics combination on a *SmartScrap* page, you can select either one or the other, or both, when you copy it again.



The three Scrapbook replacements — *Multi-Scrap, New Scrapbook,* and *SmartScrap* — all offer advantages over the original Scrapbook.



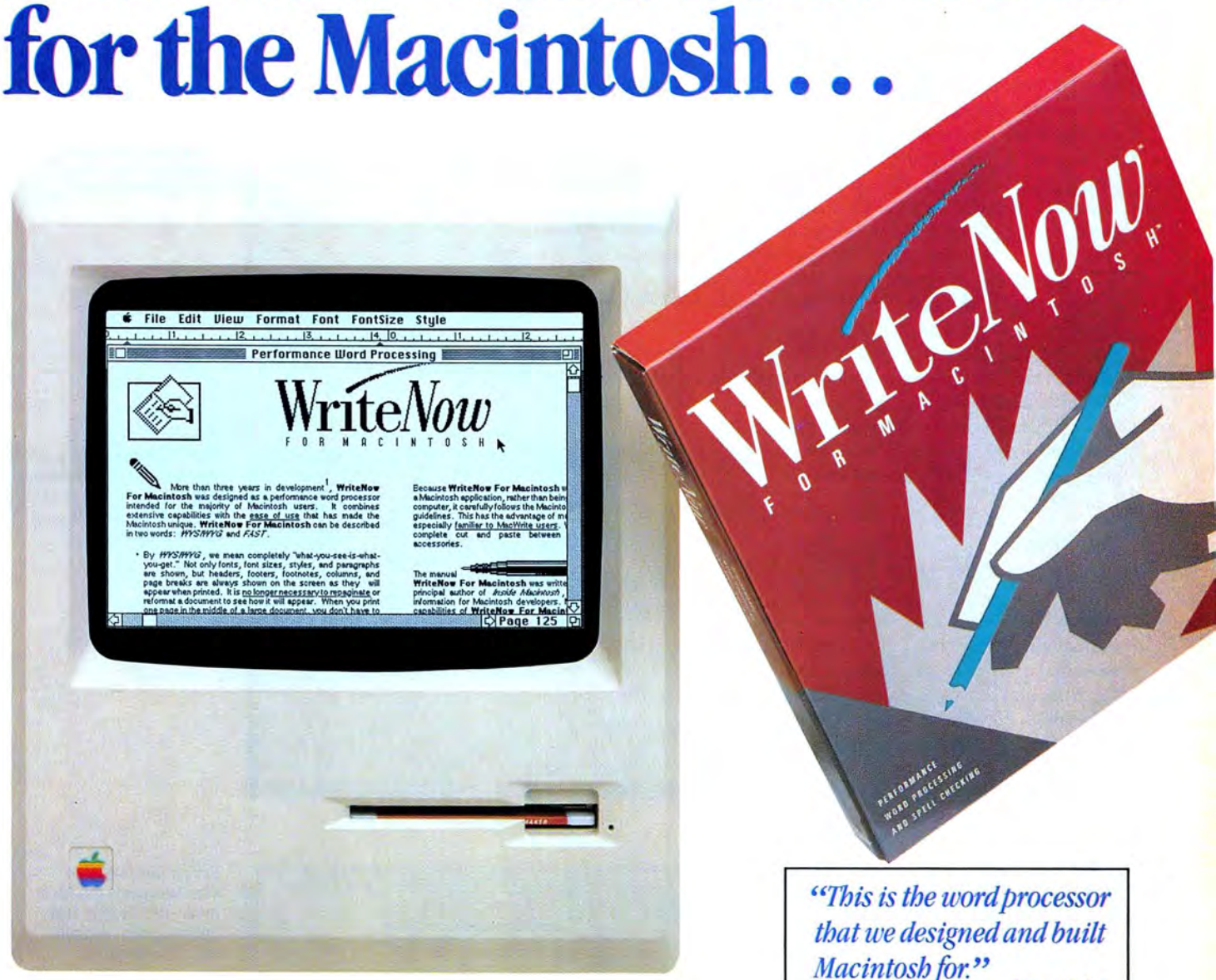
Outliners like *Acta* and *Voila!* can store graphics, and give you sort and search functions, as well.

THE OUTLINERS

Acta and *Voila!* can both store graphics, so you can use them instead of the Scrapbook. Since they weren't designed to handle graphics, there's not much in the way of copying options: it's an all or nothing proposition. But, you can set up topics and subtopics or window titles so that you can design a really thorough data base of the pictures in your file.

In *Acta,* for instance, you can

Best New Word Processor for the Macintosh . . .



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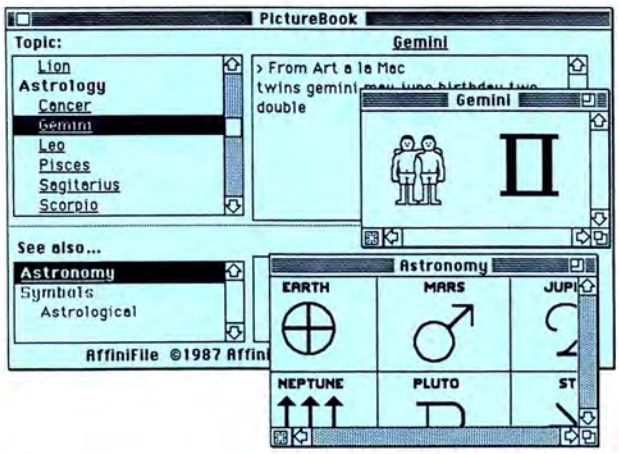
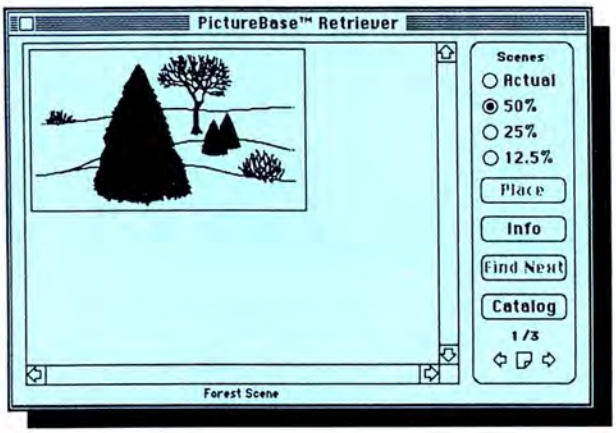
arrange your pictures under specific headings, grouped together under general headings; the headings can serve as titles. Then, in a topic on a level with or subordinate to the picture, you can type in a list of keywords for searching. A similar setup is possible in *Voila!*, using text windows for the keywords and titling the graphics windows for the pictures.

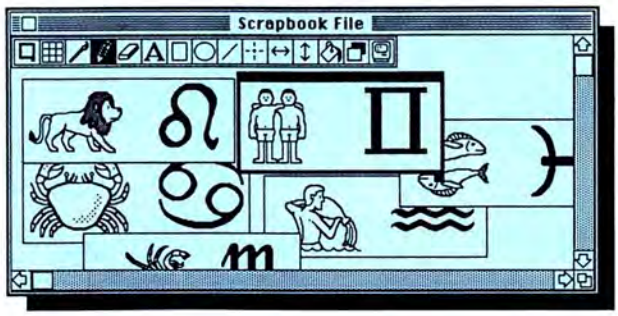
In all, *Voila!* is much more comfortable to work with for graphics storage, since it has separate windows for the graphics. On the other hand, *Acta* lets you set a default file for automatic opening, and takes a lot less room in your *System* file. Both outliners give you the advantage of being able to print the file contents.



An underlined topic in *Affini*File* indicates a graphics window is attached. You can open the notes and graphics window for anything that is cross-referenced to the main topic; the cross-references are listed in the "See Also" box.



The *PB Retriever* has a sophisticated storage and search system. One of its special features is its ability to scale images for you.



***CheapPaint* is a mini-*MacPaint* under the Apple menu. It's the only desk accessory that lets you alter the stored art.**

AND THEN . . .

*Affini*File* from Affinity was originally developed to be the ultimate generic help file desk accessory. (I know, this was the one I helped develop.) However, once we added "picture frames" to the topics in the help file, a few more graphics capabilities seemed necessary, and soon the help file became a more sophisticated filing system that handled graphics as well as text.

*Affini*File* organizes topics and subtopics automatically in alphabetical order; each topic or subtopic has a page of notes attached to it, as well as a graphics window. You can resize and scroll the graphics window, and use a selection rectangle to copy a portion of the picture.

You can use the topics as picture titles, and the notes area for keywords and/or comments; or, you can use the notes area only for comments and use the Link feature to set up keyword searches. With Link, the same text and picture is stored under multiple titles, without storing multiple copies of the picture. *Affini*File* also has a cross-reference feature that lets you note related items and look at them without leaving the current item; it also lets you have multiple picture windows open.

You can set up multiple default files: a file can be linked to a certain application, so the default file changes depending on what application you're running when you open the accessory.

CheapPaint is a mini-*MacPaint* under the Apple menu. While it has absolutely no search features or text capabilities, and so looks a little weak in the feature chart, its main feature more than compensates for what's missing. It's the only accessory that lets you alter existing pictures or create new ones. *CheapPaint II* will be available by the time you read this; it has even more tools and capabilities than the original — the addition of a lasso is especially appreciated.

CheapPaint is closely allied to the Scrapbook. The default file it opens is the Scrapbook file in the System folder; you can access any other Scrapbook format file. Each page of the Scrapbook becomes an "easel" in *CheapPaint*.

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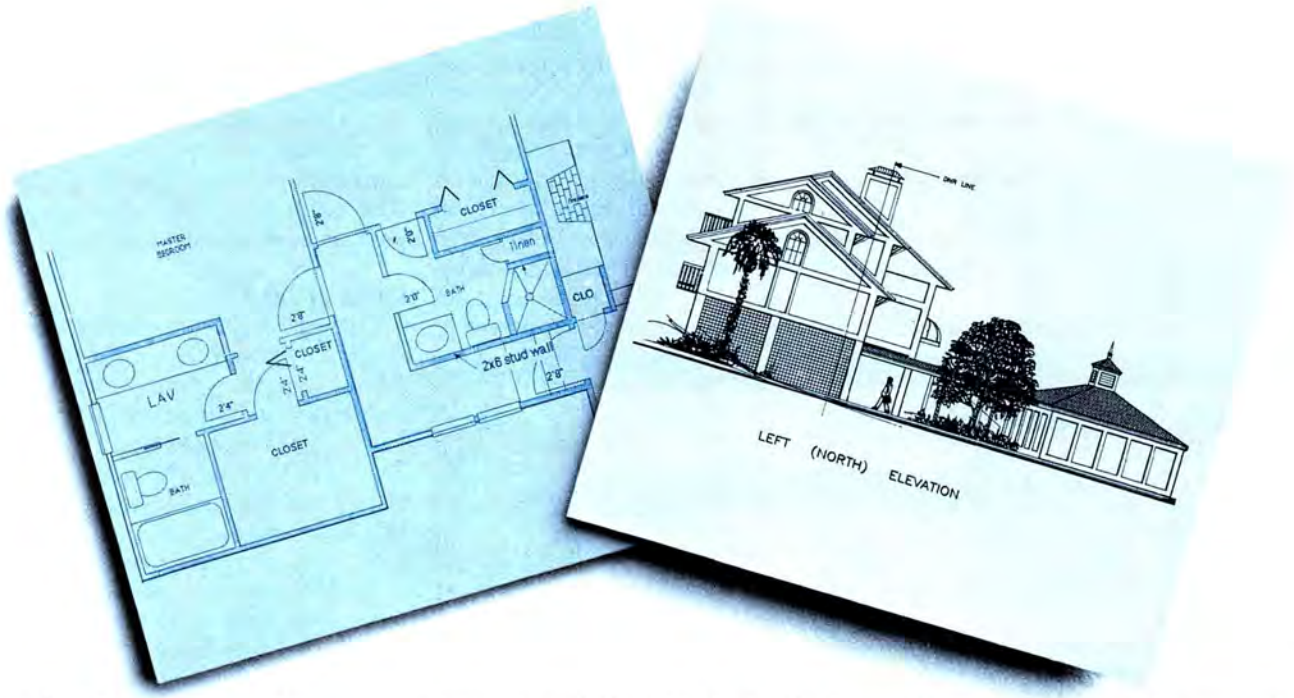

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Let's Talk Scrapbooks

PB Retriever is a DA that comes with *PictureBase*. It's a heavy-duty graphics handler, because that's what it was meant for. The *Retriever,* however, cannot create or edit the "libraries" of pictures it accesses. The libraries are created with the *PictureBase* application, or bought as-is from certain art-disk companies. In fact, the *PB Retriever* is only available on the *PictureBase* disk or from some clip art companies that license it. If you do lots of graphic retrieval, though, you may want to invest in the application, too.

With the *Retriever,* you can see all the libraries on a disk or in a folder, and search through any or all of them using titles or keyword descriptions that have already been entered for each of the pictures. You can reduce the picture to 50, 25 or 12.5 percent of its original size and then copy all or part of it. One of the *Retriever*'s very special features is that you can copy a picture in its reduced size and correspondingly increase its resolution. If you have a regular *MacPaint* graphic, its resolution is 72 dots per inch. Reducing it to 25 percent of its original size increases its resolution to 288 dots per inch; pasting this into a program and printing it on the LaserWriter takes advantage of the LaserWriter's 300 dot per inch capability.

PB Retriever doesn't handle text at all. It only stores descriptions of the pictures, and these cannot be edited, although they can be copied.

A special utility that comes with the *PictureBase* application lets you convert Scrapbook files into *PictureBase* libraries without copying and pasting each picture individually.

Inside Scrapbook

		Scrapbooks				Outliners		Other		
		Scrapbook	Multi-Scrap	New Scrapbook	SmartScrap	Acta	Voila	Affini*File	CheapPaint	PB Retriever
Files	Scrapbook format	✓	✓	✓	✓					
	Multiple files		✓	✓	✓	✓	✓	✓	✓	✓
	Create own files	✓	✓	✓	✓	✓	✓	✓	✓	
	Open default file	✓	✓	✓	✓	✓		✓	✓	✓
	Set default file					✓		✓		✓
	Multiple defaults							✓		
Viewing	Enlarge window				✓	✓	✓	✓	✓	
	Scroll				✓	✓	✓	✓	✓	✓
	Miniature			✓						✓
	Multiple pictures							✓	✓	
Find	Titles					✓	✓	✓		✓†
	Keywords					✓	✓	✓		✓†
Copy	Rectangle			✓	✓			✓	✓	✓
	Lasso								✓	
	Scaled									✓
	Alter picture								✓	
Text	Selection			✓	✓	✓	✓	✓		
	Edit					✓	✓	✓		
	Formatted	✓	✓							
	Print					✓	✓	✓		
	Size	3K	5K	12K	31K	52K	82K	47K	30K	14K
	Price		Shareware		59.95*	59.95	99.95	69.95	49.95*	99.95*

†non-editable *accessory is part of package

CONCLUSION

The perfect Scrapbook hasn't been designed yet, but you could use any one of these programs while you're waiting for it. Which one is best for you depends on your needs (and, as mentioned before, the size of your system and software budget). How's that for wimpy advice? Okay, I'll do some specific recommendations.

All things considered, two of these accessories stand out from the rest, and it's probably no coincidence that they are the two specifically made for graphics. My personal favorite is *CheapPaint,* since I need something that lets me alter a graphic whenever I want. If I were into — dare I mention it? — desktop publishing, I don't think life without *PB Retriever* would be pleasant. But I still wouldn't give up *CheapPaint,* so I'd have to use both.

Acta, $59.95 and **PB Retriever** (on **PictureBase:** $99.95). Symmetry Corporation, 751 E. University Drive, Suite C, Mesa, AZ 85203.

Affini*File, $69.95. Affinity Micro Systems, 1050 Walnut Street, Boulder, CO 80302.

CheapPaint II (on MUD II disk: $49.95). Macromind, 1028 West Wolfram, Chicago, IL 60657.

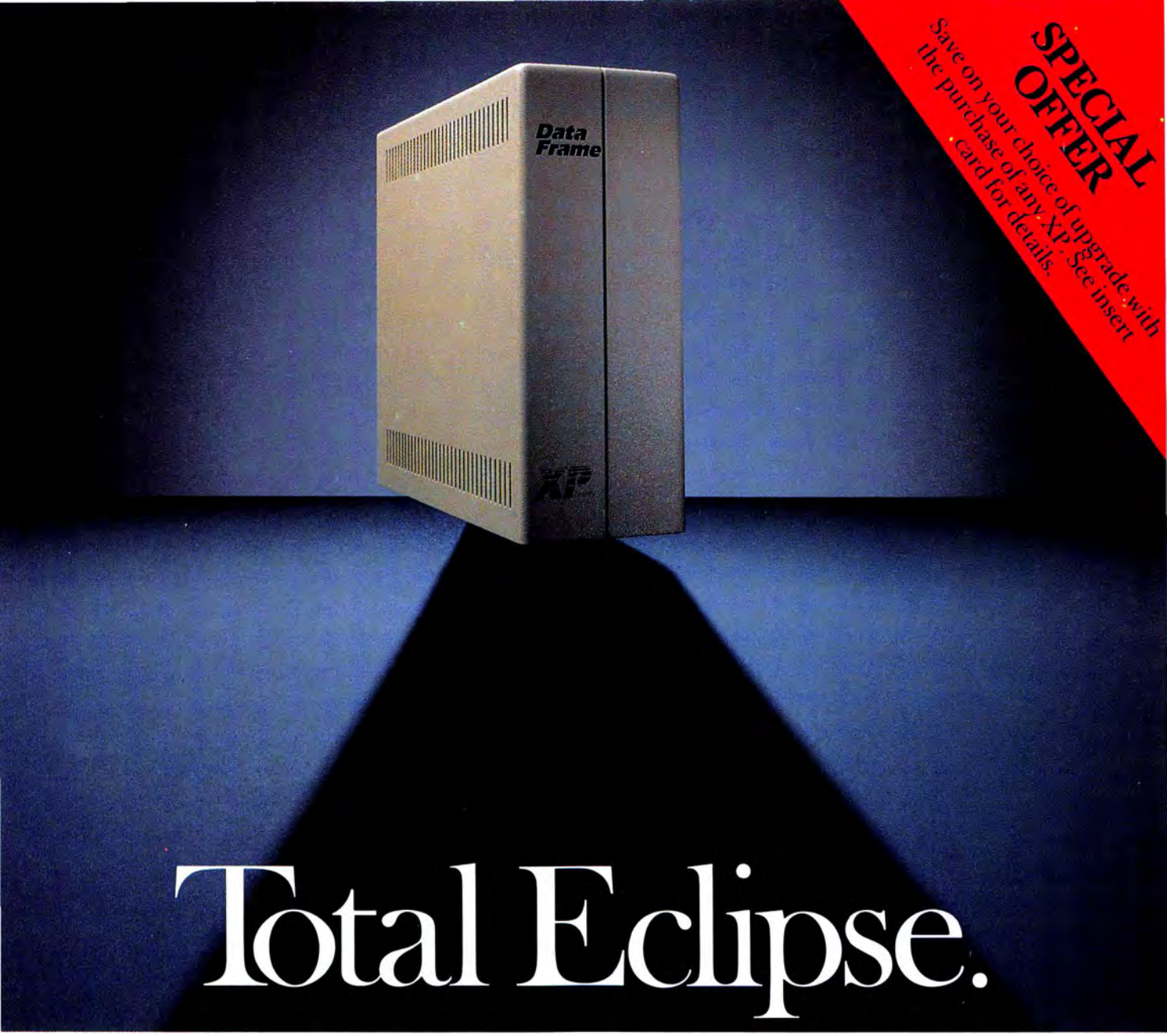
MultiScrap. Shareware.

New Scrapbook. Shareware.

SmartScrap (with **The Clipper**, $59.95). Solutions, Inc., PO Box 989, Montpelier, VT 05602.

Voila!, $99.95. Target Software, 14206 SW 136th Street, Miami, FL 33186.

SHARON ZARDETTO AKER IS A MACUSER CONTRIBUTING EDITOR AND AUTHOR OF MANY GREAT COMPUTER BOOKS.



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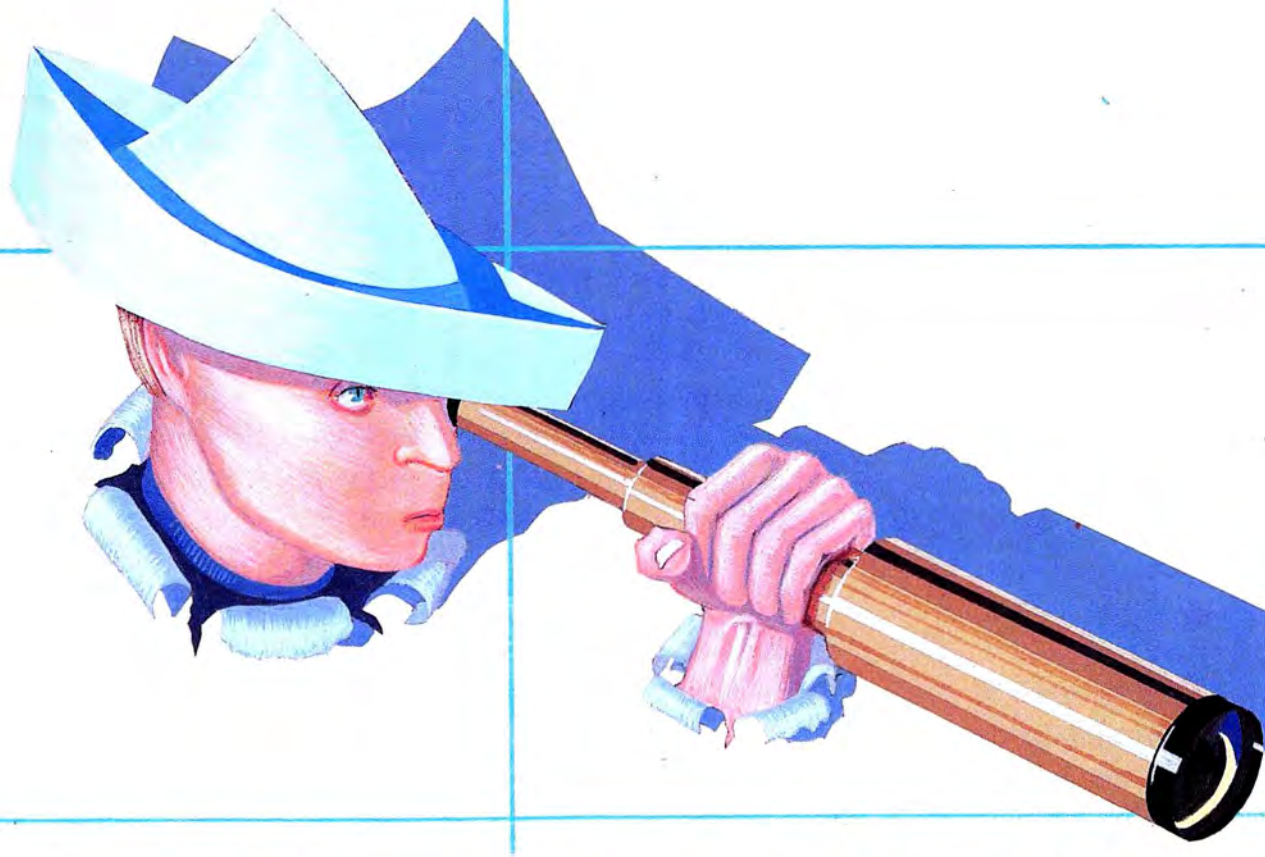


Go For the Gold

Plunder and negotiate your way through the New World with Seven Cities of Gold.

EDUCATIONAL SOFTWARE. THE phrase conjures up pictures of bored 8-year-olds falling asleep in front of a screen that displays badly-drawn illustrations of words beginning with the letter "A". Most often educational software is something you wouldn't even wish on your own kids. It certainly couldn't be interesting or — perish the thought — fun for adults, right?

Wrong. Not since Scarborough's now out-of-print *Make Millions* has an educational game done such a good job of blurring the distinction between educational and entertainment software for the Mac. Electronic Arts' *Seven Cities of Gold* proves once and for all that even a grownup can really enjoy the thrill of the quest. And "quest" is what *Seven Cities* really is — a quest to explore and exploit the unknown lands of the New World, much like Columbus did in the Fifteenth Century.

This is a "soft" educational game, so soft it could just as easily be classified as an adventure game. The object: to discover as much as you

BY TRACIE FORMAN HINES

can about the fabled New World, trading Spanish goods for gold whenever possible, and establishing religious missions to conquer the New World culturally.

Options let players recreate Columbus' journey to the Americas or generate random world maps of their own. The latter is much more exciting, adding elements of mystery to the mission.

In the Beginner mode, you can see unexplored villages and cities on-screen, but at higher levels you'll have to stumble into your first villages by yourself. Once a single population center has been found and you've picked up a few native bearers, they'll point you to new towns. And once you've visited a town, it's inscribed on your map, and you'll be able to see it from the distance from then on.

HOWDY, SAILOR

The first step in any quest is to use the gold you've been lent by the Crown to equip your ships. If you buy huge amounts of goods, you need more ships, but more ships require more men — and they require more food. When you start, be sure to take at least a year's supply of food — and carry as many goods as you can, since they can be traded for food *or* gold as the situation merits.

When the ships are equipped, it's time to take to the seas, sailing into the sunset in search of a New World. Check your map constantly while at sea, since otherwise you might miss a continent entirely!

Ships are completely safe in the deep water of the open sea, although they can be blown off-course by sudden storms. Navigating the shallows around continents requires a steady hand, and on higher levels, shoals can sink a ship.

Docking is easy enough. Just be sure to leave at least a few men on board, which helps make sure your navigators don't take off without you. But leave enough food behind so that your men won't mutiny or starve to death in your absence.

FOR LOVE AND MONEY

No self-respecting Spanish explorer would undertake a New World expedition solely out of the thirst for knowledge — or even out of missionary zeal. There's gold in them thar cities, and bringing home a good amount of it is one of your prime objectives.

The larger a population center is, the more gold it has on hand — and the more native bearers you'll find to carry your booty back to the ships. Large cities also sport large armies, so it's helpful to maintain peace there at all costs, especially if the natives are already angry at your earlier treatment of their smaller neighbors.

HOW TO MAKE FRIENDS

No matter what the size of the tribe, you'll almost always accomplish more by treating every villager you meet with respect, no matter how lowly their wealth. Listen to the drum beats you hear upon entering every village to get a quick reading of the residents' mood; the faster the drum beats, the angrier they are. Actions your party takes in villages can calm angry villagers — or whip a peaceful tribe into a bloodthirsty frenzy.

Natives don't like huge hordes of European travellers bursting into their villages and recklessly stomping around. Always adjust your pace to Cautious (and leave the Automove mode, if you're in it) before entering any population center.

Townspeople can also get very testy if you carelessly kill too many of their neighbors. Since all your disease-ridden party has to do is

MORGAN PICKARD

touch a native to kill him, always keep a safe distance from the curious natives who'll rush forward to get a look at you. If you have to, stop moving completely and then edge forward a step at a time, as the natives step out of the way. It's far better to take a few extra seconds edging your way towards the center of town than it is to fight a war you never intended to start!

Never, but never, touch a chief (he's the well-dressed fellow found in the center of any town when the natives' mood is relatively calm.) The chief is just as vulnerable to your touch as any other native, and once he's been killed he will not be replaced — but the village immediately declares war on your party, and you either have to take over by force, or fight your way out.

As long as you haven't killed their chief, making friends with your enemies is possible. There are two ways to accomplish this: you can OFFER GIFTS to natives or to the chief, or by using your "superior" knowledge, you can AMAZE THE NATIVES.

Giving gifts is useful when you get mobbed in a village and want to distract a lot of the crowd while you find the chief. Hey, who doesn't react well to shiny boxes full of exotic goodies? Unless the villagers are really furious, just the sight of a box or two can slow down those war drums. Remember also that the boxes are always dropped to the left of your explorer — so it will work better to distract natives to the left than it will to the right.

AMAZE THE NATIVES with care, since it only works once per village — and then, only according to how gullible that particular tribe is. As the instruction manual explains it, this option means that you pull some kind of trick — lighting a match and saying you can produce fire from a stick, for example, or using your foreknowledge of an eclipse to make the tribe think you're a demigod — that frightens the population into temporary submission. When you AMAZE THE NATIVES, your explorer icon turns white and the natives run out of your path. It's an effective way to restore calm in an agitated village, or just to get everyone out of the way so you can reach the chief quickly.

The best place to begin your exploration is at the mouth of a river.

IF WAR IS INEVITABLE...RELAX AND ENJOY IT

There are a few villages that just don't want to make friends, especially if you've accidentally killed off their chief. Once in a while, like it or not, you're stuck with war.

The first thing you'll notice is that the war drums pound furiously and villagers start hurling themselves against your explorer. To dodge enemies and equip a sword in your hand, quicken your pace to RECKLESS. Touch approaching natives with the sword to kill them without suffering many casualties yourself.

Once you've beaten the locals into submisison, you're free to take what you want without having to trade any goods. You also have the option of garrisoning the town as a fort (or with more men, a mission). Just remember that the natives are very likely to kill everyone you leave behind the minute they think your back is turned. And, upon leaving a ravaged village or city, be on the alert for ambushes on the way back to your ship.

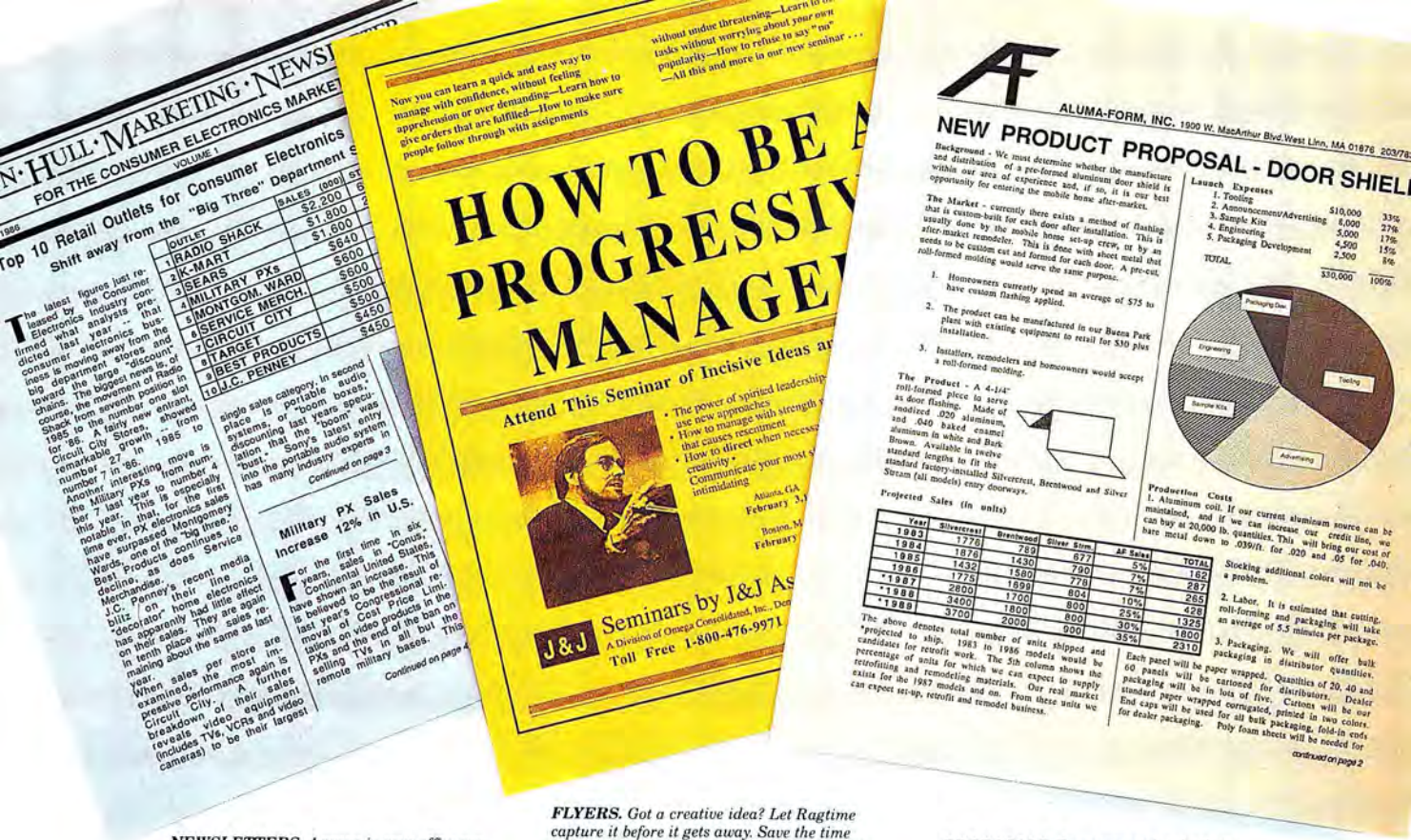
It's far better in the long run to be nice to everyone. That way, you enter new villages with some automatic goodwill, and your native bearers will also be more loyal. They'll tell you when you're approaching a gold mine or the capital city, and point out villages you wouldn't ordinarily see when you're playing in the Intermediate or Advanced modes.

Natives will trade food or gold for European goods. The more men in your expedition, the higher your daily food requirements will be.

THE MISSIONARY'S POSITION

When a chief is particularly impressed with your behavior — and that's rare — he offers to let you establish a mission in his village. Unlike what happens when you establish a mission in a conquered village, this mission will remain viable as long as its food holds out.

The instructions also mention something about missions being useful for setting up supply lines to docked ships, but the instructions



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were so vague that I never did figure out if I was doing it right.

Establishing missions by invitation earns you a lot of prestige points when you get back home — and, if you can leave enough food, you can use missions to store goods and gold that your ships can't carry. (It's less risky to simply bury the extra booty in a cache, but you have to make sure you'll be able to find it again.)

EARNING YOUR LAURELS

When your goods run low it's time to head back to Spain, and often, to a performance review from the Crown. Player's progress in the game is rated according to a formula that includes how many discoveries you've made (of plains, rivers, gold mines, mountain ranges, etc.); how many natives you've contacted; how many active missions you've established; and, of course, how much gold you've collected. All of those factors are figured against how much time you spent achieving all those targets.

When the Crown is particularly pleased with your efforts, you are given a promotion to a higher rank. Luckily, the reverse isn't true, so no matter how badly you do subsequently, you can't be busted to a lower level.

A MEASURE OF CONTROL

Seven Cities has been around for a few years on other computers, and the Macintosh version reflects Electronic Arts' policy of keeping new translations as close to each other as possible. This is a mixed blessing.

Your home port in Spain is where you stock up on supplies, save your maps and (if you're lucky) finagle an audience with the Crown.

For example, the game was originally designed for joystick control. In spots that require precise maneuverability (like skirting around a group of curious natives), the mouse runs a poor second to a joystick. To partially compensate for its difficult control, the Mac *Seven Cities of Gold* gives players an Automove option that continuously moves the exploration party in the direction indicated by the mouse.

Frustrated explorers can take heart, though — while it took a half hour or so to get adjusted to moving the mouse in tiny little increments, the learning curve rises quickly and you'll soon be maneuvering like a pro.

A disappointing feature is caused by Electronic Arts' steadfast refusal to conform to Apple software development guidelines. *Seven Cities* uses its own *System*, so it doesn't behave the way most other Mac programs do. The most inconvenient result is a mystifying Save routine.

Players can save a game in progress by entering the pub and choosing to save. But, if you want to save the game, then quit — and maybe reboot or run another application — there is no way to do so without physically shutting down and rebooting. There isn't even a way to remove the disk from the drive while the game is in progress (not counting your faithful paper clip, of course).

WORTH LOOKING INTO

Despite the program's eccentricities, *Seven Cities of Gold* is a worthwhile adventure for the entire family. Adults will enjoy the challenge of exploring random maps in the Intermediate level (or tear their hair over the Advanced game), while the Beginner mode is easy enough for your 8-year-old. Of course, using the built-in map of the Americas helps kids pick up a little geography — but don't tell them that, unless you want this one all to yourself.

The expedition finds a wealthy village along the banks of a river.

TRACIE FORMAN HINES IS A CONTRIBUTING EDITOR OF MACUSER.

Seven Cities of Gold $

Overall Rating	$\$\$\$\$$
Follows Mac Interface	$\$$
Printed Documentation	$\$\$\$\$$
On-Screen Help	N/A
Performance	$\$\$\$\$$
Support	$\$\$\$\$$
Consumer Value	$\$\$\$\$$

Comments: Enjoyable quest to explore the New World. Combines elements of role-playing games with real-time action. Don't give up on using your mouse to control it — the learning curve rises quickly. **Best Feature:** Random map generator and variable skill settings keeps play challenging. **Worst Feature:** Non-Maclike menu options (or the lack thereof) can be confusing and inconvenient. Didn't the play-testers notice there wasn't a way to Quit the game? **List Price:** $39.95. Published by Electronic Arts, 2755 Campus Dr., San Mateo, CA 94403. (415) 571-7171. Copy protected.

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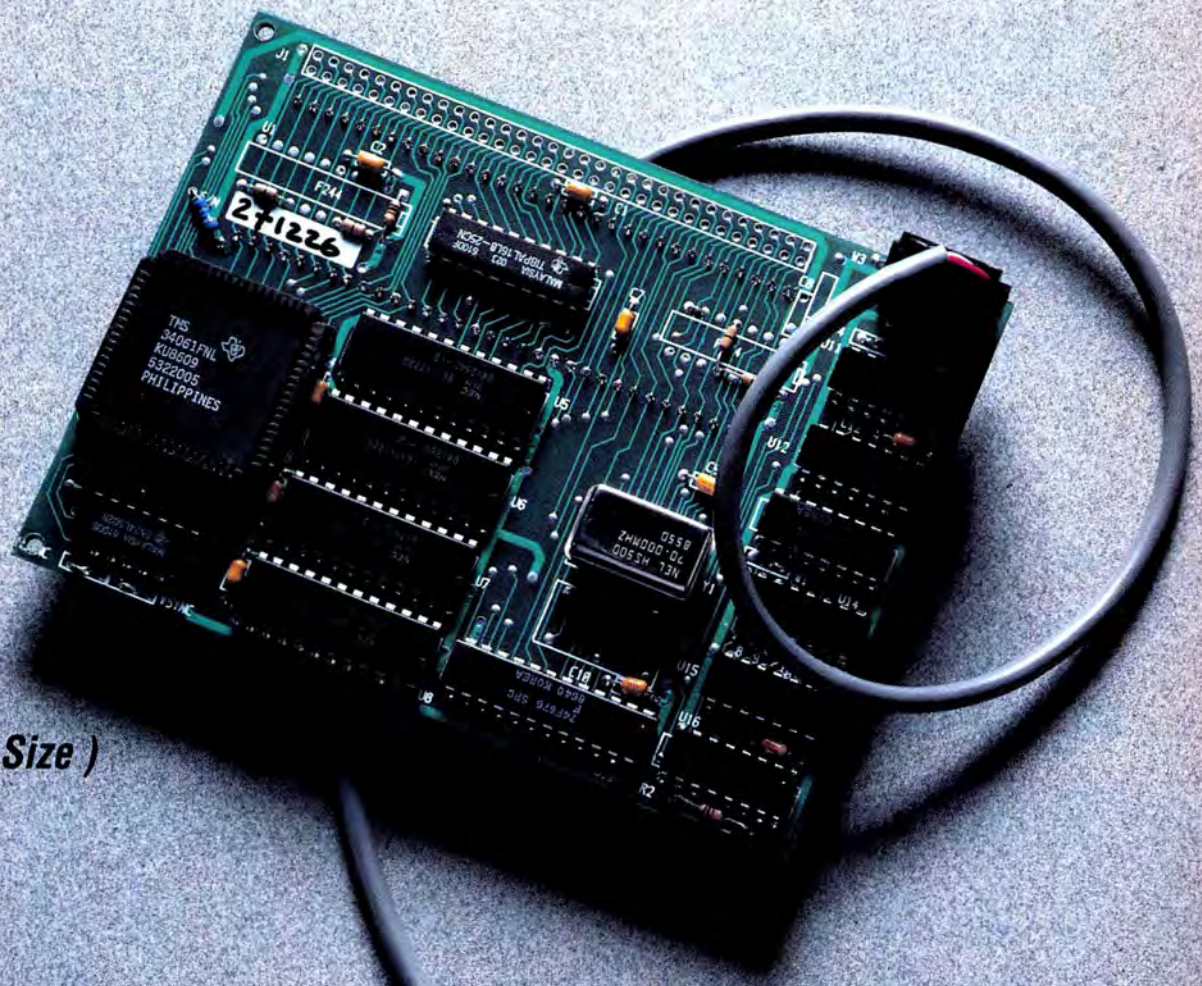

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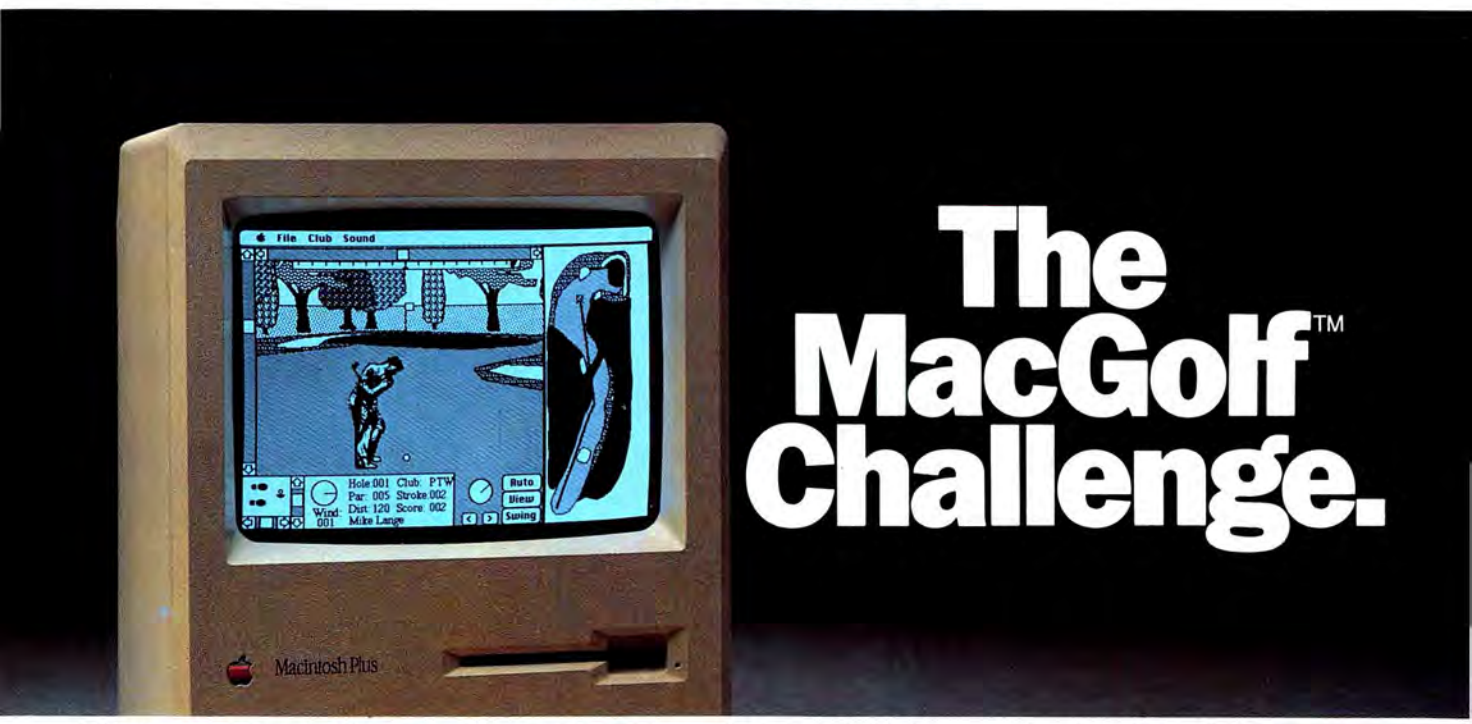

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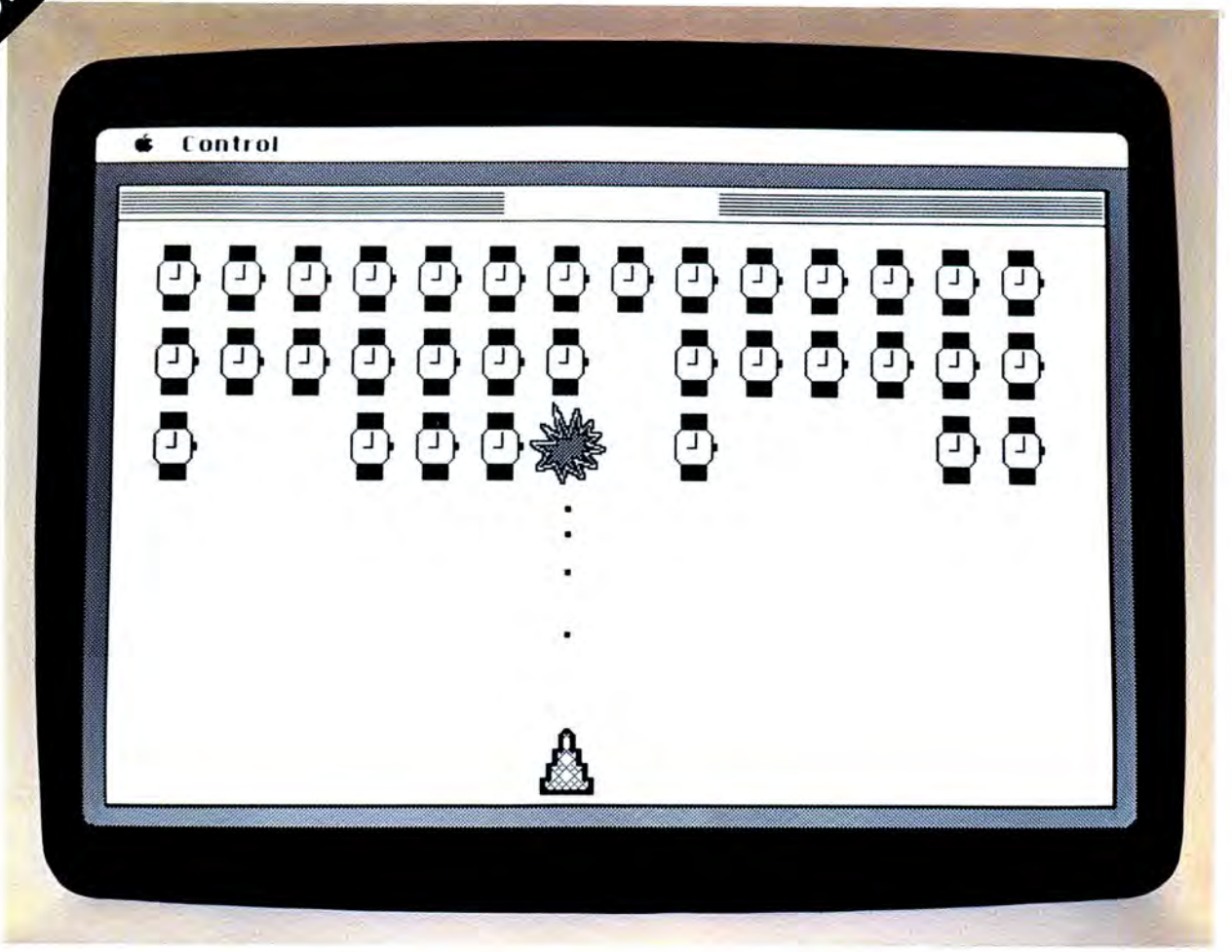

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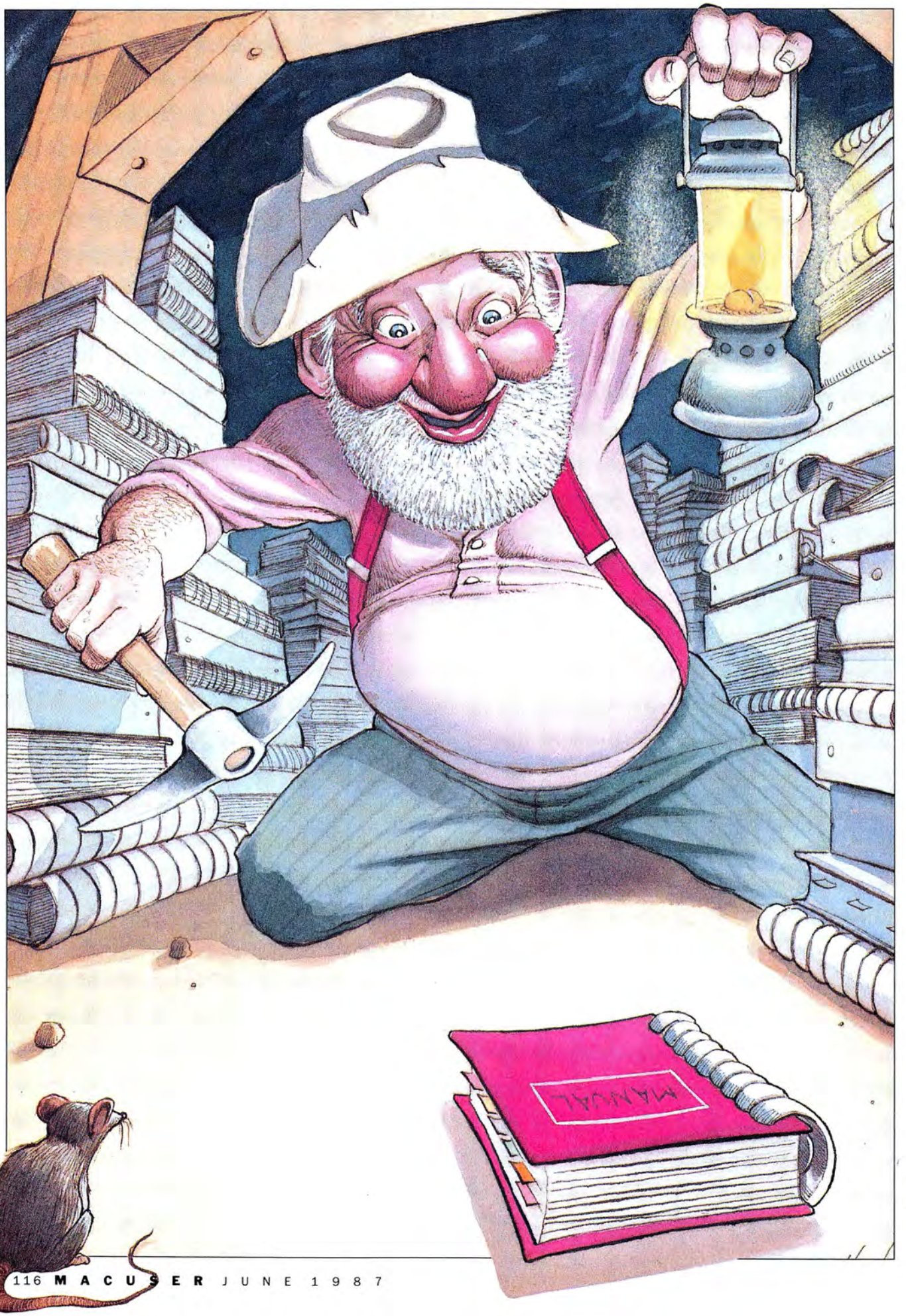

STEVE HAEFELE

Manual Labor

Even if you never read a Mac manual, read this manual on reading manuals.

BY KAREN S. WILSON

ONCE YOU HAVE DETERMINED you need a certain type of program, how do you decide which specific program to buy? Do you read your favorite computer magazine cover to cover and follow its recommendation? Do you judge software by advertising or by what other users say? Or maybe you go to your local computer store, ask "What's a good word processor?" and take the salesperson's advice. And when you've made your purchase, how do you make sure you are getting the maximum use and efficiency from the program?

Every commercially available program comes with a buyer's guide and every program worth owning comes with a power user's guide. It's called a user manual. The user manuals (good or bad) can be the best buyer's guides for any product. You just have to know how to use them.

One of the first things you can determine about a program from the user manual is the program's accessibility. If it's a complex program with a thin manual, expect to spend a lot of time wondering how to use the program. If it's a simple program with a 200-page, large-print manual, check the price. You may be paying by the pound.

If you get beyond the size of the manual with your interest intact, apply a short checklist of features to the user manual and you'll be able to tell quickly if the program, regardless of the application, warrants more review. Take a few minutes to answer the questions below and you will save time and trouble later.

●Does the manual's table of contents provide quick access to major topics and subtopics?

Look for chapters covering how to start using the program, use the major functions of the program and go beyond the basic procedures.

●Does the manual contain a tutorial that simulates a practical application of the program?

Even with the simplest programs there should be a section in the manual which gives you step-by-step instructions for the program's major function. By the end of the tutorial, you should have a realistic example of what you intend to produce with the program.

●Does the manual present screen dumps and other illustrations frequently?

Illustrations help clarify the points made by the text and provide quick reference when learning or recalling specific procedures. The illustrations will also tell you how closely the program follows the Macintosh user interface.

●Does the manual have an index?

The more complex a program, the more essential an index. Only the thinnest of user manuals, for programs with one or two functions, can do without an index.

If the manual contains a helpful table of contents, a tutorial, ample illustrations and an index, it's ready for the next review checklist. If the manual is missing any of those items, consider carefully the time you may have to spend to compensate for the inadequacy of the manual. The more complex the program, the more time it will take you to learn the basics not to mention the more complicated functions. If the manual passes the first checklist or you're satisfied you can live with its limitations, go on to the next checklist.

The second review checklist should be specific to the application and to your intended use of the program. With this tailored checklist, you will find out how useful the manual really is and how useful the program is for your specific needs.

The more powerful the program, the more functions. The manual should detail how to use all the major functions. Use the table of contents or the index to find the sections that describe all the functions you intend to use. For example, if you are shopping for a word processing program, look for sections on editing, formatting documents, formatting paragraphs, printing documents, using footnotes, setting tabs, opening multiple documents and similar tasks. If you can't find them in the manual, don't count on them being in the program. Even if they are in the program, you'll have no easy access to them without documentation.

●How thorough are the descriptions of the functions that you need?

Review the sections detailing a few of the functions you intend to use. Try at least to look at one you will use frequently, one you will use infrequently and one you may use in the future. A quick read of the procedures should tell you if the function works the way you'd expect and if it will be easy or cumbersome to use.

●Are minor functions documented as well as major functions?

Use the index to look up a few simple or standard functions of the application. For example, when considering a word processing program, look up inserting text, saving a document, copying and other similar

tasks. Review the sections describing those standard activities. Again, a quick read will let you know if the little things are given as much attention in the manual as the major functions. Minor items often are overlooked in user manuals, which can lead to major headaches. And sometimes such oversights in the manual can indicate similar oversights within the program.

- Is there anything in the manual about using the program with other applications?

If there is the remotest possibility you will use the program with any other applications, check the index for the names of those applications or check the reference section for a general discussion of such use. If there is no information in the manual, there may be no compatibility or, at best, limited compatibility between the program and other applications.

A note about glossaries: Manuals for very technical or unique applications (for example, layout programs, scientific applications, etc.) usually contain the jargon of the field most likely to have use for the application. If the application or field is unfamiliar to you, a glossary of terms should be a definite requirement for the user manual. Without a glossary, the manual will be difficult to comprehend and perhaps impossible to use. By extension, the program will be inaccessible as well.

After applying the general and the specific checklist, you should be able to answer the following questions

- Is the user manual designed to be used? Is it an aid to using the program rather than an obstacle?
- Is the user manual sufficient for a novice as well as an experienced user?
- Is this program going to do everything I want it to?
- Does the manual tell me how to use all the features I need?

If the answer is "yes" to all these questions, you have found yourself a well-documented, accessible program which probably would be a good investment, depending on your budget and personal preference.

If the answer is "no" to any of these questions, you have a program which doesn't stand up to much review and probably wouldn't stand up to much use.

Once you have your well-documented, accessible program up and running on your Mac, how do you make sure you are getting your money's worth? Take another look at the user manual. This time, instead of using it as a buyer's guide, use it as your guide to quick, hassle-free, efficient computing.

First, use the tutorial. Let the manual guide you through your first session with the program. Regardless of your level of experience, the tutorial will help you learn the jargon of this specific program, which, in turn, will aid you in using both the manual and the program. Although there are certain standard terms, there is also much uniqueness in the microcomputer world. For example, some word processing programs refer to the file you create with them as a "document." You may call it a memo or a report, but if you want to know how to create one, you have to look under "document" in the index. Some word processing programs use the term "block," which can refer to a paragraph or a line or collection of lines that you designate as a block. If you don't know a paragraph is called a block, you won't understand how to use certain commands. Learn the jargon to unlock the usefulness of the manual and the power of the program.

Let the manual be your guide the first time you use a program for a project and you'll learn quickly the program's routines.

If the manual contains a glossary, it's a good bet that certain words have particular or special meanings in the manual, the program or both. It's always a good idea with such manuals to review the glossary either before or after you use the tutorial the first time. Remember, the quicker you learn the jargon, the quicker you master the program.

If the Macintosh or the application is new to you, working through the tutorial should give you basic lessons in Mac use and rudimentary understanding of the application as well as practical use of the program. Overall, your use of the tutorial should meet two primary objectives:

- To familiarize yourself with the main functions of the program.
- To create a sense of comfort using the program.

You may want to go through the tutorial more than once to reach those objectives. As your familiarity and comfort grows, so will the skills you can glean from the tutorial.

If you are an experienced Mac user and/or knowledgeable about the application, working through the tutorial should give you sufficient skills to immediately put the program to use on any project. In your case, the objectives of using the tutorial should be:

- To learn the general logic of the program.
- To begin to familiarize yourself with functions beyond the primary ones and with program shortcuts.

Next, as you begin working with the application, use the table of contents and index to find explanations or illustrations applicable to your specific project. If it is a fairly routine project, the manual may have an example of one which you can use as a guide. For example, preparing a memo with a word processing program is a common task. The user manual for such a program would be very likely to use a memo as its example in the tutorial. Another example is designing reports, a routine function of a data base program. Such a topic probably would have a section in the user manual devoted to it, with several examples of layout and data sorting options. Let the manual be your guide the first time you use a program for a project and you will learn quickly the program's routines.

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Manual Labor

As you move on to more projects and become thoroughly familiar with the program's operation, use the manual as your guide to shortcuts. Sometimes shortcuts are included in the major discussion of a function. Other times shortcuts are included in a reference section or appendix of a manual. shortcuts can range from Command-key combinations for certain functions to sets of quick procedures for complex tasks to custom macros for frequent operations. The user manual is the best place to start for help in using those shortcuts because you know which functions or procedures you use and with what frequency. Using the manual as your guide to shortcuts allows you to pick and choose the tasks you want literally at your fingertips.

When you're ready for more complex projects, use the manual as your planning guide. More complex projects will call for using procedures and functions found in several sections of the manual. As you think about your project and its ultimate result, review the manual sections that are applicable and use those sections as building blocks for each step or segment of the project.

For example, if you are ready to tackle a high-concept screenplay with your familiar, comfortable word processing program, re-reading the section on how to set tabs will help you visualize and set up the unique format of indentations screenplays require. Re-reading the section on how to insert often-used text will aid you in deciding what would be the best procedure for dealing with repetitious words or phrases, such as characters' names or camera directions.

As you begin to apply general procedures to specific tasks, you should discover multiple levels of information in the user manual, levels which build on each other and your experience with the program. A good manual will let you mine each level for the nuggets of knowledge you need with the tools you have.

When you are ready to become a power user of the program, out of necessity or desire, once again the manual should provide guidance and expertise. Most manuals contain a reference section or a set of appendices covering topics such as default or preset options, menus and commands, printer information, using the program with other applications, disk management and sometimes error codes and suggested reading. After you have mastered the program's standard functions, these and other reference topics will help you move to the next level of usage and explore the outside limits of the program.

For example, understanding preset options will allow you the flexibility to change those options in a meaningful way. Experimenting with various options also will give you greater flexibility in using the program. With the preset options documented in the user manual, you have an accessible, quick method of comparison between standard (or preset) and custom configurations.

A good manual will let you mine each level for the nuggets of knowledge you need with the tools you have.

Reviewing a detailed explanation of all the program's menus and commands exposes you to some functions which you haven't yet used or considered. Such a reference section also may be used to quickly brush up on infrequently used commands.

Printer information may assist you in more efficient use of the printer or in understanding why your screen image does or does not match your printed output. Such a reference topic also may help in compensating for the difference in the resolution of the Macintosh screen and the resolution of various printers.

A section on using the program with other applications should give you sufficient information about such compatibility so as to integrate with or switch easily to and from various applications. It is a key section to read before purchasing any other programs if you anticipate needing to have compatibility.

Error codes and messages are especially useful when you start pushing the program or your system to its limits. Reviewing the messages in the manual beforehand will assist you in avoiding some problems. When the error messages do occur, use the section to help you understand the problem and lead to finding a way around the limitation.

A section containing suggested reading usually encourages you to become an expert with the application or to find new uses for it. In either case, what's not found in the user manual may very well be found in something on the reading list.

The various other reference sections found in user manuals provide similar assistance. Such sections always should be consulted when you are ready to go beyond the common or standard functions of a program.

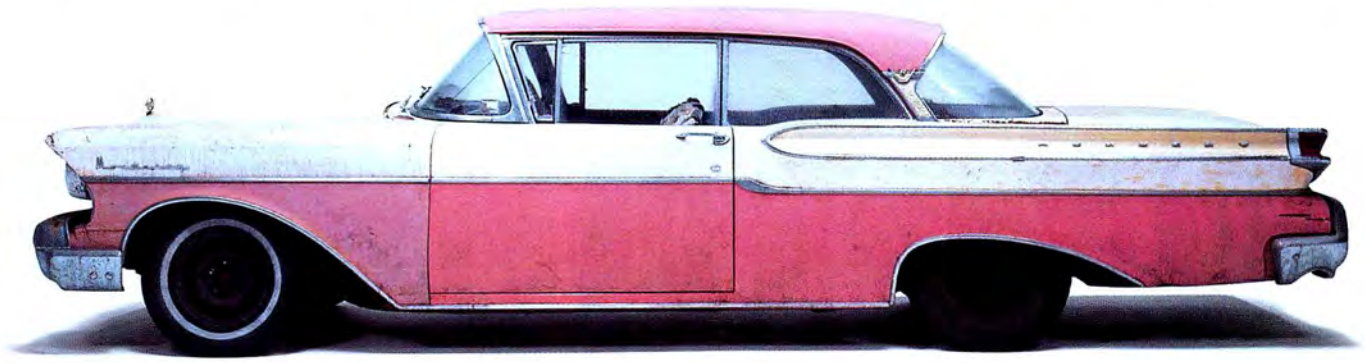
WHY PAY TWICE?

If you still need to be convinced a user manual is a good buyer's guide and a powerful tool for getting the maximum from a program, consider two more points: the cost of software and the cost of user support. If a 15-minute review of a manual at your local computer store saves you a $200 mistake, is it worth it? The good, the bad and the ugly will be evident even in that short a time. Is an hour spent with a tutorial cheaper than an hour on the telephone to a long-distance (not toll-free) number? The price of a program includes the cost of the manual. Why pay for the same information twice?

Good or bad, user manuals are meant to be used. Take advantage of them and reap the benefits of more informed purchases, quicker program mastery and more effective computing with your software.

KAREN WILSON IS A LOS ANGELES-BASED FREELANCE WRITER. SIX YEARS OF WRITING MANUALS ARE BEHIND THE RECOMMENDATIONS IN THIS ARTICLE.

YOU WOULDN'T DRIVE A CLUNKER TO THE OFFICE.



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MAGNUM TAPE 20. INTRODUCING THE MAGNUM TAPE 40.

For the serious user who can't afford to lose data. These "safety nets" keep a portable, permanent record of your data. So reliable, the Library of Congress uses us to backup their most critical data. Free software update policy so your tape drive can be updated as we update ours. We're the only one to deliver file by file, volume and incremental backup. With incremental, you backup *only* the data you've changed since your last backup. These totally secure systems run silent and cool. When we designed the new Tape 40, we worked side by side with Apple and 3M so it would be compatible with any products released by Apple in the future.

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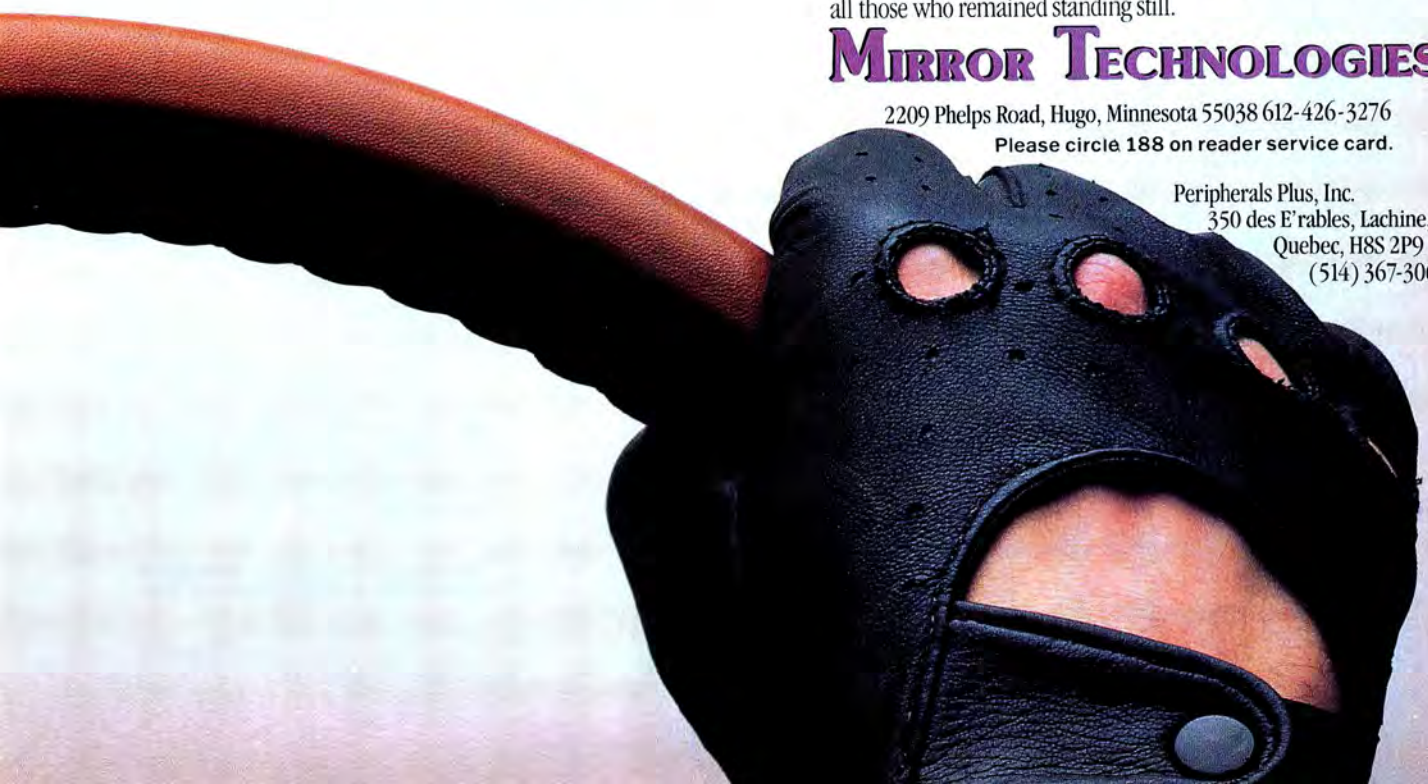

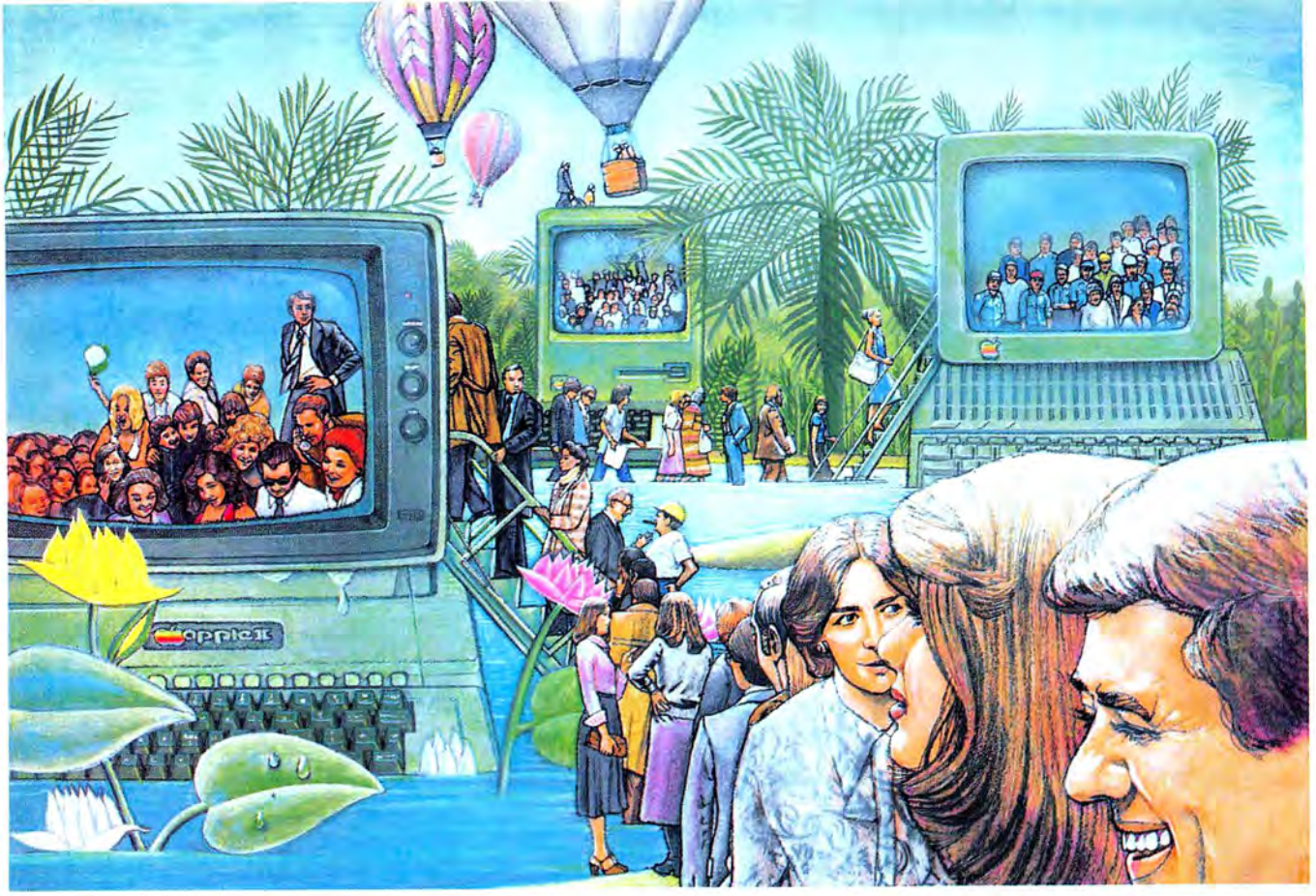

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The Faster ImageWriter

Printing quality and speed rarely go together. But with these tools and techniques you'll really see some great performances.

BY BILL LAYMAN

HOW LONG DOES IT TAKE YOUR ImageWriter to print a page? Want to guess? A minute? More? Less?

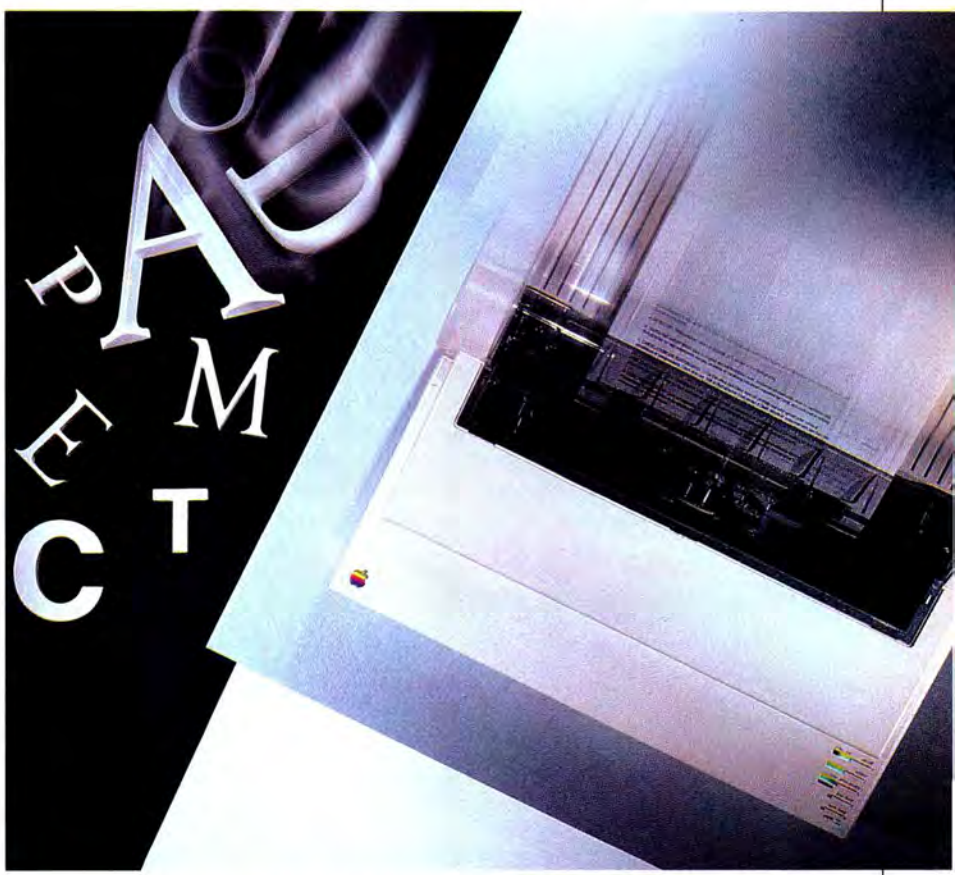
As is often the case, the question has more than one answer. An ImageWriter II will print a page of "Best" quality straight text (no graphics) every 160 seconds. That's two and two thirds minutes per page and a really long time to wait, especially if you're printing multiple-page documents. Lower quality prints faster, but lower quality is really *much* lower quality and may not be acceptable in many instances.

When more speed is needed, however, you don't have to give up as much quality as you might think. There are several tools and techniques, some of them not at all obvious, that can substantially improve your ImageWriter's overall performance.

DETAILS OF DOTS

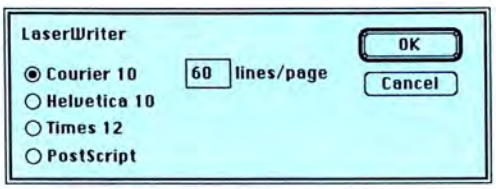
ImageWriters print Macintosh fonts in several levels of detail or resolution. To print a Mac font exactly as it appears on the screen (72 dots per inch resolution) simply select TALL ADJUSTED and the FASTER print option in the Print... dialog. If you select BEST in the Print dialog box, the letters will print either at 144 dots per inch if the "Tall Adjusted" printer setting has been selected, or squeezed horizontally to 160 dots per inch, in the "Default" printer setting. The Default 160 dots per inch makes most fonts look a little better, but graphic images are distorted, a little too narrow.

Using Best quality requires some extra fonts that you might not realize you need. The Mac tries to use a font twice as big as the selected font when doing Best quality printing. It "shrinks" that font to the smaller size to get more detail in the final product. So in order to properly print at Best quality, your *System* file must contain the double-size of the screen font (the 18-point font is what the Mac will actually use to the 9-



MICHAEL JAY

The Faster ImageWriter



These are the Print dialog boxes from *miniWriter*. It works equally well with the ImageWriter and the LaserWriter.

point type in your document, and so on).

To see what point sizes of each font are actually in your *System* file, open your word processor and go to whatever menu shows you point sizes. The font sizes actually installed in your *System* file will be displayed as outlined numbers. If you need to install the double-size fonts, use Apple's *Font/DA Mover* version 3.2 or later (version 3.4 is current at press time). Earlier versions have some bugs.

SPEEDS TO EXPECT

The ImageWriter II prints approximately one page every 160 seconds when *MacWrite*'s Print... dialog is set to Best quality. The original ImageWriter, a slower machine, prints Best quality at about the same speed, because the Mac's processing time is the limiting factor for Best printing.

Selecting FASTER quality printing, causes the ImageWriter II to print twice as fast as Best, approximately one page every 80 seconds. (In this case the original ImageWriter is slightly slower.) However, you can reduce Faster printing time to about one page every 60 seconds, simply by holding down the Option, Shift and Caps Lock keys as you click OK in the Print dialog This sets the ImageWriter II to print during both directions of head travel. This bidirectional printing setting remains in effect until the ImageWriter is turned off. (Be sure that you are using *ImageWriter Driver* version 2.3 or later with the Option, Shift, Caps Lock trick.)

WHEN FASTER ISN'T ENOUGH

By using *MacWrite*'s Draft quality setting, you could cut ImageWriter II print times to under 30 seconds per page (45 seconds for the original ImageWriter), but the results would be very poor. *MacWrite* Draft is ugly and often difficult to read. Its word spacing is erratic, and it uses a monospaced font (like Monaco), rather than a proportional one (like Geneva). Monospaced fonts are ugly because they use the same width for all characters, too wide for narrow letters like "i", and too narrow for wide ones like "W". Even if you struggle through a *MacWrite* Draft copy to do your own proofreading, it's not good enough to show to anyone else.

With *MacWrite* (or *Word*, etc.) you just can't make the ImageWriter II print an acceptable page in less than 60 seconds—but don't despair. You can print good-looking pages in less than 30 seconds, by using a text processor called *miniWriter* in place of your regular word processor.

MINI WHAT?

David Dunham's *miniWriter* is a text processor desk accessory which is fast at printing and fast at scrolling. *MiniWriter* prints at high speed, with good quality, by using the ImageWriter's standard internal proportional font. *MiniWriter* also prints at moderately high speed with excellent quality when using ImageWriter II's optional internal "Near Letter Quality" (NLQ) font. *MiniWriter* does NLQ printing much faster than *MacWrite*'s Best quality, and it does standard quality printing much faster than *MacWrite*'s Faster quality.

MiniWriter's high printing speed is matched by its high on-screen scrolling speed. Scanning and revising large documents with *miniWriter* is a delight after living with the jerky scrolling of *MacWrite*.

MiniWriter has drawbacks too. It's not a full-fledged word processor (and doesn't pretend to be one). It doesn't support WYSIWYG style formatting nor multiple fonts in a document. It's great for rapidly printing and revising the text portion of a document. Later, for polished final reports, the *miniWriter* document can be re-opened on a full-scale word processor, and enhanced with pictures and multiple fonts.

Because *miniWriter* is a desk accessory, both a *miniWriter* and a word processor document can be on the screen at the same time. You can read notes from one while typing into the other, or easily cut and paste between documents.

MiniWriter comes with a special bonus, the imageWRITER 10 screen font. This special font teams with *miniWriter* to give true WYSIWYG proportional printing.

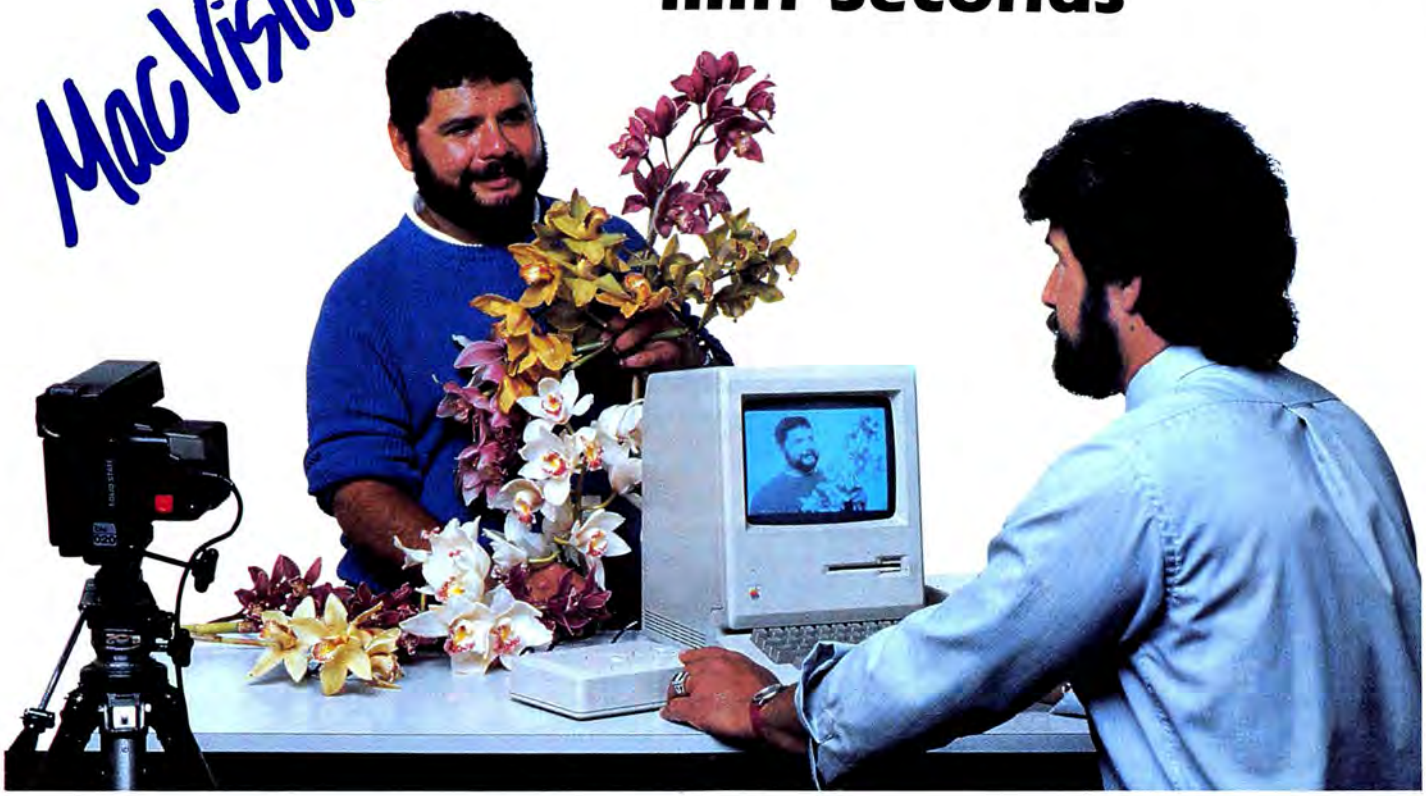
Sources For *miniWriter*

The shareware desk accessory, *miniWriter*, is available from most user groups, BBSs, Delphi, CompuServe and GEnie. If all else fails, send *miniWriter*'s $12 shareware fee, a blank disk and a self-addressed, stamped envelope to Maitreya Design, PO Box 1480, Goleta, CA 93116.

While you're at it, you may want to send an additional $10 and get David Dunham's widely acclaimed disk and file handling desk accessory, *DiskInfo*. It will search all disks and folders for a specified file (even if you only remember part of its name), rename or delete files, display file sizes, types, creators, and dates, show remaining disk and free memory space, all without leaving the application program you are using at the time. (David was honored with the Boston Computer Society's Shareware Author's Award for *DiskInfo* and *miniWriter* programs.)

MacVision

Live Action to Newsletter ...in Seconds



Ted Benhari is Public Information Officer at Dominican Hospital in Santa Cruz, CA. He is very much into Desktop Publishing. He produces numerous publications for the hospital, including "The Dominigram," a magazine for the general public, "The Scanner," a newsletter for employees, and a catalog promoting various classes at the hospital's Education Center. Ted likes having the ability to digitize three-dimensional objects. **He can go from live action to his newsletter in seconds.** MacVision™ saves him time and money and gives him tremendous creative flexibility in his publishing efforts. If you need to image three-dimensional objects (building displays, people, products, etc. as well as flat art) you will need MacVision.™ It's that simple. **Send for MacVision™ applications brochure.** MacVision™ is available at Egghead Discount Software and other leading computer dealers.

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DOMINICAN HOSPITAL EMPLOYEE NEWSLETTER

VOLUME 1, NUMBER 7 AUGUST, 1986

Alphonse Castaneda...Blooming Genius

The gorgeous orchid corsages at the Hospital's Employee Service Award Dinner came not from some South American jungle, but from the carefully tended plants grown locally by **Alphonse Castaneda**, the instrument technician in the Surgery Department.

Alphonse has been growing orchids for seven years. Bloomed from a hobby into a part-time vocation, his orchids are in great demand by local flower marts for retailing to the public.

Orchids' delicate beauty belies their durability. They make great gifts - a cut stem laden with flowers, called a spray, can last for one to two months, Alphonse says.

He grows his plants by cloning them in petri dishes, or combines varieties through hybridization. The work is exacting, as is his delicate adjustments of the sophisticated surgical equipment.

"My job here is to make sure everything used in an operation is working properly," says Alphonse. "It requires great care and the ability to trouble-shoot during a procedure if something isn't working as well as it should.

Alphonse's expertise goes beyond mere maintenance. He redesigned a surgical saw used for cutting bone blocks for vertebra fusions. "The improvement makes the procedure go a lot faster," Alphonse says with justifiable pride.

Alphonse was a prime mover in organizing the Hospital softball teams, although his schedule doesn't permit him to play this year. "The teams boost morale by helping people from different departments get to know each other as people," he says, "not just as functions."

This is very important to Alphonse, who, as anyone who knows him will affirm, is a real "people person," with a well-deserved reputation for kindness and generosity.

Newsletter created with the Macintosh™ using PageMaker!™ MacWrite!™ MacDraw™ and MacVision!™

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The Faster ImageWriter

"The real problem is not whether machines think, but whether men do."
- B.F. Skinner

These lines are printed by *MacWrite* Best quality (with the imageWRITER 10 & 20 fonts in the *System* file).

"The real problem is not whether machines think, but whether men do."
- B.F. Skinner

These lines were printed by *MacWrite* in Faster quality (with the imageWRITER 10 font in the *System* file).

"The real problem is not whether machines think, but whether men do."
- B.F. Skinner

Sample of *MacWrite*'s Draft mode printing. Would you show this to anyone?

ImageWRITER 10 ends up on the finished page as the Pica Proportional typeface that is actually used to print your documents.

The ImageWriter internal fonts fail to include many characters that are needed for quality work, such as:“ ” ’ (the typographer's left and right quotation marks) ... (a typographer's ellipsis, which won't break awkwardly in the middle and wordwrap as three spaced apart periods do)- — (en dash and em dash), and the special characters ™ © ® . The ImageWriter internal fonts also fail to include a Tab character, or many of the European characters with diacritical marks.

MiniWriter overcomes the ImageWriter's internal font limitations by sending all the missing characters to the printer's internal font memory at the start of printing. *MiniWriter* even has a feature called "Smart Quotes" that inserts a proper left or right typographer's quote into your text when you key in a "neuter" quote.

Normal *MacWrite* printing is done by separately sending each dot of each character to the printer. *MiniWriter* printing is much quicker because each of its commands prints an entire letter at a time (by using the ImageWriter's built-in fonts). This good looking internal proportional font provides output quality equal to *MacWrite*'s Faster quality. In addition, the ImageWriter II contains a Near Letter Quality proportional font of excellent quality, about the equivalent of *MacWrite*'s Best quality output. This NLQ font can be directly selected from within the current version of *miniWriter*. (If you have registered an earlier version of *miniWriter*, no additional licensing fee is required when you upgrade.)

Also contained in the ImageWriter's internal font collection are several widths and qualities of monospaced internal fonts, but only the ImageWriter II's Draft Elite is worth mention. ImageWriter II Draft Elite is not as attractive as Pica Proportional, but it looks much better than the old ImageWriter's monospaced internal font. Draft Elite is the fastest good quality printing available from the ImageWriter II.

NATIVE SPEED

ImageWriters achieve surprisingly high printing speeds with their built-in fonts. *MiniWriter* and ImageWriter II will produce a page of approximately Best quality, using NLQ Pica Proportional text, in about 80 seconds (versus *MacWrite*'s 160 seconds). At higher speeds, *miniWriter* does a page of Draft Pica Proportional in 33 seconds, versus *MacWrite* Faster, which takes 60 seconds. (The times when printing on the slower original ImageWriter are: *miniWriter* Draft, about 45 seconds; *MacWrite* Faster, about 70 seconds.)

FASTER, FASTER!

If you have a need for even more speed and can accept the ImageWriter II's monospaced font, select ELITE, DRAFT to get a page of approximately Faster quality, monospaced text, in about 22 seconds. Use Monaco 9 or Courier 10 on your screen to achieve nearly WYSIWYG performance. (Because the original ImageWriter's monospaced font is so ugly, only ImageWriter II monospace is considered here.)

Documents printed using the ImageWriter internal fonts are normally limited a single style of a single font, but you can include sections of **bold,** or underlined printing, or of **HEADLINE** style (each letter double width). The trick is to use special printer command characters that *miniWriter* can place (using menu selections or keyboard commands) in your document.

If you're using the ImageWriter II you can also add commands for subscripts, superscripts and half-height fine print. Check the manual for the exact codes. And a free, public domain desk accessory, Billy Steinberg's *StuffClip,* lets you paste any command character into a text document. It's available from most Macintosh user groups and bulletin boards.

When it's speed that's really needed, for dashing off quick correspondence or for beating a midnight term paper deadline, *miniWriter* and the ImageWriter's internal fonts meet the need.

BILL LAYMAN IS AN ENGINEER AT THE JET PROPULSION LABORATORY. HE IS ALSO THE CREATOR OF SEVERAL COMMERCIALLY AVAILABLE FONTS FOR THE MAC, INCLUDING ALTSYS' *POWER FONTS.*

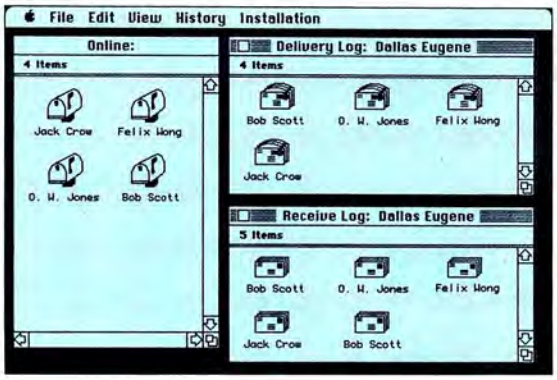
miniWriter

Overall Rating ★★★★★

List Price: $12 shareware license fee. Published by Maitreya Design, PO Box 1480, Goleta, CA 93116. Available from user groups, bulletin boards and national services. Latest version at press time: 1.3. Not copy protected.

Videx® - Solutions for the Macintosh™...

Mail Center® *Electronic Mail for the Macintosh Office.*



Mail Center is a communication program that transfers letters, charts, and programs via the AppleTalk Personal Network™. Mail Center lets you use AppleTalk to communicate directly from workstation to workstation without interrupting the person receiving mail. No file server or hard disk is required.

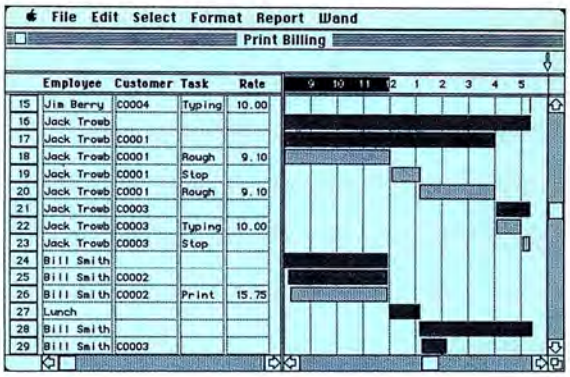
Bar Code Labeler *For All Your Labeling Needs.*

Bar Code Labeler allows you to design custom labels. All of the Macintosh font and type styles can be used to print mailing labels, bar code labels, or virtually any other type of label. Bar Code Labeler uses information from any program that saves information in a text format such as OverVue, Omnis 3, and MacWrite. Bar Code Labeler will print on label stock using either the LaserWriter or ImageWriter printers.

TimeWand® *A Portable, Time-Stamped, Bar Code Reader.*

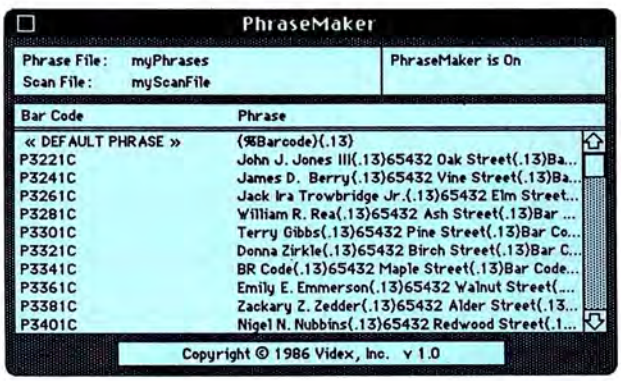
The TimeWand is an intelligent yet inexpensive bar code reading system. With its built-in micro-processor and up to 16K of memory, the TimeWand can be programmed to read different types of bar codes. Different program options can be selected, such as requiring the bar codes to be scanned in a predetermined order. The TimeWand's recharging/downloading station uses a serial connector to communicate with a variety of host computers. Since communication is keyless, the scan information is sent quickly and error free. Versatility is the hallmark of the TimeWand system.

TimeWand® Manager *A New Dimension in a Data Base.*



TimeWand Manager is a powerful software program written specifically for the TimeWand system, enabling you to easily organize your bar code information. TimeWand Manager can sort, perform calculations, display timelines, cross-reference, search, and print a variety of reports. This valuable program is ideal for both reviewing and reporting daily operations.

PhraseMaker™ *A Powerful New Software Tool.*



PhraseMaker is a unique new program that allows the TimeWand to be used with virtually any Macintosh program. Written as a desk accessory, PhraseMaker automatically cross-references bar code data received from the TimeWand with a list of stored information. Similar to a macro, PhraseMaker can enter text, menu commands, cursor movements, and bar code data directly into a program without typing.

Mail Center (Twin Pack) $299, (Six Pack) $499;
Bar Code Labeler $89; **TimeWand** (2K) $198;
TimeWand Manager $489;
PhraseMaker $299.

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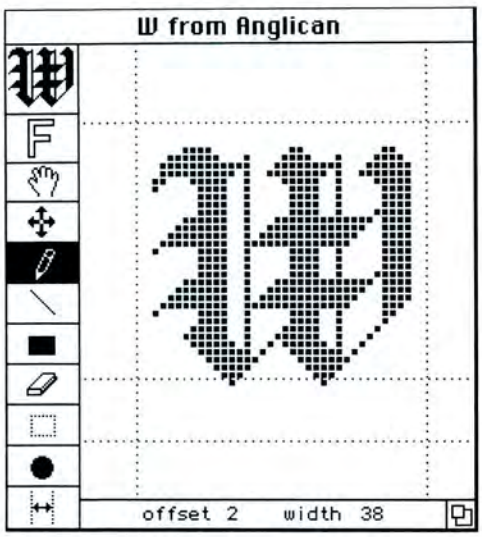

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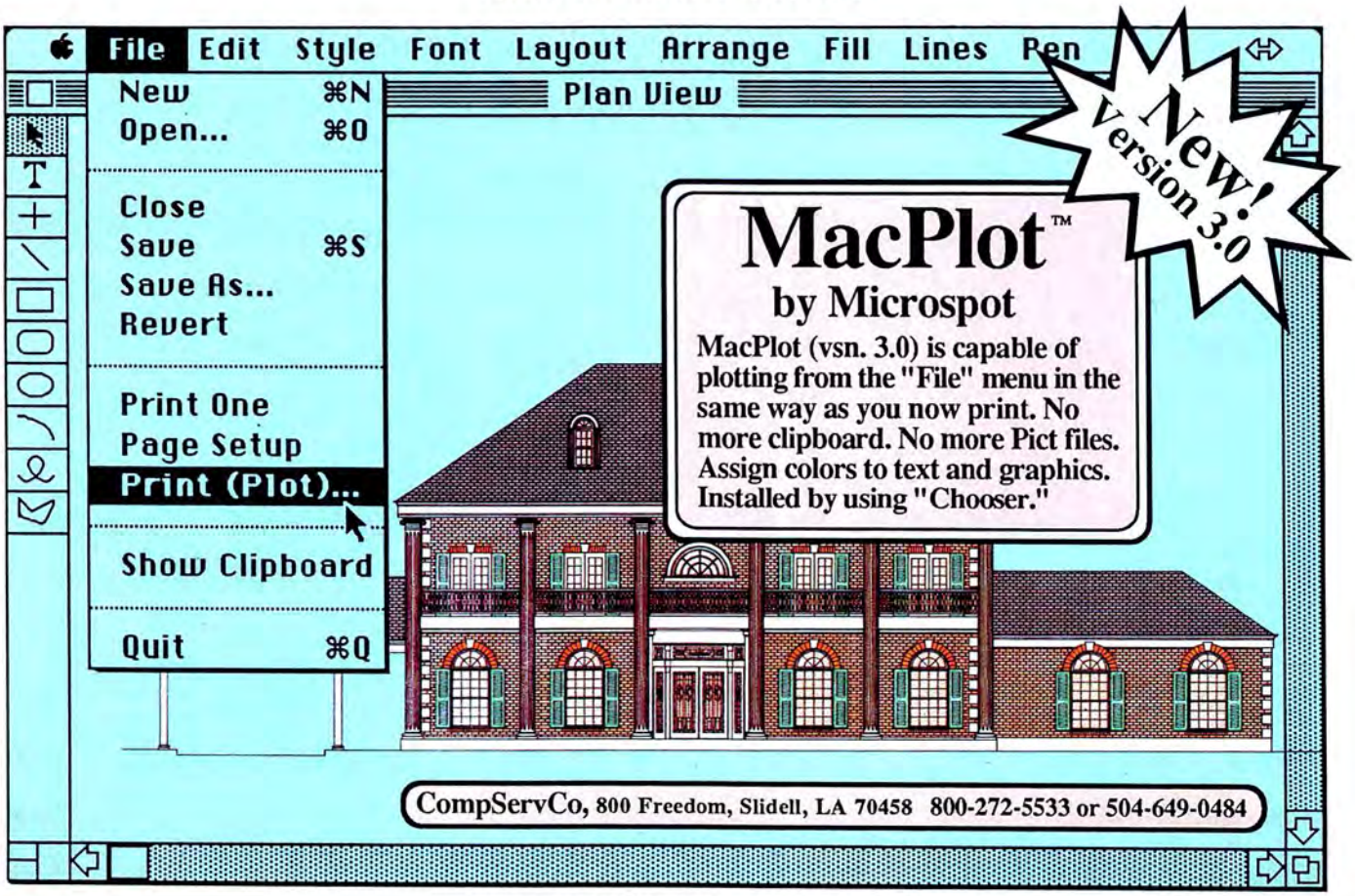

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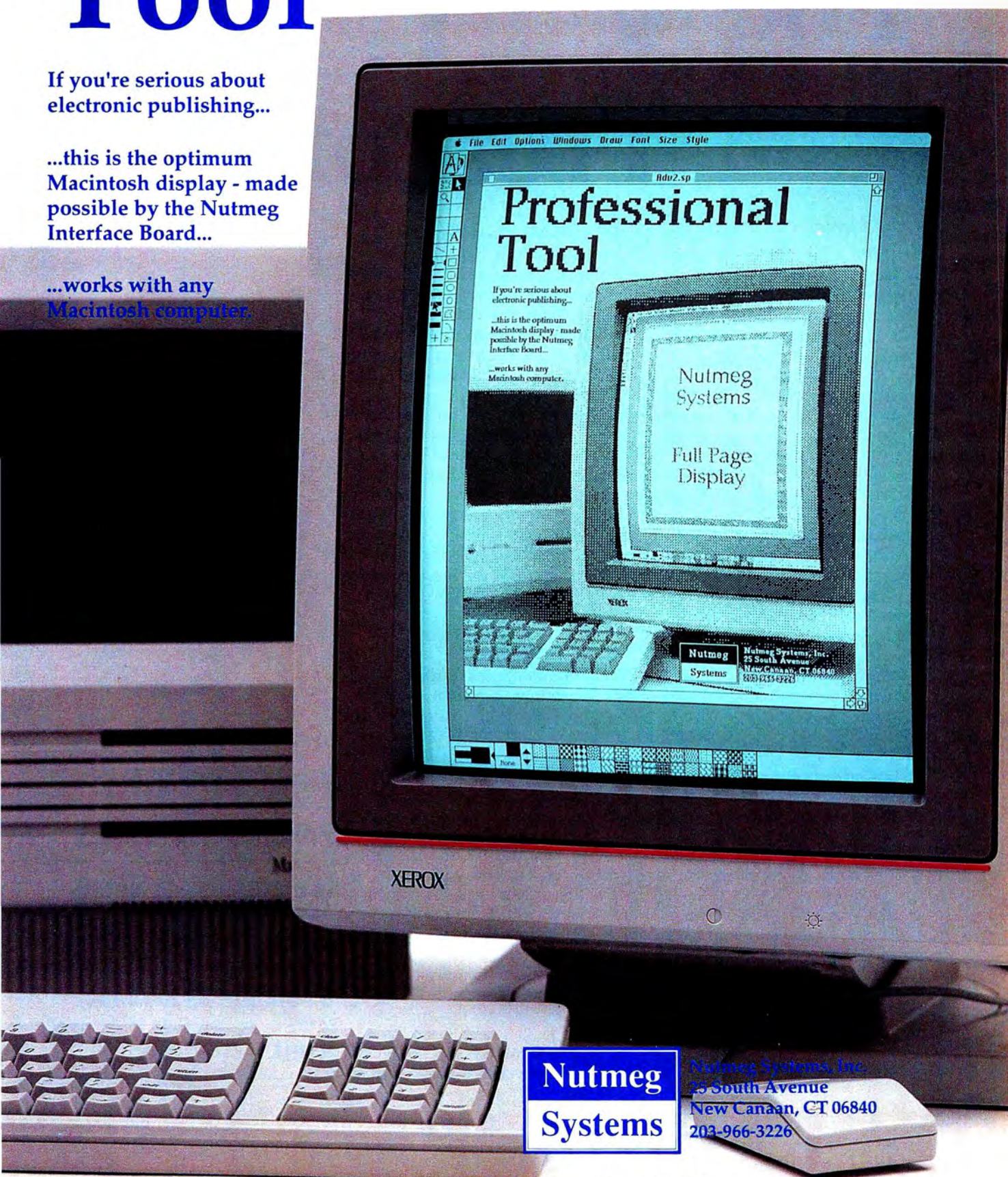

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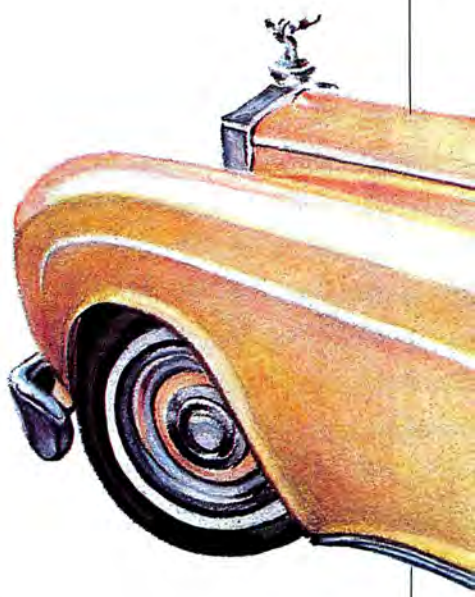
The V. I. P. Treatment



Visual Interactive Programming (V.I.P.) is a graphics-oriented programming language as unique as the Mac itself.

BY PHIL REED

VISUAL INTERACTIVE PROGRAMming (V.I.P.) is a unique programming language that not only depends upon but completely utilizes the Macintosh user interface. A first look at a *V.I.P.* program may confuse the unwary into thinking that its on-screen graphics are simply a representational flowchart — the map of a program. But, in the case of *V.I.P.*, the flowchart — map — *is* the territory, the program itself.

Programming has traditionally been text-based. A typical non-*V.I.P.* program consists of line after line of commands to the computer. Program structure is often indicated by indenting lines, or putting sections on separate pages. In most languages programmers will draw flowcharts, or other separate overviews of the program structure, to help visualize the design before coding begins.

Macintosh programming adds its own unique problems. In order to make the Mac the easiest machine for the user, Apple gave the programmer an enormous number of powerful tools. But in order to produce a finished application, the programmer has to know about each and every one of these tools and how they interrelate. The result is that a simple program on the Mac can take page after page of code, much of it not directly related to your program's actual task. A similar program written in BASIC for the IBM PC is half the size.

V.I.P. is a program development environment that attempts to resolve this. It does so by allowing the programmer to enter a program in a graphic format, very similar to a flowchart. But, *V.I.P.* is more than a flowcharting tool, it is a programming language whose statements are the actual flowchart elements.

After the program flowchart is entered, it can be run as a program. It *is* a program. In addition, *V.I.P.* contains an integrated debugger that works in the graphic environment.

V.I.P. also helps the programmer deal with the Macintosh Toolbox. Much of the low-level grunt work of the Mac interface is hidden from the programmer. In place of the more than 500 Toolbox calls, *V.I.P.* provides about 150 high-level functions that cover most of the more painful aspects of the Macintosh operating system.

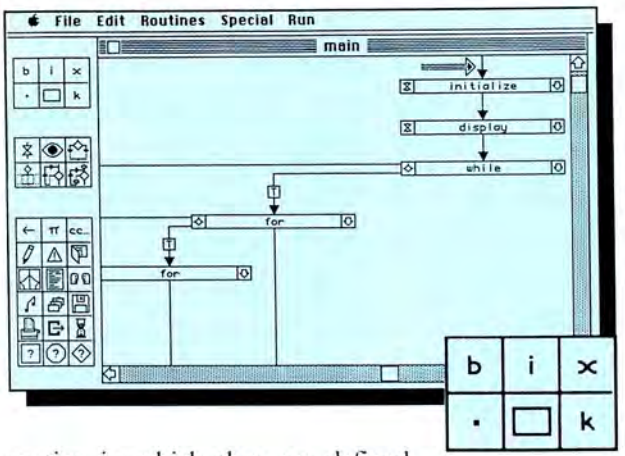
WRITING A PROGRAM

The program's main window is used for editing a routine. Palettes down the left side give you access to a variety of commands. A program looks like a series of connected boxes. Don't worry about program flow lines. They are automatically drawn between the boxes. Boxes are inserted in the program at the insertion point by selecting from either the structure or Toolbox palette.

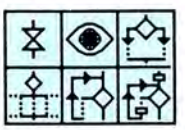
The first palette is used for defining variables, which are called *objects* in *V.I.P.* The allowed types of objects are bytes (also including characters), integers, real numbers, points, rectangles and constants. Clicking a palette icon brings up an object definition dialog. *Global* objects are available to all routines in a program, *local* objects are only available to the

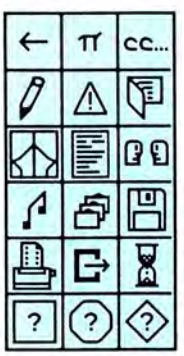
PATRICK KERNAN

The V.I.P. Treatment



The main screen. All programs are created in the window on the right using parts of the various palettes shown on the left. The large arrow (currently above the initialize box) points just above the instruction that is to be executed next.





Breakdowns of the palettes. The top palette allows you to define variables and constants. The middle palette consists of two parts; most are used for program structure, while the eye icon symbolizes the program overview. The bottom palette is the toolbox palette. *V.I.P.*'s access to ROM toolbox routines is provided with these.

routine in which they are defined. Object names cannot be longer than 19 characters, and the names are case sensitive. Each object can have up to three dimensions, each dimension ranging in value from 1 to 32,767. Objects can be used in a box before they are defined. *V.I.P.* will check a program for undefined variables before you run it.

Program structures are entered using the middle palette. The icons are: Call Subroutine, If/Then/Else, Case (called Switch here; it allows selection of up to 30 alternatives), While...Do and For...Next.

When you select an icon an empty structure is placed at the insertion point. For example, the If/Then /Else structure consists of a box with two lines coming out of it. The lines have True or False on them, and depending on the result of the condition specified in the box, program flow follows one or the other line. The programmer then inserts the desired actions into the branches.

As a program develops, the editor stretches the program flow lines to accommodate the growing structure. In a large program, this means that only a tiny piece of the program can be seen at one time. If you want to see the complete outline of a program, click the eye icon. This causes the editor to "zoom out" and show an overview of the entire program. All that's visible are the box outlines and flow lines, along with a dotted rectangle showing the current position of the window (like Show Page in *MacPaint*.) If the program is so large that the zoom-out view is too small to show anything, the view can be "zoomed in" by shift-clicking on a location in the routine. The result is an intermediate level view of the routine.

Most work will be done with the bottom palette, which is used to select operations from the *V.I.P.* Toolbox.

Toolbox parameters can be objects or formulas. Each parameter may be edited with normal Mac methods. If a parameter line is too long, it may be scrolled back and forth using the arrows at the end of each parameter window. The *V.I.P.* editor will not let you close a box unless all the parameters are supplied.

Clicking on a box in a program selects it for editing, and shows the selection with a heavy black line. Selections are extended by holding the Shift key down when clicking. Cutting / Copying / Pasting then works as you expect. The *V.I.P.* editor will not allow you to create code that violates structured programming methods. For example, if you cut an IF statement from the program, the editor will automatically remove both branches of the statement. It is not possible to leave behind the ELSE part of an IF.

The editor also includes some handy utilities, such as a note pad, with one scrollable page for each routine. The text entered here appears on the program listing at the top of each routine. *V.I.P.* also has a global search-and-replace, that can find and replace text anywhere in the program (good for changing variable names). You can save subprograms in separate files, and merge them into one.

Unfortunately, the *V.I.P.* editor has one major failing. It prints your work neither well nor efficiently. Listing 1 shows the complete graphic view of a routine. Listing 2 shows the same routine, as *V.I.P.* prints it. Depressing, isn't it? The editor does have an option to move the contents of the *V.I.P.* Clipboard to the "Deskscrap" (*V.I.P.*'s name for the normal Mac Clipboard). I created Listing 1 by selecting the entire subroutine, performing a Copy, performing a "Clipboard to Deskscrap" command, quitting *V.I.P.*, starting *MacPaint* and pasting it in. Not a particularly elegant way of getting a listing. If the program is too wide, *MacPaint* cuts off the sides. The pseudocode listing is certainly usable. It's just not in keeping with the rest of the graphic programming environment.

PROGRAMMING SPEED

Since you don't have to worry about syntax, writing a program takes surprisingly little time. In many cases, you can start designing your program in *V.I.P.*, and naturally move into actual coding with no effort. Mainstay has a program, written in 6 hours, that has around 75 percent of the functions of *MacPaint*. I was able to produce my first running program (John Conway's *LIFE*) in under an hour.

Structured programming helps simplify program design. *V.I.P.* encourages you to use completely structured techniques. The program

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editor's ability to edit structure makes coding (and on-the-fly redesign) substantially easier.

DEBUGGING AND RUNNING

When you get your program finished, select RUN from the Run menu and *V.I.P.* checks your program for variables used, but not defined. If it finds undefined variables, it stops and invokes the editor at the box with the offending usage. If there are no problems, the program starts.

Since no one writes a program that runs first time, *V.I.P.* supplies a debugging tool integrated into the runtime environment. It pops up automatically if the program hits an error, or can be invoked by pressing COMMAND-D while the program is running.

When the debugger is activated, it puts up a window showing the program, with an arrow pointing at the box that was about to execute. In the debugger, you can:

- Open any box in the program to see what the parameters are.
- Examine any variable and change its contents, if desired.
- Set a breakpoint anywhere in the program, so execution will stop when the breakpoint is hit.
- Single step the program.
- "Slow—step" a program (about one box per second).
- Open a window that shows the program's subroutine entries and exits.
- Open an "observer" window that constantly displays the contents of a variable.
- Continue the program, or restart it from the beginning.

The debugging windows can stay open even while the program is running at full speed. This means you can observe a variable dance wildly as the program changes its value, or see what branches your program is taking while watching the output develop. When single- or slow-stepping, the box that is about to execute turns black, so you can follow the logical progression of your code. The debugging windows have minimal effect on the program windows.

The debugger is nicely integrated into *V.I.P.*, and it works fairly well. A slight disadvantage is that you can only examine one element of an array at a time. This slows down debugging a bit. Single-stepping a program with visual monitoring helps find logic errors in short order.

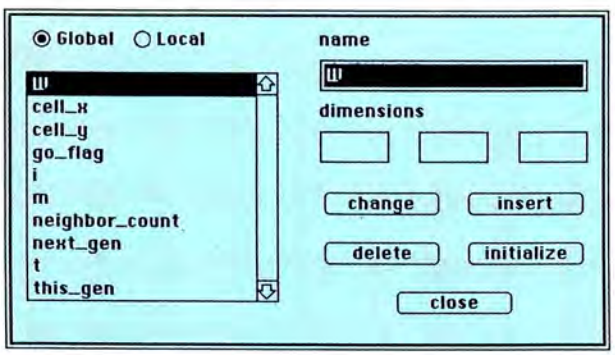
V.I.P. IN USE

The Macintosh operating system supplies over 500 routines that a program uses to interact with the hardware and the user. In order to write any substantial system, the programmer needs to know something about most of them. A great deal of program code must be written to take care of details such as resizing windows, handling menus, tracking the mouse and so on.

V.I.P. hides much of this. Most of the endless details are covered by *V.I.P.* internally, so that the operating system interaction becomes a nonissue. For example, when you define a window, scroll bars are automatically created and handled. System events (menus, mouse-down in close box or windows, activating a new window, typing on the keyboard, etc.) are collected and processed by one Toolbox operation. The end result is that writing a Macintosh application in *V.I.P.* has a much lower grief coefficient than traditional languages.

***V.I.P.* statements are actually Toolbox routines that behave like subroutines provided by any computer language.**

V.I.P. "statements" are actually Toolbox routines that behave like subroutines provided by any computer language. Toolbox routines are provided to handle disk and serial port input and output, creating and using menus, dialogs and alerts, complete speaker control including four notes at a time, with user-definable waveforms (this is essentially full access to the operating system sound driver) and complete access to the Macintosh QuickDraw Toolbox. The more commonly used mathematics functions are available, as well as a good collection of string handling operations. The program can create "records" in memory



The object definition dialog. Here you define variables or objects (e.g. points, rectangles, etc.) that are either global or local to a routine. Defining new objects is done easily in *V.I.P.*

	new window
type (n)	2
text only (n)	false
autorefresh (n)	true
window rect (r)	window
port rect (r)	grid
title (b)	"Life"
window (B)	W
**********	Open the main windo

This is a sample definition of the new window toolbox routine. The information below "new window" is your data for the parameters detailed on the left. The bottom line, where the parameter shows asterisks, is a line for your comments.

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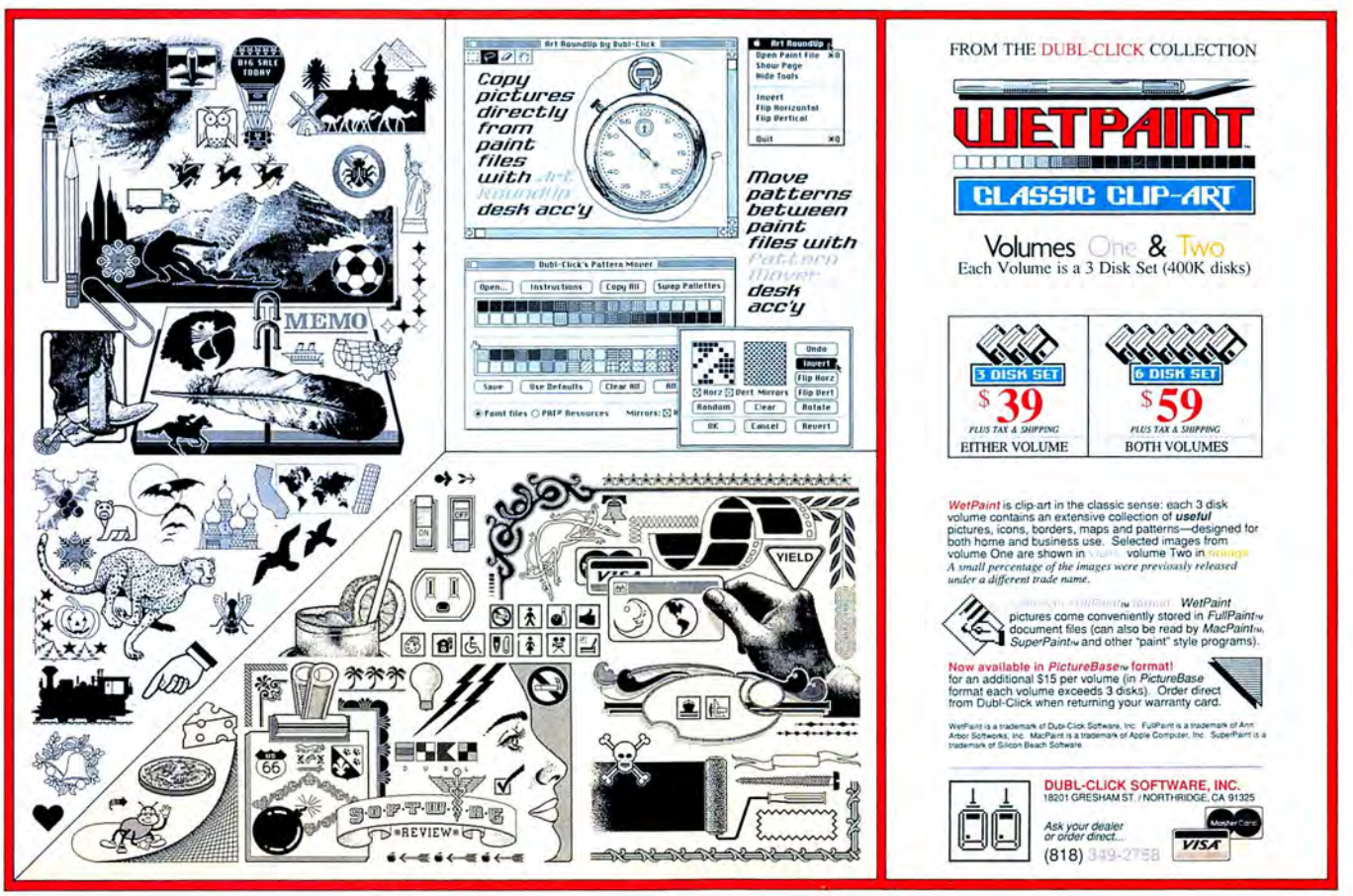

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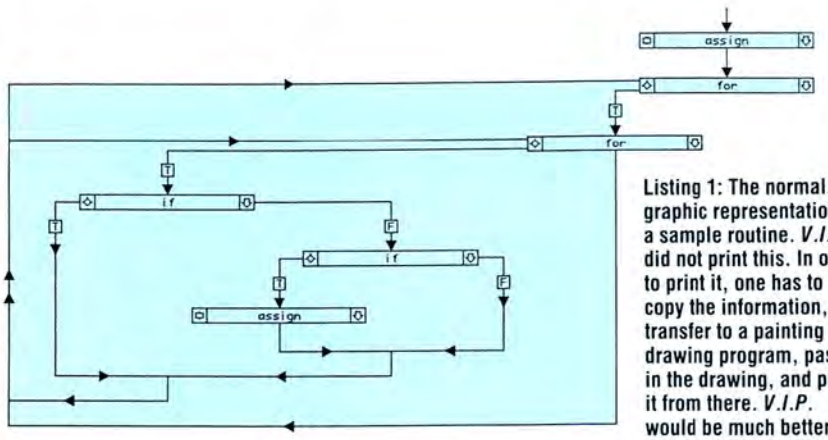
The V.I.P. Treatment



Listing 1: The normal, graphic representation of a sample routine. *V.I.P.* did not print this. In order to print it, one has to copy the information, transfer to a painting or drawing program, paste in the drawing, and print it from there. *V.I.P.* would be much better if it provided the ability to print without the present hassles.

```
assign (0,neighbor_count)
for (x,-1,1,1)
  for (y,-1,1,1)
    if ((x=0)&(y=0))

    else
      if (this_gen[cell_x+x,cell_y+y])
        assign (neighbor_count+1,neighbor_count)
      else
```

Listing 2: The printout of Listing 1 as it is printed from *V.I.P.* It is unusual that a program that has graphic editing produces this arcane listing instead of a graphic listing, which is normally edited.

(similar to Pascal records or C structures). There are even routines to handle simple text editing. All these can be used without worrying about their interrelationships.

Another nice feature: For items such as strings, windows, menus and dialogs, a *V.I.P.* program can either create them on the fly or read them from a resource file (created with *ResEdit*). This is in the tradition of Mac programs, where changing the appearance of these items doesn't require mucking around with the program itself.

V.I.P. can also find good use as a prototyping tool. It takes very little time to put together a running program, so you can try things out until you get them the way you like, and then recode and enhance the final version using a more traditional language.

THE THORN ON THE ROSE

So far, so good. However, you never get something for nothing and simplifying access to the Macintosh operating system doesn't come without cost. When you write an application in a traditional Mac language, you get absolute command over every possible thing that happens. In the case of *V.I.P.*, you give up this fine control of your program.

Example: You cannot control what happens in the desk accessory (Apple) menu. If you use GetNextEvent, then *V.I.P.* allows access to DAs, even if you don't want them. Further, you don't get a chance to provide an About my application... menu item.

Example: When using a window, if the parameters of the window indicate that scroll bars are needed, you get them. If you call GetNextEvent, the user can scroll without your program having any control over it.

"So what?" you say. "That's the way I want my program to work." Maybe so. But, what if you don't want your program to behave that way? For example, what if you want to have a window that cannot be activated? Sorry. *V.I.P.* gives you no choice.

V.I.P. supports the behavior that *Inside Macintosh* says a program is supposed to have. The majority of Mac applications work that way, and it is reasonable to expect that most programs you will want to write would behave this way also.

If you plan on writing nonstandard applications, then *V.I.P.* may not be suitable. If you want to write a desk accessory or other software that is more closely related to the operating systems (device driver, INIT resource, FKEY) then *V.I.P.* is definitely not appropriate. You need to make sure that what you want to accomplish is within the scope of what *V.I.P.* provides.

PLUSES

If you write an application in *V.I.P.*, and you want to give copies to your friends, Mainstay supplies a *RunVIP* application that can be distributed with your *V.I.P.* program file. It is a runtime-only version of *V.I.P.*, with no editor, error checking or debugger. If the program hits an error, *RunVIP* will ignore it. This will certainly lead to strange program behavior and may crash the machine. Thus, you should only distribute *well debugged* programs.

Another problem with *V.I.P.* programs is that they are *s l o w*. *V.I.P.* is an interpreted language, like BASIC. This means that each statement is analyzed each time it is executed, with enormous overhead processing not directly related to your program. You can speed execution up somewhat by turning off *V.I.P.*'s checking for Command-D or error trapping, but it's still no speed demon. I ran timings with my *LIFE* program, in which most of the processing is in a pathological collection of nested loops. It is most definitely *not* optimized for speed. Turning off error checking and Command-D intercepts speeded up my program by just over 15 percent.

Mainstay sent along a beta test version of their *V.I.P. to Lightspeed C* converter. This is an extra-cost option that, as the name implies, reads in a *V.I.P.* file, and spits out another file that consists of C code. *Lightspeed C* libraries are also included to provide support for the *V.I.P.*/C program. This conversion works as advertised, and when I compiled my *LIFE* program, it ran over 23 times faster. Mainstay says that they plan converters for other languages.

(Now, you might think that this C version of a *V.I.P.* program might be more amenable to tweaking, so that you can do non-*V.I.P.*-supported ac-

(continued on page 184)

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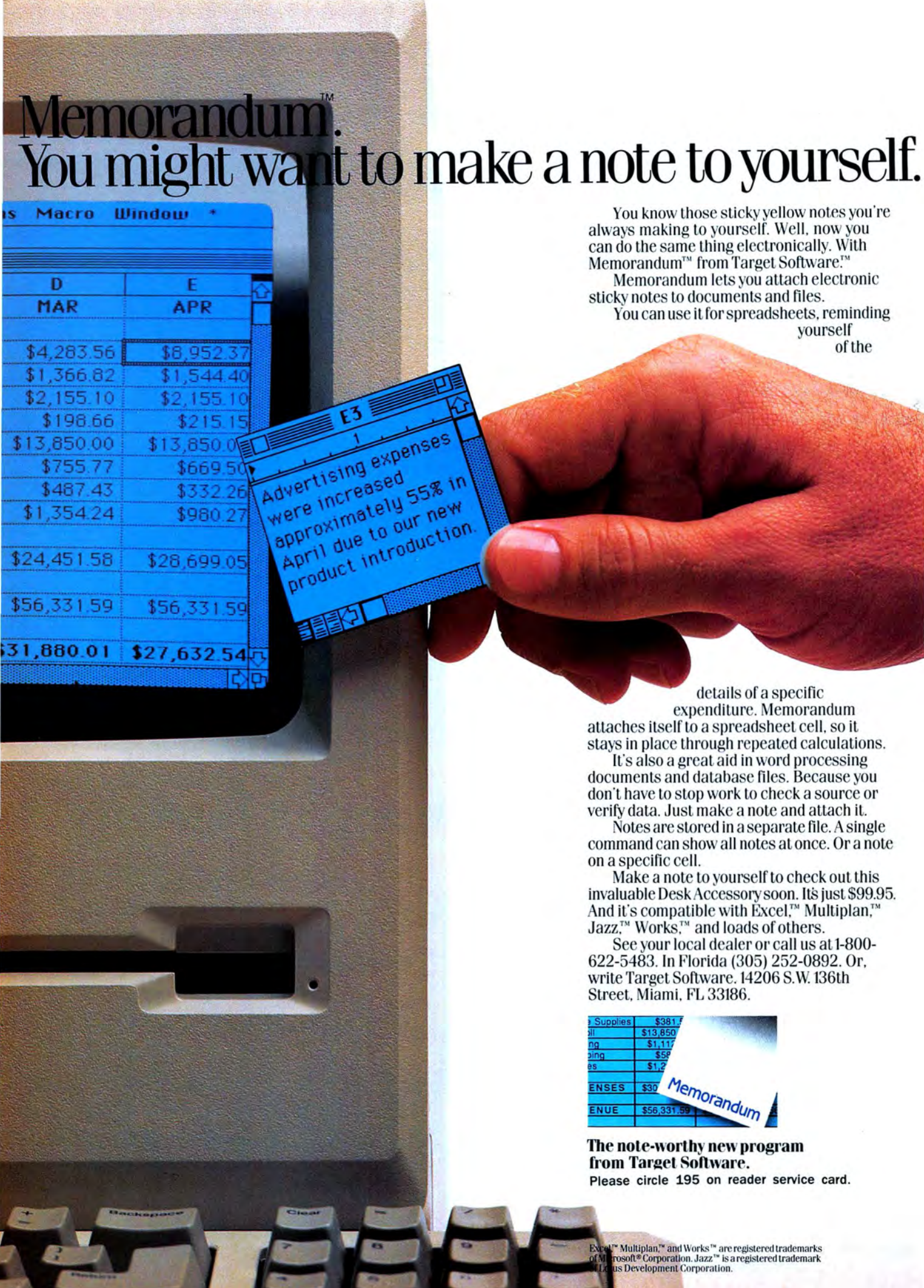

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TIP SHEET

COMPILED BY DAVID SCHARGEL

Found a trick, shortcut or smarter way to get something done with a program? Share your hints (and maybe make a few bucks) by sending them to The Tip Sheet, c/o MacUser, 25 West 39th St., New York, NY 10018. We pay at least $25 for every hint we publish, plus we'll print your name and hometown (so you get all local bragging rights).

DISK EXPRESS

To ensure that *Disk Express* will run properly, boot and run it from its original disk. Additionally, make sure that any RAM cache is off.

ALAN STEINBERGER
SHERMAN OAKS, CA

PARAMETER MANAGER

You can speed up data entry without having to scroll to the end of the data base to select a new date/sample field. Simply hold down the Command and Option keys while you press Return. Doing this will scroll to the end of the file and place the cursor in the date/sample field, preparing you for entry in a new row. This action is similar to using COMMAND-T except that the date, time and next sample number are not entered.

WILLIAM E. ADAMS
SOUTH HAVEN, MI

WRITENOW

WriteNow doesn't print high quality on the original ImageWriter with a 128K Mac. This problem is due to the printer driver on the *WriteNow* disk requiring too much memory. The solution?

Create a blank disk and place *Finder* 1.1 and the original *ImageWriter* Driver (the one with the Mac icon) onto it. You can find the old *Finder* on the Macintosh Guided Tour disk, which came with your machine. Now, just place the *WriteNow* application on your new disk and reboot the Mac with your new *WriteNow* disk. High quality printing is now at your command.

BRADY ALLMON
POLLARD, ARKANSAS

MAKE MILLIONS

Are you tired of waiting for "Manny the Mouth" to give a ring on the phone so you can find out how many stocks of Aloha Lumber Humungus currently owns. Why don't you just give him a call? His direct phone line is 62669.

ROB GIBSON
ONTARIO, CANADA

FINDER 5.4

The new *Finder*, version 5.4, gives you an interesting feature that the other *Finders* didn't provide. Try holding down the Option key while dragging a file into a folder. Instead of moving the file, *Finder* 5.4 will duplicate the file and place its duplicate (with the same name) into the folder.

MILTON FESTER
WEST NYACK, NY

WORKS

[The editors would like to thank Productivity Software, Inc., developers of Microsoft Works *for providing us and our readers with these undocumented tips.]*

When scrolling horizontally in *Works* your view usually shifts a fixed length. Scrolling in the word processor happens one inch at a time, while scrolling in the data base or spreadsheet will move you one column. Holding down the Shift key while scrolling will allow you to microscroll, thus allowing you to more perfectly position all or parts of a window.

You can rapidly hang up the phone or modem while in the communications module by typing a quick COMMAND-= (equals sign).

If you have copied or cut information from the data base, hold down the Option key while pasting the information into the word processor to avoid pasting in the field names along with the data.

Holding down the Option key while saving a word processing file as text (Export File) will save the file with Return characters at the end of each line. This can be useful for later sending text files in communications.

When working with multiple documents, typing COMMAND-, (comma) will bring the bottommost window to the front. This can be used for allowing you to quickly switch between different documents you are currently working on.

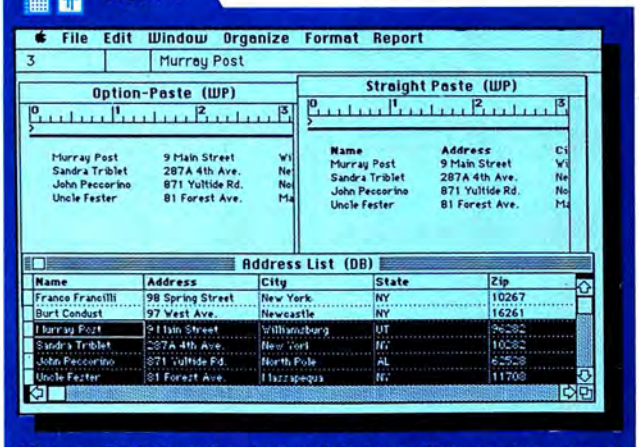
You can easily enter a page break without having to go to the Format menu. While you are typing, simply hit the Shift and Enter keys and a page break will be entered.

Double-clicking in a chart window will quickly bring up the graph specifications dialog box, allowing you to change the graph.

CYBORG

Cyborg can be made to run on a Mac Plus. First, make a copy of the master. Then use any file utility (e.g. *Fedit, HFS Locator Plus*, etc...) and rename the *Finder* on the *Cyborg* disk to anything other than *"Finder."* (How about "Phinder?") Reboot the Mac Plus with the current *System/Finder* and insert *Cyborg* in the external drive. Double click on the *Cyborg* icon and you're off. (Use a small

WORKS



After copying information from a data base, there are two ways of pasting the information into a word processor. The upper right window shows a regular paste, while the window to the left shows a paste with the Option key depressed. Notice that when doing an OPTION-PASTE, the field names do not appear.

RAMdisk to load the current *System/Finder* if you have only an internal drive.)
RON BUTCHER
LIBERTYVILLE, IL

IMAGEWRITER II

Getting a good letter quality font printed from your ImageWriter II is just a few steps away. Simply use the LaserWriter's Courier font and print your text in high quality. It is important that you have installed a font size twice the size of the size you want printed (e.g., to print a 12-point letter, you must have the same 24-point font installed in your *System* file.)

You can obtain this font in various sizes from your Apple dealer. This tip will not work with the original ImageWriter nor with a few applications (*MacWrite* being the most noteworthy).
STAN CLAYMAN
BEDFORD, NH

READYSETGO! 3

Viewing a page using COMMAND-1 through COMMAND-5, can be troublesome because *ReadySetGo! 3* always moves in to show the upper left corner of a page. This inconvenience can be easily remedied. While the text tool is activated, click and hold the mouse button with the cursor in the text block you want to zoom to. Still holding down the mouse button, type the Command key to zoom to any factor. When you release the mouse button, the view will shift to show the insertion point in your text block.
JOHN STONEHAM
CUPERTINO, CA

PAGEMAKER

There are many times when you want evenly spaced lines in a place that is not easily divided with the ruler. Here's an easy way to make them without having to make painstaking calculations.

Create and save your own simple ruler (with a number of division lines) in a *MacPaint* or *MacDraw* (PICT) document. Enter *PageMaker* and use the PLACE command to put your ruler on the page.

Now, select the ruler and resize it, stretching or shrinking it to fit the space you want to divide. You can now draw lines using the ruler marks as a guide. Later, remove the ruler(s).
RON SAITO
HONOLULU, HI

PageMaker has this annoying habit of attaching long handle lines to any piece of text no matter how small or large it is. When working with a complex page with a number of different text blocks, determining which handle lines belong to which block can be a problem. Even a text "block" of one character has handles that stretch across the page.

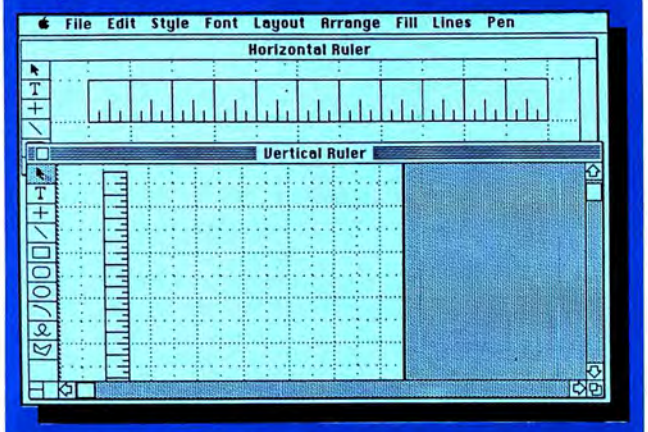
To correct this problem, select, from back to front, all of the text in a block and cut it. Then select the arrow tool and paste in the text that is in the Clipboard. You will notice that the text now has short handle lines; however, selecting to the right will reveal the old handle lines. Quickly delete them by typing a backspace.

Once you have used this method a few times you will find that text placement will be easier.
PETER REYNOLDS
CAMBRIDGE, MA

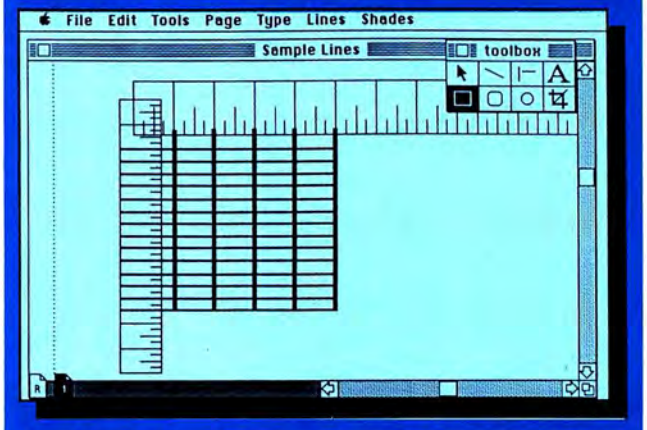
MAC 3D

After creating a complex model it is sometimes difficult to select part of it and know with certainty exactly what part has been selected. To swiftly verify your selection, choose the ROTATE command and the currently selected object will appear in the Show Selection window. Now that you have confirmed the correct object just click CANCEL.
JOHN GOODMAN
CAMBRIDGE, MA

PAGEMAKER



1 Using *MacDraw* or *MacPaint*, create a ruler with a number of tick marks. Be sure to save each ruler (vertical or horizontal) in its own file. If using *MacDraw*, save the file in PICT format.



2 After using the PLACE command in *PageMaker*, you can resize the ruler(s) to assist with drawing evenly spaced lines.

SUPERPAINT

While any item is selected, either with the lasso or with the marquee, you can "nudge" it one pixel in any direction by using the arrow keys. If you are using a keyboard without the directional keys, COMMAND-Y will nudge upwards; COMMAND-J, left; COMMAND-K, right; and COMMAND-D will shift the selection downwards.
TIMOTHY K. CRAWFORD
CAROL STREAM, IL

WORD 3.0

The new Microsoft *Word* (version 3.0) allows you to do all of your work without reaching for the mouse. With the numeric keypad, this includes selecting items from the

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menu. This is done in steps: Activating the menu bar, finding the desired command and then executing it.

Typing a period on the numeric keypad will "activate" the menu bar. The menu bar will instantly turn to black to show it has been activated.

Choosing the desired menu and menu item can be done a number of ways. Once the menu bar is active, you can choose the desired menu by either typing a letter, choosing a number or using the arrow keys. Typing a letter will pull down the first menu from the left that begins with that letter (e.g., F for File, E for Edit, etc.). Typing a number will pull down the respective menu (e.g., 0 for the Apple menu, 1 for File, etc.) and using the left and right arrow keys you can directly select the menu.

Once a menu has been chosen, you can select one of the menu items. Using the up and down arrows will move you vertically in a menu, while typing a letter will choose the menu item that begins with that letter. If there are more than one menu items beginning with the same letter, repetitively pressing the letter will choose subsequent choices.

Once the menu item is highlighted, press Return or Enter to execute it. To cancel the menu selection at any time, press Backspace or COMMAND-. (period).

PAUL CAHLSTADT
MANITOBA, CANADA

EXCEL

Using the CELL PROTECTION command only hides formulas from being viewed. To "protect" data, we will eliminate the column the data is in from view.

Select all of the columns you want to hide, choose COLUMN WIDTH from the Format menu, and set the width to zero. Now, protect the document with a password. No one will be able to view the hidden data without knowing your password and unprotecting the document.

LOUIS F. deGEFROY
VINYARD HAVEN, MA

PROFESSIONAL COMPOSER

When working with transposing instruments, be sure that you place your articulations and ties after you TRANSPOSE PARTS. *Professional Composer* will not make allowances for the fact that the direction of note stems often change after transposition. Your articulations and ties will often end up on the wrong side of their notes, and redoing articulations and ties can be a very time-consuming process.

STEVEN MORRIS
APO S.F., CA

WORD

Word, version 1.0X, gives you the ability to create a document with the right margin at 19½ inches. Using the horizontal scroll bar to see information not displayed in the window, can be a very slow and tedious process. Here's a way to get the right edge, fast.

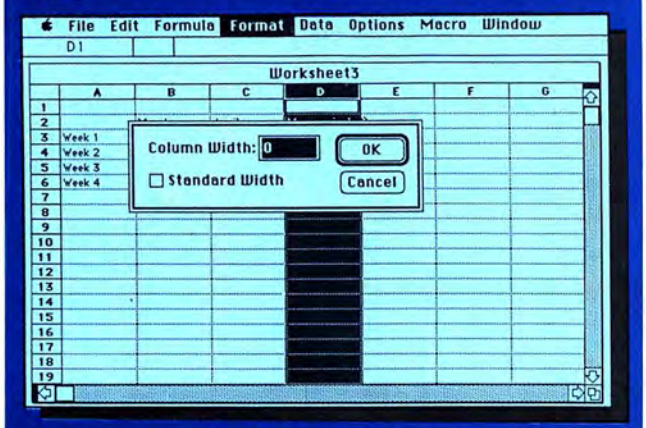
After setting the right margin where you want, create one "word" by typing a long string of letters; end it with a Return just before the right margin. If you are using a numeric keypad and want to "jump" to the right, position the insertion point somewhere in the long string and press the "6" key on the numeric keypad. (If you do not have a keypad, COMMAND-OPTION-; will have the same effect.) This is the command for moving to the right of the current word. You will see the right margin as your view shifts to show the insertion point.

You can get more from this tip by separating the string into several parts. Now you will be able to go to a very specific horizontal point in the document.

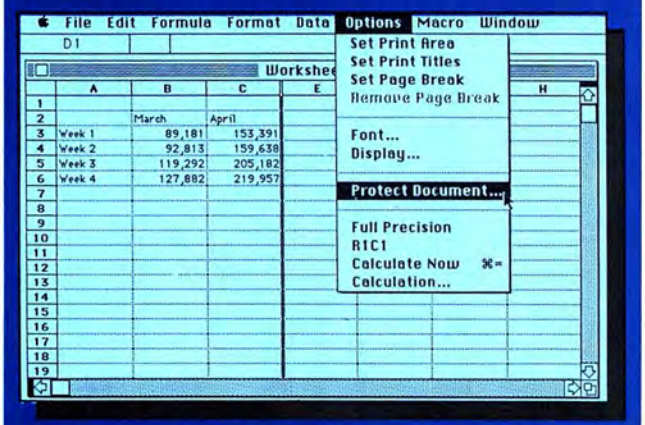
Be sure to delete these characters when you are finished.

ROBERT L. BANGERT-DROWNS
ANN ARBOR, MI

EXCEL



1 To "protect" your *Excel* data, select the column(s) that contain the data and select COLUMN WIDTH under the Format menu. Enter a zero (0) where *Excel* asks you for the column width.



2 Once the column(s) have been reduced to zero (column D), choose PROTECT DOCUMENT from the Options menu to give the worksheet a password. In order to later view the hidden data, you must unprotect the document and set the width of the column to a viewable size.

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by Dan Cochran

Answers From the Mac Team

Got a Mac problem? Something that you'd like explained? Something you can't find the answer for anywhere else? Apple's Dan Cochran will answer your questions every month in this space. When the questions are too tough for him, he'll get the answers from other members of the Mac team.

Send your questions to Dan care of MacUser, *25 West 39th Street, New York City, NY 10018. Dan will read all of your questions, but, unfortunately, he may not be able to answer individual queries.*

MAC SYSTEM SOFTWARE—AN UPDATE

It's the duty of a good Q&A journalist to anticipate questions. So here's my explanation of a situation which I didn't even understand until I got it on paper.

With the January introduction of *AppleShare* and the March introductions of the Macintosh SE and the Macintosh II, the Macintosh System Software situation becomes more complex than usual.

AppleShare is a software package that allows a Macintosh Plus and a hard disk to become a file server for an AppleTalk network. *AppleShare* is an Apple retail product and is only available through authorized Apple dealers. Included with *AppleShare* is a new Macintosh System Software release, the first since the *System* 3.2 and *Finder* 5.3 release of June 1986. This new release, which includes *System* file version 3.3 and *Finder* 5.4, is intended only for *AppleShare* users and does not contain any significant enhancements for non-*AppleShare* users. Don't use it unless you are using *AppleShare*.

With the introduction of the Macintosh SE, Apple has released yet another interim version of the Macintosh System Software necessary to support the additional features and functionality of the SE. This new release is included with the SE and comes on two 800K disks:

1. System Tools Disk—includes *System* 4.0, *Finder* 5.4, new *LaserWriter* and *ImageWriter* Drivers, *HD20 SC Setup,* and the *Installer*.

2. Utilities Disk—includes the new *System* file as well as additional fonts, desk accessories, *Font/DA Mover,* and *HD Backup*.

This new System Software is intended for use primarily with the Macintosh SE, but may also be used with the Macintosh 512KE and the Macintosh Plus. It will also work with an unenhanced Macintosh 512K but you'll first have to transfer it to 400K media after removing selected fonts and desk accessories as *System* 4.0 is well over 400K in size. *System* 4.0 also supports *AppleShare*. If you are running a Macintosh SE in an *AppleShare* environment use the *System* 4.0 and *Finder* 5.4 software that comes with your SE. If you are using a Macintosh 512K, a Macintosh 512KE or a Macintosh Plus in an *AppleShare* environment you should use the *System* 3.3 and *Finder* 5.4 software that comes with the *AppleShare* software.

Both the new System Software included with *AppleShare* and the new System Software included with the Macintosh SE are interim versions and will have very short life spans. As such they will not be available for software licensing. If you are developing commercial software you should continue to ship your products with the June 1986 release (*System* 3.2 and *Finder* 5.3).

The new Macintosh SE System Software is available from authorized Apple dealers and should also be available from several of the licensed on-line services including CompuServe, GEnie and from many user groups. Later this year Apple will release a set of universal System Software disks (containing *System* 4.1 and *Finder* 5.?) that will support the Macintosh II, Macintosh SE, Macintosh Plus, Macintosh 512KE and Macintosh 512K.

The following table shows the recommended System Software configurations with respect to all versions of Macintosh CPUs. And if you're still confused you are in good company.

Recommended System Software Configurations

	Macintosh 128K	Macintosh 512K	Macintosh 512KE	Macintosh Plus	Macintosh SE	Macintosh II
System 2.0/Finder 4.1	☺					
System 3.2/Finder 5.3		☺	☺	☺		
System 3.3/Finder 5.4		☺	☺	☺		
System 4.0/Finder 5.4					☺	
System 4.1/Finder 5.?		☺	☺	☺	☺	☺

☺ The best or only software to use today.
☺ Use only with AppleShare.
☺ The software to use when it becomes available.

SYSTEM 38

Q. I have a customer who uses an IBM System 38 in conjunction with Compugraphic typesetters for producing a variety of publications and catalogs. The System 38 is used for mass storage of the publication text. The text is formatted on the System 38 and they have custom-programmed the System 38 so when it goes to output a particular text file to the Compugraphic to be typeset, the control codes normally entered at the Compugraphic terminals are already contained within the text file. This eliminates the need for the typesetter at the Compugraphic terminal to continually repeat this task. When changes are made they are reprogrammed at the System 38. All the operator at the terminal need do is retypeset the text. The customer will be upgrading the total system within the next six months and has the desire to incorporate Macintoshes and LaserWriters into the system and possibly replace the Compugraphic equipment. They'd like to be able to download preformatted text to the Macintosh and have it automatically displayed in the desired format. The customer is already

capable of getting ASCII formatted text, complete with control codes, to an IBM XT. How can the customer get the same text to the Macintosh with appropriate Macintosh formatting instructions and control codes?

WARD OLDHAM
MICROAGE COMPUTER STORE

A. *The customer could custom program the System 38 to translate the System 38 text and formatting codes to a format understood by a comparable Macintosh text-preparation and printing program. But first, your customer will need to get their hands on the documentation that describes the file format for whatever Macintosh program they choose to use. I can send you the file format for* MacWrite *documents. But that won't help your customer if they want to use* PageMaker *or* Word. *Many software companies will provide their file formats on request and will be most helpful in assisting efforts of this type. Since you forgot to include your address on your letter I can't send you more information. But if you call or write again I might be able to offer some additional suggestions. By the way, if they are going to replace the Compugraphic equipment, why not replace the System 38 as well? With a large SCSI hard disk, an* AppleShare *network, and a good data base program I see little reason to keep it around.*

STARTUP PROBLEMS

Q. I have a Mac Plus with an HD-20. My problem is that when I turn on the Mac in the morning, it skips the *Finder* and boots right up into an untitled blank *MacWrite* document. If I quit that document, the *Finder* comes up and all is well. The problem happens only during initial start-up. My local Mac dealer is stumped. He suggested I remove the *Keeper* from the system completely. I did, but the problem persists. Any ideas?

KIT BEURET
HONOLULU, HI

A. *Your "problem" is actually a feature. You can designate any Macintosh application, including the* Finder, *as the start-up application to run when you boot the machine. Somehow, you've managed to designate* MacWrite *as your start-up application. It's simple to change. Quit* MacWrite *and return to the* Finder. *Single-click on the icon of the program you wish to designate as the start-up application (In your case, the* Finder *icon contained in your System folder). Then select the* SET STARTUP *command from the* Finder's *Special menu. A dialog box will ask you if you wish to change your startup application from* MacWrite *to the* Finder. *Click OK, reboot your machine, and voilá.*

The Set Startup command is explained briefly on page 126 of your Macintosh Plus Owner's Manual. Since I rarely read manuals, either, I won't lecture on the virtues of such. I would suggest, however, that your dealer do so.

ANDY MARTIN

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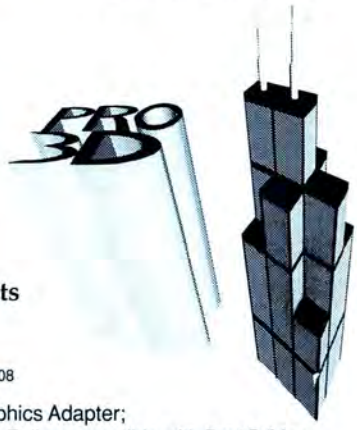

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IW AGAIN

Q. Holding down the Option, Shift and Caps Lock keys when pressing the OK button, causes the ImageWriter II (*Driver* 2.3) to print in both directions, apparently speeding up the printing process.

A. What happens to cause the speed-up?

B. What are the disadvantages of using that technique?

C. How can the process be reversed?

D. Why did Apple not inform users of the technique?

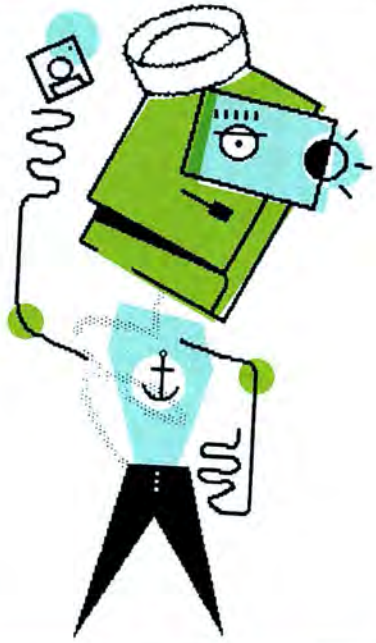
MARTIN SNYDERMAN
CHEVY CHASE, MD

A. *The ImageWriter is capable of bidirectional printing. You just need to send it the appropriate command. This is accomplished by the technique you describe.*

B. If the resulting bidirectional print quality looks good on your ImageWriter there really are no disadvantages. Some ImageWriters don't perform well when printing bidirectionally because of alignment discrepancies.

C. You can reverse the process by holding down the Command key while clicking the OK button in the print dialog box. Otherwise the ImageWriter *Driver will remember and continue to print bidirectionally until told otherwise.*

D. The user-interface implications are ugly and need some attention.



ANDY MARTIN

CACHE AGAIN

Q. Your column "The Help Folder" is one of the best and most useful of all such information that appears in personal computer periodicals. I look forward to gaining more knowledge from your future columns. However, in the January 1987 issue you seemed to indicate that the RAM cache control panel setting is dependent upon the state of the *System* file on a particular disk and could inadvertently be changed by rebooting with a different disk. I'm using a 512K Enhanced Mac and my RAM cache settings are remembered during reboots with any other disk and when the power is turned off. The only way I know to change the settings is to call up the *Control Panel* desk accessory and manually change them. Does a Mac Plus behave differently?

DOUGLAS HOFFMAN
LAKE ORION, MI

A. *Thanks for the kind words and guess what—you're right. RAM cache settings don't change across different system disks. The status of RAM cache settings are stored in parameter RAM and as such are not system-disk dependent.*

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THE COMIC STRIP FACTORY

The Comic Strip Factory. For the comic artist in everybody.

Can't draw? That's okay. The Comic Strip Factory isn't a "paint" program (You probably have a paint program already)! Instead, it's a great new program for creating comics.

How's it work? Like this: we supply the comic parts (2 + disks by master MacArtist Trici Venola) and the backgrounds (you gotta see 'em to believe 'em) and you create the comics. We did the hard stuff; you do the fun stuff.

The Comic Strip Factory, we unblushingly admit, is the fastest, funnest way to make comics ever invented. With a world of features for shaping panels, customizing characters, altering most anything and—before we forget—a complete word processor. And all the balloons you'll ever need. And, of course, more.

Here's what The Comic Strip Factory isn't: Confusing. It isn't a paint program masquerading as a comic program. You won't tear your hair out. You'll smile.

If you can draw, it gets better. Introducing PartMaker. It converts graphic documents from MacPaint, FullPaint, SuperPaint or whatever into individual comic parts. Fast, neat and fun.

But don't take our word for it. Reviewer Jim Samuels says: "It allows you to put together a comic strip that looks good in about one tenth the time it would normally take. All without drawing a single stroke. What's more, it's easier to use than almost ANY other Macintosh software! These people have done something special."

Chuck Weigand says: "Overall, I found The Comic Strip Factory to be a delightful product. It is, in my opinion, the ideal tool for molding finished artwork into professional-looking comic strips."

We say this: The Comic Wars are over.

You won.

The Comic Strip Factory $89.95 from
FOUNDATION PUBLISHING, INC.
10301 Yellow Circle Drive
Minneapolis, Minnesota 55343
1-612-935-4230

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MacPaint is a trademark of Apple Computer, Inc., FullPaint is a trademark of Ann Arbor Softworks, Inc., SuperPaint is a trademark of Silicon Beach Software. The Comic Strip Factory is a trademark of Foundation Publishing, Inc.

MINIFINDERS

Have you often wished for a personal assistant to help in picking software? These MiniFinders may not breathe and move, but they do tell you what products are hot and, better, what these products do. Each of these items has been carefully reviewed and selected by the* MacUser *editorial staff. Each has been rated from 1 to 5 mice. Ratings are relative within categories, and they can change as categories expand and new products advance the state of the art. You won't see many low ratings or bombs, since we're telling you about the cream of the crop, but we will warn you about the really bad products so that you don't spend your money on them. Red names indicate this month's additions. The letters at the end of the entries indicate whether a product is copy protected (CP) or not (NCP). CP? indicates that we don't know. If a product has been reviewed or QuickClicked in* MacUser*, the date of the review is shown. Next time you have to find products you can count on, count on* MacUser*!

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INTEGRATED SOFTWARE

Crunch is an icon-driven relational spreadsheet that features ★★★★ versatile charting and database capabilities. Strong financial logic, date and mathematical functions. Spreadsheets can be linked. The manual is clear and concisely written. Macros are not supported. $195. Paladin, 2895 Zanker Rd., San Jose, CA 95134. CP (Jan 86)

Excel is THE power spreadsheet. Of the Mac, of the world. Has ★★★★★ 256-column by 16,384-row capability. Features include a powerful macro function (with a recorder to make creation simple) and elaborate charting facilities. 512K+ Mac and external drive required. $395. Microsoft, 16011 NE 36th Way, Redmond, WA 98052-6399. CP (Prem)

Jazz provides well integrated modules for word processing, graphs, ★★★★ worksheets, databases and communications. HotView is best feature. Requires 512K+ and external drive. Version 1A requires 800K drive. $595. Lotus, 55 Cambridge Parkway, Cambridge, MA 02142. CP (Prem)

Microsoft Works is an integrated application that includes word ★★★★½ processing, database, spreadsheet and telecommunications functions. The telecommunications module includes background uploading and downloading. $295. Microsoft, 16011 NE 36th Way, Redmond, WA 98052. NCP (Oct 86)

Quartet is an integrated program that works on a 128K Mac, built ★★★★ around a powerful spreadsheet with a full range of functions. It can also be used as a database and provides good quality charts from spreadsheet data. Documentation is adequate but not too well organized. $199. Haba Systems, 6711 Valjean Ave., Van Nuys, CA 91406. CP

BUSINESS ACCOUNTING

Back to Basics Accounting is a powerful double-entry accounting ★★★★ software package for the small business user with GL, AR and AP modules. Exhaustive manual with numerous examples. Report capabilities are excellent. $199. Peachtree, 4355 Shackleford Rd., Norcross, GA 30093. NCP (May 87)

BPI General Accounting is an easy to use system. Six journals, ★★★★ AR, AP, Payroll and GL on one disk. Offset amounts automatically post to ledgers. Up to 8000 accounts. Detailed records, wide range of reports. *Switcher* and HFS compatible. $425. Requires 512K+. BPI Systems, 3001 Bee Cave Rd., Austin, TX 78746. NCP (Aug 86)

CheckMark is a Ledger with five preset journals: Cash Disburse- ★★★★ ments, Receipts, General, Sales, and Purchases. Menus and data entry are very straightforward. Flexible summary reports are built in, but customer and vendor information is very minimal. $295. CheckMark Software, PO Box 860, Fort Collins, CO 80522. CP

Hardisk is a complex integrated hard disk system that does not ★★★½ use Mac interface. Manual is detailed but complicated, with a few pages that make it Mac-specific. Requires hard disk and printer. $695 per module. Great Plains, Box 9739, Fargo, ND 58109. CP (Dec 85)

Insight is a high-powered accounting program for the small to ★★★★½ medium size business. At present, two modules are available: Accounts Receivable and General Ledger; others are in the works. Requires 512K and hard disk. $595. Layered, 85 Merrimac St., Boston, MA 02114. NCP (Dec 86)

Rags to Riches integrated accounting modules (General Ledger ★★★★½ and Accounts Receivable) uses Mac interface to the hilt. Information entered in one window automatically transfers. Version 3.0 now provides detailed, flexible report options. Very easy to use, but it can be confusing with several windows on screen. Requires 512K+ and printer. $199.95 per module. Chang Labs, 5300 Stevens Creek Blvd., San Jose, CA 95129. CP (Dec 85)

Rags to Riches Professional Billing tracks and bills profession- ★★★★ al services. Batches activities for individual timekeepers. Use as standalone, or integrate with *R to R* modules. $399.95. Chang Labs, 5300 Stevens Creek Blvd., San Jose, CA 95129. 512K+, printer. NCP (Feb 87)

Strictly Business General Ledger features clear, well-outlined ★★★★ set-up procedures and operations. Very flexible, up to 99 profit centers with up to 100 departments each; and customized reports. Program print spools. Requires 512K+, printer and external drive. $395. Future Design, 13681 Williamette Dr., Westminster, CA 92683. NCP (Dec 85)

PERSONAL FINANCE

Dollars & Sense is a bookkeeping program. Easy to use, with a ★★★ good manual and excellent on-screen help. Will handle up to 120 separate accounts or money categories. Uses standard double-entry accounting techniques. Will work on 128K. $149.95. Monogram, 8295 S. La Cienega Blvd., Inglewood, CA 90301. CP (Mar 87)

MacInTax is an excellent tool for preparing tax forms. Intuitive, ★★★★★ easy to use. Accepts data from leading personal finance programs. Good built-in help. Liberal upgrade policy for current owners. California forms set also available. $99 federal; $45 California. SoftView, 4820 Adohr Lane, Suite F, Camarillo, CA 93010. NCP (Mar 87)

MacMoney is a complete and easy to use personal financial ★★★★½ system. Intuitive data entry. Integrates with *MacInTax*. Requires 512K+. $74.95. Survivor Software, 11222 La Cienega Blvd., Inglewood, CA 90304. NCP (May 87)

Market Pro is a comprehensive portfolio management program for ★★★★ the generation of fundamental data as well as technical

charts and graphs. Requires 512K+, external drive and Hayes-compatible modem. $395. Pro Plus Software, 2830 E. Brown Rd., Mesa, AZ 85203. NCP (Nov 86)

DATABASES

Business Filevision is a masterpiece of Macintosh programming, ★★★★ the only true graphic database on any micro. Much more powerful than the original, accepts *MacPaint* graphics. $395. Telos Software, 3420 Ocean Park Blvd, Santa Monica, CA 90405. NCP (Feb 86)

Double Helix is an environment to generate custom applications ★★★★ built around a data base-type framework. Contains enhancements to *Helix* 2.0. Includes custom menus, sub form windows, password protection and a universal dump and load parser. Ability to store pictures as data fields. $495. Odesta, 4084 Commercial Blvd., Northbrook, IL 60062. NCP (Oct 86)

File is a flexible data manager. Creates files for a variety of data, ★★★★ including simple graphics. Files are created in simple row/column format, but reports and forms are easily customized by moving field names around on a blank form. $195. Microsoft, 16011 NE 36th Way, Redmond, WA 98052. CP

FileMaker Plus retains features of *FileMaker* and reads *FileMaker* ★★★★★ data, also displays up to 8 files, uses "lookup" to retrieve data from other files. Enhanced calculation with many additional functions. Scripts automate a sequence of actions. Mac Plus compatible. $295. Requires 512K+. Forethought, 250 Sobrante Way, Sunnyvale, CA 94086. NCP (Nov 86)

Helix is a relational database that makes extensive use of icons. ★★★★ Setup is easy due to adherence to the Mac interface. The manual is clear, thorough and well-indexed. Complicated for simple database applications, excellent where a relational power is needed. Requires 512K+ and external drive. $395. Odesta, 4084 Commercial Blvd., Northbrook, IL 60062. NCP (Mar 86)

MacRelax is a relational list manager that stores data in a column ★★ format. Files can be related by sharing a common field. Flexible design for reports. Screen display is sometimes strange. Easy to use but not obvious to learn. $99.95. 512K required. Arrays, 6711 Valjean Ave., Van Nuys, CA 91406. NCP (Jan 87)

Omnis 3 is a power database, featuring concurrent multiple file ★★★★ management. Can handle 24 files, 12 at a time, and is fully relational. Create custom environments including user-defined menus, commands and dialogs. $495. Blyth, 2655 Campus Dr., San Mateo, CA 94403. CP (Mar 86)

OverVUE is a power-packed relational database that has extensive ★★★★½ sorting, summarizing and report generation capacity. Has macros and a charting function. Good manual. It can exchange files with a very wide variety of other programs (including IBM software). $295. ProVUE, 222 22nd St., Huntington Beach, CA 92648. NCP (Nov 85)

Professional Bibliographic System is a specialized data base ★★★★ storing and retrieving bibliographies. Redesigned templates (20) simplify creation. Version 2.6 offers improved speed, flexible formatting. $295. Personal Bibliographic Software, Box 4250, Ann Arbor, MI 48106. CP (Feb 87)

Record Holder is a flexible, easy-to-use form-oriented data ★★★ manager. Set up is particularly simple and the search features are powerful. $49.95. Software Discoveries, 99 Crestwood Rd., Tolland, CT 06084. NCP (Apr 86)

Reflex For The Mac is a flexible relational database. Excellent ★★★★½ report generator gives full control over appearance, style of output. Requires 512K+, second drive or hard disk. Highly recommended. $99.95. Borland International, 4585 Scotts Valley Dr., Scotts Valley, CA 95066. NCP (Nov 86)

Writer's Workshop maintains orderly records for writers. It can ★★★½ track manuscripts, income and publisher. Based on and includes *Runtime Helix*. $99.95. Futuresoft System Designs, PO Box 132, New York, NY 10012. NCP (Apr 87)

NUMBER CRUNCHING

DesignScope is a construction kit for digital and analog circuits. ★★★★ Up to 254 components can be utilized in a single circuit, and the equivalent of a dual trace oscilloscope plots output in real-time. Good for testing basic (and not-so-basic) circuitry without touching a breadboard. $249.95. BrainPower, 24009 Ventura Blvd., Calabasas, CA 91302. NCP

MacCalc is a fast, competent, full-featured spreadsheet with ★★★★ impressive built-in functions, font control, on-line help, ability to expand columns and rows and read/write SYLK or WKS files. The worksheet is 125 columns by 999 rows. Cell names, printing power make *MacCalc* a very flexible pure spreadsheet. $139. Bravo Technologies, c/o DPAS, PO Box T, Gilroy, CA 95021. NCP (Sep 86)

MacSpin is a unique and powerful graphic data analysis program. ★★★★ Handles multivariate data in a highly visual manner. Nothing else like it for any micro. $199.95. D2 Software, PO Box 9546, Austin, TX 78766-9546. CP (Jun 86)

Mindsight is a professional level decision support and business ★★★★ planning package. Can work with IFPS on mainframes, and is able to transmit models in both directions. Powerful and easy to use. Requires 512K+. $195. Execucom Systems, PO Box 9758, Austin, TX 78766. CP

Multiplan, the first Mac product from someone other than Apple, is ★★★½ beginning to show age. Still a very capable basic spreadsheet with simple sorting, 63 columns by 255 rows, many built-in functions, other standard spreadsheet features. $199.95. Microsoft, 16011 NE 36th Way, Redmond, WA 98052-6399. CP (Mar 86)

StatView 512+ is a very intuitive statistical analysis program with ★★★★★ tools needed to understand any set of data. Holds data in a spreadsheet-like form. Full-featured, fast and accurate. Extremely wide range of analyses possible. Requires a minimum of 512K of RAM & 800K of disk space to operate. $349.95. BrainPower, 24009 Ventura Blvd., Calabasas, CA 91302. NCP (Dec 86)

StatWorks is a general-purpose statistics package that is both ★★★★ powerful and easy to use. Handles all standard tests and procedures. Single variable and multivariate statistics are supported. $125. Cricket Software, 3508 Market St., Philadelphia, PA 19104. NCP (May 86)

Trapeze is a very powerful spreadsheet program that functions ★★½ through use of blocks similar to page layout programs aligned on a user-definable grid. Blocks can contain the usual spreadsheet-type cells, rows or columns, text, pictures and any type of special graphics. Includes financial, conversion and transcendental functions. $295. Data Tailor, 1300 S. University Dr., Fort Worth, TX 76107. NCP (Jun 87)

GRAPHICS & DESIGN

CalendarMaker creates monthly calendars in a variety of formats. ★★★★½ Users can incorporate their art and daily notes. Note files can be imported from a variety of DA calendars and outliners. $30. CE Software, 801 73rd St., Des Moines, IA 50312. NCP (Dec 86)

Chart can easily create area, bar, column, line, pie, scatter and ★★★½ combination charts. A total of 42 styles are provided. Limited to 100 data items (64 in a series) on a 128K Mac, approximately twice that on a 512K Mac. $125. Microsoft, 16011 NE 36th Way, Redmond, WA 98052-6399. CP

ClickArt Special Effects is a *MacPaint* enhancement desk ★★★½ accessory. Allows the user to distort, stretch, rotate and use perspective on *MacPaint* documents. A necessary addition for all serious users of *MacPaint*. $49.95. T/Maker, 2115 Landings Dr., Mountain View, CA 94043. NCP (Apr 86)

ColorPrint allows you to print *FullPaint*, *MacPaint*, *MacDraw* ★★★ *and MacDraft* documents in color using the ImageWriter. *Paint* files set up as overlays are read into *ColorPrint*, and the program controls positioning. $29.95. 19341. NCP (Mar 86) I/O Design, PO Box 156, Exton, PA

MINIFINDERS

ComicWorks is a graphics wonder. Manipulate bit mapped graphics as independent objects, with up to 64 layers of matting. An airbrush, multiple page capacity, full-screen drawing, and two disks of gorgeous artwork round out this package. Needs better LaserWriter support. $79.95. Mindscape, 3444 Dundee Rd., Northbrook, IL 60062. NCP (Nov 86)

Cricket Draw is an object-oriented drawing program that will produce stunning, high-quality output. Designed to print on PostScript-compatible devices, such as the LaserWriter. Making shadows and flowing fountain effects are just a point and click away. $295. Cricket Software, 3508 Market St., Philadelphia, PA 19104. NCP (May 87)

Cricket Graph easily generates 12 graph types. Multiple windows can be displayed. *Graph* prints in up to 8 colors with up to 16 patterns. Self-generating macro formatting. *Switcher*, HFS, LaserWriter and plotter compatible. $195. Cricket Software, 3508 Market St., Philadelphia, PA 19104. NCP (Jun 86)

Easy3D is a three-dimensional, solid modeling masterpiece. Four variable light sources, powerful sculpting tools and an exquisite user interface make this a must-have for graphics enthusiasts. Requires 512K+. Enabling Technologies, 600 S. Dearborn, Chicago, IL 60605. NCP (May 86)

EZ Draft is a high-level CAD application. Does things usually only found on minicomputer programs. Uses "pop-up" menus to supplement a full set of pull-down menus. Comes with an additional set of printer/plotter/monitor drivers. A real powerhouse. $1995. $500 for IEGS module to link to other CAD programs. Bridgeport Machines, 500 Lindley St., Bridgeport, CT 06606. CP (May 87)

Fluent Fonts is a two-disk collection of fonts. Forty-nine different items are included. All install easily in user systems. Most are well executed and some are extraordinarily nice. This is a real bargain for font lovers. $49.95. Casady, PO Box 223779, Carmel, CA 93922. NCP

Fontastic is the best font editor now available for the Mac. Features a large editing window with a grid to make positioning easy. Select letters to edit by clicking on a matrix of the font. Allows scaling of existing fonts and previewing the various styles (italic, bold, etc.). $49.95. Altsys, PO Box 865410, Plano, TX 75086. NCP (Dec 85)

Fontographer is a complex, but excellent laser font creator. The fonts created have 300 bits per inch resolution. The fonts are actually downloadable PostScript files. $395. Altsys, PO Box 865410, Plano, TX 75086. CP

FullPaint is an expanded version of *MacPaint*. Features include full-screen drawing, multiple documents open simultaneously, brush editing, movable tool palettes, special text effects and much more. $99.95. Ann Arbor Softworks, 308½ State St., Ann Arbor, MI 48104. NCP (Jun 86)

GraphicWorks is a powerful bit-mapped graphics program using easels for drawings, balloons for text and panels to contain both. Confusing interface and the manual could be improved. Requires 512K+. $79.95. Mindscape, 3444 Dundee Rd., Northbrook, IL 60062. NCP (Apr 87)

Graphidex indexes *MacPaint* and *MacDraw* format graphics without removing them from their original documents. Indexed graphics are retrieved via the *Graphidex* DA. Can modify an indexed graphic without affecting the original. Best for bit-mapped (*Paint* format) images but the design is questionable and the execution imperfect. Requires 512K. $124.95. BrainPower, 24009 Ventura Blvd., Calabasas, CA 91302. NCP (May 87)

GridMaker is a tool for artists who use perspective. The program automatically generates a series of three-dimensional plane sets that can be pasted into *MacDraw*. Sizes and viewing vantage point are easily modified. $49. FolkStone Design, Inc., PO Box 86982, North Vancouver, BC V7L 4P6, Canada. NCP (Nov 86)

Japanese Clip Art is a two-disk set of extraordinary Japanese clip art. Consists of *MacPaint* documents and separate fonts. Volume I, Heaven, covers mythological subjects; Volume II, Earth, has secular subject matters. $69.00 each volume; $149.95 set. Enzan Software, 150 W. Acton Rd., Stow, MA 01775. NCP (Apr 87)

LaserFonts are new fonts for the LaserWriter. Users download them to their machines. Very high quality and very simple to use. *Willamette* looks like Avant Garde. *MicroFonts* provides tiny, expanded and condensed versions of the LaserWriter's own fonts. $29.95 each. Century Software, 2306 Cotner Ave., Los Angeles, CA 90064. NCP

The Mac Art Dept. is a collection of over 150 graphic images ranging from foods to hands holding signs to borders. Best suited for letterheads, memos, other business use. $39.95. Simon & Schuster, Computer Software Div., 1230 Ave. of the Americas, New York, NY 10020. NCP (Mar 86)

Mac-a-Mug is an Identikit type program for creating faces from facial feature files. Uses scroll bars that are slow and jerky. Lots of creative fun. 512K+ Mac required. $59.95. Shaherazam, PO Box 27731, Milwaukee, WI 53226. CP (Jul 86)

MacDraft is an object-oriented graphics program. It sports advanced features such as variable scaling, single degree rotation, complex arcs and a FatBits-like magnification mode. Best used to complement *MacDraw*, not replace it. $269. Innovative Data Design, 2280 Bates Ave., Ste. A, Concord, CA 94520. NCP (Feb 86)

MacDraw is an object-oriented structured graphics program. Can be used to design forms, create presentation materials and do technical illustrations. Drawing sizes up to 8 feet by 10 feet are possible. Text can be easily generated and integrated in the graphics. $295. Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014. NCP (Nov 85)

MacModel is an economical 3D package with shading. Somewhat sketchy Mac interface, shading speed slow (but acceptable), grainy image resolution. On-line help screens are a welcome addition. Frequent updates and low price make this a reasonably good buy. $40. A.P.P.L.E. CO-OP, 290 SW 43rd St., Renton, WA 98055. NCP (Aug 86)

MacPaint is the graphics program that started a whole new genre. Still the best freehand graphics tool. Version 1.5 supports 512K+ Macs and the LaserWriter. Multiple tools, patterns and features too numerous to describe. A work of art for artists. $125. Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014. NCP (Nov 85)

Mac3D 2.0 is a feature-laden 3D program with a *MacDraw*-like interface. PostScript-resolution shading with six variable light sources, user-definable tools, and many more features make this a graphic powerhouse. $249.95. Challenger Software, 18350 Kedzie Ave., Homewood, IL 40430. NCP (Jan 87)

MapMaker produces maps and analyses of related geographical data. Additional data disks available. Documentation could be better. Requires 512K; second drive recommended. $295. Select Micro Systems, 2717 Crescent Dr., Yorktown Heights, NY 10598. NCP (Jan 87)

MGMS: Professional CAD for Macintosh offers more than 200 functions. Very complete, capable program. Powerful tools like Groups, Dimension, Libraries etc. are standard. Sometimes confusing to follow—designed for experienced, professional CAD user, not the novice. Full plotter support. Good tech support. 512K. $799. Micro CAD/CAM, 5910 Noble, Van Nuys, CA 91411. CP (Jun 87)

MockPackage+ is a set of extremely powerful DAs. Includes a text editor, text printer (supports LaserWriter), charter, terminal and EZmenus. HFS compatible. $35. CE Software, 801-73rd St., Des Moines, IA 50312. NCP (Mar 87)

PageMaker is an advanced layout and makeup program. Can easily create multiple page documents. Output is optimized for LaserWriter. Good documentation. $495. Aldus, 411 First Avenue South, Seattle, WA 98104. CP (Jun 86)

Phoenix 3D is an economical 3D drawing package, with features that belong in a more expensive program. Multiple light sources, fine object placement and orientation control, and a good selection of shapes. $39.95. Dreams of the Phoenix, PO Box 10273, Jacksonville, FL 32247. NCP (Oct 86)

New from NewDirections Software:

How many times have you had to quit your program just to start up another to type a letter, address an envelope, or print an invoice or form?

Introducing the solution.

If you are like most other Macintosh users, your answer to this question is probably "Too Often!". FastForms Construction Kit consists of two programs: a powerful drawing application that lets you create forms, letterheads, newsletters and about a zillion other documents, **and** a convenient desk accessory that provides you with instant access to any of your FastForms creations. The drawing program features nifty tools such as grey screens, foreground and background drawing planes for visible and invisible objects, text editing, interactive fields, hairlines, and some unique object alignment and distribution tricks. Once your document has been created, the desk accessory can retrieve it from FastForms own built in hierarchical file system from within any other program. From the desk accessory, tab to move from field to field entering in data. Then print, file and get back to work. Type a letter complete with letterhead graphics and print with the LaserWriter, add a loaf of bread to your shopping list, create an on-line help file, write and print a cheque (FastForms can even balance your bank account!) or fill out an invoice that totals all items, plus adds tax - all without interrupting your regular work!. You could even scan your forms and trace over them with the drawing program, then fill them out with the desk accessory and print. What could you use FastForms construction kit for?
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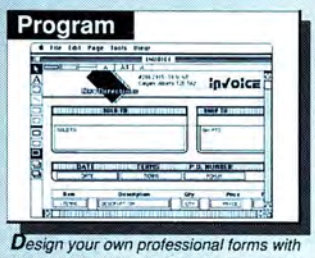

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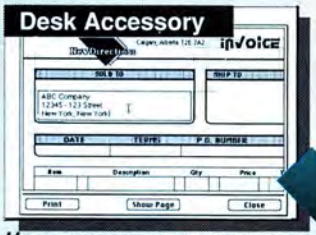

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MINIFINDERS

PictureBase is a program and accompanying desk accessory for ★★★★★ organizing *MacPaint* and *MacDraw* files. Graphics are organized into libraries, and can be searched for by keywords. $69.95. Symmetry Corporation, 761 E. University, Mesa, AZ 85203. NCP (Jun 86)

Portfolio: Designs for Newsletters provides over twenty templates for 2-page newsletters with pre-set columns, headlines, graphics and captions. Documentation provides excellent tutorial in page design. Includes DA called *Wyzzy* that optimizes screen fonts and copyfit. Requires 512K+; *PageMaker*. $79.95. Aldus Corp., 411 First Avenue South, Suite 200, Seattle, WA 98104. NCP (May 87)

The Print Shop makes it easy to create greeting cards, banners, ★ letterhead and signs in minutes. Offers full access to fonts, styles, graphics. Can pull images from *MacPaint* files or off the Clipboard. Don't get near a hard disk. $59.95. Broderbund, 17 Paul Dr., San Rafael, CA 94903. CP (Dec 86)

Ragtime is an "Integrated Page Processor" with text, graphics and ★★★★ built-in spreadsheet. Flow text automatically from one frame to another. Spreadsheet has a full set of functions. Excellent, easy to use program. Requires 512K+. $395. Orange Micro, 1400 N. Lakeview, Anaheim, CA 92807. CP (Apr 87)

Slide Show Magician 1.3 is useful for creating full screen audio-★★★ visual presentations on the Mac. Frame branching, improved editing capabilities, external cassette recorder synchronization and digitized sound capabilities make this much more powerful than the original. $59.95. Magnum, 21115 Devonshire St., Chatsworth, CA 91311. CP (Mar 86)

Storyboarder produces working animated storyboards for use in ★★★★ film and video production. Imports graphics from *MacPaint;* allows screen masking to simulate television, 35mm or 70mm screen widths; allows limited animation and special effects. $495. American Intelliware, PO Box 6980, Torrance, CA 90504. CP (Nov 86)

SuperPaint is a powerful, easy-to-use graphics program with all ★★★★★ the best features of *MacPaint* and *MacDraw* —and then some. Among the new features, LaserBits provides 300 dpi magnification and there are 40 editable brush shapes. Requires 512K+. $99. Silicon Beach, 9580 Black Mountain Rd., PO Box 261430, San Diego, CA 92126. NCP (Feb 87)

World-Class Fonts! comes in two volumes of three disks each. ★★★★½ Includes all the *Mac the Knife* fonts and a lot more, including 2 useful utilities. This is now the best collection of ImageWriter fonts available. Each volume: $39; both volumes: $59. Dubl-Click Software, 18201 Gresham St., Northridge, CA 91325. NCP (Dec 86)

COMMUNICATIONS

AppleShare is the long awaited file sharer from Apple. Software-★★★★ based, *AppleShare* requires you to dedicate a Mac and a hard disk to run it. Allows users on the network to protect things from other users on the folder level. $799. Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014. NCP (May 87)

HomePak is a package consisting of *HomeTerm*, an excellent ★★ simple telecommunications program with strong macro features; *HomeFind*, an electronic filer as bad as *HomeTerm* is good; and Apple's *Edit*, a simple, non-HFS-compatible text-file editor. $49.95. Batteries Included, 30 Mural St., Richmond Hill, Ontario L4B 1B5, Canada. NCP (Aug 86)

InBox is an easy to use mail system. It's called up from a desk ★★★★½ accessory. Has a very slick interface. Current version requires a dedicated Mac to run as storage for the mail. $299

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MINIFINDERS

for starter set which includes one Administrator disk and three Connection disks. Additional Connections cost $75 each. Think Technologies, 420 Bedford St., Lexington, MA 02173. CP (May 87)

InTalk comes with its own communications command language ★★★★½able to do unattended sessions. Supports Xmodem and MacBinary. Has a macro key function. Many sample set up documents and command language files provided. $195. Palantir, 12777 Jones Rd., Houston, TX 77070. NCP (Prem)

InterMail is an electronic mail system that runs under AppleTalk. ★★★★½Supports file transfers across the mail system. Full on-line help facility. Also includes "While you were out" messages. Desk accessory based. Prices determined by number of users licensed. One to four users, $299.95; 5 to 10 users, $499.95; 11 to 20 users, $749.95; 21 or more users, $949.95. Interactive Network Technologies, 20 Amy Circle, Waban, MA 02168. NCP (May 87)

MacTerminal provides basic telecommunications and terminal ★★½ emulation for the Mac user. Doesn't have macros nor any sort of auto redial/auto logon capability. Best for those needing faithful VT100 or IBM 3278 emulation—it is superb at those. $99. Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014. NCP (Prem)

Microphone is a high-powered terminal program that's easy ★★★★ enough for novices. Very powerful command language allows full automation of communications, if desired. $74.95. Software Ventures, 2907 Claremont Ave., Berkeley, CA 94705. NCP (Jun 86)

Red Ryder is a full-featured telecommunications program that ★★★★★ supports MacBinary, Xmodem and Kermit. Remote service procedures, auto procedure writer and keyboard macros allow automation of many operations. It is shareware and a real bargain. $40. The FreeSoft Corp., 10828 Lacklink, St. Louis, MO 63114. NCP (Jun 86)

Smartcom II balances power and ease of use. Capable of ★★★★½unattended operation and has a very powerful command language. Supports MacBinary, Xmodem and Hayes Verification protocols. The large screen buffer can easily be archived. $149. Hayes, 5923 Peachtree Industrial Blvd., Norcross, GA 30092. NCP (Prem)

Telescape is the power telecommunicator's terminal program. Can ★★★ be configured to emulate any terminal. The documentation does not adequately explain the many features. $125. Mainstay, 28611B Canwood St., Agoura Hills, CA 91301. NCP (Jun 86)

TOPS is a file server that is designed to network computers with ★★★★½different operating systems. The current system will support Macs, MS-DOS compatibles and UNIX. Access to files and subdirectories is transparent to the user, they appear as Mac folders. Only handles ASCII or Text files. $149 for Mac version. $389 for PC's (comes with add-on card). Centram Systems West, 2560 Ninth St., Berkeley, CA 94710. Serial number protected. (May 87)

VersaTerm features include DEC VT100 and VT52, Tektronix 4014 ★★★★½graphics terminal and Data General DG200 emulation. Supports Xmodem and MacTerminal Xmodem protocols and MacBinary. $99. Peripherals, Computers & Supplies, 2457 Perkiomen Ave., Mt. Penn, PA 19606. CP (Prem)

VersaTerm-Pro is a very powerful terminal program with several ★★★★½special features. Does one of the best VT100 emulations available and specializes in high-quality Tektronix 4014 and 4105 emulation. A pro's tool. Requires 512K+. $295. Peripherals, Computers & Supplies, 2457 Perkiomen Ave., Mt. Penn, PA 19606. NCP (Apr 87)

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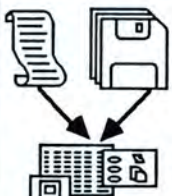

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MINIFINDERS

WORD PROCESSORS

Document Compare allows users to compare any two *MacWrite* 4.5, ASCII or MDS documents. Differences in spelling, punctuation, formatting and wording are detected. Documents can be printed out with differences highlighted. $99. The Model Office Company, 49 Wellington Street East, Toronto, Canada M5E 1C9. CP (May 86)

Document Modeler can automate much of a professional office's correspondence. Comes in two parts: *Template Maker* and *Document Maker*. Initial set-up requires time and is complex. $299.95. The Model Office Co., The Gooderham Flatiron Bldg., 49 Wellington St. E., Toronto, Ontario M5E 1C9, Canada. NCP (Mar 87)

Laser Author is a high-powered, technically oriented word processor. Good math setting capability. Has style sheets, word count and page layout capability. $199.95. Firebird Licensees, PO Box 49, Ramsey, NJ 07446. NCP (Mar 87)

Liberty Spell Checker is a fast, effective interactive checker. The dictionary is smaller than average, but well chosen. Unfortunately, it has a few misspelled words. $59.95. DataPak, 14011 Ventura Blvd., Sherman Oaks, CA 91423. CP (Oct 86)

MacGAS is a DA spelling checker with both a small and extended dictionary. Its best point is the excellent thesaurus, provides antonyms & glossary. A slow checker. $99. EnterSet, 410 Townsend St., San Francisco, CA 94107. CP (Oct 86)

MacLightning is an interactive spelling checker in desk accessory form. Text can be checked on the fly or by selection. Works within many applications, and options include a thesaurus, medical and legal dictionary. $99.95. Target Software, 14206 Southwest 136th St., Miami, FL 33186. NCP (Oct 86)

MacProof is a grammar, style and spelling checker that's like having your own personal copy editor. Grammar rules are fixed, and you may not agree with the choices. The program only suggests corrections, it doesn't make them for you. And the checking process can be slow if your document is long. $195 for standalone version; $2500 for networked version. Automated Language Processing Systems, 190 West 800 North, Provo, UT 84604. NCP (Apr 87)

Macspell+ (version 1.10) is a spelling checker that installs as a desk accessory. Works easily with *MacWrite* 4.5 and 2.2 and *Word*, but has some drawbacks. New version just available. Requires 512K+, two drives or hard disk. $99. Creighton Development, 16 Hughes, Irvine, CA 92718. NCP

MacWrite is the basic Mac word processor. While it doesn't have every bell and whistle, it is more than adequate for most users. Features include global search and replace, page numbers indicated in the scroll bar and excellent LaserWriter compatibility. $125. Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014. NCP

MindWrite is an outliner-based word processor of considerable power. Besides outlining, it allows multiple documents and multiple selections. Excellent if you like to outline your writing first. $125. MindWork Software, PO Box 222280, Carmel, CA 93922. NCP (Mar 87)

QuickWord is a word processing accessory that adds sophisticated glossaries to *MacWrite*. Simple to install and use, yet powerful and efficient. $49.95. EnterSet, 410 Townsend St., San Francisco, CA 94107. NCP

Scriptor is designed for producing standard format scripts. Starts with a *Word* document. As you change your *Word* document, *Scriptor* will reformat, renumber and reprint the script. Supports LaserWriter and daisywheel printers. $295. Screenplay Systems, 348 E. Olive Ave., Suite F, Burbank, CA 91502. NCP (May 87)

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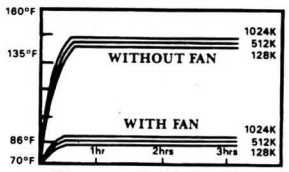

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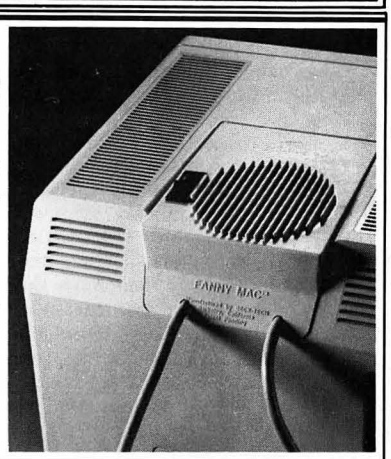

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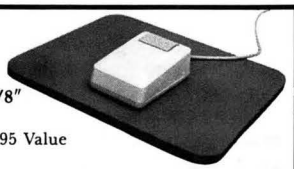

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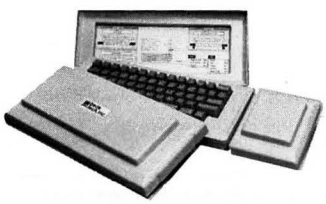

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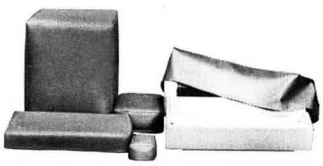

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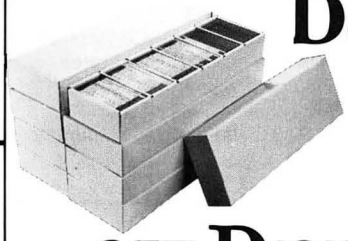

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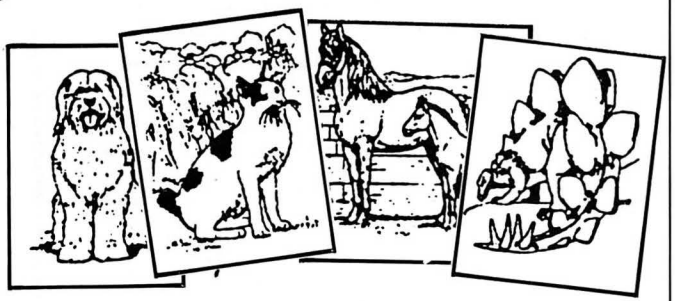

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MINIFINDERS

Spelling Champion is a fast and accurate batch-type spelling checker. Works only with *MacWrite* 4.5. $39.95. Champion Software, 5201 South Hill Dr., Madison, WI 53705. NCP (Oct 86)

Spellswell is an effective and powerful standalone spelling checker. It has many advanced features such as capitalization and homonym checking and comes with a large, well-chosen dictionary. $59.95. Working Software, Inc., 321 Alvarado, Ste. H, Monterey, CA 93940. NCP (Oct 86)

Thunder! is the best spelling checker currently available. Has a 50,000-word dictionary. Features Learned Words (a superb glossary) and statistics. A very fast DA, it works interactively and in selection mode. Requires 512K+. $49.95. Batteries Included, 30 Mural St., Richmond Hill, Ontario, Canada L4B 1B5. NCP (Dec 86)

Word 3.0 is the most feature laden word processor now available. Has a spelling checker, hyphenation, some page layout, style sheets and more. Also has Microsoft's somewhat unusual view of what the Mac interface is. Requires 512K+ and at least 1200K of external storage. $395. Microsoft, 16011 NE 36th Way, Redmond, WA 98073. NCP (Mar 87)

WriteNow for the Macintosh has many of the features of *MacWrite* and then some, including the ability to work in columns. Has built-in spelling checker with 50,000-word dictionary. $175. T/Maker, 1973 Landings Dr., Mountain View, CA 94043. NCP (Mar 87)

ORGANIZATIONAL TOOLS

Acta is an outline processor in desk accessory format. It has practically all the power of a standalone program, and then some. Can save files as *Acta* outlines, *MacWrite* or text files. A must-have for those who do outlining. $59.95. Symmetry, 761 E. University Dr., Mesa, AZ 85203. NCP (Jul 86)

Calliope is a new type of outlining program. Chunks of information are manipulated as small "light bulbs" containing text. Related elements can be graphically connected. Text files can be created for *MacWrite* editing. $59.95. Innovision, PO Box 1317, Los Altos, CA 94023. NCP (Sep 86)

DecisionMap organizes data to facilitate decision making. Unique weighting abilities make this a powerful tool. The decision analysis process is long and sometimes complex, but never difficult. $145. SoftStyle, 7192 Kalanianole Hwy., Honolulu, HI 96825. CP

Design is a powerful organizational tool. It goes beyond mere flowcharting. Complex, detailed program aimed at software pros. $200. Meta Software, 55 Wheeler St., Cambridge, MA 02138. NCP (Apr 87)

Guide allows you to "cross reference" from within a document using hypertext. You can set up words or sections of the document so that double-clicking brings up explanatory material, graphics and other useful items. The word processing and formatting functions, however, are limited. $135. OWL International, 14218 NE 21st St., Bellevue, WA 98007. NCP (Apr 87)

MacProject allows a user to plan and track a project from beginning to end. Uses CPM to produce schedules with start and finish dates for each task. Can report on resource interdependencies and generate all needed printed reports. $125. Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014. NCP (Mar 86)

MacSpec is a specification writing tool, a cross between word and outline processors. Can automatically number and indent headings, and renumber everything when lines are moved.

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MINIFINDERS

Text under headings is handled and formatted as though in a simple word processor. HFS-compatible. $199.95. LM Software, PO Box 93, Belmont, CA 94002. NCP (Oct 86)

Micro Planner Plus is a great project management system with ★★★★½ major enhancement to *Micro Planner*. Outstanding analysis capability. Memory based, making it much faster than the original. Includes a font menu. Even saves reports out in *MacDraw* format for further work. Uses standard print drivers. HFS compatible. Micro Planning Software USA, 235 Montgomery St., San Francisco, CA 94104. CP (Dec 86)

MORE is an incredibly powerful outline processor with gobs of ★★★★★ great features: instant charts, math capabilities, multiple windows, font and style control, templates and more. Prints outlines in any of several standard formats, even in color. Requires 512K+. $295. Living Videotext, 2432 Charleston Rd., Mountain View, CA 94043. NCP (Sep 86)

ThinkTank 512 is a very fast and intuitive organizational tool. Full ★★★½ keyboard control is possible. Can store and paste graphics into outlines. Slide show features allows high-quality presentations to be created. Good report formatting and printing capability. $195. Living Videotext, 2432 Charleston Rd., Mountain View, CA 94043. CP (Jan 86)

Voila! is a full-featured outliner in desk accessory format. Head- ★★★★ lines can be edited like normal text. Reads and writes text files, *Word*, *MacWrite*, *ThinkTank* and *MORE* documents. An excellent value. Requires 512K+, 800K drive or external 400K drive. Mac XL not supported. $99.95. Target Software, 14206 SW 136th St., Miami, FL 33186. NCP (Mar 87)

DESK MANAGERS

BatteryPak is a set of 9 handy desk accessories including ★★★★★ scientific and RPN calculators, a background text file printer and a 250-page note pad with search and phone dialing capabilities. $49.95. Batteries Included, 30 Mural St., Richmond Hill, Ontario, L4B 1B5, Canada. NCP (Dec 85)

Executive Office is a jack of all trades office application. Good ★★★½ data base, word processing, graphics and minispreadsheet. Available on 400 or 800K disks; get the 800 if you can. $249.99. DataPak, 14011 Ventura Blvd., Sherman Oaks, CA 91423. CP (Mar 87)

Front Desk lets small businesses and offices easily keep track of ★★★ personnel schedules, activities and payments. The program can keep track of up to 15 employees, functioning as a day-, week- and month-at-a-glance calendar. $149.95. Layered, 85 Merrimac St., Boston, MA 02114. CP (Dec 85)

My Office lets you handle your files and papers in much the same ★★★★ way you did before you got a computer. Excellent use of graphic symbols makes this program the easiest to use of its type. $129.95. DataPak, 14011 Ventura Blvd., Sherman Oaks, CA 91423. CP (Prem)

Quickset is a set of desk management and organizational tools ★★★ that can be used as desk accessories or applications. Functions include note filer, card filer, calendar, phone dialer, financial and statistical calculators and a file encryptor. $49.95. EnterSet, 410 Townsend St., San Francisco, CA 94107. NCP (Dec 85)

SideKick 2.0 beefs up original *SideKick* DAs and adds two major ★★★★ new ones — *MacPlan*, (formerly *Click-On Worksheet*) and *Outlook*, a full-featured outliner. Also comes with seven applications to support the desk accessories. $99.95. Borland International, 4585 Scotts Valley Dr., Scotts Valley, CA 95066. NCP (Jun 87)

Smart Alarms is the best reminder system for the Mac. Easy to ★★★★½ use, versatile, and, well, smart. This self-running DA automatically reminds you of anything you enter into its Reminder file, giving you a wide range of useful advance warning options. $49.95. Imagine Software, 2000 Center St., Berkeley, CA 94704. NCP (Oct 86)

Top Desk is a set of 7 self-installing (and self-removing) DAs. ★★★★½ Menu Key adds Command key sequences to programs, View allows looking at and moving data between up to 8 *MacWrite* documents, BackPrint, Touch 'n' go, Blank, Encrypt, and Launch. $59.95. Cortland Computer, PO Box 9916, Berkeley, CA 94709. NCP (May 86)

UTILITIES

Accessory Pak 1 is a set of useful applications and utilities. *Paint* ★★★★ *Cutter* alone is worth the price. That program allows users to browse and manipulate full page *MacPaint* documents. $39.95. Silicon Beach, PO Box 216430, San Diego, CA 92126. NCP (Nov 85)

Copy II Mac does efficient sector and bit copies and in its latest ★★★★★ version can back-up virtually all Mac software. Features graphic displays of copy progress. Comes with *MacTools*, a multi-use utility that can recover many damaged files. $39.95. Central Point Software, 9700 SW Capitol Highway, Portland, OR 97219. NCP (Apr 86)

DiskExpress unfragments disk volumes by reorganizing data into ★★★★ continuous sectors and arranging files to slow down further fragmentation. Works with *MacServe*, floppy drives and most hard drives. Requires 512K+. $29.95. ALSoft, Box 927, Spring, TX 77383. NCP (Feb 87)

DiskFit is a utility for backing up and restoring hard disk files. ★★★★½ Creates a "SmartSet" of floppy disks so incremental back ups only update files modified since the last back up procedure. Backs up to floppies or another hard disk. Requires 512K+. $79.95. SuperMac Software, 950 N. Rengstorff Ave., Mountain View, CA 94039. NCP (Jun 87)

Disk Librarian is an easy to use shareware cataloguing program. ★★★★ Criteria selection option for generating subcatalogs. Requires 512K+. $20. Little Bit, 469 Edgewood Ave., New Haven, CT 06511. NCP (Apr 87)

Disk Ranger is a speedy cataloguing program that doubles as an ★★★★ efficient labelmaker. Comes with pinfeed labels. Works with regular and hard disks. Can catalog HFS systems. $49.95. Mainstay, 28611B Canwood St., Agoura Hills, CA 91301. NCP (Mar 86)

Dubl-Click Calculator Construction Set lets users design per- ★★★★½ sonalized calculators with a variety of standard and special functions. Finished calculators can be saved as installable desk accessories or as clickable applications. $59. Dubl-Click Software, 18201 Gresham St., Northridge, CA 91325. NCP (Apr 86)

Fedit Plus is the file and disk editor for everyone, from newest Mac ★★★★★ owner to oldest. It can do more for your disks and files than any other application. Can recover deleted MFS files. If you own a Mac, get it. HFS-compatible. $49.95. MacMaster Systems, 939 E. El Camino Real, #122, Sunnyvale, CA 94087. NCP (Sep 86)

FlashBack is a utility to backup HFS hard disks onto floppies. A ★★★ unique graphic display of the HFS directory facilitates file selection. The program can handle files larger than 800K. $59.95. Mainstay, 28611B Canwood St., Agoura Hills, CA 91301. NCP (Nov 86)

Glue adds a print-to-disk capability to many programs. *ImageSaver* ★★★★½ installs as printer driver, *Viewer* allows copying and printing of *Glue* files. Handy utility for desktop publishers. $59.95. Solutions, Box 989, Montpelier, VT 05602. NCP (Dec 86)

Hard Disk Util uses patch files to allow users to mount and run ★★★★½ specified programs on their hard disks. The list of patches is constantly expanding. $89.95. FWB Software, 2040 Polk St., San Francisco, CA 94109. NCP

HFS Backup ranks as one of the preferred hard disk backup ★★★★½ utilities. Backup by file/folder or last changes. Backup specifications can be saved as templates. Good graphic interface. Reliable program. $49.95. PCPC, 6204 Benjamin Rd, Tampa, FL 33614. NCP (Dec 86)

HFS Locator Plus is *the* essential HFS desk accessory. It can ★★★★ search for a file by name or date of creation, create folders, move files from one folder to another, set a program to launch while in an application. $34.95. PBI Software, 1111 Triton Dr., Foster City, CA 94404. NCP (Sep 86)

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MINIFINDERS

LaserServe is a printer spooler for AppleTalk networks. After ★★★★★ installation all operations done via a desk accessory. Works with both *MacServe* and *TOPS*. Requires 512K+ and 800K drive or hard disk. $125 per node. Infosphere, 4730 SW Macadam Ave., Portland, OR 97201. NCP (Feb 87)

Mac Disk Catalog II is a utility that will quickly organize a ★★★★ moderate size disk library. Easy to use with powerful reporting and label-making features. $49.95. New Canaan MicroCode, 136 Beech Rd., New Canaan, CT 06840. NCP (Dec 85)

MacFlow is a design tool created for programmers. Traditional ★★★½ flowcharting symbols are linked together, and a symbol can be connected to a separate flowchart file. Symbols can't be edited, precluding using *MacFlow* for other applications. $125. Mainstay, 5211-B Derry Ave., Agoura Hills, CA 91301. NCP (Apr 87)

MacInUse tracks time spent in applications and saves info as text ★★★★★ files. Installs on any disk, works in background. MFS, HFS compatible. Extremely valuable for tax purposes, client records, etc. $49. SoftView, 4820 Adohr Lane, Camarillo, CA 93010. NCP (Jan 87)

MacLabeler lets users instantly index and print labels for all the ★★★½ disks in a burgeoning collection. Choose border type and orientation of your label; index by folder or document. Starter set of labels is included. $49.95. Ideaform, PO Box 1540, Fairfield, IA 52556. CP (Prem)

MacLink lets users transfer data between Macs and PCs. Can do ★★★½ special format transfers such as *1-2-3* to *Multiplan* and *WordStar* to *MacWrite*. Contains both Mac and PC disks, interface cable is optional. Has Mac and MS-DOS disks. $125, $155 with 8-ft interface cable. DataViz, 16 Winfield St., Norwalk, CT 06855. NCP

MacNosy is a global disassembler. A very advanced user can use ★★★★★ this program to look into the code of virtually any program. This advanced tool can take you places no other Mac program could dream of going IF you have the skill to guide it. The documentation is sparse. For pros only. $85. Jasik Designs, 343 Trenton Way, Menlo Park, CA 94025. NCP

Mac + II lets you run Apple II software on the Mac. Emulation ★★★ speed is only 35 to 45 percent of a real Apple II, so graphics especially suffer. Games also run slow. Runs AppleWorks (Apple II integrated software). Good for ex-Apple II owners who have large software collections. $149.95. Meacom, PO Box 272591, Houston, TX 77277. CP

MacSafe is a data file security program that allows you to place ★★★★ multiple files into a "safe", and then you can further protect them through two types of encryption (including DES). Flexible and very easy to use. Allows for installation on hard disk.$69.95. Kent Marsh Limited, Inc., 1200 Post Oak Blvd., Houston, TX 77056. CP (Mar 87)

MacServe converts a Mac and a hard disk into a disk and print ★★★★½ server. Uses the AppleTalk network and is easily hooked up. Users can partition the hard disk into multiple volumes. Runs in the background. $250. Requires 512+ or Mac XL. Infosphere, 4730 SW Macadam, Portland, OR 97201. CP

MacZap is a three-part disk and memory utility. It can be used to ★★★★ recover some damaged files and disks, compare disks, analyze disk structure and make back-up copies of most disks. $60. Micro Analyst, 2505 Roxmoor, Austin, TX 78723. NCP (Jan 86)

myDiskLabeler is an excellent label making program. It can read ★★★★ directories, or use large or small icons, or anything else the user desires. Comes with 54 precut labels on pinfeed paper. HFS compatible. $44.95; with color printing ability (on the

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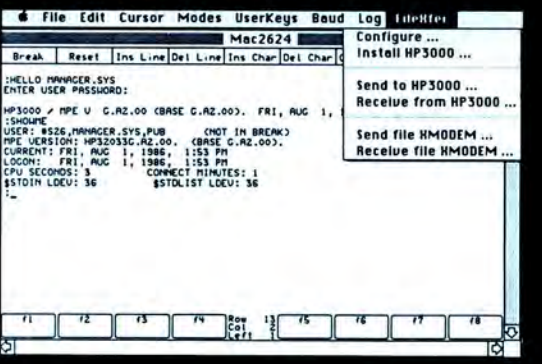

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MINIFINDERS

ImageWriter II), $54.95. Williams and Macias, PO Box 19206, Spokane, WA 99219. NCP (Aug 86)

'Ncryptor is a simple, safe program that lets users password their ★★★★ files. The same program is used for encoding and decoding. This is the best product in its category. $39.95. Mainstay, 28611B Canwood St., Agoura Hills, CA 91301. NCP

Packit III is an essential utility. Primarily used to temporarily ★★★★½ "glue" files together, it can also compress and encrypt. Feeware. $10, $10 for printed manual. Harry R. Chesley, 1850 Union St., San Francisco, CA 94123. NCP (Jan 87)

Quick & Dirty Utilities, Volume One is a disk chock full of the ★★★★½ handiest programs you have ever bought. Included are a super disk cataloguer, a desk accessory mover and more. Several desk accessories including a menu bar clock and a terminal are on the disk. $39.95. Dreams of the Phoenix, PO Box 10273, Jacksonville, FL 32247. NCP (Nov 85)

RamSnap is a RAMdisk and disk cache in one easy to use ★★★★ package. Can store multiple configurations as files. Good product but a little pricey. $59.95. Dove Computer Corp., 1200 North 23rd St., Wilmington, NC 28405. NCP (Jun 87)

Stepping Out is a software virtual screen extender. Lets you ★★★★½ create a screen as large as memory allows. 9" screen is a "view" to larger screen. Also has reduction features. Amazing. $95. Berkeley System Design, 1708 Shattuck Ave., Berkeley, CA 94709. NCP (Jun 87)

Switcher is Andy Hertzfeld's contribution to Mac productivity. This ★★★★★ program lets users run several programs at once (up to 8 on a 1-megabyte or larger machine). Switching between the programs is near instantaneous. Requires 512K+. $19.95 from Apple, free from BBSs, included with some third-party applications. Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014. NCP

SuperLaserSpool is a LaserWriter spooler. Very fast because it ★★★★ does conversion to PostScript in the background. $149.95 single user, $395.95 for up to five users on one network. SuperMac Software, 950 N. Rengstorff Ave., Mountain View, CA 94043. NCP

Tempo is a desk accessory that allows most Mac commands to be ★★★★ intelligently recorded and played back. Capabilities include pausing, conditional branching and macros that work between applications. $99. Affinity Micro Systems, 1050 Walnut St., Boulder, CO 80302. NCP (Jul 86)

TMON is *the* debugger for the Mac. This isn't open to question. ★★★★★ *TMON* is simply the best. Comes with the latest version of Darin Adler's Extended User Area. $100. ICOM Simulations, 626 Wheeling Rd., Wheeling, IL 60090. NCP

TurboCharger is a RAM cache utility for 512K and larger. Works on ★★★★★ most hard disks and Mac XLs. Dramatically improves any program you use that heavily accesses the disk, like *MacPaint*. $69.95. Microsystems, PO Box 1249, Capitola, CA 95010. NCP (Jan 87)

TurboDownload is a desk accessory designed specifically to ★★★★½ increase the speed of Xmodem data transfers from national databases to your Mac. Speed increases range upward from 50% to over 300% at 2400 baud. $39.95. Mainstay, 28611B Canwood St., Agoura Hills, CA 91301. NCP

Twelve-C Financial Desk Accessory brings all the power and ★★★★ functionality of a Hewlett-Packard 12C programmable calculator to your desktop. Can be programmed and all registers can be viewed while calculator is running. $39.95. Dreams of the Phoenix, PO Box 10273, Jacksonville, FL 32247. NCP

II in a Mac is a graphically oriented Apple II emulator with unique ★★★ features, such as text and graphics copy from Apple screen to Mac Clipboard. Suffers speed problems associated with

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A Guide to Microsoft Works by Michael L. Sloan.

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PageMaker

Desktop Publishing on the Macintosh by Kevin Strehlo.

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The Complete Guide to Omnis 3 by Donna Mosich.

This book picks up where the user's manual leaves off to help you master Omnis 3 or 3 Plus quickly and easily. Containing four complete database applications, this book begins the first application with a step-by-step tutorial for the beginning user. The three additional database applications cover the more advanced features, such as connected files and sequences, and all are supported by numerous helpful illustrations and examples, 352 pages, $22.95, 18595-8.

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MINIFINDERS

"virtual machine" emulation. $69. Micro-W Distributing, 1342B Route 23, Butler, NJ 07405. CP

TypeNow is a desk accessory that allows the Mac and ImageWriter ★★★★ to function as an electronic typewriter. Type can be placed into blanks in complex forms easily. Typing can be recorded and played back. $39.95. Mainstay, 28611B Canwood St., Agoura Hills, CA 91301. NCP (Jan 86)

LANGUAGES

AAIS Prolog is a fast standard Prolog with excellent debugging ★★★★★ and error handling. Good for serious program development. Documentation is not as good as the program. $150. Advanced AI Systems, PO Box 39-0360, Mountain View, CA 94039-0360. NCP (Mar 87)

Aztec C is a C language that will appeal to users with a UNIX ★★★★ background. It uses many UNIX conventions and in the more expensive versions comes with standard UNIX utilities, including the VI editor. $199 basic system, $299 development system, $499 commercial system. Manx Software Systems, PO Box 55, Shrewsbury, NJ 07701. NCP (May 86)

Basic Compiler is the long awaited compiler for *Microsoft BASIC*. ★★★½ The interface is unfriendly, but it gets the job done. Compiled programs run faster, but you can still tell they are written in BASIC. $199. Microsoft, 16011 NE 36th Way, Redmond, WA 98052. NCP (May 87)

ExperLISP is a very buggy, but still incredibly useful, programming ★★★ language for high-level programmers. The more you use it, the more you'll figure out about it. System crashes are too common for a language this useful and expensive. $495. Requires 512K+. ExperTelligence, 559 San Ysidro Rd., Santa Barbara, CA 93108. CP

ExperLogo is a version of the popular teaching language, Logo. ★★★ Features three-dimensional graphics using "bunnies" rather than usual "turtles." Very speedy, smooth program. Comes with an excellent manual. $149.95. ExperTelligence, 559 San Ysidro Rd., Santa Barbara, CA 93108. CP

ExperProlog II is a Prolog based on the new Prolog II standard. ★★★ Has the ability to handle infinite trees and allows user-defined functions that operate conditionally. Documentation is not the best and Mac interface is nonstandard. $495. ExperTelligence, 559 San Ysidro Blvd., Santa Barbara, CA 33108. NCP (Mar 87)

LAP MacProlog is a flexible program that supports several Prolog ★★ syntaxes, producing a rich programming environment. However, the program's implementation and documentation are both poor. $295. Programming Logic Systems, 31 Crescent Dr., Milford, CT 06460. NCP (Mar 87)

Lightspeed C provides an integrated environment for the develop-★★★★½ment desk accessories, applications and code resources in C. The editor works with the compiler for searches and file management. Can get awkward if you need something outside the environment. $175. Think Technologies, 420 Bedford St., Lexington, MA 02173. NCP (Apr 87)

Lightspeed Pascal is a fast, powerful development system for ★★★★★ Pascal programming. Fully integrated Mac-like environment. Requires 512K+. $125. Think Technologies, 420 Bedford St., Lexington, MA 2173. NCP (Feb 87)

MacAsm is a software development system that allows programs ★★★ to be written in assembly language. Programmers can assemble, edit and test software, and an integrated resource compiler lets independent applications run from their own icons. $125. Mainstay, 28611B Canwood St., Agoura Hills, CA 91301. NCP

Mac C is a good, highly Mac-oriented implementation of this ★★★★ popular development language. Assembler and linker included. $425. Consulair, 140 Campo Dr., Portola Valley, CA 94025. NCP

MacExpress is a development environment or shell. Programmers ★★★ use it to save time and effort when developing standalone applications for the Mac. $195. ALSoft, PO Box 927, Spring, TX 77383. NCP (Feb 86)

MacForth Plus is an excellent implementation of the popular Forth ★★★★ programming language. New, reduced price, $199. Creative Solutions, 4701 Randolph Rd., Rockville, MD 20852. NCP

Mach II is a multitasking implementation of Forth that allows local ★★★★ variables and text files. Can create standalone applications. Several windows can be up with different operations in each, operating concurrently. Execution is fast. $99.95. Requires 512K. Palo Alto Shipping, PO Box 7430, Menlo Park, CA 94026. NCP (Apr 86)

Macintosh 68000 Development System is a fairly traditional ★★★★ assembly language package. The two-disk set provides an editor (*Edit*), an assembler, a linker, an executive and a resource compiler. $195. Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014. NCP

Macintosh Pascal is Apple Computer's version of this very popular ★★★ programming language. Loaded as it is with innovative teaching features, this interpreter is an excellent introduction to Pascal. $125. Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014. CP

MacScheme is a LISP dialect with "artificial intelligence" capabili-★★★ ties. Has a large appetite for RAM. Interpreted language with Toolbox access limited to a small part of QuickDraw. $125. Semantic Microsystems, 4470 S.W. Hall St., Beaverton, OR 97005. NCP (Jun 86)

Megamax C is an easy to use, full version of C. Has a compiler, ★★★★ linker, disassembler, editor and much more. Good for beginners. Excellent documentation. $299.95. Megamax, PO Box 851521, Richardson, TX 75085. NCP

Microsoft BASIC was the Mac's first programming language. This ★★★★ interpreter (it's not a compiler) now supports the Toolbox and the whole Mac interface can be implemented in your programs. For nonprogrammers there are lots of programs available to run. $150. Microsoft, 16011 NE 36th Way, Redmond, WA 98052-6399. NCP

Personal Prolog is an inexpensive and well-documented program. ★★★★ Has no debugging or search and replace facilities, making it a more appropriate tool for learning than development. Documentation and use of Mac interface are excellent. $64.95. Optimized Systems Software, 1221 B Kentwood Ave., San Jose, CA 95129. NCP (Mar 87)

Prolog/m is a solid Prolog following the Edinburgh standard. Has ★★★★ extensive debugging facilities, but you may need separate *Toolbox* disk with 58 additional predicates. Only drawback: no true editing or printing facilities. $99.95. Chalcedony Software, 5580 La Jolla Blvd., La Jolla, CA 92037. NCP (Mar 87)

QUED (Quality Editor for Developers) is the ultimate source ★★★★ code editor. Loaded with useful and well thought out features, it will make any programmer's life much easier. It is not a word processor, however. $65. Paragon Concepts, 4954 Sun Valley Rd., Del Mar, CA 92014. NCP (Mar 86)

TML Database Toolkit is an ISAM type database that provides ★★★★ fast and efficient administration of large data files in applications developed with *TML* compiler. Supports open multiple index files simultaneously. $89.95. TML Systems, PO Box 36126, Melbourne, FL 32936. NCP (Dec 86)

TML (MacLanguage Series) Pascal is a good Pascal compiler, ★★★★★ capable of producing standalone programs. Can use most existing Lisa Pascal programs with only slight modification. Requires 512K. $99.95. TML Systems, PO Box 361626, Melbourne, FL 32936. NCP (Jun 86)

TML Source Code Library shows how to write programs that use ★★★★½ custom definition routines, speech, serial drivers, split bars and other topics. Provided on three 400K diskettes. Requires *TML Pascal*. $79.95. TML Systems, PO Box 361626, Melbourne, FL 32936. NCP (Dec 86)

Visual Interactive Programming is a unique visual programming ★★★★ system for creating simple Macintosh applications. Programs are constructed in a flowchart-type manner. Easy access to most toolbox routines. Poor printing control. $124.95. Mainstay, 5311-B Derry Ave., Agoura Hills, CA 91301. NCP (Jun 87)

MINIFINDERS

ZBasic is a fast, interactive compiler capable of creating stand-
★★★★ alone applications that takes advantage of Mac's unique features and abilities. Includes *Edit*, *RMaker*, and *MacIntalk*. Requires 512K. $89.95. Zedcor, 4500 E. Speedway Blvd., Tucson, AZ 85712. NCP (Dec 86)

EDUCATION

ChipWits is a combination game and teaching tool. Players create
★★★½ programs to maneuver robots through a set of 8 mazes. The programs are written in *ChipWit*'s built-in icon-based programming language (IBOL). $49.95. BrainPower, 24009 Ventura Blvd., Calabasas, CA 91302. NCP

KidsTime is a package of five quality educational programs for
★★★★ children between the ages of 3 and 12. The programs all have adjustable difficulty levels. Some use speech and one is a nice introduction to musical notes. Sparse documentation. $49.95. Great Wave Software, PO Box 5847, Stanford, CA 94305. CP (Oct 86)

MacEdge and **MacEdge II** each contain 8 reading or math drill
★★★ programs for basic skills. Programs follow one of three formats, a bit contrived. Contrivances are design flaws. $49.95 each. Think Educational Software, 16 Market St., Potsdam, NY 13676. CP

MacType offers structured typing instruction. Can teach both
★★★★ standard and Dvorak keyboards. Features include certificates for reaching certain levels. $49.95. Palantir Software, 12777 Jones Rd., Houston, TX 77070. CP

MasterType is proof that learning to type can be fun. In this
★★★ arcade-style action game words descend from four corners towards the center ship; the user must type them correctly. Features 18 skill levels, tracks errors, recommends lessons and provides comparison scores. $49.95. Mindscape, 3444 Dundee Rd., Northbrook, IL 60062. CP

ENTERTAINMENT

A Mind Forever Voyaging is a departure in text adventure games.
★★★★ It has a more extensive vocabulary and a more involved story than most of the genre. The story here is gripping, but there are only a few puzzles to solve. Requires 512K+. $44.95. Infocom, 125 CambridgePark Dr., Cambridge, MA 02140. CP (Apr 86)

Alter Ego simulates the entire lifetime of a fictional character. The
★★★ player's reaction to each multiple-choice event shapes the character's future relationships, job, health, etc. Spectacular the first time you play; after that there are too many similarities to previous characters. $59.95. Activision, PO Box 7287, Mountain View, CA 94039. CP

The Ancient Art of War gives users a chance to refight some
★★★★½famous campaigns on both strategic and tactical levels. Campaigns can also be designed from scratch. Very playable, addicting game. Requires 512K+ Mac. $49.95. Broderbund, 17 Paul Dr., San Rafael, CA 94903. CP (Apr 86)

Archon pits the forces of Light against Dark in a quest to gain
★★★★½control of five Power Points on a checkerboard grid. The shifting cycles of squares' colors keeps the balance of power ever-changing. One or two players. $44.95. Electronic Arts, 2755 Campus Dr., San Mateo, CA 94403. CP

Balance of Power is the world's first computer peacegame. This
★★★★★ simulation allows players to become either the President of the United States or General Secretary of the Soviet Union. Extraordinary artificial intelligence routines and general play make this a classic. $54.95. Mindscape, 3444 Dundee Rd., Northbrook, IL 60022. CP (Prem)

Borrowed Time casts players as detectives who have to solve their
★★★★ own murder — before it happens. This game requires players to think and act like a detective to solve the game. Good sentence parser, sketchy Mac interface. $44.95. Activision, PO Box 7287, Mountain View, CA 94039. CP (May 86)

Bridge 4.0 provides three other players and the cards for a game
★½ of rubber bridge. It's an average (Goren) bidder and a less than good card player. Good if it's the only game in town. Plays slowly since it's written in BASIC. $29.95. Artworx Software, 150 N. Main St. Fairport, NY 14450. CP (Sep 86)

Dark Castle is an outstanding achievement in action games which
★★★★★ integrates RealSound with superb animation and graphics. You'll need better-than-average hand/eye coordination, but it's well worth the effort. Requires 512K+. $39.95. Silicon Beach, PO Box 261430, San Diego, CA 92126. NCP (Apr 87)

Deja Vu: A Nightmare Comes True is a graphic adventure that
★★★★★ breaks new ground. Innovative use of the Mac interface in truly playable and exciting game. A great introduction to graphic adventure games. $49.95. Mindscape, 3444 Dundee Rd., Northbrook, IL 60062. CP (Jan 86)

Dinner at Eight is a useful recipe filing system that includes a
★★★★ collection of recipes from a nationwide sampling of restaurants. Users enter number of diners and program scales recipes accordingly. $59.95. Rubicon, 6300 La Calma Dr., Austin, TX 78752. CP (Jan 86)

Enchanted Scepters is a surround sound graphic adventure
★★★★ game. It has a limited vocabulary and virtually no story. Offers extensive and varied scenes and utilizes the Mac interface to the fullest. $39.95. Silicon Beach, PO Box 261430, San Diego, CA 92126. CP (May 86)

Flight Simulator puts you at the controls of a small plane (prop or
★★★★ jet) and lets you roam North America. As difficult as real flying. Mac version has features not found on earlier versions, including spotter aircraft. Not all features available on 128K. $49.95. Microsoft, 16011 NE 36th Way, Redmond, WA 98052. CP (Nov 86)

Fokker Triplane is about as near to flying as you can get seated in
★★★★ front of a computer. Very realistic simulation and excellent graphics. Well designed and implemented. $59.95. Bullseye Software, PO Drawer 7900, Incline Village, NV 89450. CP (Feb 86)

Gato puts players in command of an American submarine in World
★★★★½War II. This superb simulation game uses all of the Mac's graphic capabilities to really make you feel that "you are there." $49.95. Spectrum HoloByte, 1050 Walnut St., Boulder, CO 80302. CP (Nov 85)

Grand Slam is an absorbing and realistic tennis simulation game.
★★★★ Practice or play tournament against Mac-controlled players with different styles and abilities on four different surfaces. 512K or Mac Plus. $49.95. Infinity Software, 1331 61st St., Emeryville, CA 94608. CP (Nov 86)

HardBall is a baseball simulation game complete with umpire's
★★★★ calls and crowd sounds. Great graphics and a lot of fun for fans. $44.95. Accolade, 20833 Stevens Creek Blvd., Cupertino, CA 95014. CP (Feb 87)

Hollywood Hijinx substitutes a modern Hollywood estate for the
★★★★ famous Underground Empire, but otherwise represents a return to *Zork* gameplay and feel. There's even a maze to navigate. Simplistic, but good, "finely wrought and goodhearted game." $39.95. Infocom, 125 CambridgePark Dr., Cambridge, MA 02140. CP (Jun 87)

Leather Goddesses of Phobos is another in the long line of witty
★★★★★ and entertaining Infocom text adventures. This one lets you choose your sex and comes with a 3D comic and a scratch 'n' sniff card. It has three levels of play: tame, suggestive and lewd. $39.95. Infocom, 125 CambridgePark Dr., Cambridge, MA 02140. NCP (Feb 87)

Lode Runner is a 150-screen action-strategy challenge. Move
★★★★ around a grid of ladders and platforms collecting treasure; dig a hole to trap pursuers. Build your own challenges. $39.95. Broderbund, 17 Paul Dr., San Rafael, CA 94903. CP

MacCourses adds four very challenging new courses to *MacGolf*.
★★★½ Courses are swapped on the original *MacGolf* master disk two at a time. Nice add-on for a good game. Requires *MacGolf*. $34.95. Practical Computer Applications, 1305 Jefferson Hwy, Champlin, MN 55316. CP (Apr 87)

MacGolf is a dynamic simulation of real golf. Players have a
★★★★½choice of courses and difficulty levels. Superb playability makes this a must for all golfers and gamers. Requires

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512K+. $59.95. Practical Computer Applications, 1305 Jefferson Highway, Champlin, MN 55316. CP (May 86)

Mac Pro Football is a terrific sports simulation that gives you the ★★★★ chance to pit any combination of 38 Super Bowl teams against each other and direct team play. It comes with excellent, detailed (and necessary) documentation. Play selection can get a bit Byzantine. $49.95. Avalon Hill, 4517 Harford Rd., Baltimore, MD 21214. CP (Mar 87)

Make Millions is a fascinating business simulation in which the ★★★★★ player competes against the computer to take control of five companies, then run them profitably. Appeals to the closet capitalist in all of us. $49.95. Scarborough Systems, 55 South Broadway, Tarrytown, NY 10591. CP

MazeWars+ is an interactive, multiplayer game to be played on ★★★★ AppleTalk or through a modem link. Chase opponents through a four level maze. Requires 512K+, AppleTalk or Hayes compatible modem. $49.95. MacroMind, 1029 W. Wolfram, Chicago, IL 60657. NCP (Nov 86)

Mind Over Mac features five games. Entertainment for the whole ★★★★ family. Good graphics paired with synthesized sound and on-screen help. $49.95. Think Educational Software, 16 Market St., Potsdam, NY 13676. CP (Feb 86)

MoonMist is Infocom's latest introductory level text adventure ★★★ game. This is a typical haunted English castle story, not quite up to Infocom's best. It has four versions, so it's good for more then one play. $38.95. Infocom, 125 Cambridge-Park Br., Cambridge, MA 02140. NCP (May 87)

NewGammon is animated backgammon that will challenge even ★★★★ good players. Features include variable skill levels and strategies and options to play the Mac or watch the Mac play itself. An arcade-like high speed mode is included. $39.95. Newsoft, PO Box 3046, Newport Beach, CA 92663. CP

NFL Challenge simulates coaching and watching professional ★★★½ football. Comes on two disks, one with program and system, the other statistical data. Play against either human or computer coaching. Plays are selected from pre-defined playbooks. $99.95. XOR Corp., 5421 Opportunity Ct., Minnetonka, MN 55343. NCP (Jun 87)

Orbiter puts a real space shuttle on the Mac screen. A multitude of ★★★★½ controls, intelligent on-board computer with speech capabilities, real-time graphics and 16 distinct missions help this program succeed as both a game and a simulation. $49.95. Spectrum HoloByte, 1050 Walnut St., Boulder, CO 80302. NCP (Jul 86)

Orbquest is a fantasy role-playing adventure with better-than-★★★½ average puzzles and an excellent sense of humor. Not as sophisticated as some, but a good value. $49.95. QWare, PO Box 850415, Richardson, TX 75085. CP (Dec 86)

Patton vs. Rommel is traditional-style strategic wargame. It ★★★★ covers events in Normandy in 1944. While complex, it's well designed and very playable. $39.95. Electronic Arts, 1820 Gateway Dr., San Mateo, CA 94404. CP (Apr 87)

The Pawn is an unusual British interactive adventure game with ★★★½ text and graphics. The unique interface has some drawbacks, but *The Pawn* has humor, social satire, is entertaining and is challenging. $44.95. Requires a Mac+. Firebird, PO Box 49, Ramsey, NJ 07446. CP (Mar 87)

Pinball Construction Set lets users create their own pinball ★★★★ games, as elaborate or as easy as desired. Uses *MacPaint* for backgrounds and has lifelike sounds (on 512K+ Macs). $40. Electronic Arts, 2755 Campus Dr., San Mateo, CA 94403. CP (Jan 86)

Puppy Love is a combined game and teaching tool. As you teach ★★★★½ your puppy tricks and routines, you learn the basics of programming logic. Great fun for all ages. Does not run from a hard disk. $19.95. Addison-Wesley, Reading, MA 01867. CP (Mar 87)

Real Poker is five-card draw against five other players with Old ★★★★½ West names, distinct personalities and playing styles, in a saloon setting. Dealing and play are very fast. Game evaluates your hand. $39.95. Henderson Associates, 980 Henderson Ave., Sunnyvale, CA 94086. CP

Seven Cities of Gold is an educational program masquerading as ★★★★ an adventure game; and is practically unique in being equally good in both respects. You are to land (not the easiest part) in the New World and attempt to placate the natives, seed a few missions and collect gold. Nice work if you can get it. $39.95. Electronic Arts, 2755 Campus Dr., San Mateo, CA 94403. CP (Jun 87)

Shanghai challenges players to clear a board of all 144 tiles, by ★★★★★ matching pairs of mah-jongg tiles and removing them. Terrific strategic options plus the ability to randomly generate new game boards keep this one fresh. $44.95. Activision, PO Box 7287, Mountain View, CA 94039. CP (Oct 86)

Skyfox is a sophisticated 3D shoot-em-up. You're fighting tanks, ★★★ planes, and enemy cities floating in the sky. Fast graphics, good sound, slick, on-board attack computer and many levels of difficulty will keep fans of this genre happy for hours. $39.95. Electronic Arts, 2755 Campus Dr., San Mateo, CA 94403. CP (Oct 86)

Smash Hit Racquetball is an accurate and entertaining simula-★★★★½ tion of a day on the courts. Digitized sound adds to the realism. Includes a hard disk install, unusual for a game. The low price makes this the perfect Mac gift. $19.95. Primera Software, 33 Norwood Ave., Kensington, CA 94707. CP (Dec 86)

Strategic Conquest is large scale, strategic conflict on the Mac. ★★★★ This very involved war game will be enjoyed by those who like this genre. $49.95. PBI Software, 111 Triton Dr., Foster City, CA 94404. CP (Dec 85)

Tass Times In Tone Town is a slightly off-the-wall graphic ★★★½ adventure in which you need a flashy hairdo and a jumpsuit before you can get anywhere, and you pay for things with guitar picks. Decent puzzles, with a sense of humor. $39.95. Activision, 2350 Bayshore Pkwy, Mountain View, CA 94043. CP (Jan 87)

The Toy Shop is a construction kit for building 20 different working ★★★★ model toys. Some parts can be customized. Manual gives clear instructions, but many toys are too complex for a child to build. $64.95. Broderbund, 17 Paul Dr., San Rafael, CA 94903. CP (Nov 86)

Ultima III allows up to four characters to cooperate to explore the ★★★★½ vast wilderness of Sosaria. $59.95. Origin Systems, 340 Harvey Rd., Manchester, NH 03103. CP

Uninvited is an icon-based adventure game set in an extremely ★★★★★ haunted mansion. Since you access the parser by double-clicking, command choices are always visible — you don't waste time trying to figure out which words the program understands. It has animation and sound. $49.95. Mindscape, 3444 Dundee, Northbrook, IL 60062. CP (Sep 86)

Winter Games lets up to eight players compete against each other ★★★★ in Olympic events including figure skating, bobsledding, biathlon and ski-jumping. Excellent animation, good graphics, good theme music. $39. Epyx, 1043 Kiel Ct., Sunnyvale, CA 94089. CP (Mar 86)

Wizardry is an outstanding dungeon exploration adventure pitting ★★★★★ a party of up to six characters against the guardian monsters of the evil wizard Werdna. Capture his amulet to earn your reward. Even after solving the game, you'll want to go back into the dungeon. $59.95. Sir-Tech, 6 Main St., Ogdensburg, NY 13669. CP

WordPlay is a word game with over 50 crossword puzzles for ★★★★ different levels of expertise. User friendly, it offers on-screen Help menus. A Work mode allows development of new puzzles for the creative. $49.95. Palantir, 12777 Jones Rd., Houston, TX 77070. NCP (Mar 86)

World Builder is an adventure game construction set with what ★★★★½ amounts to its own programming language. The whole program (language including) is easy to learn and produces commercial quality games. No support for the programming language, though. $79.95. Silicon Beach Software, PO Box 261430, San Diego, CA 92126. NCP (Apr 87)

Xyphus is a role-playing game pitting four characters (fighters or ★★★★ wizards) against multiple scenarios that grow increasingly

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Your Personal Poet creates personalized greeting cards on the ★★★½ Mac. Comes complete with four greeting cards and matching envelopes. Does not run when connected to a LaserWriter. Requires 512K+. $9.95. Door Openers, 775 Greg St., Sparks, NV 89431. NCP (Jun 87)

Zork II is where the adventure continues in the underground ★★★★½ empire. A wandering wizard keeps things interesting, though there's a way to beat him if you persevere. $44.95. Infocom, 125 CambridgePark Dr., Cambridge, MA 02140. CP

Zork III is the final chapter in the trilogy. Players come up against ★★★ the ultimate enemy — the Dungeonmaster himself. More closed-ended than previous *Zorks*. $44.95. Infocom, 125 CambridgePark Dr., Cambridge, MA 02140. CP

MUSIC

ConcertWare+ is an enhanced version of *ConcertWare*. Has ★★★★½ different instruments and can use any four of a set of eight at any point in a piece. Can read and use *ConcertWare* and *MusicWorks* files. $69.95. Great Wave Software, PO Box 5847, Stanford, CA 94305. NCP (Nov 85)

Listen is an educational tool for ear training. It has both a piano ★★★★ keyboard and a guitar fretboard for the student to input notes, and offers a wide range of exercises. It also produces some beautiful sounds. $69. Imaja, PO Box 638, Middletown, CT 06457. CP (Jan 87)

Music Mouse is a music program in a genre all its own. Called an ★★★★★ "intelligent instrument", *Music Mouse* gives you instant musical feedback as you move the mouse and type on the keyboard, which controls tempo, vibrato, volume, etc. $59.95. OpCode Systems, 444 Ramona St., Palo Alto, CA 94301. NCP (May 87)

Performer is a strong contender for the high-end of the MIDI ★★★★ sequencer market. Only those experienced with MIDI should get this. Files can be transported to *Professional Composer* for editing. No direct track or segment looping. $295. Mark of the Unicorn, 222 Third St., Cambridge, MA 02142. CP

Professional Composer is aimed at music professionals. Pro- ★★★ duces performance-quality sheet music; has only limited playback facilities. $495. Mark of the Unicorn, 222 Third St., Cambridge, MA 02142. CP (Prem)

Studio Session consists of two programs, Editor and a Player, ★★★★½ that produce music with six voices of digitized sound. Excellent program plus good manual make this a good buy. $89.95. Impulse, 6860 Shingle Creek Pkwy, Minneapolis, MN 55430. CP (Dec 86)

HARDWARE & ACCESSORIES

DASCH is an external RAMdisk available in half, 1 and 2M sizes. ★★★ Connects to a serial port. Speeds up operations 200 to 300%. Can be used as a printer buffer. Works with all Macs. 512K, $395; 1M, $450; 2M, $545. Western Automation Laboratories, PO Box 3438, Boulder, CO 80307. (Feb 87)

Data Frame 40XP is a very fast, very quiet 40-meg external SCSI ★★★★ hard drive. Comes with a good and complete set of utility software. About as fast as a SCSI drive can be. Requires SCSI port, 512K+, new ROM. $1995. SuperMac Technology, 950 N. Rengstorff Ave., Mountain View, CA 94043.

Ergotron is a Mac (and external drive) holder that allows a full ★★★★ range of swiveling and tilting. Very strong, this well made unit is also very easy to use. $99.95. Ergotron, PO Box 17013, Minneapolis, MN 55417.

FX-20 is a good 20-meg external hard drive. Good utility software. ★★★★ Reliable, and reasonably quiet. Sits next to Mac, has a large, oddly shaped case. Requires SCSI port, 512K+, new ROM. $1199. General Computer, 215 First St., Cambridge, MA 02142. (Feb 87)

Hard Disk 20SC is Apple's 20-meg SCSI hard disk. Reliable, fairly ★★★★ noisy unit. Good utility software, but no backup yet. Requires cable and terminator ($80). Requires SCSI port, 512K+, new ROM. $1299. Apple Computers, 20525 Mariani Ave., Cupertino, CA 95014. (Feb 87)

MacBottom HD21 is a very low (about 2 inches high), external 20- ★★★★★ meg hard drive. Fits under the Mac. Very quiet, very reliable. Good utility software, including *HFS Backup*. Requires SCSI port, 512K+, new ROM. $1195. PCPC, 6204 Benjamin Rd., Tampa, FL 33614. (Feb 87)

MacCharlie's components slip around the Mac and convert it into ★★★★ an IBM PC clone. Amazingly, it works well. The enlarged keyboard has a few bugs but is a joy to use. $995. Dayna Communications, 50 S. Main St., Salt Lake City, UT 84144. (Dec 85)

MacIntizer is a graphics tablet and absolute positioning device ★★★★ that replaces the mouse. Various scales are possible. $599. GTCO Corp., 7125 Riverwood Dr., Columbia, MD 21046.

MacNifty Sound Digitizer turns ordinary analog sound input into ★★★★½ digital waveforms which can then be manipulated using the *SoundCap* software it comes with. Capable of truly stunning effects. Requires 512K+. $129.95. Impulse, 6860 Shingle Creek Pkwy., Minneapolis, MN 55445.

MacNifty Switch allows any port on your Mac to connect to two ★★★★ peripherals. Turn the knob to switch between the two devices. $34.95. Impulse, 6860 Shingle Creek Pkwy., Minneapolis, MN 55445.

MacSnap Plus 2 is a 2M memory upgrade for the Mac Plus. The ★★★★ board has 256 kilobit chips. User installable. Not compatible with existing big screens or internal hard disks, and can't be expanded further. $399. Dove Computer Corp., 1200 North 23rd St., Wilmington, NC 28405. (Jun 87)

MacTablet is a stylus-driven graphics tablet. Users can easily ★★★★ sketch or trace art using this absolute-positioning device. Has a working area the size of the Mac screen. Allows concurrent use of the mouse. $495. Summagraphics Corp., 777 State St. Extension, Fairfield, CT 06430. (Jan 86)

MacVision is a digitizer that uses an ordinary video camera for ★★★★ input. Capable of extremely fine results and special effects. Easy to use and well documented. $399.95. Koala, 3100 Patrick Henry Dr., Santa Clara, CA 95052.

Magic Digitizer is a hardware digitizer that works with video ★★★★ cameras. With *LaserMagic* software you can generate 300 dpi images (in PostScript). Requires 512K+. Digitizer with *Magic* software, $399.95; *LaserMagic* software, $49.95. New Image Technology, 10300 Greenbelt Rd., Seabrook, MD 20706. NCP (May 87)

Mouse Mover is a mouse pad-type surface that snaps on to the ★★★★½ bottom of the mouse like a roller skate, freeing it up to glide over desk or mouse pad with ease. 99 tiny ball bearings at three strategic points. Mouse glides faster and saves on mouse wear and tear. $19.95. Magnum Software, 21115 Devonshire St., Chatsworth, CA 91311.

Moustrak is a fabric covered foam mousing pad. It will increase ★★★★ the efficiency of your mouse while helping to keep it clean. Pad comes in a variety of colors. Particularly useful in the typical office desk top environment. $10. Moustrak, 3047 St. Helena Hwy., St. Helena, CA 94574.

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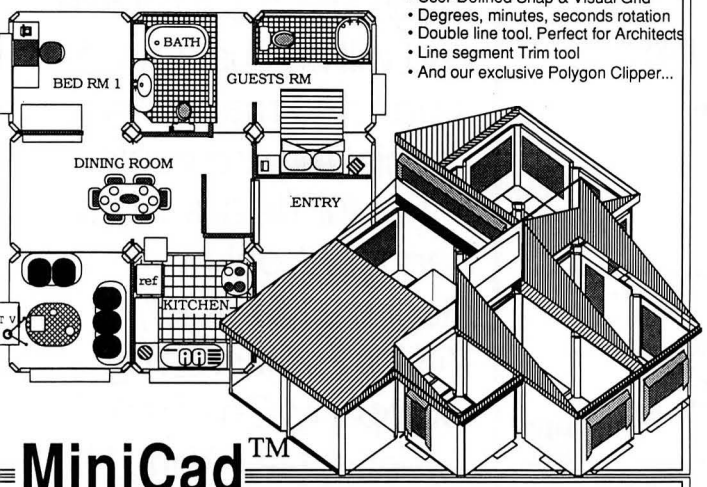

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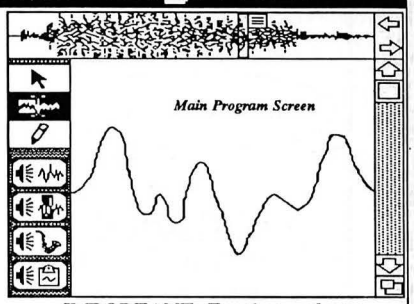

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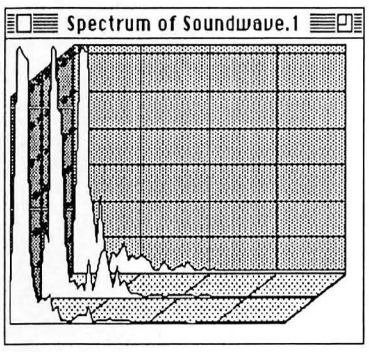

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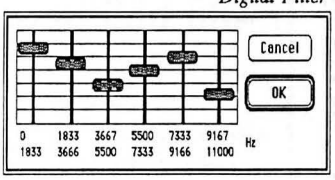

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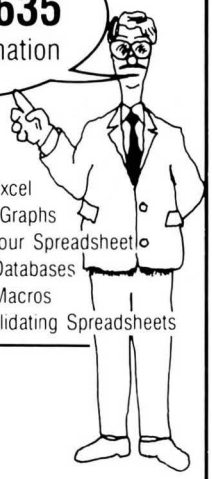

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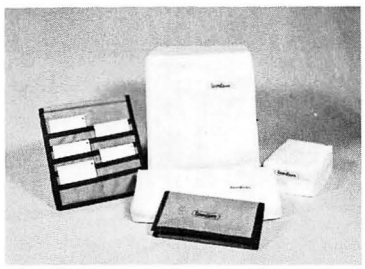

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On The Flying Trapeze

(continued from page 79)

good descriptions of the built-in functions, it is not always that useful as a reference.

If you are a heavy spreadsheet user, *Trapeze* takes a lot of getting used to, and just plain doesn't do some things that other spreadsheets do. There is no macro capability, for example, so although the built-in function list is impressive, you cannot add your own. Linking worksheets requires that they all be open (opening a single worksheet of a linked set will generate a lot of NAs — it doesn't store the most recent value the way *Excel* does). Formulas work on blocks, so if you have worksheets with formulas going across and down at the same time, you either have to use single cell blocks or use complicated extraction functions (XBLOCK(1,2,1,1,Revenue) is not exactly intuitive). The charting capability of *Trapeze* doesn't offer the kind of flexibility that *Excel* does, although for simple charts you may find it adequate.

The major problem most users will have with *Trapeze* is importing and exporting data from and to other spreadsheets. Importing into *Trapeze* means pasting, and exporting means copying. *Trapeze* can neither read nor write any other spreadsheet format. Pasting into *Trapeze* puts everything into one block (and needless to say the formulas don't come along), which means a lot of work breaking it all down into smaller blocks. Copying from *Trapeze* is sensitive to the order in which the blocks were selected, and it is difficult to get all the rows and columns (especially of scattered and variously shaped blocks) to come out right when pasted into something like *Excel*. This means that most copying and pasting between *Trapeze* and other spreadsheets is best done in small pieces (perhaps under *Switcher*), making for cumbersome movement of data.

There are other problems with *Trapeze* as well, but Data Tailor (the publisher) has announced that it is working on them, and they have already supplied two free upgrades (1.0d and 1.0e) with bug fixes to registered users. A major problem is the lack of Undo on most operations. And even after the upgrades, there are still minor bugs (while many have been eliminated), although when a fatal error occurs you are just notified and returned to the *Finder* rather than faced with a bomb dialog.

SO IS IT FOR ME?

Depending on what you need to accomplish, *Trapeze* could be exactly what you've been looking for, or it could be completely inappropriate. Consider the problem you're faced with, then choose the tool best suited for dealing with it. Sometimes a standard spreadsheet like *Excel* will be more suitable, other times *Trapeze* could solve the problem better.

If you've never used a spreadsheet before and are used to object-oriented programs like *MacDraw, Trapeze* could be just what you've been looking for. If you need matrix manipulation ability, *Trapeze* could be your ticket. If what a spreadsheet looks like is more important to you than how easy it is to use, *Trapeze* could be for you.

But if you're a frequent spreadsheet user looking for a single spreadsheet to fill all of your needs, *Excel* would be a better choice. And if you need macros, *Trapeze* is definitely not for you.

ROBERT R. WIGGINS IS THE CONTRIBUTING BUSINESS EDITOR OF *MACUSER*.

Trapeze

Overall Rating	★★½
Follows Mac Interface	★★★★★
Printed Documentation	★★★★
On-Screen Help	★★★★
Performance	★★★★
Support	★★★★★
Consumer Value	★★★★

Comments: An unwieldy spreadsheet that can produce beautiful output. **Best Feature:** Page layout capabilities. **Worst Feature:** Inability to import or export other types of files. **List Price:** $295. Published by Data Tailor, Inc., 1300 S. University Drive, Fort Worth, TX 76107. (817) 332-6836. HFS compatible. Requires 512K+. Version 1.0e reviewed. Not copy protected.

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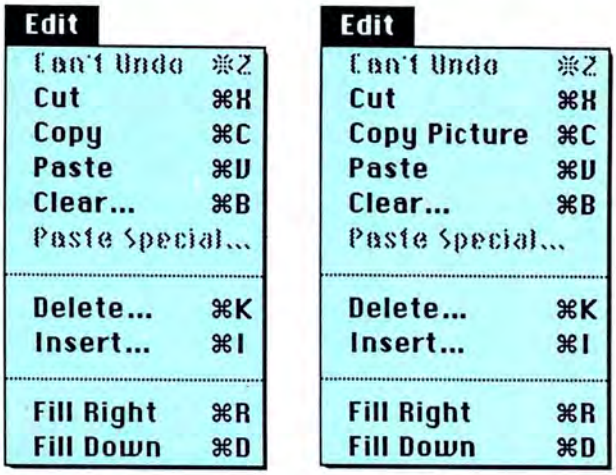

Edit menu transformed: Holding the Shift key while selecting the Edit menu converts the COPY command to COPY PICTURE, simplifying the process of moving *Excel*'s graphics to painting and drawing programs.

(continued from page 85)

NAME) is a goto. Once MACRO.NAME starts execution, *Excel* forgets about the state of the macro that originated the process. The statement MACRO.NAME() is a call. Macro execution would temporarily detour to the subroutine macro, then return to the location of the statement that called it. In effect, a call serves to graft the subroutine into the middle of the originating macro.

The simplest way to record a macro is to select an empty cell in your macro sheet with no statements beneath it. Choose SET RECORDER, and start recording whenever you're ready. As you record your macro, remember that Relative Record remembers *offsets* to the active cell as you click and drag, while Absolute Record remembers *exact locations*. You can shift between record types on the fly as needed. You can even stop and start recording without going back to the macro sheet to set a new record range.

Once you've recorded everything you can record, you're ready to step into the wonderful world of nonrecordable macros. There are at least three types of nonrecordable macro statements: interactive, special action and function macros.

Interactive macro statements take the form of STATEMENT?({DEFAULT}). Not all interactive statements will properly use the default format contained in the parentheses, but it's worth a try.

Other types of interactive instruction take the forms of the INPUT statement, ALERT boxes and MESSAGE instructions. It's very useful to know that the cell of the macro sheet containing the INPUT statement contains the value that the user entered, and evaluates to false if the user cancels. Assuming you placed your INPUT statement in cell B16, for example, you can use the statement =IF(NOT(B16),HALT()) as a means of preventing the input macro from running amok.

Alert boxes with cancel buttons also evaluate to false when canceled. If you use a lot of MESSAGEs, you might consider using =MESSAGE(TRUE,"") instead of =MESSAGE(FALSE), since the message line causes the windows to be pushed down. Of course, this is primarily a cosmetic consideration.

My favorite macro commands are the special function statements, because they extend the macro language far beyond the realm of a mere keystroke parrot. These commands include BEEP, CELL.PROTECTION, ECHO, ERROR, HALT, INPUT, MESSAGE, OFFSET, OPEN, SET.NAME, SET.VALUE, and STEP.

While it is true that you can record an OPEN statement, you can only write the command =OPEN(DOCUMENT,FALSE). This instruction causes *Excel* to open the document, but bypass the "Update references to non-resident worksheets" dialog. Unfortunately, it also turns off the loading progress indicator.

Normally, *Excel* politely informs you when and where errors occur as macros are executing. You are then presented with the options of stopping, stepping or continuing. The ERROR command adds the options of ignoring errors totally, or switching execution to a different macro altogether.

SET.NAME is a very interesting function, because it assigns a value to a range name that has no cell reference. You can't see the value of NAME until you paste it into a cell or perform some calculation with it. SET.NAME is best used for gizmos like loop counters, but it is a useful function.

AT THE FINAL CELL

Here's a final interesting nonmacro feature of *Excel*. You can open text-only documents as spreadsheets, if you follow one simple rule: Cells are separated right-to-left by tabs, and rows are designated by carriage returns.

Text formatted in such fashion can be copied from a DA, then pasted into a worksheet with the same result. If you've ever wanted to jot something down for entry into a spreadsheet later, try this one with *MockWrite*, *Notepad+*, or other text-processor DA.

At this point, we've covered more than the basics of *Excel*'s secrets, but there is a lot more. For example, worksheet functions can be used in macro commands to create extremely powerful statements. Macros have been devised to give the full effect of data base entry screens! There are a number of schemes for creating menus in *Excel*, including menus that respond to point-and-click responses from the user. And we haven't even touched upon function macros.

I hope that this tour through *Excel*'s secrets has whetted your appetite to try new and different techniques. I know that writing it has given me a few new ideas.

LOUIS BENJAMIN, AUTHOR OF *THE COMPLETE BOOK OF EXCEL MACROS*, IS A BROOKLYN, NEW YORK-BASED SOFTWARE DEVELOPER SPECIALIZING IN *EXCEL* AND *OMNIS 3* BUSINESS APPLICATIONS.

The V.I.P. Treatment

(continued from page 138)

tivities. Nope. Examining the generated code shows that the program consists mostly of calls to *V.I.P.* to C library routines, generally in a one-to-one relation with the Toolbox calls of the original *V.I.P.* program. All the special operating system related functions are still out of reach.)

The bottom three icons on the Toolbox palette have question marks in them. These are uncommitted categories of Toolbox routines, for add-on modules that can be purchased at a later time. Mainstay sent beta versions of three additional Toolbox libraries (called external procedure set packages); *MacInTalk,* ISAM data base and Grid Manager. These external procedure sets install very easily and are used just like the normal *V.I.P.* procedures.

The *MacInTalk* manager is a very straightforward interface to the *MacInTalk* speech driver. In 45 minutes I created a program that would read an ASCII text file and speak the contents through the speaker.

The data base package is a sophisticated set of routines that allow you to create and use data bases with indexes. The Grid Manager is an extended version of Apple's List Manager. You can create lists of data and scroll through them or access them in various ways. Mainstay created the skeleton of a spreadsheet program with these routines. Another use would be to create a list of items for a user to select elements from, in the same way that the Mac presents a list of files for the user to open.

Mainstay has promised more external procedure sets, including a multi-user data base and matrix management.

MINUSES

No program is perfect, and *V.I.P.* is no exception. I discovered several things that I don't like and wish that Mainstay had done differently.

As mentioned above, there is no direct way for *V.I.P.* to print out a graphics listing of the program: printing generally seems to be a weak point. Your program can perform printing operations in only one way: by dumping the contents of a window to a printer. Another obnoxious printing misfeature is that *V.I.P.* puts the date on the program's printed output, and you can't turn it off.

V.I.P.'s support for character strings also feels weak. You get a fair collection of Toolbox operations that work on strings, but there is no "string" type variable. Instead, you have to define an array of bytes to hold a string. This means that you always run the risk of running past the end of your array with too long a string. A dynamically allocated class of variables for strings would have been better.

Also related to strings, there is no easy way to display the contents of strings so the user can edit them. *V.I.P.* has a variety of window called "text only," but about the only thing you can do with it is make it into a little text editor (you can type in it, edit it, print it and save/load it to the disk). *V.I.P.* doesn't supply an easy way for the program to access text being typed to the window. The program can send text to the window, but it will appear at the insertion point (replacing any selected text), and there is no way to move the insertion point.

There is an annoying difficulty with the variable definition box. If the object that occurs first in the box has dimensions and you type in a new variable name, you have to explicitly clear the dimension box. If you don't, you will accidentally give the same dimensions to your new variable.

Referencing variables is the subject of another problem. In some circumstances, including defining arguments to be passed to a subroutine, the type of a variable (real, integer, whatever) is defined by *number;* i.e., 1 = byte, 2 = integer, etc. *V.I.P.* should have used radio buttons, at least.

Opening a box that is near the edge of the editor window can result in part of the box vanishing past the window boundary. The editor should really autoscroll to show the complete box. (Mainstay says they will try to fix this in version 2.1.)

The manual mentions the way to access Apple-supplied fonts, but there is no apparent way to get to other fonts.

Having multiple debugging windows open along with your program's windows can really crowd the Mac's small screen. This isn't *V.I.P.*'s fault, though. *V.I.P.* works fine with large add-on screens.

V.I.P. is a pretty good programming language for the general class of Macintosh applications, with sufficient flexibility to produce nearly any general program you could want. It is also an excellent prototyping tool. It is *not* the tool to use to write more esoteric Macintosh software, like desk accessories.

What makes *V.I.P.* extraordinary is the smooth integration of the flowchart idea into the programming process. Once you have an idea of what you are creating, the programs nearly write themselves. Structured programming techniques are effortless and nearly painless.

The Mac has been called the hardest computer to write programs for. *V.I.P.* makes Macintosh programming available to "the rest of us." If you want to program the Mac, *V.I.P.* deserves serious consideration.

PHIL REED IS A MICROCOMPUTER TECHNICAL SUPPORT ANALYST. HE LIVES IN LEXINGTON, KY WITH HIS WIFE, TWO CATS AND FOUR COMPUTERS.

Visual Interactive Programming

Overall Rating	★★★★
Follows Mac Interface	★★★★
Printed Documentation	★★★
On-screen Help	None
Performance	★★★★
Support	★★★★
Consumer Value	★★★★

Comment: A programming system that uses a flowchart graphic language. **Best Features:** Graphic-oriented language is very easy to write. Many parts of the Mac Toolbox are automatically handled. **Worst Feature:** Fine control of application behavior is not possible. **List Price:** $124.95. Published by Mainstay, 5311-B Derry Ave., Agoura Hills, CA 91301, (818) 991-6540. Version 2.0 reviewed. Not copy protected.

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by John C. Dvorak

The Dvorak Wave Theory

This year marks the 10th anniversary of the Boston Computer Society. Last February, at the anniversary meeting, a group of distinguished pundits were brought together by *PC Magazine*'s West Coast editor Stewart Alsop. The task: predict the future. Predict what life in microcomputerdom will be like a decade from now. The panel consisted of myself, Jim Seymour of *PC Magazine*, Stu, Jerry Pournelle of *Byte* and Michelle Preston of Salomon Brothers.

Michelle Preston, grand microcomputer poobah for Salomon, had little to say except that the Tandy Corporation would somehow rule the world and dominate the PC market forevermore starting sometime between now and 1997. Funny thing. I heard the same prediction in 1983. Then it was spouted by the Yankee Group (a pure research firm) trying to predict what 1984 would be like. I don't know what free booze Tandy is giving to these people, but I suppose I might be willing to say the same thing, if enough case lots of Hennessy Paradis were shipped to the house. It won't make any difference, though, her prediction isn't going to happen. Tandy dropped the ball a few years ago and will probably drop it again.

Columnist Jim Seymour of *PC Magazine* and Stewart Alsop both predicted that Apple will be more or less entrenched in the corporate world by 1997. Who cares? Jerry Pournelle of *Byte* was more into the concept of cheap information for the masses, and he reiterated his long-standing bet that all the world's knowledge will be available to everyone by the turn of the century. He likes to say, "You'll be able to get the answer to any question you can think of, assuming it's answerable."

After listening to these pedestrian predictions and intriguing generalities, it was obvious that specific predictions were needed. It was a good thing I was there (he said, smugly). I decided that instead of philosophizing about the future I would extrapolate destiny based on the fact that we are observing an obvious and perpetual 10-year cycle in the personal computer industry with harmonic off-center overtones created by Apple, Commodore and Atari. Once you see this cycle, it's a snap to predict the future. Since I discovered the cycle I will name it after myself: The Dvorak 10-Year Wave Theory.

The cycle is keyed by the Intel or 8080/8088/80286/80XXX chips. This is only natural because Intel created the microprocessor. In large part, the 10-year wave is related to the semiconductor design cycle. The high and low part of the 10-year sine wave is marked by 5 years of chaos and 5 years of single source dominance. In the first iteration this showed itself as 5 years of chaotic CP/M computing followed by 5 years of IBM dominance. Now we are entering another 5 years of chaos.

Apple meanwhile plays off this primary cycle. It brings out a series of products that are largely a reaction to the cycle hoping to become the top player. Arrogance or blundering always interferes

with the possibility of success. Tandy does well during the chaotic periods and should do well in the next few years (no, the booze didn't just arrive). Commodore and Atari play against each other and try to compete with Apple.

With some of this in mind, let's predict 1997. The dominant chips will be the 80786 and the 68090. IBM will have passed through another five years of glory, but will show its lack of creativity as clones of its PCZ and PCZ-AT fade and fall prey to cheap clones from the Chinese mainland. 80786 prototypes are shown using a high speed 80287 math coprocessor.

Commodore will release the new Commodore 2M machine. It will contain two megabytes of main memory and use a 6502 chip with some form of memory management added. It will sell at Toys 'B We, the newly reorganized and somewhat ethnocized Toys 'R Us chain.

Atari will announce its Atari 10240 ST. It will cost $299 and be sold without a disk drive. That will be an extra $199. Some newcomer named Jody Tramiel will be the CEO.

I have no idea what Tandy will be doing, and neither will they.

NeXT president, H. Ross Perot will show the NeXT Killer II computer, while Chairman Steve Jobs begins to say bad things about Perot to select female news reporters. Jobs is ousted by year end. Somehow he goes bald from a nervous condition.

Apple will have just announced the Apple II-GSXZ. It will supposedly be compatible with the old Apple II, IIC, IIGS, IIGSX and all the rest and, as usual, it won't be. A couple of years earlier it showed the II-CGS, and a few people bought them. Meanwhile, it announced a failed Apple IV, a lackluster Mac III and Mac IV in hopes of improving its highly successful Mac IICS Hi-Res first shown back in 1995. In 1997, still prexy John Sculley makes a bold move to consolidate the Apple line with the following machine:

It will look like a Mac II/III/IV, which is to say it will look like an IBM PCZ. It will be Mac IV compatible and will sport a 68080 with a math coprocessor. Capable of full color and 1032 X 856 resolution for reasons unknown, it will have two special so-called emulation slots. For more than the cost of another machine you can buy add-in cards that will allow this new machine to fully emulate the Apple IIGSXZ, Commodore 2M, Atari 10240ST or the IBM PCZ. None of the cards will ever be made to work correctly, and all will require the users to find some way to move their data from those other machines to the variable speed disk drives employed by Apple.

The machine will retail for $3895 and the cards for the various emulations will cost about $1700 each, which will include on-board dedicated memory and I/O ports. At that price, each card will cost from between $200 to $800 more than if you bought the real thing.

Users will soon discover that they can't access the hard disk of the machine while in emulation mode, but since nobody will buy the emulation cards — except Fortune 100 companies who will buy them to assuage some MIS guy — and will never use the cards anyway, nobody will complain much.

The machine will be called the Sculley I. And that's 1997 in a nutshell.

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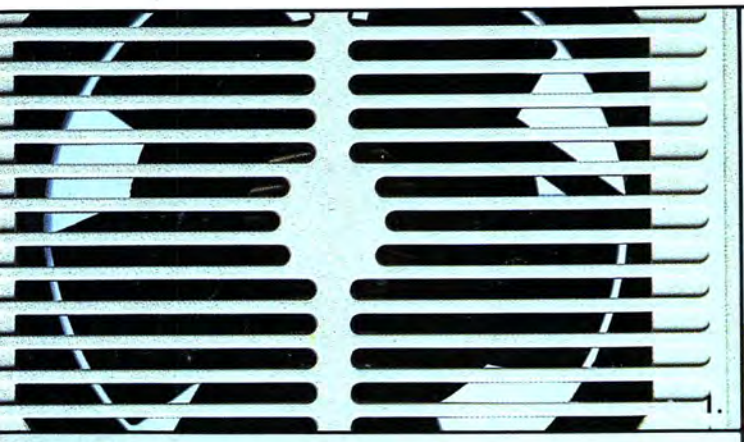

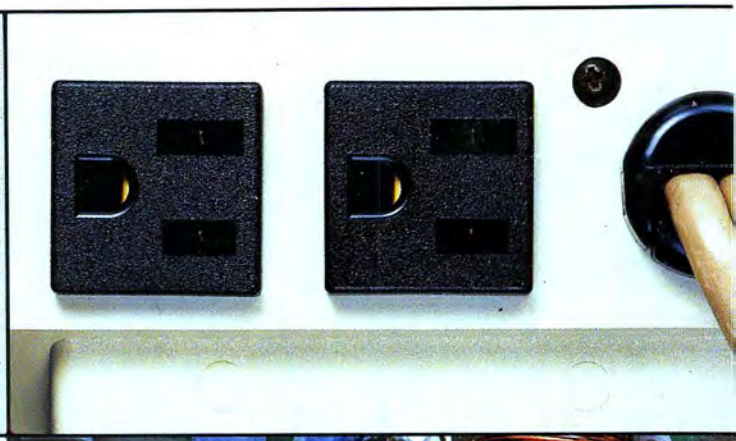

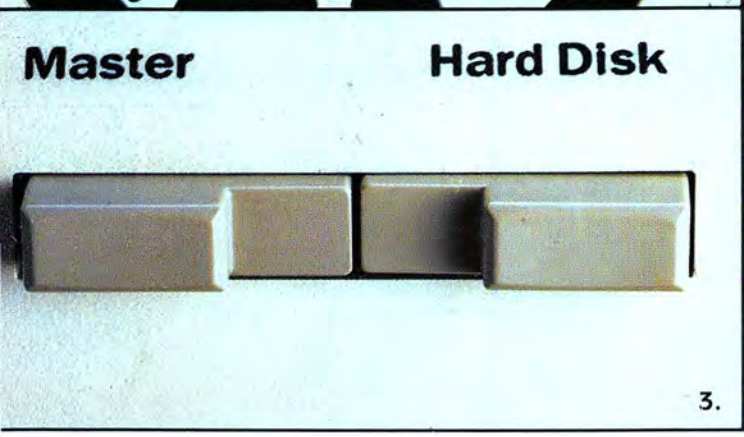

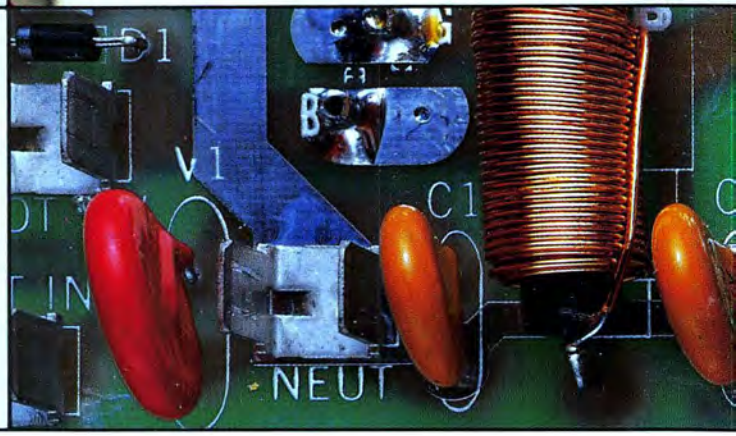

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