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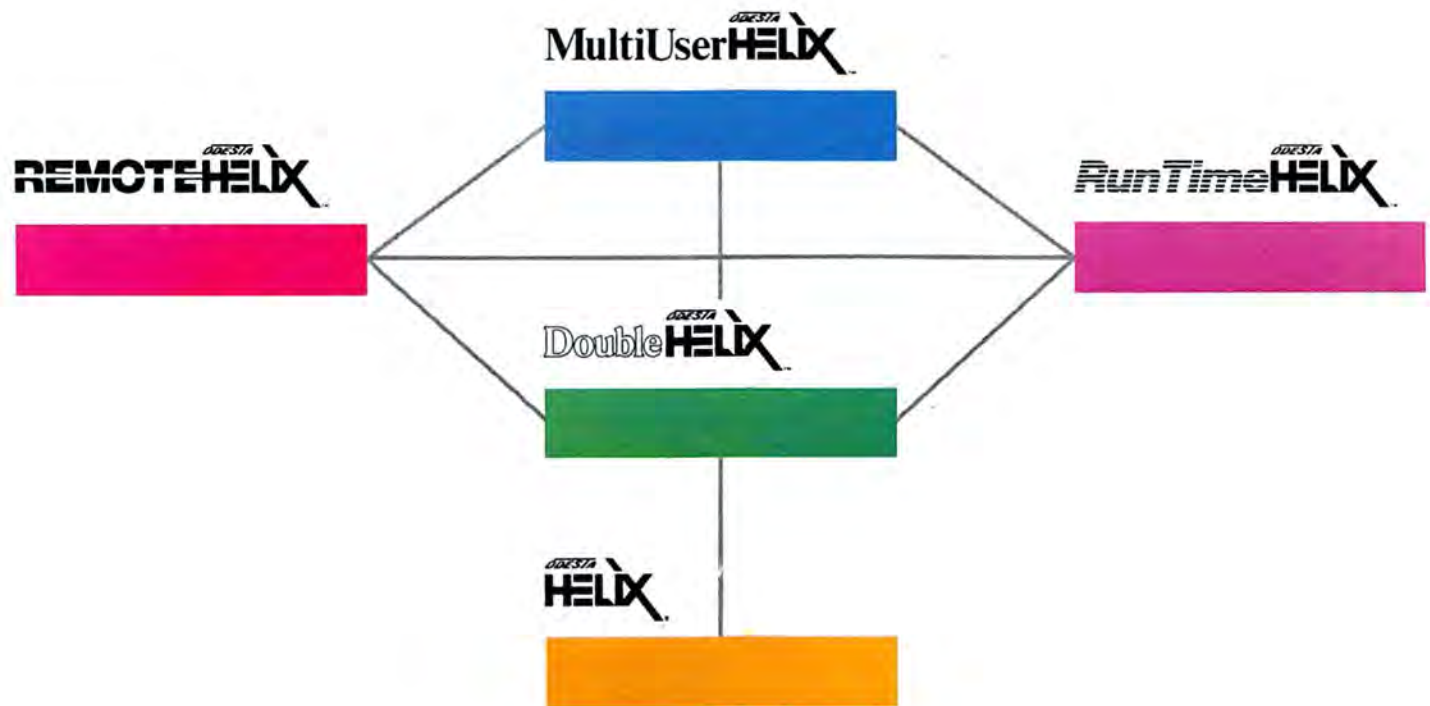
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**VOL. 1, NO. 9 JUNE 1986**

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## POWER COMPUTING

LOOK AT IT THIS WAY *MacSpin* lets you see your data in entirely new ways. *by Ellen Hiram*..... 40

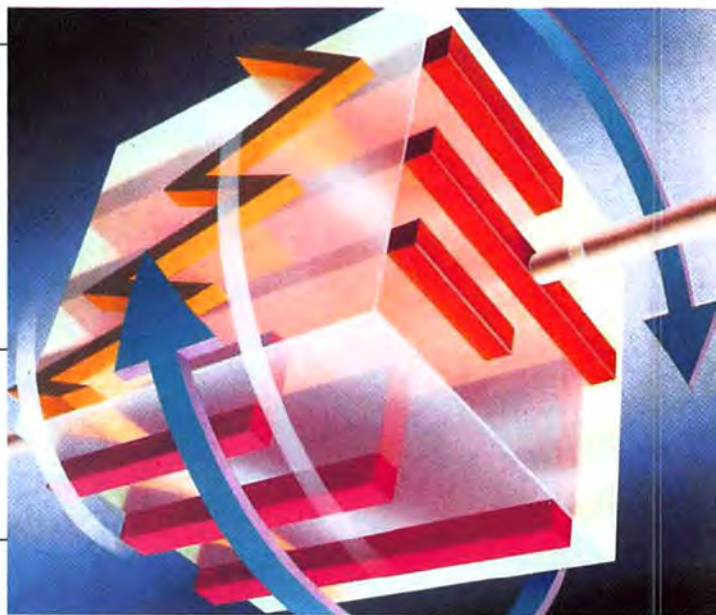
A SWITCH IN TIME SAVES 8 Combine *Switcher* with a RAMdisk and step back! *by Michael D. Wesley and Gilbert Rankin*..... 46

## DESKTOP PUBLISHING

FIRST IMPRESSIONS Use your Mac to create that job-winning resume. *by Tracie Forman Hines*..... 90

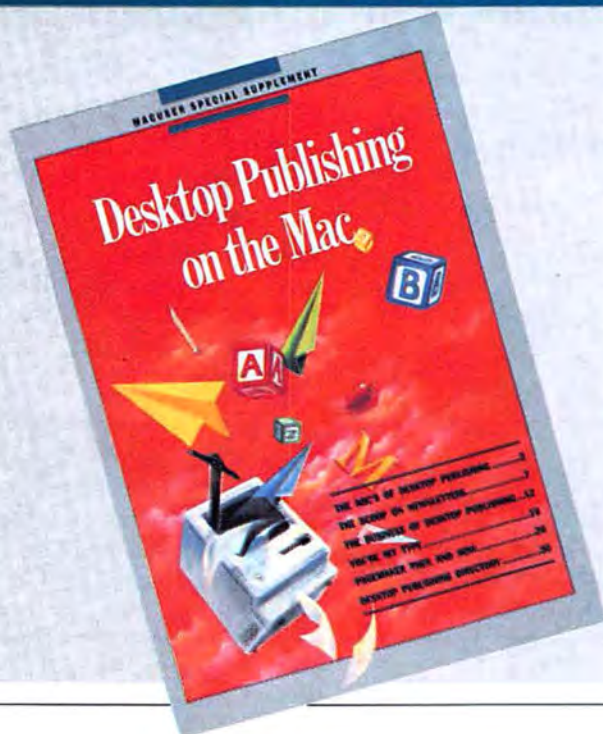
## ENTERTAINMENT

WHICH WAY TO THE WIZARD? Discover the spell of *Wizardry*. *by Joyce Worley and Bill Kunkel*..... 94



Page 40

## SPECIAL TEAR-OUT SUPPLEMENT



Beginning opposite page 52

**THE ABC'S OF DESKTOP PUBLISHING.** *by Steven Bobker*..... 2

**THE SCOOP ON NEWSLETTERS** Everything you need to know to put out a great newsletter. *by Russ Coffman*..... 7

**THE BUSINESS OF DESKTOP PUBLISHING** Make profits as you make pages. *by David Biedny and Irving S. Berman*. 12

**YOU'RE MY TYPE** Laser fonts and how to use them and make your own. *by Timothy Onosko*..... 18

**PAGEMAKER THEN AND NOW** A new version improves an already great program. *by Michael D. Wesley*..... 26

**DESKTOP PUBLISHING DIRECTORY** A comprehensive list of sources and prices. *by David Biedny and Steven Bobker*.. 30



## RESOURCES

- SEEKING THE PERFECT PASCAL** How TML PASCAL stacks up. *by Howard Katz* ..... 98
- C YOU LATER** The final part of our series reveals printing secrets. *by Bob Perez* 108



Page 156



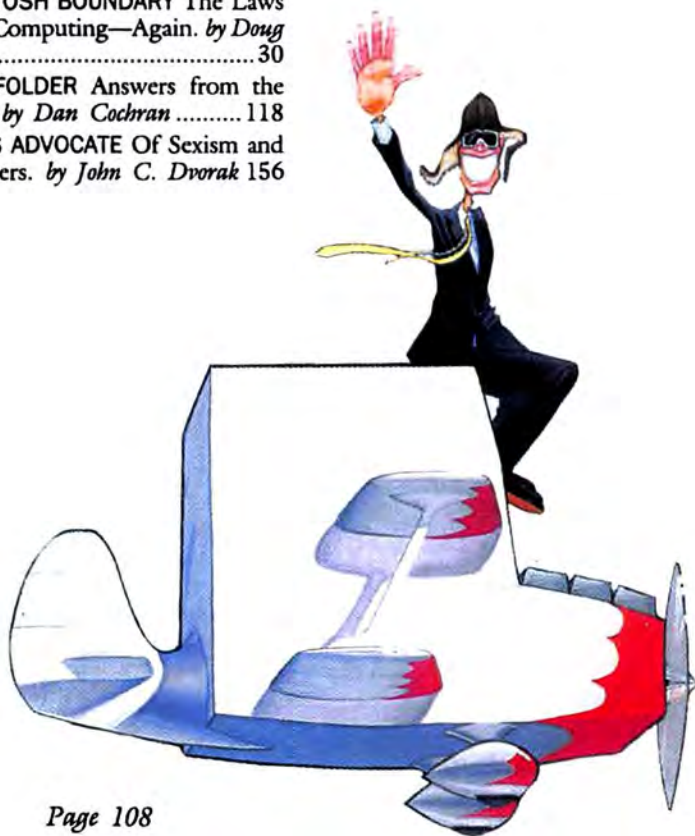
Page 98

## COLUMNS

- THE EDITOR'S DESKTOP** The Simple Things in Life. *by Neil L. Shapiro* ..... 9
- WEST COAST REPORT** Out of the Closets and Onto the Mac. *by Michael D. Wesley* ..... 25
- THE MACINTOSH BOUNDARY** The Laws of Personal Computing—Again. *by Doug Clapp* ..... 30
- THE HELP FOLDER** Answers from the Mac Team. *by Dan Cochran* ..... 118
- THE DEVIL'S ADVOCATE** Of Sexism and Silicon Sinners. *by John C. Dvorak* 156

## DEPARTMENTS

- LETTERS** Readers have their say. *from the Mac Community* ..... 18
- NEW ON THE MENU** What's new and hot, upgrades, rumors and vital information ..... 20
- QUICK CLICKS** Seven reviews of exciting programs ..... 36
- TIP SHEET.** Get more from your Mac. *compiled by Tracie Forman Hines and Dawn Johnson* ..... 126
- MINIFINDERS** Hundreds of capsule reviews to help you pick and choose. 131
- PICTURE PALETTE** Your graphics showcased ..... 154
- ADVERTISERS INDEX** ..... 140



Page 108



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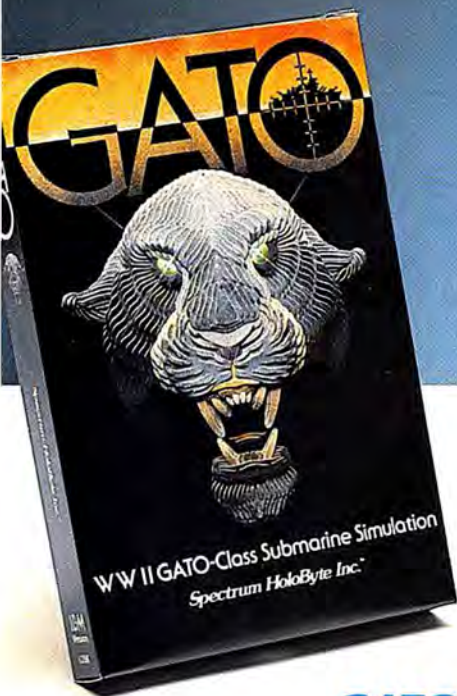
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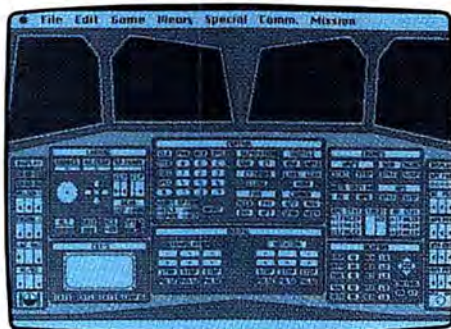
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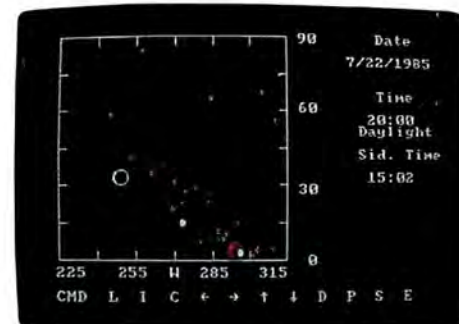
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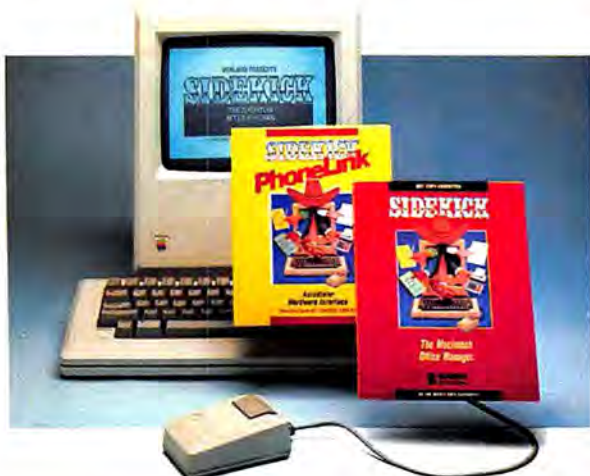
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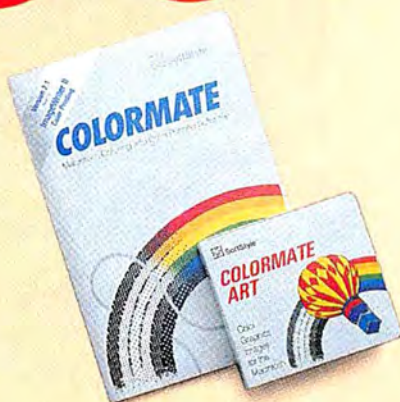
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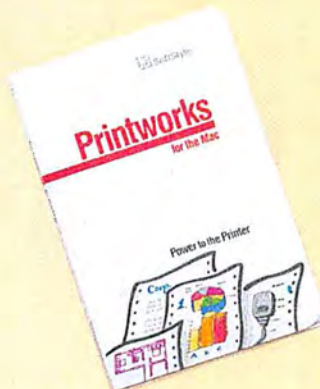
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by Neil L. Shapiro

## THE SIMPLE THINGS IN LIFE

I've said some unpopular things before in my life, but the day I took on FKEYs was a bleak time indeed. It all started during an on-line conversation on a computer network among some Mac programmers about the future of Macintosh programming. (While I'm not a programmer, I figure I'm as opinionated as any programmer so I'm fearless.)

### REASONED PREJUDICE

I mentioned the fact that as far as I was concerned the only good FKEY was a dead FKEY—and then the battle began! Of course, if you don't know what an FKEY is it may be difficult for you to gauge either the sagacity or evilness of the above comment.

FKEY stands for Function Key, and a function key is when you hold down the COMMAND key (cloverleaf) in conjunction with another key or keys and something special happens. When you hold down the combination of keys COMMAND-SHIFT-1 and your internal disk drive sticks a disky tongue out at you, that's an FKEY. When you hit COMMAND-SHIFT-3 and the screen is copied to a MacPaint file, that's an FKEY. When you do a COMMAND-SHIFT-4 and the ImageWriter wakes up and sizzles out a hardcopy of the screen, that's another FKEY.

So why do I hate such a harmless, cuddly, useful thing as an FKEY? Well, look, I take it back—I don't hate all FKEYs; just a lot of them.

The reason is that FKEYs, if they are used to excess, have the capability of taking the Macintosh away from the rest of us. They do not seem, to me, to partake of the simple beauty of the rest of the Macintosh interface.

### GIVE ME MICE!

I used to use FKEYs all the time. In fact when I did my pre-Mac word processing I was FKEYing along at a great clip. I had dozens of FKEYs to keep my fingers hopping and skipping and doing everything from centering lines to changing type pitches. This collection of FKEYs was called *WordStar*.

But then along came the mouse and the Mac and *MacWrite* and the whole Macintosh interface. I remember the first time I tried the mouse. Would this be as good as the keyboard? I wondered. Wouldn't it bother me to keep having to move my hand off the keys? Wouldn't I miss having all those wonderful keystrokeable commands at my fingertips?

Well, we all know the answer to that. The mouse is to word processing what Prince is to *The Revolution*.

### FATAL VISION?

Still, as was pointed out to me during this friendly twenty-way spat, sometimes you just can't do what you want to do without an FKEY. For example, what are you going to do if you want a screen dump of a dialog box? When a dialog



box comes up on-screen you can't get to the menu bar, and even if you could you might also want to leave the menu bar in its present state. And it does make sense to have a keyboard command that will spit out a disk just in case all your paper clips are busy at the moment.

Yet, many FKEYs are not so special that they could not be done in a manner controlled—even optionally—by the mouse and the menu bar.

More and more FKEYs are being published in both the noncommercial (shareware) and commercial arenas. It really is possible now to go out and have a custom keyboard with perhaps up to ten FKEYs installed in the *System*.

For the hacker this is wonderful. Indeed, for anyone with a Mac computing background, the FKEYs are not really all that confusing.

But to the newcomer, a plethora of FKEYs is the next worst thing to sitting him down with some ancient PC. The old "What does this key do?" Big Blues

can hit a new Mac owner the way the first twinges of arthritis do a person who thinks they will never get old.

One minute everything is fine and intuitive and nice—and the next minute you have to remember that command-something is only to be used for one thing while command-something-else is to be used for a different thing.

The whole idea of the Macintosh interface, to my mind, is that the new user doesn't have to learn how to use a computer. He just uses the Macintosh.

I fear for the newcomer who enters an office environment where the Macs have been installed for a while and someone has come up with a collection of FKEYs to install. What might have taken 20 minutes to learn will now take about a week until it becomes intuitive (of course an IBM PC would have taken 6 months, but who's counting?).

The point is that programmers need vision. But unless they have the same type of vision as that which guides the most intuitive of Mac programs, we may see the Mac become harder to learn.

I think there are ways to compromise. There are ways to design such things as FKEYs that could please everybody. For example, there could be a desk accessory that (when called) puts up a pull-down menu of FKEYs in the system. That would enable mouse selection and menu bar explanation as well as the option for straight keystrokes. Sure, if you have to go the mouseless route, then take it. But that should be your last alternative.

The problem expressed above extends throughout every facet of Macintosh programming. The Mac is so easy to learn, so quickly does a user feel at ease with it, that it is often difficult to recall how it was before you and your Mac were on a first-name basis.

We are beginning to see the effects of this in programs other than FKEYs. Some new software that I've seen is simply not intuitive. Menus call other menus in awkward ways. Strange collections of icons that would rival the hieroglyphic dreams of drug-besotted, ancient Egyptian priests, reveal even more tortuous shapes and ideas, when clicked upon.

Following the Macintosh interface means more than simply doing everything that *Inside Macintosh* (in its own turgid way) spells out for you. I think that it also means never forgetting that the newest Macintosh owner should be able to "get into" your program as fast as possible.

Keep it simple. Keep it intuitive. Keep it Mac.



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*Alter Ego*, Activision's fantasy role-playing game lets you experiment with "What if"... just for the fun of it.

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*Conceived and Created by Peter J. Favaro, Ph. D.*

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HOME COMPUTER SOFTWARE®

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### BRINGING US TOGETHER?

Apple is presently a two-computer company. Few other companies make computers that are so separate in technology as are the Apple IIc and the Macintosh.

And yet, anyone who has seen *Mouse-desk* or *Mousewrite* on an Apple IIc knows that the Macintosh interface can work as lovely on an 8-bit machine as on a 16-bit. And, latest rumors in the Apple II field are that the next generation of Apple II machines will feature a 16-bit chip that will make such a user interface eminently easier to achieve.

Another rumor is that Apple will be introducing a SCSI interface for the next Apple II—the same as the SCSI interface on the Mac Plus. Couple that one to the rumor that the SCSI hard disk drive for the Macintosh will be released in a few months and it is not hard to come to the conclusion that Apple's new hard disk may be an Apple-wide peripheral.

This would be an extremely interesting development for anybody with an Apple computer (either flavor) to watch closely.

From the standpoint of us Mac users, I think it means that we will begin to see very competitive prices in add-ons for our favorite machines. Let's face it: The present line of hard disks for the Macintosh—whether from Apple or other suppliers—are pretty expensive compared to the rest of the field.


The only time I ever envy an IBM PC owner is when he or she goes hard disk shopping. Wow, the prices that competition and large market potential can breed!

So how many millions of Apple IIs are there? When you add the Apple II and the Mac markets together you get one big audience of people looking for such things as hard disks.

If Apple really does try—and can pull off—integrating the Macintosh and Apple II lines to where they use many of the same peripherals, then happy days are here again.

There will be so many companies going after an audience of that size that soon all you and I will have to do is to lean back, leaf through the ads in *Mac-User*, and pick out the kind of buy we can only dream of today.

Beyond the hard disk market there are all sorts of other reasons for the two lines to come together. We hope that Apple does indeed realize that its two markets are really one, or at least intertwined.

Which of your friends do you think will be the first to buy a Mac hard disk for less than \$500? I hope it's me... 





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So use Sony 3.5" or 5.25" floppy disks, and avoid disk error. If you use somebody else's, you could be sorry.

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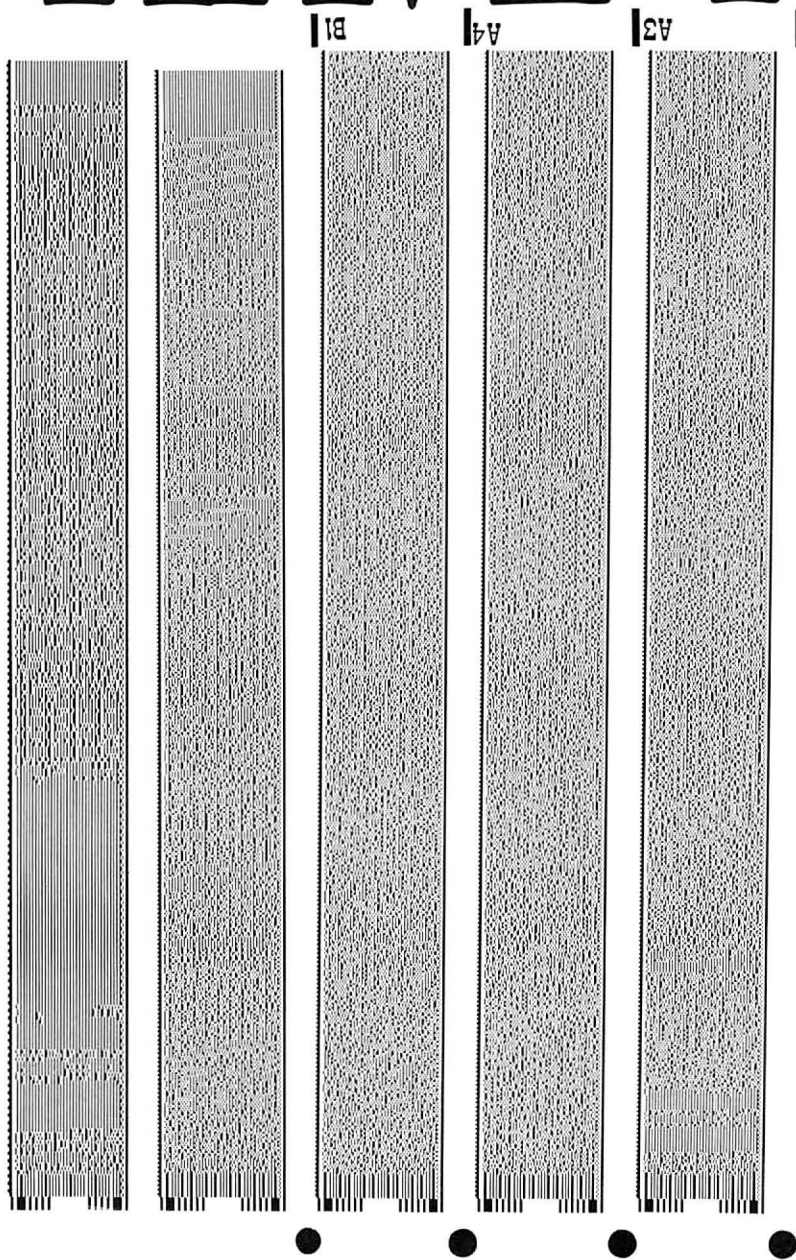


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# HAVE YOU STRIPPED



It's a question more and more Macintosh owners are asking. And no wonder. What everyone is talking about is Softstrip™. The revolutionary technology that is changing the shape of computer software.

The Cauzin Softstrip System is more than just software or data on paper. Because when you invest in this system, you can do much more with your computer, and for far less than you are probably spending now. You can even create and print out your own data strips.

But that's only the beginning of an offer that's going to make you wonder why you haven't stripped yet . . .





# RIPPED YET?

The data strips on these six pages feature seven entertaining programs from the Software Exchange Library of the Boston Computer Society. Our collection includes:

A — FONT TESTER

display the entire alphabet of any installed fonts in any size and style

B — WORLD CLOCK

know what time it is in some of the world's key cities

C — MASTER GUESS

an enjoyable adaptation of the popular MasterMind™

D — SOLITAIRE

it's the luck of the draw in this card game classic

E — PUSH

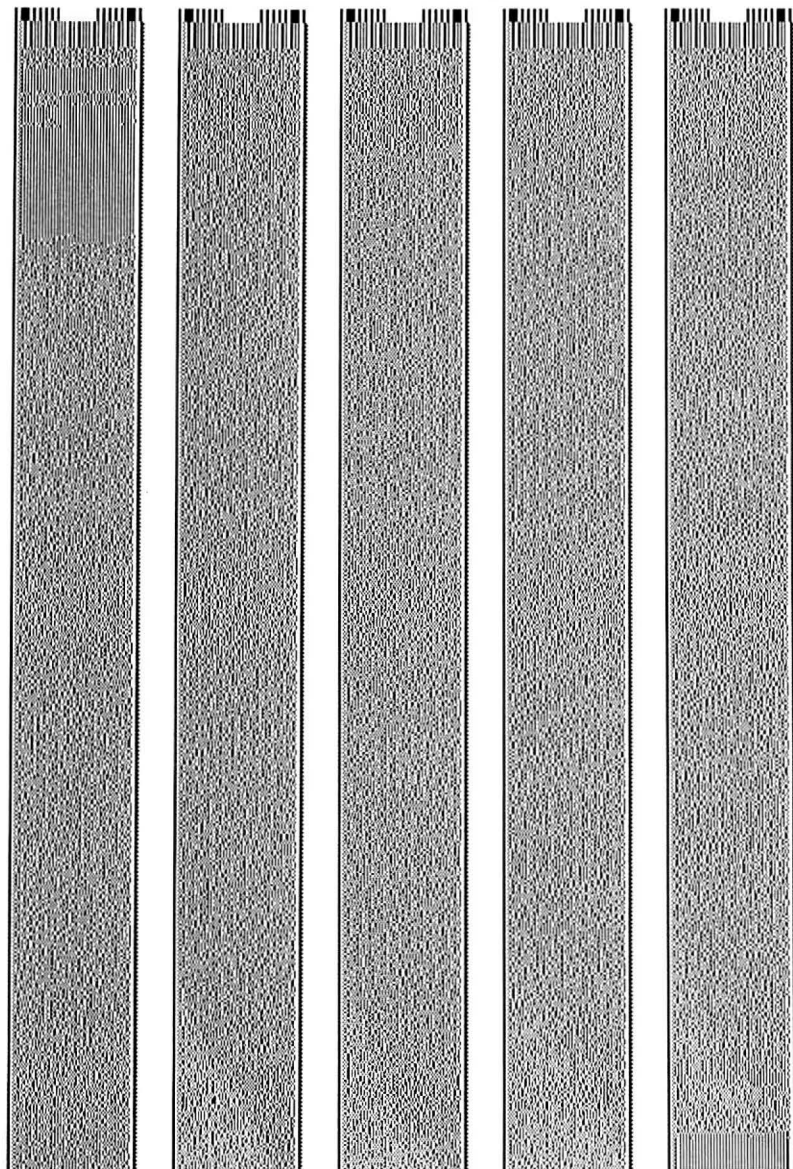
set your sights on this novel way to clear your screen

F — SWITCH

instantly move from application to application

G — EXPLORER

display any area of memory in hex or ASCII



C1 |

C2 |

C3 |

C4 |

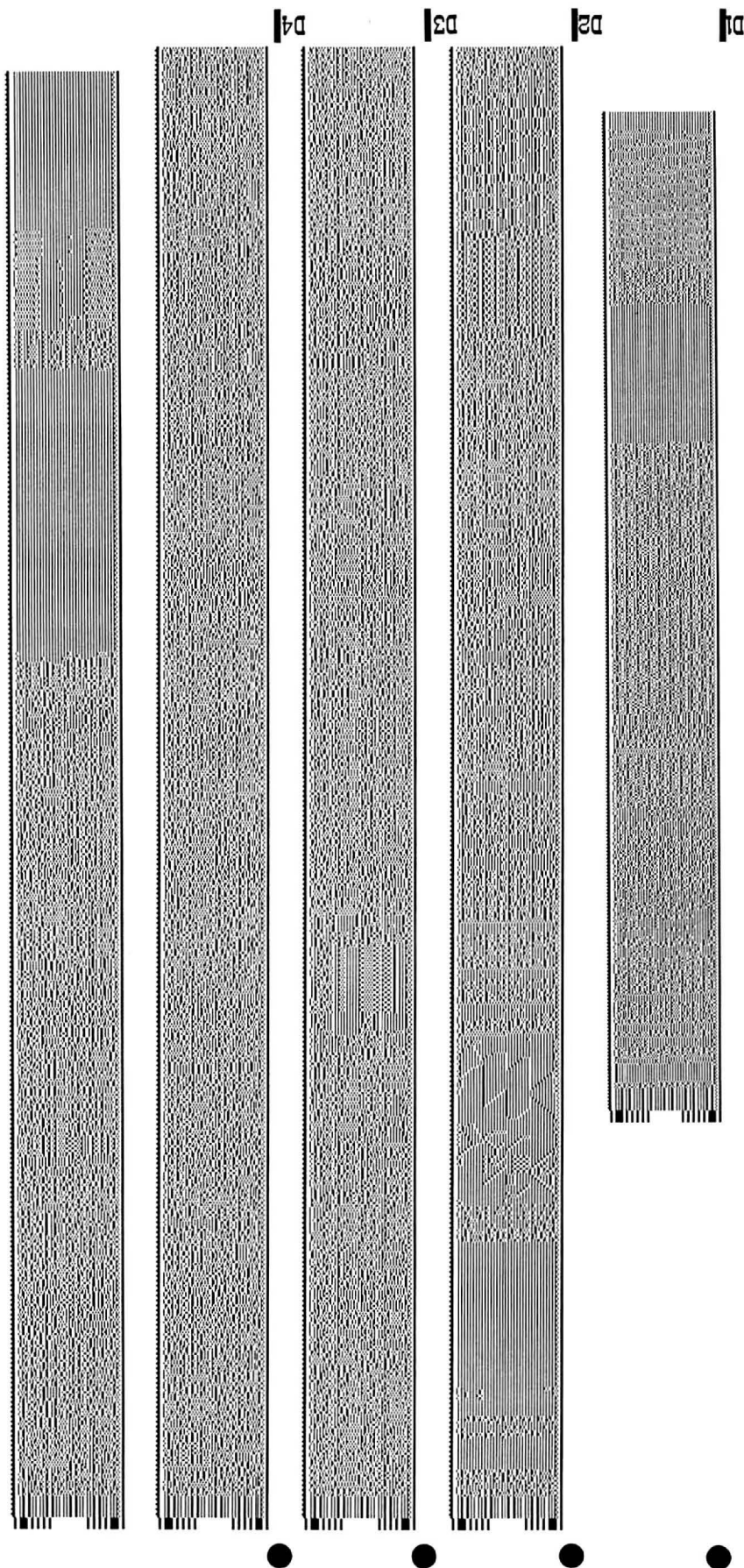
C5 |

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COMPUTER-READABLE PRINT

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**90**  
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**BUT THERE'S**  
**STILL MORE . . .**

When you invest in the Softstrip System, you get the Softstrip reader, a special storage base, and a full one-year replacement warranty. Also included with your purchase is a complete Accessory Kit containing connector cables and communications software to link your Macintosh to the reader.

In addition, you'll find a StripWare Library Sampler of 23 programs from a line-up of popular authors and publishers that includes Addison-Wesley, Family Computing, Hayden Books, Nibble Mac, Osborne/McGraw-Hill, The Waite Group, and John Wiley & Sons.





When you become a Softstrip reader owner, you also get a FREE one year StripWare Club membership with programs mailed to you monthly. You'll even receive a FREE Cauzin Effect Newsletter filled with the latest updates and news about Softstrip developments.

There's also StripWare™ brand software in authorized Softstrip dealers across the country. Our collection of titles include everything from utilities, graphics and entertainment to business programs.

There is even a StripWare package that lets your Macintosh talk. All for only \$2.98 to \$19.98!



E1

E2

E3

E4

E5

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## AND IF THAT'S NOT ENOUGH TO START YOU STRIPPING...

Do you want to create your own data strips? Well, now you can with a special StripWare program called "STRIPPER™" that lets you print your disk files as strips using your own Imagewriter printer. The printing software is only \$19.95, but just think of the things you could be stripping. Store backup files on your paper. Print, copy and mail your own programs to others easily and inexpensively. Even exchange ASCII or binary files between different types of computers.

And all you need to start is the Softstrip System. You get everything you need to read strips (like the ones you're seeing in this magazine and others) for just \$199.95.

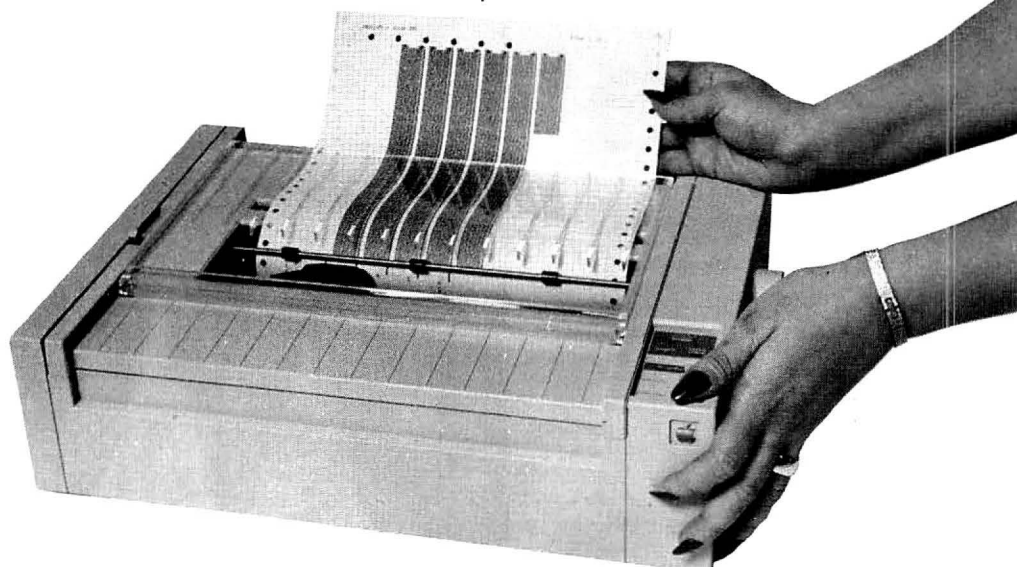
The CAUZIN SOFTSTRIP SYSTEM. It's what Macintosh owners everywhere are talking about. So what are you waiting for? Shouldn't you be stripping too?

For the Softstrip System Dealer nearest you (or if there isn't one in your area, to order), call toll free:

**1-800-533-7323**  
(in Connecticut,  
203-573-0150)



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## HOW TO STRIP

It's easy to read strips.

- 1) Just load Cauzin's communications software into your Macintosh.
- 2) Pick up the reader and lay it on the strip.
- 3) To the side of the data strip you'll see a black dot and a short black line (such as the ones found on these pages). These are your alignment marks.

Place the reader so that its loop fits over the black dot and the edge of the reader just touches the black line.

- 4) Click "Read Strip".
- 5) That's all you have to do. The strip is read automatically, and its contents are saved to disk. You can use the file in the same way as if it had come on disk originally.

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- Printer interface card: either a Super Serial Card (built into the Apple //c), Grappler graphics card, or Dumping graphics card

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Do you have a question or comment about MacUser? Address it to: *Letters to the Editor*, MacUser Magazine, 25 W. 39th St., New York, NY 10018. We reserve the right to edit all published correspondence.

### WAY TO GO!

Your February issue was superb. Your '86 ways to get more out of your Mac was excellent. Please keep this as a regular feature.

NOEL HOYD  
REDMOND, WA

*We are happy to inform our readers that MacUser is running a monthly tip section called the Tip Sheet.—DG*

I really am amazed at what a top-notch publication *MacUser* is. Aside from the absolutely incredible articles, all kudos and glories to your design team! Every page of every issue looks like a million bucks, and I've yet to see an article that was not enhanced by the clarity and efficiency in layout and design.

Not only is the magazine a delight to the eye, but your Art Director and staff should be congratulated for featuring the work of some of the hottest graphic artists around. I'm firmly convinced that *MacUser* is the best designed American publication on the stands. Bravo!

AL MCANESPY  
HOUSTON, TX



I recently attended the Apple show in San Francisco. I saw your magazine for the first time at the show. I picked up all five issues and spent all my spare time during a week of vacation reading them. It is the best magazine out on the Mac.

B. PATICK THOMPSON  
LOS GATOS, CA

I would like to congratulate you on your excellent magazine. I like the power user section and the depth of the articles in general. It is nice to know that not all writers assume the reader is a seventh grader.

ANDREW J. SPRY  
URABANA, IL

### THE STATE OF SUPPORT

As a consultant who has worked with both *Omnis 3* and *Helix*, I don't get involved in which is the "better" database. It's like arguing which is the "better" color, green or purple. I'll use *Omnis 3* when execution speed is important. I'll use *Helix* when style has a higher priority. I'll also use *Helix* when I might need tech support.

For a large fee, you can call *Omnis* tech support ten times in a year and the complexity of the question they'll answer is determined by the size of the fee you paid.

Both *Helix* and *Omnis 3* are outstanding products, but let's give credit where it's due. On the matter of support, *Helix* deserves at least a rating of five, and perhaps a gold star and a skyrocket to boot.

GREGG SANDERSON  
SAN DIEGO, CA

### IN SEARCH OF

I have tried desperately to get any information on your little spiel on Personal Publishing Magazine in your "New on the Menu" section (Feb. '86). Even my Apple dealer couldn't help. Could you get me an address, so that I can write to the publisher? Your help would certainly be appreciated.

LAWRENCE J. BARCLAY  
NEWPORT NEWS, VA

*For all those wishing more information about Personal Publishing, published by Renegade Company, write PO Box 390, Itasca, IL 60143.—DG*

### A VOTE FOR MACBASIC

As I was reading "The Great Language Face-off" (Jan. '86), I couldn't help but wonder how peoples' opinions of BASIC would be different if Apple had officially released *Macintosh BASIC*. This is the language that should have come packaged with every Mac, along with *MacPaint* and *MacWrite*. Put quite simply, *MacBASIC* is the best BASIC for any microcomputer, and probably the best way to get non-programmers started on programming the Macintosh.

Apple canned *MacBASIC* after developers had spent over a year writing it, and several publishers, acting on good faith, printed books on it. It's truly a shame when such a fine piece of programming has to be relegated to being passed around in the software underground.

DAN CALLAWAY  
SAN FRANCISCO, CA

*We agree. And let's not mention the multitasking capabilities, either. Rumor has it that a large software company bought the rights for a fraction of our cover price. . . .*

—DB

### MACDRAFT OUT OF THE SHADOWS

Congratulations on "First Draft" (February '86). This is the first comprehensive, critical review of *MacDraft* that I have seen in any Mac publication. After reading the glowing reports in competing journals, I began to wonder if I had been using the same application!

I agree wholeheartedly with the authors—*MacDraft* has a considerable way to go before it becomes the professional product it is advertised as being.

ED CUNDY  
HANOVER, NH

### PAYING THE PRICE

After a lot of soul-searching, I just plunked down \$39.95 for an upgrade to *ReadySetGo* (version 2.0 to 2.1). That's far more than I usually spend for upgrades, and it's even more than I spend for some software. Unless the upgrade price is dropped, this is my last time around.

Why can't all sellers of new software give a written commitment to a reasonable upgrade policy? Some do. I'll look carefully for this in the future.

TERENCE MCARDLE  
ROCHESTER, NY

### A SOFTENED SORE SPOT

My husband is a Macintosh zealot! Consequently, I have developed a somewhat stubborn resistance to all but minimal usage of the machine. Though I found it quite user friendly, I resented any of the Mac's effective applications in my area of interest.

Recent surgery severely curtailed my physical activities. Attracted by the professional and quality graphics of your magazine, I found myself thumbing through it. To my surprise, I now understand much more about the Mac than I had initially wished. To my dismay, I discovered excellent new programs spe-



cifically pertinent to my obscure field of endeavor.

HANNA WALDHAM  
STARKVILLE, MI

### CRASH COURSE

**R**ec: Andre Ouimer's Bug of the Month Award (March 1986):

A user who intentionally tries to crash his computer has little use for the machine in the first place. That task is performed by a product's developers, whether it's hardware or software.

Any computer can be crashed if one works hard enough at it, especially while performing unnatural acts such as dragging an unwanted disk icon to the trash can while another disk is loading up. I don't have a need to do that and I don't think anyone else does either.

PETER WURZBACH  
DALLAS, TX

*We disagree. Quite a few users have tried this maneuver, often with fatal results. Lots of "keep a neat desktop" people always get rid of old disk icons at the first opportunity.*  
—SB

### PIRACY RATIONALE

I fail to see the validity of Mr. Dick's comment (Feb. '86, Letters) defending

his "lack of guilt" over using bootleg software. It reflects a severe lack of understanding in the area of copyright law specifically, and regarding real world business ethics in general. Just because Mr. Dick would not consider legally purchasing the product in question doesn't mean that his acquisition of an illegal copy is somehow different than stealing.

Regardless of your personal beliefs concerning the software industry and its pricing policies, there is no legal or ethically valid justification for possession of bootleg copies. Perhaps software publishers would be more responsive to reasonable and realistic pleas from consumers for better pricing policies if we showed a little integrity and regard for honesty in dealing with their products.  
HENRY SITZMAN  
PLANTATION, FL

I'm getting tired of people who attempt to publicly rationalize their own immoralities. I doubt that they are as generous with their own creations as they seem to be with the creations of others.

Software pricing is a frequent excuse for theft. Some people will always claim the work of others as their own, regard-

less of rationale.

Every developer I know invests heavily in his/her product. Money and sweat. Don't dare tell us that nothing is lost when our work is ripped-off. Nobody has the right to benefit from my effort without offering me my price.

JIM KASLIK  
ALLENTOWN, PA

People can always come up with an excuse not to pay for something, like "it's expensive, it doesn't work, I don't use it that much, everyone else does," but we all know that people don't use things that don't work.

The answer is very simple: people steal software because they don't get punished, and they make excuses because they know it's wrong and they are trying to convince themselves that it isn't.

We have the miserly, gutless thieves to thank for being unable to run good programs on hard disks or being unable to make a quick, easy backup of a program "just in case." People can say NO. I have been both offered and asked to provide "free" software and I either avoid further contact with the person or repeat, "no thanks."

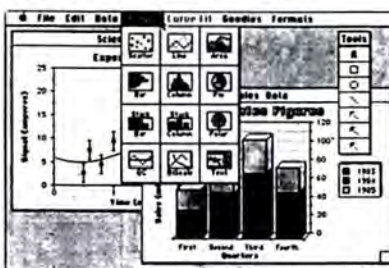
MICHAEL J. HUNTER  
SHARON, PA

cricket  
software introduces...

# GRAPH

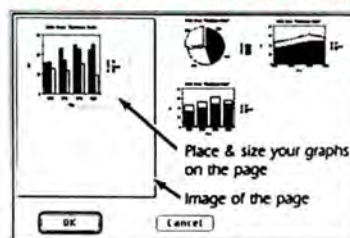
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# New

## ON THE MENU



ALEX QUESADA

### RUMOR MANAGER

The Mac will finally take its place as a great game machine with the introduction of numerous games, many of them new, totally unheard-of types, in time for Christmas . . . a well-known software company is switching gears and will be totally devoting itself to Mac programs . . . John Dvorak has been offered an important government job in a small Central American "democracy" . . . several highly placed Washington lawmakers do virtually all their office work on Macs (root for some AI programs) . . . Steve Jobs has been secretly dating a famous punk rocker (orange and purple hair, you know who) . . . a new art DA that will change MacPainters' lives forever will be out by midsummer . . . plans are set to market a

stuffed animal version of our favorite micro (no, it will not be available in blue) . . . look for a low-cost (under \$1000) CD ROM device at the upcoming Mac expo . . . "Night Court's" Harry Anderson won't leave home without one of his several Macs . . . a well-known Mac programmer was recently seen leaving a well-known image consultant's office, where he had been having his manners spruced up . . . IBM has secretly developed a Macintosh-compatible PC and has seeded certain select parties with them (don't call, we won't show you ours) . . . some of the cheap plastic apples seen at Apple seminars around the country recently have contained coupons good for a free Mac Plus upgrade . . . a color laserwriter????

### MOUSE CLOTHES

There's no need to have a plain-vanilla styled mouse anymore, thanks to a very unusual—but very cute—mouse cover from H & H Enterprises.

Called the MouseTop, this fuzzy gray facsimile of our favorite rodent fits snugly over the standard mouse to keep it dust-free. It also adds a humorous personal touch to homes or offices.

The MouseTop is available

in two styles, one that wears wire-framed granny glasses, and one with 20/20 vision. At a price of \$5.95 for the near-sighted mouse, or \$5.49 for the mouse without glasses, this could well become one of the year's most sought-after Mac accessories.

If your local dealer has no sense of humor, contact H&H Enterprises, PO Box 2672, Corona, CA 91718, (714) 737-1376.—TFH

### MACCHALLENGER COMMEMORATES FALLEN SHUTTLE CREW

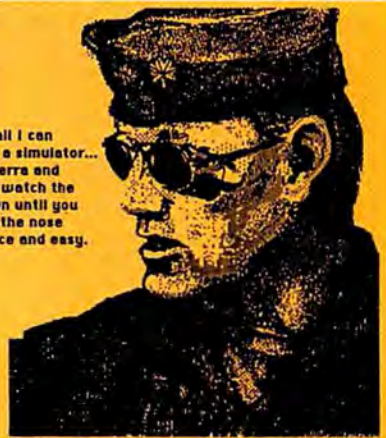
Responding to the tragic crash of the Challenger space shuttle, Aegis, manufacturer of MacChallenger, has released a commemorative version dedicated to the seven men and women of the Challenger crew.

The commemorative MacChallenger version includes an updated final screen, in which the flight instructor berates the flight crew for crashing, instead of the original sequence saying that gophers and their homes had been destroyed.

The new circumstances of the final Challenger flight preempted that kind of humor.

All of the profits from the sale of the new version will be sent to the Children's Fund and the Rebuild the Shuttle Fund equally. The MacChallenger flight simulator program is priced at \$49.95. For further information, contact: Aegis Development, Inc., 2210 Wilshire Blvd., #277, Santa Monica, CA 90403. (213) 306-0735.—RBK

You call that a landing? Well, all I can say is you're lucky this is only a simulator... Now, comon! Cut the bravo sierra and let's fly this baby. Remember, watch the panel and keep your nose down until you reach one thousand. Then pull the nose up gently and put her down nice and easy. Ready to try again?





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## MacTote

1. Padded pouch for mouse; 2. Open pouch for manuals or notes; 3. Open, padded pouch for keyboard; 4. Side handle for easy carrying and stability; 5. Padded, Velcro handle (no snaps); 6. Padded, non-slip shoulder strap; 7. Zippered pouches for disks or accessories on both sides of case; 8. Zippered pouch for accessories, modem, cords, etc.; 9. Padded pouch for disk drive, and extra padding to protect Macintosh's screen; 10. Reinforced bottom fully supports and distributes weight of Macintosh; 11. Heavy-duty nylon zippers.

**Now available—new extended keyboard accessory pouch.**

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# New ON THE MENU

## QUICKSET 2.0: NEW PRICE, NEW FEATURES

EnterSet has lowered the price of *QuickSet*, its popular collection of desk accessories/applications to \$49.95, and at the same time added some new features to *QuickSet 2.0*, including a print spooler, phone dialer (it requires an Apple modem with autodial capability),

and an enhanced interface that allows *QuickSet* to be accessed through the menu bar or through a graphic representation called "The Desk." In addition, all copy protection has been removed to make *QuickSet* easy to install on a hard disk.

*QuickSet 2.0* operates as a desk accessory on 512K Macs, and its individual modules can be run on 128K or 512K Macs as applications. Call EnterSet at (415) 543-7644 or write to them at 410 Townsend, San Francisco, CA 94107 for further details.—TFH

## EAT AND BE MERRY

With the big wave of health consciousness, it's not surprising to see yet another nutrition analysis program hit the market. *MacNutriplan* is a program that keeps track of a meal's calorie content and two other nutrients, like cholesterol and potassium, of the user's choice.

Included is a built-in directory of over 400 common foods, with caloric and nutritional information obtained from official USDA publications. The directory can also hold up to 200 more user-added foods. A table of equivalent mea-

sures is also available. With *MacNutriplan*, the user can assign a maximum value to any of the nutrients to be warned when exceeding it. But don't worry, since if you do, *MacNutriplan* will not let you forget it—an audio and visual alarm will go off. According to the company, *MacNutriplan* can analyze data by the user's age and sex to track USDA nutrient allowances within a meal. The program lists for \$75. For more information, contact Anthony Cocheo, Micromedex, 187 Gardiners Ave., Levittown, NY 11756, (516) 735-8979.—DG

## ZIP!—THERE'S THE CODE

Finding ZIP codes for particular addresses is a messy, complicated business at best. People who do a lot of mailings might want to check into *ZipFinder*, a database of addresses, towns and zip codes that can integrate into other database programs.

*ZipFinder* is available on a collection of separate disks, each of which contains relevant information for the state or region it covers. (California, Florida, Ohio and Texas

are split into several regions; New England states and Trust Territories are each covered by a single program.) The program also spell-checks names of cities and addresses.

*ZipFinder* retails for \$125 and includes one state or region disk. Additional disks are available for \$65 each. Site licenses are available. Contact SoftIdea, 8177 S. Harvard, Suite 619, Tulsa, OK 74137 or call (918) 745-9792 for more details.—TFH

## NO MORE STICKY DISKS!



ALEX QUESADA

How many times have you peeled off your disk label and replaced it with a new one? Weber & Sons has an alternative called the NoLabelSystem—we call it the permanent label, but a stickless disk by any other name....

The NoLabelSystem consists of 100 plastic pockets that can be affixed to a disk, plus 100 white tabbed insert cards, 100 tabbed color cards and instructions. Stick on the plastic pocket and slide in the insert card, then when you

want to rename the disk, just slide in a new card. The tab sticks out of the disk drive, making it easier to see than a standard label.

The kit is available for \$19.45, plus \$3.00 for shipping, catalogue number NLS-3.5. A test package containing 20 samples of each item is also available. For more information, contact Weber & Sons, NLS Dept., 3468 Hwy 9, Freehold, NJ 07728 or call (800) 225-0044.—TFH

This month's winner is Robert T. Huffman from Raleigh, North Carolina, who discovered a file management bug in *MacDraw 1.7*.

"After creating over 50 drawings and saving them in the *MacDraw* format, I realized that they should have been saved in PICT format so they could be pasted into a *PageMaker* document. So I did a Save As on each, selecting the PICT format without changing the name. I assumed that *MacDraw* would change the drawings to PICT format and overwrite the old Draw format, so I answered 'yes' to the question 'Replace existing filename?' The next time I opened the drawings, however, I was presented with an apparently empty file for each one.

"After exploring the files with the aid of *MacTools*, I discovered that the Save As did change the format to

PICT and overwrite the old format, but it did not change the filetype attribute of the file. The filetype was left as DRWG, although the file had actually been converted. I changed the filetype with the Info Edit command in *MacTools*, and the drawings were rescued. (It should be said that I breathed a heavy sigh of relief.)" We at *MacUser* tried this out, and the bug also exists in *MacDraw 1.9*.

A \$25 check and a 1-year subscription (for the solution) has been sent out to Robert. Get your bug reports in and you may be the next lucky winner. Send your reports to Buggy, c/o *MacUser Magazine*, 25 W. 39 St., NYC, NY 10018. Remember to include all the details, such as what Finder, what fonts and desk accessories were in the System, and exactly how you stumbled on your critter.





## BUT CAN YOU GET IT FOR ME WHOLESALE?

Wholesalers of such items as furniture, office supplies or liquors can run virtually their entire operations with a Mac, a printer, a hard disk with at least 10 megabytes and a convenient business package called *The Wholesaler*.

This package lets businesspeople track credit lines, control inventory, generate billings and accounts receivable and order entry. Special features allow users to track orders that aren't in stock (the program automatically generates a back order, and, when the item



comes in, creates invoices for those back orders) and accommodates discounts, price overrides, sales tax and ten customer price levels. All functions are integrated.

Although *The Wholesaler* sells for \$800, interested customers can buy a working demonstration version, with complete documentation, for \$35 to test the waters. For more information, contact Vertical Business Software, Inc., 662 Main Street, New Rochelle, NY 10801, (914) 632-8305.—TFH

## YO! MORE GO...

If you have just purchased your new Macintosh Plus, you will be glad to know that there is a new version of *ReadySetGo* that works flawlessly on it, without the incompatibility bugs in version 2.0.

*ReadySetGo 2.1* features enhanced scrolling, including the ability to scroll diagonally, improved versatile block

manipulation, and a higher page capacity. The higher page capacity is the direct result of the larger memory of the Macintosh Plus. *ReadySetGo* can produce up to 40-page documents, when used on a Mac Plus or any Mac with at least a megabyte or more of RAM. The increased processing speed of the new

Macintosh Plus will be noticeable on longer documents.

*ReadySetGo 2.1* costs \$195, and owners of earlier versions can upgrade. The cost of the upgrade is \$60 for version 1.0 owners, and \$30 for 2.0 owners. Contact Manhattan Graphics, 163 Varick St., New York, NY 10013, (212) 989-6442.—RBK

## FACTS THAT FIGURE

Here's a distillation of facts from the most recent Apple Shareholders' Report:

The Macintosh is now the third best-selling microcomputer family in the over-\$500 price range (lagging behind the IBM-PC and Apple II, respectively), with an installed base of over half a million. In addition, the Mac is the leading personal computer on college campuses, and it has virtually created—and is undisputed leader of—the desktop publishing market (is that news to you?).

Upwards of 10,000 Apple-Talk networks are in use around the country, and there are more than 1000 software packages available for our favorite micro.

As for Apple, Inc., the company's current cash position is quoted at \$338 million (MacUser sources put the figure at closer to \$451 million), the result of having reduced the number of factories from six to three, and drastically slashing personnel across the board. Apple rebounded from its first quarterly loss ever to post its highest gross profit margin in nine quarters. It's investing much of that capital in Research and Development. Apple also manufactures 60% of personal computers used in American schools.—TFH

## UPDATES

Do you have the latest versions of your programs? Most programs indicate what version they are when you look in the About . . . choice at the top of the Apple menu. If your version isn't the latest, contact the publisher about possible upgrades. Look for addresses in our MiniFinder section. Here's our list (as of press time).—SB

Aztec C	1.06g
BatteryPak	1.11
ColorChart	1.3
ColorPrint	2.01
ConcertWare+	3.0
Copy II Hard Disk	5.1
Copy II Mac	5.1
Dollars & Sense	1.3
Excel	1.01
ExperLISP	1.04
ExperLogo	1.1
Factfinder	1.1

Fedit	4.0
Finder (HFS)*	5.2
Finder (MFS)*	4.1
FONTastic	2.5
Font/DA Mover	3.0a
Hard Disk Utility	1.2
Hayden Speller	1.2C
Helix	2.0 r5
Home Accountant	1.03
Jazz	1A
Just Text	1.1
MacDraw	1.9
Mach 1	1.1
MacLabeler	2.0
MacPaint	1.5
MacSpell+	1.07
MacTerminal	2.0
Mac Tools	5.1
MacWrite	4.5
Mac Zap Copier	4.1
Mac Zap Tools	3.5
Mac Zap Patcher	3.1
MeasureTest	3.1
Microphone	1.0
Micro Planner	1.1
MS BASIC	2.1

MS Chart	1.00
MS File	1.01
MS Fortran	2.1
MS Word	1.05
Multiplan	1.1
Omnis 3	3.10.MAC
OverVUE	2.0d
PageMaker	1.2
QUED	1.4
QuickSet	2.0
ReadySetGo	2.1
Red Ryder	9.0
SlideShowMagician	1.3
Smartcom II	2.2A
StatWorks	1.2
Switcher	4.4
ThinkTank 512	1.1
Top Desk	1.2
TurboCharger	2.0
VersaTerm	2.00
*HFS is Apple's new Hierarchical File System that comes in ROM in the Mac Plus, MFS stands for Macintosh File System and is the old, "regular" file system.	



# Introducing Super Crunch™



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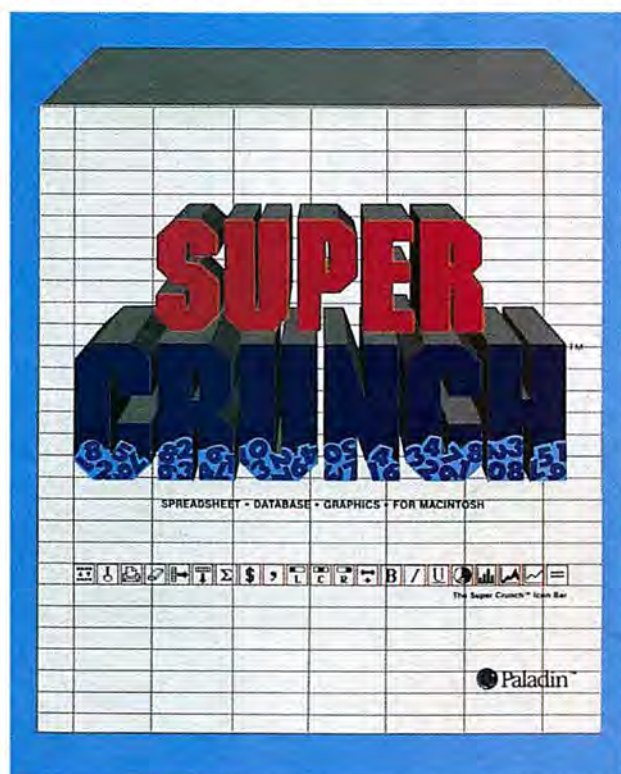
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by Michael D. Wesley

## OUT OF THE CLOSETS AND ONTO THE MAC

In the deepest and darkest regions of corporate America knowledge workers are enslaved by a beast out of antiquity. These people labor under the burden of an outdated and cumbersome technology, staring transfixed at amber or green CRTs and paying tribute to the beast in a cryptic and ritualistic language.

But take heart — a few brave, intrepid souls have dared to risk the ire of the beast by exploring a new technology. In small concealed rooms, far away from the ponderous blue cloud that shadows their fellow workers, these adventurous people toil. Many of them are engineers and scientists who have had the strength of will to turn away the advancing beast. They have adopted a small, friendly alien called Macintosh and freed themselves from MS-DOS forever.

The existence of these closet Mac users has had to be kept secret in order to protect them from the watchful eyes of the beast. Even mother Apple, fully aware of the rebellion, has kept mum to keep Big Blue from heading them off at the pass. But now, little by little they are opening their doors and spreading the word. Quietly at first, then boldly, they state "We are here!" even in the hallowed halls of Fortune 500 companies.

Now the Mac Plus has arrived, the computer with enough power to provide the ammunition for closet Mac users to stage small, but determined, assaults on the enemy. And little by little these brave freedom fighters are seeing results as their companion workers throw off the shackles of oppression and embrace the Mac Plus as their liberator.

All right, I admit I have gotten a little carried away again. Sometimes you just can't help it. But a number of influential people in the Mac community have recently wondered out loud about Apple's common sense. "Why," they ask, "hasn't

Apple played up the fact that the Macintosh is the machine of choice in engineering departments around the country?" (It is a good question — without naming names, suffice it to say that engineers in several very large companies have simply refused to use IBM PCs and insisted on Macintoshes.) Some foolish listeners have even been prompted to say that Apple may not know.

Well, maybe I was wrong. It turns out that Apple does indeed know that the Mac's penetration into the large business market is significant, especially in certain areas. But they don't want IBM to be able to step in and close them out by putting pressure on the companies. Truth to tell, there are several more deals in the works, some for 10,000 Macs or more, that hinge on the acceptance of the Mac Plus.

The Mac Plus has generated a great deal more excitement than Apple projected. (According to one source who couldn't give out actual numbers, Apple



is "pleasantly surprised".) In fact, upgrades have been delayed until June because parts have had to be moved over to handle increased production demands for the Plus. Dealers have not been able to get all the machines they have ordered because Apple can't keep up with the demand.

### AST AND IT SHALL BE GIVEN

One of the West Coast companies that is contributing to and benefitting from the success of the Plus is AST Research, well known in the industry for producing quality special function or multifunction boards for Apple II, IBM, AT&T and other machines. AST has a hard disk subsystem for the Mac that you wouldn't believe. Called the AST 4000, it is a 74-

megabyte hard disk with a 60-megabyte streaming tape backup. Whoa, mama! It does amazing things for speed and storage. How would you like to look at your Mac screen and see that you had 32000K in the disk and 42000K space available?

AST had to rewrite portions of the SCSI Manager because Apple was faced with a troublesome, Catch-22 situation. The only way to really test a SCSI port is to attach a SCSI subsystem to it and try it out. But nobody had SCSI systems for the Mac because it didn't have a SCSI port. The result is that Apple's SCSI Manager doesn't recognize some standard commands. While many companies will simply rely on the SCSI materials provided by Apple, AST has reworked portions of the code as overlays to solve the problems they encountered.

OK, I admit I'm greedy for storage and the numbers of the 4000 practically make me salivate. But who would actually need that much space and be willing to shell out \$6995 to get it (remember now, that's more than double the price of the Mac) even if AST is going to provide free upgrades for the first six months? If you guessed "big companies" give yourself a hundred points. I find it fascinating that a relatively inexpensive computer has created a marketplace for a \$6000 laser printer, a \$7000 hard disk and a \$12,000 color graphics system. The basic reason is that a lot of people now recognize the Mac and the Mac Plus as viable alternatives to minicomputer systems costing tens of thousands of dollars.

If you can't go out and pick up an AST 4000 today, don't panic. AST also wants to be in the Mac consumer marketplace and will have announced the AST 2000 by the time you read this. The 2000 is a 20-megabyte hard disk with a streaming tape backup that will sell for under \$3000. Both the 4000 and the 2000 can act as file servers in networking applications using MacServe software from Infosphere. Because of their experience and insistence on quality control, AST is looking to establish and maintain less than a 0.2% failure rate, considerably lower than the industry average for hard disk subsystems.

### OTHER HARDWARE STUFF

Kurta Corporation has been manufacturing graphics tablets in all shapes and sizes for a variety of computer systems including the Mac. Their latest offering is a cute little device called the PenMouse+. Unlike other graphics tablets whose pens are attached with a cable, the PenMouse stylus sends a small radio



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## WEST COAST REPORT

signal. Its pen is therefore a completely separate object, slightly larger than a standard ink pen, but lightweight and easy to use. The lack of a cable provides considerable freedom of movement. On a recent visit to the Kurta plant I was impressed with the company's commitment to quality.

Talking about nice hardware, how would you like to be able to load a Switcher set with MacWrite, MacPaint and MacDraw in under 13 seconds? Or copy those three applications, Switcher and the Switcher set from one disk to another in under five seconds — without a hard disk? Several companies now put out a product called an external RAM-disk, or electronic disk. The one I've been using for about three months is the DASCH from Western Automation in Boulder, Colorado.

Not only is the DASCH very fast, but it also saves you time and headache in the event of a system failure. If the Mac hangs or crashes, it doesn't affect the information kept on the DASCH. All you have to do is reinitialize the DASCH and you're ready to go. MacMemory Systems, MacVenture, and Assimilation also have similar external RAMdisks available, and the cost is usually much less than a hard disk. The only drawback is that you still have to use floppies for storage.

### SOFTWARE STUFF

MacPrompter Associates, a Berkeley company consisting of Daniel Sabsay and John Draper, is working on a piece of software called MacPrompter. It turns the Mac into a teleprompter for text files from virtually any Mac program. MacPrompter scrolls text smoothly, providing a simple way to read prepared speeches, announcements or other documents. It might provide an interesting alternative to 3 x 5 cards for public presentations. Hey, it works for television journalists and television politicians!

The off-the-wall program of the month is a combination hardware and software system called Smart Home. Smart Home consists of a series of modules that monitor lighting, appliances, smoke detectors and security systems in the home. The system stands alone so it doesn't tie up the Mac full time. Instead, the controlling software comes up as a desk accessory and once all the system's parameters are set, you can use the Mac for other things. The controller hardware and modules are expensive but it is a very interesting product and certainly a precursor of smart products for the home.

## SuperMac Dealers:

AK: Anchorage; Pictures Inc. 279-1515; Fairbanks: Empire Electronics; AL: Birmingham: AC3 Computing 942-9554; Montgomery: AC3 271-2211; AZ: Kingman: Computer Room 753-1711; Tempe: Computer Pro 829-7593; CA: Albany: ComputerLand 527-8344; Arroyo Grande: Computer Terminal 481-4860; Bakersfield: Computer Basics 339-5080; Computer Warehouse 327-3393; MicroAge 397-5864; Belmont: ComputerLand 595-4232; Berkeley: Winner's Circle 845-4814; Burlingame: ComputerLand 348-7731; Carmel: Computer Design 625-6150; Chico: Computer Center 891-1630; Concord: Infomax 689-2331; Costa Mesa: Coast Computer 646-6981; Dublin: ComputerLand 828-8090; Dublin Computers 829-8644; Fresno: OnLine Computers Plus 432-4324; Garden Grove: Inacom 898-2665; Hayward: Computer Center 538-7368; ComputerLand 538-8080; La Mirada: ComputerLand 739-0941; Long Beach: ComputerLand 595-6683; Los Alamitos: ComputerLand 594-6813; Los Altos: ComputerLand 941-6154; Los Angeles: Computer Showcase 474-6409; ComputerLand 837-5388; Los Gatos: Wolf Computer 354-1210; Newport Beach: ComputerLand 476-8360; Oakland: ComputerLand 839-5230; Computer Store 763-7600; Palo Alto: Computer Attic 322-0639 & 328-0171; Computer Ware 323-7557; Pasadena: ComputerLand 449-3205; Petaluma: Execulon 778-1242; Pleasanton: Home Business 846-3944; Rancho Cordova: AVC Computers 638-2242; Redwood City: Peninsula Office Supply 364-1333 and six other Bay Area locations; Riverside: Computer Kingdom 787-1142; Rocklin: AVC Computers 624-0601; Sacramento: Net Profit 638-0588; AVC 962-2100; Salinas: Peninsula Office Equipment 424 2103; San Diego: Byte Shop 565-8008; Computer Age 565-4042; Computer Merchants 595-2463; San Francisco: Software for Less 753-1066; Conroy Lapoint 862-6212; Computer Connection 781-0200; Computer Attic 338-4541; ERA Electronics 398-6361; Santa Ana: ComputerLand 929-2026; San Mateo: MicroAge Computer 348-2963; Santa Clara: Affordable Computers 249-4221; ComputerLand 246-4500; Santa Cruz: Affordable Computers 458-1644; Stockton: Stockton Computers 952-2028; Sunnyvale: Fry's Electronics 733-1770; Ventura: Computer Village 644-5226; W. Los Angeles: PC Land 478-7709; CO: Boulder: Friendly Computers 350-5115; Denver: CW Electronics 832-1111; ComputerLand 759-4685; Lakewood: Neighborhood Computer 988-9140; Longmont: Micro Computer World 651-1177; CT: Fairfield: Computerworks 335-6316; MicroAge 335-3694; Hamden: Computer Factory 281-4119; New London: Computer Lab 447-1079; Norwalk: MicroAge Computer 347-8428; Simsbury: Logical Systems 651-0241; Stamford: Computer Factory 356-1920; Stratford: Programs Plus 278-3662; Wallingford: Computerease 269-4440; Westport: Computer Factory 255-2822; Wethersfield: Computer Resources: FL: Fort Meyers: Microworks 936-4676; Jacksonville: Computer Kingdom 641-9042; Miami: Integrated Computer 887-4777; Kendall 274-6312; GA: Augusta: Cash Register Exchange 724-1747; Gainesville: Preferred Sys. 532-3857; Norcross: Varsity 446-3434; Macon: Computer Store 474-5166; ComputerLand 474-1410; IA: Dubuque: Computers Plus 556-6150; IL: Chicago: Golden Rule 929-2592; Highland Park: Universal Computers 433-8930; Jacksonville: Computer Oasis 245-1461; Waterloo: Computer Helper 800-235-6646; IN: Fort Wayne: Graham Computer 423-3422; Marion: Computer Store 662-9994; KS: Emporia: Mr. Computer 342-4893; KY: Lexington: Lexington Computer 268-1431; Louisville: Computer Emporium 582-4486; Alexandria: Delta Computer 442-0217; Metairie: Computer Shoppe 454-6600; LA: Shreveport: Compco Computer 869-1282; MA: Chicopee: Custom Computers 594-6682; Needham: Neece 449-1760; MD: Gaithersburg: MacCarter 330-9116; Laurel: Comm Center 792-0600; Wheaton: Computer Crafters 933-5820; NY: Ann Arbor: Learning Center 996-1616; Farmington Hill: Retail Computer Center 626-3240; MA: Newton: Microware Unlimited 964-0202; MN: Baxter: Computer One, 626-4650; Hutchinson: Hutch Computer Inc. 587-2940; Manchester: United Computer 391-9409; MS: Meridian: ComputerLand 482-8523; Starkville: Teletronics 324-4614; MT: Billings: ComputerLand 259-0586; Computer Store 245-0012; Bozeman: Computer Lines 586-7693; NC: Charlotte: Computer Room 377-9821; Greensboro: Computer Gallery 854-2443; Leicester: Great Smokies Software 863-4128; Rocky Mount: Computer Displays 937-4781; ND: Fargo: ComputerLand 235-0699; NE: Fremont: Fremont Office 721-6436; NJ: Cranbury: Clancy/Faul Computer 655-8100; East Hanover: Computer Factory 887-5711; Englewood: Computer Madness 462-9696; Ingleside: American Business 569-0653; Fairfield: Computer Discount 882-0039; Hasbrouck: Nubs Computer 288-6827; Iselin: Computer Factory 750-8810; Northvale: Micro Age 529-1400; Montvale: Computer Center 391-1006; Norwalk: ComputerLand 646-5611; Ocean Township: Transnet 531-7020; Paramus: ComputerLand 845-9303; Computer Factory 599-2700; Summit: Stonehenge Computer 277-1020; Totowa: Computer Factory 785-0088; Union: Transnet 688-7800; ComputerLand 851-2858; Wayne: Computer Pro's 256-7070; NM: Albuquerque: Rocky Mountain Computers 292-2775; Wayne: Computer Pros 256-7070; Carlsbad: Computer Network 621-0937; NY: Brooklyn: Computer Factory 377-4999; Buffalo: Logical Operations 856-0596; Clifton Park, Lela Computer 383-0035; Garden City: Computer Factory 248-6700; Hicksville: World Computers 822-1400; Hauppauge: Computer Factory 360-7700; Huntington Sta.: B.C. Communications 549-8843; Little Neck: ComputerLand 423-5280; Manhasset: Computer Microsystems 627-5240; Melville: Computer Factory 351-8460; Merrick: Byte Shop 379-2983; Middletown: Computer Emporium 343-8740; Nanuet: Computer Factory 824-8008; NYC: ComputerLand/Third Avenue 624-8006; ComputerLand/Seaport 608-2266; ComputerLand 213-1000; Olden Computers 725-1234; Software Solution 608-9595; Computer Factory/52nd St. 864-0170; Computer Factory/Lexington 687-5000; Computer Factory/Broadway 344-0733; Computer Factory/47th Street 687-5000; Computer Factory/Maiden Lane 968-0100; Computer Factory/Third Ave. 980-1700; Portchester: A World of Computers 937-6662; Rego Park: Computer Factory 896-0700; Syosset: ComputerLand 496-4554; Vestal: Micro World 757-0500; White Plains: Computer Factory 681-6060; Whitesboro: Update Computer 768-8151; Yonkers: Computer Factory 793-1300; OH: Akron: ComputerLand 836-7900; Canton: ComputerLand 493-7786; Strongsville: CBM Computer 238-0060; Toledo: Abacus 865-1009; OK: Oklahoma City: OnLine Computers: Tulsa: ComputerLand; OR: Beaverton: Software Station 641-4667; Canby: Clackamas Computers 650-0079; Eugene: Computer Solutions 344-9677; Medford: Micro Computers 773-9661; Portland: Conroy Lapoint 620-4990; Moore's Audio Visual 233-5621; PA: Allentown: General Computer 266-1880; Gladstone: TJ Enterprises 785-5311; Monroeville: Computer Factory 656-1880; Pittsburgh: Computer Factory 355-0101; Columbia: Byte Shop 788-2525; TN: Knoxville: Educational Computing Systems 966-6731; TX: Abilene: Computer Shop 895-7320; Arlington: Hardin Computer 478-2775; Austin: ComputerLand 834-2499; Beaumont: Concept Computer 842-1163; Houston: Computer Craft 977-0247; Computer 956-7483; Laredo: ComputerLand 724-1551; Lubbock: Agriplus; Richardson: Metropolitan Computer 437-9119; Sherman: Business Computers 893-6834; Spring: Williams Computer 821-9813; Temple: Action Business Sys. 773-5351; Victoria: Computer Command 573-4305; Leesburg: Computer Solutions 777-3710; WA: Bellevue: Conroy Lapoint 455-0206; Kennewick: 783-6420; WI: Sheboygan: 452-2777; West Allis: Software Center 545-5727; WV: Morgantown: Computer Corner 292-8298; WY: Casper: Computer Solution 265-8388

**SUPERMAC**  
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# Introducing DataFrame

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Why DataFrame? Because DataFrame was designed especially for the Macintosh Plus. It's the first hard disk to take full advantage of the new high performance SCSI port that comes with every new Macintosh. DataFrame is not only faster than competing external disks, but faster than internal drives as well. And Apple wanted to demonstrate this big advantage over the older 512K Macintosh.

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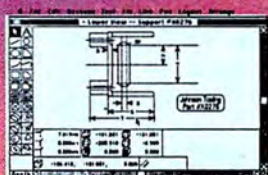
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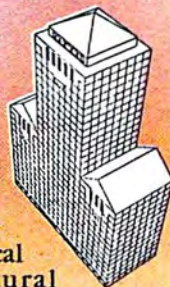


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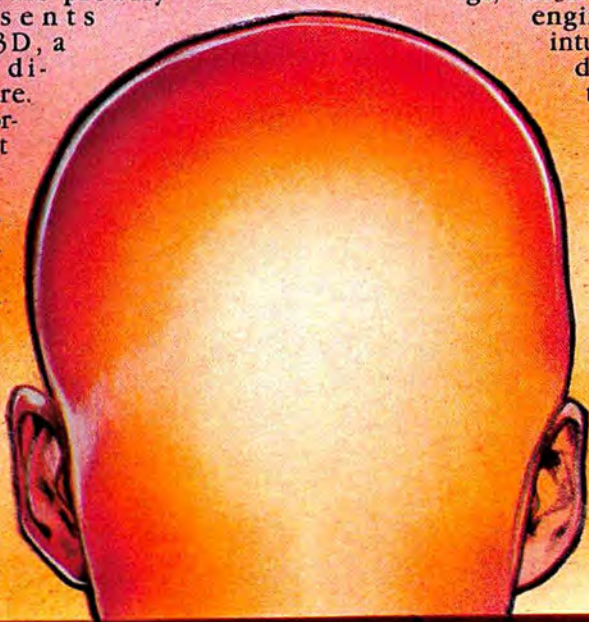
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Functioning as a complete two- and three-dimensional graphics package, Mac3D allows artists, architects, engineers, and others to intuitively create complex designs. Use it for illustrations, presentations, desktop publishing, technical drawings, architectural models, and more.



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**Mac3D**

Mac3D requires a 512K or larger Macintosh or Macintosh Plus and an external disk drive. Mac3D is compatible with the Apple ImageWriter and LaserWriter.







by Doug Clapp

# THE LAWS OF PERSONAL COMPUTING, AGAIN

Years ago, I wrote a column about the "Laws of Personal Computing." They're not my laws, mind you; Professor T. G. Lewis of Oregon State University gets the credit. (Notice that he didn't name the laws after himself; modesty lives—in some places, anyway.)

The laws first appeared in *BYTE* cons ago, in October 1979. I read the article and loved it. The laws buzzed around my head. They still do. Now, 7 years later, it's time to drag them out and see how well they've worn. Let's see. The Laws of Personal Computing are:

1. "Personal computing equals interactive computing: The personalness of a computer system increases in direct proportion to its interactivity."

Score one for Lewis. In my earlier column, I suggested an addition to the last sentence: "and in inverse proportion to its price." If you can't afford it, it's not personal.

Alan Kay has the best remark, though. Kay says that computers will be "personal" when people use them for grocery lists. Why didn't I say that?

2. "Conservation of agony: the work expended to program a computer to solve a problem plus the work expended to construct the computer system remains constant for that problem."

Isn't that one lovely? Lewis is 2 and 0. And it's a real equation!  $\text{Work}(p) + \text{Work}(c) = \text{SomeConstant}$ . One  $\text{Work}()$  goes up, the other  $\text{Work}()$  goes down. In other words, Microsoft can write *Excel* for the Timex Sinclair! But it won't be easy.

3. "As the power of a personal computer increases, its price decreases."

Ah...what do you think? Too vague? Mainframe computers are also decreasing in price and gaining in power. All "high technology," in fact, seems to strive for a "least cost to produce." Does Law 3 also work for software?

4. "Software is hard; hardware is soft: it is economically more feasible to build a computer than to program it."

"I guess Macintosh is an exception to that rule," admitted Lewis when I called him up. Macintosh is an exception, but only if "a computer" implies "lots of computers." Certainly, it's cheaper to build rather than to program a computer, if you're only talking about one computer. But Macintosh is a "software machine," and the cost of developing software—though horrendously expensive—needs only be borne (for the most part) once. You only pay for the "software parts" once; you pay for hardware each time you build a computer.

5. "Knowledge costs more than soft-



- Professor T. G. Lewis -

ware and hardware: the usefulness of personal computers increases in inverse proportion to how much people must know in order to use them."

This law is a variation on Law 1. You could also state that "usefulness increases in direct proportion to interactivity." (Although I can imagine a few good counterarguments. Can you?)

6. "The color, shape and size of a personal computer are often more important to a buyer than what is inside the computer."

Jeez. Does this mean Jobs was right? When I first read this law, I wished it had said "color, shape, size and price...." I still do.

7. "BASIC is to personal computing as sign language is to English."

Lewis, you must remember, is a college professor. College professors are not, as a species, fond of BASIC.

8. "An operating system is a feeble attempt to include what was overlooked in the design of a programming language."

I love this one, but it may be dated.

9. "The ultimate personal computer is a robot: the goal of personal computers

is to reduce the difference between humans and computers."

Yes. The ultimate personal computer is a robot. When I first read this law, 7 long years ago, I imagined that useful, affordable personal robots were just around the corner. Pretty Soon Now, or however it goes. I'm still waiting.

10. "Knowledge is power: information is the fabric of knowledge; the controller of information wields power."

You bet. And there they are, only slightly less for wear after 7 years. What about Lewis himself? This is the good part.

When I began this column, all I knew was that a "T. G. Lewis of Oregon State University" was responsible for the laws. A few calls later, I found him at Oregon State University in Corvallis, Oregon. In the Computer Science Department. What's he doing? Programming mainframes? Teaching assembler? Doing research into programming PAL chips?

Nah, he's writing Macintosh software! Professor Lewis, it turns out, formerly used IBM PCs, but now prefers Macintosh. Currently, he's engaged in a project to create a new Macintosh programming environment (his words). His project will create resources for Macintosh applications.

To create resources now, you need to add the relevant portions of code to your program. Or, at the very least, you need to write arcane text files that are "compiled" by a special program called a *Resource Maker*. The output of the *Resource Maker* is then globbed together (linked) with other program code to create the final program. Either way, it's a pain.

Lewis' application will allow you to create resources for programs by clicking, dragging, selecting and drawing—more like *MacPaint* than *MacPascal*. When you've got the "looks" the way you want them, the application turns your efforts into code. In effect, the project will allow you to reverse Apple's suggested way to write Macintosh applications. Apple says: write the program code, then write the resources, then combine them. Lewis' application allows you to create the resources first—and get all the looks right—then fill in the "stubs" with code. In all, it's a much easier way to "program"

Lewis' program may be ready as you read this. Lewis expects to place the program, *TML Pascal* source code and all, in the public domain. Then even nonprogrammers can do much of the work involved with creating a Macintosh application.

Isn't that great? Thanks, Professor. ☐



# How To Make Your Maccing Faster, Easier, and a Lot More Fun!



## Tempo macros speed your work or play on the Macintosh.

Record any series of Macintosh commands or keystrokes and Tempo will play them back, at top speed, every time you need them. With a single key code, you can execute a macro that replays an unlimited number of commands.



## Add intelligence to your Macintosh software

If a macro needs to be performed 27 times in a row or every 15 minutes, Tempo will do that. If it depends on whether a number starts with a "\$" or if a name is greater than "Jones," Tempo will read it and decide which way to branch. Tempo can even determine if it needs to *branch to another program*. Tempo will close the program you're in, open the other, and continue replaying your commands. Automatically. Exactly as you require.



## Intelligent macros for the Macintosh.



## Edit your macros for changes or corrections

You may edit Tempo macros the same way you create them – click to edit, click to change, click to save. Tempo has no complex programming language, simply step-by-step menu commands and dialog boxes.



## What you can do with Tempo

- Reduce complex commands to a single keystroke.
- Automate moving information from one program to another.
- Have Tempo wait until the time you specify, then perform multiple tasks on your Macintosh – unattended.

- Guide new users through programs, prompting them with dialog boxes along the way.
- Distribute time-saving macros to other members of your company.
- Customize programs to work the way you need them to.
- Simplify, automate, customize, modify, design, and create in a million different ways!



## Other Tempo features...

- Pause during a macro replay to enter text or make a selection.
- Record macros up to the limits of your disk space – hard drive or floppy.
- Assign up to 450 keyboard commands in each application.
- Use Command key codes or Option key codes.
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# Marlow: A.D. 2000?

## Future schlock.

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Math problem solver

But recently, some slick city planners showed up at MacConnection and told us our dynamic little village needed a 15-year plan.

Their suggestions were downright imaginative. Computerized laser light shows highlighting a fountain in the middle of the mill pond. A rapid transit system, code named H.A.R.T. (Holographic Acrobatic Rapid Transit)—just



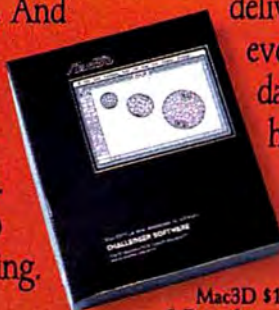
Sidekick/Phonelink \$59  
Phone & office mgmt.

imagine where you want to go and you'll be there. Why they even figured out a way to build a 200,000 sq. ft. enclosed mall right on top of the general store.

## Forward into the past, and back.

Well, we took a good look at the experts' report. And we started thinking about building skyscrapers bigger than nearby Pitcher Mountain. And how strange it would be to have robots answering the phones and packing the boxes. And how they wanted us to turn apple orchards into parking lots, and old barns into condos.

And we decided to forget the whole thing.



Mac3D \$125  
3-D graphics package

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# Mac, Mac, Mac

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PFS:File/Report	103
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Art a la Mac Vol. 2-Variety Pack	23
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Masterpieces (jigsaw puzzles) 24

Word Challenge II (boggle-like game) 24

Perplex (scrabble-type game) 24

Sargon III (9 levels of chess) 29

### Infocom

Difficulty levels shown in italics

Seastalker (junior) 24

Ballyhoo (standard) 24

Cuthroats (standard) 24

Enchanter (standard) 24

Hitchhiker's Guide (standard) 24

Planetfall (standard) 24

Wishbringer (standard) 24

The Witness (standard) 24

Zork I (standard) 24

Zork II (advanced) 27

Zork III (advanced) \$27

A Mind Forever Voyaging (advanced) 27

Infidel (advanced) 27

Sorcerer (advanced) 27

Suspect (advanced) 27

Deadline (expert) 29

Spellbreaker (expert) 29

Starcross (expert) 29

Suspended (expert) 29

Invisicues (hint booklets) 6

### Magnum

Gypsy (the Computer Oracle) 23

### Mark of the Unicorn

Mouse Stampede (highly addictive) 22

### Miles Computing

Fusillade (arcade-maze) 21

MacAttack (3-D tank simulation) 27

Harrier Strike (3-D flight simulation) 27

MacWars (3-D space simulation) 27

### Mindscape

Rambo: First Blood Part II 24

James Bond 007: "A View to a Kill" 24

James Bond 007: "Goldfinger" 24

The Luscher Profile 24

Stephen King's "The Mist" 24

Racter (converse with your Mac!) 27

Balance of Power (world politics) 30

Brattacus (requires 512k) 30

Déjà Vu (murder mystery) 33

### Origin Systems

Exodus: Ultima III (fantasy adventure) 38

### PBI Software

Feathers & Space (arcade-style) 21

Strategic Conquest (war strategy) 29

Fokker TriPlane Flight Simulator 35

### Penguin

Transylvania (rescue the princess!) 24

Crimson Crown (sequel to above) 24

The Quest (beware of the dragon!) 24

Xyphus (role playing adventure) 24

### Practical Computer Applications

MacGolf (requires 512k) 36

### Priority Software

Forbidden Quest (space adventure) 24

Gateway (sci-fi fantasy adventure) 25

### Psion

Psion Chess (3D and multi-lingual) 31

### Scarborough Systems

Make Millions (business simulation) 29

### Sierra On-Line

Frogger (classic video game) 24

Championship Boxing 24

Ultima II (role-playing adventure) 35

### Silicon Beach Software

Airborne! (digitized-sound war game) 20

Enchanted Scepters (text & graphics) 21

### Sir-Tech

Mac Wizardry (fantasy) 36

1-800/Mac&Lisa 590U

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# world.

## Spectrum Holobyte

GATO (submarine simulation)	\$26.
Tellstar North Level I (reqs. 512k)	27.
<b>Unicorn</b>	
Futura (sci-fi adventure)	24.
Utopia (science fantasy game)	24.
Animal Kingdom (ages 6-12)	27.
Fraction Action (arcade style math game)	27.
Mac Robots (pre-school program)	27.
<b>Videx</b>	
MacCheckers/Reversi	28.
MacGammon/Cribbage	28.
MacVegas	34.

## HARDWARE

### Assimilation

Mac-Epson-Connection	40.
Mac-Daisywheel-Connection	45.
MIDI Conductor	75.
Mac-Port-Adaptor	85.
Mac-Turbo-Touch	89.
Numeric-Turbo	145.

### Compucable

Mac to Hayes Smartmodem cable	16.
Mac to Imagewriter cable	16.
Mac Plus to Hayes Smartmodem cable	19.
Mac Plus to Imagewriter II cable	21.

### Cuesta Systems

Datasaver AC Power Backup (90 watts)	call
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### Curtis Manufacturing

Diamond (6 outlets)	29.
Emerald (6 outlets; 6 ft cord)	36.
Sapphire (3 outlets; EMI/RFI filtered)	47.
Ruby (6 outlets; EMI/RFI filtered; 6 ft cord)	55.

### Epson

AP-80 (Imagewriter compatible)	call
FX-85	call
FX-286 (replaces FX-185)	call
LQ-1000 (letter quality dot matrix)	call

### Ergotron

MacTilt (incl. external drive bracket)	75.
MacBuffer 256k	219.
MacBuffer 512k	319.
MacBuffer 1 Megabyte	489.

### Hayes

Smartcom II (communications software)	89.
Smartmodem 300	call
Smartmodem 1200	call
Smartmodem 1200 Package	call
Includes modem, software and cable.	
Smartmodem 2400	call
Transet 1000	call

### IOMEGA

Bernoulli Box (dual 10-MB storage)	2475.
10-Meg Cartridge	48.
Head Cleaning Kit	69.

### Kensington

External Disk Drive Cover	8.
Mouseway	8.
Mouse Pocket	8.
Mac Dust Cover	9.
Imagewriter (II) Dust Cover	9.
Mouse Cleaning Kit w/Mouse Pocket	16.
Universal Printer Stand	17.
Disk Case (holds 36 Mac disks)	19.
Disk Drive Cleaning Kit	19.
Tilt/Swivel	22.
Polarizing Filter	31.
Surge Suppressor	35.
Starter Pack (includes Tilt/Swivel)	53.
A-B Box	62.
Control Center	62.

## Koala Technologies

KAT Graphics Tablet	\$139.
MacVision (digitizer)	169.
<b>Kraft</b>	
QuickStick (Mac joystick)	45.
<b>Microsoft</b>	
MacEnhancer 2.0	163.
<b>Mitsuba</b>	
Super 5 400k External Drive	199.
<b>Mouse Systems</b>	
A+ Optical Mouse	59.
<b>N² Products</b>	
Mac to Modem cable (6 feet)	19.
Mac (Plus) to Printer cable (6 feet)	19.
Mac to Transet 1000 cable (9 feet)	19.

## Paradise Systems

Mac 10 (10 megabyte hard disk)	599.
Mac 20 (20 megabyte hard disk)	849.

## PBI Software

Switch Box	36.
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## PKI

Sydewydr 400k External Drive	225.
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McD 800k External Drive	285.
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## Systems Control

MacGard (surge protection)	55.
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## Thunderware

Thunderscan (high-resolution digitizer)	175.
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## Video 7

MouseStick	39.
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## Western Automation

DASCH RAMdisk 500k	399.
DASCH RAMdisk 1000k	699.
DASCH RAMdisk 2000k	799.

## DISKS

BASF 3 1/2" Disks (box of 5)	10.
Sony 3 1/2" Disks (box of 10)	19.
Sony 3 1/2" Double-sided Disks (10)	30.
Fuji 3 1/2" Disks (box of 10)	19.
Fuji 3 1/2" Double-sided Disks (10)	26.
MAXELL 3 1/2" Disks (box of 10)	20.
MAXELL 3 1/2" Double-sided Disks (10)	35.
Memorex 3 1/2" Disks (box of 10)	23.
Verbatim 3 1/2" Disks (box of 10)	23.
3M 3 1/2" Disks (box of 10)	21.

## INFORMATION SERVICES

### Compuserve

Compuserve Information Service	27.
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### Source Telecomputing

The Source (subscription & manual)	30.
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## MISCELLANEOUS

### Automation Facilities

Floppyclene Drive Care Kit	19.
Floppyclene Drive Care Refill	10.
MacPak Complete Care System	29.

### Clean Image Ribbon Co.

Clean Image Ribbon Kit	12.
------------------------	-----

### Computer Coverup

External Disk Drive Cover	4.
Imagewriter (II) Cover	8.
Mac (Plus) & Keyboard (two covers)	10.

### Diversions

Underware Ribbon	9.
Colorpens	10.
Jumbo Colorpens	13.
ColorPack (includes Colorpens)	19.

### Environmental Software Company

The Clutch (holds 8 disks)	9.
MACATTIRE (Rip-stop nylon covers)	
External Drive Cover (400k & 800k)	7.

Numeric Keypad Cover	\$7.
Imagewriter (II) Cover	11.
Wide Imagewriter Cover	13.
Mac (Plus) & Keyboard Cover	15.
Laserwriter Cover	17.
Mac (Plus) & HD20 & Keyboard Cover	18.

## I/O Design

Imagewriter Color Transfer Ribbon	10.
Imagewriter	45.
Imagewriter II (Imagewriter II case)	49.
Imagewriter wide	49.
Macinware Plus (Mac Plus carrying case)	69.

## Innovative Concepts

Flip & File Micro (holds 25 disks)	9.
Flip & File (holds 40 disks)	18.

## Innovative Technologies

The Pocket Pak (holds 6 disks)	10.
The Easel (holds 20 disks)	14.
The Disk Directory (holds 32 disks)	21.
Compubag (Mac carrying case)	59.

## Kalmar Designs

Teakwood Roll-top Case (holds 45 disks)	14.
Teakwood Roll-top Case (holds 90 disks)	21.

## Magnum

Mouse Mover (let your mouse ride!)	14.
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## Moustrak

Moustrak Pad (standard 7"x9")	8.
Moustrak Pad (large 9"x11")	9.
Imagewriter Pad	12.

## Pacific Wave

Flip Sort Micro (holds 60 disks)	15.
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## Ribbons Unlimited

Imagewriter Color Ribbons	5.
Imagewriter Ribbons Six Pack	27.
Imagewriter Rainbow Six Pack	27.

## Smith & Bellows

Mahogany Disk Case, made by New England Craftsman (Holds 90 disks)	28.
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# Q U I C K

**What's new, what's happening in the world of Mac? We'll keep you up-to-date with our monthly Quick Clicks.**

## FULLPAINT \*\*\*\*\*

List Price: \$99.95. Published by Ann Arbor Softworks, 308½ S. State St., Ann Arbor, MI 48014. (313) 996-3838.

It's almost like heresy to suggest that MacPaint could have been better than it actually turned out. For a long time, it was the one Mac program that could do no wrong (in the eyes of consumers, that is). Well, we have some bad news and some good news. Bad news: it could have been done better. Good news: now it is. FullPaint stands a good chance to replace MacPaint in the long run, simply because it's all that Paint ever was, plus a lot more.

The main screen is almost exactly like MacPaint, except for a few new tools in the tool palette. Up to four Paint documents can be loaded at once, and each is visible in its own window, which can be resized. There are scroll bars in each window, which

permit precise scrolling in pixel increments, as well as standard scrolling. Any window can be expanded to the full screen and even the menu bar can be removed, leaving the entire screen empty, except for the tool and shades palettes. A touch of the space bar removes these, too. All the drawing tools can be used on the entire screen.

Areas larger than the active window (or screen) can be selected and edited with the

standard cut, copy and paste commands. The program still doesn't provide a full-page drawing mode, but the FatBits mode automatically scrolls when drawing larger than the active FatBits window.

Special effects similar to those found in ClickArt Effects (perspective, skew, distort and rotate) have been built directly into the program, and all perform quite well. Special text modes include an invert mode (text typed onto a black background appears white) and a transparent mode that allows background patterns and graphics to show through typed-in text. Paintbrushes can be edited from within the program. Other features include full-screen rulers, a mouse position indicator, and advanced LaserWriter capabilities.

If you bought a Mac Plus, you should purchase FullPaint instead of MacPaint. Anyone who uses MacPaint, and wishes that it were complete, breathe easy: the answer is here.—DB



## PACKER \*\*\*\*\*

List Price: \$29. Published by Bobbing Software, 67 Country Oaks Dr., Buda, TX 78610. (512) 295-5045.

Packer is a very small, simple utility program that performs two valuable functions. Its primary function is to compress any Mac file down to a smaller size. It can also password-protect compressed files.



Compressed files are protected by the compression process itself, since a copy of Packer is required to read them. That means the optional password protection is actually a second layer of protection. Passwords are sensitive to case (E is not equal to e) and to embedded invisible characters or spaces, so be careful when creating them.

Operation is simple and basically foolproof. About the only problem that could occur is to password-protect a file and then forget the password. In that case, you're out of luck.

The packing process is reasonably quick with 10K text files taking about 30 seconds. Unpacking seems to usually be slightly faster. Packing and unpacking are accompanied by a graphic display that shows the progress of the operation. Space savings depend on the type of file being compressed. Good sized text files are compressed to approximately half their original size. Smaller files do not show as much

space saved, since their formatting information usually can't be shrunk. Some files, such as MacPaint and MacWrite 4.5 files, are already stored in a compressed format and Packer can only shrink them by approximately 20 percent.

Users always have the option to keep the original file when compressing files. When that option is chosen, you will wind up with two files for each one packed. All Packer options can be selected from pull-down menus or from the keyboard (using Command key combinations).

Another useful feature allows users to pack or unpack multiple files in one operation. Simply select the files on the desktop and double click the Packer icon. The documentation gives special directions on using Packer with Switcher.

This program is particularly useful for creating backups. Users can direct the packed files to any volume, making backing up very easy. The program runs flawlessly and is the best of its type seen so far.—SB

## MACSCHEME \*\*\*\*

List price: \$125. Published by Semantic Microsystems, 4470 S.W. Hall St., Beaverton, OR 97005. (503) 643-4539.

Two of the most popular terms used to describe the future of computing are "artificial intelligence" and "fifth generation language." However, few people can supply an

understandable definition of either of these terms, and it will be a few years until useful software oriented towards this new direction hits the streets. In spite of that, development tools that actually embody these concepts have been available for many years, with much of the design of the Macintosh descending from some of the later research.

Scheme is a direct descendant of LISP, which is one of the classic languages used for building "intelligent" systems in software. MacScheme's version of the language is commonly referred to as a "dialect," as it shares most of the basic constructs of LISP while having some unique features of its own.

MacScheme is interpreted, which has



# C L I C K S

advantages and disadvantages. It is relatively easy to enter, run and debug programs quickly; but it isn't possible to build programs that can be run alone (independently of the MacScheme interpreter).

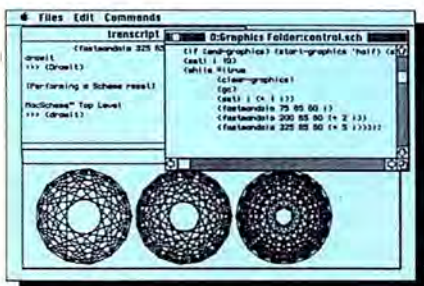
Programmers enter their programs into standard Mac text-editing windows, and have all the requisite amenities (Cut, Copy, Paste) present. Unfortunately, MacScheme doesn't have a "Print" command in its File menu! Instead, users must actually write a MacScheme program to print their other MacScheme programs, or even to use any text editor, such as MacWrite.

On the plus side, MacScheme can execute any procedure or command independently of the rest of a program. With the

recently released version 1.1, programmers have limited access to QuickDraw for drawing pictures. Otherwise, MacScheme is almost exclusively text-based. Like all AI-type languages, it has a ravenous appetite for RAM. While the manufacturer claims that, by taking certain precautions, users can construct and run a 3,000-line program on a 512K Mac, we experienced problems with memory on smaller programs, and a few of these resulted in system crashes and data loss. The program works fine with HFS, but had some problems running on our Macintosh Plus.

The manual is terse but well-written, and extensive examples are provided, both in the text and on disk. Semantic Microsys-

tems also includes a book called *The Little LISPer*, which is a good, simple tutorial on the methods and intricacies of LISP.—Steven Maller



## THE MIST

List Price: \$54.95. Published by Mindscape, Inc., 3444 Dundee Road, Northbrook, IL 60062. (312) 480-7667.

Do you like gory movies? You know, the kind with the army of gooey monsters, human sacrifice, people strung up on meat hooks and other fugitives from your worst nightmares? If so, *The Mist* is just the game for you.

Based on a short story by Stephen King, this text adventure bears his unique stamp. From the descriptions of the stricken township's population to the explicit narratives in which various monsters suck out their

victims' lungs, King's black humor and keen sense of the macabre is what makes this story palatable—even enjoyable.

As you'd expect from a Stephen King novel, the adventure begins quite benignly. Our hero is impatiently standing in line at a supermarket checkout counter when the inevitable nightmare begins. The town suddenly becomes enveloped in a thick white mist, from which issues a stream of misshapen, horrible monsters like the Bug, a gigantic, oozing insect, and the Bird, a huge mutant that can snap a person's head off with a single swipe of its beak.

The immediate object is, of course, to survive the trip home, search out your son, and try to figure out what caused the horror and what, if anything, you can do to stop it. Personally, I'd just as soon take the next bus out of town, but of course the road is blocked by an army of various monsters. Each creature can be killed with a different object, but first you'll have to find it, then figure out what to do with it.

This game is hard. First, players have to read each description very carefully, and occasionally remember to LOOK CLOSELY AT an object they may have merely looked at before. Second, timing is essential. The

sequence of events proceeds according to the program's own inner clock, so while it might not be safe to leave the supermarket on the first move, it might be possible to do it on the third.

The game's sentence parser (the program used to create a vocabulary of words the computer understands) is quirky. Try to use a word that the Mac can't understand, and rather than tell you what's wrong with your phrasing (other text games might say "I don't understand the word 'Fleece'"), this sentence parser just funnels back nonsense. Only very experienced adventure game players will have the patience and attention to detail that's required to win this game. And remember, you're on your own. Mindscape has no plans to publish a hint book for *The Mist*.

Despite its sentence parser, the fact that players must go through a limited reboot to return to a previously saved game (up to 9 positions can be saved to a separate disk) and the fact that the program can't recognize an external disk drive, there's something about *The Mist* that makes you want to solve it. Chalk up another notch to Stephen King's ability to get readers absorbed in his stories.—TFH



## CRICKET GRAPH

List Price: \$195. Requires 512K. Published by Cricket Software, 3508 Market St., Philadelphia, PA 19104. (215) 387-7955.

Cricket Software has established a solid position in academic circles and industry with an excellent statistical program called StatWorks. Cricket now seems poised for a strong assault on the general business market with *Cricket Graph*, a presentation graphics package.

*Cricket Graph* is a very strong program

that generates any of 12 different graph types for data entered manually or transferred from other software. In addition to the standard graph types—bar, pie, column, line, scatter and area—*Cricket Graph* also draws stacked bar and column graphs, polar coordinate graphs, a double-Y graph that overlays two disparate sets of data even if they are computed on different scales, a text graph and a special type of chart for quality control applications. Data in the active data window are graphed simply by pointing at a picture of the desired graph type in the Graph menu.

Multiple data and graph windows can be displayed simultaneously.

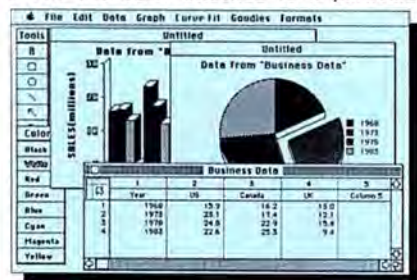
*Cricket Graph* can import data from StatWorks, or in SYLK format (used by Excel, Multiplan and Chart and available as an option in Omnis and other programs), text-only format, or via the Clipboard from Jazz and other products. *Graph* is Switcher-, HFS- and LaserWriter-compatible.

A special feature of *Graph* is its ability to print in color on the ImageWriter I or II, or on a variety of color plotters (drivers included on the Cricket disk). Depending on the printer or plotter being used, *Graph* can



# Q U I C K C L I C K S

print in up to 8 colors with up to 16 patterns, for a total of 128 variations in color. The color attached to a particular



pattern can be changed by selecting the desired color in a color palette window. Special versions of *Graph* are available (at \$495) for a variety of other color printers and film recorders, and a special version is bundled with the Dunn Macintosh Color system.

User-created graphs can be enhanced. A selection of graphics tools permits the addition of boxes or arrows, and graphs can be saved in PICT format so they can be easily transported into *MacDraw*. Graphs can also be displayed automatically in a pseudo three-dimensional mode by selecting **ADD DEPTH** from the *Goodies* menu.

One of the most powerful features of *Graph* is its self-generating macro ability. *Graph* formats (including font and style information for labels, type and style of graph, and color information) can be saved as a macro. The name of the format drops into the *Formats* menu. A new graph conforming to the saved format can be generated automatically by selecting the format name.

The manual is outstanding, with clear and straightforward explanations and examples. *Cricket Graph* is a superb program for anyone requiring presentation-quality graphs and charts. —MDW

## HOME DESIGN

List Price: \$79.95. Published by Hayden Software, 600 Suffolk Street, Lowell, MA 01854. (617) 937-0200.

Thinking of redoing your home interiors or designing a summer home? If the cost of calling in an interior consultant is not in your budget, call on *Home Design*.

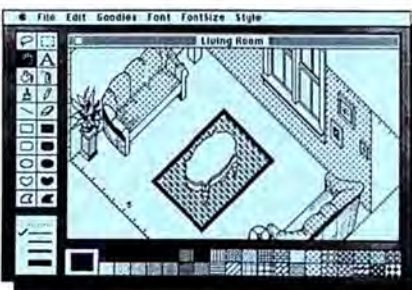
*Home Design* is a planning tool that consists of three art disks equipped with everything needed to lay out a design plan for any given room, from scale models of furnishings to accessories and appliances. *Home Design's* manual neatly holds an index of all the images available on all three disks for easy reference, saving your having to search through all disks for what you want. Also included is a pamphlet that walks the user through a sample construction session.

*Home Design* follows the Mac interface nicely, which makes it not only easy for professionals to use, but delightful for amateurs. It is made up of *MacPaint* files, but can be used with *MacDraw* if the *Art*

*Grabber* desk accessory is installed to access the *Home Design* files. *Art Grabber* facilitates and speeds the moving of items from the *Home Design* disk and a copy of the *Art Grabber Installer* is provided.

A layout grid in feet-and-inches or metric scale helps to plan rooms. Room layouts come to life in a three-dimensional plan. Everything from walls to floors and furnishings go into this grid to help in visualizing what the room will look like.

After selecting the grid, the art files will be opened from within *Art Grabber*. Open any art file and choose any part using the



selection box, then copy or "grab" it onto the Clipboard and close the *Grabber* window. Paste your choice on the grid and place it by dragging it to where you want it. The *Paint* files provide items ranging from kitchen appliances to accessories, and a choice of motif ranges from Early American to Modern.

After a room is designed and everything is where it should be, paint the room with the *Paint Bucket* to get an idea of how it will look with patterns. If wallpaper is what you like, you can even fill in the walls with a pattern. An external drive is recommended because of the number of disks being used. Because the *Art Grabber* desk accessory is being used, the grid remains on-screen while the use and switching of the other two disks is in progress without having to close and open both documents. All the art images' shapes, lines etc. can be edited by using *MacPaint* techniques.

Now that the design plans are laid out and fully detailed, and your dream home seems possible, don't forget it's only on your computer—now it's time to carry out those designs in the real rooms.—DG

## PICTUREBASE

List Price: \$69.95. Published by Symmetry Corporation, 761 E. University Dr., Suite C, Mesa, AZ 85203. (602) 844-2199.

Have you heard of graphics fever? Some of the symptoms of this insidious affliction include excessive *ThunderScanning*, *MacPaint* wrist, and *Drewed-out* eyes. Besides the obvious side effects (broken marriages, empty wallets), there's the problem of keeping track of the dozens of files that are typically created in an average mousing session. How does one organize all those files?

*PictureBase* is a program for managing large numbers of *MacPaint* and *MacDraw* documents and elements. Files created by these programs can be opened directly into *PictureBase*, or elements can be pasted in through the Clipboard, into either existing files or new ones. Files are organized by groups, or libraries. The *Catalog* window displays miniature views of the contents of

each library on any mounted disks, or volumes. A library's contents can also be viewed by scrolling backward and forward through the library entries.

Opening a specific library produces a *Picture Window*, which shows individual entries at their real size. A selection rectangle can be used to cut, copy, or clear any area of the graphic. There are also various viewing sizes (50, 25, and 12.5 percent), and the selection rectangle is active in all of these modes, allowing larger segments of a drawing to be transferred to the Clipboard.

The true power of *PictureBase* is in its searching capabilities. Each entry can be assigned a Title and Key, and the program can then search for a specific graphic entry based on these two fields. There's also an Info field where users can enter any textual information regarding an entry. This field scrolls to allow for rather long descriptions, if desired.

The program also includes a desk accessory that allows full manipulation of

*PictureBase* libraries from within any program, including the searching and editing functions. This is an extremely intelligent touch, and makes the program truly useful. A note: *PictureBase* works just fine with floppies, but is best used with a hard disk.

For the relief of Mac graphics confusion (which ultimately leads to Macmadness), *PictureBase* provides a slick, practical solution. And, best of all, it's not copy protected!—DB

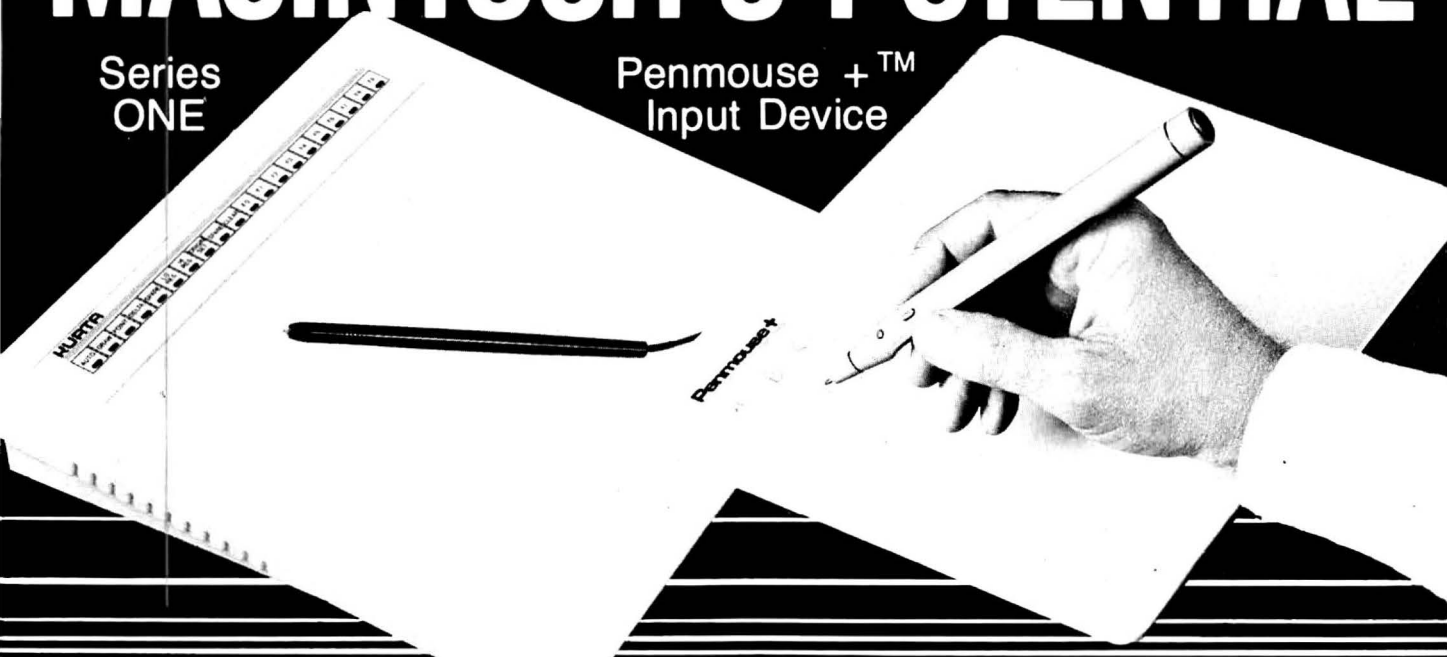




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# LOOK AT IT THIS WAY

BY ELLEN HIRAME

## ***MacSpin shows your data in new perspectives.***

INFORMATION IS THE CURRENCY of the computer world. Just as money and the ability to control and use it is the source of power in the business world, information and the ability to control and use it is the real source of power in the computer world.

Computers are superb information generators and manipulators. Any of today's computers, even the smallest and cheapest, can generate or obtain profusions of data, millions of characters of information, thousands of pages of hard copy. And they do; regularly.

Data generation and acquisition technology is so cheap and so readily available that the world has been inundated with data. The term "information overload" accurately describes the situation. The data is there, and it can be manipulated, but its real information is often so buried in its mass that it can't be found. In a simpler time people called this situation "failing to see the forest for the trees."

*MacSpin* shows you the forest. It takes all your trees, your data, and creates a picture of the forest. The brain is still the best and quickest analytic computer in the world, and it works best with visual images. Give it a picture of complex data, and let it see this image sliced, spun,

twisted and massaged as it wishes and it will find the trends, anomalies and buried information. *MacSpin* is a tool to do exactly that. This dynamic graphic data analyser uses the unique properties of the Macintosh to provide dynamic data analysis capabilities that have only been found in half-million dollar lab machines up to now. Indeed, in some significant ways, *MacSpin* is the most powerful dynamic data analyser ever created. And certainly the cheapest and the most accessible.

### **CHOOSE YOUR PARTNERS**

The information world has its own terminology (not surprised, are you?). The individual data items are often called objects or events (that's the term *MacSpin* uses). Events have attributes that distinguish them from other events. These attributes are often known as variables, and it is as variables that they are known in *MacSpin*. In the example used to illustrate this review, the events are the cars (or trucks) that make up the dataset. Their attributes include such things as horsepower, number of cylinders, weight and year manufactured.

A group of events can be referred to as though it was a single object or unit by declaring it a subset. This allows them to be selected and ma-

nipulated together. In our example, one subset might be all Japanese cars.

In most cases, up to about 600 discrete points can be seen in a *MacSpin* data cloud (that's what the image is called), before the image becomes cluttered. However, some data — particularly spatial data such as the material in the Galaxies example — is spaced so that over 2000 distinct elements can be seen. *Mac-*







*Spin* can handle more data than it can cleanly display. The data array is limited to approximately 5500 cells, while the amount of data that the program can handle while running is directly dependent on the free memory (RAM) available. *MacSpin* uses advanced memory management techniques so that even 128K Macs can run and manipulate substantial datasets.

Data entry is reasonably straight-

forward. Either type the information directly into *MacSpin*'s spreadsheet-like Worksheet (Figure 1) or create an ordinary text file with the data. The second option is far more attractive (and usually quicker and easier). The format of the information in the text file is essentially freeform. There are no special tabbing requirements and events are delineated by carriage returns. Thus, most text downloaded from other computers (including

mainframes) should work with little or no modification. The current version of *MacSpin* (1.0) does not support cutting and pasting from the Clipboard, so data can't simply be selected in another application, such as *Multiplan* or *Excel*, copied and pasted into *MacSpin*. This major deficiency is at the top of the publisher's (D<sup>2</sup> Software) fix list, and should be available in version 1.1, which is promised by midyear. Once



## LOOK AT IT THIS WAY

the required data has been entered, *MacSpin* goes to work.

The Dynamics window ("Cars") occupies the left two-thirds of the screen. This is the *MacSpin* stage — where data comes to life. In the Dynamics window shown in Figure 2, there are several horizontal lines composed of irregularly spaced dots. Each line represents cars with a different number of cylinders, and each point corresponds to a car that actually has that number of cylinders. The top line contains a point for each car in the sample that has eight cylinders, and the bottom line contains a point for each car that has three cylinders. Several facts are immediately visible. For example, there are no cars with seven cylinders. While a search of the 418 events in the dataset would reveal the same information, here a glance was both sufficient and stronger proof. If it's there, it will be seen. When scanning numeric or alphanumeric data, there is always the danger of overlooking or misreading an item.

There's more information available in this multivariate plot. Distance along the group lines toward the left indicates increased miles per gallon. That makes it easy to see that eight-cylinder cars get worse gas

mileage compared to four-cylinder cars.

The points in the data cloud represent the elements or events of the dataset. Click on any point in the Dynamics window to highlight it, and, while the mouse button is held down, display its name. If the Events window is active, the name of the car will also be highlighted there. This feature works the other way, too. Clicking on a name in the Events window causes the corresponding point in the Dynamics window to be highlighted. If you can't see the highlighted point in a busy Dynamics window, choose **USE HIGHLIGHT** in the Markers menu and highlighted points will cover an 8-by-8 pixel area instead of a 2-by-2 pixel area.

Holding down the **OPTION** key while pressing the mouse button in the Dynamics window displays the positions of each variable in terms of the currently selected variable. To obtain the most information about a point, hold down both the **COMMAND** and **OPTION** keys while selecting it. This pops up a window that contains the full set of variables and their values for that event.

At times, data points will be so close together that it is difficult to click one particular point. Solve that

problem by holding down the COMMAND key and clicking. *MacSpin* will zoom in on that small part of the display. This high-resolution mode allows users to do everything that they could do at normal resolution.

There are three information windows on the right side of the screen. They are the Variables, Subsets and Events windows. These windows contain the numeric and text data for the dataset being plotted. Each has its own pull-down menu with the same name. The Events window contains the names of each point, or a serial number if the points don't have identifying labels. In our example the Events window contains the names of the cars.

An individual point is selected by clicking on it in the Dynamics window or on its name in the Events window. Groups of points are selected by shift-clicking in either the Dynamics or Events window or dragging a selection rectangle in the Dynamics window.

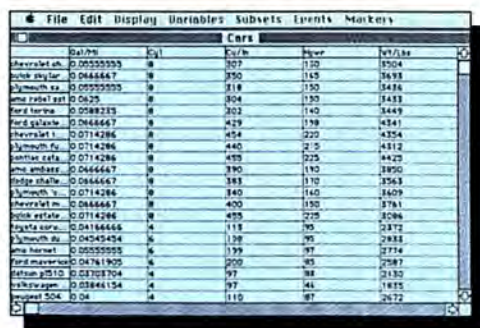
The Subsets window is initially empty, but any selected group of points can be declared a subset or added to an existing subset. Subsets also can be combined using standard set theory operations (union and intersection) to create other subsets.

Distinctive markers (for example, a cross or a plus sign) are chosen from the Markers menu and assigned to any point, group of points or subset to set them off visually. Only eight different markers are available and each can only be used once. However, a marker can apply to an entire selection, no matter how many events it contains. In Figure 2 the AMC Gremlin, Dodge D200 and Datsun P1510 each have been distinguished by a marker. Markers appear in both the Dynamics and Events windows.

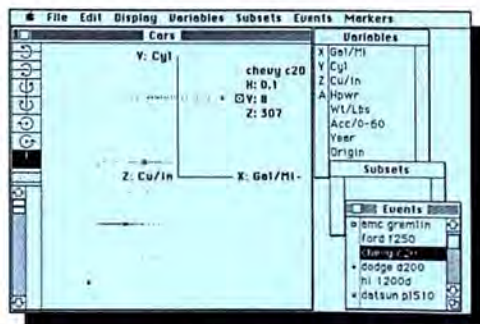
The Variables window contains the names of all the variables and indicates which ones are currently assigned to which axes. A new assignment is made by dragging the variable's name over the circle at the end of the axis, at which time the old assignment is automatically undone.

Sometimes a required variable isn't in the Variables window. If the data required can be created by ma-

**Fig. 1: Choosing EDIT DATA in the Edit menu brings up the Worksheet. Variables and data can be added or changed.**



**Fig. 2: The Cars example display. Several cars are distinguished with markers. The Chevy C20 is highlighted in the Events window and its coordinate data is visible.**





nipulating data already entered (that's certainly easier than entering new data!), *MacSpin* will do it for you. The TRANSFORM option on the Variables menu brings up a large dialog that allows the creation of new variables out of old ones (Figure 3). This dialog box is too busy. Since only one monadic or dyadic choice can be selected at a time, the large display of options could be replaced by list windows similar to the one in the lower right corner.

Missing in the TRANSFORM options is the ability to create variables that are linear combinations of other variables. However, the same results can usually be achieved by using many simple transforms, and the ability to use linear combinations is promised for the next version. How to create and use them is even covered in the current manual.

## SPIN YOUR DATA ROUND AND ROUND

The primary dynamic manipulation tools are contained in a tool palette on the left side of the Dynamics window (Figure 4). The top six tools are rotation icons. Each controls one of the data cloud's six possible motions. To rotate the data cloud, click on these icons. Rotation is quick and quite smooth.

The program intelligently augments the image it presents (for example, it makes pixels that are visually toward the front of the image brighter, while those in the back are dimmed) to enhance depth perception as the 3D data cloud rotates.

Next down is the Tripod icon. This simply toggles a reference set of axes on the screen. Keep it turned off for best performance, using it every now and then to show a reference marker.

Datasets are actually calculated using four variables. The fourth variable is the animation axis, with the selected variable indicated by an A in the Variables window. *MacSpin* allows the user the choice of two types of animation: masking or slicing. They differ only in how the subset of events they display is formed.

Below the reference tripod toggle is an animation mode switch that controls which mode of animation is selected. In the masking mode, only

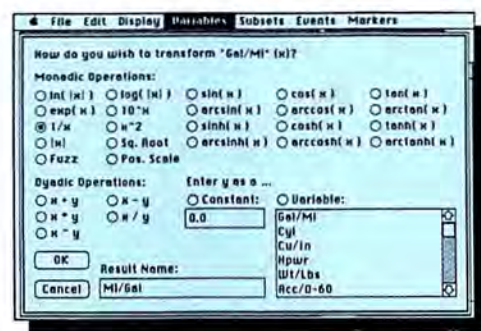


Fig. 3: Use the TRANSFORM option to create new variables from old.

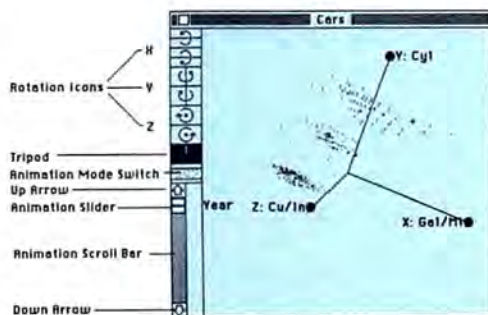


Fig. 4: Another view of the Dynamic window. The axes have been rotated from their position in Figure 2 and the names of the tools have been added.

data that has a value less than some threshold (user selected via the vertical animation scroll bar) is displayed. In the slicing mode, the dataset set can be examined slice by slice (two-dimensional plane by two-dimensional plane). The exact plane shown is determined by the value of the animation variable selected via the scroll bar.

Animation, particularly slicing mode animation, works best using animation variables with a relatively small number of values. A variable with too many values will often show too little information in each animation frame.

In our example, slicing mode animation is illustrated in Figure 5. This mode is selected by clicking on the animation switch. The animation variable for Figure 5 is "Year" (manufactured). Moving the animation slider up and down displays data for one axis unit (a year in our example) at a time only providing a powerful animation effect.

The three overlapped windows on the left show the trend away from producing fast, fuel-inefficient cars in 1971 through intermediate cars of 1978 to the slower accelerating economy cars of 1983. On-screen these frames appear as an animation.

If the animation switch was clicked once more, masking mode would be invoked. Now moving the animation slider will display data for all years no later than the slider-selected year.

The animation variable can be changed at will. Simply select any unused variable from the Variable window and drag it to the animation scroll bar slider.

## HERE'S LOOKIN' AT YOU

Many variables tend to be distributed more or less evenly, unrelated to other variables (a reasonable example in the sample dataset is color), or normally [that is, they follow the normal distribution, with its characteristic bell-shaped curve, that is beloved of statisticians — it is best defined as tending towards some value, and usually near it (in our example this would be the number of drivers)].

Both the unrelated (random) and normally distributed variables are easy to visualize in a *MacSpin* three-dimensional image. The first is a cube and the second is an egg shape. The eye is very critical, and can detect even fairly slight deviations from these highly symmetric shapes. Users can transform their variables



## LOOK AT IT THIS WAY

to make the data cloud as symmetrical as possible. The more symmetrical the cloud, the easier it is to spot anomalies. Anomalous points can be interesting for a number of reasons: they may be data capture errors (a station wagon labeled as a sedan), measurement errors (incorrect mileage readings), sampling errors, something that wasn't supposed to be captured in the first place (a truck in the cars data), or a discovery (a three-cylinder car).

*MacSpin* is not a true statistics program, but a graphical multivariate data analysis program. It often behaves like a statistics program, though, and the rules of good statistics apply. For meaningful results *MacSpin* should have at least 100 events and three to eight variables to work with, although a user well versed in statistics will, in some cases, be able to get meaningful results with much smaller datasets.

As with all statistics programs, it is easy to mislead yourself. If you know your statistics, *MacSpin* is the most powerful tool imaginable. But you must know where to use it and you must know what you are doing, or it can take you down the primrose path of erroneous results as well as any powerhouse statistics package.

### THE PROPS

*MacSpin* can save datasets in two ways. The saved files can be either ordinary text files or special (and much more compact) *MacSpin* binary files. The binary files are not only more compact, but they are much quicker to load. Binary files load many times faster than text files. For example, the Cars file (saved as text) took 42 seconds to load in one of our configurations. Saved as a binary

file, it loaded in 6 seconds! Programmers whose products create a lot of data can obtain (from D<sup>2</sup>) Lisa Pascal source code that can be written into their programs so that their programs can create *MacSpin* binary files.

*MacSpin* does not currently have a hard copy report generation capacity. The Dynamic window can be dumped to the ImageWriter or to an on-disk *MacPaint* file using standard operating system calls (COMMAND-SHIFT-3 or 4). That's it, though. This very serious deficiency should be eliminated in the first revision.

Another serious drawback is that the information in the datasets can't be printed out directly. Datasets (and subsets) can be saved as text files, exported to a database, spreadsheet or word processor, and then formatted and printed. However, that's asking a lot of users. There should be some way within the program to print this material out.

The *MacSpin* manual is the best manual seen to date. It not only instructs users in program usage in a clear and direct manner, it also takes the trouble to explain why the program does what it does and how it does it. Also included are sections on the history of dynamic data analysis, using the program effectively with a wide range of other programs (this section alone rates this manual a five-mouse rating), and commentary and tutorial involving the seven extensive sample datasets provided. These samples (which take up 198K of disk space) are absolutely fascinating. Reading the manual's excellent descriptions and running the complete and well-designed tutorial gives users superb insight into what *MacSpin* can really do. The manual is marred

only by its poor glossary and index. The rest of the manual is so strong that, in spite of them, it still rates five mice.

*MacSpin* is copy-protected. The program asks for a key disk when a copy is used. It can be copied to a hard disk. Users are prompted to insert their *MacSpin* master disk either every seven calendar days or every ten program launches (whichever comes first). While this copy-protection scheme is not too onerous, it has a serious flaw when used with RAM-based HFS (512K Mac and Hard Disk 20). Users running that configuration are forced to insert a write-enabled master disk (that's something to never do), which is then accessed by the disk drive. A failure here could wipe out the master disk. This situation does not occur in any of the other configurations tested [128K and 512K Macs, 2-meg (Levco Monster) Mac, Mac XL and Mac Plus]. If you do use RAM-based HFS, be sure to order your backup disk promptly. A backup disk is available for \$10.

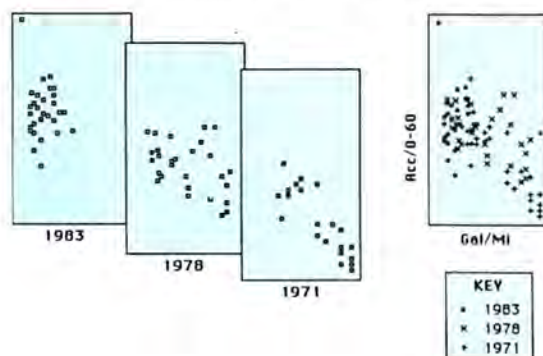
*MacSpin* is shipped without a System folder. Users must supply their own. This is a drawback only if you don't have an external drive or a hard disk. The System files were omitted so that more sample data can be packed onto the disk.

The first upgrade, version 1.1, has already been announced. It should be available before midyear and will cost \$99.95. Owners of version 1.0 will be able to upgrade for \$10. Version 1.1 will support the Clipboard fully (copy, cut and paste), have real printing function, allow linear combinations in the TRANSFORM option and have an option that will connect the points in the data cloud to form a wireframe. It will come on two disks, one with the program and System files and the other packed full of sample data.

*MacSpin* runs adequately although sometimes slowly on a 128K Mac. The major limitation involves how much data can be loaded. The program has good memory management and utilizes whatever space it has very efficiently. We encountered no problems running with a RAM-

(continued on page 153)

Fig. 5: Animation frame by frame. On the left are the start, middle and end frames of an animation of American cars data. Note that the trend from the bottom right to the top left showing cars getting less powerful and more fuel efficient between 1971 and 1983. On the right the three subsets are superimposed.







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# A SWITCH IN TIME SAVES



# 8

IF YOU HAD ASSEMBLED A WISH list of features for the Macintosh in its first year of life, the top three choices would have been enhanced speed, more memory and an external disk drive. After that, it probably would have been a toss-up between a hard disk, color, slots and multi-tasking, or at least the ability to switch between applications without having to quit to the *Finder*.

The introduction of the 512K Mac answered some of the speed and memory needs, and with it came an application designed to attack two of the 128K Mac's more serious problems. Called *Switcher* and written by Andy Hertzfeld, it was a way to speed up and simplify operations on the Mac by permitting the user to switch between applications at the click of a mouse.

Combine *Switcher* with an external disk drive and you should see an end to disk swapping forever—or so the theory goes. As long as that external drive is a hard disk, and as long as all your software can be installed on it, you can do that. But with one or two floppy drives, it often turns out that applications running under *Switcher* are passed in and out of the disk drives almost as much as they are on a single-drive, 128K Mac.

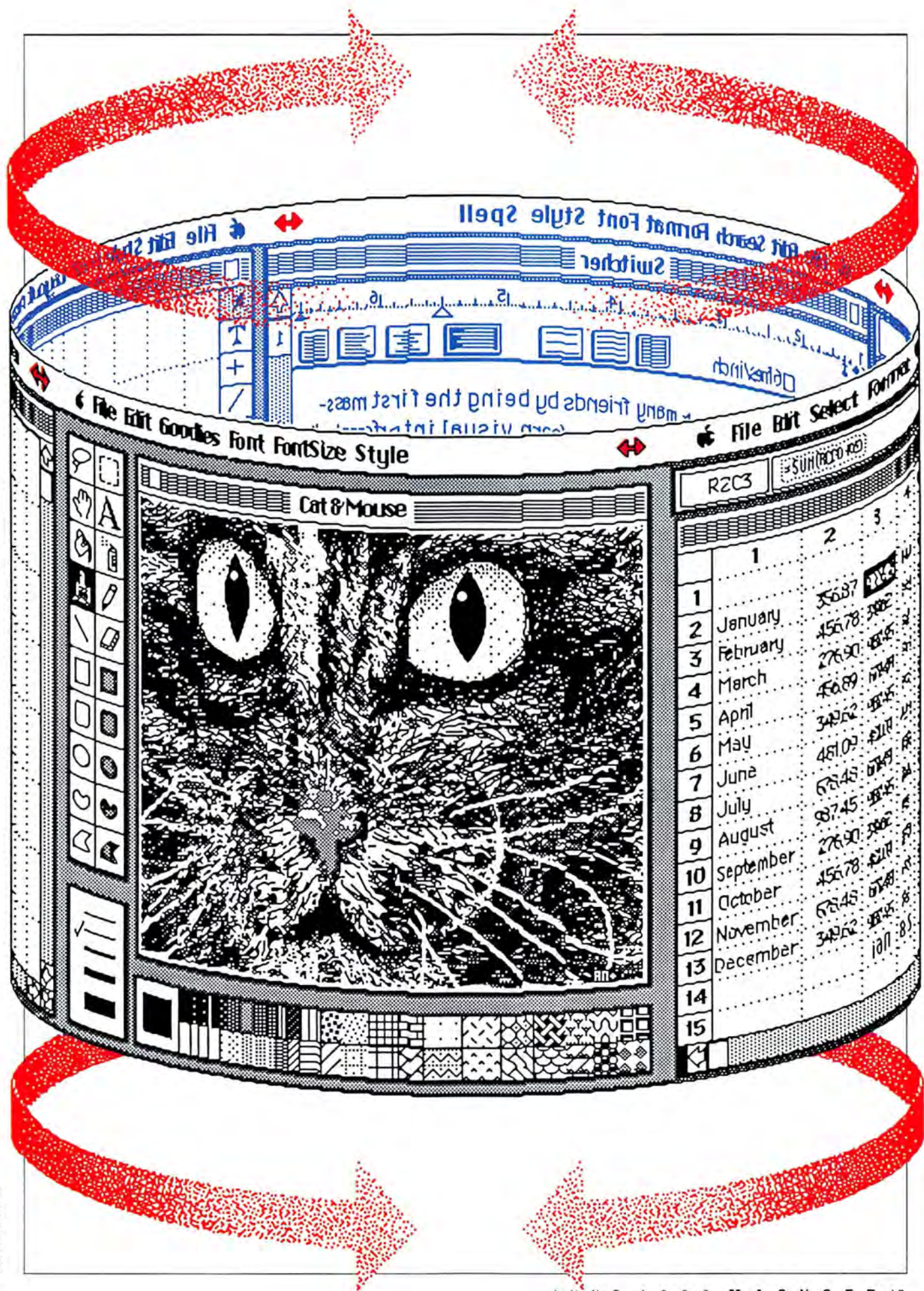
The situation can be improved to a certain extent by creating special disk sets. Put *Switcher* and the System files on one disk, for instance, then create *Switcher* disks with two or three frequently used applications on a disk. Put *MacDraw*, *MacPaint*, *PaintCutter* and *Picture Base* on a disk for graphic design applications, for example. Put a terminal program like *Smartcom II* or *Red Ryder* on a disk with a word processor and spreadsheet for telecommunications needs.

There should be some space available on the system disk to save files. It will still require some disk swap-

***Using Switcher and  
RAMdisks to make your  
Mac applications lean  
and mean.***

BY  
MICHAEL D. WESLEY  
AND  
GILBERT RANKIN





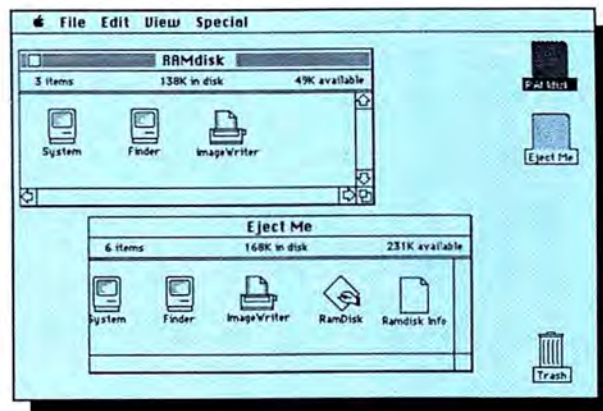


# A SWITCH IN TIME SAVES 8

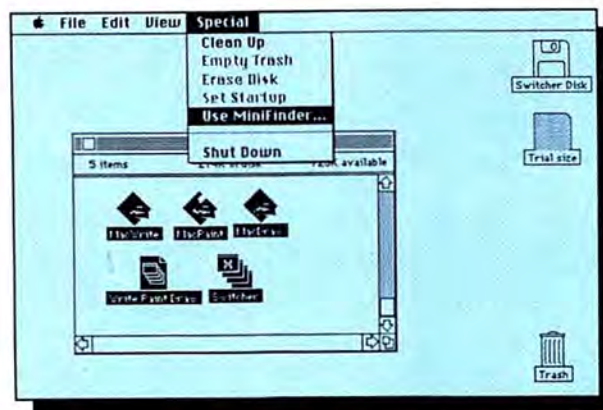
Establish a system RAM-disk by creating a Temporary Disk on startup.



The RAMdisk and "Eject Me" disks, both of which show the system files present. The RAMdisk resides in the Mac's memory, so "Eject Me" can be removed, leaving the disk drive free.



Install all the applications, *Switcher*, and *Switcher* sets in the Mini-finder.



ping if you want to keep files on separate data disks, but this may be the best way, short of having a hard disk, to work with *Switcher* and large applications.

## RAM SWITCHER

There is, however, a way to set up *Switcher* sets that practically eliminates disk swapping in a two-disk system, and reduces it considerably for single-drive Macs. It involves creating a RAMdisk that contains the necessary *System* files, then using the disk drives to hold applications and data disks.

RAMdisks are not particularly stable, so they tend not to be good

places for applications or data. If you are working in an application, saving to a RAMdisk simply means storing information in RAM (also called "volatile" memory because it goes away at the first sign of trouble). Any changes made to data in a RAMdisk are lost in the event of a power outage or crash.

The advantage to the system outlined below, however, is that all the applications and data reside on disk. Only the *System* files, which do not undergo changes, are resident in the RAMdisk. If there is a system failure for any reason, data would only be lost up to the last point saved.

The RAMdisk application soft-

ware must be able to create a RAM-disk on startup and dump the *System* files directly into the RAMdisk. Then the physical disk can be ejected, leaving both drives free. Since the *System* file is always present, there is no need to reinsert the startup disk. Because of its ability to do this, we will be using *Mac Memory Disk* from Assimilation as our RAMdisk software.

## SETTING UP

The first step is to create a *System* that occupies as little space as possible. Begin by copying the *System*, *Finder 4.1* and *ImageWriter* files onto a blank disk. Name the disk "Eject Me," for reasons that will become clear later on.

Unless there is a need to use a variety of fonts or a specific set of fonts, use *Font/DA Mover* to strip all the fonts out of the *System* file except Chicago 12, Geneva 9, Geneva 12, and Monaco 9. These fonts are required by the *System* and must be kept in.

This selection of fonts is generally sufficient for many applications and stripping out the other fonts saves about 49K, leaving only 10K occupied by fonts. You can leave as many fonts in the *System* as you like, but each one takes up space, and the *System* file should be as lean as possible so there is plenty of room left for *Switcher* to run your applications.

After removing unnecessary fonts, leave *Font/DA Mover* running and perform a similar operation to remove extraneous desk accessories. Remember that at least one desk accessory must remain in the *System* file. As with fonts, you can leave as many DAs as you want or need, but each one occupies valuable space in memory.

Stripping out the fonts as described, and removing all the desk accessories except, say the Control Panel, will leave a *System* file reduced from 117K to about 59K. With a lean *System* file, *Finder 4.1* at 47K, the *ImageWriter* file at 25K and the invisible Desktop file at about 13K the entire *System* file on "Eject Me" should take up about 134K.

Now copy the RAMdisk application from the program disk to "Eject Me," then shut down. (Note: You



can replace the *ImageWriter* driver with one for the *LaserWriter*, but this takes up a lot more space. It might be better to have a separate "print" disk with a variety of printer drivers in the *System*.)

### TEACHING RAMDISK THE SYSTEM

Reboot the Macintosh with the "Eject Me" disk. Presuming that all the files were copied correctly it should boot with no problem. If it doesn't boot normally, make sure there is a *System* file on the disk and at least one desk accessory in the *System*.

Launch the RAMdisk application. In the dialog box that appears, select the option marked "Create temporary RAMdisk automatically on startup." Another dialog box appears with a sliding switch. Move the switch until it displays a number a few K larger than the *System* folder (the sum of the *System*, *Finder*, Im-

ageWriter and *Desktop* files) on "Eject Me."

*Me* serves as the *System* disk. For the others, identify the *Switcher* sets you use most often and keep these as separate disks. For example, you might have a "word processing" disk, with a word processing program or two, a spell checker, and *Interlace* or similar database program for simple mail merge capabilities. The great advantage that the Mac affords is that applications can be customized to accommodate your personal needs.

Create application disks with the programs you need to run under *Switcher*. Be sure to include *Switcher* on the disk, and save some time by building and saving *Switcher* sets in advance (select *SAVE SET...* option on the *File* menu). Then just launch the set and *Switcher* will do the rest. Plan the disks around your program needs and memory space.

Because the *System* files occupy RAM, it is important to find the optimum configurations for the programs you want to install. Many applications will run in 128K or slightly more. Some will work a little better with a bit more memory. *MacPaint*, for example, will run in 128K, but it should be set at 180K because the system then thinks it has a full 512K to work with and keeps a document entirely in RAM, rather than constantly having to access the disk.

### SWITCHER

**Overall Rating:** ■ ■ ■ ■ ■  
**List Price:** \$19.95 from Apple, free from MAUG on CompuServe, from Delphi, and included with some applications. Published by Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014. (408) 996-1010.

ageWriter and *Desktop* files) on "Eject Me."

A final dialog box will ask which files should be copied over to the RAMdisk on startup. Select the *System*, *Finder*, *ImageWriter* and *Desktop* files, then quit the RAMdisk and shut down once again. The "Eject Me" disk is now ready to serve as the system for a *Switcher* set.

To test it, boot "Eject Me." Two disk icons should appear on the desktop, one for RAMdisk and one for "Eject Me." Note that the RAMdisk, not "Eject Me," is shown as the startup disk in the upper right corner. Now eject "Eject Me" (hence the name) and the disk drives are free.

### POCKET PACK SYSTEM

It is possible with the plan outlined to compile a complete set of working disks that will fit in a small disk folder or pocket pack. "Eject

### THE UP SIDE/DOWN SIDE

The obvious disadvantages of this technique are reduced memory for applications and reduced access to fonts and desk accessories. Of course if you have more than 512K of RAM installed, the RAMdisk system could be large enough to accommodate your favorite desk accessories and fonts and still leave plenty of room for several applications.

Even in a 512K Mac, though, the memory question can be dealt with in an innovative way. The goal is to keep the *System* folder as small as possible, and one way to do this is to eliminate the *Finder*.

### LEANER AND MEANER SYSTEM

To shrink the system even further, or to leave extra room for fonts and desk accessories you will need *MacTools*, included with *Copy II Mac*.

### MAC MEMORY DISK

**Overall Rating:** ■ ■ ■ ■ ■  
**List Price:** \$29. Published by Assimilation, 485 Alberto Way, Los Gatos, CA 95030. (408) 446-0797.

Begin by creating the applications disk first, including *Switcher* and the desired *Switcher* sets. Select all the applications and *Switcher* sets. Then select *USE MINIFINDER...* from the *Special* menu and install all the selected items in the *Minifinder*. The *Minifinder* icon will appear on the applications disk.

Launch *MacTools* and select the *Minifinder* file. Note that the *Minifinder* occupies only 4K of disk space, as opposed to 47K for the regular *Finder*. Select *RENAME* from the *File* menu and rename the *Minifinder* "Finder." Quit *MacTools*.

Now create the "Eject Me" RAMdisk as described above, but copy the new "quasi"-*Finder* onto "Eject Me" instead of the usual *Finder*. Repeat the process of installing the RAMdisk at startup, but this time the *System* folder is about 43K smaller than before (or just under 100K), so the RAMdisk can be assigned much less space. Alternatively, give the RAMdisk a full 140K for the *System* folder and fill it up with fonts and/or desk accessories.

### WISHING FOR MORE

Every Mac owner still maintains a wish list, but most of the basic needs—hard disks, more memory, more speed, more power—have been satisfied. Now we can sit back and watch what happens when developers have capabilities to play with that have only been dreamed about for personal computers. True multitasking? Color? Optical disk storage? Be patient a little longer.

### COPY II MAC WITH MACTOOLS

**Overall Rating:** ■ ■ ■ ■ ■  
**List Price:** \$39.95. Published by Central Point Software, 9700 SW Capitol Highway, Portland, OR 97219. (503) 244-5782.



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TwinWriter 5 Dual Head Printer	839.00
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LO-800/1000 w/Serial Interface	Call
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ThinkJet, LaserJet, LaserJet Plus	Call
Jet 6100 (18cps) Daisywheel Serial	379.00
6200 (30cps) Daisywheel Serial	559.00
6300 (40cps) Daisywheel Serial	659.00
NEC SpinWriter e.i. 360 Par/Ser.	399.00
SpinWriter 2010 (20cps)	669.00
SpinWriter 3510	789.00
SpinWriter 8810	1139.00
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Colormate	49.00
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Okidata ML-192 Apple Mac/Lisa	369.00
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Available in Black, Blue, Brown, Green, Orange, Purple, Red, Yellow, Silver & Gold	
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Macintosh Midnight Madness	14.00
MacWork/MacPlay	14.00
Microsoft Macinations	16.00
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The Apple Macintosh	14.00
The Apple Macintosh Book Vol. 2	15.00
The Printed Word	14.00

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Because just *having* information isn't enough. You have to be able to do whatever you want with it. Arrange it. Rearrange it. Massage it. Embellish it.

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# Now data doesn't have to look base.

**The Spokesman**  
12 Bearing Street Wheeling, W.VA 26055  
March 6, 1985

Item Number	Product Description	Price
AC 2345	Water Bottle	15.00
AB26L	Ladies 26" Breeze 10 Speed	179.00
AB200	Bicycle Built For Two	249.00
AB100		69.00
AB27M		
HT100		
FCA911		
FCA901		
5792		
5796		
5650		
BBS200		
BBA101		
BBA102		
27AW		
26AW		
SB 231		

Jeremy Williamson, Jr.  
1456 East Raybourne Road  
Farmville VA 23944

Dear Jeremy:

Thank you for your recent order from the Spokesman Company. We are currently processing your order for immediate shipment. The following list represents the totals we have received in our shipping department.

2	27" alloy wheel	# 27AW	at \$62.00	\$124.00
1	Seat Post	# 5792	at \$22.78	\$22.78
4	Brake Shoes	# BBS200	at \$3.00	\$12.00
2	Saddle Bags	# SB 231	at \$38.00	\$76.00
			<b>Total Order:</b>	<b>\$234.78</b>

I am confident products for your free number if modify the on telephone price adequate now

Thank you again in the Sincerely,

John L. Sp

**The Spokesman**

**PURCHASE ORDER**

To: Weinmann, USA  
88 Skid Row  
New York, NY 01103

Description	Item Number	Units	Unit Price	Extended Price
Brake shoes	BBS200	2	\$0.50	\$1.00
Brake lever, right front tire	BBA101	1	\$5.45	\$5.45
Brake lever, left front	BBA102	2	\$5.45	\$10.90
Amount of Purchase order:				\$17.35
Sales Tax:				\$1.12
Total Amount of Purchase order:				\$18.47

**Infoworld**  
REPORT CARD

**FILEMAKER**

	Pool	Fair	Good	Excellent
Performance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Documentation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ease of Use	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Error Handling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Support	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**The Spokesman**

**INVENTORY**  
By Vendor  
March 31, 1985

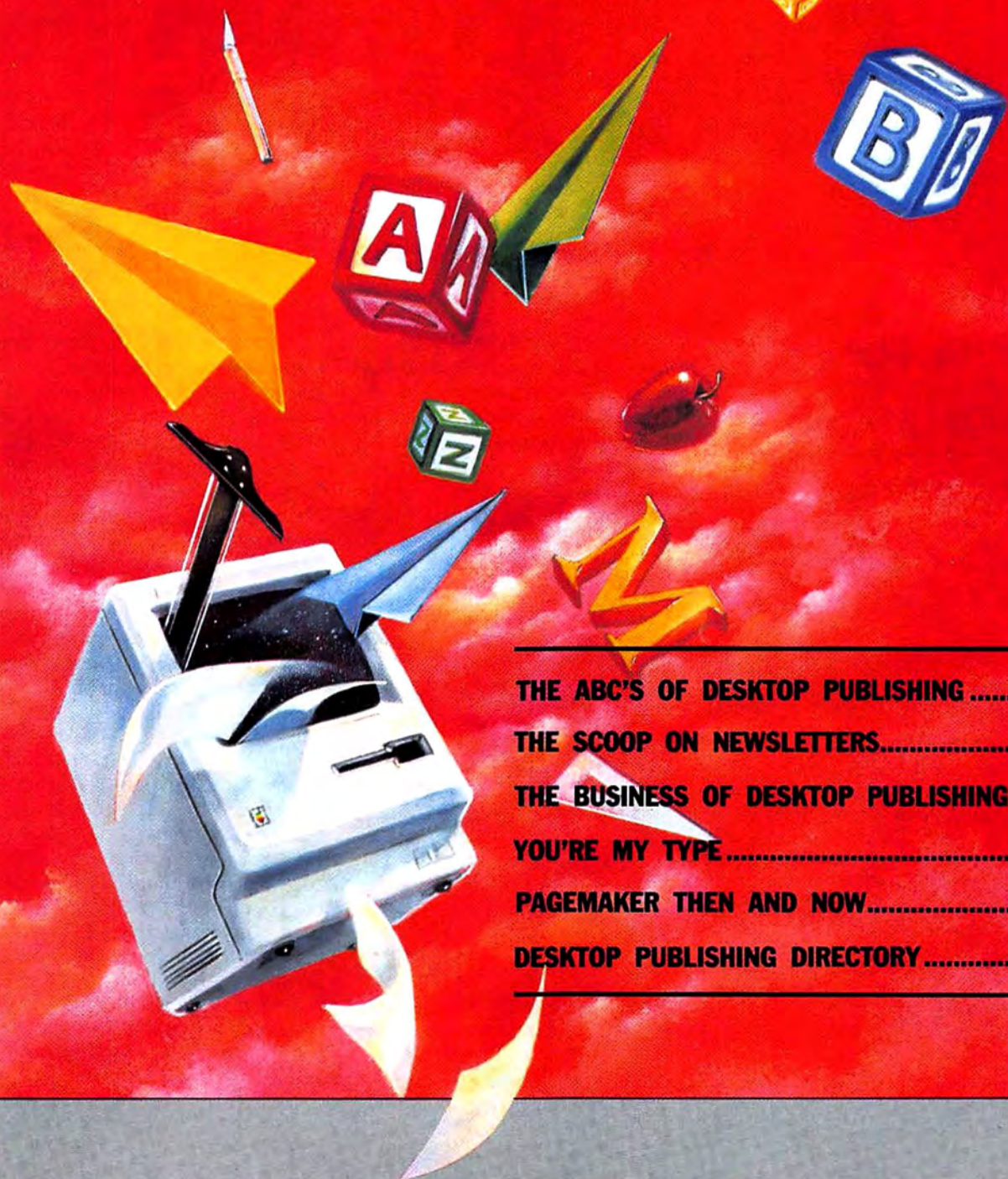
Vendor	Description	Item Number	Units in Stock	Reorder Units	Unit Cost	Resolving Cost
Acme Water Bottle	Water Bottle	AC 2345	8	4	\$11.34	\$45.12
American Bicycle	Ladies 26" Breeze	AB26L	3	1	\$22.00	\$66.00
American Bicycle	Bicycle Built For Two	AB200	4	1	\$135.00	\$540.00
American Bicycle	Solo Unicycle	AB100	5	1	\$49.50	\$247.50
American Bicycle	Mens 27" Blazer	AB27M	3	1	\$99.00	\$297.00
MiracleTape Inc.	Handlebar Tape	HT100	10	2	\$0.50	\$5.00
Miyaka Bicycle	Chrome forks for 27"	FCA911	2	1	\$5.95	\$11.90
Miyaka Bicycle	Red Flyer Bike	FCA901	4	1	\$78.85	\$315.40
<b>Totals for Acme Water Bottle Sales</b>						<b>\$45.12</b>
<b>Totals for American Bicycle</b>						<b>\$1,150.50</b>
<b>Totals for MiracleTape Inc.</b>						<b>\$11.90</b>
<b>Totals for Miyaka Bicycle</b>						<b>\$327.30</b>

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# Desktop Publishing on the Mac



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THE ABC'S OF DESKTOP PUBLISHING .....	2
THE SCOOP ON NEWSLETTERS.....	7
THE BUSINESS OF DESKTOP PUBLISHING...	12
YOU'RE MY TYPE .....	18
PAGEMAKER THEN AND NOW.....	26
DESKTOP PUBLISHING DIRECTORY .....	30

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# THE ABC'S OF DESKTOP PUBLISHING

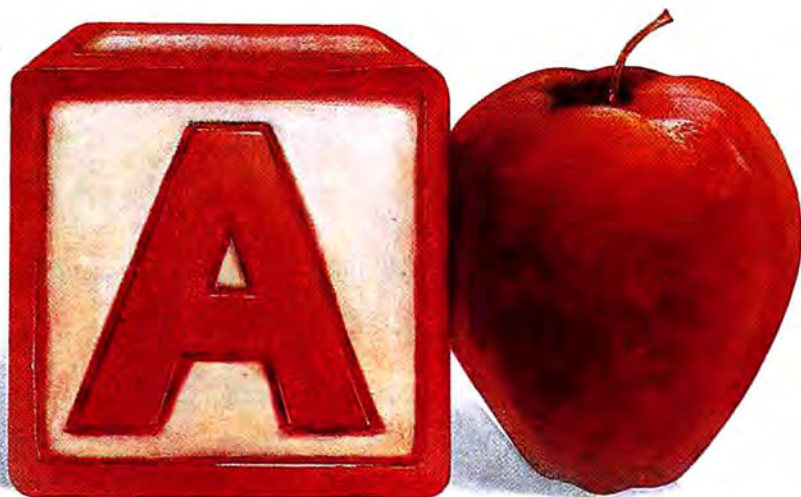
*by Steven Bobker*

***What it is, what it's  
about and what you  
need to get going.***

THE REVELATION WAS SUDDEN. It happened one night at a local Tex-Mex restaurant of some repute, the primo yuppie watering hole for miles around. (I was forced to go. The food is too good to resist. Really.) We were standing at the packed bar, during the inevitable

long wait for our reserved table. Without meaning to, I found myself eavesdropping on two separate conversations that could have been one. Well-dressed young professionals were discussing how they planned to move ahead in their organizations. The terms they were using sounded familiar. They were talking about—yes—desktop publishing. Using position papers, memos and presentations that they were preparing on the Macs in the art department (after hours, of course), they were going to “blow away” their superiors. It was going to be simple.

I had been aware of desktop publishing for a while. (It's not something that Mac owners can easily miss these days.) There are lots of heavily advertised and widely reviewed programs that let users do “desktop publishing.” There are lots of (good) how-to articles. There are even whole magazines devoted to the subject. Still, until that moment at the bar, I had thought desktop publishing might be a flash in the pan, a sales gimmick. But now I was convinced; desktop publishing was real and here to stay.





A . . .

Desktop publishing is a term that covers a great deal of ground. It can mean fancy reports prepared for your boss and also mean commercial newsletters. It often replaces the purchase of outside typesetting and graphics services. Yet it can be as simple as a fifth-grade weekly newspaper.

Desktop publishing certainly isn't new. People have been desktop publishing in America since before America was independent. Their techniques were different, and the process was much harder, but the ultimate result was no different than it is today. Information was gathered and distributed.

In simplest terms, published materials consist of text and graphics on paper. That's the bottom line. Creating and combining the text and graphics is the first step of publishing. The next step is reproducing and printing the material, creating the required number of copies. The final step is distribution.

Desktop publishing takes you through the first step. After all, the Mac is ideal for creating graphics and text. And with the help of specialized programs, it's also great for combining them into attractive, professional pages.

The second and third steps are still best left to traditional older methods. Reproduction can be done both more quickly and less costly by using noncomputer equipment. Photocopying and offset printing are still the best way to reproduce your material. And until we're all on that great electronic mail network, the one that has full graphic capacity, great speed and great flexibility, the traditional distribution methods are still the ones that work.

The Macintosh is an ideal desktop publishing system base. It suits all ranges of users. It's certainly the best tool in the under \$15,000 category. Combine it with a laser printer, a hard disk and the best available software and you'll still have a lot of change left from your \$15,000 or so. A bare-bones system can be had for between \$3000 and \$4000.

The first step in putting together your own desktop publishing system is deciding what exactly you need.



Need near-typeset quality? If so, then you require a LaserWriter (or LaserWriter-compatible printer). But needing the quality that laser printers provide need not eat up your entire budget. A laser printer doesn't have to be purchased. Most cities, and particularly cities with colleges and universities, now have service bureaus where you can either rent laser printer time or buy laser printed output on a per page basis. Many copy shops are getting laser printers and selling this type of service, so by the end of this year, it should be easy to find a shop virtually anywhere that will produce laser printed output from your disks. If lower (but still excellent) quality is acceptable, the ImageWriter II is hard to beat.

Unless you plan to restrict yourself to very small documents, a hard disk is a wise investment. Newsletters in particular will benefit from the masses of storage space that a hard disk provides. That space will allow you to keep standing elements (those used every issue, like headlines and the masthead) handy. Recreating them each issue, or even finding them on a floppy disk and loading them in, is time-consuming and tedious.

Along with the hardware, you'll need software. A good word processing program is essential. Most users will find *MacWrite* more than adequate, especially when combined with a page composition program. If you prefer and have *Word*, that is also great. Whatever word processor

you're most comfortable with is the right choice.

Graphics creation is more complex. You most likely own *MacPaint*, which is fine for most limited size graphics. *MacPaint* has spawned a slew of accessory programs (such as *ClickArt Effects*, *Art Grabber+* and *Paint Cutter*) that extend the basic program's capabilities.

*MacDraw* is a much better tool for many purposes. This somewhat more complicated program handles text much better than *MacPaint*. It also prints more efficiently on the LaserWriter. *MacDraw* actually uses the LaserWriter's very high-quality internal fonts, while *MacPaint* simply creates each letter as though it was an individual graphic image.

Now that Apple is not bundling *MacPaint* with the Macintosh Plus (it still comes with 512K Macs), expect to see enhanced *MacPaint* replacement programs. The first of these is Ann Arbor's *FullPaint*. Another interesting product has been announced by Silicon Beach Software. Called *SuperPaint*, this program will combine many of the features of *MacPaint* and *MacDraw*. It will be out later this year.

Publishers who are not artists have an enormous amount of prepared art (clip art) to choose from. There are numerous disks and sets available. Some are great, some are not. The trick is finding just the image you need. Most of this material is currently in *MacPaint* format, although more and more is coming out in *MacDraw* format as well.



# THE ABC'S OF DESKTOP PUBLISHING

Clip art is easy to use. Find the image required and simply select and COPY it. The image goes to the Mac's Clipboard. Close the document you copied from and open the target document. Then PASTE the captured image in and use the program's tools to combine it with other images or enhance it. Another very effective way to move *MacPaint* images (which is what almost all clip art is) is to use *Art Grabber+*.

There are other ways to create graphics. Scanners, such as the ThunderScan and MicroTek, can take a photograph or other flat image and convert it into an image composed of tiny dots (much like a halftone). That *bit-mapped* image can then be manipulated in graphics programs and used in page composition programs. Other digitizers (such as MacVision and Magic) use video cameras to obtain their basic images. Remember that most of these digitizers don't come with a camera, and a good video camera is expensive.

Yet another way to create graphics is to use a graphics tablet. These devices allow users to draw anything they want with a stylus. The result is generally a *MacPaint* image. Artists find tablets useful for entering large amounts of graphic information quickly. Since the image is a *MacPaint* document, entry need not be ultra-precise; a "sloppy" image can be "cleaned up" in *MacPaint*.

## B . . .

What you publish is made up of elements. Each block of text and each graphic is a separate element. Each border is an element; for example, page numbers, headers and footers are all elements. Treat them as separate entities and create each to the best of your ability.

However, that doesn't mean that each bit must stand on its own. It doesn't and it shouldn't. All the pieces must work together. If you're publishing a small magazine, look closely at magazines you admire. Try to see what it is about them that attracts you. If a flyer on the wall stops you, don't just read it for the information it contains; try to see

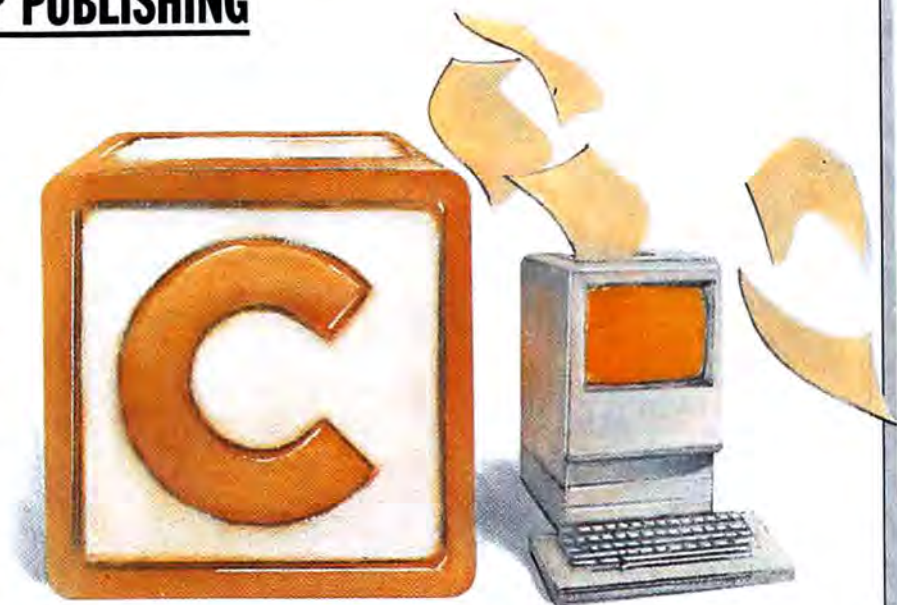
what attracted you in the first place.

Good design is never an accident, just as good writing doesn't just happen. They both require study and hard work. Don't expect that just because you're working on a computer, everything will just "happen." Read about type and design, and read about writing. And practice. Write. Use clip art to create graphic montages. Combine them and publish your results. Sending your work out into the world should tell you how good it really is.

How the text is placed and broken up determines its readability. Column widths should be neither too wide (hard to read) or too narrow (hard to justify—make both margins even, like this type). Headlines are crucial for both readability and organization. They break up large gray masses and make them more accessible, while at the same time are the piece's primary organizers.

Don't neglect the "little" text features. Captions should be in a smaller size typeface than text. Using bold for captions is also effective. Use descriptive headers and footers to add to the organization.

The graphic elements should receive as much attention as the text. Graphic elements fall into two basic types: pictorial elements that are essentially information providers and design elements that are used to attract the eye and provide controlled emphasis.



Virtually any image can be converted into a digital form suitable for sizing and placing within your documents. The scanners and digitizers start at under \$200, although digitizers with a camera are much more expensive. If your budget doesn't allow for a unit, or your use is infrequent, try to borrow one from a friend or a users' group. After the image is digitized, the unit is no longer needed. The digitized image is enhanced using standard tools such as *MacPaint* and *MacDraw*.

Digitizing is not a panacea. Don't expect to take any image from anywhere and run it through a scanner or past a digitizer and get great results. Producing good images with these devices takes a certain amount of skill and practice. And even the best images need to be enhanced and cleaned up. Still, they allow you to include images that couldn't be created any other way.

Combining the elements is the final step. Don't complicate this step unnecessarily. If your word processor produces acceptable results without too much effort, use it. If not, and you have *MacDraw*, try that.

A page composition program should be used if your work is large or complicated. These programs are complex and require learning time. Don't expect perfect results on your first try. Once you become proficient, however, they can be great time savers. There are several good



programs available. The best two are *PageMaker* and *ReadySetGo*. Be sure to get the latest versions as it does make a difference. (As of press time the latest *PageMaker* is version 1.2 and the latest *ReadySetGo* is version 2.1.) Early versions of both programs had some bugs, which, while they might not have affected most of your work most of the time, tended to crop up at bad moments. Save very frequently when using a page composition program and make document backups whenever you quit. That way, a crash will neither cause you to lose too much work nor to lose the only copy of your data.

The current crop of page composition programs is pretty much WYSIWYG (what-you-see-is-what-you-get). There are slight deviations from WYSIWYG in some reduced or enlarged screen modes. All page composition programs offer a reduced size mode where the whole can be viewed on a Macintosh screen, so a page can be laid out as a whole. (That can also be done in *MacDraw*, but not in any of the current word processors.)

## C . . .

Desktop publishing is the hottest thing in the computer world right now. And that's no accident. Both the products and the ease of production are revolutionary. People first exposed to reports or newsletters produced using simple desktop publishing tools are both astounded by the quality, and usually have no idea how easy the material was to produce. Similar work, done in traditional ways, took a long time and required expensive outside services and experts. Such material was usually used to make an impression. Now anyone can make a favorable impression.

Not only are the results outstanding, but the cost savings can be substantial. In one case, a company that produces a bimonthly 16-page newsletter spent \$12,500 to computerize (Mac, LaserWriter, software). Everything works well—in fact, the newsletter looks better than ever. It is also on time more often. And the company estimates savings

(on production costs) of \$23,100 per year!

Soon the high quality that is so noticeable now will become a norm. Reports, presentations and even sim-

## ABCDEFGLOSSARY

**Jargon**, the bane of simple English, has already taken firm root in the world of desktop publishing. This dialect borrows heavily from both typesetting and computerese. Here are some (possibly not obvious) terms.

**Comp**—A rough sketch, quickly done to show a proposed page design.

**Digitizer**—A hardware device that can convert text or graphic images into digital information that can be used and manipulated by a computer.

**Folio**—Page number.

**Halftone**—Any image that contains gray value, as opposed to only black and white.

**Laser printing**—A new printing technology that uses a small sealed laser to transfer images from the computer to a photocopier-type printing mechanism. This technology is relatively quick, capable of very high quality, and very quiet.

**Leading**—The space between the lines of text.

**Page makeup**—The actual combining of the text and graphic elements to create a finished, publishable page.

**Pica**—A typesetter's measurement equal to almost exactly  $\frac{1}{6}$  inch. Consider 6 picas to equal 1 inch.

**Point**—A typesetter's measurement equal to almost exactly  $\frac{1}{72}$  inch. There are 12 points to a pica. Handily enough, the pixels that make up the Mac's screen are 1-point squares.

**PostScript**—A computer language that efficiently sends text and graphic information from a computer to a laser printer that has been equipped to understand it.

**Recto**—A right hand page in a bound, multiple-page document.

**Scanner**—A hardware device that can convert text or graphic images into digital information that can be used and manipulated by a computer.

**Standing Element**—Elements such as logos, titles, mastheads and running heads and feet that are used repeatedly, usually in each issue.


**Verso**—A lefthand page in a bound, multiple-page document.

**WYSIWYG**—"What you see is what you get." This term, pronounced "whizzywig," means that the computer screen shows exactly what is to be printed. Most Mac programs are WYSIWYG.

ple fliers will be expected to have a finished, "professional" look. That's a day to look forward to, since the tools required are already here.

It's no accident that a lot of Apple's recent advertising has emphasized desktop publishing and the Mac. The Mac/LaserWriter combination is desktop publishing. Apple now has an incredible desktop publishing market share of roughly 70 percent. IBM and others are starting to counterattack, but the equipment and software they offer are not up to Mac standards. And the hardware investment to make those machines do what a Mac does naturally is substantial. The Mac (in all its guises) is the desktop publishing machine and will remain the desktop publishing machine.

Small laser printers are currently expensive. The technology is still new. However, laser printing is the coming main printing technology, and prices will drop startlingly and soon. A printer such as the LaserWriter Plus could and should be half its current list price (\$6798) a year from now.

Desktop publishing is here to stay. The rest of this special section will delve deeply into producing newsletters, dealing with desktop publishing as a business, and working with and creating the new typefaces that make the LaserWriter sing. There's also a directory of major desktop publishing products to help you get started. So jump in and join this latest revolution. 





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# THE SCOOP ON NEWSLETTERS

BY RUSS COFFMAN

***Your quick and dirty  
guide to publishing  
newsletters.***

BEFORE PERSONAL COMPUTERS, newsletter publishing was a time-draining, cash-consuming proposition (much like owning a yacht). Small publishers had to rely on their typewriters, scissors, paste, Gestetner machines and the will to see a dirty job through.

Personal computers changed that. And the Mac has had the greatest

impact. Its ability to create formatted, illustrated, multiple typeface documents is unsurpassed by any equipment that costs less than \$50,000. Desktop publishing—a term and an industry unthought of 5 years ago—is now a reality, thanks to the Mac.

Even if your experience with newspapers and magazines is limited





# THE SCOOP ON NEWSLETTERS

to thumbing through the racks at your local newsstand, you too can become a publisher virtually overnight. You already have the most essential tool—your Mac—and there is a wide variety of software available to make desktop publishing feasible. Whether you want to publish a users' group newsletter or a monthly financial forecast for a select group of subscribers, the Mac will take you places Gestetner never dreamed of.

## THE FIRST RULE: READERS FIRST!

The object of publishing is to provide information. To do so, you must attract and interest readers. The editorial content is for readers, not the editors. Write for all of your readers, not yourself or a few friends. This rule is not mentioned first by accident. Artsy pages printed on a LaserWriter are more likely to be used to wrap fish than become a valued reference if you skimp on the meat. Limited time is a common complaint among editors, so use it where it counts most—in the newsletter's content. Remember you have a responsibility to get the news out. Then if time remains, go for a polished look. Fortunately, the Mac lends itself to doing just that, but don't get carried away—the medium is not always the message.

Find out a little about your audience's demographics—age, level of expertise and interests. You can't satisfy everyone, but do make balance an editorial goal.

Ask for suggestions at meetings to keep in touch with your readers. When the meeting continues at Sam's World of Donuts, listen to the patter. Between the spontaneous comments, questions, and coffee slurps, you'll discover what's on members' minds—take out your (paper) notepad and write down ideas from this real-world resource. You can't help but be more on target next time.

What columns you should have beyond the usual announcements and club business stuff is determined by your readership. From comments I've gotten from other editors and my own experience, how-to's and reviews lead the list. "Members like our completely subjective reviews.

We like to call a spade a spade," says Chris Hutcheson of Toronto, editor of Club Mac (no affiliation with the U.S. group). Look for original material—this builds membership by providing a resource unavailable elsewhere. Merely parroting *MacPaint* shortcuts from a magazine is about as appetizing as microwave toast.

## GETTING CONTRIBUTIONS

Once you know what your readers want, you must get it—perhaps your hardest, most time-consuming job as editor. It's important to delegate responsibility lest the newsletter becomes a one person show, an impossible situation. If you have to do it all yourself at first, do it—but don't stop asking for help. Like other editors, I have tried asking, begging, appealing to vanity, shaming, cajoling, and groveling, but found that plain old delegating works best. "Larry, please do something on blown disks for the next issue" worked better than asking. The delegatee feels needed and a part of the group. Try it.

"We kindly ask for submissions and vehemently hang on to members who contribute," says Carlos Albuene, Publications Director of Columbia University's Mac Users Group in New York. "Out of 150 members, only about 7 have contributed to the newsletter." Other groups use everything from "open weeping" to threats of torture. Try bribery, too—for some reason people will do more for a blank disk than if you handed them the \$2 it cost.

If your club has SIGs (special interest groups), make it clear an article is due from the leaders each issue—then you can count on at least a little regular material.

Look for expertise within your own circle, first, but there's no reason not to look outside, too. I lassoed a newspaper reporter who has John Sculley's private number, into contributing a few "insider" pieces. I offered a BBS sysop/psychiatrist (an oxymoron) a soapbox and he did an article about disembodied communication. What I learned is, don't be afraid to ask—those you ask usually feel flattered.

## SOFTWARE CHOICES

Word processing is vital. You can turn out a decent newsletter with just a word processing program. A surprising number of newsletters are done with *MacWrite*, and there's no reason not to—it's fast, familiar, and a good "standard" for material exchange. "We started with just *MacWrite* and *MacPaint* like everybody else, and we've tried to stick with those," says Linda Custer of Berkeley Macintosh Users' Group, which publishes up to 220 pages twice a year. "We've used *Word* occasionally for special formatting, and *MacDraw* for easier layouts of some pages."

It's easy to add pizzazz to a newsletter done with a word processor. Special effects can be created with the *FONTastic* font editor. *Word* prints in columns, and with a forms/border/box-making font—like Washington—it can do a fair job on graphics. Full-width headers and footers combined with multicolumn copy create the illusion of a paste-up program. You can paste page-size *MacDraw* pictures into headers that overlap the text to divide columns or add full-page borders (try it!). But *Word* doesn't have WYSIWYG (what you see is what you get)—it requires lots of trial-and-error printing to discover where columns start and end. With practice, I could do a medium-quality test print, fine-tune with the KEEP PARAGRAPHS/LINES TOGETHER option, then add clip-art to fill in larger holes, in a reasonable time. *Word* has several nasty habits, though, like randomly ending columns that should extend to the page bottom, starting columns with a blank line, and, in highest quality print mode, running italicized words together.

A page composition or paste-up program is another ball game. With a little practice, using a page layout (yet another name for these useful programs) programs like *PageMaker*, *ReadySetGo*, or *MacPublisher II* can be time-competitive with *Word* or *MacWrite*, while producing more aesthetic results. Each has been reviewed extensively, each has new versions on the way or already released by the time you read this, and



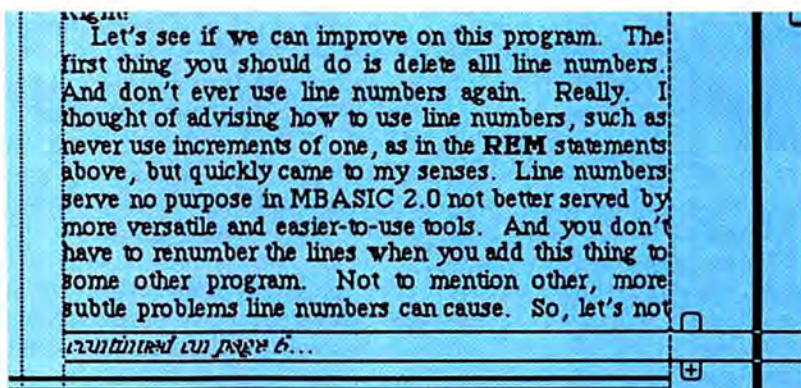
more are being announced, so I'll stick to a few general guidelines.

With any of these, have all text and artwork prepared before you ever launch the program. Paste-up programs have cut, copy, and paste, but no search and replace and other advanced text editing features (although such features are rumored to be coming). Depending on which program you're using, disk space management is crucial to avoid frequent disk swapping and "disk full" roadblocks. Putting source text and graphics on the same disk as the newsletter [or the System volume (disk, drawer or HFS folder) with *PageMaker*] saves a lot of time. After a few pieces are pasted in, delete them to free up space for the growing newsletter (a 16-page newsletter can easily be 150K, and some programs create work files equal in length to the newsletter). A hard disk or 800K floppies solve just about all such problems.

Save at least every few minutes (and before each major operation, such as printing), and go to the *Finder* periodically to make a backup (important with 100K+ files!) and delete source files (be sure though not to throw away your only copy). Make a "contingency print" occasionally in case a passing comet blanks your disks (it's never your fault or the Mac's, of course).

Picture import methods vary, but all these programs support the Scrapbook and Clipboard. You can "upgrade" your paste-up or word processor by using desk accessories like *Art Grabber* + or *QuickPaint* and FKEYS (invoked with COMMAND-SHIFT-NUMBER) like *Copy Screen*. *Copy Screen*, available on MAUG or from users' groups, copies a section of the screen to the Clipboard—great for grabbing an application's icon as an illustration in its review, for instance.

For checking alignment and making measurements, try one of several DAs that show mouse position. If you use decorative, modified or symbol fonts, get *Font Map* to refresh your memory—it's like Key Caps but shows the actual font (a similar DA comes with the Mac Plus). Several DAs can delete files from within



Using *PageMaker* to add a continued line as a separate element.

the application to help prevent "disk full" problems. In a pinch you can even delete the *Finder*, desktop file, or a printer driver. Keep up with the flood of commercial, public domain, and shareware utilities.

Add the *MockWrite* (search, but no replace) text editor DA to the above and you have an impressive bottom-dollar integrated mini-word processing/layout system on one disk.

#### HOT TIPS

If you do all your text and graphics ahead of time, use the Scrapbook and the above tools, you shouldn't have to keep graphics and text editing programs in *Switcher* or a RAM-disk. Instead, use the extra RAM for a disk cache—it speeds up things dramatically, especially when you jump from page to page. Often you'll encounter fonts (or other resources or data) that have been purged from RAM—the disk cache may still have them handy, though. Don't necessarily use the largest size cache (start at 256K on a 512K Mac, 384K on a Mac Plus), since some DAs and the Clipboard use big memory chunks.

With a paste-up program, there's no reason to do pages sequentially. If you're waiting for the president's ramblings (they're notoriously late) for page one, just leave space for it and continue on an inside page when you finally get it. Then continue pasting up pages two to whatever. So what if it's a little disjointed? Remember, content comes before form.

Inserting a "continued on page ..." in a word processor can be maddening—it creates a ripple effect on everything following. With a paste-up program, it's easy—just don't make it part of the text. Keep each continuation line as a separate element. Then, regardless of last minute changes, cuts or additions, it stays on the right page in the right place. Do the same for "continued from page..."

Here's a big time-saver. After completing your first newsletter with a new program, go back and delete everything but what will be common to future issues—columnists' headings, membership information, masthead, etc., and the basic page structure itself. Rename this file to "Shell" and archive it. Next issue, drag the Shell to your work disk, rename it to the current issues designator, and open it. Now, half your work is already done. Just paste in text and graphics and that's it. If inertia has kept you from starting a whiz-bang newsletter keep this in mind—it can only get easier.

I also use a "junk page" in the Shell—a page where I keep frequently used headers, art, and so on. Depending on how regimented you are, this may be better than leaving items scattered on otherwise empty Shell pages. In *ReadySetGo*, select a block on your junk page and do a MOVE TO PAGE. In *PageMaker*, drag the item to the Pasteboard, click on the target page's icon, then drag the item where you want it. Just before printing, delete your junk page. This is much faster than scrolling through



# THE SCOOP ON NEWSLETTERS

the Scrapbook. One page will be plenty if you overlap items—there's no reason to be tidy here.

## ON STYLE

With all the fonts available, it's tempting to use too many. My advisor on things aesthetic, Lance Jackson, of Lance Jackson and Associates in Denver, offers this rule of thumb: "Never use more than two, perhaps three fonts in one edition. For headlines and compact copy, Helvetica always works. A readable serif font like Times works for most copy, with Times Bold for matching headlines. To call attention to something, use a bold typeface of the same font, not a different font. Use a decorative font—once—to announce your July 4th chili cookoff and disk formatting party."

Aesthetics—artwork placement, number and width of columns, and white space, are less precise. "There are no rules of thumb for overall aesthetics," says Jackson. "That's an art. For someone just starting out, I'd recommend getting a book or two at an art supply store. You should know a little about minimum type size, indentation, and ideal relation between column width and type size, for instance."

Lance would be proud. The first compliment I got on my newsletter was that I wasn't "font-happy." I settled on Times for most of the copy, and a couple of large fonts for headlines from *ClickArt Letters*—24 and 36-point New Haven (sans-serif, like Helvetica but bolder) and 48-point Boston (a very bold serif that goes well with Times)—and that's it. These work well at (exactly) half size, too, on the ImageWriter. If your club is poor like ours, you may have to limit seas of white space to keep printing costs down. Printers, like barbers, don't charge less for unadorned areas.

If you use the LaserWriter, of course, the choices are simpler—just don't go style-happy. If you made up fonts for special effects, you'll have to use "font substitution" when setting up for the LaserWriter. Further, the font must be "resourced" correctly—if the font is 36 points (pixels) tall, it must have been created as

such. Otherwise, it will come out the wrong size on the LaserWriter. An example is the Icon font—it's about 36 points, but the LaserWriter thinks it's only 12 and prints it accordingly. Use *FONTastic* to correct such fonts. Don't edit a LaserWriter font or your special characters won't be printed. If you have bit-mapped (*MacPaint*-type) art in the newsletter, use 96 percent reduction to make them look better—this makes one screen pixel translate exactly to four LaserWriter dots ( $0.96 \times 300 = 4 \times 72$ ).

## OTHER TOOLS

*FONTastic* is great for adding "icons" and special characters to give your newsletter personality—it's handier than storing *MacPaint* images, in many cases. You can make up "faces" for each columnist. The next "gotta-have" is a digitizer. Get club members with ThunderScans and video digitizers to loan them to you.

A good collection of clip art can spice up your newsletter, but I try to get original stuff from talented members and sources such as MAUG, as we've all seen the commercial clip art in our letters to Mom (embellished with the San Francisco font, no doubt).

If you use the ImageWriter, invest in a ribbon re-inker. It'll pay for itself quickly in dollars and trips to the computer store. I have re-inking down to a science—and a lightly re-inked ribbon is better than a brand new one. A modem speeds up getting articles in (we in the revolution should practice what we preach, no?). A UPS (uninterruptable power supply) has saved me many a time—it's worth every nickel. And I find having a large bag of Oreos and an icy glass of milk at hand helps as deadline approaches.

A less obvious "gotta have" is a proofreader. Get someone who did not write anything for that issue. Writers tend to "read in" missing words, whereas a person seeing the article for the first time will spot errors instantly. A spouse or neighbor is best for logistical reasons—you can lose a day or more getting a draft to a member across town.

## ON EDITING

To pep up your writing and your contributors', get a few books on editing. And edit. You're sure to be faced with prose like this: "Due to the fact that some, but not all, people currently members of this organization have not contributed their annual membership dues at this point in time, the newsletter's publication will be suspended by the board members until such a time as we have sufficient incoming revenues to resume its publication at some future date." Learn how to boil stuff like that down into a more digestible English: "We stopped the newsletter because some haven't paid their dues, but will begin again when they do."

Saves printing costs, too. I changed a contributor's "reduced greatly" to a more vivid—and shorter—"slashed." And please learn the difference between "its" and "it's"—such errors are distracting. For more books on writing, editing, layout, and typography, see Appendix C of the *PageMaker* manual.

One final point: if you belong to a hike'n'bike or ceramic figurine club, don't let them know about your Mac. You'll never have another free weekend in your natural life!

My readers know I don't always follow my own advice, but I can't help it. The power of expression this Mac gives me just drives me mad, so I go creative from time to time. You do the same and enjoy!

Let me leave you with a final tip. Before you fork over as much as \$495 for a paste-up program, take this quick test. Think back to the last time someone posed a question requiring conceptualization. If, while the wheels turned, you searched the heavens for the answer, you'll do better at paste-up than the person who looks down (note: there's a 60% chance this is reversed in left-handers). This behavior indicates right-brain dominance. Right-brainers are better at visual tasks like page layout. They tend to be artistic, and better at spatial relationships and abstraction. Left-brainers tend to purchase IBM PCs and are thus twice precluded from paste-up pleasures. ☐



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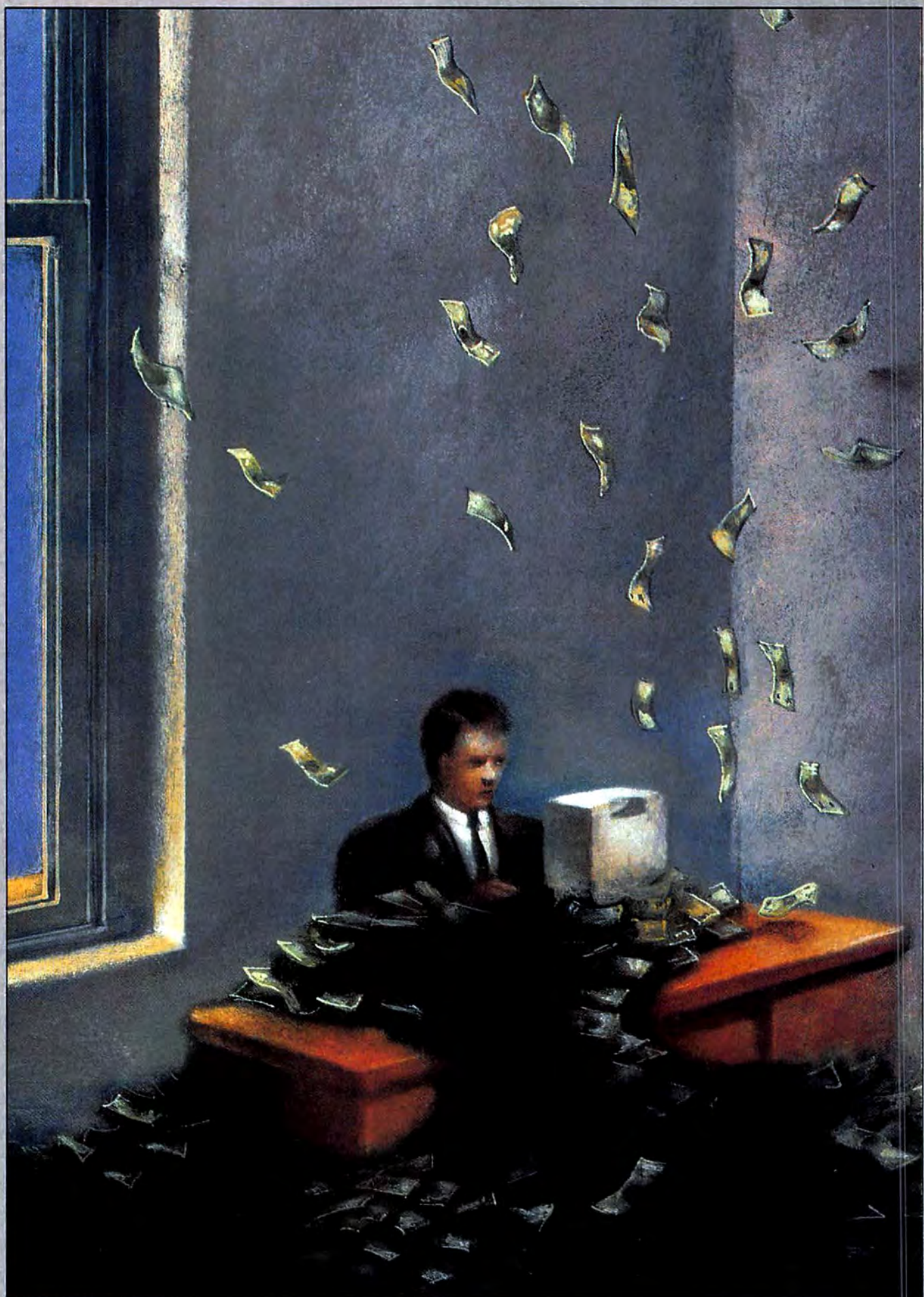
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# THE BUSINESS OF DESKTOP PUBLISHING

## ***Maybe the Mac really is a business machine!***

MONEY. THAT'S THE ULTIMATE goal of every business that wants to stay in business. It's the one factor that is common to every type of capital venture. Including desktop publishing.

Marketing. It's the technique that helps wrangle customers, promote one's capabilities, make a company grow. The best product in the world will fade into obscurity if it isn't marketed correctly. The best service, too. Including desktop publishing.

What began as a buzzword in the computer industry has taken firm hold of the entire printing and typesetting world. And the machine that is leading the revolution is none other than the Mac.

### **THE REVOLUTION BEGINS**

The combination of the Macintosh and the LaserWriter have given way to a new branch of printing technology, one that is differentiated from others by its relatively low startup cost and ease of use, which translates into real advantages for doing business and for managing businesses. The Mac is a far more

flexible machine than the dedicated typesetting devices which have dominated the market until recently. But that isn't the whole story. There's a lot more to desktop publishing (DP) than meets the eye.

Desktop publishing lets end users avoid the old process requiring three separate experts to produce a publication: the design and illustration artists, pasteup artists and typesetters. It also lessens the effects of "communication breakdown" between these elements, which lead to wasted time and longer completion times for projects. A new type of person is needed, one who possesses the skills of all the creative and production elements. A new job description has entered in the ranks of the employed: the desktop publishing expert. The costs associated with each level of work are reduced to one, lowering overhead. The time previously involved to get materials and ideas between these three elements is drastically reduced, resulting in more time effective production, resulting in a cost advantage. Start to finish control is the promise of DP.

### **HAIL TO MAC!**

The Mac isn't the first kid on the block, but it's the most popular and

**BY DAVID BIEDNY AND IRVING S. BERMAN**



# THE BUSINESS OF DESKTOP PUBLISHING

attainable. Typesetting machines require operators to be fluent in typesetting code, a skill which involves training time and costs. The type produced with these machines is really meant to go to the next stage of the process, paste-up. The few machines that have allowed on-screen composition have been prohibitive in price (usually well over \$100,000, although the bottom end machines have been drifting down toward \$50,000), not to mention the inflexibility of their software, and the dedicated nature which reduces their potential usefulness.

The Mac, on the other hand, has emerged as the People Express of typesetting. Low cost, pretty good quality, it does get you something useful, though if you pay more you get something a bit better. And it doesn't always deliver as advertised.

## SOFT-TO-HARDWARE

At this point, there are a number of "standard" programs meant for DP use. *PageMaker* and *ReadySetGo* are the most popular page layout programs, and the ones that receive the most manufacturer support. Choosing between them becomes a question of personal preference and budget constraints. Text should be formatted in Microsoft *Word*, as the current generation of layout programs seem to be optimized for use with that program. *MacDraw* and *MacPaint* are the main graphics tools, though there is a whole new generation of graphics programs on the horizon (Ann Arbor's *FullPaint* and Silicon Beach's *SuperPaint* come to mind). The multilayer capabilities of *MacDraw* can be exploited to create separations for full color printing. And there's *MacDraft*, which unfortunately, is still too unreliable to be used in a production situation.

Then there's *Just Text*. A professional level tool, it's primarily meant for those experienced with more traditional typesetting equipment (Compugraphic machines, for example), and doesn't really fall into the category of page layout software. For extremely fine control over text formatting, it is the most precise tool

available. It's good for generating text to be dropped into a paste-up board.

A new generation of hardware is elevating the Mac to a substantial level of usefulness for true final quality layout work. The Allied Linotype Linotronic takes the Mac to a new level of sophistication: with it, the Mac becomes the front end to a final output-quality device. The Linotronic 100P (\$29,000+) prints at up to 1270 lines/inch, and the Linotronic 300 (\$49,000+) can print 2540 lines/inch. It can do this with the same *PageMaker* page that you would typically print out on a LaserWriter. In fact, the Linotronic series uses the same print drivers! Object graphics (such as those generated in *MacDraw*) print at this resolution, resulting in a perfect graphics generator. Using the reduction capabilities of the print driver, artwork can be created at a large scale and then electronically reduced to real size, rendering remarkably crisp images. An Allied Linotronic 300, which can be leased for about \$1300/month (in the New York metro area), extends the capabilities of the Mac-based DP system far beyond the LaserWriter. This level of resolution yields true camera-quality text. Print a *MacDraw* graphic at that resolution, and no one will ever know that it originally came off a Macintosh. It's not unusual for a company that deals with communications materials to spend anywhere between \$1500 to \$5000 a month on typesetting bills. A Macintosh-based service could offer proofing on a LaserWriter at no cost (almost unheard of in the typesetting industry), and then output the same file on the Linotronic. And it would still provide a substantial cost advantage over a traditional typesetting house.

The arrival of true LaserWriter ratio scanners (which scan at 250 to 300 lines per inch) allows unprecedented manipulation of digitized images. These scanners open the potential to provide PostScript files of images that can be placed on a page with text, to be printed at photohalf-tone quality on a PostScript printer. Expect to see at least three or four of

these digitizers appear during the course of this year.

A modem is a must-have for a DP production environment. It allows files to be transmitted from remote locations quickly, without incurring the expense of express mail services, and is also faster. There is another important side benefit to having a modem: The reality is that most businesses still use IBM PCs or compatibles. Using a modem to download text files from a client with an IBM PC and convert them to standard Mac text files is a simple process. This crude level of compatibility is important, for it allows existing PC-formatted text to be used in Mac-generated layouts. In fact, there is a noncommercial program that converts *WordStar* files to *MacWrite* files (*WordStar* is the most popular word processing program in the PC world).

## PITCH AND CLOSE

How much farther can DP go beyond newsletters? It's a question of how far your imagination can take you. When a client comes in with a quick business card design need, a little probing will probably reveal that there are a variety of things that the Mac could do for that client, if they knew what the technology had to offer. The Mac is still a relatively new phenomenon, and is mostly marketed on the basis of its speed, not necessarily its capabilities. A little preaching of the virtues of the Mac can make for some pretty convinced potential customers. The Mac's best marketing device is itself. Some of the work best suited for the Mac are fliers, brochures, newspaper advertising, direct mailings and mailing labels. Any written communication is fair game for the Mac.

Directory publications can be assembled efficiently, thanks to the power of a DP program coupled with the data handling capabilities of a database. Directory entries are entered into the database, and the better database packages allow lists to be saved to disk as text files. These text files are then brought into a word processor, where they are formatted into columns, and then



brought into the page layout programs, where they are placed into pages. Updating the directory involves adding or deleting information from the main database file, which can also be used to generate mailing labels, marketing survey reports and other support materials. Some sample target markets for this type of service would be advertising agencies, doctors, hospitals and educational institutes.

### THE MAC EDGE

Turnaround time. The "I need it yesterday" element dominates the business world. The Mac has the advantage of being a quick machine, meaning that jobs get delivered faster, making for happy customers. Less labor is expended per job, resulting in lower production costs, and this raises the profit margin on a job. In the commercial graphics industry, a rush job (completion time: 24 hours) commands a 100 percent surcharge on the actual charge. We spoke to graphics artists that are doing quite well taking these rush jobs, which are typically a nightmare, and exploiting the speed of the Mac to do the work their competition can't. "Time equals money" is a universal formula for business and it's just as valid in DP. The numbers are surprising: typically, the turnaround time and cost that can be offered to a client using the Mac DP system can be 50 percent less than bids from commercial design and typesetting houses.

Jobs that are printed on a repetitive basis are gravy. As a true DP program permits the saving of layout templates, the pages don't have to be reset, and dropping in new data is much easier to do on a Mac than on a paste-up board. The economics of these situations are obvious.

### HOW MUCH IS THAT MAC IN THE WINDOW?

More often than not, the standard cost of work done by design or typesetting houses can be easily undercut. But that doesn't mean that the same profit margin can be earned. In fact, because of the reduced turnaround time, the margins

are usually higher.

Larger fees can be charged for initial set-up (which typically consists of defining correct page formatting by studying the client-supplied specifications), which would motivate the client to keep coming back to you (to avoid paying another set-up fee to someone else). Set-up fees are usually a substantial, if not major, cost at the production stage.

The pricing structure, or the question of how such a structure should be established, is a difficult one. The best thing to do is some investigative work into the prices charged by normal design and typesetting companies (and turnaround times) for specific types of jobs. This will give you an idea of the average going rate, which will tell you what the market is willing to pay. Being competitive is the name of the game, so if you can't beat the competition's price, then offer your clients faster service.

### MARKET MAC

The DP business is just that, a business, which goes beyond the questions of the technology itself. Like any service industry, the magic word is *marketing*. Finding a target market, knowing the needs of that market, presenting services in a professional context, and establishing constructive communications with the client are important pieces of the puzzle.

The speed and flexibility of the Mac should be utilized to hook clients at the very moment that they are discussing the type of layout work they need. Dummy text and clip-art can be utilized to create a "quick, on the spot" sample that looks like much more than a simple "comp" (rough draft). The Mac DP setup is the perfect comping device, because a page can be generated quickly, and the LaserWriter provides a close approximation the final type specifications and graphic look of a project. Being the first to get a proposal in for a layout job is a powerful edge over the competition.

### CUSTOMER SHAPES AND SIZES

There are two distinct audiences for Mac DP services: those people that own Macs, and those that don't. The people that own Macs break down into two categories. Those people who own Macs usually want access to a LaserWriter to output small quantities of pages. Providing a printout service for people that only want to print on a page-by-page basis can be made profitable in a couple of ways. An office with a LaserWriter and a few Macs can rent out the set-up on downtime (when the machine isn't being used for anything), either by offering the system as a complete package, or having someone manage the people flow for a page-by-page basis. A fee is paid for a specific amount of time on the

<p><b>Fee Struc</b></p> <p>Larger fees can correct page for would motivate set-up fee to so the production :</p>	<p><b>Fee Struc</b></p> <p>Larger fees can correct page for would motivate set-up fee to so the production :</p>
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Allied Linotype's Linotronic 100 versus LaserWriter output. Note the sharpness of the Linotronic print, as compared to the same text printed on the LaserWriter. The realistic threshold of true high-quality resolution is 600 lines per inch, after which a magnifying glass (or "loupe") is needed to notice the difference in clarity. At 1270 lines per inch, the Linotronic output is truly camera-ready.



# THE BUSINESS OF DESKTOP PUBLISHING

system, which includes a fixed amount of support time and a specific number of printouts. Technical support should be kept to a minimum, as the cost of providing good support is often high enough to offset the potential profit. A schedule must be created to manage the different timeshares, and efficient planning is crucial to avoid more than one person being scheduled into a time slot. Downtime can be filled quite effectively with this method. The three main cost factors:

- time on the system
- output costs
- support

The second, and more desirable customer, is the office or organization that has purchased from one to five Macs. A manager who buys a few Macs for the office is likely to have done some investigation work into the capabilities of the machine, specifically whether it can handle the tasks that created the need for it in the first place. The manager then sees a LaserWriter demo at a dealer, sees the potential to use the Mac as a communications tool, but can't immediately justify the LaserWriter's high cost. This is a great potential customer. The steps to selling this client are straightforward:

- Demonstrate the potential that the Mac has to prepare *all* of the company's communications and promotional materials.

- Sit them through a sample session. Do a quick layout to show them the flexible nature of the Mac DP system.

- Illustrate how each program is used to accomplish a specific task.

The inevitable question arises: Is this too much information? Can't their office do the same thing in-house? Aren't you giving away valuable trade secrets? Not really. Creating and maintaining a smooth DP department takes many hours of trial and error. Most businesses don't have the time to go through the learning curve, and therefore, rely on outside consultants to get them up to speed, train their people, and advise on the correct software and hardware requirements to fit a specific set of goals, keeping within a

## How To Use This Directory

Sanus arranges a complete system of medical care, encompassing routine office visits, specialty care (both in and out of the hospital), and hospital care.

When you use the Sanus system, you can free yourself and your family from financial worry related to medical problems. You can also use Sanus benefits to help you prevent illness and maintain your health. Your key to this system is the Sanus Primary Care Physician — the private doctor you personally choose.

### CHOOSE YOUR OWN PRIVATE PRACTICE PHYSICIAN

Your Sanus private Primary Care Physician is your guide in the medical care system. Either through your Primary Care Physician or through his or her referral, you and your family have direct access to the hundreds of participating specialists and a wide range of hospitals when necessary. This assures that you and your family will receive professional service for all your medical care needs.

Your choice of a Primary Care Physician is an important one. We have therefore prepared this detailed Directory of Sanus Primary Care Physicians and their offices. Please use the information in this Directory to choose your Sanus Primary Care Physician. The name of the physician you choose should be listed in the proper spaces on your Enrollment Application.

### LEADING HOSPITALS TOO

Sanus uses leading hospitals throughout the community when our members require hospitalization. We also arrange hospitalization at other facilities when necessary.

In case of a medical emergency, Sanus members are permitted to use any hospital worldwide.

### WHAT TO DO IN AN EMERGENCY

Sanus Primary Care Physicians maintain round-the-clock service. In an emergency which happens late at night, over the weekend or on a holiday, phone your Primary Care

Physician. If you are out of town, seek immediate attention and then contact your Primary Care Physician or Sanus.

### SHOULD YOU HAVE QUESTIONS

- If you would like assistance in choosing from among our many physicians or have questions, please call Sanus and ask for Member Services:

314-739-7755

weekdays, between 8 a.m. and 5 p.m.

- If you are currently seeing a physician who is not a participating Sanus provider but might like to become one, call our Provider Relations Department to see how he/she can join the Sanus provider network.

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Creating a quick rough draft of an existing layout is one of the Mac's strongest abilities. Above, the original typeset brochure page. Below, the same page produced on the Mac.



We're just not making Macintosh™ computers like we used to make them.

We're making them better.

Now they're twice as powerful. They're more expandable. And they're significantly faster.

We call our newest Macintosh, Macintosh Plus.

By Plus, we refer to a full

By Plus, we refer to its new, 800K double-sided disk drive, that allows you to store twice as much by using both sides of a floppy.

By Plus, we refer to 128K of

# Look what our own engineers did behind our back.

megabyte of RAM that gives Macintosh the power to take advantage of the most powerful software programs ever driven with a point and click.

ROM that makes Macintosh perform more efficiently. And a sophisticated hierarchical filing system that enables you to find things faster than you used to lose them.



## Is there enough storage space in your office?

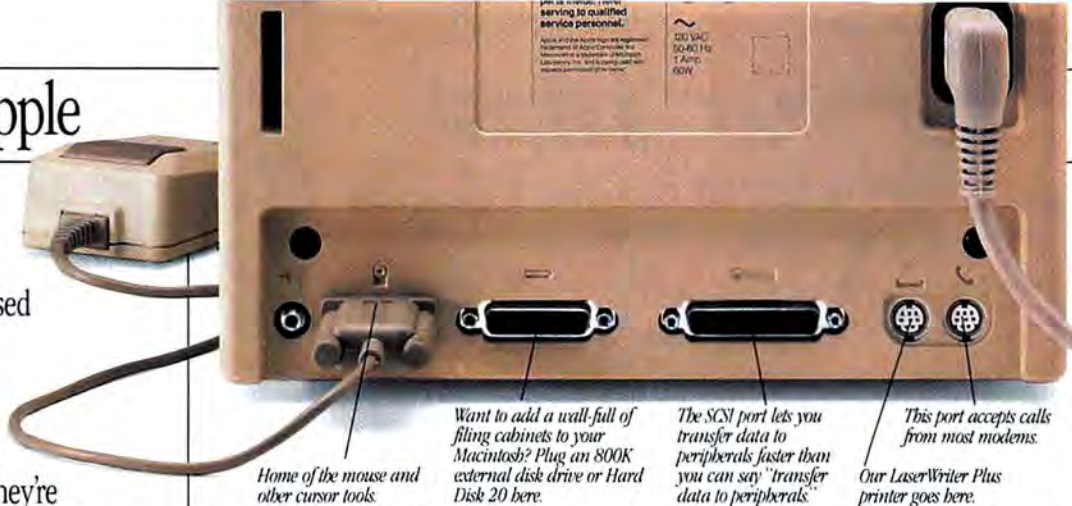
It's only 7 $\frac{7}{8}$  x 17 $\frac{1}{8}$  x 4 $\frac{3}{4}$  inches on the outside, yet big enough to store over 400 pages of data on the inside.

We're talking, of course, about our new and faster 800K external disk drive.

Like the internal drive in our new Macintosh Plus, our external drive also uses 800K double-sided 3 $\frac{1}{2}$ " disks. Which virtually eliminate the words "disk is full" from the Macintosh vocabulary.

And you can even daisy chain an extra external drive off an Apple® Hard Disk 20, giving you the capacity to work at extraordinary speeds with larger documents.

Like your own personal copy of the Des Moines white pages.



And by Plus, we refer to the added cursor keys and a built-in numeric keypad that let you do your adding, subtracting, guess-timating and bottom-lining without lifting your hands from the keyboard. Or your eyes from the screen.

But to fully understand the biggest turn-around in Macintosh Plus engineering, all you need do is turn around any Macintosh Plus.

And behold, a Small Computer Systems Interface port.



Macintosh Plus.

Better known in computer circles as a SCSI port.

The SCSI port not only allows you to transfer data six times faster, but lets you connect up to seven high-speed peripherals at once. Including hard disks and tape drives.

Needless to say, we've given ourselves a considerable kick in the backside.

And if you read on, we'll show you how to turn the Macintosh that's sitting on your desk into the Macintosh sitting on this page.



# Now you can buy as much Macintosh as you need.

Now that there's more than one Macintosh to choose from, you're probably wondering which one to choose.

Well, for you power-mongers out there, we recommend the Macintosh Plus. The computer whose powerful features adorn the previous page.

But if you don't need a full megabyte of memory, we recommend the newly enhanced Macintosh 512K.

By enhanced, we mean we've taken our Macintosh 512K and added an 800K internal disk drive and 128K of internal ROM.

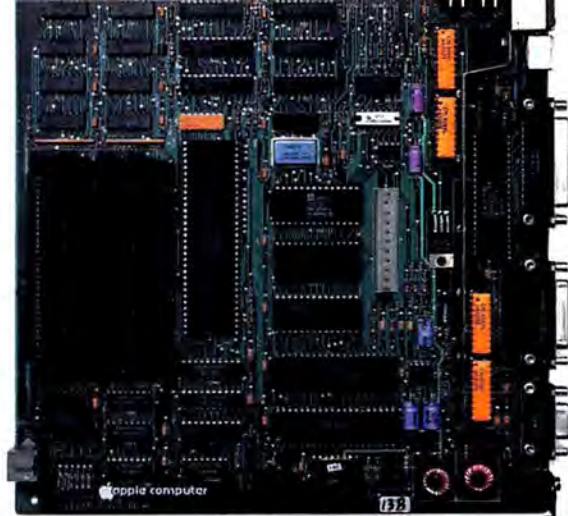
Which makes it more than capable of handling all your computing chores. Even though it costs considerably less than a Macintosh Plus.



*Apple Hard Disk 20.*



*Macintosh Plus Disk Drive Kit*



*Macintosh Plus Logic Board.*



*Macintosh Plus Keyboard.*

And should the day come that you want to sort out a database faster than you can take a sip of coffee, you can always upgrade from a 128K, a 512K or enhanced 512K to a Plus.

All at once. Or a little at a time.

We recommend you start with the Macintosh Plus Disk Drive Kit. That's where we install the new 128K of ROM, the hierarchical filing system and the 800K internal

disk drive (Of course, the enhanced 512K already has these features).

After that, you can bump your RAM up to 1Mb with the Macintosh Plus Logic Board Kit. And add a new rear housing and SCSI port.

And finally, you can attach our keyboard that comes with the keypad and cursor keys.

The point being, the more you put into a Macintosh, the more you get out of one.

## Disk space vs. desk space.

It used to be, adding a hard disk to your computer meant giving something up: a big chunk of desktop.

Enter the new Apple Hard Disk 20. Since it has the same footprint as Macintosh Plus, it fits directly beneath it.

This not only makes Macintosh Plus a few inches taller, but about 25 times bigger. Because you can install all the programs you currently keep on floppy disks on the Hard Disk 20's disk. So you

don't have to swap disks to switch applications.

And the Hard Disk 20's Winchester, 20-megabyte technology allows you to cut and paste, switch from application to application, and access information up to three times faster than you can using floppy disks.

The Hard Disk 20 really gives you the best of two worlds.

You get more disk space to work with. And more desk space to work on.



# Meet the press.

Here's all the news that's fit to print about our new LaserWriter™ Plus printer.

For starters, it isn't just a printer. It's also a computer.

Inside is the same Motorola 68000 microprocessor that's inside Macintosh Plus. Not to mention a hefty 15-megabyte of RAM and a full megabyte of ROM.

And inside the ROM is POSTSCRIPT®, the page description language that is quickly becoming the industry standard.

Translated, this means LaserWriter Plus can quickly and

POSTSCRIPT also allows the LaserWriter Plus to generate dozens of different type styles from its 11

**ABCDEFGHIJKLMNOPQRSTUVWXYZ  
abcdefghijklmnopqrstuvwxyz** ITC Avant Garde Gothic

**ABCDEFGHIJKLMNOPQRSTUVWXYZ  
abcdefghijklmnopqrstuvwxyz** ITC Bookman

**ABCDEFGHIJKLMNOPQRSTUVWXYZ  
abcdefghijklmnopqrstuvwxyz** Helvetica Narrow

*Some of the new faces you'll be seeing around the office.*

quietly print an amazing 300 dots per inch, and give you complete control over every single dot on the page. Which allows you to cover an entire page with virtually any combination of near typeset quality text and high resolution graphics.

built-in typeface families. Including popular business faces like Helvetica®, Times®, Palatino® and ITC Avant Garde Gothic®. And more families are becoming available all the time.

POSTSCRIPT allows the Laser-



*Put this LaserWriter Plus printer together with a Macintosh Plus and you get a design studio, a type house and a print shop that fits on 3.1 square feet of desk.*

Writer Plus to generate hundreds of different type sizes, too. So you can create legal documents with fine print as fine as 4-point. Or banners with blocks of type as big as 720-point.

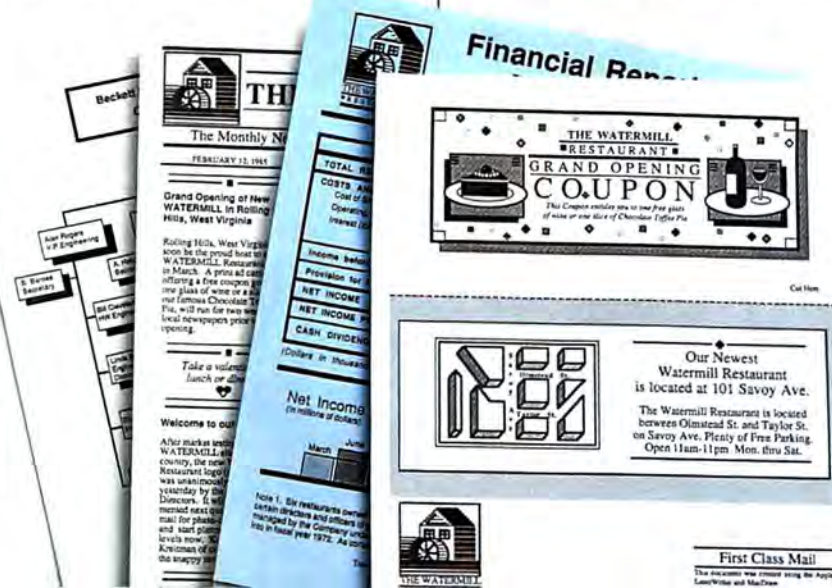
But those aren't the only pluses to the LaserWriter Plus.

When you hook one up to a Macintosh Plus, you become the proud owner of one of our Desktop Publishing Plus™ systems. A system that virtually puts a design studio, a type house and a print shop on your desk. Which means your newsletters, flyers, forms and manuals will stand out in a world full of typewritten pages thick with white-out.

We could easily go on and on. Instead, we'll let our LaserWriter Plus speak for itself in the form of the output pictured to the left.

While they may look like the handiwork of a professional artist, typesetter, and printer, we assure you they were created with nothing more than a LaserWriter Plus, a Macintosh Plus and software like our own MacDraw™ and MacPaint™, Microsoft's Word and Excel, and Aldus' PageMaker.

And an ordinary pair of human hands.





# How the people who run things, run things.

If there's one thing every business person can use more of, it's power.

Which is why you'll be happy to hear that the most powerful personal computer software being written, is being written for Macintosh computers.

Take Excel from Microsoft, for example. It's the first spreadsheet program to combine automatic macros, user-defined functions, array-handling and two-way data



Excel from Microsoft.



Omnis 3 from Blyth.

file compatibility with Lotus 1-2-3 in one program.

Omnis 3 from Blyth is a relational database program that lets you create your own pull-down menus, on-screen buttons and dialog boxes. As well as share files over our AppleTalk™ Personal Network in the multi-user version.

And while we're on the subject of sharing, we should tell you that we've entered into a working relationship with what we consider



3Server from 3Com.

to be one of the highest ranking disk servers on the market. 3Server from 3Com.

For the uninitiated, disk servers are storage devices that allow your Macintosh Plus to share information and other services

with other computers over a network.

Which, in conjunction with the powerful new software we described earlier, makes it a lot easier to start running your business.

Instead of chasing after it.

## Here's our new business card.

Now you can automate your office without draining your company's checking account down to the right side of the decimal point.

With our new Apple Business Credit Card.

As the name suggests, it's a credit card for your business, issued in your company's name.

Make an initial purchase of \$2,500, and it gives your company a line of credit that can be applied towards the Apple products of your choice.\*

With the Apple Business Credit Card, there's never a down payment on anything you buy. It's possible to get credit approval in 24 hours. And you don't have to pay any interest if you pay your balance within 30 days.

To apply, visit any participating authorized Apple dealer.

The Apple Business Credit Card. Don't leave the office without it.



## Trade Apple stock.

If you own a Lisa® or a Macintosh XL computer, this is your lucky day.

Because from April 14th to August 29th, you can trade-in these computers for a Macintosh Plus and a Hard Disk 20 at the suggested retail price of only \$1498.

So bring your authorized Apple dealer your Lisa and Macintosh XL computers.

And trade them for the stock on his shelf.



© 1986 Apple Computer, Inc. Apple, the Apple logo and Lisa are registered trademarks of Apple Computer, Inc. LaserWriter, MacDraw, MacPaint, AppleTalk and Desktop Publishing Plus are trademarks of Apple Computer, Inc. Macintosh is a trademark of McIntosh Laboratory, Inc. and is being used with its express permission. Helvetica, Times and Palatino are registered trademarks of Allied Computer, Inc. TPC Avant Garde Gothic is a registered trademark of International Typeface Corporation. PostScript is a trademark of Adobe Systems, Inc. Microsoft is a registered trademark of Microsoft Corporation. PageMaker is a trademark of Aldus Corporation. Lotus and 1-2-3 are registered trademarks of Lotus Development Corporation. Omnis 3 is a registered trademark of Blyth Software, Inc. 3Server is a trademark of 3Com Corporation. \*Subject to credit approval. For an authorized Apple dealer near you, call (800) 446-3000. In Canada, call (800) 268-7796 or (800) 268-7637.



fixed budget. Even if that same company you were doing layout work for decides to set up its own system, it'll need help from somebody who knows how they are going to use the equipment, what they'll want in terms of end product. That someone will be you. DP consulting is a new field, and Mac experts are in heavy demand. What begins as a production arrangement often leads to this type of ongoing consulting, which is very profitable, as it is usually paid by the hour. It also gives you a chance to experiment with many more solutions, and in the process learn much more about the equipment and software, something that can't be done under the constraints of a production schedule. All that you learn can always be applied to future projects.

And the customers who don't have Macs? Because they've been dealing with the traditional suppliers, chances are they know little or nothing about the Mac and what it has to offer. They're worried about cost and turnaround time, just the things that give the Mac its distinct edge. These clients are easy to hook, and they are potential consulting customers down the road. Dazzle them, amaze them, sell them, and make them happy, and you'll do business with them for many moons.

Another useful approach to building the DP aspect of the business is to specialize in marketing. Helping

your clients market their services through the traditional vehicles (mailings, brochures, newsletters), in effect, turns your operation into a marketing firm. This is an approach that is working for a number of small DP startups, permitting them to begin as a DP business and gradually build up to a marketing firm specializing in communications technology. This allows the full realization of the tremendous potential the Mac offers, not just the publishing aspect.

## POST PRODUCTION

As good as the Mac is, the current generation of Macintosh DP software is simply not sufficient to satisfy the needs of a true production environment. Because of the limitations of 512K of memory, and the complexity of PostScript, we have yet to see software that will make the post-screen paste-up process unnecessary. The introduction of the Mac Plus allows programmers to create software that can utilize a megabyte of memory, paving the way for programs that will permit the rotation of LaserWriter text on a page. PostScript scanners will provide graphics that can be previewed on the screen, manipulated on the page with text, and then converted to full LaserWriter resolution when printed.

The absence of these two factors still necessitates the use of traditional paste-up techniques, which involves skilled art labor, thereby raising pro-

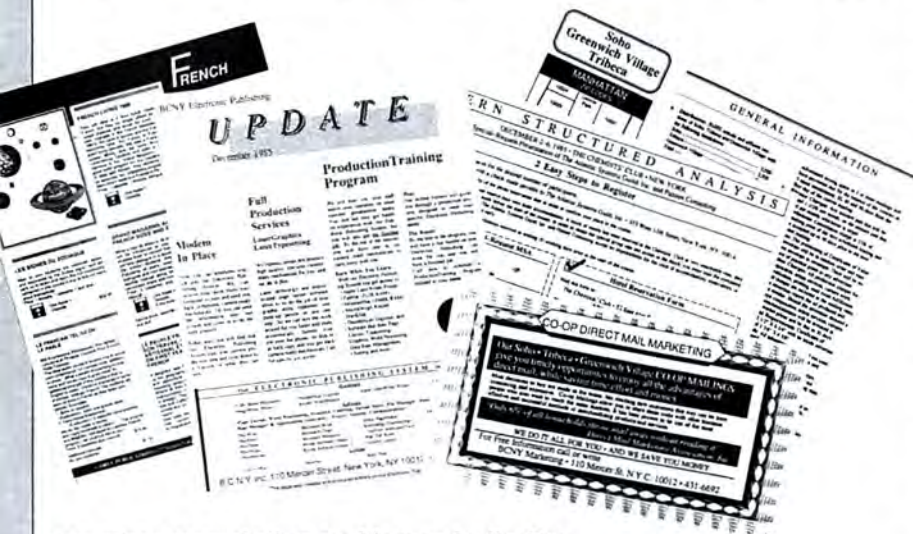
duction costs. If an independent layout service is used, that introduces a substantial production cost, raises turnaround time, and decreases the control over the final product. If the artist is employed in-house, equipment must also be purchased, and space allocated to the equipment and artist, adding to overhead.

If a full layout business is in the works, there are some things to consider. Will the post-Mac process (manual paste-up) be done in-house, or will it be sent out to independent art houses? If printing is to be done in-house, then the costs of appropriate equipment must be taken into account. It costs in the neighborhood of \$12,000 to \$20,000 to acquire a printing press, printing plate maker, collating machine, and support equipment, not to mention ink, paper, a press operator, and the learning curve of coming up to speed with the equipment. But having a press on-site increases the overall capabilities of a DP business to meet strict quality controls and deadlines, and adds to the competitiveness of the company. If you're going into this for the long haul, it may be worth considering.

## THE BOTTOM LINE

Inevitably, the entrepreneurial spirit that rubs off when you're near a Macintosh turns small startups into full-blown organizations with an unstoppable will. The dynamic nature of the machine, coupled with its awesome graphic potential, fosters inspiration like no other computer in existence. The Mac lets everyone in on what was once a world of mystic jargon, the language of "picas, points and leading." Funny though, that the Mac also did that for the computer world. It took the mystique out of computing, and let people get down to the business of getting work done. Now it's finally found its niche in the "business market." It doesn't just help people in business—it gives new businesses to people. ☐

*Irving S. Berman is president of BCNY (an electronic publishing consulting firm), 110 Mercer Street, New York, NY, 10012. (212) 431-6605.*



Any written communications are fair game for the Mac.



# YOU'RE MY TYPE

by Timothy Onosko

**Everything you ever  
wanted to know about  
LaserWriter fonts but  
were afraid to ask.**

QUICK, WHAT'S THE "OTHER HALF" of the Macintosh system? If you said the LaserWriter, give yourself five points and a gold star.

In many ways, the LaserWriter is the "other half" of the Macintosh system. With graphic capabilities on the front edge of printing technology, it's the most advanced printer you can get. With the LaserWriter you can set a resume, newsletter or any black and white image and it will look 100% professional. LaserWriter output is actually better than the image you see on your Mac screen.

All laser printers are *not* created equal. Even though laser printers

from other manufacturers may look similar, and though inside most of them beats the same Japanese heart—Canon's xerographic marking "engine," which actually produces the image on paper—the LaserWriter is separated from the pack by more than its price tag.

The mind of the LaserWriter is a computer driven by a faster version of the same microprocessor (Motorola M68000) that's inside the Macintosh. This computer runs a language called PostScript, which is rapidly becoming the standard for describing printed pages that combine text, graphics and photographs.


Other laser printers manufactured by Data Products and QMS use PostScript as well, as do laser typesetters manufactured by Allied Linotype. This means that the same or better results can be obtained by using any of these compatible printers with the Macintosh. This also means that laser printers which do not use PostScript—those produced and sold by Hewlett-Packard, Coro-

na and Canon, itself—cannot deliver the complex, professional-looking, typeset-quality pages that the LaserWriter offers.

PostScript uses a unique method of defining type styles. New typefaces are simply PostScript programs that define them as a set of points, lines and mathematically derived "Bezier" curves. Since a type style is described by only this information, it uses little memory. A fully defined character set, including special symbols and foreign language marks, occupies 15 to 75K of memory.

PostScript can scale characters to virtually any size and rotate them from portrait to landscape or any angle in between. And it can automatically generate new type styles and sizes—italic, boldface, outline, shadow or any combination of these, from 4-point to over 400-point sizes—by using the original descriptions. This is what gives the LaserWriter its incredible flexibility, and what gives its users access to the art of typography.





*Writer Driver.* The *Laser Prep* program is downloaded into the printer, where it resides until the machine is turned off or another file takes its place. This occurs before the Macintosh prints for the first time. (Aldus *PageMaker*, which uses its own prep file, replaces *Laser Prep* before it prints its first page.) These prep files extend the PostScript language, adding routines that mimic the functions of the QuickDraw graphics routines in the Mac's ROMs. The *LaserWriter Driver* does some code translation and moves the data to the printer. This terrific (and virtually invisible) trick makes all Macintosh software PostScript-compatible.

The *Laser Prep* program also sets up a system of naming the PostScript typefaces inside the printer. If a font is used that isn't identified by the printer as either being in its ROMs or residing in the printer's RAM memory (having been downloaded there by the user), the *LaserWriter Driver* will make substitutions. For example, Times will be substituted for New York and Helvetica for Geneva. (The newest releases of the *LaserWriter Prep* and *Driver*, versions 3.0 and higher, do more.)

If the *Driver's* routines cannot identify a font that the Mac requests it to print as one in the printer's ROM, they will actually try to send it the correct PostScript font from a file on disk. If it can't find that, then they use the bit-mapped information from the screen as a graphic and print the screen's dots.

The RAM memory set aside for accepting new, downloaded typefaces other than the ones in the PostScript ROMs is very small, considering the LaserWriter has 1.5 megabytes of RAM. Much of this memory is needed to set up the page to be printed.

Fonts downloaded automatically on a "per job" basis, as described above, are flushed immediately after each print session. Since RAM memory is limited, only a small number of different downloaded fonts (from one to four) can be used in one job. The latest version of *PageMaker* (1.2) also has a new driver that allows each page to contain up to

three different typefaces, which are all downloaded automatically as needed.

Fonts can also be downloaded manually into the printer, using Apple's PostScript dump program or Adobe System's font downloader—furnished with Adobe's new LaserWriter fonts—where they will reside until the machine is turned off or reset. This is necessary for certain applications that don't use the *Driver* correctly and for graphics programs written directly in PostScript itself. Since users can do much more with PostScript directly, this is an important option. (We found that Microsoft's *Excel* was one of the few programs that would not download fonts automatically.)

All of this works as described providing that certain new resources are present. These new resources are called FONDS and POSTs. A FOND file contains a table that correlates the name of the font seen on the Mac screen—under the Font menu—and the fonts as they are named inside the LaserWriter.

The FONDS also contain information for a new and more accurate method of spacing characters, as well as "kerning pairs," data that determines how two characters should be specially positioned next to one another. An example of this is the word "To." Correctly kerned, the small "o" should be slightly tucked underneath the overhang of the capital "T".

The POST resource assists the printer in locating the correct PostScript font to send to the printer. The PostScript fonts must be on the same disk as the *Driver* and *System*. If you're using HFS, they must be in the same folder, too. Automatically downloaded fonts require the POST resource to be present in the system, but don't necessarily require a FOND.

Unless you own a hard disk, or are using double-sided floppies, the use of automatically downloaded LaserWriter fonts is extremely difficult, if not impractical. The size of all this software has simply outgrown the capacity of single-sided disks. Especially when you use a lot of different fonts....

The original LaserWriter and the recent LaserWriter Plus are, externally, physically identical. The LaserWriter Plus, however, is equipped with a new and much larger version of the PostScript ROM chips that contain several new typefaces: Avant Garde, Century Schoolbook, Bookman, Palatino, Narrow Helvetica, Zapf Chancery and Zapf Dingbats. The new ROMs also store an improved version of the original PostScript interpreter for faster printing and the correction of several bugs.

#### HOW THE MACINTOSH USES FONTS

The fonts seen on the Macintosh video screen are only approximations of the characters that are printed by the LaserWriter—in some cases, not very accurate (or readable) ones. Other than as visual clues, they serve no purpose in the actual printing process.

When the Macintosh prepares to print a file on the LaserWriter, it must first find and use two pieces of software: *Laser Prep* and the *Laser-*



# YOU'RE MY TYPE

## THE NEWS THAT'S FIT TO PRINT

The typeface drought is finally over. Not only are a large number of laser typefaces being swiftly brought to market, but a new tool for the creation of PostScript typefaces is readily available.

Adobe Systems has had a number of new laser typefaces prepared and ready to go for almost a year. But marketing and software problems, as well as the lack of a keen sense of direction on Apple's part, prevented them from reaching LaserWriter users. Late last year, Apple turned the responsibility for marketing new LaserWriter typefaces back to Adobe, which is now going to sell fonts directly to users.

Adobe is now offering a large variety of faces for the LaserWriter. [Note that these font files—as well as any other PostScript typeface mentioned here—can also be used by the QMS and Data Products printers.] Each set of typefaces comes with the necessary screen fonts in a variety of sizes.

Among Adobe's new fonts are the Bookman, Avant Garde Gothic, Souvenir and Palatino typeface families included in the new LaserWriter Plus ROM set. (This means that current LaserWriter owners needn't spend the nearly \$800 for the ROM upgrade if they want only one or two of the new typefaces that are provided by it.) Also available are the ITC Garamond, Glypha, Optima, ITC Benguiat, ITC American Typewriter, ITC Machine, and ITC Lubalin Graph faces. The Zapf Chancery italic calligraphic typeface and a collection of Zapf Dingbats, or special printer's symbols, are also among this first group of releases from Adobe.

Each Adobe font set comes with several typefaces, usually all within the same family. Palatino, for example, is furnished as a collection of Palatino Roman (plain), Palatino Italic, Palatino Bold and Palatino Bold Italic. At first this might seem like unnecessary duplication, but the bold, italic and bold italic faces are really distinct typefaces, totally different from one another.

To prove this, take a look at the lower-case letter "f" in the Times

family. The italic "f" is a completely different character from the plain, roman "f"; it is not simply slanted over by a mathematical formula within the printer.

By creating these different faces within the same family, Adobe has taken the high road, attempting to maintain the traditional art of typography. The company offers this to discriminating users at a price. Each font set costs \$185 for a one PostScript printer license (laser printer or typesetter).

Adobe copy-protects all its typefaces. (Since typefaces can't be copyrighted, this is an especially touchy subject in the eyes of companies from which Adobe licenses its classic typeface designs.) This is accomplished by means of an EEPROM (Electrically Erasable Read-Only Memory chip) inside each LaserWriter. When the Adobe typefaces are initialized for downloading into the printer, a program checks EEPROM for a serial number. If it doesn't find one, it will "tattoo" the LaserWriter, inserting one, and then brand the laser font file with the same number. Thereafter, that font file will work on that LaserWriter, alone. Everytime the font is loaded, it checks to see if the serial number

matches. If a serial number is already in place, each laser font will be branded with that same number the first time it's used.

One LaserWriter typeface developer indicated that a mysterious bug in the LaserWriter ROM can randomly reset this EEPROM. Adobe confirmed this and says that a technician's oscilloscope connected to the wrong point on the printer's logic board can do the same thing. This means that Adobe's scheme isn't entirely foolproof. Worse, it could leave valid typeface copies useless if the EEPROM is reset by mistake.

The new *Laser Prep*, *LaserWriter Driver* and *System* come packaged with every Adobe font package, as does an excellent new PostScript downloader that (finally) displays error messages sent back by the printer.

Adding a host of beautiful new fonts can put a hefty nick in your wallet. Century Software's founder, laser typographic pioneer Michael Mace, feels that PostScript typefaces should be inexpensive and accessible. Century was the first on the market with downloadable typefaces, and established a price of less than \$30 each for its products.

Century does not furnish true,

### *This is Fat Times Italic.*

*But words are things, and a small drop of ink,  
Falling like dew upon a thought, produces  
That which makes thousands, perhaps millions, think.  
Byron*

### *This is Fill Times.*

**But words are things, and a small drop of ink,  
Falling like dew upon a thought, produces  
That which makes thousands, perhaps millions, think.  
Byron**

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*But words are things, and a small drop of ink,  
Falling like dew upon a thought, produces  
That which makes thousands, perhaps millions, think.  
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# YOU'RE MY TYPE

authorized versions of its fonts. In fact, its designs are rather closely based on other familiar typefaces. Willamette is Century's name for its Avant Garde-like light text face. For a comparison of Willamette with the real Avant Garde, look at the accompanying type samples. One of its faces, called Spokane, is essentially, a traditional style called Peignot. Century's Congo is much like Futura Black (a stencil style). Styx is an often-seen futuristic face, and so on. At press time, Century was offering nine new fonts, with many more on the way.

The lack of pedigree does not mean that Century's fonts are inferior typefaces. On the contrary, Century's collection of styles is far more valuable than its bargain price tags indicate. These are carefully executed, well thought-out editions, and those who own a LaserWriter would be foolish not to take advantage of them. Of special merit: Century's Thames typeface, an elegant calligraphic design, very distinctive and not a bit flashy. Also available from Century is a package called Micro-fonts, which offers extended and condensed versions of the built-in

LaserWriter faces, and a nifty little package of unusual typographic effects.

Casady Company is known to many Mac users as the publisher of a large number of screen and ImageWriter font styles it calls "Fluent Fonts." Many a LaserWriter user has looked longingly at this vast assortment of novel faces, wishing they weren't just bit-mapped characters, but could print with PostScript quality.

Now, Casady has seen the (laser) light and turned its efforts toward true PostScript typefaces. Its first releases, designed by Richard A. Ware, demonstrate an understanding of typography and its antecedents. Casady's Bodoni is a distinguished version of this "modern" face with sharply contrasting thick-and-thin construction. Its Sans Serif (not to be confused with the display face used so often by designer Milton Glaser and his Push-Pin Studio artists) is a very clean, utilitarian face. Casady's Calligraphy font is a good, but garden-variety, style that imitates the stroke of the pen, but its Regency Script (modelled after Stephenson Blake's famous Palace Script) is a marvel of swashes and curls that must have taken months to render.

The Casady Fluent Laser Fonts are packaged two (completely different designs) to a disk, sell for \$69.95, and come with good, readable screen font equivalents in a number of sizes.

## FONT CONSTRUCTION

Casady's laser fonts were designed and built using *Fontographer*, the PostScript typeface design tool developed by Altsys Corporation. This is the same group responsible for *FONTastic*, a popular bit-map font editor. *Fontographer* is a very, very valuable tool, well worth its \$395 price to serious LaserWriter users.

It uses a graphic entry method for outlining characters, generates the PostScript typeface files the LaserWriter (or any other PostScript printer) needs, and even produces its own bit-map screen font equivalents. To improve upon the latter, Altsys includes a copy of its *FONTastic*

### This is Thames.

But words are things, and a small drop of ink,  
Falling like dew upon a thought, produces  
That which makes thousands, perhaps millions, think.  
Byron

### THIS IS STYX.

BUT WORDS ARE THINGS, AND A SMALL DROP OF INK,  
FALLING LIKE DEW UPON A THOUGHT, PRODUCES  
THAT WHICH MAKES THOUSANDS, PERHAPS MILLIONS, THINK.  
BYRON

### This is Extra-Light Willamette.

But words are things, and a small drop of ink,  
Falling like dew upon a thought, produces  
That which makes thousands, perhaps millions, think.  
Byron

### This is Fat Extra-Light Willamette.

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Falling like dew upon a thought, produces  
That which makes thousands, perhaps millions, think.  
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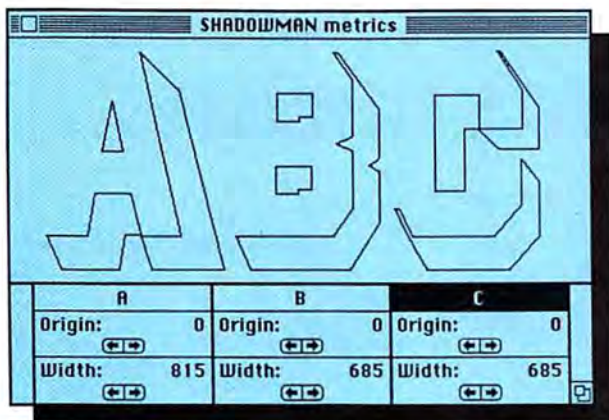


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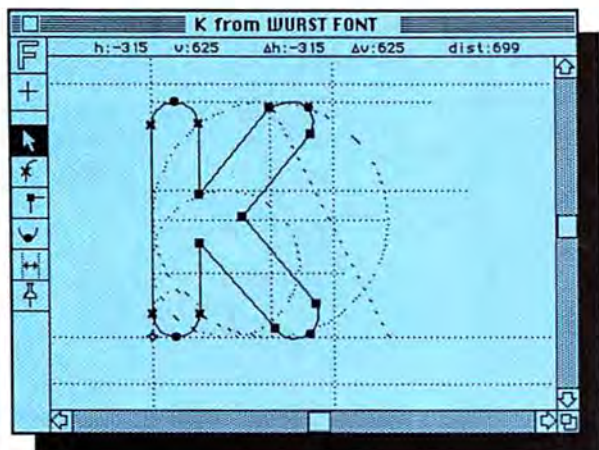
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# YOU'RE MY TYPE



Setting "font metrics" in *Fontographer*. "Origin" refers to where each character begins. "Width" is the amount of space added to the character for spacing.



This is *Fontographer*. The background lines—grids, circles, etc.—are guides that can be drawn to appear in each window for measuring the size of characters. The solid square markers represent straight line points; the "x"s are "tangent points" (where a curve meets a straight line) and the dots are points that mark a Bezier curve.

screen font generator for cleaning up and filling the outlines *Fontographer* provides.

Since typeface files are actually complex, mostly numerical text documents, *Fontographer* is a graphically oriented PostScript compiler. You outline a character by setting points (in a specific order, clockwise for the outside of the symbol, counterclockwise for the inside path), and determine the connecting curves by setting four strategic control points for each curve section.

While *Fontographer* is excellent and takes the mystery out of typeface creation, its documentation suffers from one big, but almost unavoidable, flaw. It is practically impossible to describe the behavior of the Bezier curves, from point-to-point, especially the vital control points that determine where the curves will actually flow. Without a few hours of trial and error, the curves act like panicky eels and appear to have a mind of their own.

Michael Mace, who uses an editor

of his own design, has likened typeface creation on the Macintosh to the art of sculpting—a good analogy. Adobe's own master typographic artist-in-residence, Sumner Stone, confirms that the control of the Bezier curves is something learned only with experience and intuition. Once mastered, however, the erratic splines tame and, with a bit of intuition and a good eye, pleasing curves can be created.

A nice feature of *Fontographer* is its three drawing planes. The first level allows measures and guidelines to be set. On top of that, a background plane is for pasting in other characters for tracing or precision alignment of the character being created on the third level, the foreground. *Fontographer* will also generate sample PostScript files that can be immediately sent to the printer to see a sample of the font-in-progress on paper.

Still, *Fontographer* could use some geometric drawing tools and a set of rulers. Its manual needs more, too,

such as a serious discussion of the whys and wherefores of PostScript typefaces, for example.


This means the program is not for novices or those who can't devote enough time to learn to use it. Some PostScript language background will be a big help. For that, a good place to start is the two-volume set of manuals written by Adobe Systems and published by Addison Wesley. They are: *PostScript Language Reference Manual* (\$22.95) and *PostScript Language Tutorial and Cookbook* (\$16.95).

If only by its existence, though, *Fontographer* ensures a steady stream of laser typefaces in the very near future. Users, in fact, are encouraged to distribute type products produced with the program. *Fontographer* is progressing, too. James Von Ehr, its principal author, says that many improvements are on the way, including new versions that will generate automatically downloadable fonts.

What does all this mean? Sumner Stone points out that typography was not always the specialized art it is today.

"There was once much more local type design activity than there is today," says Stone. "Before the middle of the 19th century there were many more type foundries—the places where type was created and manufactured. Every city had its own type foundry. It was a local business.

"With the mechanization of typesetting came the centralization of type design. Very few companies controlled the type design world. That's no longer going to be true. The technology is widely available: It's out. And I think that's wonderful."

Stone welcomes a new generation of typographers. "There's a good possibility," he says, "that we'll see a blossoming of this art, not just because of the availability, but because we haven't reached the limits of what we can do with this technology."  The author wishes to acknowledge the technical assistance in the preparation of this article of Loren Archer and Linda Gass of Adobe Systems, Mike Mace of Century Software and Richard A. Ware of Cassidy Company.



## LaserFonts

New typestyles for  
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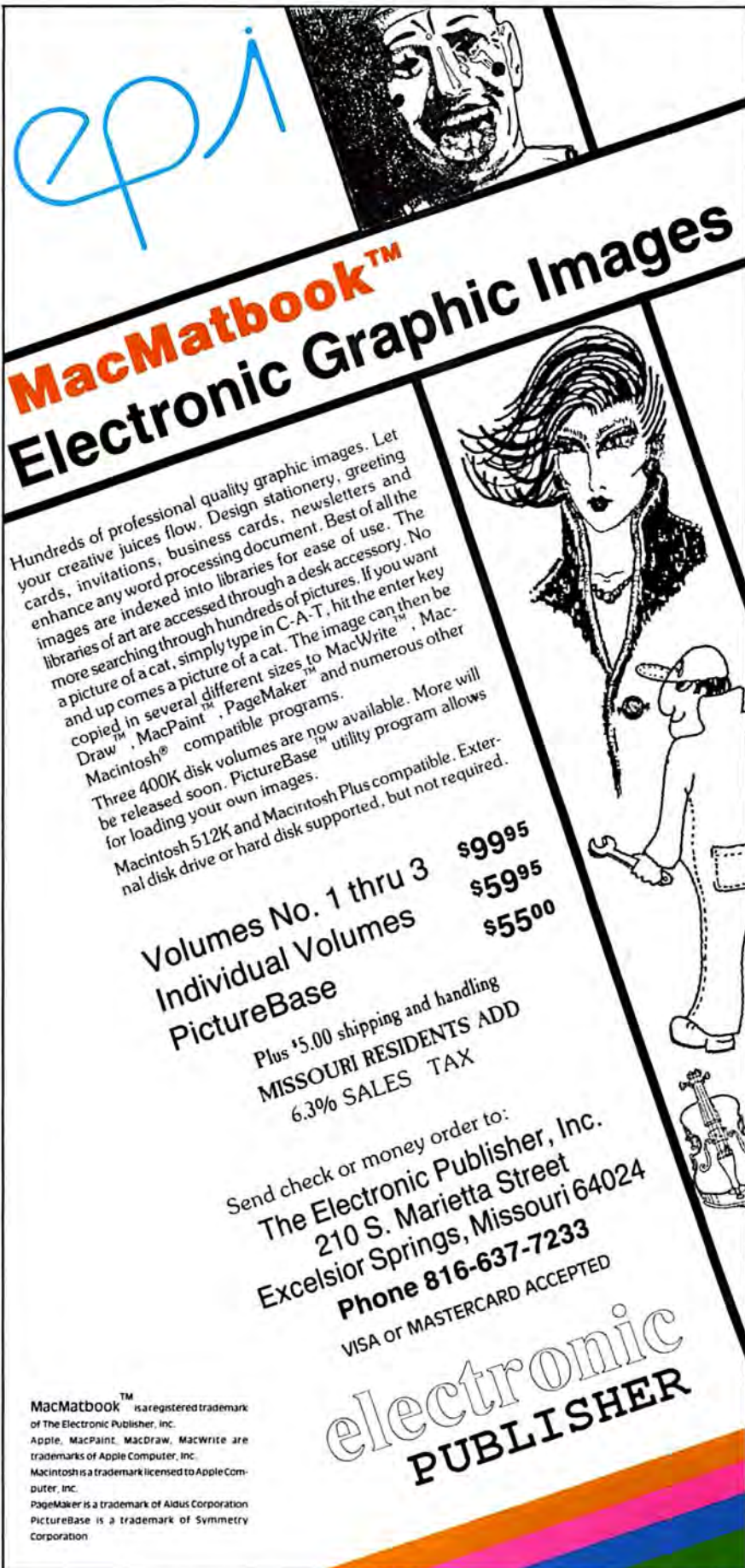
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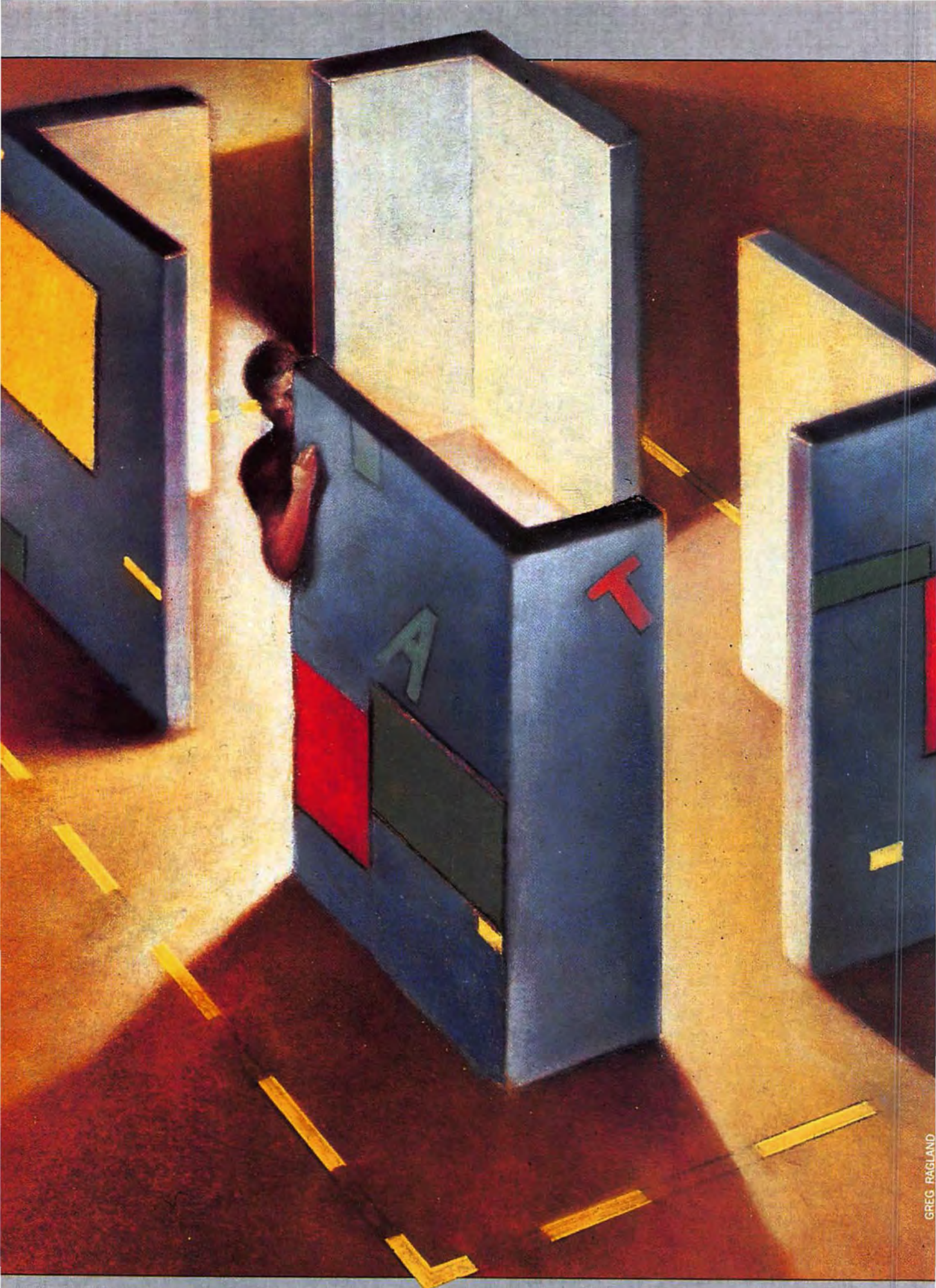
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# PAGEMAKER

## THEN AND NOW

***PageMaker, 1.1 Times Better.***

THINK DESKTOP PUBLISHING.

The first item that pops into most people's minds is the Macintosh. The second is the LaserWriter. The third is *PageMaker*. When *PageMaker* was introduced, it quickly became one of those rare commodities like Häagen-Dazs or "Rambo," a product that really started something big. Although *ReadySetGo* and *MacPublisher* were on the market first, *PageMaker*, linked to a LaserWriter, had the combination of features that made professional quality desktop publishing a reality. Suddenly everybody and their cousin was making pages for newsletters, brochures and announcements.

*PageMaker* made it easy to put text and graphics of almost any variety into a single document; mix text and graphics side by side, even on the same line; place text anywhere on the page and have it flow from column to column; assemble text and graphic documents up to 16 pages long; have multiple columns on a page and move column boundaries into custom positions. It could also read *MacWrite*, *Word*, or *MacPaint* files directly from disk, show the printed pages in several reduced or exploded sizes as they would

print, then send the pages out to the LaserWriter for printing in near-typeset quality. *PageMaker* couldn't turn out brilliant work all by itself—it required that the user have some knowledge of design and layout. But with a little technical expertise, almost anyone could design and create professional-looking publications.

As exciting as all this was, the original release version of *PageMaker* sometimes made users tear their hair out. *PageMaker* 1.0 crashed more frequently than production software should, especially within large documents. Screen representations were often far from perfect in some of the reduced size modes, and tab handling was nearly hopeless (see *MacUser*, November 1985, p. 50). While overall quality was high, some users expected and required more reliability than version 1.0 could deliver. Still, at a list price of \$495, there was more typographic power for the buck than in any other package.

As is true with the publishers of all major software, Aldus Corporation continually revises *PageMaker* in order to improve on problems and enhance functionality. *PageMaker* version 1.1, the release current at press time (version 1.2 has been

announced), adds one major new feature and corrects many of the problems found in the first release.

The most significant visible difference between version 1.0 and version 1.1 is the ability to create much larger pages. *PageMaker* 1.0 only allowed the creation of letter size (8.5" x 11"), legal size (11" x 14") or two standard European sizes, A4 and B5, pages. Version 1.1 replaces the European B5 size (182 x 247 mm) option of version 1.0 with a selection called Tabloid. This creates a page 11 inches wide by 17 inches long (the standard size of a tabloid style newspaper). With this change, *PageMaker* has become a much more valuable tool for newsletter and low-budget newspaper production.

Unfortunately, the LaserWriter can't print larger than 8 1/2 by 14 inches, so four sheets must be pieced together to make up each tabloid page. One solution to that problem is to have the final material printed on a PostScript-compatible printer that can handle larger sizes. The new Linotronic line (models 100/P and 300) from Allied Linotype can do very large sheets in one piece. These machines are room-sized and start at \$30,000.

*by Michael D. Wesley*



# PAGEMAKER—THEN AND NOW

The graphic images that are produced now look better. Users familiar with *MacPaint* and the LaserWriter know that graphic images can be smoothed when printed, reducing the rough edges (called "pixelation") normally associated with bit-mapped images. *PageMaker* 1.1 incorporates the same sort of smoothing algorithm for *MacPaint*-type images that appear in its layouts. As in *MacPaint*, the algorithm works on both ImageWriter and LaserWriter output.

*PageMaker* also includes a variable

stantly—like every two or three minutes. Getting the same test file into *PageMaker* 1.1 was very easy and proceeded without incident. The entire file was placed correctly over seven pages, each of which had different column settings, without a single problem. Cutting and pasting bits of text after the document was placed also caused problems in 1.0, but 1.1 handled it like a trooper.

One problem found in *PageMaker* 1.0 remains with version 1.1—a problem with tab settings in files originally created in word proces-

on the LaserWriter, which must be considered the primary printer for *PageMaker*, and the results can be a bit shocking. The information is not processed correctly. Some tabs print in the correct position but others do not. While the tab handling seems better with imported *Word* files than with imported *MacWrite* files, the page boundaries in *PageMaker* still present a problem when using tabularly formatted material. The problem is that when there are more tabs than tab stops on a line, the text will wrap to the next line and the tab stops will be retained. That virtually always causes misformatting.

Aldus is aware of this problem. Version 1.2, due out by the time this article is printed, will allow you to set tabs within *PageMaker*, hopefully ending some of the difficulties with tabs.

## PAGE LAYOUT 1.1

We received some comments after our first review of *PageMaker* that the review went too lightly—that perhaps a program that crashed as often as *PageMaker* did (and cost \$495) really didn't deserve a rating of four mice. The reasoning behind the original rating was that *PageMaker* opened a new world to the Mac community (and the computer industry at large), simplified difficult and painstaking tasks and debuted many advanced and powerful features. It did almost everything. While casual users could and did do very impressive work with the program, in the typographic production environment that seemed to be *PageMaker*'s real market, "almost" isn't good enough.

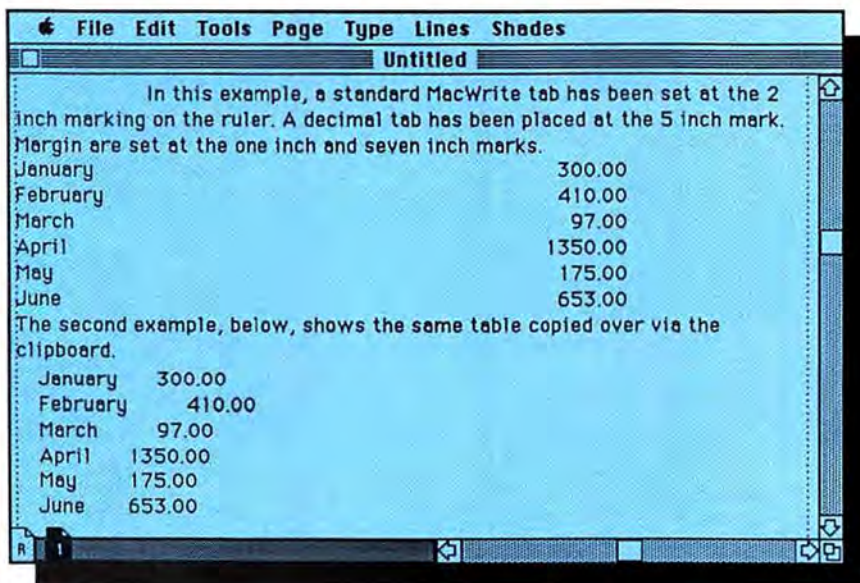
With its new stability and cleaning up of many serious problems, *PageMaker* 1.1 is truly a solid four-mouse program. Even so, there are still improvements to be made. ❏

## PAGEMAKER 1.1

### Overall Rating



**List Price:** \$495. Requires 512K, second drive and printer. Hard disk and LaserWriter recommended. Published by Aldus Corp., Suite 400, 616 First Ave., Seattle, WA 98104. (206) 441-8666.



scaling option that allows a page to be expanded to 999 percent of its original size. As many sheets as necessary to make up the whole image will be generated. It's up to the user to put them together.

Enlargement is often useful for enhancing quality. Material is shot at, say, twice its original size, and photostated down to final size. Such material looks (and is) much sharper than same size material.

In addition to these changes, *PageMaker*'s code has been cleaned up. Some of the serious problems that plagued version 1.0 have been eliminated. In our tests, attempting to import a 20-page *MacWrite* document into *PageMaker* 1.0 caused several system crashes, some of which resulted in large losses of data. A good rule of thumb when using this early version was to save con-

sors. There are basically two ways to take textual information into *PageMaker* from a Macintosh word processor. One is to use the Clipboard to paste a selection of text. When you do this, none of the tab settings are carried over. Each tab is represented simply as if it were a press of the space bar.

The other option is to place an entire file, in which case *PageMaker* simply reads the file off the disk. Placing a file retains formatting information like tab settings and margins, although margins and line breaks are adjusted as necessary to accommodate the boundaries set within *PageMaker*. The text looks fine on the newly designed page, with tables or columns in the right place and they will print without error on an ImageWriter.

Try printing tabular information



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## SOFTWARE

### GRAPHICS

**ColorChart**, Esoft, 8555 N. 117 E. Ave., Owasso, OK 74055, 918-272-7616. \$99.95.

**Cricket Graph**, Cricket Software, 3508 Market St., Suite 206, Philadelphia, PA 19104, 215-387-7955. \$195.

**Easy3D**, Enabling Technologies, 600 S. Dearborn, Suite 1306, Chicago, IL 60605, 312-427-0408. \$99.

**Full Paint**, Ann Arbor Softworks, 308½ S. State St., Ann Arbor, MI 48104, 313-996-3838. \$99.95.

**Mac3D**, Challenger Software, 18350 Kedzie Ave., Homewood, IL 60430, 312-857-3475. \$195.

**MacDraft**, Innovative Data Design, 1975 Willow Pass Rd., Concord, CA 94520, 415-680-6818. \$239.

**MacDraw**, Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014, 408-996-1010. \$195.

**MacPaint**, Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014, 408-996-1010. \$125, bundled with 512K Macs.

**Microsoft Chart**, Microsoft, 16011 NE 36th Way, Redmond, WA 98052, 206-882-8080. \$125.

**PictureBase**, Symmetry, 3900 E. Camelback Rd., Phoenix, AZ 85018, 602-224-5944. \$48.

### PRINTING UTILITIES

**ColorPrint**, Esoft, 8555 N. 117 E. Ave., Owasso, OK 74055, 918-272-7616. \$49.95.

**MacPalette**, CompServCo, 800 Freedom Lane, Slidell, LA 70458, 504-649-0484. \$69.

**Silicon Press**, Silicon Beach Software, PO Box 261430, San Diego, CA 92126, 619-695-6956. \$79.95.

### CLIP-ART

**ClickArt Publications and Graphics**, T/Maker Graphics, 2115 Landings Dr., Mountain View, CA 94043, 415-962-0195. \$49.95 each.

**daVinci Building Blocks**, Hayden, 600 Suffolk Ave., Lowell, MA 01854, 617-937-0200. \$79.95.

**daVinci Exteriors**, Hayden, 600 Suffolk Ave., Lowell, MA 01854, 617-937-0200. \$49.95.

**daVinci Interiors**, Hayden, 600 Suffolk Ave., Lowell, MA 01854, 617-937-0200. \$49.95.

**daVinci Landscapes**, Hayden, 600 Suffolk Ave., Lowell, MA 01854, 617-937-0200. \$49.95.

**DrawForms**, Datafood Software, 400 Country Dr., Dover, DE 19901, 302-736-9098. \$59.

**Home Design**, Hayden, 600 Suffolk Ave., Lowell, MA 01854, 617-937-0200. \$79.95.

**folk Ave.**, Lowell, MA 01854, 617-937-0200. \$79.95.

**Human Forms**, Bert Monroy, 205 Luquer, Brooklyn, NY 11231, 212-713-5195. \$59.95.

**MacArt for Business**, Wiley Professional Software, 605 Third Ave., NYC, NY 10158, 212-850-6788. \$39.95.

**Mac-Art Library**, compuCraft, PO Box 3155, Englewood, CO 80155, 303-850-7472. 11 disks, \$29.95 each.

**Maccessories Graphic Accents**, Kensington Microware, 251 Park Avenue South, NYC, NY 10010, 212-475-5200. \$49.95.

**MacForms**, DataFood Software, 400 Country Dr., Dover, DE 19901, 302-736-9098. \$79.95.

**Mac the Knife/Volume One: Sampler** (1 disk) and **Volume Three: Mac the Ripper** (2 disks), Miles Computing, 21018 Osborne St., Canoga Park, CA 91304, 818-994-7901. Vol. 1 \$39.95, Vol. 3 \$59.95.

**McPic! and McPic! Volume 2**, Magnum Software, 21115 Devonshire St., Chatsworth, CA 91311, 818-700-0510. \$49.95 each.

**The Mac Art Dept.**, Simon & Schuster Computer Software, 1230 Avenue of the Americas, NYC, NY 10020, 212-245-6400. \$39.95.



## PAGE LAYOUT/FORMS DESIGN

**Just Text**, Knowledge Engineering, GPO Box 2139, New York, NY 10016, 212-473-0095. \$195.

**MacPublisher**, Boston Software, 1260 Boylston St., Boston, MA 02215, 617-267-4747. \$99.95.

**MacPublisher II** (not out at press time), Boston Software, 1260 Boylston St., Boston, MA 02215, 617-267-4747. \$149.95.

**MegaForm**, Megahaus, 5703 Oberlin Dr., San Diego, CA 92121, 619-450-1230. \$295.

**PageMaker**, Aldus, 411 First Ave. South, Suite 200, Seattle, WA 98104, 206-662-5500. \$495.

**ReadySetGo**, Manhattan Graphics, 63 Varrick St., NYC, NY 10013, 212-924-2778. \$195.

## FONTS

**ClickArt Letters**, T/Maker Graphics, 2115 Landings Dr., Mt. View, CA 94043, 415-962-0195. \$49.95.

**Fluent Fonts and Fluent Laser Fonts**, Casady, PO Box 223779, Carmel, CA 93922, 408-646-6600. \$49.95 per volume.

**FONTastic**, Altsys, PO Box 865410, Plano, TX 75086, 214-596-4970. \$49.95.

**Fontographer**, Altsys, PO Box 865410, Plano, TX 75086, 214-596-4970. \$499.95.

**LaserFonts**, Century Software,

2306 Cotner Ave., Los Angeles, CA 90064, 213-829-4436. Numerous disks, \$29.95 each.

**Maccessories Professional Fonts**, Kensington Microware, 251 Park Avenue South, NYC, NY 10010, 212-475-5200. \$49.95 text, \$69.95 headline (2 disks).

**Mac the Knife/Volume Two: Fonts**, Miles Computing, 21018 Osborne St., Canoga Park, CA 91304, 818-994-7901. \$49.95.

## WORD PROCESSING/MAILMERGE

**1st Merge**, Desktop Software, 244 Wall St., Princeton, NJ 08540, 609-924-7111. \$95.

**Hayden:Speller**, Hayden, 600 Suffolk Ave., Lowell, MA 01854, 617-937-0200. \$79.95.

**MacIndexer**, Boston Software, 1260 Boylston St., Boston, MA 02215, 617-267-4747. \$49.95.

**MacLightning**, Target Software, 14206 SW 136 St., Miami, FL 33186, 305-252-0892. \$99.95.

**MacSpellRight**, Assimilation, 485 Alberto Way, Los Gatos, CA 90064, 800-MAC-5464. \$89.

**MacWrite**, Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014, 408-996-1010. \$125, bundled with 512K Macs.

**Microsoft Word**, Microsoft, 16011 NE 36th Way, Redmond, WA 98052, 206-882-8080. \$195.

**MegaMerge**, Megahaus, 5703

Oberlin Dr., San Diego, CA 92121, 619-450-1230. \$125.

**Spellswell**, Greene, Johnson Inc., 15 Via Chualar, Monterey, CA 93940, 408-375-2828. \$49.95.

**The Right Word**, Assimilation, 485 Alberto Way, Los Gatos, CA 95030, 800-356-6241. \$89.

**Think Tank 128 and 512**, Living Videotext, 2432 Charleston Rd., Mountain View, CA 94043, 415-964-6300. 128K version: \$145, 512K version: \$245.

## ACCESSORIES/UTILITIES/MISC.

**Accessory Pak #1** (including **Paint Cutter**), Silicon Beach Software, PO Box 261430, San Diego, CA 92126, 619-695-6956. \$39.95.

**ClickArt Effects**, T/Maker Graphics, 2115 Landings Dr., Mountain View, CA 94043, 415-962-0195. \$49.95.

**ClickOn Worksheet**, T/Maker Graphics, 2115 Landings Dr., Mountain View, CA 94043, 415-962-0195. \$79.95.

**Easy Trace**, Heizer Software, 5120 Coral Ct., Concord, CA 94521, 415-827-9013. \$39.95.

**MacAtlas**, Micro:Maps, Box 1353, Morristown, NJ 07960, 201-658-4333. 4 volumes, \$79 each.

**MUD [MacroMind Utility Disk (Art Grabber+, CheapPaint)]**, Hayden, 600 Suffolk Ave., Lowell, MA 01854, 617-937-0200. \$49.

## HARDWARE

### PRINTERS

**Allied Linotronic 100/P and 300**, Allied Linotype, 425 Oser Ave., Hauppauge, NY 11788, 516-434-2000. \$28,000 and up.

**LaserWriter**, Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014, 408-996-1010. \$5999.

**LaserWriter Plus**, Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014, 408-996-1010. \$6798.

**ImageWriter II**, Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014, 408-996-1010. \$599.

### DIGITIZERS/SCANNERS

**MacVision**, Koala Technologies, 3100 Patrick Henry Dr., Santa

Clara, CA 95052, 408-986-8866. \$399.

**Magic**, New Image Technology, Suite 104, 10300 Greenbelt Rd., Seabrook, MD 20706, 301-464-3100. \$549 (with camera). \$399 (without camera).

**MicroTek MS-300A**, MicroTek Lab, 16901 South Western Ave., Gardena, CA 90247, 213-321-2121. \$2500.

**ThunderScan**, ThunderWare, 21 Orinda Way, Orinda, CA 94563, 415-254-6581. \$229.

### GRAPHICS TABLETS

**Macintizer**, GTCO, 1055 First St., Rockville, MD 20850, 301-279-9550. \$599.

**MacTablet**, Summagraphics, 777 State Street Extension, PO Box 781, Fairfield, CT 06430, 203-384-1344. \$395. ☐

# MacUser

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PageMaker™, the remarkable page layout program, gives you the tools to create high-quality business communications such as newsletters, catalog sheets and price lists in your own office.

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PageMaker lets you quickly and efficiently integrate text and graphics onto a page which is displayed on the computer screen where you can also see how graphics, type styles, fonts and sizes will look when printed. When layout is completed, the document is ready for reproduction.

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# Power Plus!



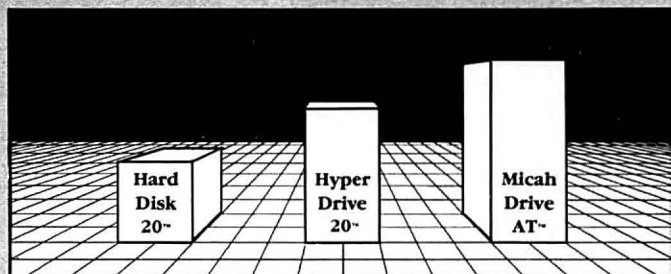
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# MICAH

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GEORGE RIVERS  
2116 East River Drive  
Philadelphia, Pa. 02976  
415 555 7881

#### OBJECTIVE

A career in art utilizing the graphic capabilities of the computer as a design tool in today's market.

#### EDUCATION

UNIVERSITY OF PHILADELPHIA, Fall 1982-Spring 1985  
B.A. in Communications, cum laude 1985  
Course of studies included media development, writing, art history, communication graphics, design and photography.

FRANKLIN COLLEGE, Summers 1983-1984  
Work in computer studies including computer graphics.

ASSISTANT, WORDS, a monthly literary magazine  
University of Philadelphia  
Preparation, type setting and  
designs and designed public

ALICIA STURGEON  
2402 University Place  
Madison, Wisconsin 53706  
(615) 555-8760

#### EMPLOYMENT

OPERATION'S CLERK May 1983-present  
22 World Fair Center, New Port, WI  
Balanced daily stock trades, made necessary changes on  
stocks and cancelling and additions of trades into  
computer files.

INTERNATIONAL TELLER October 1981-May 1983  
53 East Street, Madison, WI  
Costumer contact consisting of foreign currency trades  
traveller's checks and making up foreign and domestic  
drafts. Organized cash advances on credit accounts.

ADJUSTER October 1980-October 1981  
369 Franklin Boulevard, Will.  
Handled customer complaints, adjusted  
statements and sent investigations  
customers accounts. Handled  
ticket orders for a

October 1979  
SECRETARY  
2200 Old And  
Typing, filing, open  
booker.

SUZIE WONG  
17 SHANGHAI AVENUE  
FORT LEE, N.J. 02150

#### EDUCATION

COMMUNITY COLLEGE FOR THE MARTIAL ARTS.  
New Paltz, Pennsylvania. June 1983  
Tai Kwon Do  
Zen Studies  
Chinese

#### MAJOR COURSES

Karate  
Judo  
Meditation

#### WORK EXPERIENCES

10/85-Present

7/84-9/85

9/83-6/84

#### COLLEGE ACTIVITIES

ICHING DEFENSE CENTER, New York, N.Y.  
As an assistant trainer and spotter, I help  
the masters teach classes in intermediate  
and advanced defense practices, exercises,  
and follow-up training.

FLOAT TO AWARENESS, New York, N.Y.  
As an evening staff member, I am respon-  
sible for prepping sensory deprivation  
clients and attending to tank functions.

SYNERGY INCORPORATED, Fort Lowell, N.J.  
As an assembly-line employee in the manu-  
facturing department, I check production  
quality of biofeedback devices.

Chairman of Flatland Symposium, 1982.  
Volunteer to set up window display for  
sushi preparation; New Paltz Library, 1981.  
Typing 45-50 wpm.  
Bilingual: Chinese-Mandarin  
Astronomy, Paranormal

# FIRST

WILLIAM KENDRIDGE  
230 Mills Road  
North Point, CT 10567  
203-555-6751

#### JOB OBJECTIVE

Seeking a position which enables me to ut-  
communication, interpersonal and manager  
skills to their fullest advantage.

#### EDUCATION

State University of New York at Birm-  
B.A. 5/84. Majored in Psychology.

#### WORK HISTORY

9/83-12/85  
Brookdale Children's Psychiatric  
Westport,  
CT. Position as an intern in th  
Program. Evaluated patients an  
as part of a team of supervisio  
therapy and education program  
treatment planning sessions,  
on crisis intervention studi

5/83-9/83  
Carteridge Children's Camr  
Position as a counselor.  
planning and supervisi-  
year old girls.  
counsel-  
Was a a-

Carol McCann  
1664 East 91st Street  
New York, New York 11197  
(212) 555-9651

#### BETTER GARDENS MAGAZINE

Advertising and Promotions Coordinator: Promoted  
after seven months to assist the Associate Publisher in all phases of  
magazine promotions and advertising.

Advertising Coordinator: Coordinated and participated in  
advertising activities including conventions, agency presentations  
and press conferences. Interfaced with advertising agencies and  
helped develop special projects to increase ad linage. Liaison with  
our ad agency on focus, concept and approvals. Compiled  
marketing analysis. Coordinated monthly magazine closing.

Promotions Coordinator: Wrote copy for advertise-  
closing pieces, sales support materials, special issue pro-  
sales presentations and direct mail campaigns. Organ-  
as BDA, National Daisy Chain and Fuji Florists, pr  
events.

Assistant To The National Advertis-  
Handled customer complaints and reader re-  
Arranged fulfillment for promotional acti-  
premium houses. Maintained promotion

M.H. ELLSBERG STUDIOS  
Sold handcrafted furniture to decor-  
clerical duties and billings.

WRITING EXPERIENCE  
Freelance copywriting ex-  
direct mail, brochures, a  
such as Lawn Surgeon  
My articles have app  
Pasture News.

EDUCATION  
B. A. with



# IMPRESSIONS

## Get your foot in the door with a resume you create on your Mac.

LIKE IT OR NOT, RESUMES ARE A fact of life. Resumes provide an initial foot in the door, opening the way to a full job interview. If you don't own your own business or have connections, you'd better have a good resume.

Among its many virtues, the Mac is a resume producer *par excellence*. The beauty of creating your resume on the Mac is twofold: first, it's there when you need it, any time you need a single copy or a dozen. Second, while you'd probably hesitate to pay for typesetting several different resumes, the Mac makes it easy to keep as many variations as you need, geared for different jobs or industries, and you can update any or all of them quickly and easily.

### FIRST IMPRESSIONS COUNT

Ask a half dozen personnel directors what they like most in a resume and chances are they'll give back six different answers. Striking the right chord in a person is based on a set of very subjective criteria. For example, many personnel officers file multiple-page resumes immediately—in the wastebasket, that is. Colored paper (some people even consider beige a color), misspelled words and unprofessional formatting also usually result in flat rejection.

The best way to pick up the most

popular and successful resume styles is to read one of the many books available on the subject. Of course, resumes should be geared towards the industry in which they'll be used—for a somber investment firm, only the most rigid form will do, while if you're aiming for the artistic professions, you'll have a bit more leeway in formatting.

### PUTTING YOUR BEST FOOT FORWARD

The Mac's ability to create and print different typefaces comes in handy when creating a resume. Be careful not to go overboard, though: use good judgment and discretion with italics, boldfaces and font changes or your resume could end up looking like it was typed in San Francisco-12 and then modified in MacPaint.

When used in moderation, boldface and italics can be used to add emphasis where you want it. In our example we boldfaced the name and address of the job seeker, and underline-boldfaced the names of all the companies where she had worked. To highlight her job titles and places of employment, we used 14-point New York for just those words.

Italics are a great way to set off dates, or to split off the word "promoted" from the rest of the jumble on the page. But only use them in a resume if you'll be printing the resume out on the LaserWriter, since even in high-quality mode the ImageWriter produces slightly choppy italic characters.

When spacing out the resume, don't rely on the screen image as your guide to margins. While they might look great on-screen, indented



by **Tracie Forman Hines**

**PAMELA BAKER**  
66 Weathermere Drive  
amestown, KY 40678  
2-555-9092

EDUCATION

DEGREES

EMPLOYMENT

1981-1985

1984

1984

1984

1984

1984

1984

1984

1984

1984

1984

1984

1984

1984

1984

Southern University,  
Barrington, KY  
B.S. in Political Science 1985

Honor Student  
Sculley Leadership Award  
Who's Who Among American High School Students  
Junior Advisory Council Representative

Recipient of the Rose Atwood Scholarship  
\$10,000 for four years

5/85-present  
Internship at KXYZ Communications Network  
Lexington, Ky  
Analyzed and systemized budgets and  
presentation material for promotional  
packages and advertisements.

1981-1985  
Political Science Secretary at  
Southern University, KY  
Coordinated meetings, receptions, rallies,  
club functions and fundraising events.  
Revised general office procedures

1984  
Madame Curie Science Foundation  
Organized data and  
ferences.

net

Riding



print ads, catalogues,  
materials for companies.  
and Eisenstein Associates.  
er Times Magazine and Cow  
Hunter College, Jan. 1984



# FIRST IMPRESSIONS

areas of text often print out slightly crooked, especially when a page is printed out on the LaserWriter. Save time and effort. Always use the Tab settings to indent and no matter how you print it, your resume will come out perfectly aligned.

## SIZING UP THE SITUATION

The ideal resume fits perfectly on a single page, with enough spacing between items to set each slightly apart. It also requires the name, address and telephone number at the top, and if room permits, a little phrase like "References furnished upon request" along the bottom. If you actually fit everything in on one perfectly-spaced page on the first try, congratulations. You're the first!

There are a million little tricks that can be used to squeeze a fat resume down to size or expand a paltry one to important-looking proportions. It's all in how you size it.

Inexperienced workers, like recent

graduates or returning homemakers, probably have little of real note to fill up a page with. You can make use of what you do have by creating the entire resume in 14-point type. It takes up a lot of space, it's very easy to read and it isn't so large as to look as if you're trying to put something over on anyone. Leaving an extra space at the top and bottom margins adds even more "non space" to a slim experience listing, as does setting the margins just a notch or two further in on each side.

New York is a nice, big font that will print a little wider than most others, no matter which point size is used. If you need to add just a line or two, changing the type to New York can do the trick.

Trimming down a thick resume is a bit trickier, but it can be done. The most obvious course of action is judicious copy editing (try substituting smaller words and phrases for longer ones, to wit, change "Job

responsibilities included" to "duties were"). Using Times as your font also loses a few lines, since it's a relatively small, narrow typeface.

If you've edited down to the bare bone and still find yourself with a two-page resume, the next thing to do is scale the entire text down to a 10-point font. Just make sure to keep the double-spacing between lines here, since 10 point fonts are harder to read. (If you absolutely must single-space, do it in a 12-point font. It will be much easier on the eyes.)

A note here: LaserWriter fonts are smaller and tighter spaced than those meant for use with the ImageWriter. Remember also that if you'll be using a LaserWriter to print out your resume, you must use a LaserWriter font or the word spacing will end up looking sloppy.

For ImageWriter work, the Boston II font gives a sleek, professional appearance. It's shareware available in most users' group libraries, and it makes an excellent choice for resumes with a lot of text.

## TYPES OF TYPE

Resumes should never leap off the page at a reader. Keep it conservative, which lends an air of professionalism. Never even debate using a font like San Francisco or London in a resume unless the job you're applying for is at the local McDonald's (and even then, chances are the purple-haired manager will think you're weird).

Straightforward, conservative fonts like New York and Times are ideal for most situations. Those in the creative arts can experiment with Geneva or Chicago, which both give a clean, if somewhat artsy, feel.

## THE PRINT SHOP

Many of the people you'll be applying to aren't impressed by resumes that look typeset, feeling that you're probably more of a professional job-seeker than a person genuinely interested in their particular company. On the flip side, many others hate seeing a resume that looks typewritten and hastily dashed off, feeling that people who can't take the trouble to cultivate a profes-

(continued on page 153)

Carol McCann  
1664 East 91st Street  
New York, New York 11197  
(212) 555-9651

### BETTER GARDENS MAGAZINE

2/84-3/85:

**Advertising and Promotions Coordinator:** Promoted after seven months to assist the Associate Publisher in all phases of magazine promotions and advertising.

**Advertising Coordinator:** Coordinated and participated in advertising activities including conventions, agency presentations and press conferences. Interfaced with advertising agencies and helped develop special projects to increase ad lineage. Liaison with our ad agency on focus, concept and approvals. Compiled marketing analysis. Coordinated monthly magazine closing.

**Promotions Coordinator:** Wrote copy for advertisements, closing pieces, sales support materials, special issue promotions, sales presentations and direct mail campaigns. Organized and implemented successful merchandising programs for such clients as BDA, National Daisy Chain and Fuji Florists. Planned promotional events.

**Assistant To The National Advertising Director:** Handled customer complaints and reader response analysis. Arranged fulfillment for promotional activities with print, art and premium houses. Maintained promotional lists.

9/84-11/84:

**M.H. ELSBERG STUDIOS: Sales Assistant**  
Sold handcrafted furniture to decorators. Responsible for all clerical duties and billings.

### WRITING EXPERIENCE

Freelance copywriting experience includes print ads, catalogues, direct mail, brochures, and sales support materials for companies such as Lawn Surgeon, Pools by Hiranda and Eisenstein Associates. My articles have appeared in Fertilizer Times Magazine and Cow Pasture News.

### EDUCATION

B. A. with Honors from Hunter College, Jan. 1984



# FOR THE BEST IN MAC GRAPHICS, ONE PRODUCT SCANS ALONE.

## "Best Peripheral Device"

**MacUser**

The editors of *MacUser* named ThunderScan the Best Peripheral Device of 1985. Here's what they said: "ThunderScan from Thunderware is an astonishing device that transfers images to the Mac by scanning them using a snap-in device that replaces the ImageWriter ribbon... Easy to hook up and use, relatively inexpensive, this device should be owned by anyone who uses graphic images on the Mac."

## "Best Graphics"

**MACazine**

Based upon their personal use, the readers of *MACazine* voted ThunderScan the Best Graphics System of 1985.

## "Best Hardware Product"

**MACazine**

We didn't finish first here, but in this case we don't object to second best. Of all the hardware products on the market, ThunderScan finished second only to the Mac 512 as the Year's Best Hardware Product.



To get the best graphics from the world's most graphic computer, experts and users agree: Nothing works like ThunderScan. Because only ThunderScan replaces ImageWriter's ribbon cartridge, scans printed images and turns them into high-resolution MacPaint documents. Just \$229 complete including our powerful image enhancement software (no video camera required). Get yours today. Or contact us for more information and sample ThunderScanned images.

ThunderScan, as shipped, is compatible with the 128K or 512K Macintosh, ImageWriter I & II and LaserWriter. Compatibility with the wide-carriage ImageWriter and Mac Plus requires accessories. Contact us directly for answers to your compatibility questions.



Thunderware, Inc.  
21 Orinda Way  
Orinda, CA 94563  
(415) 254-6581

**ThunderScan**

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# WHICH WAY TO THE WIZARD?

CRASH! THE ATTACKERS SPRING out of the shadows, with blood-thirsty screams and the sudden clash of swords on shield. Almost before there's time to think, they attack, ambushing the tiny group of stalwarts. But the heroic adventurers, weapons at the ready, are quick to rally. Sandor the Strong swings his long sword, and an orc falls dead at his feet. Cutter John swiftly dispatches another, while Binkley the Mage casts a sleep spell to hold off the rest of the nasties. After the battle is finally won, there's gold and booty to divide. Magenta, an elfen thief, opens the booby-trapped chest, and Test, a Bishop, identifies the sword inside, pronouncing it enchanted, but safe to use.

Hey, wait a minute, where's the spreadsheet? Is this a battle from a magic kingdom? You guessed it.

## ***Wizardry combines Macs, magic and mythos.***

This is *Wizardry*, the classic game of fantasy and adventure that has kept gamers enraptured since it was first introduced in 1981.

The Mac edition is a straight adaptation of the original game, from the placement of doors and traps in the dungeons to the somewhat limited graphics and complete lack of sound. This doesn't interfere with players' enjoyment of this sword-and-sorcery slugfest — but if you're looking for razzle-dazzle animation and state-of-the-art digitized sound effects, you

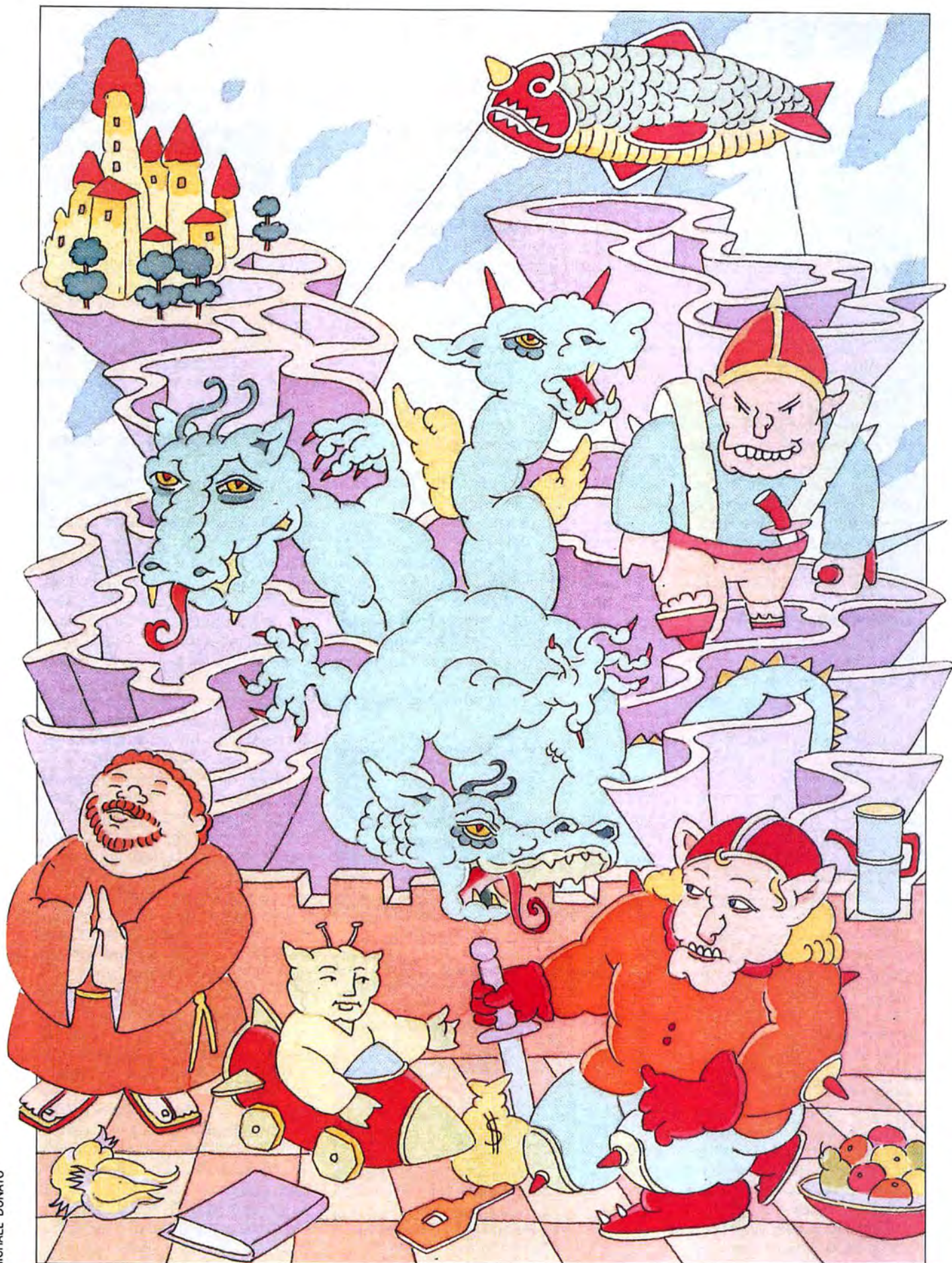
won't find them here. Fantasy role-playing gamers won't mind much, though, especially when they're locked in a confrontation to the death with evil Werdna and his vampiric entourage. For all its advanced age, *Wizardry* is still as exciting today as it was in 1981.

### **PICK A ROLE—ANY ROLE**

*Wizardry* lets the adventurer choose a character's Race (Human, Elf, Dwarf, Gnome or Hobbit), which affects the sort of attributes he or she starts out with (for example, hobbits are more agile than dwarves) and the character's Alignment (Good, Neutral or Evil). Careers are determined first by these two factors, then by six randomly generated statistics that measure the characters' abilities. Strength, Intelligence, Piety, Vitality, Agility and Luck com-

***by Joyce Worley and Bill Kunkel***







# WHICH WAY TO THE WIZARD?

bine to make each character an individual.

After studying the characters' abilities, the player chooses a Class for each. There are four basic professions: Fighter, Mage, Priest and Thief; plus four jobs that combine advantages and disadvantages from the basic classes: Bishop, Samurai, Lord and Ninja. All possess special skills (for example, only a Bishop can identify items without having to pay the store), and a good warring party must combine these talents in order to ultimately beat the dungeon dreadfuls.

Up to six heroes can join an adventuring party. Those of Neutral alignment get along with anybody, but Good and Evil characters obviously hate the sight of each other and therefore can't join the same party. Before entering the dungeon, each character must be outfitted with weaponry and armor appropriate to his/her character class.

## ONWARD AND INWARD

The maze is where the adventure really begins. Players see the dungeon from an eye-level perspective courtesy of a graphics window that can be enlarged to fill about a third of the screen, or left at its original size, about a fifth of the screen. An arrow cursor is used to select a direction, changing automatically to straight up (forward) or turning left or right, depending on the section of the dungeon window it's moved to. When the arrow is facing the direction you want, click the mouse to take a step.

The dungeon itself consists of ten levels (one of which is hidden). The population of nasties gets more dangerous as the party descends deeper into the labyrinth. Woe betides any group foolhardy enough to plunge into depths that they're not strong enough to master! Death in any number of horrible ways lurks just behind every twist and turn. Before any adventurer can safely advance to the lower levels, where the monsters are more deadly but the swag is proportionately bigger, they must gain experience in battle.

Every successful dungeon encounter gives the party members experi-

ence points, and as each warrior accumulates enough points, they advance to the next level. Upper level characters are stronger, faster, more competent and, most important, better able to survive the fierce battles.

The hazards are many. Not only is there a seemingly unlimited number of monsters, but to keep things interesting there are also traps, pitfalls, darkened mazes and evil magic items that can kill or maim at a touch. Even the most careful player can expect to suffer losses while shepherding a group of adventurers through the maze. In some cases, if the party can bring the body back to the surface, resurrection is possible. But it takes a lot of gold to meet the "donation" requested at the temple to raise the dead, so the party must be well-heeled if they expect to see any fallen friend again. Wise party-managers will simply shrug away the loss and create a new character when a low-level hero goes on to glory, and saving their loot for reviving more valuable upper-level heroes. Or, they'll keep extra back-ups of all their favorite characters on a separate disk (hint, hint).

All this plundering and pulveriz-

ing is not without a purpose. There is, of course, a Mission. The evil wizard Werdna took a magic amulet from Trebor the mad overlord, and the artifact must be recovered. As adventurers pillage through the maze, they penetrate deeper into the dangerous Werdna. Clues found along the way help pinpoint his location, and with a whole lot of luck—plus a lot of death and destruction along the way—eventually Good will triumph over Evil (or, in the case of an Evil party, Bigger Evil will triumph over Evil). At least, that is the hope.

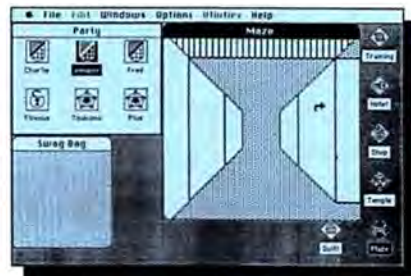
## EASY TO PLAY, HARD TO MASTER

*Wizardry* is a deep game with lots of extra niceties to make it more engrossing. There is a wealth of knowledge about the party available through the pull-down menus, special windows and information displays. Each party member has a special character information sheet that gives the pertinent information about that hero: hit points, armor class, items owned, spells known, class, race, and vital statistics. This is available directly from a menu command, and a set of special sheets enclosed with the game make it easy to keep a hard copy of favorite heroes.

When the adventurers encounter bad guys in the maze, three on-screen windows track the fight. One lists the party members and their status, showing damage and injuries inflicted to each character so that players can keep a careful eye on the party's status. The Monster window shows the type and number of monsters, plus a small drawing of each type of creature in the group. The Events window lists each party member by name, so the gamer can choose the role each will take in the battle, whether it is fighting (only applicable to the first three characters listed), casting a spell, or avoiding the combat altogether. The gamer can also choose whether to fight, or to have the party run away—a wise move when a weakened party meets a large group of bad guys! Still, if you don't fight, you can't collect the treasure that appears when all monsters have been van-



A typical battle sequence. Note that the character vmunix has only one hit point left out of a possible eight. The creatures the party is fighting are shown in the upper right window.



The view from underground. Because the arrow is facing the right, if a player clicks the mouse it will turn the party in that direction.



quished.

There is still another type of encounter. Once in a while, a group of monsters will offer a truce instead of attack. Players can either accept the offer or start the battle. It's more fun to fight — especially if you're using an Evil party, who would be way out of character to allow peaceful encounters in the dungeon.

The monsters have one slight advantage over player-controlled characters: if the party is surprised (read "ambushed"), all the magic-using monsters are allowed to cast offensive spells. But, if the party surprises a group of monsters, its magic users have to wait until the second round before being able to cast any sort of magic. It's not fair to the party, but then, they usually win anyway.

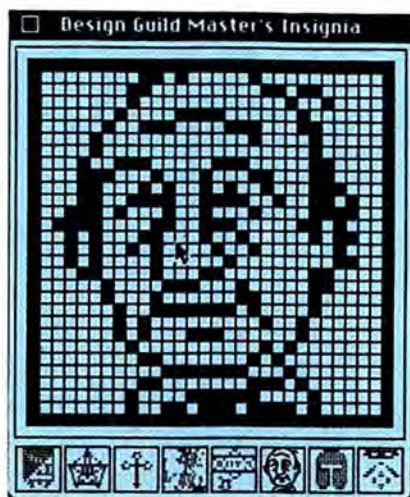
Not all treasures are valuable, and some are downright harmful. Some magical items are endowed with evil personalities, so adventurers must be careful handling things they find in the maze until they have been identified. Of course, an evil character will fare far better wearing Armor of Evil than a good one will, though everyone seems equally vulnerable to the Ring of Death. One of the game's most interesting features is a perception chart which indicates what each member of the party sees when they look at a newfound treasure. While a Fighter may see a harmless sword, for example, the Mage might perceive a hexed weapon.

## EXPLORING MADE EASY

Although most players will eventually learn the dungeon's winding maze of different paths, mapping is an essential key to the game. Use a standard piece of large-grid graph paper and record each step you take. Note any doors, secret doors, traps, staircases, elevator chambers or messages, so you'll be able to orient yourself quickly and easily when the inevitable happens and you find yourself lost. Each step should be represented by a square on the grid.

Get to know your spells and what they do. Silence spells are very effective against spellcasting monsters, and stillness works best against creatures who inflict heavy damages.

Before engaging monsters in combat, be



The FatBits window lets players customize their players' shield icons. As you can see, almost anything is possible within the grid's boundaries. Only Guildmasters can bear special icons.

## WHAT YOU SEE IS WHAT YOU GET

*Wizardry* doesn't boast fancy graphics. The straight-ahead, quasi-3D perspective is flat and totally unadorned; the doors aren't rendered, but are depicted as black holes in the maze, a holdover from the original Apple II edition of the game. According to the designers, the graphics are so sparse because they wanted the program to run on a 128K Mac.

There is, however, one truly inspired graphic innovation. Players can design their own heraldic shield icon for high-level characters using a FatBits option. Only the Guildmas-

ter, the highest-ranking character in any given profession, has the right to bear a customized shield.

Still, *Wizardry* doesn't need any fancy trimmings. It's one of the great games of all times; certainly high on the list of computer hits. Anyone who has ever enjoyed the dice-and-paper game *Dungeons & Dragons* should find this entrancing, since it provides many of the same splendid gaming devices as that nonelectronic classic. But, unlike *Dungeons & Dragons*, *Wizardry* can either be played solitaire, or enjoyed with a group of friends.

It's unnervingly thrilling to battle the dungeon dreadfuls, testing wit and wisdom, bravery and brawn, against the evil minions of the underworld. If you've played through the entire scenario, don't erase your character disk yet — the two follow-up scenarios, *Legacy of Llylgamin* and *Knight of Diamonds*, are being translated to the Mac even as you read this, and more scenarios are on the drawing board. Wrestling the amulet away from Werdna is exciting, but it's not the end of the line for *Wizardry* mavens.

## WIZARDRY: REPORT CARD

Overall Rating:	■ ■ ■ ■ ■
Follows Mac Interface:	■ ■ ■ □ □
On-Screen Help:	None
Performance:	■ ■ ■ ■ ■
Support:	■ ■ ■ ■ ■
Consumer Value:	■ ■ ■ ■ ■

**Comments:** The granddaddy of computer fantasy role-playing games. Create six characters and advance them through the ranks as they explore a perilous dungeon. **Best Feature:** Infinitely playable dungeonquest; engrossing adventure that combines strategy with puzzle-solving. Well-written tidbits add humor; expandable (as other scenarios are translated to the Mac); excellent support. **Worst Feature:** Poor graphics; incomplete Mac interface that requires players to type in the names of spells, rather than select them from a menu. **List Price:** \$59.95. Published by Sir-Tech, 6 Main Street, Ogdensburg, NY 13669, (315) 393-6633.



# SEEKING THE PERFECT P A S C A L

***TML Pascal packs compiled programming power.***

PASCAL, THE PROGRAMMING LANGUAGE, is entering a venerable middle age (don't confuse it with Blaise Pascal, the 17th-century mathematician after whom it was named, who passed through middle age some time ago). Niklaus Wirth's creation is now 15 years old and is finding ever increasing use, both in academia and in the commercial domain.

The Macintosh, in its third year, is also showing signs of maturity. Programs continue to proliferate, and the recent introduction of the Mac Plus marks the end of adolescence for Apple's prodigal child. It thus seems fitting that the two have met, in the form of the *MacLanguage Series Pascal* (almost always called *TML Pascal*) from TML Systems.

Actually, this is not the first time that Pascal and the Mac have gotten together. Pascal, indeed, was the first high-level programming language available for the Macintosh. The only thing was, you had to run your Pascal on a Lisa. The Mac's designers did much of their early work in *Lisa Pascal*; they also thought highly enough of Pascal to make it their language of choice for documenting the five hundred-odd routines available in the ROM — the famous Toolbox. Open any of *Inside Macintosh's* thousand-plus pages, and chances are that Pascal will pop out at you.

*TML* is not even the first Pascal to

run directly on the Macintosh (*MacPascal* claims that distinction). The main difference is that *MacPascal* is an interpreted language, like BASIC, while *TML Pascal* is a true compiler that produces machine-language applications. As a rule, interpreted languages run far slower than compiled ones, and *MacPascal* programs require the Pascal itself to be present on-disk at runtime. This makes it impossible for commercial developers to create standalone programs that can be sold independently. *TML*-produced applications, on the other hand, are fully double-clickable, standalone programs. Alternatively, users can set an option to compile to a desk accessory format. There is a tradeoff, of course.

Interpreted environments are generally easier to work with, and it's also easier to monitor the state of variables on the fly. *MacPascal's* main use has been as an educational tool for teaching Pascal, and that portion of the Toolbox it makes accessible, to beginners.

## WORKING THE CYCLE

*TML Pascal's* compiled-language environment is more complex. Using a compiler involves a lot of moving back and forth between three separate applications: an editor for creating source programs; the compiler, which takes those source files as input and creates intermedi-

***by Howard Katz***



PASCAL





# SEEKING THE PERFECT PASCAL

ate REL files; and a linker, which binds the REL files together into an executable, machine-language program. Working with a compiler involves running through many iterations of the "ECLRC" cycle: Edit-Compile-Link-Run-Crash. The last component is not pure whimsy: it doesn't matter whether you're a genius hacker or not — very few programs run correctly the first time around. One of the virtues of Pascal is that it does a good job of catching errors as early in the development cycle as possible.

*TML Pascal* requires at least 512K of RAM and two drives, unless you're running off an 800K drive. We tested a number of small 40- to 50-line programs and found that a full development cycle of Edit-Compile-Link and back to Edit again took about 2 minutes. The ideal development environment for this language system may be on a Mac Plus or expanded Mac with a large RAMdisk (512K or higher) on which the cycle time should fall to roughly 30 seconds (for our test programs).

In a sense, this package is an extension of Apple's *MDS 68000* assembly-language development system. *TML* has licensed Apple's *Edit* and *Link* programs from the *MDS* package for inclusion with the compiler. But you don't have to own *MDS* — or even know assembly language — to use *TML Pascal*. *TML* provides the best of both worlds: you can compile directly to the linkable REL format, or you can produce assembly-language source listings for input to the *MDS* assembler. Most users would select the first option, but the second option is nice if you want to diddle with the code directly, learn assembly-language programming, or simply see how compilers work.

## EASY MOVEMENT

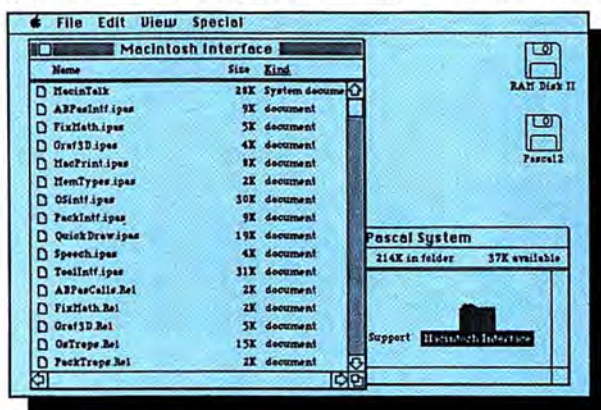
*TML Pascal* extends *MDS*'s transfer-menu facility to allow easy movement between the editor, compiler, and linker without returning to the desktop. A Transfer menu appears on the right side of the menu bar in all three applications, showing which of the three programs you can call up next. When you've finished an edit-

ing session, for example, you can select PASCAL in the Transfer menu to move directly to the compiler. This makes development just about as painless as it could be. The linker even adds the name of your application to the Transfer menu at the conclusion of the cycle, and you can boot right into your program.

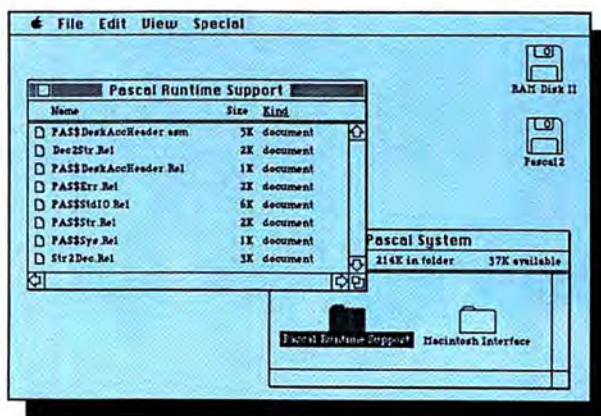
*TML Pascal* is compatible (with a very few, minor exceptions) with both *MacPascal* and *Lisa Pascal*. This means that it shouldn't be very difficult to port programs, in source format, from either of those two systems for recompilation under

*TML*. It's also close enough to standard Pascal, if there is such an animal, that "foreign" (non-Mac) Pascal applications should move across easily as well. *TML* is nonstandard, as are both *MacPascal* and *Lisa Pascal*, to the extent that all three require extensions to the language to allow programs full access to the Toolbox.

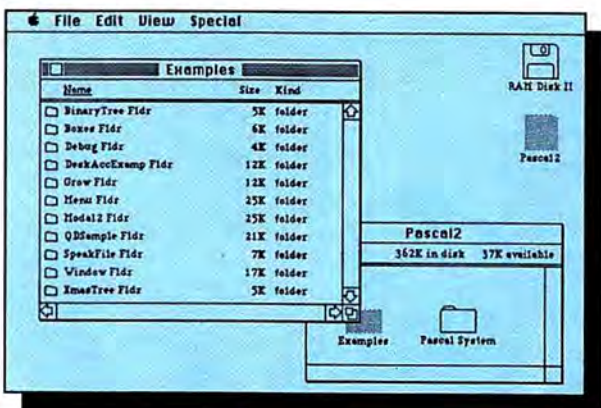
Using the Toolbox adds an extra degree of complexity to any program that dips into the Macintosh ROM. *TML Pascal* allows access to the Toolbox through a number of ancillary files that come supplied on a second disk. Interface files describe,



Interface source files which can be included in your application and REL files which are linked. The reference manual explains which are needed where. Not shown are the four files PrLink.Rel, Speech.Rel, ToolTraps.Rel, and ATalk/ABPack.age.



Pascal Runtime Support files supplied in REL format. The compiler automatically informs the linker which are needed for any particular application. The Desk Accessory ASM source file can be modified to take advantage of *TML*'s "Create Desk Accessory" option.



Sample programs provided for hands-on exploration.





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```

PROGRAM Sieve( Input, Output );
{ from page 274, July 1984 Byte Magazine }

{ adding "(Input, Output)" above
  automatically invokes "Plain Vanilla" }

CONST
  size = 8190;
VAR
  flags : ARRAY [ 0 .. size ] of BOOLEAN;
  i, prime, k, count, iterations : INTEGER;

BEGIN
  WriteLn ( '10 iterations' );
  FOR iterations := 1 TO 10 DO BEGIN

```

```

    count := 0;
    FOR i := 0 TO size DO flags [ i ] := TRUE;
    FOR i := 0 TO size DO
      IF flags [ i ] THEN BEGIN
        prime := i + i + 3;
        k := i + prime;
        WHILE k <= size DO BEGIN
          flags [ k ] := FALSE;
          k := k + prime;
        END; { while }
        count := count + 1;
      END; { if }
    END; { for }
    WriteLn ( count, ' primes.' );
  END. { program }

```

Source code for the infamous Sieve. This program should run as is on just about any micro.

in Pascal source format, ROM types, constants and procedures that can be referenced in programs with the Include directive. Runtime Support files, which have to be bundled in with the final version of applications, are supplied in the REL format that the linker can handle. The Interface package also provides a few REL files of its own. Happily, the compiler takes care of informing the Linker which REL files it has to bind together, so the user needn't worry about that.

TML also supplies a dozen example programs that provide good ammunition for a few evenings of hands-on practice. These are particularly valuable for exploring the structure of small applications when you're just getting started. Tom Leonard of TML wrote several of the examples; the others are revised versions of small programs that Apple originally supplied for the Lisa. Also supplied is the source code for Steve Chernikoff's *MiniEdit* program, taken from his book, *Macintosh Revealed*. Hayden Publishing, which gave TML permission to do this, asks that you send them \$20 to use the files.

### PLAIN VANILLA

TML has added one feature to its compiler that is particularly interesting: a Plain Vanilla option that simplifies the job of getting foreign applications up and running. This option automatically puts up a simple document-type window on the screen as soon as a compiled application starts running. This allows programmers to use the Pascal Write and WriteLn functions without the

necessity of going to ROM to provide their own window support. This option is particularly handy for writing little snippets of test code. And the rest of the Toolbox is still available, if you want to use any of the Mac's distinctive features.

We also used Plain Vanilla to put up *The Sieve*. We capitalize both words because this program has taken on an almost mystical connotation in its role as a benchmark of compiler efficiency. It is amusing how often *Sieve* results are cited in the literature and then immediately qualified with the caveat that the results don't necessarily prove much of anything at all. Whatever your feelings on the matter, a TML-produced *Sieve* ran in just over 6.6 seconds. This compares favorably with results published for five C compilers in a recent issue of *BYTE* magazine, where the two fastest C versions ran the *Sieve* in 6.2 seconds, and the three slower ones ran in times ranging from 8 to 12.6 seconds. And all produced application files that were a fair bit larger than the file produced by TML. These results, of course, don't necessarily prove much of anything at all . . .

This brings us dangerously close to a second contentious issue: The Battle of the Languages. Which is best: C or Pascal? There are so many considerations that it is really difficult to say. There is, however, one issue on which TML wins hands down: price. At \$99.95, *TML Pascal* costs about one-third the going rate of its main C competitors. It's nice to see a full-featured package at a reasonable price.

All in all, there's not much that

TML Systems could have done to improve their product. The two reservations we have are minor. Both have to do with the reference manual. While it is otherwise fully adequate at just over 130 pages, it could sorely use an index. The manual, moreover, assumes a fairly competent grasp both of Pascal and the Toolbox, and given the complexity of the Mac programming environment, a tutorial for beginners would be welcome.

The bottom line is that *TML Pascal* is an excellent package. If you want to get into programming on the Mac, a good way is to buy a copy of *TML Pascal* and *Inside Macintosh*, send Niklaus Wirth a "Thank You" note, and get to work. ☐

## MACLANGUAGE SERIES

### PASCAL (TML PASCAL)

Overall Rating:	■ ■ ■ ■ ■
Follows Mac Interface:	■ ■ ■ ■ □
Printed Documentation:	■ ■ ■ □ □
On-Screen Help:	None
Performance:	■ ■ ■ ■ □
Support:	■ ■ ■ ■ □
Consumer Value:	■ ■ ■ ■ ■

**Comments:** Powerful, low-cost native-code Pascal compiler. Integrates with MDS and has a Plain-Vanilla option. **Best Features:** Ease of use in a complex development environment and compatibility with existing *Lisa Pascal* files. **Worst Feature:** Lack of an index in the documentation. Requires 512K and external drive. Runs under MFS and HFS, Mac Plus and Mac XL compatible. **List Price:** \$99.95. Published by TML Systems, PO Box 361626, Melbourne, FL 32936. (305) 242-1873.





# DOUG CLAPP ON WORD TOOLS™

This is an advertisement.

I need to say that first. I'm sitting in a little room typing this. When I finish, I'll send it off to someone. They'll make it into an ad. I have no idea how the ad will look.

So if this doesn't look like an ad, don't be fooled: it's an ad. Get ready.

More than that, it's a time travel ad. Actually, it's a WORD TOOLS time travel ad. I'm about to try and sell you on Word Tools. The Program (we'll do "WORD TOOLS: THE MOVIE" if the program makes enough money).

This is a lot like writing for Byte, or MacUser. You're up there, about three months in the future, and I'm back here. Word Tools is still in Beta testing, but here I am, writing an ad for Word Tools.

That's the Software Biz (and the Writing-For-Monthly-Computer-Magazines-Biz, too.) If we waited until Word Tools was completely finished, we'd have warehouses full of "product" and no ads, because magazines have long "lead times" for ads. Come to think of it, make that "closets" full of...

But that's okay. I just want you to know what's really happening.

Here's what's happening.

To begin, a short bio: I'm a writer. I do this for a living. (I know, it's amusing to me, too.) When I'm not writing, I'm usually dorking around with computers, pretending to program. I've done both for years.

And because I write for a living, I try to do my "job" as well as I can. Here's the premise: the better I write, the more money I make.

But I'm not proud. I'll use anything that helps: word processors, spellers, macro-makers, funny command-key sequences, anything: even editors (the human type).

That's a preface. The story behind this ad really began during a conversation with David Barrett, who's Head Maniac at Aegis Development.

David said, "So what program hasn't yet been done? What would you like to see? What would sell?" (David, being a businessperson, is also a capitalist.)

I said, "I dunno."

But after I thought about it, I realized what I wanted. I wanted an Excel™ for writers. A Helix™/Omnis™/MacDraft™ for writers. I wanted a program as "word nerdy" as power-spreadsheets and power-databases and power-graphics programs. But for writers and editors, not for accountants, or filers, or architects. Writers. Editors. Me.

So I said, "I want the Ultimate Word Nerd Program, David! I want a program that will help me write better. That does everything software can do to help writers write better and editors edit better."

And I get this from David: "Okay. You design it and we'll code it and sell it."

Time for The Sell.

Here's what Word Tools does: it counts, sorts, analyzes, and improves your writing. It does some very simple but very useful things with text documents. And it does some

incredibly difficult (programming-wise) but very useful things with text documents.

(It also natters at you when it sees "very". And it should. Good writers don't need "very" very often.)

We're trying to "give value" with Word Tools. To do that, Word Tools must be useful: it's gotta work, it's gotta actually help you improve what you write.

It does. Really.

And it needs to be fun to use. In Word Tools, that means extremely "modeless" operation and "user involvement," for want of a better phrase.

In other words, you can do anything with Word Tools anywhere in Word Tools. And if you don't like the way Word Tools works, you can change it.

So what does it (do)?

Facts are always difficult.

The heart of Word Tools is a style and grammar and punctuation checker. Somewhat like a speller, but "smarter" than a speller. It knows about wordy sentences, and clichés, and tautologies, and redundancies, and typos, and improper abbreviations, and commas in the wrong place.

Those are "suspects". Just like in a speller, you can ignore, mark, merely browse, or replace, or whatever.

For guides, we used the University of Chicago Press "Manual of Style", "The New York Times Manual of Style and Usage", Strunk and White's "Elements of Style", common sense, and a few of my pet notions (for instance, Word Tools will groan at the word "Maccish," and tell you that "salesgirl" is sexist).

But even the best style guides differ on some points. If you don't use a final "series comma" in your writing, for example, that's okay. You can customize almost everything in Word Tools. If you don't think "salesgirl" is sexist, that's okay. Word Tools is not a fascist program: you can mold it to your wishes.

Back to the style and grammar and punctuation checker.

In particular, the punctuation algorithms are (as they say) state-of-the-art. Word Tools doesn't "know" what you're writing any more than an AI program on a ten million dollar Cray "knows" what you're writing, but it's amazingly "AI"ishly smart. If you're a writer or editor and your only use for Word Tools is punctuation checking, we think you'll be well pleased.

That's the goal, anyway.

But, as they say, there's more.

Word Tools "counts" everything in your document. Or counts nothing, if you don't need counts. I like counts, because I get paid by the word. I also like knowing how many prepositions are in an average sentence. I truly dislike prepositions, especially "of".

And Word Tools creates sorted word lists: by length, frequency of use, or alphabetically. In ascending or descending order.

What's that good for? Lots of things. It's in the manual. And it's fun: after all, this

is (your) writing it's grinding away at.

Word Tools also performs mathematical analysis on your writing. It gives you a readability "Grade Level," and rates you on word, sentence, and paragraph length (from Poor to Good). And helps you improve what needs improvement.

If you want, Word Tools will spot the longest sentences and paragraphs in your document. Then you can shorten them. Because shorter is usually better.

Word Tools even tells you how "interesting" your text is. From profoundly dull to truly fascinating.

Fascinating is better.

What else? It works great with Switcher. You can edit in Word Tools, or you can use Switcher to blast between MacWrite or Word.

If you're a "power user," you can use Word Tools as a sophisticated "batch oriented search and replace" application, possibly for automated insertion of typesetting codes, or massaging files in weird and useful ways.

Anyway, it's fun, it works, it's neat, and I really like Word Tools even though I've got A VESTED INTEREST IN ITS SUCCESS!!!! (Something you should remember.)

This is the first time I've been involved in a software project. It's a lot like planning the Normandy Invasion. Fortunately, we've been blessed with Chris Newton, one of the best programmers I've ever met. For example, I wanted Word Tools to rip through text as fast as the disk can spin. Chris made it even faster than that (he explained how that's done, but it went over my head).

The manual explains everything: how the program works, all the formulas, the basic algorithms, how to customize Word Tools, everything. I even wanted to include the source code, but that idea got nixed.

Even though Word Tools is a complex software machine, the program's premise is simple: good writing is clear, direct, and forceful. And free of typos. And free of phrases that make you look like an idiot. And properly punctuated.

I've got a stack of Word Tools beta copies next to me, back here in the past. Back here, Word Tools isn't quite finished (the "descending" sort isn't in yet), but everything works. In the last few days, I've used Word Tools on everything I've ever written.

By now, my face is frozen into a perpetual grimace. Using Word Tools can be humbling. (How humbling? Well, there's some incorrect punctuation up toward the front of this piece. Can (you) find it?)

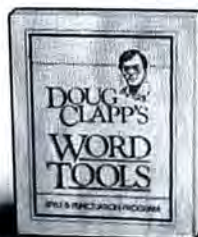
Word Tools is a neat thing. I hope we sell lots and lots and lots of them. I really want to work on versions 2.12 and 4.5 and 6.4 and 12.1.

Version 12.1 is the one that automatically writes self-serving ad copy in your own particular style. It's up there, in the future, just a few more algorithms away.

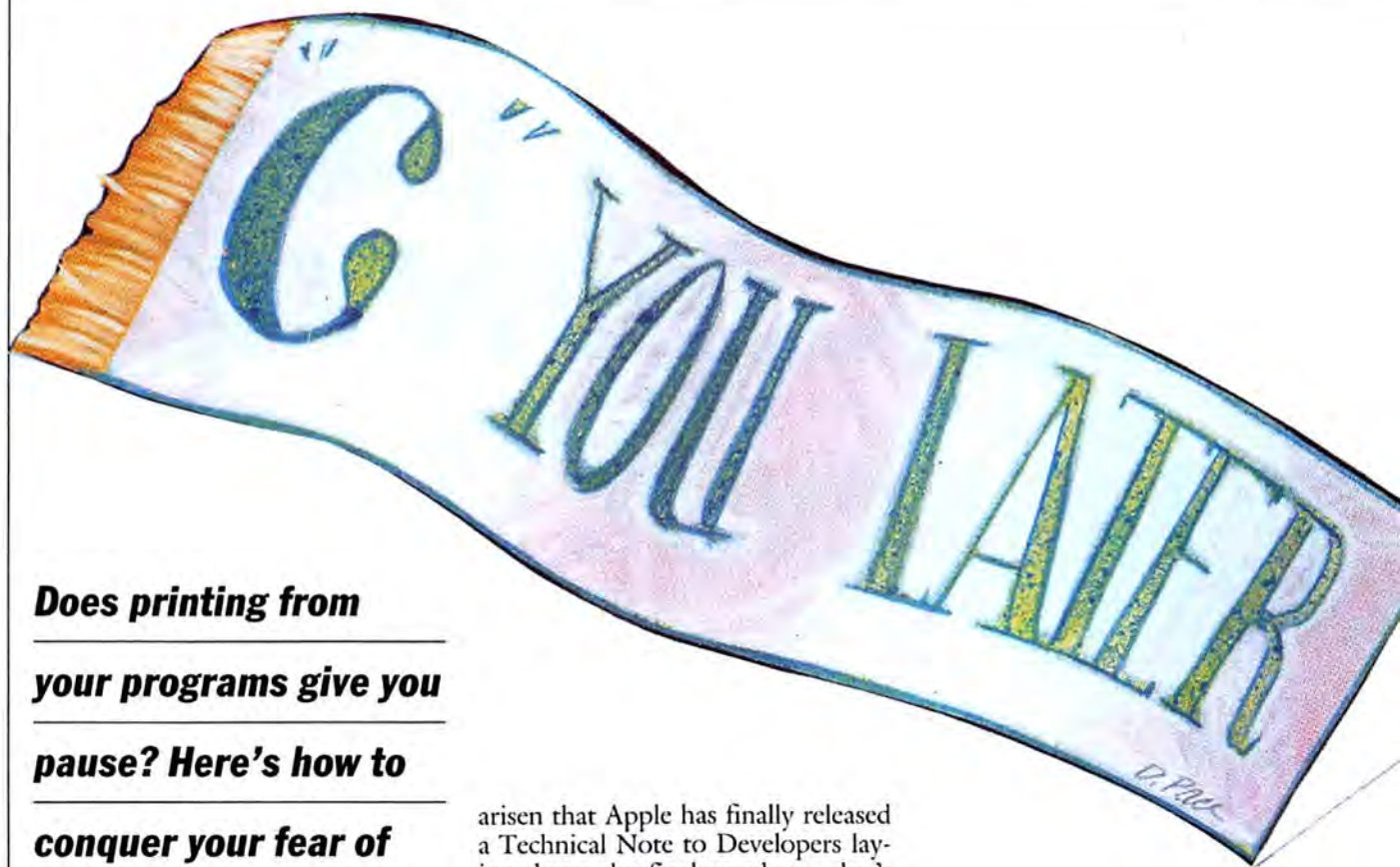
But even now, I think you're gonna like Word Tools.

It works.

Doug Clapp







**Does printing from  
your programs give you  
pause? Here's how to  
conquer your fear of  
printing.**

IF THERE'S ANY ONE AREA OF THE Macintosh that most programmers shy away from, it's printing. Perhaps that's due to intimidation by all of the strange data structures defined in *Inside Macintosh* (TPPrPorts, TPrXInfos, and TPrStls, to name a few). Or, maybe it's just not perceived as a very exciting area to investigate. After all, sending characters to a printer can't possibly be as interesting as, say, using CopyBits or hacking around with a Clipping Region, and is bound to be the same from one computer to the next, right? Wrong! Printing with the Macintosh bears no resemblance whatsoever to the same activity on any machine I've ever met, and it provides its own intellectual rewards.

For one thing, trying to make sense out of *Inside Mac's* Printing Manager manual is a puzzle all to itself. Several different versions of that manual have been officially released from time to time, and some of these completely contradict each other on the most basic principles of printing. So much confusion has

arisen that Apple has finally released a Technical Note to Developers laying down the final word on what's what, and warning Developers to ignore inconsistent sections of *Inside Macintosh*.

As if this weren't enough, several different versions of the ImageWriter driver have been released. Some of them even work. As of press time, the current ImageWriter driver version is 2.1, although version 2.2 has been heard of, but not seen.

The Printing Manager is built around a laudable, if ambitious, premise: that application code designed to output to a printing device should be completely and transparently device-independent. That is, an application programmer shouldn't have to be concerned with what sort of output device is actually hooked up to the Mac. Code written to print on an ImageWriter should work equally well on a letter-quality Qume Sprint 5, or an Apple thermal printer, or an HP LaserJet, and so on. The Printing Manager provides the basic procedures and data structures necessary for use with any of these devices, and the key to its universal operation lies in the notion of a particular type of device driver known as a printer driver. (Device drivers are documented in the Device Manager manual of *Inside Macintosh*, II-173). In-

dividual printer drivers provide the necessary liaison between the specificity of the Printing Manager and the specificity of each printer. It is the responsibility of each printer manufacturer to provide the appropriate printer driver for its own customers' use, and Apple has done this by providing both ImageWriter and LaserWriter printer drivers. Other printer manufacturers haven't exactly fallen over themselves getting Macintosh-compatible printer drivers into the marketplace, but then not many of their printers are capable of the sort of magic the ImageWriter and LaserWriter can whip up, and these manufacturers have probably resigned themselves to the cold reality that most Macintosh owners are going to be using Apple printers.

There are at least three ways of producing printing code from C. Since the Printing Manager is really just an interface to the Device and File Managers, you could construct your own parameter blocks and



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#### LANGUAGES

#### PRINTERS

#### MODEMS





make direct calls to those Managers. The Printing Manager is not currently in ROM, so the actual routines must be provided by your development environment (*Workshop C*, *Aztec C*, etc.). Many compilers don't yet offer such an interface and in such cases direct access to the Device and File Managers is your *only* means of writing printing code. Fortunately, *Inside Macintosh* is fairly complete in its description of the necessary data structures and methods, but this method is not for the casual programmer.

The other two methods for producing printing code are provided by the Printing Manager, an abstraction that is embodied by two differ-

ent sets of routines: the Low-Level calls and the High-Level calls. The Low-Level calls offer fast, no-frills printing in two modes: BitMap and Text Streaming. BitMap mode allows you to send a BitMap in memory directly to the printer. One common use of this mode is for quick screen dumps and in this month's example program, there is just such a capability. By simply changing a few parameters, you can alter this exam-

**by Bob Perez**



## C YOU LATER

ple to print out the contents of the frontmost window, for example, or any other readily accessible bit image.

The other printing mode provided by the Low-Level calls is Text Streaming. This service provides elementary text printing on a line-by-line basis. A common use for this type of printing is in terminal programs that send incoming text to the printer one line at a time. With the Low-Level routines you're able to send device-independent Carriage

Return/LineFeed sequences, and other printer control calls, without regard for the exact control codes required by the specific printer.

The High-Level calls appear in their Pascal format in the Printing Manager manual of *Inside Macintosh*, and are every bit as Macish and data-structure-intensive as most of the other High-Level Manager routines. Here, the very highest level of abstraction is reached, and applications print simply by issuing QuickDraw commands, just as though they were

drawing on the screen. There is no distinction between text and graphics (as with QuickDraw). Simply define a special type of grafPort and draw into it with the usual QuickDraw commands.

As with any other device-driven code, start by opening the relevant driver. The Printing Manager supplies separate routines for the high- and low-level OpenDriver calls, and warns that these cannot be mixed, i.e., you can't have them both open simultaneously. The example shows

## LISTING, PART IV

```
/*
 * PrintDemo.c -- Copyright © 1986 by Bob Perez.
 *
 * A Sample application illustrating the use of the Printing Manager to
 * print various images on an Imagewriter. Uses both high and low-level
 * calls to do simple text-streaming, a screendump, a font sampler, and
 * an illustration of how to use Quickdraw graphics in your printing.
 *
 * The example is coded using Attec C; other compilers may require slight
 * modification. Note that several of the functions used herein are
 * described in Inside Macintosh as "[NOT IN ROM]". Other compilers may
 * not provide such routines and in such case you should use equivalent
 * Device Manager calls. Consult the Addison Wesley edition of Inside
 * Macintosh for details on how to do this. Note also that this program
 * assumes the presence of Chicago, Geneva and Monaco fonts.
 *
 * A style note: for this example we've included all function calls
 * in one file. In practice you'd break this file up into smaller modules
 * for individual compilation.
 */
#include <quickdraw.h>
#include <window.h>
#include <menu.h>
#include <event.h>
#include <osutil.h>
#include <memory.h>
#include <desk.h>
#include <ints.h>
#include <segment.h>
#include <print.h>
#include <font.h>
#define NIL 0L
#define noErr 0
#define FOREVER 1
#define APPLEID 128
#define APPLEMENU 0
#define FILEID 129
#define FILEMENU 1
#define EDITID 130
#define EDITMENU 2
#define OPTIONSID 131
#define OPTIONSMENU 3
#define NUMMENUS 4
#define DO_BIT 1
#define DO_STREAM 2
#define QDSAMPLE 0
#define FONTSAMPLE 1
#define QDITEM 2
#define FONTITEM 3
#define HIGH 2
#define LOW 1
#define NEITHER 0
#define PRINTLINE(x) PrCtlCall(1,PrIOCtl,x,(long)strlen(x),0L)
#define PRINTCLRL PrCtlCall(1,PrDevCtl,1,PrLFSixth,0L,0L)
MenuHandle mymenus[NUMMENUS];
WindowPtr wp;
short mode = FONTSAMPLE;
THPrint myPrH;
short level = NEITHER;
char *msg[] = {
    "\PMacUser Printing Manager Demo -- by Bob Perez",
    "\P This is Chicago 12, the Mac's usual System Font.",
    "\P Chicago just isn't very readable at 9 point.",
    "\P Monaco 9 is the font most programmers are used to seeing.",
    "\P Smaller programmers may wish to use Monaco 12.",
    "\P Geneva 12 is a hard font to beat for word processing.",
    "\P But with Geneva 9 you'll actually be able to get a lot more \
text on any given page.",
    "\PWhat You See is What You Get (most of the time).",
};
char *stream[] = {
    " This is the first line of the Text Streaming Demo.",
    "Text Streaming uses low level calls to the Printer Driver.",
    "Use this mode when you require simple, unformatted text printing.",
    "Terminal programs often use this mode to output all incoming text.",
    "Note the low overhead using this mode: no print records or dialogs.",
    "On the other hand, this mode doesn't do very pretty printing.",
    "As its name implies, it's your basic, general-purpose text-streaming.",
    " This is the last line of the Text Streaming Demo.",
};

main()
{
    /*
     * Set up everything.
     */
    init();
    /*
     * Fall into our event loop.
     */
    event();
} /* end of main() */

init()
{
    register unsigned short i;
    char apptitle[2];
    Rect vRect;
    /*
     * Standard sequence to initialize all managers, clear event queue
     */
    InitGraf(&thePort);
    InitWindows();
    InitFonts();
    InitMenus();
    TEInit();
    InitDialogs(0L);
    FlushEvents(0);
    InitCursor();
    /*
     * Set up the menu bar. Usually this would be done using resources and
     * GetMenu(). I've hard-coded it here for simplicity. The apptitle[]
     * array is a hack to get the $14 value (the little apple) into a pascal
     * string (as expected by NewMenu) for the menu bar. Note Attec C's use
     * of the \P prefix to denote pascal strings. Use an equivalent function
     * with other compilers (CToPStr() with Consulair, for example).
     */
    apptitle[0] = 1; /* length byte of the pascal string */
    apptitle[1] = appleMark;
    mymenus[APPLEMENU] = NewMenu(APPLEID,apptitle);
    AddResMenu(mymenus[APPLEMENU], 'DRVR'); /* Adds all desk accessories */
    /*
     * Set up our File menu. These printing selections apply only to the
     * high-level calls.
     */
    mymenus[FILEMENU] = NewMenu(FILEID, "\PFile");
    AppendMenu(mymenus[FILEMENU], "\PPage Setup/S");
    AppendMenu(mymenus[FILEMENU], "\PPrint/P (-)");
    AppendMenu(mymenus[FILEMENU], "\PQuit/Q");
    /*
     * Standard edit menu. Editing isn't needed for this example program and
     * the menu is only provided to conform to the User Interface Guidelines
     * for the support of desk accessories that do support editing. We'll
     * disable the menu initially, enabling it later if a desk accessory
     * comes up.
     */
    mymenus[EDITMENU] = NewMenu(EDITID, "\PEdit");
    AppendMenu(mymenus[EDITMENU], "\PUndo/Z (-); Cut/X; Copy/C; Paste/V; Clear");
    DisableItem(mymenus[EDITMENU], 0);
}
```



one way to get around this "limitation." In both the high- and low-level modes it's important to keep in mind that you're dealing with two further abstractions: the document and the page. There are corresponding routines to be called at the beginning and end of each page of a document being printed, and the document itself is likewise framed with calls to specialized Open and Close routines. Finally, the appropriate driver should be closed upon completion of the printing job. See

pages II-154 and II-155 of *Inside Macintosh* for a detailed summary and Pascal example of a typical printing loop.

The Printing Manager uses one of two methods to print your document. These are inappropriately named Draft and Spool printing. "Draft Printing" in this context should not be confused with "draft-quality" printing, although on the ImageWriter the two are synonymous. The LaserWriter, on the other hand, utilizes "Draft Printing" to

produce high-quality output. The chief difference between these two methods is that Draft Printing sends immediate printing commands to the printer as they're encountered in the code. Spool printing—as the name implies—stores up ("spools") the itinerary of printing commands in a Print file and leaves you (the programmer, not the user) with the option of printing the document contemporaneously, or at some later date. The example program illustrates a method that can be used to

```

/*
 * Set up Options menu for selection of type of printing to demo. Disable
 * and checkmark the FONTSAMPLE (default) item.
 */
mymenus[OPTIONSMENU] = NewMenu(OPTIONSID, "\Options");
AppendMenu(mymenus[OPTIONSMENU], "\P{ High-Level Calls");
AppendMenu(mymenus[OPTIONSMENU], "\P{ QuickDraw Sample/D");
AppendMenu(mymenus[OPTIONSMENU], "\P{ Font Sample/F; {-");
AppendMenu(mymenus[OPTIONSMENU], "\P{ Low-Level Calls");
AppendMenu(mymenus[OPTIONSMENU], "\P{ BitMap Demo [Screen Dump]/B");
AppendMenu(mymenus[OPTIONSMENU], "\P{ Text Streaming Demo/T");
CheckItem(mymenus[OPTIONSMENU], FONTITEM, TRUE);
DisableItem(mymenus[OPTIONSMENU], FONTITEM);
/*
 * Insert the defined menus into our menubar, then draw the menubar.
 */
for (i = APPLEMENU; i < NUMMENUS; ++i)
    InsertMenu(mymenus[i], 0);
DrawMenuBar();
/*
 * Set up the window's Rect
 */
SetRect(&wRect, 20, 40, 492, 320);
wp = NewWindow(NIL, &wRect, "\P", TRUE, altBoxProc, -1L, FALSE, NIL);
SetPort(wp);
} /* end of init() */
/*
 * The event loop, focal point of most Macintosh applications.
 */
event()
{
    EventRecord er;
    WindowPtr wptr;
    short wpart;
    WindowPtr saveport;
    Rect dragR;
    /*
     * Set up the dragRect for window movement.
     */
    SetRect(&dragR, 4, 24, 508, 338);
    /*
     * Set up an 'infinite' loop to process events
     */
    while (FOREVER) {
        /*
         * Call SystemTask for any desk accessories that might be active. Then,
         * use GetNextEvent to handle only our events.
         */
        SystemTask();
        if (!GetNextEvent(everyEvent, &er))
            continue;
        switch(er.what) {
            case mouseDown:
                /*
                 * Find out where the mouse was clicked.
                 */
                wpart = FindWindow(pass(er.where), &wptr);
                /*
                 * Now check wpart to see if the click was in a menu or in a desk
                 * accessory window. If in a menu, send the information off to
                 * do_menu() for processing.
                 */
                switch(wpart) {
                    case inMenuBar:
                        do_menu(MenuSelect(pass(er.where)));
                        break;
                    case inSysWindow:
                        SystemClick(&er, wptr); /* Go handle desk accessory click */
                        break;
                    case inContent:
                        /*
                         * If a window other than the frontmost window was clicked,
                         * bring it to the front. Else, drag our window around.
                         */
                        if (wptr != FrontWindow())
                            SelectWindow(wptr);
                        else
                            DragWindow(wptr, pass(er.where), &dragR);
                        break;
                    default:
                        break;
                }
                break;
            /*
             * The only keyDown events we handle are command key presses.
             */
            case keyDown:
                if (er.modifiers & cmdKey)
                    do_menu(MenuKey((char)er.message & charCodeMask));
                break;
            /*
             * Find out who's being activated/deactivated and enable/disable
             * menu items accordingly.
             */
            case activateEvt:
                if (er.message == wp) {
                    if (er.modifiers & activeFlag) {
                        /*
                         * Must be activating our window, so enable our menus.
                         */
                        EnableItem(mymenus[FILEMENU], 0);
                        DisableItem(mymenus[EDITMENU], 0);
                        EnableItem(mymenus[OPTIONSMENU], 0);
                        DisableItem(mymenus[OPTIONSMENU],
                            (mode == QDSAMPLE) ? QDITEM : FONTITEM);
                        SetPort(wp);
                    } else {
                        /*
                         * Must be deactivating our window (e.g., desk acc. opened),
                         * so disable our application menus. Leave apple menu
                         * enabled in either case, to support desk accessories.
                         * Enable the Edit menu now for desk accessory support.
                         * Try opening some desk accessories while running this
                         * program to see how this works.
                         */
                        DisableItem(mymenus[FILEMENU], 0);
                        DisableItem(mymenus[OPTIONSMENU], 0);
                        EnableItem(mymenus[EDITMENU], 0);
                    }
                    CheckItem(mymenus[OPTIONSMENU], QDITEM,
                        (mode == QDSAMPLE) ? TRUE : FALSE);
                    CheckItem(mymenus[OPTIONSMENU], FONTITEM,
                        (mode == FONTSAMPLE) ? TRUE : FALSE);
                    DrawMenuBar();
                }
                break;
            case updateEvt:
                /*
                 * A standard updating sequence.
                 */
                GetPort(&saveport);
                SetPort(wp);
                BeginUpdate(wp);
                draw_text(wp);
                EndUpdate(wp);
                SetPort(saveport);
            }
        }
    }
}

```



# C YOU LATER

determine if a spooled file needs to be printed.

When using the High-Level routines you'll notice another difference in your printing code requirements; you'll be expected to conduct Style and Job dialogs with your user. If you've ever printed anything from within *MacWrite*, you're familiar with the Style and Job dialog boxes that spring up in response to a request to print a document. The Style dialog usually comes up in response to the user's selection of the

Page Setup item in the File menu and presents the user with several options relating to the orientation, size and format of the printing about to take place. The Job dialog comes up in response to the actual request to print and should be a familiar sight to most Mac users. Using this dialog box, the user may choose one of three print qualities ("Draft," "Faster" or "Best" with the version 2.1 driver, formerly "Draft," "Standard" and "High-Quality"), and is presented with the option of which

pages to print and what type of paper-feed option is being employed. The functions `PrStdDialog()` and `PrJobDialog()` allow you to conduct these dialogs using the dialog resources contained within the ImageWriter and LaserWriter drivers. In order to use these calls, you'll have to set up the appropriate data structures as set forth in the Printing Manager manuals.

This month's program illustrates each of the above printing techniques. The File menu contains a

## SON OF LISTING

```
break;
/*
 * In case of other events coming through, dequeue them and continue.
 */
default:
    continue;
} /* end of main event switch */
} /* end of while(FOREVER) loop */
} /* end of event() */
do_menu(mresult)
unsigned long mresult;
{
    register short theitem, themenu;
    short err;
    char name[256];
    Boolean result;
    themenu = mresult >> 16;
    theitem = mresult;
    switch (themenu) {
        case APPLEID:
            /*
             * Simple check for 8K available memory prior to opening
             * desk accessory. See March example for additional comment.
             */
            GetItem(mymenus[APPLEMENU], theitem, name);
            ReszMem(8192L);
            if ((err = MemError()) == noErr)
                OpenDeskAcc(name);
            else
                SysBeep(3);
            break;
        case FILEID:
            switch (theitem) {
                case 1:
                    if (level != HIGH)
                        open_hi();
                    result = PrStdDialog(myPrH);
                    break;
                case 2:
                    if (level != HIGH)
                        open_hi();
                    if (result == PrJobDialog(myPrH))
                        print();
                    break;
                case 4:
                    quit();
                    break;
                default:
                    break;
            }
            break;
        case EDITID:
            /*
             * Reroute the edit request to any open desk accessory
             */
            SystemEdit(theitem - 1);
            break;
        case OPTIONID:
            switch (theitem) {
                case QDITEM:
                    /*
                     * User selected Quickdraw sample. Check the item in menu,
                     * then dim it so it can't be selected again. Uncheck and
                     * enable the Font item so that can again be selected.
                     */
                    mode = QDSAMPLE;
                    CheckItem(mymenus[OPTIONSMENU], QDITEM, TRUE);
                    DisableItem(mymenus[OPTIONSMENU], QDITEM);

                    CheckItem(mymenus[OPTIONSMENU], FONTITEM, FALSE);
                    EnableItem(mymenus[OPTIONSMENU], FONTITEM);
                    break;
                case FONTITEM:
                    /*
                     * Do the same for the Font item now.
                     */
                    mode = FONTSAMPLE;
                    CheckItem(mymenus[OPTIONSMENU], FONTITEM, TRUE);
                    DisableItem(mymenus[OPTIONSMENU], FONTITEM);
                    CheckItem(mymenus[OPTIONSMENU], QDITEM, FALSE);
                    EnableItem(mymenus[OPTIONSMENU], QDITEM);
                    break;
                case 6:
                    /*
                     * Go do a low-level call using BitMap mode.
                     */
                    low_level(DO_BIT);
                    break;
                case 7:
                    /*
                     * Go do a low-level call using Text Streaming.
                     */
                    low_level(DO_STREAM);
                    break;
                default:
                    break;
            }
            break;
        case 8:
            HiliteMenu(0);
    } /* end of do_menu() */
    /*
     * draw_text() simply draws the font message. Note the use of Option-8
     * to generate the little ball character. The text is printed into the port
     * passed to the function (either a printing port or the screen).
     */
    draw_text(port)
    WindowPtr port;
    {
        register short i;
        WindowPtr saveport;
        Rect r;
        GetPort(&saveport);
        SetPort(port);
        /*
         * Create a Rect around the inside border of our window, then
         * create successively smaller rects, shrinking it 2 pixels at a time.
         * A primitive example of using Quickdraw commands in a Printing port.
         */
        r = wp->portRect;
        for (i = 0; i < 18; ++i) {
            FrameRect(&r);
            SetRect(&r, r.left + 2, r.top + 2, r.right - 2, r.bottom - 2);
        }
        TextFont(systemFont); /* Chicago 12 */
        TextSize(12);
        MoveTo(67, 58);
        DrawString(msg[0]);
        MoveTo(50, 86);
        DrawString(msg[1]);
        TextSize(9);
        MoveTo(50, 109);
        DrawString(msg[2]); /* Chicago 9 */
        TextFont(monaco);
        MoveTo(50, 132);
    }
}
```



# For all of you who thought Dennis Brothers was crazy to give away MacTEP, here's MicroPhone.™

## The one he's selling.

When the Macintosh first came out, the most powerful personal computer ever built didn't have the brains to make a phone call.

So Dennis Brothers tore down his Mac, figured out how it worked, and wrote Mac's first communications program, MacTEP.

Which he proceeded to give away.

MacTEP was a classic. The first standard in Mac communications.

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### Run on automatic.

When you open MicroPhone to the desktop you'll find a comprehensive collection of icons pre-programmed to access all major information services: CompuServe,® Dow Jones News/Retrieval,® The Source,™ Delphi,™ the works.

A few clicks and you're in. With automatic log-in and sign-on.

But that's just the beginning of its ability to automate the whole telecommunications process. For MicroPhone features the most powerful, yet simplest to set up macros ever seen on a program.

### Write your own script.

Dennis gives you two ways to create these macros. The first is to set MicroPhone in the Watch Me,™ the recording mode.

The program looks over your shoulder as you conduct a communications session following your keyboard and menu commands.

MicroPhone can remember not only an uninterrupted string of keyboard commands, but also wait-for-prompt conditions. In fact, virtually any series, no matter how long or complex.

The entire sequence is saved. To be invoked at any time with a single key command.

The second way to generate macros is through



MicroPhone's unique "Script" window. Open it and you'll discover an extensive set of functions which can be called up and linked with a series of mouse clicks. The resulting macro is extremely powerful. The method is Mac-simple.

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Sending and receiving files is faster and easier with MicroPhone, too. Using XMODEM protocols and MacBinary, MicroPhone transmits or receives anything you

can create on a Macintosh. Including MacPaint documents, text, spreadsheets, charts, database tables, or programs.

MicroPhone allows you to scroll back and forth at high speed to review your session. Then you can select any portion of your session, print it, save it to a file, or copy it to the Clipboard for use by other Macintosh programs.

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# C YOU LATER

Page Setup item which in turn calls up a Style dialog, allowing you to specify details regarding style. Try using the 50% reduced mode and experiment with landscape versus portrait orientation. The File menu has a Print item that, when called, first conducts a Job dialog and then proceeds to print using the High-Level routines. What ends up getting printed depends on what you select from the Options menu. I've provided two examples of printing using the High-Level calls. One is a Font demo that simply prints the

text that you see in the main program's window. You can see the differing quality as you move from "Draft" to "Best" quality printing of the different fonts. For the sake of simplicity I've not dealt with printing individual pages within a multi-page document. *Inside Macintosh* has details and some sample code showing how to loop through several pages.

The program writes this text to the grafPort using standard QuickDraw DrawString() calls, and the proof of this is that the very same

function, draw\_text(), is used to draw the program's main window contents. That function takes a grafPort as its sole parameter and will print the text messages in their various fonts to whatever port has been specified, in this case, either the printing port or the main window.

The QuickDraw demo simply draws various geometric shapes using standard QuickDraw commands. I've provided an example here of how you might toggle between two different menu selections, checking and dimming each item in turn.

## GRANDSON OF LISTING

```
DrawString(msg[3]); /* Monaco 9 */
TextSize(12);
MoveTo(50,155);
DrawString(msg[4]); /* Monaco 12 */
TextFont(geneva);
MoveTo(50,178);
DrawString(msg[5]); /* Geneva 12 */
TextSize(9);
MoveTo(50,201);
DrawString(msg[6]); /* Geneva 9 */
TextFont(systemFont);
TextSize(12);
MoveTo(75,230);
DrawString(msg[7]); /* Chicago 12 */
SetPort(saveport);
} /* end of draw_text() */

/*
 * This function sends low-level calls to the Printer driver. See the
 * Printing Manager manual (Inside Macintosh pp II-162 through II-165).
 * Note the lack of error checking for this example. Always check for
 * errors with PrError() after each Printing Manager call!
 */
low_level(which)
short which;
{
    register short i;
    /*
     * Open the Printer driver, the document, and the page. Inside Macintosh
     * tells us we can't use the low-level and high-level calls together, so
     * we make sure and close the driver opened with the high-level call (if
     * it's currently open) before proceeding with this low-level call.
     */
    if (level == HIGH)
        close_hi();
    open_low();
    if (which == DO_STREAM) {
        /*
         * Print the first line of our stream array, then 2 CR/LF sequences.
         * Note the use of macros defined above.
         */
        PRINTLINE(stream[0]);
        PRINTCRFL;
        PRINTCRFL;
        /*
         * Now, loop through the rest of our array, printing CR/LFs along the way.
         */
        for (i = 1; i < 7; ++i) {
            PRINTLINE(stream[i]);
            PRINTCRFL;
        }
        /*
         * Then, print an extra CR/LF and the last line of the array.
         */
        PRINTCRFL;
        PRINTLINE(stream[6]);
    } else if (which == DO_BIT) {
        /*
         * BitMap demo. Do a screendump. Note the bug in AsteC's print.h
         * file: lScreenBits and lPaintBits need to be altered to long values
         * with the 'L' suffix -- PrCtlCall expects longs for parameters. The
         * use of lPaintBits corresponds to "Tall Adjusted" printing, and is
         * generally recommended for graphics (as opposed to text) printing,
         * since it uses square pixels. Use lScreenBits for rectangular pixels.
         */
        PrCtlCall(iPrBitsCtl, lScreenBits, l(screenBits.bounds), lPaintBits);
    } /* end of if(which...) loop */
    /*
     * Then, close the page, the document and the driver.
     */
    PrCtlCall(iPrDevCtl, lPrPageEnd, 0L, 0L);
    close_low();
} /* end of low_level() */

/*
 * This is our high-level print loop.
 */
print()
{
    TPrPort myPrPort;
    TPrStatus myPrRec;
    short perr;
    /*
     * Check to see if the printer driver's already open. (It could have
     * been open by selecting Page Setup or Print from the File menu).
     */
    if (level != HIGH)
        open_hi();
    /*
     * Open a printing grafport and prepare for a new page by opening a
     * document and then page.
     */
    myPrPort = PrOpenDoc(myPrH, NIL, NIL);
    PrOpenPage(myPrPort, NIL);
    if (mode == QDSAMPLE) {
        /*
         * Go ahead and draw some Quickdraw graphics for fun.
         */
        paint();
    } else if (mode == FONTSAMPLE) {
        /*
         * Print the Font display in our printing port.
         */
        draw_text(myPrPort);
    } /* end of if(mode...) loop */
    /*
     * The page is complete, close it and close the document--all through!
     */
    PrClosePage(myPrPort);
    PrCloseDoc(myPrPort);
    /*
     * Now, check to see if we need to print out a spooled picfile.
     */
    if ((*myPrH) >= bJob.bJDocLoop == bSpoolLoop)
        if ((perr = PrError()) == noErr)
            PrPicFile(myPrH, NIL, NIL, myPrRec);
    /*
     * Close the driver and return.
     */
    close_hi();
} /* end of print() */

/*
 * paint() draws some simple shapes to illustrate the use of Quickdraw
 * commands within a printing port. Adapted from samples provided by Apple
 * in the May 1985 Developer's Software Supplement. Change this function at
 * your pleasure, installing whatever Quickdraw commands you'd like to
 * see printed. Draw just as though you were drawing on the screen, keeping
 * in mind that you've got a much bigger portRect to play with.
 */
paint()
{
    Rect tempRect;
    PolyHandle myPoly;
    RgnHandle myRgn;
    /*
     * Start off with an outlining gray border
     */
    SetRect(tempRect, 0, 0, 600, 400);
}
```



# Artificial Intelligence Update

## Transform Your Macintosh Into A Powerful A.I. Workstation For Less Than \$500 ... And Make It Fly ! \*

In 1983, I was developing an expert system tool in LISP (the *defacto* standard). It was a shock when I encountered a true LISP workstation - both the price (\$100,000) and its capability (phenomenal !!). I rushed out and bought one, and it immediately justified the expense. My code development speed increased 10 TIMES because of the incremental compiler, integrated editor, and rich environment. But I also wanted to deliver my completed application. In 1984 Apple answered my prayers by giving us the Mac!

This tool had a powerful 68000, windows, a mouse, menus; in short, all of the things I was used to on my LISP machine, except LISP! I realized that until I had a good LISP on the Mac, I was limited in what I could accomplish. With a team of skilled LISP programmers, we started to create a powerful development environment for the Mac, with an incremental native code compiler, macros, multiple edit windows, automatic matching parenthesis and indentation. Along the way we added control of the Mac toolbox, 3-D graphics with perspective, spherical graphics and an object oriented SmallTalk like class system. The result is an incredible environment that rivals features found ONLY on \$100,000 systems, and is available today at microcomputer prices of less than \$500.

Our next task was to port across expert system tools to the ExperLisp environment. With the help of Science Applications, the 3000+ lines of LISP source code in OPS5 was running in less than two weeks, and *outperformed* a \$30,000 workstation. ExperOPS5+ is now available with a user interface that includes dialog boxes and pictures for less than \$500! Next was another powerful expert system builder called ExperFacts. It can chain both *forwards and backwards*.

If all of this just seems too good to be true, just remember how far technology has come. The \$100,000 system has 2MB of memory. Amazing! But not as amazing as the MacPlus; it has 1MB to 4MB of memory for 1/20 of the price!

The future of Artificial Intelligence is just starting today. This revolution will only succeed if hundreds of thousands of

professionals encapsulate their expertise into expert systems. This requires powerful A.I. development tools on microcomputers. We have delivered these tools now, the rest is up to you. The only limitations now are the experts. Not just LISP programmers and knowledge engineers, but also accountants, lawyers, architects, engineers and other professionals.

Hundreds of simple expert systems with 50 to 1500 rules are begging to be developed NOW. Already, our users are working on a medical advisor, maintenance systems ..., etc. Most of them have NO previous A.I. or programming experience, but using ExperOPS5+ they have been able to understand and develop expert systems rapidly.

Denison Bollay,  
Founder and President,  
ExperTelligence, Inc.

## ExperTelligence Takes the Lead in Lisp Workstations

SANTA BARBARA, Ca. - ExperTelligence announced today that it has sold more LISP compilers than any other A.I. vendor. Additionally, the company announced that its expert system shell ExperOPS5 has been sold to more than 1000 customers. This is a larger installed base of users than all of the other A.I. vendors combined.

Headquartered in Santa Barbara, the publicly held company has pioneered many firsts in the industry: the first incremental compilers on the Mac (ExperLogo in '84,

ExperLisp in '85); the first 3-D tools (with automatic perspective) and spherical graphics embedded in Lisp and Logo; the first complete expert system shell on a microcomputer (ExperOPS5, developed in ExperLisp by Science Applications International). Soon to be announced the first CommonLisp compiler for the Mac.

## Prolog II : The Real Thing

MARSEILLES, France - PrologIA announced that it has chosen ExperTelligence, Inc. to distribute its famous PrologII in the U.S. Prolog was invented in Europe (Marseilles, France and Cambridge, England). It is the European A.I. language of choice, and was selected by the Japanese as the basis of their Fifth Generation Project. This version of Prolog was created by the inventors of the language, and includes the latest developments.

## Knowledge Engineers Wanted

The demand for skilled knowledge engineers is sky high. Until now, it was impossible to get the necessary experience without talking your boss into buying over \$100,000 worth of equipment and software or mortgaging your house. Now, with ExperLisp+ and ExperOPS5+, you can start gaining experience immediately.

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## C YOU LATER

The Low-Level options demonstrate the BitMap and Text-Streaming modes. The BitMap I've chosen for this demo uses the entire screen and illustrates an easy way to do a quick screen dump. The Text-Streaming demo prints out a few lines of text stored in a global array.

Most of this code can be altered for use in virtually any application that wants to print. You could, for instance, completely change the contents of the paint() function to draw any QuickDraw picture you desired and it would be printed out instead

of my example. Pay close attention to the comments in the listing for details and warnings. As usual, most of the error-checking has been left out due to space considerations and you should pay particular attention to *Inside Macintosh's* specific warning to call PrintErr() after each Printing Manager call in any production code.

Some final comments. I ran into several problems along the way with this month's program and discovered a couple of bugs in the print.h header file supplied with *Aztec C*—

they're noted in the comments. The latest version of *Inside Macintosh*, published by Addison Wesley finally has the correct Printing Manager information, so if you've got that edition you won't have to bother reading Apple's Tech Note for corrections. Also, the 2.1 ImageWriter driver has a few annoying bugs in it (this probably accounts for the existence of 2.2). That should be proof once again that even the professionals don't have a complete grasp on this printing business.

C you later! ☺

## C YOU LATER

```
FillRect (&tempRect, gray);
InsetRect (&tempRect, 30, 30);
EraseRect (&tempRect);
/*
 * Do a pie with multi-patterned wedges
 */
MoveTo (130, 98);
DrawString ("\\PArches");
SetRect (&tempRect, 80, 103, 215, 193);
FillArc (&tempRect, 135, 65, &lt;Gray);
FillArc (&tempRect, 200, 130, &lt;Gray);
FillArc (&tempRect, 330, 75, &gray);
FrameArc (&tempRect, 135, 270);
OffsetRect (&tempRect, 20, 0);
PaintArc (&tempRect, 45, 90);
/*
 * Several Polygons
 */
MoveTo (130, 212);
DrawString ("\\PPolygons");
myPoly = OpenPoly();
MoveTo (80, 250);
LineTo (80, 240);
LineTo (100, 225);
LineTo (140, 225);
LineTo (130, 240);
LineTo (145, 250);
LineTo (80, 250);
ClosePoly();
FramePoly (myPoly);
OffsetPoly (myPoly, 25, 15);
PenSize (3, 2);
ErasePoly (myPoly);
FramePoly (myPoly);
OffsetPoly (myPoly, 25, 15);
PaintPoly (myPoly);
OffsetPoly (myPoly, 25, 15);
PenNormal();
FillPoly (myPoly, &gray);
FramePoly (myPoly);
OffsetPoly (myPoly, 25, 15);
FillPoly (myPoly, &lt;Gray);
FramePoly (myPoly);
KillPoly (myPoly);
/*
 * Regions
 */
MoveTo (370, 212);
DrawString ("\\PRegions");
myRgn = NewRgn();
OpenRgn();
ShowPen();
SetRect (&tempRect, 310, 220, 510, 300);
FrameRoundRect (&tempRect, 24, 16);
MoveTo (325, 285);
LineTo (375, 235);
LineTo (425, 285);
LineTo (325, 285);
SetRect (&tempRect, 415, 227, 495, 275);
FrameOval (&tempRect);
HidePen();
CloseRgn (myRgn);
DisposeRgn (myRgn);
/*
 * Several Ovals
 */
MoveTo (380, 98);

DrawString ("\\POvals");
SetRect (&tempRect, 310, 103, 370, 133);
FrameOval (&tempRect);
OffsetRect (&tempRect, 25, 15);
PenSize (3, 2);
EraseOval (&tempRect);
FrameOval (&tempRect);
OffsetRect (&tempRect, 25, 15);
PaintOval (&tempRect);
OffsetRect (&tempRect, 25, 15);
PenNormal();
FillOval (&tempRect, &gray);
FrameOval (&tempRect);
OffsetRect (&tempRect, 25, 15);
FillOval (&tempRect, &lt;Gray);
FrameOval (&tempRect);
} /* end of paint() */

/*
 * Here we open the printer driver for use with the high-level calls
 */
open_hi()
{
    /*
     * Allocate print record handle & do standard printing initialization.
     */
    myPrH = (TPrint)NewHandle((long)sizeof(TPrint));
    PrOpen();
    PrintDefault (myPrH);
    level = HIGH;
} /* end of open_hi() */

/*
 * Close routine for hi-level printer calls
 */
close_hi()
{
    PrClose();
    DisposeHandle (myPrH);
    level = NEITHER;
} /* end of close_hi() */

/*
 * Open the printer driver for use with the low-level calls, reset printer.
 */
open_low()
{
    PrDrvOpen();
    PrCtlCall (1PrDevCtl, 1PrReset, 0L, 0L);
    level = LOW;
} /* end of open_low() */

/*
 * Close routine low-level printer calls
 */
close_low()
{
    PrDrvClose();
    level = NEITHER;
} /* end of close_low() */

/*
 * Exit routine
 */
quit()
{
    if (level == HIGH)
        close_hi();
    else if (level == LOW)
        close_low();
    ExitToShell();
} /* end of quit() */
```



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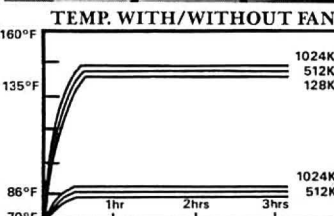
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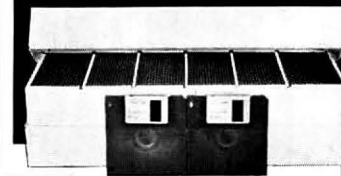


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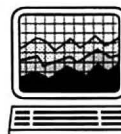
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MU06

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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. So ask what you need to know and get your answers straight from the source!

Send your questions to Dan care of MacUser, 25 West 39th Street, New York, NY 10018. Dan will read all of your questions, but, unfortunately, he may not be able to answer individual queries. Watch this space for the pick of each month's Q & A crop.



I have a 128K Macintosh with an external drive. I start up the machine with *MacWrite* 3.95 in the internal drive and a file disk in the external drive. Everything is fine until I try to save a document on a third disk inserted in the external drive. The program

cues me to keep changing disks in that third drive and I end up switching disks back and forth ten or more times. I have two questions. First, *why*, and second, what can I do to avoid having this happen?

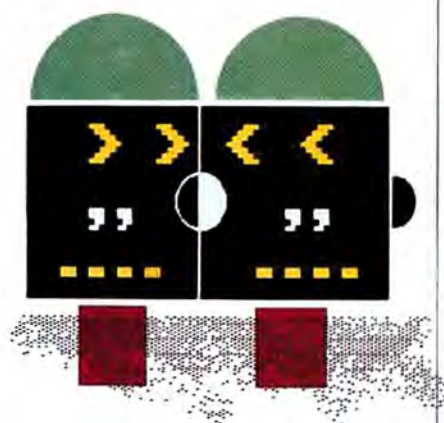
LEONARD BICK  
TORONTO, ONT

*MacWrite* 3.95 was never officially released, but it was the precursor to *MacWrite* 4.5. The first official *MacWrite* (version 2.2), was memory-based and the document size was restricted to the available memory in the Macintosh. *MacWrite* 4.5 is disk-based and therein lies the major reason for the condition you describe. When you save a document to a third disk, the document you are saving is not fully contained in the machine's memory—in fact, most of it is probably on your original document disk. That means you need to read from the original before you can write to the third disk. And you'll be asked to swap disks as many times as is necessary to copy the whole file.

I'd recommend that 128K Macintosh users who are having similar problems either: (a) go back to using *MacWrite* 2.2, especially if you're only creating small documents (you'll have more memory to use than you would with 4.5), or

(b) get a 512K upgrade. If you must use *MacWrite* 4.5 with your 128K machine, try restricting yourself to using only one font type and style per document.

I have a 15-inch ImageWriter I. Is it possible to change to the new print



head and buffer that has come out with the new ImageWriter II?

LORI SCRABLER  
FORT LEE, NJ

No. There is no practical ImageWriter upgrade path that can be offered because of multiple design changes both in electronics and packaging. While both produce hard copy on paper, they are entirely different machines. Just about the only parts they have in common are the ribbon cartridges and the power cords.

Is there a utility or public domain program that can change the characters generated by certain keycaps? I'd like the period (.) and comma (,) keys to generate periods and commas even when the shift key is depressed. It is very awkward to type P>O> Box 123, instead of P.O. Box 123.

JASON MART  
ALBUQUERQUE, NM

I'm not aware of any particular public domain program that allows you to do this (any readers out there know of any?), but there is a way for the particularly adventurous. The keyboard table that converts the keystrokes entered into actual characters is contained in the Macintosh System File. You'll need a copy of John Mitchell's *Fedit* (\$40, MacMaster Systems, #122, 939 E. El Camino Real, Sunnyvale, CA 94087) or another disk-editing program to modify this table appropriately.

Make a copy of the *System* file you want to modify and copy it to another disk along with a copy of the *Finder*. Reboot your Macintosh with the *Fedit* program in the internal drive. Start up *Fedit* and insert your backup *System* disk into the external drive. Use the *Fedit* program to open the *System* file on the external drive and do an ASCII search for the character string "asdf." You'll find yourself right in the middle of the



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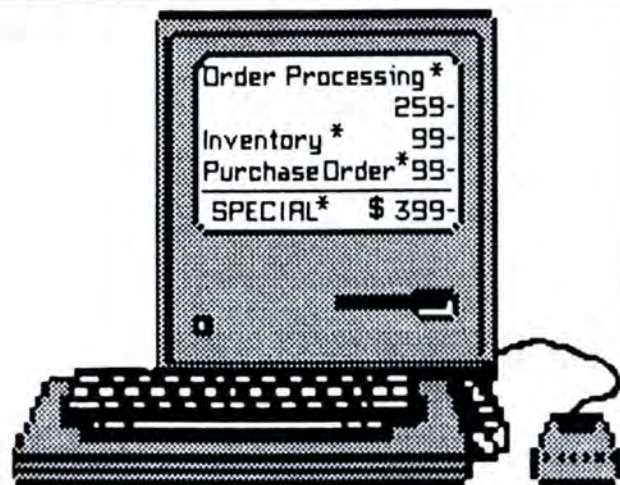
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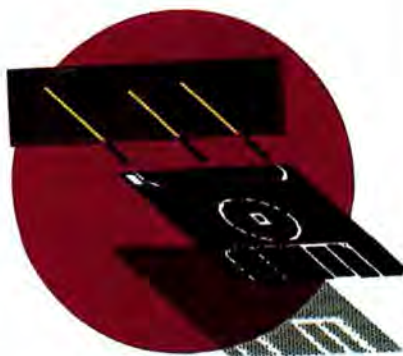
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previously mentioned character table. Find the > character and replace it with a period and find the < character and replace it with a comma. Write the sector back out to disk, quit *Fedit* and reboot the system using this modified disk. You'll now get periods and commas regardless of whether the shift key is depressed. I suppose you could use this technique to remap the entire keyboard with periods and commas.

If you do this, make sure you practice first on a disk you can afford to lose. Byte-editing is a risky business. By the way, when the CAPS LOCK key is depressed you'll get periods and commas even without this hack.

If all that seems too risky there are several commercial products that will do what you want. Try either *MacQwerty* (\$35, from Paragon Courseware, 4954 Sun Valley Road, Del Mar, CA 92014, 619-481-1477), *MacKeymeleon* (\$49.95, from Avenue Software, CP 2085, Terminus, Quebec G1K 7M9, Canada, 418-641-0441), or *Keymap* (Available on the Quick & Dirty Utilities, Volume Two disk from Dreams of the Phoenix, PO Box 10273, Jacksonville, FL 32247,



904-396-6952. This \$39.95 disk also contains other applications and desk accessories.)

I enjoyed your article in the December issue of *MacUser* and found it very informative. I am a Certified Developer and this is the first article I've seen in the Mac trade press that was addressing my needs. However, I couldn't find the "Inside Switcher" document anywhere. I could not find it on MAUG or in any of the released

Technical Notes. What happened to it?

CONRAD OLMSTEAD  
MINNETONKA, MN

"Inside Switcher" has never quite made it to Tech Note format but is available on MAUG in the Macintosh Developer SIG. It's located in Data Library (DL) 8 and titled "INSWIT.WRT." It's also pretty old. We're working on an updated version. While you're waiting, I'll put a copy of the old one in the mail for you. When the new one is ready I'll do the same. By the way, you might check out *MacTutor*, a great journal for Macintosh developers (if my editor will let me print this, he might also include the address for subscriptions). [Sure, you techies need *MacTutor* as well as *MacUser*. Contact them at PO 846, Placentia, CA 92670, 714-993-9937. Subscription prices are \$24 per year.]

I recently designed and produced a letterhead for my business using *MacPaint*. My particular letterhead, however, utilizes almost the entire width

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of an 8 1/2" by 11" sheet of paper. When I tried to copy and paste my letterhead from *MacPaint* into *MacWrite*, I discovered that *MacPaint* limits the maximum copying size to the size of the drawing window itself. Therefore an entire page can't be pasted into another document. Is there something I'm missing about *MacPaint*, or do I need some sort of utility program in order to copy larger segments of *MacPaint* documents?

GLENN E. SKIRVIN  
SAN DIEGO, CA

You need *PaintMover*, a public domain utility program written by Bill Atkinson, author of *MacPaint*. It's available from most bulletin boards and user groups. You might also take a look at *FullPaint*, a full-featured *Paint*-type program (\$99.95 from Ann Arbor Softworks, 308 1/2 S. State, Ann Arbor, MI 48104, 313-996-3838), a similar program that also does object-oriented (*MacDraw*-style) graphics called *SuperPaint* (from Silicon Beach Software, PO Box 261430, San Diego, CA 92126, 619-695-6956, price not set at press time), *Art Grabber+* [on the \$49.95



M.U.D. (*MacroMind Utility Disk*) from Hayden Software, 600 Suffolk St., Lowell, MA 01854, 677-937-0200], and *Paint Cutter* (which is part of Silicon Beach's *Accessory Pak #1*).

Each of these programs let you copy entire *MacPaint* documents and let you use the whole Macintosh screen as an easel. They have many other useful features such as the ability of *Paint Cutter* (and others) to have more than one document open at a time.

I have a 128K Macintosh with an external drive. Using *MacWrite 4.5* with relatively small documents (2-6 pages) and when changing font styles, I get the message "Memory is almost full—Can't Undo." Why?

DAVE SHACK  
ARVADA, CO

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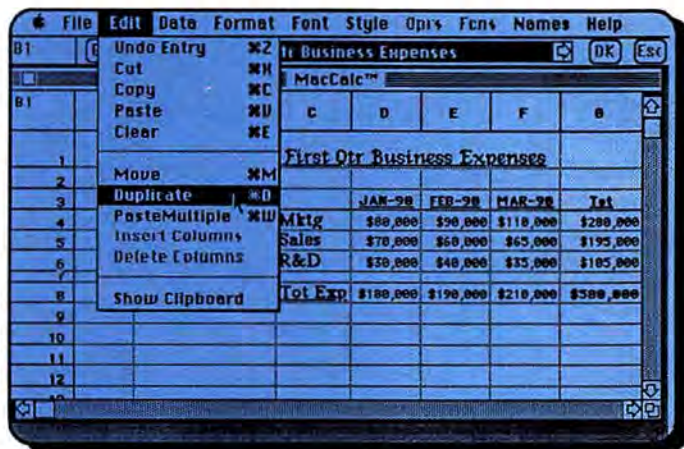
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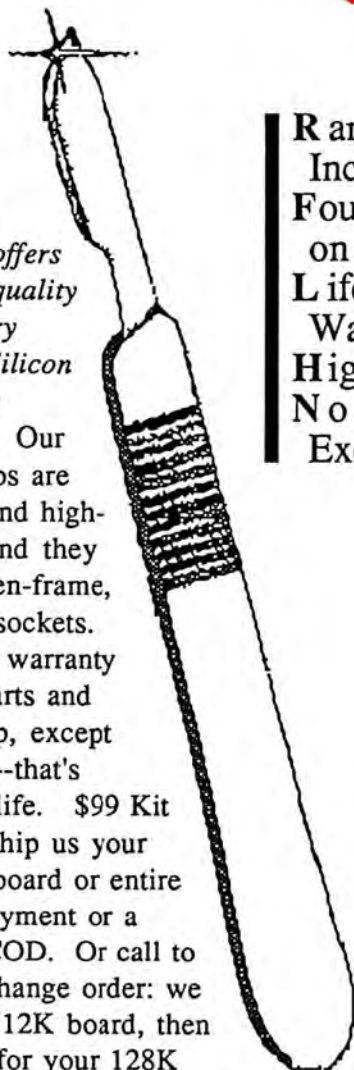


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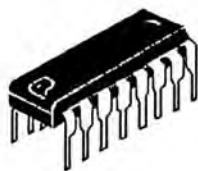
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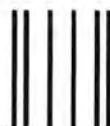
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# Mac Underground

*We've Made Desktop Communications  
so simple small children can do it.*

I oughta know. I'm only four years old and I can do it. All you gotta do is point and click a mouse. I learned how to do that when I was two. That's when I entered the MacWorld Gallery contest but they passed me over. Mom says I was ahead of my time and they have no art sense.

Anyway, now that I'm big I spend most of my time visiting my Underground SafeHouse™. I get there using AT&T, my Mac and a Hayes-compatible modem. Then, I copy files published daily by the Underground for us Mac enthusiasts. I'll tell you how easy it is later. First, I better introduce myself.

My name is Joey Daniels, and I'm the son of Jerry Daniels, national director of Mac Underground. Dad asked me to put on this trenchcoat and hat and sit in for our corporate image, Mr. Rick of Casa Blanca.

Dad chose the name Mac Underground and the whole French Resistance schtick to illustrate our dedication to producing high-grade intelligence for and about the Mac.

Some people got the name *Underground* mixed up with *underworld*, though. And let's face it, Mr. Rick's a good guy but kinda scary looking. That makes people think only the very hardcore computer users can figure out our software and benefit from our online information service and product discounts. So Dad asked me to tell you that's not true, and...

## Even beginners should join the Underground.

\$39.95 to join the Mac Underground for a year! Dad gladly takes your money and sends you a copy of *Underground Courier*™. That's our desktop communications software. You use Courier and a Hayes compatible modem to enter an Underground SafeHouse. A SafeHouse is one of several "host" systems we've set up around the U.S. They house the files you'll read about in a minute. All you need to know about your SafeHouse is its phone number. Courier will walk you right in the front door.

Once you've pointed and clicked your way into one of our SafeHouses, you can copy any and all of the files posted there daily. What kind of files do we have? Please read the next column of text.



• **DAILY INDUSTRY BULLETINS** covering events, technological breakthroughs, product developments and rumors that affect Mac users;

• **MAC MAGAZINE ABSTRACTS** summarizing articles in the Mac mags (you can search through them by key word!);

• **PUBLIC DOMAIN SOFTWARE** representing some of the best Mac public programs with professionally written instructions (called "dossiers");

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# TIP SHEET

compiled by Tracie Forman Hines  
and Dawn Johnson


Have you found a better, easier or more unusual way to get things done? Share your hints and tips with *The Rest of Us* by sending them in to Tracie Forman Hines at MacUser Tips, MacUser Magazine, 25 West 39th Street, New York, NY 10018. We'll pay you \$25 for every tip we print, plus we'll print your name and hometown in the magazine for all to see. What are you waiting for? We can't make you rich—but at least we can make you famous!

## JAZZ

 Here is a shortcut for people who do graphics work. If copies are made of the worksheet and graphics, Jazz will keep the new graph linked to the old worksheet. Duplicating the graph serves no useful purpose. To solve this, change the reference board of the graph linking it to a different worksheet. This can be done by using any available resource editor to edit "LFRF" and change the old file name to the new file name.

Craig Dewey, Fairmont, MN

Ed: As with all other work done with a resource editor, make the changes on a backup disk—never back around with an original program. Don't say we didn't warn you!


 When using Jazz's communications facility, you can cut and paste your messages to make things a little easier. First, store all the messages you want to send in a word processing file on

one side of the screen, then cut each, one at a time, and then paste it into the communications window when you're ready to transmit.

Incidentally, the shareware program *MockTerminal* also allows you to do this, using *MockWrite* as the source.

Joe Sbarra, Concord, NH


## MAC SYSTEMS

 I often leave documents up on my screen while I attend to other jobs in my office. There's usually no problem with this, except when something accidentally bumps the keyboard, either typing in extra, unwanted characters, or (horrors!) erasing what I've already typed. I found a simple solution to the problem, though:

If you want to freeze what you're doing in the middle of a document and make sure the keyboard is incapacitated temporarily, just bring up a desk accessory like Alarm Clock. Not only do you have the correct time at a glance, but all keyboard input is deactivated while the Alarm Clock (or any DA) is showing on the screen.


Bob Hines, Rye Brook, NY

## MACWRITE


 When the MacWrite icon is opened from the desktop wait about 4 seconds, and you can begin typing. MacWrite remembers what you've written, and when it opens, your work will be displayed.

Jason Mart, Albuquerque, NM

Ed: What you've just described happens on most programs, not just on MacWrite. The reason is that when you type, the data is stored in the keyboard's memory buffer, which holds the information handy until the program is ready to receive it.


 Reformat a MacWrite 4.5 paragraph quickly by double-clicking on any word in it and then choosing flush left, justify, or any of the other orientation options by selecting them from the Format menu or by using the command keys COMMAND-N, COMMAND-M or COMMAND-R. The entire paragraph will be reformed.

Arnie Slapin, Raleigh, NC

 Insert a word in MacWrite without taking your hands off the keyboard by backspacing to the appropriate point, typing in the word, and then holding down the COMMAND and BACKSPACE keys simultaneously. The de-

leted text will reappear from the 50-character buffer. Of course, this won't work well if you backspace more than 50 characters (but then, you might as well use the mouse).


Karen Schaefer, Washington, DC

 I keep my address book right in MacWrite. It's formatted as a continuous document with one address per page and a page break inserted after each address. The addresses are all in their correct positions, fonts, styles and so on for use in printing envelopes. To find a particular name, I just use the SEARCH command, or can find it by glancing at the index kept on the first page.


This lets me print directly from the address book without having to Cut, Copy or open and close other documents. This only uses about 20K of disk space per 50 addresses.

Gregory King, Altoona, PA

## MAC XL

 When you move an Excel document from a MacXL to a Mac, the window is larger than the new screen display. There's an easy way to scale things down to size, though. Just click twice on the window title to bring the screen down to new proportions.


Tysin McDaniel, Sausalito, CA

 Here are two tips about the OPTION key. One is to hold down the OPTION key and push the power button. It will reboot the XL and then it will ask for a floppy disk.


Second, you can hold down on the OPTION key after the memory test and it will allow you to boot from a floppy disk.

Mark Raymonds, Poplar Bluff, MO

## SYSTEMS

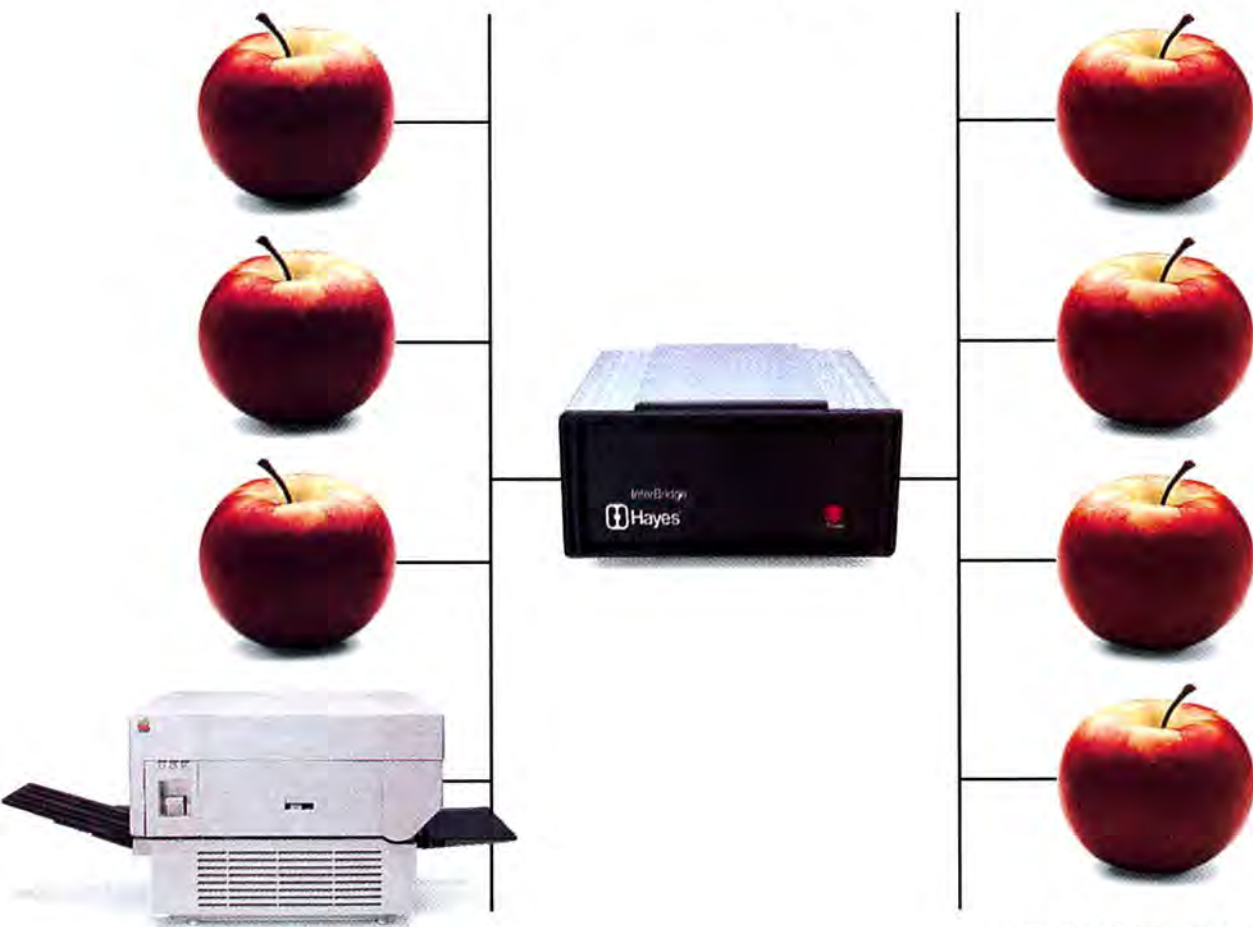
 If you have some private data on floppy disks, the information remains, even if erased. The only way to permanently keep your erased information from prying hacker eyes is to write another file on top of it.

Tykeia Leigh, Orlando, FL

 System files have version numbers, just like everything else. They're well-hidden, though. To find out what version of the System file you have, you'll need a copy of a good disk editor—one that has the ability to search for ASCII strings in a file. The best is *Fedit*, but both *MacZap* and *MacTools* have this ability.



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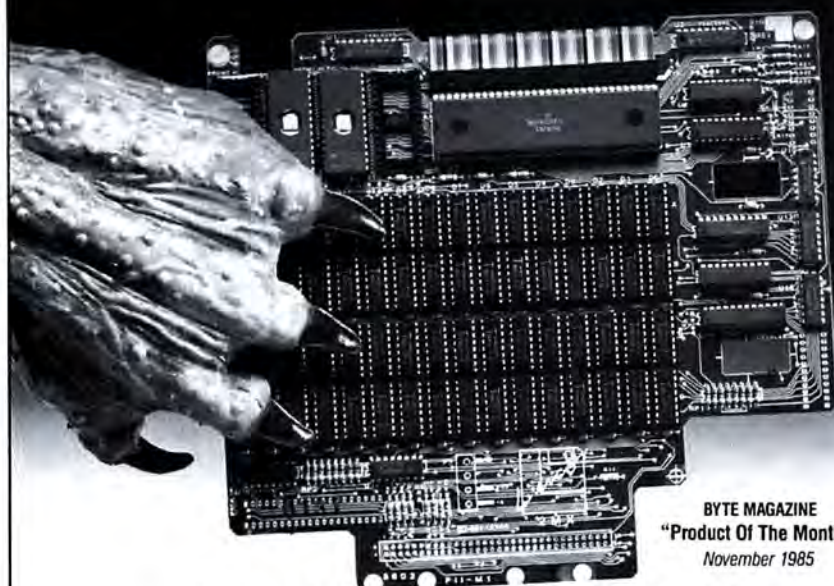
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## T I P S H E E T

Start by making a duplicate of the System file (to prevent a lot of teeth-gnashing if you make a mistake and destroy it). Then open your disk editor and do an ASCII search for the string "Version." You should see one of these:

Version 3.0 04-Jan-86 (HFS release for the Mac Plus introduction)

Version 2.1 01-Sept-85 (Second major system update that came with Finder 4.1)

Version 2.0 08-Apr-84 (Released with Finder 1.1g)


Version 1.1 24-Apr-84 (Released with Finder 1.0)

Version .097 14-Jan-84 (Still occasionally found!)


Versions 3.0, 3.1 and 3.2 were also reported current as of press time.

Don Rose, Crystal Lake, IL


### MAC PLUS

 Files can be selected in an open dialog box by typing the first letter of the name of the desired file. The "Delay until Repeat" control in the new control panel determines how many characters may be entered for a string search. The longer the delay, the more characters will be accepted (up to four or five, if you're fast enough)—as in, typing in the first three letters of a file to "express" past the normal Minifinder scroll box.

Theodore H. Xaviera, Madison, WI

 In the Mac Plus' OPEN or SAVE AS dialog boxes, the TAB key activates the Drive button, switching easily between various drives or volumes.

Dawn R. Browning, Forest Hills, NY


 When you first turn on the power on a Mac Plus, the computer goes through a memory diagnostics test, which takes a few seconds. This can be bypassed by holding down the mouse button while the Mac Plus is booting (if you keep holding the button down, any disk in the internal drive will be ejected also, just like it is on a "standard" Mac).

Richard Kutner, New York, NY

Ed: All of the above tips are mentioned (buried?) in the Mac Plus manual. But thanks for giving us the chance to highlight some of the Plus' new features.

### FINDER 5.1

(For use with the Mac Plus)

 How many times have you mistakenly double-clicked an application that you didn't really want to launch?



And then you had to wait for it to open, and then you had to quit and wait for it to rebuild the Desktop. Well, a quick COMMAND-PERIOD can usually save you and bring you right back to the Desktop. This same command will stop file transfers (of multiple files) from within the *Finder* after completing the file it's presently transferring.

*Don Rose, Crystal Lake, IL*



The GET INFO window scrolls to accept more text than can fit in the active window. The cursor keys on the Mac Plus keyboard can be used to move the text, and the window will scroll when the cursor moves beyond the boundaries of the active text window.

*Bill Velle Koop, Fort Lauderdale, FL*

The Mac Plus offers a fast way to close all the active windows on your desktop. Just press the OPTION key while selecting CLOSE from the File menu.

*Theodore H. Xaviera, Madison, WI*



Have a program you need fast, but it's buried within a few folders? Hold down the OPTION key while opening the various folders, until you find the application or document you're looking for. Then, open your document or application. When you quit and return to the *Finder*, all your opened folders will be closed. (Ed: These too were covered in the Mac Plus manual. But then again, we know how many Mac owners read their documentation fully....)

*Ellen Joseph, Gainesville, FL*

## LASERWRITER



If your brand-new toner cartridge doesn't seem to be working properly, don't despair—just remove the cartridge and gently shake it from side to side for a few seconds and reinsert it. Then, print about thirty sheets. All it needs is to be broken in a little.

*Melia Maldonado, Jamaica, NY*

## DELUXE MUSIC CONSTRUCTION SET



To my dismay, *Deluxe Music Construction Set* can't be mounted to a hard disk. When the program would usually ask for a key disk, the entire system crashed instead due to the program's copy protection.

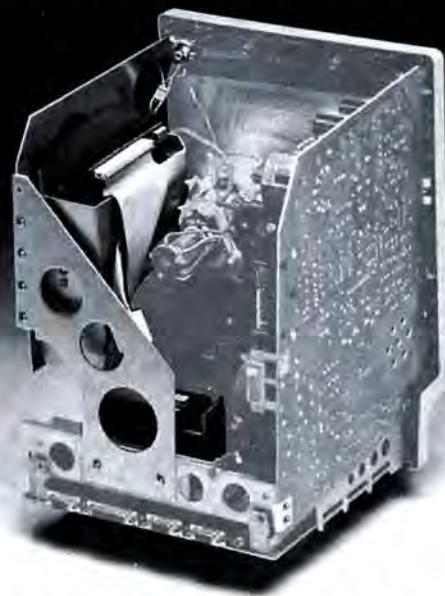
*Caesrae West, Cleveland, OH*

## HARDWARE



You can clean your Mac and external drive with—get this—a Black  
(continued on page 153)

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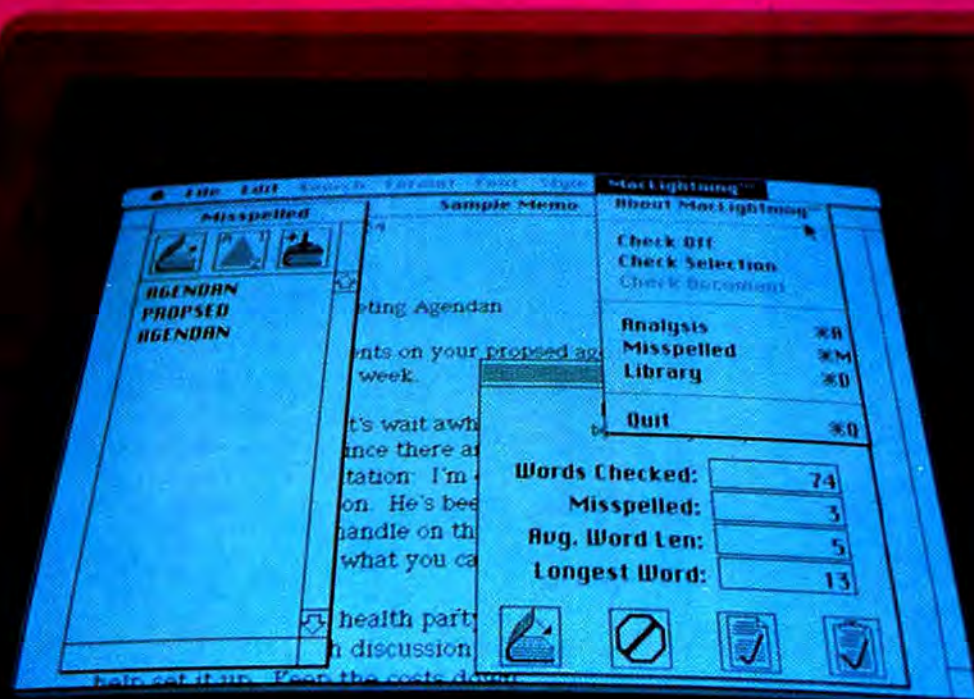
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# MINIFINDERS

Ever go into a computer store and wish you had someone you could trust tell you what the various programs and accessories do and how well they do it? These MiniFinders detail items chosen by the editors. Each one has been rated from 1 to 5 mice and there are even a few bomb icons scattered here and there. Red names indicate this month's additions. Dates at the end of an entry indicate a major review. And, since so many of you have asked, we've included a code that indicates whether or not a program is copy protected. CP means copy protected, NCP means not copy protected and CP? means we don't know the status. If you do, write us at MiniFinders, c/o MacUser, 25 West 39th St., New York, NY 10018. Next time you have to find products you can count on, count on MacUser!

## MINIFINDER INDEX

<b>BUSINESS ACCOUNTING</b> .....	<b>131</b>
<b>COMMUNICATIONS</b> .....	<b>137</b>
<b>DATABASES</b> .....	<b>132</b>
<b>DESK MANAGERS</b> .....	<b>138</b>
<b>EDUCATION</b> .....	<b>144</b>
<b>ENTERTAINMENT</b> .....	<b>145</b>
<b>GRAPHICS &amp; DESIGN</b> .....	<b>134</b>
<b>HARDWARE &amp; ACCESSORIES</b> .....	<b>150</b>
<b>INTEGRATED SOFTWARE</b> .....	<b>131</b>
<b>LANGUAGES</b> .....	<b>143</b>
<b>MUSIC</b> .....	<b>150</b>
<b>NUMBER CRUNCHING</b> .....	<b>132</b>
<b>ORGANIZATIONAL TOOLS</b> .....	<b>138</b>
<b>PERSONAL FINANCE</b> .....	<b>131</b>
<b>UTILITIES</b> .....	<b>138</b>
<b>WORD PROCESSING</b> .....	<b>137</b>

## 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)

**Ensemble** lets users create a database of words, pictures, and/or  
 •••• numbers; graph data; generate custom forms and link files for applications such as mail merge. Can perform calculations and math functions on data. Capacity limited by RAM and disk size. \$299.95. Hayden, 600 Suffolk St., Lowell, MA 01854. CP

**Excel** is THE power spreadsheet. Of the Mac, of the world. Has  
 ••••• 256-column by 16,384-row capability. Features include a powerful, easy to use macro function (with a recorder to make creation simple) and elaborate charting facilities. Can link multiple spreadsheets. 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. Each of the modules is substantial. HotView, where data placed in any module automatically updates all other documents that use that data, is best feature. Jazz provides adequate coverage of most data and communications needs of small businesses. Requires 512K and external drive. Version 1A requires 800K drive. \$595. Lotus, 55 Cambridge Parkway, Cambridge, MA 02142. CP (Prem)



## BUSINESS ACCOUNTING

**Accountant's Choice** is a powerful system built around a relation-  
 ••••• al database, with functions accessed through menus. Standard reports are provided but most can be customized. Multiple journals allowed. Number of accounts determined by disk space. General Ledger can stand alone or integrate with other modules, not yet available. Requires 512K, printer and external drive. \$695. Sierra Information Systems, 10201 Torre Ave., Cupertino, CA 95014. CP (Dec 85)

**AMS General Ledger** is a Ledger with five preset journals: Cash  
 •••• Disbursements, Receipts, General, Sales, and Purchases. Other modules are planned. Account ranges are preset. Menus and data entry are very straightforward. Flexible summary reports are built in, but customer and vendor information is very minimal. \$295. Applied Micro Solutions, PO Box 860, Fort Collins, CO 80522. CP

**Gallery Finance** is a one-write system with General Ledger, Cash  
 •••• Disbursements, Payables and Receivables in a single package. Additional modules to be added. Data entered in a journal is automatically posted to appropriate record card. Excellent manual includes tutorial on basic accounting principles. Requires 512K, printer and external drive. \$795. Micromax Systems, 6868 Nancy Ridge Dr., San Diego, CA 92121. CP (Dec 85)

**Hardisk** is a complex integrated hard disk system (General Ledger,  
 ••••• Receivables, Payables, Inventory, Payroll and Job Cost modules) that does not use Mac interface. Fully menu driven. Manual is detailed but complicated, with a few extra pages that make it Mac-specific. Flexible reporting, statements and account numbering; huge numbers of accounts, transactions, profit centers and detailed financial analysis. Requires hard disk and printer. \$695 per module. Great Plains, Box 9739, Fargo, ND 58109. CP? (Dec 85)

**MacOneWrite** Cash Disbursements is a simple, one-write check  
 ••• writing system. Limited functionality, but does allow some detailed information. Menus clear and easy to follow, but check printing can be confusing. Other modules planned. 512K and printer required. \$245. Sierra, PO Box 485, Coarsegold, CA 93614. CP (Dec 85)

**Palantir** is a simple, inexpensive accounting system for a 128K,  
 • one drive Macintosh. Manual is clear and concise; program uses icons for common operations; menus are clear and detailed, with most operations easy to find and use. Flexible report formatting and a customized chart of accounts. Program is written in Microsoft BASIC so it is very slow. Nice design but the speed is intolerable. Requires Microsoft BASIC, printer. \$145 per module. Palantir, 12777 Jones Rd., Houston, TX 77070. NCP (Dec 85)

**Rags to Riches** integrated accounting modules (General Ledger  
 ••••• and Accounts Receivable) uses Mac interface to the hilt. Information entered in one window automatically transfers. Menu commands all have command keystrokes, as can accounts. No detailed or flexible reporting. Very easy to use, although it can be confusing to operate with several windows on screen. Requires 512K and printer. \$295 per module. Chang Labs, 5300 Stevens Creek Blvd., San Jose, CA 95129. CP (Dec 85)

**Strictly Business** General Ledger features clear, well-outlined  
 ••••• set-up procedures and operations. Very flexible, with a custom chart of accounts; user-defined journals; up to 99 profit centers per company with up to 100 departments each; and customized reports. Program spools to printer and allows for printing of multiple documents. Requires 512K, printer and external drive. \$395. Future Design, 13681 Williamette Dr., Westminster, CA 92683. CP? (Dec 85)

## PERSONAL FINANCE

**Dollars & Sense** is a bookkeeping program suitable for personal,  
 ••• home and small-business use. Easy to use, with a good manual and excellent on-screen help. Will handle up to 120





# MINIFINDERS



separate accounts or money categories. Uses standard double-entry accounting techniques. Reports can be generated and either viewed on-screen or printed. Has simple graphing and charting facilities. \$149.95. Monogram, 8295 S. La Cienega Blvd., Inglewood, CA 90301. CP

\*\*\*\* **Electric Checkbook** does exactly what the name says: keeps a running account of checkbook transactions, balances checkbook to bank statements, tracks bills, and even prints out checks. Provides detailed financial statements, calculates net worth, lists expenses by category and tracks your personal cash flow. \$79.95. State of the Art, 3191-C Airport Loop, Costa Mesa, CA 92626. CP

\*\*\*\* **Financial Cookbook** provides nearly 3 dozen "recipes" to help users figure out financial formulas (i.e., mortgage costs at different percentage rates) by inputting pertinent data. Very user-friendly. \$44.95. Electronic Arts, 2755 Campus Dr., San Mateo, CA 94403. CP

\*\*\* **Financial Utilities Pack** is a set of applications that allow users to figure annuities, compound and simple interest, depreciation and amortization. Simple and well documented. \$69. Cognitive Software, PO Box 26948, Austin, TX 78755. NCP

\*\*\* **Forecast** is a tax estimating and what-if program designed to work with and use *Dollars & Sense* files. Straightforward, easy to use program. \$69.95. Monogram, 8295 S. La Cienega Blvd., Inglewood, CA 90301. CP

\*\*\*\* **The Home Accountant** is a complete and easy to use financial system. Data entry is intuitive. All kinds of reports, including charts and checks, are easily generated. Entered data will update all relevant material. \$150. Arrays, 11223 South Hindry Ave., Los Angeles, CA 90045. NCP (Apr 86)

\*\*\* **WillWriter** uses a rule-based system to create wills valid in all states except LA. Simple to use, comes with a complete book on wills. \$39.95. Legisoft/Nolo Press, 950 Parker St., Berkeley, CA 94710. NCP (Jan 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. CP (Feb 86)

\*\*\*\* **Factfinder** is a free-form information organizer (medium-duty database). Users enter data on to factsheets in any manner desired and select keywords. Searches are by name or keyword. Only one factsheet can be open at a time. Publisher offers free telephone support (800 number). \$149.95. Forethought, 1973 Landings Dr., Mountain View, CA 94943. NCP (Feb 86)

\*\*\*\* **FileMaker** is a nonrelational database that combines lots of power with ease of use. Data entry is extremely flexible and all items in all fields are indexed so that multiple criteria searches are both simple and fast. Calculation fields make the creation of invoices and similar documents a snap. Reports can include graphics and multiple data layouts are easy to construct. \$195. Forethought, 1973 Landings Dr., Mountain View, CA 94943. NCP

\*\*\* **Filevision** is a simple database that can change the way you think about data and data organization. Records are based around user created graphics screens. Screens and records can be linked in complex ways. \$195. Telos Software, 3420 Ocean Park Boulevard, Santa Monica, CA 90405. CP

\*\*\* **1stBase** is a small, easy-to-use database that allows users to join or append files. It is the simplest, most accessible relational database available for the Mac. Supports calculated fields, including statistical summaries such as averages. Integrates with *1stMerge* and *1stPort*. \$195. DeskTop Software, 244 Wall St., Princeton, NJ 08540. CP

\*\*\*\* **Hellx** is a relational database that makes extensive use of icons. Excels in database setup and forms generation. Setup is made easy by the adherence to the Mac interface. The manual is clear, thorough and well-indexed. Too complicated for most simple database applications, excellent where a

relational database application is required. Requires a 512K Mac and external drive. \$395. Odesta, 4084 Commercial Blvd., Northbrook, IL 60062. NCP (Mar 86)

\*\*\*\* **I Know It's Here Somewhere** stores information in a simple filing system. Ideal for general household or small business use. Can cross reference up to five files at a time; perform simple, wild card, or multiple key searches, and print selected items or whole files. \$59.95. Hayden, 600 Suffolk St., Lowell, MA 01854. CP

\*\*\*\* **Interlace** is a flexible relational database that makes it simple to create single or multiple files and establish links between files. Excellent report generator gives full control over appearance, style of output. Requires 512K, second drive or hard disk highly recommended. \$129 retail, \$95 direct. Singular Software, 5888 Castano Dr., San Jose, CA 95129. CP (Apr 86)

\*\*\* **MegaFiler** is a simple file manager. Its limited capabilities have been far surpassed by cheaper and easier to use programs. Valuable only in conjunction with *MegaForm*. \$195. Megahaus, 5703 Oberlin Dr., San Diego, CA 92121. CP

\*\*\*\* **Microsoft 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 98052-6399. CP

\*\*\*\* **Omnis 3** is a power database, featuring concurrent multiple file management. Can handle 24 files, 12 at a time, and is fully relational. Allows user to create custom environments including user-defined menus, commands and dialogs. Good report generation capability. Comes in single and multiple user versions. \$495 (single user version). Blyth, 2655 Campus Drive, San Mateo, CA 94403. CP (Mar 86)

\*\*\*\* **OverVUE** is a power-packed relational database that has extensive sorting, summarizing and report generation capacity. Has macros and a charting function. Good manual. The program tries to anticipate every need conceivable in manipulating data. 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 database designed for storing and retrieving bibliographies. Predesigned forms for 20 types of entries. Citations automatically formatted with correct punctuation for printing. \$295. Personal Bibliographic Software, PO Box 4250, Ann Arbor, MI 48106. CP (Feb 86)

\*\*\* **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)

## NUMBER CRUNCHING

\*\*\* **ClickOn Worksheet** is a 50-row by 20-column spreadsheet that loads onto any system disk as a desk accessory. Though small in size, it has remarkable capabilities for a desk accessory. It produces line, bar and pie charts and changes in the worksheet automatically reflect in charts. \$79.95. T/Maker Company, 2115 Landings Dr., Mountain View, CA 94043. NCP

\*\*\*\* **Multiplan**, the first Mac product from someone other than Apple is 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)

\*\*\*\* **ProAnalysis** is a powerful real estate investment analysis program. This program uses the Mac interface as well as any program yet published. Analytic power is combined with report generating so good you have to see it produce an extraordinary product. Requires 512K. \$295. Technalysis Services, 14555 DeBell Rd., Los Altos Hills, CA 94022. CP

\*\*\*\* **StatView** is a high-powered statistical calculation package. Easily and efficiently handles all the common statistical tech-



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niques and many uncommon tests. Has a user-definable area as well. Easy to use and well documented. \$199.95. BrainPower, 24009 Ventura Blvd., Calabasas, CA 91302. NCP (May 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)

## GRAPHICS & DESIGN

**Animation Toolkit I** lets users prepare "film clips" of moving  
 ••• objects which play back at varying speed, like old-fashioned flip books. Drawings are built pixel by pixel in frames, using some of the tools from MacPaint. They can be copied and altered easily from frame to frame. Each film clip plays repetitiously as it is being constructed. A limited animation tool, but a lot of fun. \$49.95. Ann Arbor Softworks, 308 1/2 S. State St., Ann Arbor, MI 48104. CP

**Art Grabber with Body Shop** is a desk accessory that lets users  
 ••••• browse MacPaint documents, selecting and copying as they choose. Selections can be larger than screen size. Also included are MacPaint documents and templates to allow the creation of people in your art. \$49.95. Hayden, 600 Suffolk St., Lowell, MA 01853. NCP

**ClickArt Special Effects** is a MacPaint enhancement desk  
 ••••• 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** facilitates color printing on the standard ImageWriter.  
 ••• MacPaint files set up as overlays are read into ColorPrint, and the program controls proper positioning registration and colored ribbon switching. Good results require lots of hard work, but it's cheaper than an ImageWriter II. \$49.95. Esoft Enterprises, PO Box 179, Owasso, OK 74055. NCP (Mar 86)

**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)

**DaVinci Building Blocks** features predrawn blocks of brown-  
 ••••• stone, garden, and skyscraper portions that can be cut and pasted together to form landscape and architectural drawings. Fun for even non-pro's. \$79.95. Hayden, 600 Suffolk St., Lowell, MA 01853. NCP

**Easy3D** is a three-dimensional, solid modeling masterpiece. Four  
 ••••• variable light sources, powerful sculpting tools and an exquisite user interface make this program a must-have for Mac graphics enthusiasts. Requires a 512K Mac. Enabling Technologies, Inc., 600 South Dearborn, Chicago, IL 60605. NCP (May 86)

**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. It fills the gaps left by MacPaint. \$99.95. Ann Arbor Softworks, 308 1/2 State St., Ann Arbor, MI 48104. CP (Jun 86)

**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)

**Home Design** is a home planning tool that includes three disks  
 ••••• full of MacPaint files of household items needed to design a home. Art Grabber Installer is included for easy maneuvering

of items. The professional home designer, as well as the amateur will feel at ease using this program. \$79.95. Hayden, 600 Suffolk St., Lowell, MA 01854. NCP (Jun 86)

**Human Forms** allows users to create perfectly proportioned  
 ••• humans in any posture or position. Contains over 1000 separate body parts. Tiny X's mark make limb, head and detail placement perfect. Requires MacPaint. \$59.95. Bert Monroy, 205 Luquer St., Brooklyn, NY 11231. NCP

**Icon Switcher** changes icons for applications and the documents  
 ••••• they generate, permitting you to customize icons for personal work. New icons can be built pixel by pixel in the program or created in MacPaint and pasted in. \$19.95. PBI Software, 1155B-H Chess Drive, Foster City, CA 94404. 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 (May 86)

**Mac the Knife/Vol. 1: Treasury** contains over 500 pieces of clip  
 ••••• art in the form of MacPaint documents and two new fonts. The art is well organized and mostly high quality. The rulers, for on-screen measurement, and the disk label templates are particularly useful. If you only plan on getting one clip art disk, this would be a good choice. \$39. Miles Computing, 21018 Osborne Street, Canoga Park, CA 91304. NCP

**Mac the Knife/Vol. 2: Fonts** contains over two dozen new fonts.  
 ••••• Some of these (Paris and Stuttgart, for example) are real stunners. If you do a lot of word processing try Paris 9 point (it's a big 9 point) as your text face and use High quality printing. Some fonts have single key fractions (1/2, 1/4). \$49. Miles Computing, 21018 Osborne Street, Canoga Park, CA 91304. NCP

**Mac The Ripper** is a two-disk set of highly stylized graphics and  
 ••••• large display typefaces. Both are extremely well done, and represent the high-end of the clip-art disk category. \$49.95. Miles Computing, 21018 Osborne Street, Canoga Park, CA 91304. NCP (May 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. It has some annoying quirks and a few bugs, and is best used to complement MacDraw, not replace it. \$239. Innovative Data Design, 1975 Willow Pass Rd., Concord, CA 94520. CP (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. MacPaint documents can be pasted into MacDraw, but not manipulated. \$195. Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014. NCP (Nov 85)

**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. Free with 512K Macs. \$125. Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014. NCP (Nov 85)

**MacPublisher** is a tool for creating newsletters. Allows multiple  
 ••• page issues. Layout is fairly easy but hard to do precisely. Runs on a 128K Mac but is slow; a 512K should be considered a requirement. Printer support, including LaserWriter, is good. Ideal for informal newsletters, not yet a professional tool. \$99.95. Boston Software Publishers, 19 Ledge Hill Rd., Boston, MA 02132. CP

**Magic Slate** is a graphics and design program with built-in special  
 ••• effects and custom features. Fun but sometimes difficult to use. Great for pattern design, block and geometric graphics and watercolor-style "washes." Requires 512K. \$99. Devionics, PO Box 2126, Covina, CA 91722. CP (Feb 86)



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OverVUE's clean sweep of these two prestigious awards only confirms what everyone else has been saying all along:

Infoworld (July 8, 1985): "...it is Macintosh software done right."

Icon Review (Fall 1985): "OverVUE 2.0 is our favorite database workhorse... it simply offers the best balance of power and ease-of-use available on the market today."

Nibble Mac (Oct. 1985): "OverVUE is not only easy to set up, it's the easiest for data entry. Its tools for entering repetitive data minimizes typing time."

Online Today (electronic version — Nov. 1985): OverVUE 2.0 is a heavy-duty data management tool... It does all the things a good relational database manager should."

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# MINIFINDERS



**Microsoft Chart** is the standard to be matched in presentation  
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**M.U.D (MacroMind Utility Disk)** is a disk of various utilities for  
\*\*\*\*\* *MusicWorks* and *VideoWorks* owners. It also contains *CheapPaint* and *Art Grabber+*, two graphics desk accessories that are musts for graphics enthusiasts. Hayden, 600 Suffolk St., Lowell, MA 01854. NCP (Feb 86)

**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 (Nov 85)

**PictureBase** is a program and accompanying desk accessory for  
\*\*\*\*\* organizing *MacPaint* and *MacDraw* elements and files. Graphics are organized into libraries, and can be searched for by keywords. A multitude of display options, and an advanced interface make this package indispensable for quick access to graphics files. \$69.95. Symmetry Corporation, 761 E. University, Mesa, AZ 85203. NCP

**PosterMaker** can enlarge *MacPaint* drawings by up to 3200  
\*\*\* percent. Full-screen cut and copy are supported, so any portion of a *Paint* document can be selected and scaled. Borders can be added automatically. Includes some nice digitized graphics files. Easy to use. \$39.95. Strider Software, Beecher Lake Rd., Pembine, WI 54156. NCP

**ReadySetGo** is a page makeup program for 512K Macs. Users  
\*\*\*\* build up pages from blocks of text, graphics and rules. Resizing and scaling of blocks are supported. Each block can be precisely positioned. Text and art may be pasted in from another source or created within the program. Good LaserWriter support. \$195. Manhattan Graphics, 163 Varick St., New York, NY 10013. NCP (Apr 86)

**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)

**VideoWorks** is a full-featured animation package. Professional  
\*\*\*\*\* quality animations are easily accomplished using the tools provided. Features frame-by-frame and real-time modes. Comes with an art disk of predrawn images and *Art Grabber* (which allows the user to use any part of a *MacPaint* document in *VideoWorks*). Includes many special video and sound effects, and on-disk examples. \$99.95. Hayden, 600 Suffolk St., Lowell, MA 01854. CP (Nov 85)

## COMMUNICATIONS

**InTouch** comes with its own communications command language  
\*\*\*\*\* able to do unattended sessions. Supports Xmodem, MacBinary and Kermit. Has a macro key function. Many sample set up documents and command language files provided. \$145. Palantir, 12777 Jones Rd., Houston, TX 77070. CP (Prem)

**MacTerminal** provides basic telecommunications and terminal  
\*\* 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)

**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 (Prem)

**Smartcom II** balances power and ease of use. Capable of  
\*\*\*\*\* unattended operation and has a very powerful command language. Supports MacBinary, Xmodem, and Hayes Verification protocols. The large screen buffer can easily be

archived both to the printer and to disk. \$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 and has all the advanced features (except unattended operation). The documentation does not adequately explain the many features and much of the power will be unavailable to all but the pros (who can figure it out on their own). \$125. Mainstay, 28611B Canwood St., Agoura Hills, CA 91301. NCP (Prem)

**VersaTerm** features include DEC VT100 and VT52, Tektronix 4014  
\*\*\*\*\* graphics terminal and Data General DG200 emulation. Supports Xmodem and MacTerminal Xmodem protocols and MacBinary. *VersaTerm* is easy to use and well documented. \$99. Peripherals, Supplies & Computers, 2232 Perkiomen Ave., Mt. Penn, PA 19606. CP (Prem)

## WORD PROCESSING

**Document Compare** allows users to compare any two *MacWrite*  
\*\*\* 4.5 documents (only! — no other formats are supported). Differences in spelling, punctuation, formatting and wording are detected. Differences appear highlighted and the documents can be printed out with differences highlighted. Not HFS compatible. \$99. The Model Office Company, Inc., The Gooderham Flatiron Building, 49 Wellington Street East, Toronto, Canada M5E 1C9. CP (May 86)

**EgWord** is a *MacWrite* lookalike that allows full Japanese kanji  
\*\*\* word processing on the Mac. Does a superlative job of making Japanese text-entry as easy as possible, given the difficulties of the language. Great for students of Japanese, may find a place in international business as well. \$300. Counterpoint, PO Box 1685, Cambridge, MA 02138. CP (Apr 86)

**1stMerge** is a mail-merge program that integrates data files with  
\*\*\*\* documents after a blueprint for documents has been designed. Features on-screen help, and the ability to add and search records. Requires *MacWrite*. \$95. DeskTop Software, 244 Wall St., Princeton, NJ 08540. CP

**Hayden: Speller** checks spelling errors in *MacWrite*, and *Word*  
\*\*\*\* documents against a dictionary of 20,000 common words and user-created dictionary. Reasonably fast and quite simple to use. \$79.95. Hayden, 600 Suffolk St., Lowell, MA 01854. CP

**Just Text** is a professional level word processor and page makeup  
\*\*\*\*\* program that generates PostScript output. Comes with a set of LaserWriter utilities that allow total manipulation of art and text. Requires LaserWriter or other PostScript compatible output device. \$195. Knowledge Engineering, GPO Box 2139, New York, NY 10116. NCP (Dec 85)

**LaserFonts** are new fonts designed for the LaserWriter. Users  
\*\*\*\* download them to their machines. Very high quality and very simple to use. *Willamette* (in Medium, Light and Extra Light) 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

**Le Conjugueur** is a desk accessory that simplifies finding the right  
\*\*\*\* spelling for a French verb. Type a verb, select a person and a tense, and *Le Conjugueur* presents the correct form (and can even insert it for you). Good for casual French speakers or students. \$49.95. Éditions Ad Lib, 220 Grande-allee, Quebec City, Quebec, Canada, G1R 2J1. NCP. (Jun 86)

**MacSpellRight** is a spelling checker that works with *MacWrite* 4.5  
\*\*\* (not 2.2!). Allows the user to create custom dictionaries. Works from within *MacWrite*. \$89. Assimilation, 485 Alberto Way, Los Gatos, CA 95030. NCP

**MacWrite** is the basic word processor that comes with the Mac.  
\*\*\*\* While it doesn't have every bell and whistle, it is more than adequate for most users. Features include document size limited by disk space, global search and replace, page numbers indicated in the scroll bar and excellent LaserWriter compatibility. Easy to use and well documented. \$125. Free with purchase of 512K Mac. Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014. NCP





# MINIFINDERS



**MegaForm** is a well designed forms generator and processor.

... Forms design is easy. Can use data from *MegaFiler*. The form filling and print functions are slow, possibly too much so for large scale use. \$295. Megahaus, 5703 Oberlin Dr., San Diego, CA 92121. CP (Feb 86)

**Microsoft Word** is a power word processor for the Mac. It has just about every feature your heart could desire. Supports keyboard commands as well as the mouse. Does mail merge and multicolumn text. Integrates with the rest of the Microsoft line. \$195. Microsoft, 16011 NE 36th Way, Redmond, WA 98052-6399. CP (May 86)

... **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

... **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. Full-featured, easy to use, with keyboard equivalents for menu commands. \$49.95. Greene, Johnson, Inc., 15 Via Chualar, Monterey, CA 93940. NCP (May 86)

## ORGANIZATIONAL TOOLS

**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)

... **Micro Planner** is a heavy-duty project planner. Excellent, but slow, at the mechanics of project planning. Reports are its weakness. Speed is much improved when a hard disk is used. \$395. Micro Planning Software USA, 235 Montgomery St., San Francisco, CA 94104. CP (Mar 86)

... **ods/Consultant** is a program that lets users organize ideas and helps in thinking through and solving problems. Easy to use thanks to extensive use of icons and on-screen help. This program introduces some low-level AI (artificial intelligence) concepts. \$200. Organization Development Software, 1011 E. Touhy Ave., Des Plaines, IL 60018. CP (Apr 86)

... **ThinkTank 128** is a basic outline processor. The interface is not the standard Mac interface, but is simple to use and efficient. Printer support is limited, but files can be printed in a draft-style mode. Only for 128K owners; 512K owners should get *ThinkTank 512*. \$99.95. Living Videotext, 2432 Charleston Rd., Mountain View, CA 94043. CP

... **ThinkTank 512** is a very fast and intuitive organizational tool that can handle word processing chores in the midst of structuring a plan or outline. Full keyboard control is possible. Can store and paste graphics into outlines. Slide show features allows high presentations to be created. Good report formatting and printing capability. \$195. Living Videotext, 2432 Charleston Rd., Mountain View, CA 94043. CP (Jan 86)

## DESK MANAGERS

**Battery Pak** is a set of 8 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. Comes with an installer and the best manual we've seen in a long time. \$49.95. Batteries Included, 30 Mural St., Richmond Hill, Ontario, L4B 1B5, Canada. NCP (Dec 85)

... **The Desk Organizer** is a free-form desk management system based on card index style files. Has many features including alarms, report generation and calculation. The Meta feature lets the program run along with another application. \$99. Conceptual Instruments, 269 W. Walnut St., Philadelphia, PA 19144. NCP

... **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)

**MacOffix** combines many of the simple and necessary office functions in one easy-to-use package. Features include simple word processing, forms design, form letter production, report generation and filing. Good design nearly makes the manual unnecessary. \$79. Emerging Technology, Inc., 4760 Walnut St., Boulder, CO 80301. CP

... **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. Modular design allows users to add only selected items to System disks. 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** is a set of desk organization applications and accessories. Functions include phone dialer and logger, desk accessory terminal, calculator, clock, editor and more. When required resource files are included modules take up a lot of disk space, and are best used with a hard disk. \$84.95. Borland International, 4585 Scotts Valley Dr., Scotts Valley, CA 95066. NCP (Dec 85)

**Top Desk** is a set of 7 self-installing (and self-removing) DAs. Menu Key adds Command key sequences to programs, Views allows looking at and moving data between up to 8 *MacWrite* documents, BackPrint allows background printing from most applications, Shorthand adds a glossary, Blank is a screen saver, Encrypts scrambles files for protection, and Launch transfers to another application. \$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, 11212 Dalby Pl., San Diego, CA 92126. NCP (Nov 85)

... **Copy II Mac** was one of the first back-up programs available for the 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 multiuse utility that can recover many damaged files. \$39.95. Central Point Software, 9700 S.W. Capitol Highway, Portland, OR 97219. NCP (Apr 86)

... **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 personalized calculators with a variety of standard and special functions. Multiple functions can be attached to a single key. Finished calculators can be saved as installable desk accessories or as clickable applications. \$99. Dubl-Click Software, 18201 Gresham St., Northridge, CA 91321. NCP (Apr 86)

... **Fedit** is the best disk editor available for the Mac. The program also includes extremely powerful disk and file repair and recovery facilities. All Mac owners should have this tool on hand for emergencies. \$40. MacMaster Software, 939 E. El Camino Real, # 122, Sunnyvale, CA 94087. NCP

**MacBooster** is a disk-cache program that adds a great deal of operating speed to a 512K Mac. It installs easily from its master disk. This program can increase the speed of your 512K Mac by 2 to 3 times. Not for Mac Plus. \$50. Mainstay, 28611B Canwood St., Agoura Hills, CA 91301. NCP

... **Mac Disk Catalog II** is a utility that will quickly organize a moderate size disk library. Easy to use with powerful



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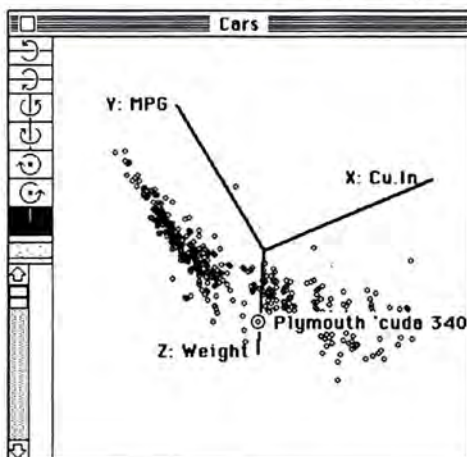
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# AD INDEX

PAGE# ADVERTISER, READER SERVICE#

10	Activision, Inc., 221	19	Cricket Software, 134	21	Optimum Computer Luggage, 180
103	Aegis Development Corp., 65	122	DataViz, 229	24	Paladin Software Corp., 206
31	Affinity Microsystems Ltd., 118	152	Diversions, Inc., 231	142	Paragon Courseware, 104
*32	Aldus Corp., 217	139	D <sup>2</sup> Software, 176	32-35	PC Connection, 82
101	Allotype Typographics, 222	*25	Electronic Publishers, Inc., 204	141	PC & S, 218
*11	Altsys Corp., 99	115	Expertelligence, 235	151	PDS Video Technology, 139
16ABCD	Apple Computer, Inc., NA	52	Forethought, Inc., 225	*21	Personal Computer Peripherals Corp., 50
*6	AST Research, Inc., 214	120	Great Wave Software, 113	139	Precision Data Products, 226
136	Batteries Included, 129	124	Greene, Johnson Inc., 172	50-51	Programs Plus, 69
142	Bay Systems, 102	127	Hayes Microcomputer Products, 130	101	Pro-Typography, 215
117	Bede Technology, 126	*29	Image World, Inc., 223	135	ProVUE Development Corp., 159
6,7	Borland International, 128	*23	Infosphere, Inc., 110	151	RH Electronics, 190
123	Bravo Technologies, Inc., 234	101	I/O Design, 187	146,147	The Saving Zone, NA
152	Capilano Computing Systems Ltd., 224	39	Kurta Corp., 173	45	Singular Software, 193
*29	Casady Company, 44	101	Laser Printing Services, 127	C2	Sir-Tech Software, 62
12-17	Cauzin Systems, 151	128,129	Levco, Inc., 185,213	125	Soft Guard Systems, 191
139	Central Point Software, 105	152	LM Software, 233	8	SoftStyle, Inc., 209
*25	Century Software, 155	122	LogiSoft, 196	113	Software Ventures Corp., 216
140	CheckMark Software, 156	32-35	MacConnection, 82	149	Sof-ware Tools, 169
29	Challenger Software, 41	124	MacDoctor Electronics, 162	11	Sony Corp. of America, 192
135	Cognitive Concepts, 220	141	MacRentals, 152	5	Spectrum Holobyte, Inc., 40
151	CompuCraft, 166	151	MacStore, 165	26, 27	SuperMac Technologies, Inc., NA
C3	CompuServe, 208	125	MacUnderground, 106	130	Target Software, 195
4	Cortland Computer, Inc., 198	28	Magnum Software, 228	120	Template Systems, 230
		28	Mainstay, 120	136	Tess Data Systems, 205
		122	Mainstay, 121	93	Thunderware, Inc., 236
		26	Manx Software, 194	121	TML Systems, 149
		C4	Maxell, 61	155	Up Grade, 237
		89	Micah, Inc., 163	149	Vision Technologies, 161
		133	MindWork Enterprises, Inc., 78	142	Williams & Macias Microcomputer Products, 219
		149	Moustrak, Inc., 170	149	WSM Software, 197
		139	New Canaan Microcode, 135	119	Zedcor, 177
		152	Nordic Software, 227		
		104-107	Northeastern Software, 76		
		1	Odesta Corp., 232		

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4 14 24 34 44 54 64 74 84 94	104 114 124 134 144 154 164 174 184 194	204 214 224 234 244 254 264 274 284 294
5 15 25 35 45 55 65 75 85 95	105 115 125 135 145 155 165 175 185 195	205 215 225 235 245 255 265 275 285 295
6 16 26 36 46 56 66 76 86 96	106 116 126 136 146 156 166 176 186 196	206 216 226 236 246 256 266 276 286 296
7 17 27 37 47 57 67 77 87 97	107 117 127 137 147 157 167 177 187 197	207 217 227 237 247 257 267 277 287 297
8 18 28 38 48 58 68 78 88 98	108 118 128 138 148 158 168 178 188 198	208 218 228 238 248 258 268 278 288 298
9 19 29 39 49 59 69 79 89 99	109 119 129 139 149 159 169 179 189 199	209 219 229 239 249 259 269 279 289 299
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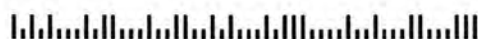
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# MINIFINDERS



reporting and label-making features. \$39.95. New Canaan MicroCode, 136 Beech Rd., New Canaan, CT 06840. NCP (Dec 85)

\*\*\*\* **MacLabeler** lets users instantly index and print labels for all the 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. Simple to install and run, high-performance software. Can do special format transfers such as 1-2-3 to *Multiplan* and *WordStar* or *MultiMate* 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

\*\*\*\* **MacMateI** combines RAMdisk and print spooling functions in a compact package. Both parts are efficient, work well and have on-screen help. \$49.95. SMB Development Associates, PO Box 3082, Chatsworth, CA 91311. NCP

\*\*\* **Mac Memory Disk** creates a RAMdisk on 512K Macs. The RAMdisk's size is user selected up to 316K. Has auto startup and auto file transfer features. Simple to use, on-screen dialogs prompt for all actions. \$29. Assimilation, 485 Alberto Way, Los Gatos, CA 95030. 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

\*\*\*\* **The Macintosh Reference System** consists of the contents of *Inside Macintosh* arranged into a simple database on a disk and a deck of 750 color coded cards that contain the same information. Very useful for programmers and developers. \$109.95. TOM Programs, 1500 Massachusetts Ave. NW, Washington, DC 20005. NCP (Mar 86)

\*\*\*\* **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, 5802B Gloucester, Austin, TX 78723. NCP (Jan 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

\*\*\*\* **Packer** is a simple utility that compresses files. It can be used to save disk space and also protect files. Packed files can also be password protected. Typical space savings range from 20 to 50% depending on the original file type and size. This is the best program of its type so far. \$29. Bobbing Software, 67 Country Oaks Dr., Buda, TX 78610. NCP (May 86)

\*\*\* **PC to MAC and BACK** has both Mac and MS-DOS disks. This program easily and efficiently transfers text and other data between PCs and Macs. Fortunately, the documentation is excellent. Does special format transfers such as *WordStar* to *MacWrite*. Includes a cable for direct Mac to PC connections. \$149.95. dilithium Press, 8285 SW Nimbus, Beaverton, OR 97005. NCP

\*\*\*\* **Quick & Dirty Utilities, Volume One** is a disk chock full of the 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. "File info" and "Q&D Filer" are two file management desk accessories that you'll wonder how you got along without. \$39.95. Dreams of the Phoenix, PO Box 10273, Jacksonville, FL 32247. NCP (Nov 85)

\*\*\* **Quick Disk** is a RAMdisk utility. Users can create RAMdisks up to 350K on 512K Macs. Works well and has good documentation. \$34. Symmetry Corporation, 3900 East Camelback Rd., Phoenix, AZ 85018. NCP

\*\*\*\* **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. Slick and easy to use; every 512K Mac user should get it. Runs on 512K Macs and larger. \$19.95 from Apple, free from MAUG on CompuServe, from Delphi and included with some third-party applications (e.g., Excel). Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014. NCP

\*\*\*\* **TurboCharger** is a disk-cache program. Can dramatically speed up operation (250 to 500% improvements are common). Features include auto-startup and write buffering. Only works on a 512K Mac but is a must for one. \$95. Nevins Microsystems, 210 Fifth Ave., New York, NY 10010. NCP

\*\*\*\* **TurboDownload** is a desk accessory designed specifically to 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

\*\*\*\* **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 or "boilerplate" stored and used as needed. \$39.95. Mainstay, 28611B Canwood St., Agoura Hills, CA 91301. NCP (Jan 86)

\*\*\*\* **XL/Serve** converts a Mac XL into a disk and print server. Uses the AppleTalk network and is easily hooked up. Users can partition the Mac XL's hard disk into multiple volumes (read-only for common access and read-write for private access). Runs in the background on the Mac XL, so users can work on all machines in the network. Comes with a backup and restore utility. \$195. Infosphere, 4730 SW Macadam, Portland, OR 97201. NCP (Nov 85)

## LANGUAGES

\*\*\*\* **Aztec C** is a C language program system 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. Good, solid system. \$199 basic system, can't produce standalone applications; \$299 development system, can produce standalone applications; \$499 commercial system, development system plus utilities and strong technical support by publisher. Manx Software Systems, PO Box 55, Shrewsbury, NJ 07701. NCP (May 86)

\*\*\* **Hippo-C Level 1** offers a good basic learning environment for newcomers to the C programming language. The programs limits and restrictions are severe and standalone applications cannot be created. A good place to begin the study of C. \$149.95. Hippopotamus, 985 University Ave., Los Gatos, CA 95030. CP

\*\*\* **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 built-in. \$375. \$475 with Toolkit and floating point package. 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. Easy to use for those with a strong technical background. \$50 test drive package, \$495. AL-Soft, Inc., PO Box 927, Spring, TX 77383. NCP (Feb 86)

\*\*\*\* **MacForth** is an implementation of the popular Forth programming language. Level 1 is a simple, introductory version with limited support of the Mac Toolbox. Excellent tutorial and



# MINIFINDERS

references sections in the manual. Level 2 supports the Mac Toolbox fully. Level 3 extends the language so that professionals can produce standalone applications. All levels are supported by the publisher via telephone and electronic BBSs (the publisher even has a private SIG on CompuServe). \$149 (Level 1), \$249 (Level 2), \$499 (Level 3). Creative Solutions, 4701 Randolph Rd., Rockville, MD 20852. NCP

\*\*\* **MacScheme** is a LISP dialect with "artificial intelligence" capabilities. Has a large appetite for RAM. Interpreted language with Toolbox access limited to a small part of QuickDraw. Includes many examples and a LISP tutorial. \$125. Semantic Microsystems, 4470 S.W. Hall St., Beaverton, OR 97005. CP? (Jun 86)

\*\*\*\* **Mach1** 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. \$49.95. 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 excellent editor (*Edit*), an efficient assembler, a linker, an executive, a resource compiler called *RMaker*. The files included in this two-disk set have all the basic equates, process definitions, and trap calls. \$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. The documents are mostly references, get a good tutorial textbook. \$125. Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014. CP

\*\*\*\* **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. CP

\*\*\*\* **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 (in user group libraries and magazines) to run. There have been several versions; get the latest. \$150. Microsoft, 16011 NE 36th Way, Redmond, WA 98052. NCP

\*\*\*\* **Microsoft Logo**, from Microsoft's MacLibrary, written by LCSi. An excellent implementation of Logo, taking full advantage of the Mac's user interface. Uses three windows. Turtle looks like a turtle, and its screen actions are very precise. Windows can be resized and moved about. \$124.95. Microsoft, 16011 NE 36th Way, Redmond, WA 98052-6399. NCP

\*\*\*\* **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 Courseware, 4954 Sun Valley Rd., Del Mar, CA 92014. NCP (Mar 86)

## EDUCATION

\*\*\* **A Bill Becomes A Law** is a multiple-choice, role-playing adventure in which students try to pass a bill requiring apples in every federally sponsored school lunch. A good insight into political maneuverings on Capitol Hill for students. \$59.95. Queue, 5 Chapel Hill Dr., Fairfield, CT 06432. CP (Mar 86)

\*\* **Astronomy** is a low-level package with basic features. Slow speed and sparseness of information makes this program of limited use to novices, but still useless to experienced astronomers. \$35. E & M Software Co., 95 Richardson Rd., N. Chelmsford, MA 01863. NCP (Apr 86)

\*\*\*\* **ChipWits** is a combination game and teaching tool. Players create programs to maneuver robots through a set of 8 mazes. The programs are written in *ChipWit's* built-in icon-based programming language (IBOL). IBOL is a nearly perfect introduction to programming for nonprogrammers. \$49.95. Brain-

Power, 24009 Ventura Blvd., Calabasas, CA 91302. NCP  
\*\*\* **Comet Halley** is a single-purpose, single-minded program. It will indicate where in the sky users should look to see this pass of Halley's comet. That's it. When the comet is gone you can erase the disk. \$29.95. Great Wave, PO Box 5847, Stanford, CA 94305. NCP (Apr 86)

\*\*\*\* **DietMac** is a database consisting of about 800 foods with nutritional information, from which to choose from for planning daily menus. The Modify Food Data option allows users to customize and update data. Some on-screen help. \$79. Tess Data Systems, Inc., 17070 Red Oak Drive, # 403-B, Houston, TX 77090. CP (May 86)

\*\*\* **MacChemistry** is a two-disk set consisting of a titration program (predetermined compounds, not user modifiable), a periodic table program, *MacNest* (a scrapbook with indexing!), and a disk of *MacPaint* files depicting everything from lab equipment to molecular structures of many solutions and compounds. *MacNest* is of general appeal. \$145. Fortnum, 31 W. Sierra Madre Blvd., Sierra Madre, CA 91024. NCP

\*\*\* **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—they require learning format as well as skill. Exception is *Alphabet Train*, a clever game with great graphics and sound, poor font definition. \$49.95 each. Think Educational Software, 16 Market St., Potsdam, NY 13676. CP

\*\*\* **MacStrometry** is a good package for novice sky watchers. Has expandable database of sky objects that can be customized by the user. New version is very fast. \$75. Etion Software, PO Box 649, Lafayette, CO 80026. CP (Apr 86)

\*\*\*\* **MacType** offers structured typing instruction. Can teach both standard and Dvorak keyboards. Features include certificates for reaching certain levels. Can be used in a multistudent environment. \$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. Scarborough Systems, 55 South Broadway, Tarrytown, NY 10591. CP

\*\* **Mind Prober** is a demonstration of a very simple expert-style system. How well do you know your friends? Answer certain statements as either true or false, and the computer prints a 3- to 5-page psychological profile of subject in business, stress, sex and other situations. \$50. Human Edge Software, 2445 Faber Pl., Palo Alto, CA 94303. CP

\*\*\* **Nutri-Calc** uses a large database of nutritional information. Users can plan healthy diets and print shopping and menu lists. \$79.95. CAMDE, 46 Prince St., Rochester, NY 14607. CP

\*\*\*\* **PowerMath** is an equation solver. Handles problems ranging from the simplest to the extremely complicated. Step-by-step solutions make this a powerful teaching tool. Results can be displayed numerically or graphically. Slow, but potent program. \$99.95. BrainPower, 24009 Ventura Blvd., Calabasas, CA 91302. NCP

\*\*\* **Score Improvement System for the SAT** is a no-nonsense drill and practice session covering practice tests, vocabulary, reading comprehension, math and quantitative comparisons. On-line tutoring for wrong answers. \$99.95. Hayden, 600 Suffolk St., Lowell, MA 01854. CP (May 86)

\*\*\* **Spanish Grammar III** is a teachers' tool consisting of ten modules for students who need tutoring in the Spanish language. Previous knowledge of the language is necessary. Uses multiple choice and fill-in formats. Keeps a Teacher's Management Report for up to 40 names. \$34.95. Queue, 5 Chapel Hill Dr., Fairfield, CT 06432. CP (Apr 86)

\*\*\* **Speed Reader II** builds skills sequentially to develop faster, more efficient reading and improve retention. Scores kept, and can be graphed. High school level selections included, other levels available on data disks. \$69.95. Davidson & Associates, 3135 Kashiwa St., Torrance, CA 90505. CP? (Apr 86)



# MINIFINDERS



**Tellstar I & II** are the best Mac astronomy programs. Has  
 \*\*\*\*\* extensive database, quick sky plotting and can locate specific celestial objects. Level II has southern hemisphere star table, Messier objects. Good for both novices and advanced skywatchers. \$49.95 (level I), \$79.95 (level II). Spectrum HoloByte, 1050 Walnut, Boulder, CO 80302. NCP (Apr 86)

**Turbo Turtle** is a turtle graphics program primarily designed as a learning tool for children. Uses Logo commands for graphics, but is not a full Logo implementation. Simple to use, good introduction to Logo for young children. \$59.95. Hayden, 600 Suffolk St., Lowell, MA 01854. 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 puzzles to solve. Still this is a trip in the imagination well worth taking. Requires 512K or more. \$44.95. Infocom, 125 CambridgePark Dr., Cambridge, MA 02140. CP (Apr 86)

**Airborne** is classic arcade-style game with "real" sound effects.  
 \*\*\* The player defends against an assault from flying enemies. Game noises digitized from actual recorded sounds add to the game. \$34.95. Silicon Beach, 11212 Dalby Pl., San Diego, CA 92126. CP

**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. Spectacularly impressive the first time you play; after that there are too many similarities to previous characters. Female edition should be available soon. \$59.95. Activision, PO Box 7287, Mountain View, CA 94039. CP (June 86)

**Amazon** is an illustrated adventure authored by Michael Crichton.  
 \*\*\* Unravel the fate of a doomed expedition with the help of Paco the talking parrot. Three difficulty levels, good sentence parser. \$49.95. Telarium, 1 Kendall Sq., Cambridge, MA 02139. CP (Feb 86)

**The Ancient Art of War** gives users a chance to refight some  
 \*\*\*\*\* famous 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 Diego, CA 94903. CP (Apr 86)

**Balance of Power** is the world's first computer peace game. 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 60062. CP (Prem)

**Baron** is the world of real estate, in a financial simulation. Buy and  
 \*\*\*\*\* option properties in five key areas; invest in industrial, residential, or land property; or put cash aside in high-interest accounts. \$59.95. Blue Chip, 6740 Eton Ave., Canoga Park, CA 91303. CP

**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)

**Championship Boxing** allows statistical replay involving famous  
 \*\*\*\*\* boxers. Players can modify existing boxers and can create their own fighters. Good sound and graphics. Sierra, PO Box 485, Coarsegold, CA 93614. CP (Mar 86)

**Cutthroats** casts players in this full-text adventure as a deep-sea  
 \*\* diver, hired by a band of toughs to locate shipwreck treasure. The game is very closed-ended, requiring almost Pavlovian obedience. Multiple endings. \$39.95. Infocom, 125 CambridgePark Dr., Cambridge, MA 02140. CP

**Cyborg** is a text adventure game with an interesting twist. Robot  
 \*\*\*\*\* brain is implanted in concert with yours. It scans, evaluates, and reports, then carries out actions. Word and sentence understanding is very good. Absorbing game for adventure

ers. \$39.95. Broderbund, 17 Paul Dr., San Rafael, CA 94903. CP

**Deadline** is a text adventure in which the player is a detective  
 \*\*\* called in to investigate what seems like a simple drug overdose. The family lawyer thinks it was really a murder. You have 12 game hours to find the killer! \$49.95. Infocom, 125 CambridgePark Dr., Cambridge, MA 02140. CP

**DejaVu** is an unusually good version of the old card game  
 \*\*\*\*\* "Concentration." Great graphics and sound, one- or two-player modes. Improves concentration painlessly. \$39.95. Rubicon, 6300 La Calma Dr., Austin, TX 78752. CP (Mar 86)

**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)

**Dragonworld** is an illustrated adventure in which the player  
 \*\*\* attempts to save The Last Dragon from the Duke of Darkness. Several on-screen illustrations at once. Outstanding documentation lists all words recognized by the program's sentence parser. \$49.95. Telarium, 1 Kendall Sq., Cambridge, MA 02139. CP

**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. A worthwhile adventure experience. \$39.95. Silicon Beach Software, PO Box 261430, San Diego, CA 92126. CP (May 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. \$39.95. PBI Software, 1155B-H Chess Dr., Foster City, CA 94404. CP (Feb 86)

**Gateway** comes with 3 full-color prints. You inherit a boring old  
 \*\*\* building from a supposedly rich uncle, eventually learning that the building is a "gateway" to a lost civilization. \$49.95. Priority, 635 Sanborn Rd., Salinas, CA 93901. CP (Prem)

**Gato** puts players in command of an American submarine in World  
 \*\*\*\*\* War II. This superb simulation game uses all of the Mac's graphic capabilities to really make you feel that "you are there." \$39.95. Spectrum HoloByte, 1050 Walnut St., Boulder, CO 80302. CP (Nov 85)

**Grid Wars** is a three-dimensional arcade-style game. Good play-  
 \*\*\*\*\* ability, for those that enjoy shoot-em-ups. Bizarre graphics. \$39.95. Ann Arbor Softworks, Inc., 308 1/2 S. State Street, Ann Arbor, MI 48104. CP (Apr 86)

**Gypsy** is a computerized, customizable Ouija board. More than just  
 \*\*\*\*\* a software package, users get a pasteboard playing surface and a Mouse Mover with 99 ball bearings. \$39.95. Magnum, 21115 Devonshire St., Chatsworth, CA 91311. CP (Prem)

**Harrier Strike Mission** pits you against a well defended island.  
 \*\*\*\*\* You fly an advanced Harrier jumpjet from a carrier offshore. Fair graphics and reasonable flight simulation prove that color isn't necessary in a flight simulator. \$49.95. Miles Computing, 21018 Osborne St., Bldg. 5, Canoga Park, CA 91304. CP (Feb 86)

**Hippo Computer Almanac** is a collection of interesting facts that  
 \*\*\*\*\* users access using a question and answer format. This is a game or toy, not a real almanac. \$34.95. Hippopotamus, 985 University Ave., Los Gatos, CA 95030. CP (Jan 86)

**Legacy** is a two-part text/graphic adventure. A magical orb in Drab  
 \*\*\*\*\* Castle must be found through the use of spells and careful adventuring. Well-constructed game. \$45. Challenger Software, 18350 Kedzie Ave., Homewood, IL 60430. CP

**Lode Runner** is a 150-screen action-strategy challenge that  
 \*\*\*\*\* requires a joystick for truly effective play. Move around a grid of ladders and platforms collecting treasure; dig a hole



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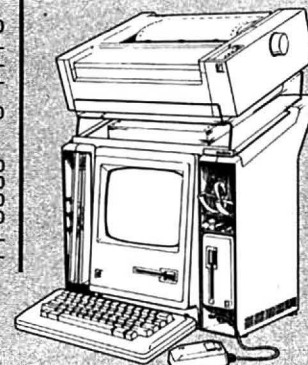
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# MINIFINDERS



to trap pursuers. Build your own challenges. \$39.95. Broderbund, 17 Paul Dr., San Rafael, CA 94903. CP

**MacAttack** puts the player in command of a super tank defending the wastes of Alaska against invaders. This 3D simulation pits you against attacking tanks and warplanes that fire heat-seeking missiles. Defeating the horde brings a graphic fireworks display. \$49. Miles Computing, 21018 Osborne Street, Canoga Park, CA 91304. CP

**MacChallenger** lets players land a space shuttle. The graphics of this flight simulator are crude and it's a hard machine to fly, but it's also a lot of fun. Version 2.0 lets you record your landing attempt (that's what most of them are!) and then review it from any of ten camera angles, a truly unique touch! \$49.95. Aegis Development, 2210 Wilshire Blvd., Santa Monica, CA 90403. CP (Feb 86)

**Macinooa Choo-Choo** is a set of electronic toy trains. Run on the layouts provided, or create your own, as complex as you wish. Create scenery using built-in tools or import fancier MacPaint scenery. \$39. Fortnum, 31 W. Sierra Madre Blvd., Sierra Madre, CA 91024. NCP (Apr 86)

**MacJack II** is a blackjack game pitting users against the house. Includes good graphics, insurance, splitting and doubling, and table limit that rises with your stake. Plays very well, and can be quite addictive. \$39.95. DataPak, 14011 Ventura Blvd., Sherman Oaks, CA 91423. CP

**MacVegas** contains seven complete casino-style games: bacarat, blackjack, craps, keno, poker, roulette and slots. All are fairly standard, but generally well designed. House rules can be selected from a menu. The games are all fun to play, but not particularly absorbing. \$59. Videx, 1105 Northeast Circle Blvd., Corvallis, OR 97330. CP

**MacWars** is a Mac version of the popular "Star Wars" arcade game. Three-dimensional graphics are sluggish at times, digitized sound is somewhat less than terrific, and playability is limited. Doesn't work on Mac Plus. Spend your quarters on the arcade version. \$49.95. Miles Computing, 21018 Osborne St., Canoga Park, CA 91304. CP

**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. Different strategic options and human-seeming associates make simulation more complete. Appeals to the closet capitalist in all of us. \$49.95. Scarborough Systems, 55 South Broadway, Tarrytown, NY 10591. CP

**Millionaire** is a financial simulation based on the stock market. "News" affects stock prices, so read it religiously. Turn a pittance into a fortune to win the game. \$49.95. Blue Chip, 6740 Eton Ave., Canoga Park, CA 91303. CP

**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)

**The Mist** is an all-text "interactive novel" based on a short story by Stephen King. Vivid graphic and sometimes gory descriptions compensate for the game's muddled sentence parser. The story is involving, while the game is overly lock-step. \$39.95. Mindscape, 3444 Dundee Rd., Northbrook, IL 60062. CP (May 86)

**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. Many positions are included so that you can learn how to play them without having to set up a whole game. An arcade-like high speed play mode is also included. \$39.95. Newsoft, PO Box 4035, Newport Beach, CA 92661. CP

**Perplexx** is a board word game based on Scrabble. Players can vary the rules and board to suit their tastes and skills. Up to four can play and the game can either be an active player or a scorer and arbiter. Has a 90,000+ word dictionary. \$39.95. Hayden, 600 Suffolk St., Lowell, MA 01854. CP

**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). No documentation to speak of. \$40. Electronic Arts, 2755 Campus Dr., San Mateo, CA 94403. CP (Jan 86)

**Planetfall** leaves users shipwrecked on a seemingly deserted planet, with only Floyd the Droid to help figure out how to get home. Two possible endings. This full-text game is written in a tongue-in-cheek style. \$39.95. Infocom, 125 CambridgePark Dr., Cambridge, MA 02140. CP

**Psion Chess** is as good a micro chess player as you'll find. This 1984 World Micro Champion makes superb use of graphics and the Mac interface. Switch between 6 languages for a touch of spice. \$59.95. Psion, 40 Lindeman Dr., Trumbull, CT 06611. CP (Mar 86)

**Real Poker** is five-card draw against five other players with Old West names, distinct personalities and playing styles, in a saloon setting. Dealing and play are very fast. Game evaluates your hand, suggests cards to keep/discard. Dynamic, exciting, addictive game. \$39.95. Henderson Associates, 980 Henderson Ave., Sunnyvale, CA 94086. CP

**Rogue** is a strategy dungeon adventure in which each quest is completely different. Randomly generated rooms, monsters and treasures keep even veterans on their toes. \$39. Epyx, 1043 Kiel Ct., Sunnyvale, CA 94089. CP (Feb 86)

**Sargon III** is a capable chess program with 9 levels of play, problem-solving modes, take back, change color, hint, manual play, etc. Easy Play option blocks Sargon from stealing search time during player's move, effectively doubling number of levels. Pieces are moved graphically. Disk stores 107 classic games for review and replay. \$49.95. Hayden, 600 Suffolk St., Lowell, MA 01854. CP (Mar 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, 1155B-H Chess Dr., Foster City, CA 94404. CP (Dec 85)

**Suspended** is Infocom's most unique text game. Using a small plastic board and six markers, the player keeps track of six uniquely designed robots which check on damage to a complex's machinery and report back what they perceive as the problem. \$49.95. Infocom, 125 CambridgePark Dr., Cambridge, MA 02140. CP

**Tycoon** is a financial simulation based on the ups and downs of commodities market. Build a fortune in pork bellies and Swiss francs, checking the "Financial Journal" for news affecting the market. \$59.95. Blue Chip, 6740 Eton Ave., Canoga Park, CA 91303. CP

**Ultima II** players take the part of a character who travels through land, sea, air, space and even time itself in a quest to find and defeat the evil sorceress Minax. Good Mac interface; excellent game; confusing graphics. \$59.95. Sierra, PO Box 485, Coarsegold, CA 93614. CP

**Ultima III** allows up to four characters to cooperate to explore the vast wilderness of Sosaria; dungeons, oceans, and the Moon Gates to help solve the adventure. \$59.95. Origin Systems, 340 Harvey Rd., Manchester, NH 03103. CP

**Webster's Revenge** is a Boggle-like word search game. Super graphics make it a pleasure to play. The dictionary is adequate and the user can always overrule it if necessary. Multiple skill levels make this a game for all. \$34.95. Shapechanger Software, 113 E. Tyler, Athens, TX 75751. CP

**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, 1034 Kiel Ct., Sunnyvale, CA 94089. CP (Mar 86)

**The Witness** is a full-text adventure that casts the player as a detective assigned to get to the bottom of a death threat. When the victim is killed, you have only one night to find the real guilty party. \$39.95. Infocom, 125 CambridgePark Dr., Cambridge, MA 02142. CP

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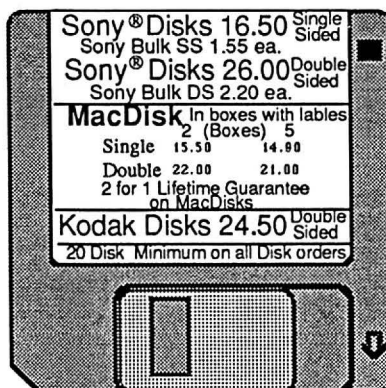
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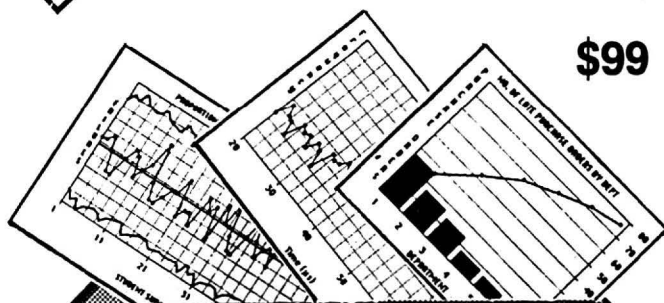
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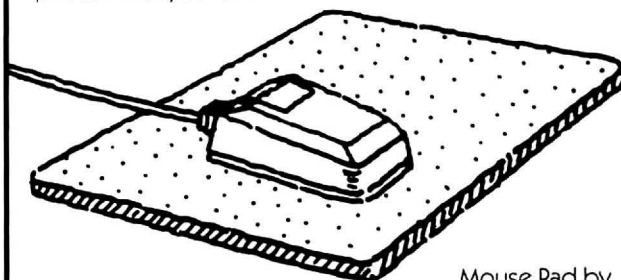
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# MINIFINDERS



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

**Word Challenge** is a *Boggle* lookalike. Features multiple (26) skill levels and an extensive dictionary. Even "pro" *Boggle* players should find a level that will challenge them. \$39.95. Hayden, 600 Suffolk St., Lowell, MA 01854. 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)

**Xyphus** is a role-playing game pitting four characters (fighters or wizards) against multiple scenarios that grow increasingly harder. Excellent Mac interface and icon control. \$39.95. Penguin, PO Box 311, Geneva, IL 60134. CP

**Zork I** is a full-text adventure game that lets players explore a strange underground empire. Parser understands full sentences; players can take many different routes to final success. Beware of the thief, who steals random objects. The ultimate text game. \$39.95. Infocom, 125 CambridgePark Dr., Cambridge, MA 02140. CP

**Zork II** is where the adventure continues in the underground 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

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**ConcertWare+** is an enhanced version of *ConcertWare*. Has different instruments and the ability to use any four of a set of eight at any point in a musical piece. Can read and use *ConcertWare* and *MusicWorks* files. The best program for those who want to listen to music on the Mac. \$69.95. Great Wave Software, PO Box 5847, Stanford, CA 94305. NCP (Nov 85)

**Deluxe Music Construction Set** is a good general purpose music program. An active piano keyboard and instant audio feedback make this program perfect for educational applications, and the advanced notational capabilities will satisfy most advanced musicians. \$50. Electronic Arts, 2755 Campus Dr., San Mateo, CA 94403. CP (Mar 86)

**MusicWorks** allows the user to create and play simple musical compositions. Music entry is by either a grid or a staff and is very easy. Users can select various instruments and modify each to produce new effects. Compositions are limited to 64 measures and overall limitations make this a beginner's program. \$79.95. Hayden, 600 Suffolk St., Lowell, MA 01854. CP (Prem)

**Professional Composer** is aimed at music professionals. Produces performance-quality sheet music; has only limited playback facilities. \$495. Mark of the Unicorn, 222 Third St., Cambridge, MA 02142. CP

## HARDWARE & ACCESSORIES

**A+ Mouse** is a replacement mouse. It works by optical tracking on a special mousepad. Good choice if the original mouse fails. \$99. Mouse Systems, 2336H Walsh Ave., Santa Clara, CA 95051.

**The Easel** is a compact and portable carrier for up to 20 disks. Can be converted into a standup rack for desktop use. Solidly made, attractive and useful. \$19.95. Innovative Technologies, 5731 La Jolla Blvd., La Jolla, CA 92037.

**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.

**Hard Disk 20** is Apple's entry in the exploding hard disk sweepstakes. This quiet, small unit uses Apple's new Hierarchical File System (HFS). The lack of utility software (spooler, backup, security is its only drawback. \$1499. Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014. (Feb 86)

**HyperDrive HD20** is an internal 20-megabyte hard disk. It only adds about 5 pounds to the Mac's weight. Good, full featured unit with all common utilities: spooler, security program and backup utility. It could use memory a bit more efficiently, and it remains to see how well it will work with Apple's new HFS. \$2195 installed in a 512K Mac. General Computer Company, 215 First St., Cambridge, MA 02142.

**MacCharlie** is one of the most unusual Mac products imaginable. Its components slip around the Mac and the keyboard and convert the Mac into an IBM PC clone. Amazingly it works well. The enlarged keyboard has a few bugs but is a joy to use. \$1,195 with 256K RAM and one floppy drive. \$1,895 with 640K RAM and two floppy drives. 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., 1055 First St., Rockville, MD 20850. (Jan 86)

**MacNifty Stereo Music System** converts Mac sounds to simulated stereo by splitting highs and lows between two powerful speakers. User controls bass, treble, balance, low and high impedance output, and most importantly, volume. Hear your music compositions the way they were meant to be played. \$79.95. Kette Group, 13895 Industrial Park Blvd., Minneapolis, MN 55441.

**MacNifty Switch** allows any port on your Mac to connect to two peripherals. Turn the knob to switch between the two devices. \$34.95. Kette Group, 13895 Industrial Park Blvd., Minneapolis, MN 55441.

**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)

**Mac Turbo Touch** is a mouse replacement device. Features include 2.5-inch diameter track ball with control buttons to either side. Users either love it (and refuse to use anything else) or hate it; very few so-so's on this product. Takes a few days to get used to. \$129. Assimilation, 485 Alberto Way, Los Gatos, CA 95030.

**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.

**Maglic** is both the most intimidating and easiest to use digitizer available. Use a regular video camera for input. Once the crowded screen is mastered, any effect is possible. \$399, \$549 with camera. New Image Technology, 10300 Greenbelt Rd., Seabrook, MD 20706.

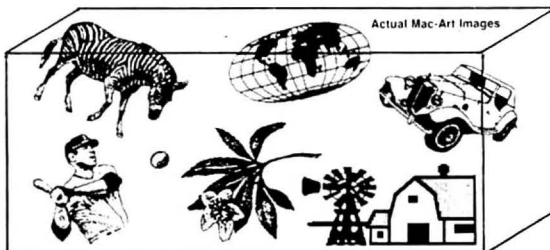
**Moustrak** is a fabric covered foam mousing pad. It will increase the efficiency of your mouse while helping to keep it clean. Pad comes in a variety of colors. Particularly useful in the typical office desk top environment. \$10. Moustrak, 3047 St. Helena Hwy., St. Helena, CA. 94574.

**Numeric Turbo** combines a track ball with an enhanced numeric keypad. The keypad includes working cursor keys and other direct function keys that bypass the Mac's Command and Shift keys. The track ball takes some getting used to and some never learn to like it. Those who do rarely ever use a mouse again. \$149. Assimilation, 485 Alberto Way, Los Gatos, CA 95030.

**ThunderScan** replaces the ribbon cartridge in an ImageWriter, which is required to use it. Laser scans art that can be run through the ImageWriter, producing high-quality digitized images. The images can be manipulated as they are created or afterward. Mac Plus compatible using optional adapter. Output has been optimized for LaserWriter. \$229. Thunderware, 21 Orinda Way, Orinda, CA 94563. NCP



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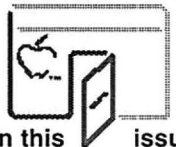
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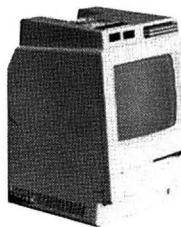
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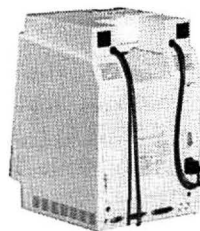


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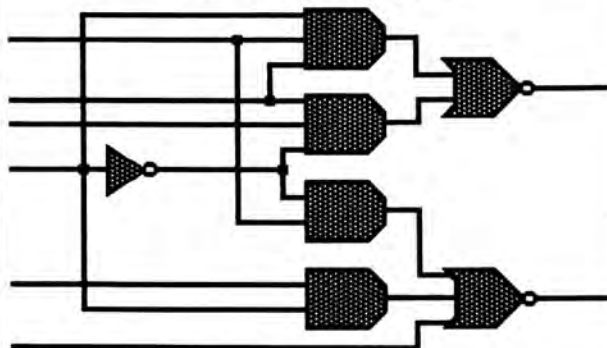
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# FIRST IMPRESSIONS

(continued from page 92)

sional image won't take the trouble to cultivate their jobs once they get them. In other words, you can't win.

Computer-generated resumes fall somewhere into a middle ground. On the plus side, they immediately let the reader know that you're comfortable and proficient with computers, and that you're well-organized enough to keep such important documents on file. On the down side, a personnel agent might wonder how many updates you keep on file.

Most of us own ImageWriters, and when printing in high-quality mode, it produces a perfectly acceptable resume. No one but the very nearsighted will ever wonder whether it's been typeset (a plus when you're applying to the sort of person who hates to see a typeset resume), and chances are, the fact that you own such a good printer will subtly speak in your favor.

That doesn't mean you shouldn't consider printing your resume on the LaserWriter, though. If you have access to one, use it—at least for a few of your copies. It does indeed give the impression of having been typeset, and if you're concerned about making a good, polished impression, the neatest and most attractive resume counts heavily. Besides, if you also print your cover letter out on the LaserWriter, your reader will figure out that it was computer-generated—or, they'll think that you went to an enormous amount of trouble to typeset a cover letter just for them. Either way, you'll win.

## EXPERIMENTATION IS THE KEY TO SUCCESS

Once you've created a master resume that contains all the key information you want others to see, experiment with different styles. Play around with fonts and style points like boldfacing and underlining. Set your margins differently and try centering portions of text. Print out each of your style changes to see how it looks. All you have to lose is about an hour's worth of time, a few sheets of paper and a little wear and tear on your ribbon or toner cartridge. All you stand to gain is a great new job. ☞

# LOOK AT IT THIS WAY

(continued from page 44)

disk, on a Mac XL and on a Mac Plus. The publisher says that some early copies may have some launching problems on Mac Pluses, due to their copy protection.

*MacSpin* ran well in *Switcher* with both *MacPaint* and *MacWrite*. Its preferred *Switcher* partition is 224K, but it will run in a 128K partition. The 224K partition will allow *Switcher* (running on a 512K Mac) to also load two other applications into 128K partitions, while allowing space for *MacSpin* to load the largest sample dataset provided. *MacSpin* does contain a SIZE resource, so the correct K values show up in *Switcher's* Configure dialog.

## THE BIG PICTURE

*MacSpin* is the premier tool for seeing the big picture in your data. You can look at some of the variables some of the time, but you can't look at all the variables all the time. A synergistic tool like *MacSpin* can help you decide which variables to look at when, and from what viewpoint. The analytic power of the brain can be realized more fully than ever before.

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## MACSPIN

Overall Rating:	■ ■ ■ ■ ■
Follows Mac Interface:	■ ■ ■ ■ ■
Printed Documentation:	■ ■ ■ ■ ■
On-Screen Help:	None
Performance:	■ ■ ■ ■ ■
Support:	■ ■ ■ ■ ■
Consumer Value:	■ ■ ■ ■ ■

**Comments:** Unique and powerful graphic data analysis program handles multivariate data in an intuitive, highly visual manner. **Best Features:** Ease and speed of manipulation of complex datasets. **Worst Features:** Can't print other than by screen dumping, and standard copy and paste to and from the Clipboard are not implemented. **List Price:** \$79.95. Mac XL and MacPlus compatible. Version Reviewed: 1.00, December 31, 1985. Published by D<sup>2</sup> Software, PO Box 9546, Austin, TX 78766-9546. (512) 482-8933.

# T I P S H E E T

(continued from page 129)

& Decker DustBuster! I found that the DustBuster nozzle fits into the drive perfectly, and about two to four seconds is all it takes. You won't believe how much gunk came out! Note: Be sure the nozzle is squeaky-clean when you insert it. There's no reason to make a dirty drive dirtier.

**Bill Wagstaff, River Vale, NJ**

*Ed: We found this more than a little incredible until we tried it out for ourselves. The nozzle did indeed fit perfectly, we removed a lot of dirt from our drives and the hardware suffered no damage at all.*



When you want to clear a disk, don't just throw everything away—initialize the disk instead. When you choose ERASE DISK, the Mac gives back a disk with 395K free, while when you initialize it, you get 399K free.

Use the initialization technique only if you're sure you don't want the material on it. You can fool the Mac into thinking you've inserted a new disk by pressing the little black button on the inside right front of the Mac's internal or external drive and holding it down until the computer gives you the "Initialize disk?" dialog box. Now, insert the disk and click on the initialize button after the disk drive stops spinning. Sometimes this doesn't work, so you might have to try it a couple of times.

**George Tseng, Los Angeles, CA**

*Ed: Newer Finders (versions 5.0 and up) reinitialize the disk when you erase. But another trick for those using Finders 5.0 and higher is to hold down the OPTION, COMMAND and TAB keys when inserting a disk. You'll be asked if you want to reinitialize it.*

## SWITCHER



Installing the *Finder* as a *Switcher* application has many advantages: you can shift files around between disks, but more important, you can also launch another (non-loaded) application.

Once the *Finder* has been installed, you can simply move into the *Finder*, launch the new application, cut or copy what you need, and then switch back to the application you were working from (*Switcher's* double arrow remains in use even with the non-*Switcher* application). You may find you'll have to re-install the *Finder* once you've left the non-*Switcher* application, but this method is still much faster than having to quit and then re-install the whole *Switcher* set.

**Andy Katz, Ithaca, NY** ☞



# PICTURE PALETTE

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**ELLIOT GOULD/Colchester, Vermont**

This painting was drawn entirely freehand. I used the four pixel paint brush with "Desktop" gray to draw the general outline of a particular feature of the face, then I shaded it using the same paint brush and an appropriate fill pattern. The detailed areas, such as the cheek under the right eye, the chin, and the area below the eyes, were drawn with the pencil in Fatbits.



**STEVE MOMII/Seattle, Washington**

I wanted to try a cartoon so I first drew out a rough picture of the characters I would include and their positions. I began the Mac with freehand black lines. The mouse was created in much the same way. I drew a single disk, added the same legs from the mouse, and lassoed and copied it to create its partner. The apple proved to be the most difficult since it was overlapped by the Mac. Shading was mostly done with the paint bucket and paint brush using three different dot patterns. Fatbits was valuable in editing and erasing. The keyboard and birds were done with freehand black lines and shaded with the paint brush.



**CLAUDE GOMBERT/Calgary, Alberta**

Most of the drawing was done with the mouse and the smallest brush tool, except for the fire crackers, which were drawn by dragging and copying the same circle. The areas were filled with a variety of different patterns. Fatbits was used extensively for small details.



**MARLENE PADEN/Salem, Oregon**

This portrait was done with the various size paint brushes, and lots of Fatbits for the detail areas (eyes, nose and mouth).



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### POINT TOOL OPTIONS:

- \* Cartesian absolute point
- \* Cartesian increment point
- \* Existing point
- \* Midpoint/Vector point
- \* Point on the existing arc
- \* Polar absolute point
- \* Point on the grid

### LINE TOOL OPTIONS:

- \* Line to absolute point
- \* Line to relative point
- \* Line to existing point
- \* Parallel line
- \* Parallel to existing point
- \* Perpendicular line
- \* Between two existing points
- \* Polar absolute line
- \* Polar increment line
- \* Line to point on grid

### ARC TOOL OPTIONS:

- \* Circle/center, radius
- \* Circle/existing center, radius
- \* Circle/existing center and point
- \* Arc/two existing points, radius
- \* Two existing points and center
- \* Arc and Tangent line
- \* Arc/center, radius, angles
- \* Arc/existing center, radius, angles
- \* Circle/3 existing points

### FILLET TOOL OPTIONS:

- \* Two lines fillet
- \* Arc-line fillet
- \* Two arcs fillet
- \* Point-Arc fillet
- \* Tangent between two arcs
- \* Tangent between point, arc
- \* Fillet all corners

### TRANSLATION TOOL OPTIONS:

- \* Translation, remove existing groups
- \* Translation, multiple groups
- \* Translation, N Times
- \* Translation to existing point
- \* Translation of entities
- \* Rotation, remove existing group
- \* Rotation, multiple groups
- \* N Times rotation of the group
- \* Rotation to existing point
- \* Rotation to mouse location

### MIRROR TOOL OPTIONS:

- \* All entities about X axis
- \* All entities about Y axis
- \* Group about X axis
- \* Group about Y axis
- \* Group about X axis (Hatch)
- \* Group about Y axis (Hatch)
- \* Group about X slope axis
- \* Group about Y slope axis

### GROUP MENU OPTIONS:

- \* Group identification by region
- \* Group identification by entities
- \* Remove group identification
- \* List of internal groups
- \* Remove internal group
- \* Change group name

### SPLINE TOOL OPTIONS:

- \* Points from file (read curve fitting text file)
- \* Key in points (keyboard entry)
- \* Contour offset (for closed circumference)
- \* Open offset (for open contours)

### ZOOM MENU OPTIONS:

- \* Scaling
- \* Cursor Window
- \* Scrolling
- \* Basic Scale
- \* Absolute axes
- \* Relative axes
- \* Axes to point

### HATCH MENU OPTIONS:

- \* New contour hatch
- \* New entities hatch
- \* Edit old hatch
- \* Remove old hatch
- \* Repaint hatch
- \* Repaint pattern

### TEXT MENU OPTIONS:

- \* Edit text (New Text, New Text Rectangle, New Text Table, New Comment, Old Item, Remove item)
- \* Position text (Move with mouse, Move with coordinates, Move to existing points, Change Rectangle with mouse, Change width of

rectangle, Margin Left, Vertical Spacing)  
\* Text Justification  
\* Repaint Text

### INTERSECTION TOOL OPTIONS:

- \* Remove ends of lines
- \* Remove end of one line
- \* Line-Line (identify segments)
- \* Chamfering
- \* Line-Arc (remove segment)
- \* Line-Arc (identify segments)
- \* Arc-Arc (identify segments)
- \* Point of intersection line-line, arc-line, two arcs

### FULL PLOTTING OPTIONS:

- \* Configurable to Roland DXY Series, Houston Instruments DMP Series, Hewlett Packard, Graftec, Gould, Apple Color with plotter communications flexible enough to adapt to virtually every plotter available
- \* Standard A through E Size Drawings

### LIBRARY MENU OPTIONS:

- \* Copy symbol
- \* Save symbol
- \* Remove symbol
- \* Copy as a group
- \* Symbols list
- \* New Library (unlimited)
- \* Old Library
- \* Full rescaling of any symbol or groups of symbols

### LINE TOOL OPTIONS:

- \* Solid line 1
- \* Solid line 2
- \* Solid line 3
- \* Dashed lines
- \* Center lines
- \* Change type

### MULTIPLE DRAWING LEVELS:

- \* Sixteen distinguishable layers per drawing

### DIMENSION TOOL OPTIONS:

- \* Horizontal Dimensions
- \* Vertical Dimensions
- \* Horizontal Dimensions (Datum)
- \* Vertical Dimensions (Datum)
- \* Circular Dimensions
- \* Angular relative X axis
- \* Slope Dimensions
- \* Delete Dimensions
- \* Precision
- \* Change/insert tolerance
- \* Position of Dimensions
- \* Repaint Dimensions

### GENERAL MENU OPTIONS:

- \* New Window
- \* Grid
- \* Repaint
- \* Sorting
- \* Data Base Dimensions

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by John C. Dvorak

## OF SEXISM AND SILICON SINNERS

The Macintosh is a screwball computer and it attracts screwballs to it. For the most part, this is a good thing because many of the creative types out there are screwballs (you know who you are) and so the Mac gets some of the most interesting software. When religion, bigotry and narrow-minded pig-headedness enters the equation, though, then tolerance for screwballism fades fast.

It happened a few weeks ago. I decided to review a couple of new Mac games. Both must have been written by fanatics of one sort or another. The first is considered one of the finest Mac games of the year and the other was brought to my attention as the most offensive software package ever seen (to date).

*MacGolf* came first. It's been reviewed in the pages of this magazine and it's one hot game. Except for the hokey screen rewrites that make the game take as long as a real game of golf, it's a fun example of elaborate interactive games. As I played with the thing I kept mumbling about the screen handling, which includes a complete (and sluggish) screen rewrite even when nothing has changed in the picture.

The game shows a golfer hitting the ball with nice digitized sounds of balls falling into the drink, crowds shouting "yay" and stuff like that. There are plenty of parameters and the game is fantastic.

Anyway, that's what I thought until I showed the game to a female golfer. She wasn't used to a 140-yard 9-iron shot. In the real world when she hit a 9 iron it went 40 yards. "280 yard drives!" she exclaimed. "Where's the girl golfer?"

Yeah, where is the female golfer? Will it offend someone to have a female golfer who doesn't hit the ball quite as far as a male golfer? If you have to make up for it, then just make her a better putter.

Okay, just as I was figuring that a female golfer in the game would offend some feminist somewhere in Berkeley I

received a copy of the most insensitive, and to my mind, the most self-righteous and possibly most offensive adventure game imaginable.

The game is called *Real Life—the Greatest Adventure of All*. It walks you through a town where you are confronted by whores, derelicts, gamblers, panhandlers, bums, sleazeballs, scuzzbags and immoral clergymen. Yeah, *REAL LIFE*. Just like in Anytown, USA.

The game is written by some sort of self-righteous Bible thumper. You know the kind. Smile on his face; Lord in his heart; sinners everywhere. The idea of the game is to take you to some sort of understanding of real life. This is done by introducing you to some religious fundamentalist concepts (a.k.a. religious fundamentalist bigotry). You walk by



the Catholic Church, St. Gerard's. You're introduced to Father Mike. What do you find out about Father Mike (and presumably all Catholic Priests)? "Father Mike is a great guy. Especially on Bingo Night, after a few beers." This is followed by a snide remark about Catholicism.

The Catholics are not the real brunt of the program. It's when you arrive at the United Protestant Church that you experience the nastiness of this program. Here you find a church that once boasted 5000 members, but now has only 500. Hey, it's obviously because of its doctrine: "humanistic with a touch of scripture." The preacher talks about "social reform, women's rights and about the virtues of Communism." Not Communism, mind you, but the virtues of Communism. Finally the program tells

you that the preacher is a practicing homosexual.

To hear the preachers preach in any of the churches you have to keep punching the mouse button to let time pass until you get to Sunday. It's then that you find out that the preacher at the United Protestant Church is named Reverend Bruce (what else?!). He even talks with a lisp! Give me a break! What is this software company's problem? In this game of *Real Life*, the world is filled with slime, the Catholics are stupid Bingo addicts and anyone who doesn't belong to the Fellowship Church is a gay stereotype.

Right you are, I forgot to tell you about the Fellowship Church. That's the good one with the best parishioners. In fact, it's "the fastest growing in town." It has a "strong scriptural foundation."

Golly, I wonder what Church the programmer belongs to? Hmmm, let me guess.


So the program lets you roam around and listen to all sorts of "foolish" people who don't know anything about real life. Heck, they are atheists and agnostics and college kids, and what do any of them know? Nothing, that's what. Why? Because they don't go to the Fellowship Church, that's why.

All the while the program quotes the Bible at you and encourages you to have sex with strangers, roll in the hay and drink and smoke and gamble so the program can deduct points from your score. After all, we are all sinners.

You have plenty of opportunity to be a scoundrel. Curiously enough, the beginning of the game asks your age and sex. One category is "under 13." Even if you click that level, it doesn't seem to affect the game one iota. In fact, YOU, as a 13-year old still get propositioned for a roll in the hay. It's sick.

The program goes so far as to condemn you for giving money to a beggar. All beggars are really rich and have limos. You're a sucker! If you take a wrong turn and decide to leave via the door of death (suicide) it condemns you with a dozen screens of scripture. Hey, do it! It's a game—nobody died!

This is a game to avoid. I think back a day or so when I last saw *MacGolf* and I now could care less about the girl golfer or anything else. Let's keep politics and ideology and bigotry and religion out of the computer room and off the floppy disk.

It's time to amend the constitution. We need more than separation of Church and State. We need separation of Church and Solid-State! 





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