

MacUser

02579

THE MACINTOSH™ RESOURCE

86 Ways to Get More Out of Your Mac

IF MICE HAD WINGS
Flight Simulators on the Mac

PERFECT FORMS
Comparing Form Design Applications

THE PUBLIC DOMAIN
150 Classic Programs. Why pay more?

NEW 20-MEG HARD DISKS
Apple & HyperDrive Coming on Strong

THE MODEM IS THE MESSAGE
A Novice's Guide to Exploring National Databases

A STEP BEYOND FILEVISION
Business Filevision—How Much Better?

THE POWER USER'S MANUAL

High Performance Hints & Tips for Your Macintosh



When the Macintosh first came out, everyone looked at it and said, "Wow, wait 'till the gaming wizards get ahold of this baby..." And some of them did. But some of the "quick and dirty" products that have appeared have left some entertainment software for the Mac a little disappointing.

Here at **Miles Computing**, software designers who simply will not put up with second best, or half-baked concepts, have delivered entertainment products of such intensity of effort and such depth that our designers say "Wow, wait 'till people get ahold of *this*..."



MacAttack! was the first, an amazing best-selling programming feat. It's a 3-dimensional tank battle zone simulation where you defend a city in your radar-equipped Sherman Tank. You must survive by out-manuevering conventional and heat-seeking missiles coming from your opponents who can only be eliminated by accurate shooting on your part. Deadly tanks and planes roam about in this unique game with three levels.



Harrier Strike Mission is follow-up to MacAttack! in a tour-de-force of Assembly language utilizing sensational 3-D graphics. This flight combat simulator features the famous Harrier Jump Jet, a fighter aircraft which can maneuver like a heli-

copter but has all the punch of the latest in modern jet armament. You are pitted against an enemy-occupied island firing heat-seekers, not to mention fighter aircraft in mid-air combat. You must take off from an aircraft carrier, take out the command post and fuel depot on the island and return to your ship. With two skill levels and your choice of day or night mission, mouse or joystick controls, it's the ultimate 3-D flight combat simulator.



Then there's **Fusillade**. You're the last person stuck on Planet Fusill, and must defend a city from power-hungry kamakazee

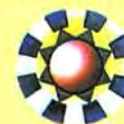
Miles Computing Entertainment Software. The Promise Fulfilled.

looters in a fast-action shoot-out which escalates at dizzying speed as wave after wave attacks your position in over 30 knuckle-whitening levels. Mouse, keyboard or joystick controlled.



If real trouble is what you're looking for, **MacWars** has it. Miles Computing just can't keep away from 3-D, and this one has a black planet strewn with a deadly obstacle course of surface and sky targets through which you fly your laser cannon-

equipped and shielded space ship. On the way to the enemy's planet-sized space station you must survive waves of enemy space paraphernalia, and only your mouse or joystick stand between you and destruction as the waves keep coming, and coming, making things "rather difficult indeed" for you.



For those who want to exercise brain muscles, we have **Overlords**. The object is galactic domination, with power struggles. Struggles against whom? Well, up to 32 players, that's who!

Players can be either people or the Macintosh itself, or can even be linked up via Apple Computer's Apple Talk network, the very first game to do this. You can have multiple players on one computer, or link up to other computers, each player with its own strategy and personality. You can use the

ships that come with it, over a dozen, or design your own, and by zooming in and out over the Galaxy, set out for high adventure.

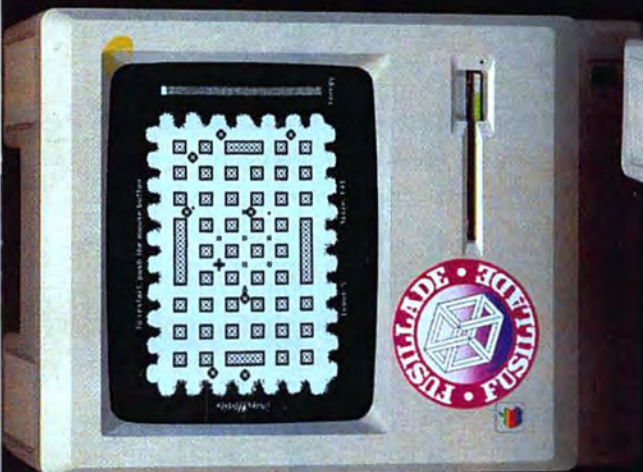
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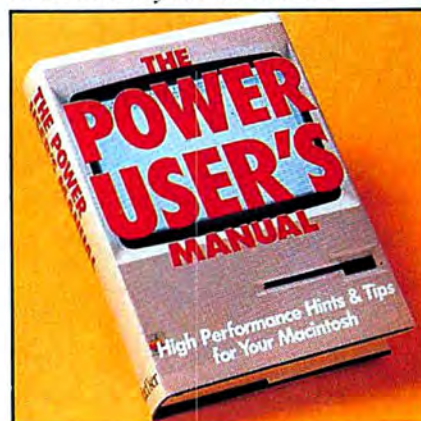
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Cover Photo by Harold Sinclair



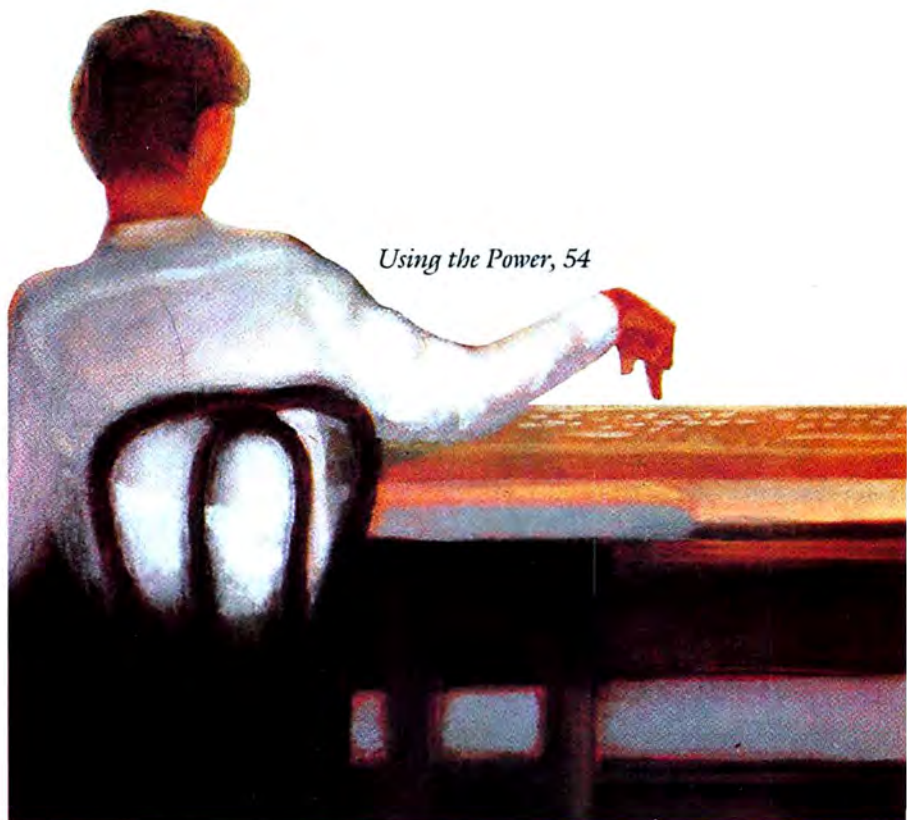
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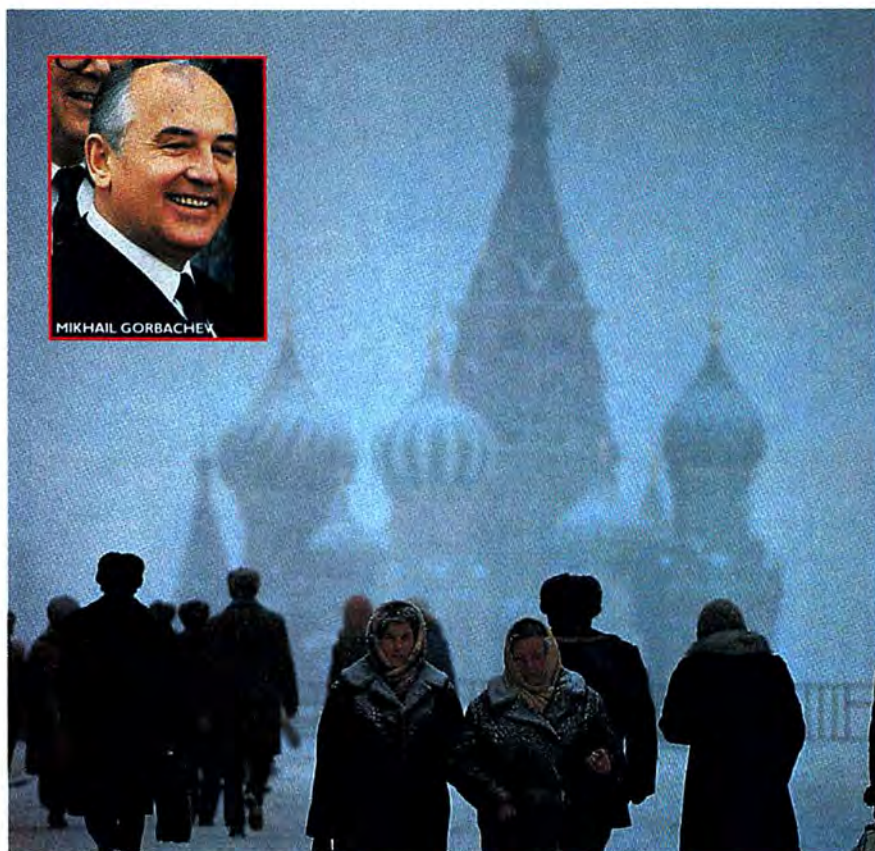
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MIKHAIL GORBACHEV



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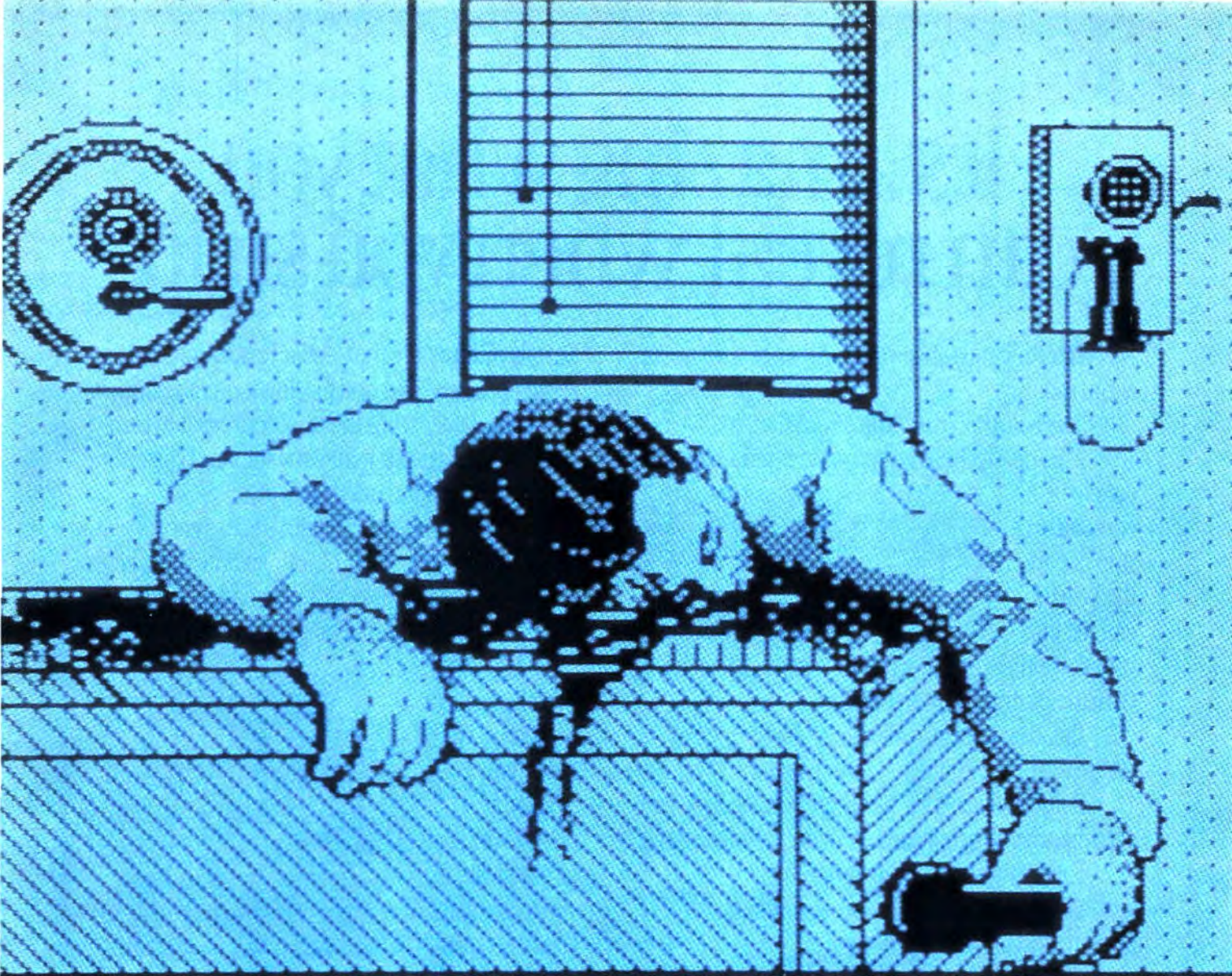
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If you think you've played this game before, you're dead wrong.

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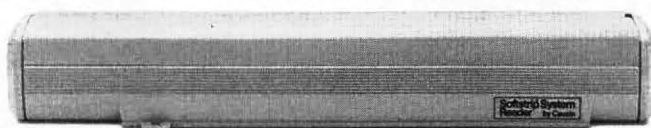
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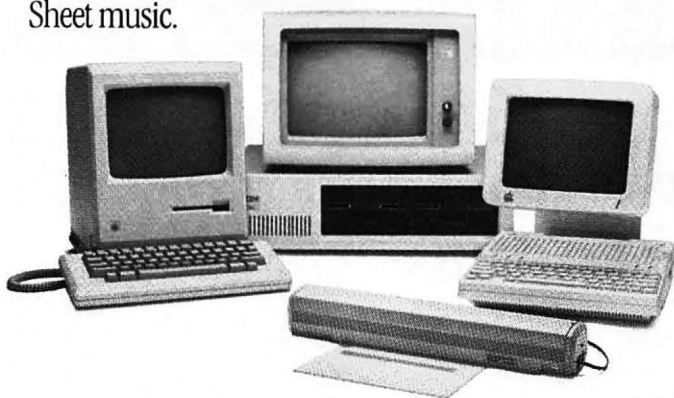
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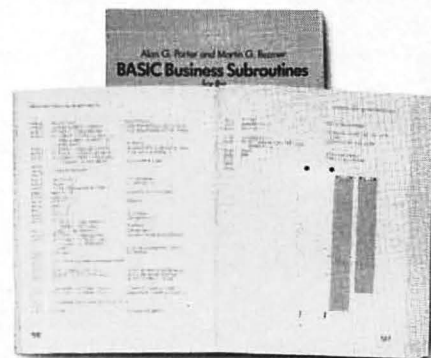
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demonstration.**

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2 TUMBLING MAC

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Softstrip

1a |

1b |

1c |

2 |

Softstrip

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The MACazine

“This program is a powerhouse. Its vital statistics are impressive.” *Infoworld*

“It’s hard to imagine a style, format, or other reporting need that the program couldn’t address.” *Infoworld*

“Loading OMNIS 3 is simplicity itself.” *New York Times*

“The power and useability of OMNIS 3 is limited only by the individual’s imagination.” *Macworld*

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OMNIS 3



Blyth Software

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IF IT WERE UP TO ME

by Neil L. Shapiro

As you're reading these words, Apple's stockholders' meeting is either recent history or is about to happen. You may already know for certain what, if any, improvements and enhancements Apple has announced to the Macintosh line.

It would be silly for me to predict anything as I write this in November. At best I would look like I was operating with inside information and, at worst, I could come off looking like the Dom DeLuise of computer magazine editors.

Instead, I'm just going to tell you what I think that Apple *should* announce at their meeting—improvements that would garner my own seal of approval. If Apple doesn't announce any of these things, well, either I'm wrong or a multi-million dollar international corporation is. Courageous, no?

PLUGGING AWAY

Take a long, hard look at the Macintosh marketplace, and at the computing marketplace generally. Thumb through the ads in this magazine and then other magazines that cover the general field, magazines such as *Byte*. Then pick up both *PC World* and *PC* (you don't have to buy any magazines other than *MacUser*, just look at them in a bookstore).

You'll see a very surprising difference in the secondary marketplace for the IBM PC and PC-compatibles and that for the Macintosh. In the PC and general-interest magazines there is an abundance of hardware advertised; plug-in boards of every variety, shape, description, function and price. Why, if you're willing to spend the money on the plug-in boards, you can actually turn the IBM PC into a worthwhile state-of-the-art computer.

Ads in Mac magazines, on the other hand, are almost exclusively software ads or feature such peripherals as hard disk drives, modems and printers. There's a whole category of advertisers missing because there's been a whole category of possibility missing from the Mac.

Slots, internal ports; call them what you

will, the Mac doesn't have any. Inside the clamshell-tight case beats a heart as inaccessible as Scrooge's before the first ghost.

Apple has got to open the Mac.

Why? I don't *know* why! But I remember when I first popped the lid off my Apple II in 1978 and looked at all the empty sockets on the motherboard. I had no idea what was ever going to plug into those things.

Of course, that idea of slots turned out to be one of the cornerstones that the years of Apple II development were based upon. Indeed, when Big Blue was copying old ideas for their new PC, they were canny enough to pick up on slots.

I was at the press conference in New York when IBM unveiled their brand new personal computer (it was right after the discovery of fire). The audience was evenly split between two camps of journalists. The first forecast that IBM would be showing a computer that was designed



well enough that it would be capable of being heavily marketed and that, with IBM's marketing clout and name, it would be a runaway best-seller. The other group had a sort of laid-back attitude and, knowing IBM would have vast marketing clout, weren't sure that they wouldn't be showing something so ill-designed that no one would buy it, no matter how many ads they bought.

After a histrionic stage show that absolutely escapes my memory at present, the IBM PC was unveiled.

The color demo was great. Scintillating logos and flaming patterns in very good resolution. OK, I figured, so a team of programmers worked a year on that. . . .

The disk drive was shown and the amount of storage gleefully described. So all right, I thought, they're on track.

Then they showed the inside. Slots. A bunch of them.

Gulp.

I turned to the guy next to me, "They've done it," I said. "They've made a real computer."

With slots it doesn't matter what a computer does when nothing is plugged in. The possibility for the future suddenly expands into uncharted, unforeseeable, exciting vistas.

I had a bit of a shock when the Macintosh was released with long screws with funny heads holding it together. This, I thought, could be a mistake.

Apple started calling the RS-422 ports on back of the Mac "virtual slots." Hardware designers, Apple said, would be using those ports just as if they were slots. So I decided to wait and see.

I waited. I saw. The ports didn't take the place of slots. There's not a whole industry connecting to them the way there are industries filling the slots in the Apple IIs (well, let's not get into the IIs) and IBM PCs of the world.

Don't get me wrong. With or without slots the Macintosh is my choice as best all-around computer. I'm just a little worried that without hardware expandability via slots there may be numerous ways to enhance a Mac that never got born.

I don't care how Apple does slots. Expansion boxes. Upgradeable motherboards. I'll even settle for a new machine I can't upgrade to, but will have to start stealing money from the family emergency fund again for.

So when the stockholders' meeting is held (and I'm going to try to be there), I'll be the fellow-stockholder in back chanting, "Slots, slots, slots..." under his breath.

MEMORY, COLOR AND COLOR

The Resource Manager in the Mac ROM is a wonderful thing. That's the part of the Macintosh ROM that loads into memory the part of the program presently needed from disk and then tries to manage things so that there are the least number of disk accesses. Basically, the more memory you have the better this management is (and, already, I am shuddering at what my programmer friends are saying about me for such a simplistic explanation).

Add more memory, better and faster programs become possible. I'd like to see Apple announce a 2-megabyte Mac upgrade that is affordable. Frankly, I'd like to see a 10 or more megabyte upgrade, but I'm willing to wait.

Although there are very good memory upgrades out now and available from reputable secondary sources, it would make a big difference if Apple released an

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THE EDITOR'S DESKTOP

Extremely Corpulent Mac. For one thing, it would settle such things as how the memory should be addressed and how such memory should be mapped; it would standardize. Once the standard was in place, many more software manufacturers would program their wares to take advantage of such memory upgrades.

Couple such a memory upgrade to the new hard disk drives and you have a machine that any business can conjure with. It would blow away anything else even near to its price class. Providing, of course, that the upgrade doesn't add astronomically to the price.

Color. There are two kinds of color, and I think Apple should announce both kinds. The first is a color-capable Mac. So much has been said about color on the Mac that I don't want to reiterate it all. I *don't* feel color is critical, but I think it would be used if it were available.

The second kind of color may seem silly at first—the color of the case. Already I have a bunch of friends moaning and groaning about the white cases planned; everyone I know seems to hate the color. How about some designer colors? That color choice might seem silly, but it's really the very last conceptual thing separating the Mac from entering the real consumer marketplace. It's worth a try!

Well, keep in mind that none of the above are predictions. But I'll buy more Apple stock if they come about.

IS THE MAC A DO-BEE?


The only aspect of the Macintosh software market that I've been personally disappointed in has been the at-home, educational (or at least child-oriented) software. Unlike most other computer systems, there are not as yet many programs just for kids.

There are some, and a good proportion of what we do have is pretty good.

Why isn't there more? The usual reply from manufacturers is that the Mac does not have color and it's quite expensive. Neither reason makes a lot of sense.

Anyone who has ever watched an entranced 5-year-old playing with *MacPaint* knows that color is not important if the program is designed well to take advantage of the Mac's many strong points. Kids all seem to love the Mac just as it is.

Expensive? Sure it is. But there's a handle on top and I bet a lot of poppas (and mommas!) would bring their Macs home from the office for the kids to play on if there was software to buy them.

All in all, I think that at-home, educational software for the Mac is a rich vein of gold just waiting to be mined. 

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For all of you who thought Dennis Brothers was crazy to give away MacT^{EP}, here's MicroPhone.TM

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, MacT^{EP}.

Which he proceeded to give away.

MacT^{EP} was a classic. The first standard in Mac communications.

Now he's created the second: MicroPhone. A program that goes far beyond any communications software currently offered for any computer.

MicroPhone is so sophisticated, it cuts through the worst tangles you encounter when you go on-line. A delight to the experienced. And a saviour for the novice.

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,SM Delphi,TM 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.

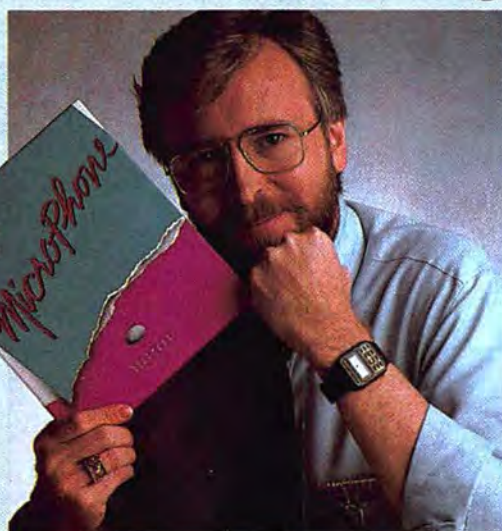
Dennis gives you two ways to create these macros. The first is to set MicroPhone in the Watch Me,TM the recording mode.

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.

Using Watch Me or the Script window, or a combination of both, you can automate log-ons, file transfers and unattended operations. And navigate back into the farthest reaches of any database with a single stroke.

Make files fly.

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.

MicroPhone also features an editor desk accessory for composing text in mid-session using familiar Macintosh editing techniques.

But enough talk. See for yourself what Dennis Brothers has done now to advance the cause of telecommunications. Just take any major credit card in hand and call us toll free to place your order.

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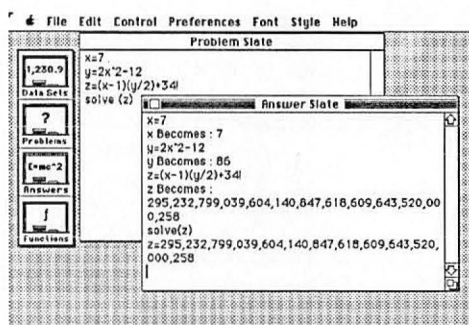
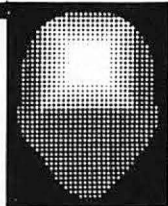
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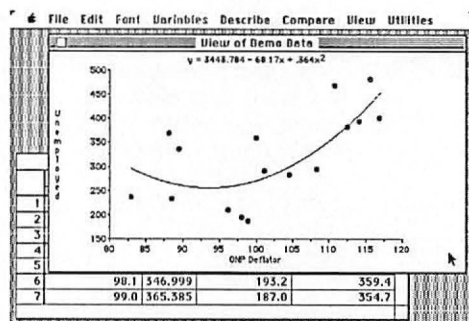


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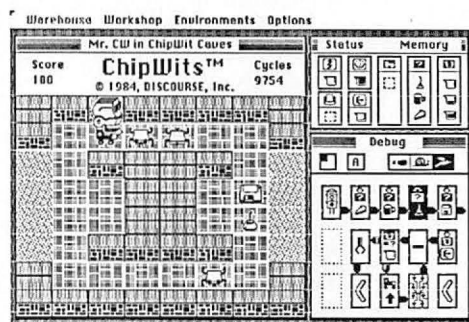


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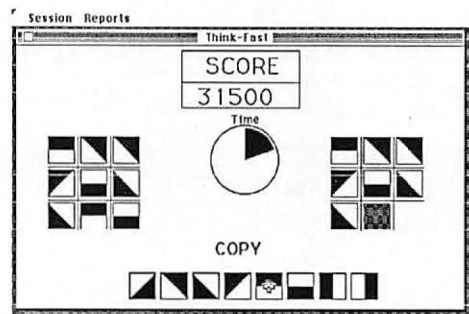
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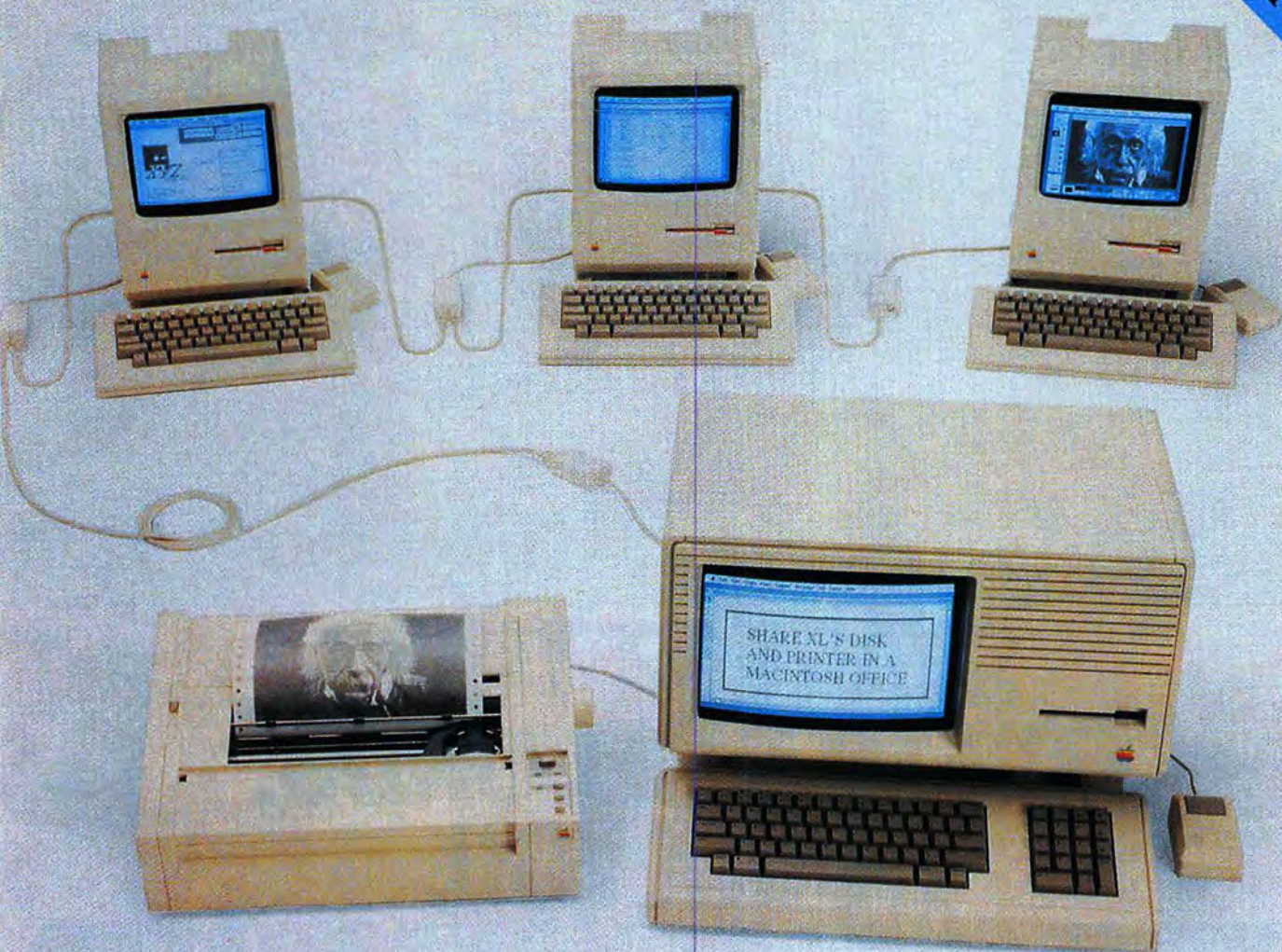
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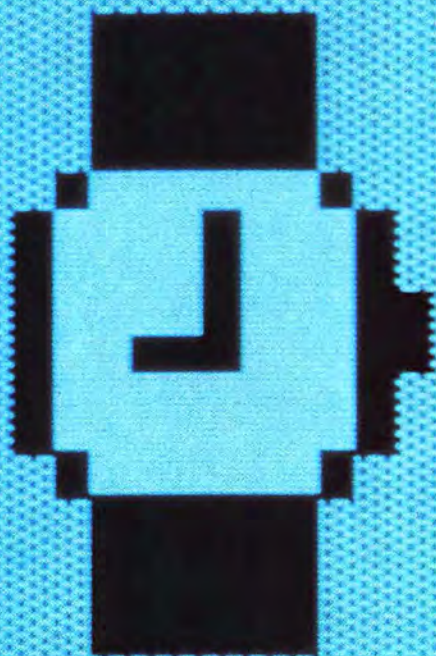
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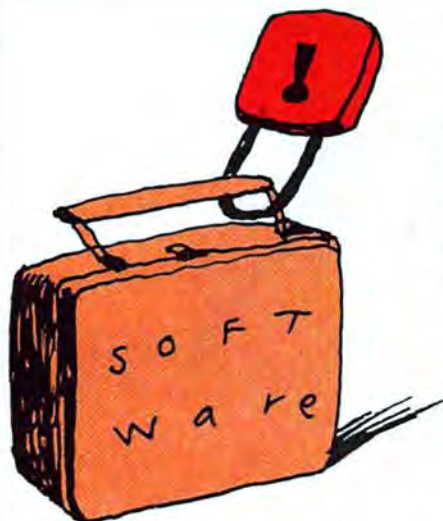
from the Mac Community

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.*

LIGHT AT THE END OF THE TUNNEL

I made a special trip to the shopping mall and found a copy of your November issue. I have read everything that I could get my hands on regarding the Mac since I purchased my Mac last January. I found more useful information regarding the Mac in this one issue of MacUser than I've found in the last year.

Colonel R. Dimore, Jr.
Wadsworth, OH



BLACK FLAG, WHITE FLAG

You make some excellent arguments against piracy, but they have one flaw: They don't take into account the woefully common software practice of wild overpricing of programs with serious bugs.

Piracy will continue until software producers provide programs that do what they say they will do, do it well, and do it at a reasonable price.

Alan Friedman

The alternative to copy-protection, however, is not necessarily service. When I buy a program (and I do buy the software I use), I need no such support. In fact, if extensive user support is necessary, the software is probably deficient. I suspect that the only solution to piracy is a more reliable method of registering legitimate owners, coupled

with aggressive prosecution of copyright violations (where copies can be traced to the original purchaser/copier). They say that the only "shareware" software that made its author any money is *Red Ryder*. This is a very good product with a nasty warning about the author's "ugly lawyer." The combination seems to work.

Tom Pittman
San Jose, CA

There is a particular function that I would like to perform on my Mac. According to several write-ups I've read, there is a package (\$60 list) that might do the job for me. There is another package, \$500 list price, that most certainly will perform the function. If I come across a bootleg copy of the \$60 program, I'll keep it (and won't feel guilty). Hell, I am willing to pay. But I won't pay for a "pig in a poke." If I come across a bootleg copy of the \$500 program, I'll keep that too. Absolutely no one will have been cheated out of any money at all because I absolutely will not consider purchasing the product and, therefore, the bootleg will not be a substitute for a purchase. Don't compare it with "stealing software off the shelf," since in that case, someone will most certainly have lost something of value (independent of whatever value I may have gained). Be advised that I actually prefer purchasing software legally, but I like better odds when I gamble.

George M. Dick
Mount Holly, NJ

I agree with Mr. Cantor that a program someone uses should be purchased (November Issue). Mr. Cantor and other software authors have a right to be paid—and we have a right to programs that do what they say they will, do it as they say it will, and do not cause problems that didn't exist before we bought the package. Perhaps, after all, Mr. Cantor's problem is just the other side of the coin, a reaction to buying "junk" software, software that has "only a few bugs" and that doesn't quite do the job.

Thomas B. Walker
Keene, NH

MAC PUTS US IN BUSINESS

Your tone of voice, attitude and general presentation is great, and is one reason that the Mac has such a following already among literate but non-computer-oriented people. The Mac, it seems, is the

one to turn on people who were previously wary of getting involved with personal or small business computers. Speaking personally, I have a son who is a computer science major, so I was at least somewhat computer-literate when I started looking. But I do not like IBM and no one can tell me that I should have one of their machines or one of the clones. Then this group discovered the Mac, *PageMaker*, the *LaserWriter*. . . and voila! We are about to launch a magazine that will be done 99% on that combination of hard- and software.

Dee Giles Forsythe, Editor
Executive Monthly
New Bedford, MA

MOVING MESSAGES

I want to take animation scenes from *VideoWorks* and put it on videotape for the purpose of playback on a regular TV or other monitor. I am making educational tapes for patients and find other means too impractical or expensive. I feel that animation will give me the freedom of creativity to allow me to express the message I want to my patients. I need a hook-up that can be used for videotaping. Do you know of anyone who has attempted this? I know you can hook-up the Mac directly to a large screen monitor but can you also hook it up to a VCR, and, if so, is the resolution acceptable? I would appreciate an answer, I wrote *MacWorld* but they never replied!

Ronald L. Cox
Poplar Bluff, MO

What you need is a GENLOCKable signal, which is produced by only one device, the CHROMATRON, a scan converter made by Beck-Tech. The CHROMATRON will also give you color images from the Mac screen. . . the device is scheduled to ship in January '86. Beck-Tech can be reached at (415) 548-4054.—David Biedny

THE CREATIVE EDGE

There are several publications out there reviewing software and informing the Mac public of new devices available for the Mac. But yours is the first I have seen print technically oriented material to assist those who are interested in being able to modify/create on the Mac rather than just use off-the-shelf applications. We are starving for information presented so that we can understand it. We are willing and able to pay you to teach us.

Gregory A. Filak
Elizabethtown, PA

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QuickPaint

The one tool to have when working with MacPaint drawings. Lets you find and retrieve your drawings wherever you are. Retrieve and Paste pictures into MacWrite™, Jazz™ or MacDraw™ without having to close the application. Includes a full disk of clip art to enhance your documents and drawings... **\$49.00**

"QuickPaint is a real winner... you will want it as a permanent part of all your MacPaint-compatible applications" ... MacNews

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A hardware memory upgrade to bring out the full power of your Mac. Convert your Mac to a 1.5 million byte speedster... configure a 1MB memory (RAM) disk and watch MacWrite load in 3.2 seconds instead of 30 seconds. Or configure a 1MB application space and run 8 applications concurrently with Switcher AND a 400k RAM disk! Includes The Max™ from MacMemory and sophisticated management software from EnterSet

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"QuickSet excels at communicating via icons, and little touches show a real understanding of the way people work."

... Macintosh Buyers Guide

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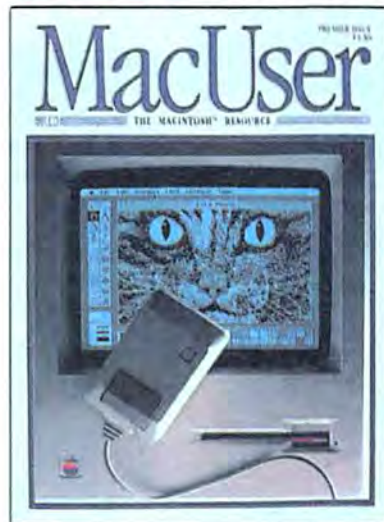
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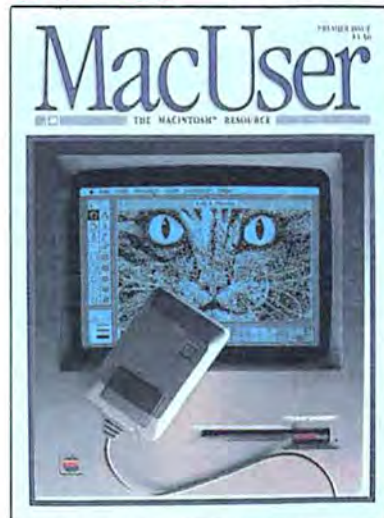
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LETTERS

from the Mac Community

SORRY, NO CENTERFOLD

I want to commend you on your new magazine. Being a novice user on the Mac, I find your articles very informative and easy to comprehend. Your format is carefully laid out and actually enjoyable. It's sorta like reading "Playboy" without the pictures.

Ken Penalver
Alameda, CA

WHERE ARE THE CHOICES?

I am getting sick and tired of all the hoopla for spreadsheet and database programs. What most Macintosh users really need are more and better word processing programs to choose from. After all, people—even businessmen—use computers more for writing than for anything else. And clearly, there are more Macintoshes in homes and on campuses than at business offices. Do you know of any new and powerful word processing programs on the horizon? How about a variety of decent word processing programs for the rest of us?

Edwin Bernbaum
Berkeley, CA

New word processors and spelling checkers are almost ready, so look for them in the next few months. Also, keep an eye out for coverage in this area from MacUser in a future issue.—Daisy Genovese

IN OUR BEST INTEREST

I particularly enjoy the MiniFinder columns that you print in each issue of MacUser. I find them to be an excellent and compact source of information about software that is available for the Macintosh. However, I wish that you would add copy protection status information to each MiniFinder entry. No more space would be required if you added letter symbols under the mice. For example:

CP is copy protected
NCP is not copy protected
NCPE is not copy protected version available at extra charge
CP? is copy protection status unknown
Some of the rest of us will not buy copy protected software.

James C. Lester
Wappingers Falls, NY

Check out the MiniFinder section in this issue, where you will see that we have taken your suggestion. Thank you for your input.—Daisy Genovese

There Are TWO Reasons To Use a Modem

No. 1--To Reach The Mac Underground™

Mac Underground is a nationwide network of "SafeHouses" that supply serious Mac users with outrageous industry info and state-of-the-art equipment. You reach the Underground using a 300/1200 or 2400 baud, Hayes-compatible modem.

The content of our daily and weekly reports—coupled with the low cost of our hardware—has made dealers and suppliers take frequent trips to their restrooms.

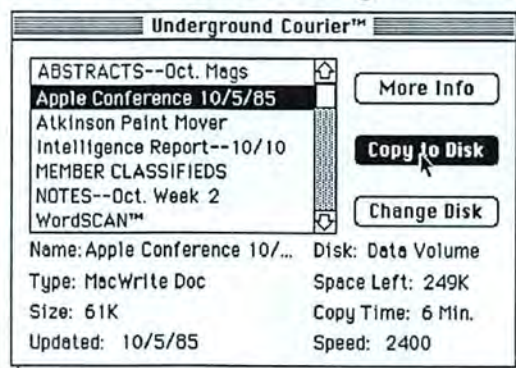


"Mac Underground is a unique organization, founded and run by honest, friendly, straight-ahead people. Highly recommended!"

Doug Clapp and Pat Ryall from *The Complete Macintosh Sourcebook*.

"The Mac Underground is a sociological footnote to the technological revolution."—Marc Halberstadt, Publicist with *Antic Magazine*.

No. 2--To Use Underground Courier™ Software



Underground members use Courier to make modem contact with a SafeHouse.

Once inside a SafeHouse, members can copy choice public domain programs, in-house software, weekly and daily intelligence reports all over the phone.

Courier also represents a landmark in telecommunications. It requires no typing or prior knowledge of teletype jargon—just pointing and clicking!

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"This could become THE standard in telecommunications." Mel Beckman, Senior Programmer at Pace Financial—an IBM VAR.

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 - Member Classifieds for seekers or sellers of used equipment & talent
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A Message from the Director

If you've ever read my *On the Road* column in MACazine—and enjoyed it—I would encourage you to join the Mac Underground. In our Underground publications I have virtually NO editorial restrictions! The result? You get material I could never put in the Mac mags.

When you call us (or write) we'll give you the phone number of the SafeHouse nearest you. We'll also send you a free copy of Underground Dossier! See you online?

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Jerry Daniels, Director of Mac Underground-USA

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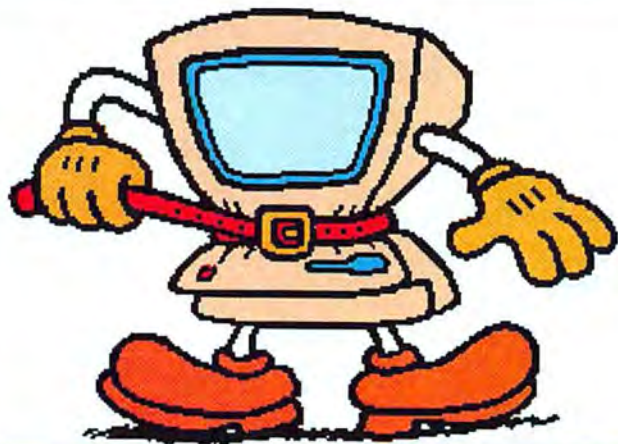
New ON THE MENU

THE LAZY MAC'S GUIDE TO COLOR GRAPHICS

This month's Unusual Product Award goes to Channel Productions, makers of "The Computer Graphics Color Packet." For under \$20, buyers get eight Cello-Tak color sheets, the kind of colored cellophane used by commercial artists to guarantee a color's consistency. Cut out the cellophane to fit printouts of charts or graphics, then stick the shape over the black and white image. A graphic knife is included. You could pick up the same thing for about half the



price at an art supply store, but on the other hand, it is awfully cold out there. . . . —TFH



BOOT UP, SLIM DOWN

Nutri-Calc lets Macdieters analyze and plan diets according to calorie, sodium, cholesterol, protein, carbohydrate, iron, Vitamin C and fat content needs. The source of the program is the USDA Home and Garden Bulletin (number 72), which covers 870 foods including infant formulas, brand name items, and fast foods. Users can add up to 130 foods of their own choice. The pro-

gram maintains the dieter's nutrition history, even allowing for one-to-seven-day averaging. *Nutri-Calc* includes a Target Daily Allowances database that lets Mac owners input their own gender, age and weight. And it even runs on a slim 128K Mac. \$79.95, from CAMDE Corporation, 46 Prince St., Rochester, NY 14607, (716) 473-5330. —TFH

TRENDY FINANCES

Want to chart financial data from Dow Jones News/Retrieval or CompuServe? Golden Rule Inc.'s *TrendStar* could turn out to be a good investment. This integrated software package combines a database manager with systems that can handle graphical analysis, price quotation and portfolio analysis. Quotations are fed into the program,

which analyzes and displays the information according to user-defined standards. The portfolio analysis section tracks multiple portfolios or diverse markets. Portfolio accounting includes margin positions and net worth calculations. *TrendStar* is by Golden Rule, Inc., 3314 Halsted St., Chicago, IL 60657, (312) 929-2592. —TFH

LOOK FAMILIAR?



It does if you've owned or used an Apple II. What's it doing on what looks like a Mac screen? It's there courtesy of *II in a Mac*, a new emulator from Computer: Applications, Inc. for 512K and larger Macs. This product, due on the market in January, features four floppy drives, a RAMdisk, joystick, language card, clock, keyboard buffer, hi-res graphics (naturally!), 68000 system calls and on-screen help.

Users can connect their Macs and Apple IIs either directly (using the standard ImageWriter cable) or via modems and phone lines. The package contains software for both machines. When running *II in a Mac*, the Mac will be able to run virtually all Apple DOS 3.3 and ProDOS programs.

The intended list price is under \$50. Check with Computer: Applications, Inc. for availability at 12813 Lindley Dr., Raleigh, NC 27614. (919) 846-1411. —SB

RUMOR MANAGER

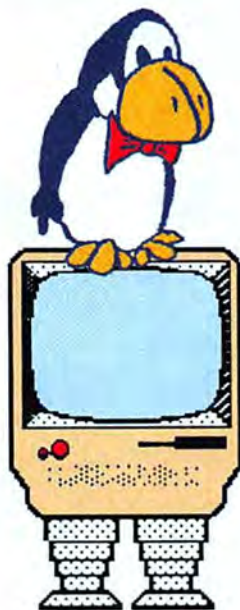
Apple's annual meeting is approaching as fast as the deadline for this issue and the rumors of what is to be announced are legion: Mid Macs, Mac Plus, 800K double-sided drives, megs and megs of memory... the folder we use to hold the rumors just burst (that's a rumor, not fact)... Apple has hired a Rumor Manager so that they know what rumors are current (and true)... CD (compact disk) readers (from Apple and third party vendors) will be on the shelves within 4 months

... write once CD-ROMs are not much further behind... John Dvorak and his faithful dog Sparky will be publishing their own computer industry gossip rag, RSN... look for a breakthrough in spelling checker technology from a new company... don't believe that some high-ups in Apple and some ex-high-ups are talking to each other... the Mac case color debate is nowhere near settled, with Ice White (like the LaserWriter) coming under increasing fire... Lotus is

wavering in its support of Jazz; it was barely mentioned in the last few issues of *Lotus' magazine*... a new (and better than AppleTalk) networking protocol for small offices is about to be announced by a major East Coast communications company... the first Mac plug-in board will be a modem (one is already virtually ready)... hard disk prices will drop 50% by the end of the summer, sooner if a hard disk on a card, rumored to be under development overseas, ap-

pears... floppy disk prices will surge, then drop sharply as manufacturers drop production of the larger disks in favor of the 3.5-inch double-sided disks... small developers looking to make a killing will have to turn to vertical markets as the big guys cut each others' throats in the mass Mac market... a high-ranking Apple manager was asked to leave a major university's computer center at 3AM recently—the allegation was “making too much noise...” —SB

WHOA, THAR, BOY, YOU'RE IN MAC COUNTY NOW!



Berke Breathed, creator of “Bloom County” and the hottest cartoonist this side of “Doonesbury,” is rumored to love his Mac so much he designed a character around it. The Banana PC 9000 was last seen making offerings to the Great God of Television after learning that its parent company, Banana, had gone belly up.

The Apple Follies also made it to the pages of “Doonesbury,” when Mike Doonesbury's mad scientist college roommate turned up out of the blue. It seems Bernie's working at Steve Jobs' new company now, developing “user-devoted” computers for the huddled masses. —TFH

WHO YOU GONNA CALL? QUESTBUSTERS!



Have a problem solving an adventure game? Drop a line to “QuestBusters,” a newsletter devoted to news, reviews, and hints exclusively for adventure game players.

“QuestBusters” is sponsoring a first-anniversary contest. To enter, just name

the sequel to *Zork I*, include a business sized, stamped, self-addressed envelope, and send it all off to QuestBusters, 202 Elgin Court, Wayne, PA 19087. You'll get a free copy of “The Adventurer's Newsletter” just for entering. Subs cost \$15 a year. —TFH

APPLE AND PERSONAL PUBLISHING IN JOINT PROMOTION

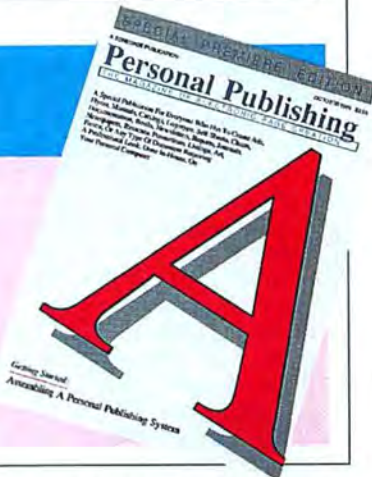
“Personal Publishing,” a new magazine devoted to desktop publishing for Mac, IBM and Amiga owners, got a helping hand from Apple Computer, which blanketed the country with 250,000 mailed promotional packets.

The promotion offers a

free year's subscription to “Personal Publishing,” provided that an Apple dealer stamps a card certifying that the respondent had been given a demonstration of the Apple LaserWriter. The offer expires at the end of January. Mailings were

sent to publishers, architects, designers, and other professionals whose work involves micro-based publishing.

“Personal Publishing” should be on the newsstands by the time you read this. A year's subscription costs \$30. —TFH



New ON THE MENU



THE MAC BUG OF THE MONTH

This month's prize goes to V. David Barton of White River Junction, New Hampshire for bringing the following "feature" of Microsoft Word to our attention.

When typing in italics, Word shows the spaces between letters as perfectly adequate on the screen, but the same text printed on the Image-

Writer shows no space between words. The only solution is to type 1 or 2 extra spaces between each word when using italics (2 extra spaces is best). This defeats the what-you-see-is-what-you-get Mac interface.

A \$25 check and a special prize (for the solution) has already been sent to David. Get your bug

reports in and you may be our next lucky winner. Send your reports to Bugsy, c/o MacUser Magazine, 25 W. 39th St., NY, NY 10018. Remember to include all the details, such as what Finder, what fonts and what desk accessories were in the system, and exactly how you stumbled on your critter.—SB

MAC LEMMINGS

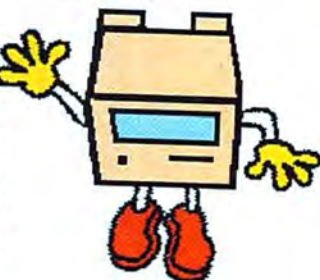


It's enough to make Steve Jobs roll over in his corporate grave.

In November Apple announced a plan to integrate its products into an "IBM-defined world" of computer systems. "We're a lot more pragmatic today," said Apple CEO John Sculley. A large part of the new corporate strategy includes a new commitment to working with independent software developers, who previously found Apple suspicious of their technologies and overly secretive about the Mac's design. But Apple appears to be pulling out all the stops to develop and support technology that can interface Macs and PCs in the office environment.

Apple's announcement seems a little belated, coming on the heels of DataViz' announcement of enhancements to MacLink. DataViz recently started shipping a version supporting translations between Displaywrite/DCA on the PC and word processors like MacWrite for the Mac, leaving style options intact. DataViz promises that the new two-way translators can reformat text files into word processing documents between machines. MacLink also lets users transfer Lotus 1-2-3 files to Jazz or Excel (alas, you still can't export files from Jazz). The package includes a PC disk, a Mac disk, and a manual for \$125. An additional \$30 buys an eight-foot interface cable. Get more information from DataViz Inc., 16 Winfield St., Norwalk, CT 06855, (203) 866-4944.

With pcLink, Mac owners can also integrate their computers into Digital Equipment VAX environments. The package allows file transfers between the Mac and VAX systems via a direct RS-232 connection or through a modem. pcLINK performs required data conversions for text files and supports MacBinary. VT100, VT220, ADDS Viewpoint 60 and Televideo 950 terminal emulation on the Mac is supported. pcLINK's command feature lets users construct customized communication applications like having the Mac wait until a designated time, dial a host, log on, then upload files to a designated directory, all without having an operator present at either end of the link. This power is pricey, with users paying from \$2000 to \$15,000, according to the number of computers on the host system. If this sounds up your alley, contact Pacer Software, 1227 Pearl St., La Jolla, CA 92037, (619) 454-0565.—TFH



DAVID COULSON

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

BatteryPak	1.1
ChipWits	1.1
Copy II Mac	4.3
ExperLISP	1.04
ExperLogo	1.1
Factfinder	1.1
Fedit	3.5
Finder	4.1
Font/DA Mover	2.5
Fontastic	2.3
Front Desk	1.0
Gato	1.3
Hayden Speller	1.2C
Helix	2.0r5
Home Accountant	1.02
Jazz	1.0
Just Text	1.09
MacDraw	1.9
MacPaint	1.5
MacProject	1.0
MacWrite	4.5
MS BASIC	2.1
MS File	1.01
MS Fortran	2.1
MS Word	1.05
Multiplan	1.02
OverVUE	2.0
Quick & Dirty Utilities, Vol. 1	1.5
Red Ryder	6.2
Smartcom II	2.1D
Switcher	4.4
ThinkTank 512	1.1
TimeBase	1.6
Turbocharger	1.11
VersaTerm	2.00



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Have you ever tried to fit your Macintosh on a standard computer table? Most of the time it's a one-size-fits-all proposition. You and your Mac lose out. Because most computer tables just can't accommodate the unique dimensions of the Macintosh. But MacTable is different.

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MacTable was created by famed Danish designers Jakob Jensen and Derek Dennis. Macintosh users themselves, they are best known for their award winning design of Bang & Olufsen stereo systems.

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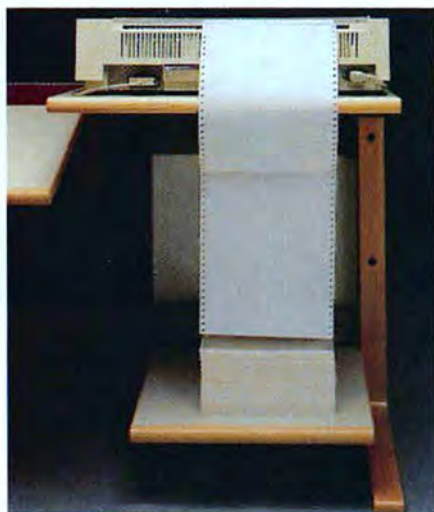
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New ON THE MENU

FWB Software's *Hard Disk Util* is actually four programs that allow users to move copy-protected software on to a hard disk. *Hard Disk Util* modifies copies of the original program to

"eliminate abnormal disk formats and protection." Included programs are *Hard Disk Util*, the patching program; *Bozode-Clone*, which eliminates disk errors; *Jazz Fixer*, specially made for Jazz;

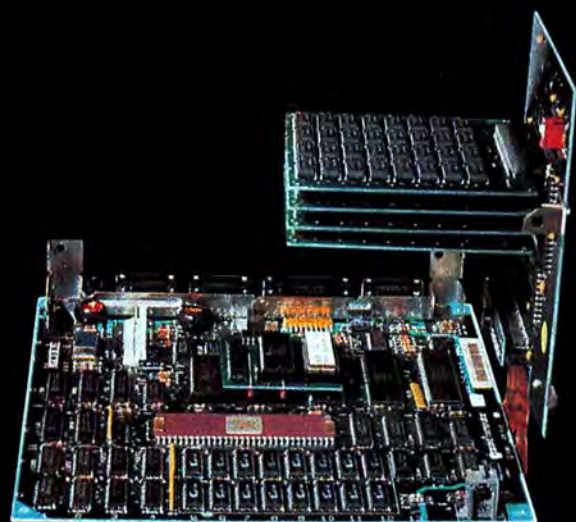
and *MacClone*, a quick, general-purpose copy program. It retails for \$89.95. Get more details from FWB Software, 2040 Polk St. Suite 215, San Francisco CA 94109, (415) 474-8055.

MEDIMAC

That doctor in the house can spend more time with patients and less with paperwork with CMA's Medical Office Management Mac 512K system, designed to suit the needs of up to ten practitioners. The program, which requires a 5-megabyte or larger hard disk, features a billing module, a claim form preparation system, a patient chart history module, a financial history reporting system and a recall system. For example, the patient accounts receivable mode includes

a time of service Super-Bill, daily transaction logs and bank control reports, end-of-month statements and detailed aging and collection reports. The system was designed to work in the AppleTalk environment, but can be used with a single Mac just as easily. The package retails for \$1,995.95 though lower priced versions are available. For more information, contact CMA Micro Computer, 55722 Santa Fe Trail, Yucca Valley, CA 92284, (619) 365-9718.—TFH

JACKIE SHAPIRO



Micro Conversions' 1/2/4™ Megabyte Upgrade

Inside every Macintosh beats the heart of a superb machine. However, the sad fact is, most Macs will never have enough memory to run the major integrated software packages wholly from memory. Or perform other tricks. But yours can.

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THE NEW GEM USER INTERFACE (By Our Investigative Reporting Operative)

Responding to Apple's threatened lawsuit, Digital Research, Inc. (DRI) has agreed to redesign GEM (a misnomer) to avoid similarity to Apple programs. An intense investigation [that spared every expense (on the orders of the boss)] discovered what the new GEM will look like. DRI has selected a metaphor perhaps even more familiar than the Mac's "desktop."

The computer itself is the Kitchen. GEM will now have Doors in place of Windows, Shelves and Refrigerators instead of Folders, a Garbage Disposal for the Trashcan, and Cupboards in place of disk icons. Shopping Lists replace the obvious but too-similar Menus. Up to four Cupboard Doors can be open at one time (double-density Cupboards count as two Doors). Need I add it has Cuisinarts, Blenders, Toasters, etc. Instead of desk accessories. The Countertop metaphor replaces Mac's desktop. The cursor is a Spatula or Hotpad. The mouse is now called a Roach, also a familiar item in kitchens.

To Cook (launch) with an application (Dish), open the Oven Door and move the Dish from a Shelf or the Countertop with the Hotpad. To select an existing document (Food), open the Refrigerator Door and carry it to a Dish with the Spatula and double-flip. To begin a new application, don't return to the Countertop—just flip the Oven control to Clean, then select another Dish or Food from the Breakfast Counter (a kind of MiniFinder). To work on a new Food while in a Dish, save the Food to the Refrigerator or Freezer, Wash the Dish, and select Leftovers from the Shopping List. There is still only one font, but the user has the style choices of Plain Vanilla, Bowled, Italian, and Underscour.

Like the Mac, the document must match the application—text files (alphabet soup icon) fit snugly into the word processor (saucepan icon). Spreadsheets are cookie sheets, and its documents are, of course, cookies. This seems even clearer than the Mac. The Blender counter accessory permits the mixing of text and graphics. Tidy up the Countertop by selecting Paper Towel from the Shopping List. Food placed in the Garbage Disposal can be retrieved by the Plumber if the user has not used

a Paper Towel on the Countertop. Food is locked by placing it in the Freezer Door and unlocked with Defrost. A Cupboard Door is locked by placing a Key in its Keyhole. While locked, you can Peek through its Keyhole, but can't place anything on the Shelves, even with Pork. To print, place Food on tables. Quality is determined by whether you place it on the Kitchen or Dining Room table.

You will be able to share Foods among several Kitchens when the Food Server network option becomes available this spring. Kitchens are connected by Halls. The network, called a House, can accommodate up to 32 Kitchens. One Kitchen is the Master, and Food is transported around the House by Kitchen Maids. Food from other Houses can be brought in via the Intercom (modem), or by Butlers.

A Microwave option speeds processing, but doesn't work on large batch files. A degree of multitasking is possible by moving Pans (smaller than Dishes) from the Countertop to the Rangetop, or by using the Toaster or Crockpot counter accessories.

Graphics are much improved over earlier GEM releases. Pie charts, especially, look good enough to eat.

Error handling is similar to the Mac's Alert Box. For instance, if you forget to close the Refrigerator Door, Mom (the Kitchen Supervisor) forces you to stand in the Corner until you do. Here they have done a good job—in tests, any inappropriate command given to Mom resulted in the user being sent to Bed without Food.

DRI may still be in trouble. The debugger icon, a Raid can, bears a strong resemblance to *MacPaint's* spray can.

Other features: Editing has several Mac-like options including Gut, Baste, Slice, Dice, Chop, Grate, and Julienne Fries (now what would you pay?). When you use keyboard equivalents, the Roach scurries off into a Roach Motel icon. System shutdown is accomplished by closing the Kitchen Door. The Scrapbook equivalent is the Recipe File. The Notepad equivalent is found under a little magnet icon shaped like a banana. It resides on the Refrigerator Door.—*Russ Coffman* (originally published in the Atlanta Mac User Group's superb journal, *Fishwrap*.)

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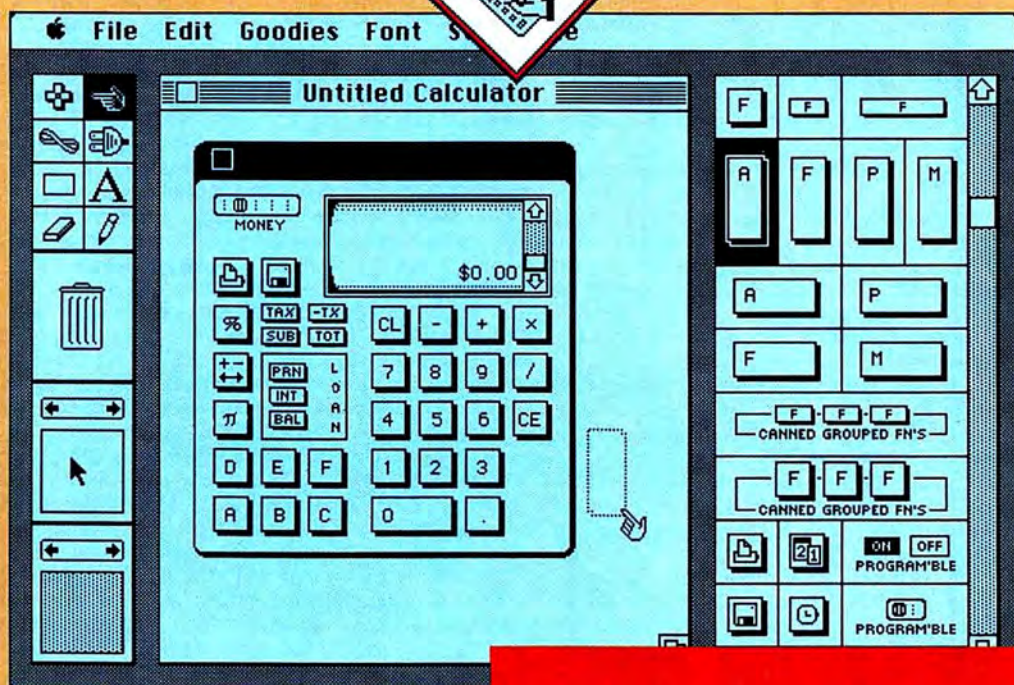
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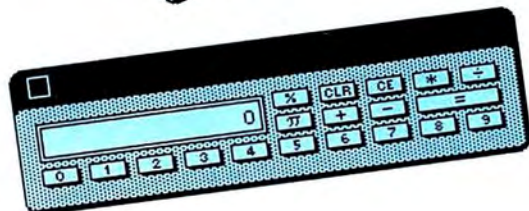
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SOFTWARE TO GO CRAZY BY

by Michael D. Wesley

Innovation with just a touch of craziness. That's what Macintosh is all about. Do you want a real Macintosh product? Not something ported over from another system or philosophy or way of life, but the real Mac•oy? (Sorry, but I have never been able to resist the temptation to pun.) All you have to do is add one part technical innovation and one part inspired code to a few thousand hours of hard work. Throw in a touch of marketing savvy, then sprinkle on the most important ingredient—the lightest dash of lunacy.

Magic Slate from Devionics is a Mac product with just the right amount of lunacy. It doesn't quite follow the Mac interface in some ways and yet when working with *Magic Slate* you sometimes get an eerie feeling that the program knows more about the Macintosh than you do. It is a graphics tool for people like me, who have no artistic ability once you take away the ruler and graph paper. (Or like Bob Hayden, who handles the marketing for *Magic Slate* and claims to have flunked Crayon 101.)

Magic Slate lets you create wonderful and outrageous designs in mere minutes. It has some amazing special effects like Zoom and Nest that will make you squeal with delight, and you never quite know what you might get if you keep playing with them.

Naturally enough, it has a lunatic manual that starts with a one-line introduction before leaping directly into the meat of the program. The manual sometimes skips over details, like how to do a particular thing. And the first half was prepared on an ImageWriter. Of course, the second half was done on a LaserWriter. But the manual is brilliant in conveying the philosophy behind the program; that software should provide

"personal enrichment," and that the best way to learn how to use *Magic Slate* is to play with it. That's great. As a former school teacher, I think the best way to learn about anything is to play with it.

Magic Slate was designed by a crazy person, Russ Gray. I haven't met Russ yet, but I have spoken to him. He's great. His code may not conform entirely to the Mac interface, but Russ knows what he likes and he understands the machine on a level that most of us will never know about. And Russ understands us. As he says, there are a lot of Mac users who were really excited about *MacPaint* at first, then became very depressed when they realized they couldn't draw the Japanese lady.

A lot of little things were left out of



Magic Slate, like being able to save a graphic directly, so the program would have room for even more features and to keep the program consistent within itself. Russ told me his biggest problem was finding room for all of the things he wants to include. For example, several menus are called from other menus.

This is a valuable tool. *Magic Slate* can teach a rank novice very sophisticated techniques and concepts of design. After working with the program for a while, you begin to understand things like balance, composition, and rhythm. And it's easy to carry these new understandings over to other areas, thus developing a new appreciation for art and graphics. Besides, *Magic Slate* is a lot of fun.

Another slightly lunatic product is *Puzzle 512*. Actually, *Puzzle 512* is a very straightforward program with a slightly lunatic name. It is a personal financial

planning program originally designed for use by professional planners, but easy enough for anyone to use. Robin Herney, the programmer, says the name comes from the concept that financial data are like the pieces of a jigsaw puzzle. With proper planning, the pieces should all come together to make a coherent picture (not like mine, which more closely resembles a Rorschach ink blot). Robin is a Certified Financial Planner and former investment broker who became disenchanted with computerized planning systems on other micros. According to Robin, decent financial planners for the IBM PC can cost as much as \$6,000 and fall short of his needs because they are slow, cumbersome, and don't do everything they should. *Puzzle 512*, running on a 512K Mac, accepts data from the user in a simple questionnaire format, then generates a balance sheet, income statement, tax analysis, estate analysis, and more. There's also a projection mode that lets you evaluate your future financial position based on actions you are considering, like selling or buying a particular stock.

What's the best thing about using a computer to do financial planning? Robin thinks it's that people lie to their human financial planners, but they won't lie to a computer. They might not like the results they get, but when using a Mac, people will bare their assets and let their liabilities hang out.

Puzzle 512 comes out of Colorado, as do a number of other interesting old and new products. The Colorado Macintosh Developer's Group has formed in the Boulder area with a membership that includes people from Spectrum Holobyte, Affinity (whose *Tempo* we're all waiting for) and CheckMark. The group is just getting started, so if you're interested in Mac development in the Denver/Boulder/Fort Collins area, contact Larry Walton at (303) 665-0703.

Spectrum Holobyte will soon debut a new simulation called *Orbiter*, a space shuttle simulator as detailed and complex as its first Mac game, *Gato*. The graphics look remarkable, and there are a number of missions built in that should provide lots of playing time. The company also plans a 3-D simulation of an F-16 fighter in the very near future.

Rick Barron of Affinity told us that *Tempo* was held up so it could be made compatible with Apple's hierarchical file system (HFS). As a result of the changes

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WEST COAST REPORT

made, the finished product works more
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than ever before.

Back on the west coast, there is concern about Apple's new ROMs and what will happen to users who got third party memory upgrades. There shouldn't be much problem in getting the new ROMs or making them work on any Mac, although it might cost more if Apple didn't do the memory upgrade. However, there is a possibility that people who opted for 1.5 meg of RAM may be messed up by the new ROMs. One, 2, and even 4-meg systems will be fine, but because of changes in memory management, the 1.5-meg systems may have big problems.

I heard a rumor that the United States Army wants to make a \$1 million purchase of Macintoshes, but they are only allowed to purchase personal computers that can read 5.25-inch MS-DOS disks. One company that may rush to provide a solution to the problem is Abaton. Abaton has a disk drive called Drive 5.25 that will read PC/MS-DOS files and CPM files. Using a *Font Mover*-type window, files can be moved back and forth between 3.5-inch and 5.25-inch disks. And at \$699 retail, it's hardly more than the government pays for a good hammer.

Abaton also produces a scanner with 300-dot per inch resolution. The scanner was used to digitize an image of John Sculley for the cover of the "Apple Street Journal," a brochure prepared by Apple for a recent presentation to the financial community. Abaton plans to enhance the software to provide optical character recognition and raster/vector conversion in the near future.

My last item of lunacy is an intriguing product from a company with a slightly lunatic name: Palo Alto Shipping. This is a small company with a new multitasking development system, *Forth 83*. While the product may drive Forth traditionalists crazy (of course some people might claim that this would be a very short trip), it has enough significant changes to make the language more comprehensible to the rest of us. For instance, *Forth 83* eliminates block files, allows for local variables and uses normal text files. It even has vectored input/output and interfaces well with *AppleTalk*.

My next bit of lunacy is an attempt to cover COMDEX. If I survive, you can read all about it in next month's West Coast Report. ☐

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Lawrence J. Magid, CHICAGO SUN TIMES

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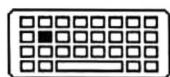
KidsTime™ is an educational package which includes five different games for young children ages three to eight.

KidsNotes™



Let your child's first love of music be developed with KidsNotes. See the results as notes are entered using the mouse to "play" the piano keyboard on the screen, or by "playing" the Mac keyboard. As each note is entered, the piano key is highlighted. Musical skills are developed by learning note names, note and rest durations, and basic key and time signatures. Children will enjoy entering and playing their own melodies. Some music is already included on the disk.

KidsWriter™



Your child's typing skills will develop with this self-rewarding activity. As the child types on the Mac keyboard, the corresponding key is highlighted on a screen keyboard. Key position skills are developed at the child's own rate. Besides writing stories with words, young children can also create their own picture stories using a special picture font instead of the usual letter font. The picture font may also be used with other word processing programs such as MacWrite™.

ABKey™

ABC

Watch your child develop letter recognition skills

using the Mac keyboard. Letters are presented on the Mac screen and disappear when the matching key is pressed on the Mac keyboard. Pictures also appear which disappear when their beginning letter is pressed. This activity includes many levels of challenge. Your child can develop letter recognition skills at an individual pace.

Match-It™



As your child plays these fun matching games, the pile of matched cards

grows to provide encouragement. This activity includes matching letters, words, pictures and puzzles. Your child will enjoy playing this variety of games individually or with others.

Dot-to-Dot



A new, interactive version of an old game. As your child moves the pointer from dot to dot (by numbers or by letters),

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This exciting package includes all five games for only **\$49.95**.

Also from Great Wave Software:™ **ConcertWare™**+(version 3)- Includes three integrated applications. Music can be entered, composed, edited, played and printed with the Music Writer. New instrumental sounds can be designed with the InstrumentMaker™ and the Music Player provides enhanced playback. Almost an hour of music and 40 instrumental sounds included.

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Contact your local software dealer or Great Wave Software at: 415-325-2202, P.O. Box 5847, Stanford, California 94305.



**Great Wave
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Please circle 113 on reader service card.

CLAPP'S LAW

by Doug Clapp

Anyone who names laws after themselves is a jerk.
That's it.

I know. This, probably, is related to the fact that most everybody in the computer journalism biz is a hindrance.

We're hindrances. We presume to know what "you" want. What's good, what's bad. When the manufacturers are doing something right, and when they're not. Which products are worthy of "your" attention, and which products stink.

Last night, I curled up with car magazines. The "new car" issues are out. It's fun to read about new cars—not that I can afford one.

When it comes to cars, I'm one of "the rest of us." I know zip about cars. Squat. Nothing. But I like 'em.

So I'm reading about cars. And the reviews! Catch this: "Where a normal American car may have one degree of caster, the nominal specification for the Taurus is four degrees. And the rest of the alignment points—fixed in place at the factory, no consumer adjustments available—are equally surprising."

Equally surprising? Did you get that?

Well, Detroit, thankfully, won't stand or crumble based on reviews in "Car and Driver" magazine. Good thing.

In the computer biz, though, you gotta please the nerds. Anger the nerds and you're in big trouble. An especially cute notion because this column resides in a magazine that's nerdier than most.

I'm slowly getting around to being a groveling apologist for the Macintosh. I can do it.

Since I can be as presumptuous as anyone in the field, let me presume to speak for Steve Jobs. As Steve might say: "Go away, nerds! Go. Away."

I know it was the nerds, the techies, and the taffies that bought and supported the first Macintoshes (and earlier

Apples), but they (read: you) weren't the crowd Apple wanted.

Actually, Apple wanted two crowds. Marketing wanted business. And Steve Jobs (I presume again) wanted your momma.

Wanting your mom is a noble desire. Anybody can get the nerds. Just give the nerds lots of memory (not that they need it), blinding speed, lots of pixels, and a universe of things to futz with, and they'll be happy. They'll coo with delight.

One of my nerdy friends has a megabyte of linear RAM in his Macintosh.



(He'd rather have four megabytes, though, and will.) What's he do with it? He installs six applications in *Switcher*. What's he doing with the applications? Not much. In his spare time, he's learning *Helix*.

Everybody needs a hobby.

Jobs, in his wisdom, believed (I think) that there are more moms than nerds. (I'm not sure what the actual ratio of moms to nerds is. Maybe my friend can coax *Helix* into generating a report with the proper subtotals of nerds and moms. It's all in the tiles.)

Unfortunately, to get to the moms, you gotta get past the nerds. A gauntlet of nerds. And no company has ever run the gauntlet and survived. Not one.

No computer has ever broken through. Despite TV ads about fat kids going—computerless—to college, despite "The Regis Touch," despite K-Mart, despite (so far) Pepsi presidents, nobody's done it.

The reason is simple. Nerds want one kind of machine. Moms want another

kind. Make something your mom would like and the nerds will kill ya. (I can hardly wait for the deluge of letters from nerdy moms. Here's my comeback: "Ah c'mon, you know what I mean.")

Remember the "Steve Jobs telephone analogy"? It goes like this: When computers are as easy to use as telephones, they'll be as ubiquitous as telephones. I don't think he said "ubiquitous" but I love that word.

And there's another, implied, analogy: When computers are as <<cheap>> as telephones, they'll be (one more time...) ubiquitous.

There will always be an Amiga. Or another computer with more memory, more speed and more doo-dads. To survive against the future, two things are necessary. First is another computer waiting in the wings. That's the easy part. The hard part is the other thing: making your present computer cheap to manufacture.

So cheap, and with so much margin, that the Atari ads are right: The Macintosh price is a rip-off. If you've been reading reports that Macintosh sales are flat, remember the margin on these babies; even "flat" sales are swelling Apple's coffers.

How's that make you feel? But remember: The goal of business is to make money. The more the better.

You can soak the nerds if you want. (And Apple did.) But you'll miss the moms. (And Apple has.)

Nobody would gripe about Macintosh being a closed system if Macintosh cost \$239. Nobody would complain about "the arrogance of Steve Jobs" if Macintosh cost \$378.

Maybe it would have broken through at a lower price.

"Dear, let's buy one of those new 'telephone' things. I hear they're very useful."

"Sounds good to me. How much are they?"

"I think we could get a serviceable system for, oh, maybe \$3,500."

"ARE YOU OUT OF YOUR MIND!?"

The salvation of Macintosh, if there is one, is the Macintosh margin. How low can you go? Real low. Next year, it's limbo Mac.

In the meantime, I saw a telephone yesterday for six bucks. Six bucks. I loved it. ☹

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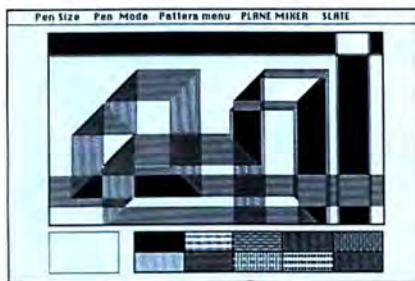
What's new, what's happening in the world of Mac? We'll keep you up-to-date with our monthly Quick Clicks.

MAGIC SLATE

List Price: \$25. Requires 512K. Published by Devionics, PO Box 2126, Covina, CA 91722. (714) 779-7193.

MAGIC SLATE IS A UNIQUE GRAPHICS AND DESIGN program. Simple forms, patterns, and designs can be combined and recombined to make new forms, patterns and designs. A multitude of built-in special effects lets you customize designs with fascinating, and sometimes surprising, results.

Designs are created on the slate using a highly unusual pen. The pen can take on a variety of shapes, from a very small dot to a long slender vertical or horizontal line to a jumbo block. It can paint in any of the patterns seen in the pattern blocks below the window. Many other patterns are available by switching the pattern set in the Pattern menu. The pen can also reverse the pattern so that as it paints, areas that



would normally be gray or black are white and vice versa. The pen can also draw in white on a black screen.

Although it is fairly easy to do freehand drawing with a small pen, *Magic Slate* works best when the pen is used to build block geometric patterns or fill large areas with a "wash." You can do amazing things in *Magic Slate* by selecting a special effect from one of several menus. Zoom effects expand an object in a variety of ways as the object is drawn. Drawing a small dot may

result in a large box built of interlaced black and white boxes, or an arrowhead-shaped block. Other special effects can be used in combination to expand existing objects, slice portions of a design, and play with patterns.

Magic Slate is a fabulous graphics toy and an extraordinary amount of fun, especially if you like geometric designs and patterns. It is sometimes a pain to work with, because you can't directly save designs. They have to be screen dumped to a *MacPaint* document (Command-Shift-3), although they can be printed directly from *Magic Slate*. Other inconsistencies with the Mac interface are confusing and sometimes annoying.

Learning the mechanics of the program takes time, because many things are not intuitive and the manual is not very informative. But play with *Magic Slate* for a few hours and you will amaze yourself. And the more time you play with it, the more you find you can do.—MW

INFIDEL

List price: \$44.95. Published by Infocom, 125 CambridgePark Drive, Cambridge, MA 02140. (617) 576-3190.

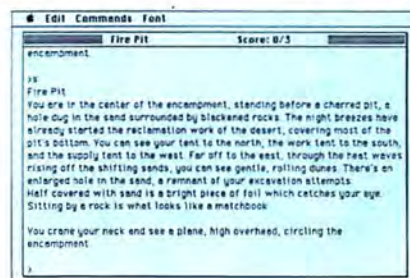
BLAST THOSE NATIVES! IT ALL STARTED OUT AS A perfectly normal expedition, really, but then the silly heathens demanded a day off for one of their little holidays. I told them, and with all rights, that we were in the desert to do a job, and we weren't to have any pay or time off until we had unearthed the lost Tomb and its riches. They seemed to accept my obvious authority—until they drugged my food and left me alone in the desert, that is. That's the lot of the *Infidel*.

This text adventure is true to form for most Infocom adventures: The game features no illustrations whatsoever, not even

a compass icon to make moving around a little easier. The game's sentence parser is excellent, pointing out to players exactly which words it doesn't understand. Players type in full-sentence commands, like "Get the book, then read the book," and the Mac responds in kind, printing its written response on-screen. Most of the fonts found in *MacWrite* are available for text display, and players can switch fonts as often as they want during the game.

Infidel is set in pre-World War II Egypt, with the object of your quest to find and loot the tomb of a long-forgotten mummy. Stuck out in the desert with little food and water, at first it's a race against time to find and enter the pyramid, hidden under the desert sand. Luckily, a map is enclosed with the game, and players who wait around camp long enough for the navigation box will have little trouble locating the right spot.

Once inside, things are a little trickier.



Just taking the wrong step can prove fatal, so save the game often as you explore the darkened rooms. Infocom markets its own clue book for \$7.95 for players who get stuck at an impasse.

The twist ending will either delight or infuriate adventurers with the patience to stick with it until the end. Either way, *Infidel* won't leave you cold.—TFH

MIND OVER MAC

List Price: \$49.95. Published by Think Educational Software, 16 Market Street, Potdam, NY 13676. (315) 265-5636.

FEATURING FIVE GAMES, *MIND OVER MAC* RUNS the gamut of fun and entertainment. Some are familiar favorites, with a new twist. Each contest emphasizes the Mac's graph-

ics and mouse movements, and has great synthesized sound. All supply the gamer with on-screen help, including a Rule menu.

In *Master Code* the gamer is challenged to solve a code using a selected number of symbols which are dependent on the level of expertise you select. Guesses and feedback are registered in an entry box which allows you to see if they are the correct symbol ("CS") or in the correct position ("CP"). So it goes until the code is broken.

Options allow Mac to deceive you once, or not at all. The Help menu gives clues if players need them.

Third Dimension is 3D tic-tac-toe. Play against the Mac or friends using three grids. Four in a row, using all three grids, wins. Options control who gets the "X" and "O", and who begins first.

Because there are three grids, it's not easy to keep an eye out for all winning combinations; this is where the real fun is.

C L I C K S



In *On-the-Contrary* the gamer makes a match by clicking on doors for which a money reward is given, trying for the high-

est valued match. Don't match a "cop" or a "robber" with any prize, though or money will be deducted from your pot. The frequency in which the "cop" and "robber" appears increases with each of the 12 rounds. The highest pot wins.

Test your wits in science, sports and entertainment and see how you fare against your friends in *Trivial Intrigue*. A click in the center of the board starts the action. Double click in the center to stop at a chosen category, designated by different shades of gray. A question zooms in, and if answered correctly, points are given according to how many stars it's worth. Several predetermined bonus questions are given every time

the board is fully circled. All have to be answered correctly to win. The game is the same, but the graphics and sound enhances the trivia.

Destroyer is a two-player competition where each hides a number of five ships in the opponents' grid. The smaller the ship, the less squares it gets. Ships can't be seen after they're entered in the grids. A click on an occupied square registers a hit. A time lapse for shots is determined by the level you select. Sink all the opponents' ships to win. Bombs away!

Fun is synonymous with *Mind Over Mac*. This enjoyable disk entertains everyone in the family for just one price.—DG

PROFESSIONAL BIBLIOGRAPHIC SYSTEM †††

List Price: \$295. Second disk drive or hard disk recommended. Switcher and AppleTalk compatible. Published by Personal Bibliographic Software, Inc., PO Box 4250, Ann Arbor, MI 48106. (313) 996-1580.

THE PROFESSIONAL BIBLIOGRAPHIC SYSTEM IS A database for storing, retrieving, and formatting bibliographic references. PBS keeps track of books, magazine and journal articles, professional and academic papers, music scores, video and film recordings, and even computer programs.

PBS comes with 20 "workforms," pre-designed record cards where information is entered. Each workform contains a customized set of fields, including the author's name, title of the publication, and other standard information, as well as unusual facts such as the storage location or packaging method. Any of the fields can be left blank, however, so each citation can con-

tain only required information.

Each citation is a record. Records can be sorted by individual fields, or by number (the order it was entered into the database), or a full text search can locate a string of characters anywhere in the citation. The latest version of the software (2.3) also permits a search by category (book, journal, etc.), and lets you move text files into and out of the bibliography so files already stored in a word processor or other database can be moved into PBS.

Each citation can be up to 32,000 characters long, in any arrangement, so it is possible to have a record with only one 32,000 character field. The capacity of PBS is limited primarily by disk space, although the program does have a built-in maximum of 32,767 citations.

Several add-on products, integrated with PBS to form a *Scholar's Workstation*, will permit downloading of files from national bibliographic services. The files can be dropped directly into PBS. These items were not yet available at press time.

Citations are punctuated automatically before printing, according to one of three built-in punctuation files. These support

ANSI, MLA, and scientific standards for bibliographies. Optionally, the user can create new punctuation files for citations that require a different format.



PBS follows the Mac interface well, but it is very slow to print out files, and style changes are difficult—formatting a file to print book titles underscored but journal articles in italics, for example.

The manual is lengthy and detailed, but not always very clear. Still, PBS is a powerful single use database for students, researchers, and anyone who requires large and current bibliographies.—MW

MACEXPRESS †††

List Price: \$495 Mac version, \$745 Lisa version. Published by ALSoft, Inc., PO Box 927, Spring, TX 77383. (713) 353-1510.

MACEXPRESS IS A GENERIC APPLICATION SHELL and user interface manager. Its goal is to reduce development time while keeping applications true to the Mac interface. All user programs are based around a main event loop and use an object-oriented data structure to create procedures. The objects

that represent things such as windows, panels and icons have been predefined so



the programmer does not have to take the time or trouble to create them from scratch.

This program is fairly easy to use. It is not a quick and dirty way to programming on the Mac. *Inside Mac* and assembly, Pascal or C programming skills are still required. This is a productivity tool and development environment.

MacExpress's final product is a stand-alone, double-clickable application. If your product design and implementation are true to the Mac interface, they will mesh well with the MacExpress shell, creating a true Mac application.

While this product is as straightforward and well documented as a tool of its sort can be, it is not for everyone. The publisher does offer a reasonably priced (\$50 that can be applied against the full price if the complete package is purchased) test drive package that will let users do everything except produce a final product. Commercial

applications produced with MacExpress must be licensed, but the fee is only \$100 per application per year for unlimited copies. That's a reasonable licensing fee.

As is usual with all development environments (excepting possibly Forth) the more memory available (both RAM and disk) the better and easier the process. MacExpress

is no exception to that rule. Although it will run on a minimal system most people will find it too difficult and slow to work with on such a system.

If you're considering development on the Mac and haven't already committed to an environment, take a look at MacExpress. The test drive offer is a good one.—SB

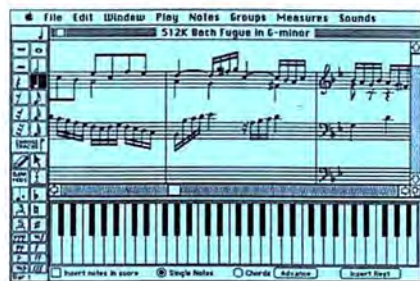
DELUXE MUSIC CONSTRUCTION SET

List Price: \$50. Published by Electronic Arts, 2755 Campus Drive, San Mateo, CA 94403 (415) 571-7171.

IS THERE ROOM FOR YET ANOTHER MAC MUSIC program? *Deluxe Music Construction Set* provides some excellent features that are not found in the other packages, and it will definitely find its own audience of admirers.

The program adheres well to the Mac interface. A tool palette allows the user to select symbols and place them directly onto the staff. Non-pros will find the piano keyboard especially helpful in entering music. Single notes and chords can be entered by clicking on the corresponding piano keys,

and the notes sound off as they are entered, providing strong audio-visual feedback to the user. Upon playback, the music can be flashed on the piano keyboard in real time, showing what piano keys are



being played at any moment, much like a player piano.

Notational niceties include triplets, quintuplets, ties, slurs, beams, etc. Multiple time and key signatures can be used within a song. Full Mac editing features are sup-

ported in *Deluxe Music Construction Set*, allowing either single notes or passages to be cut, copied and pasted. Notes can also be transposed by simply selecting and dragging them on the staff, and the program sounds the new note as it is positioned.

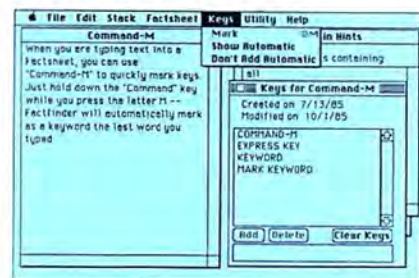
Up to eight staves can be created for each song, and Macmusicians may select treble, bass tenor and alto clefs as needed. *Deluxe Music Construction Set* comes with sixteen instruments, which can't be modified. MIDI output is also provided, so that the program can drive external synthesizers.

Full printing capabilities are present, including LaserWriter support. Lyrics and guitar notation (in font form) can be added to a score. The spacing between staves can be fine tuned to permit clear printouts of complex passages.

Deluxe Music Construction Set is a solid product that holds its own with the likes of *ConcertWare+*, making it a strong contender for your time and ears.—DB

FACTFINDER 1.1

List price: \$150. Second Drive and printer recommended. Published by Forethought, Inc., 1973 Landings Dr., Mountain View, CA 94043. 1-(800)-MAC-WARE.



WHAT SHOULD A DATABASE BE LIKE? THE CHARACTERISTICS of an ideal database might include speed, ease of use and flexibility. *Factfinder 1.1*, a new and faster version of *Factfinder*, has all of these. The beauty of a free-form database such as *Factfinder* is the ability to decide how data should be organized as it is being entered instead of having to conform to a set structure of fields. This makes *Factfinder 1.1* adaptable to a wide variety of applications where data will vary from record to record. It can also share data with any existing database that can format files as text.

While entering data in a simple word processing window, users choose words from the factsheet to use as keys for retrieval. Keys (each can be up to 28 characters long) are marked with the mouse or the keyboard. Keys can be added automatically for a whole series of factsheets by entering them using the "add keys automat-

ically" window. This is useful if several similar factsheets need to be entered in one session. Each factsheet can hold up to 30K, allowing small documents or notes to be stored as records in the database instead of being lost on a desk.

All of the keys plus the date each factsheet was created are combined to form an index for each stack of factsheets. To find a sheet or sheets select keys from the index and appropriate logic (i.e., and, or, not) to find the desired entries. The program will find the entries quickly and display them so they can be printed or modified.

Factfinder 1.1 is well suited to organizing all kinds of data. Its only significant weakness is the inability to have more than one factsheet open at a time. *Factfinder 1.1* is a flexible tool for lawyers, students, buyers, managers, salespeople or anyone who needs to translate data into usable information painlessly.—Gilbert Rankin

BEAMAC II

List price: \$295. Published by Erez Anzel, 5800 Arlington Ave., 5T, Riverdale, NY 10471. (212) 884-5798.

analysis of any continuous beam with any number of nodes, supports and hinges, easily!

So what? Did you say "So what?" You wouldn't if you were a civil engineer, architect, or building designer or engineer. *BEAMAC II* makes what is a tedious but very necessary job easy, if still not quite a

pleasure. The initial loads and distances must still be figured using non-computer methods, but the complicated final calculations are now merely a keystroke or mouse command away. "What-ifs" that would have taken too much time are right at hand.

BEAMAC II is fast, especially considering the sheer mass of the numbers it must

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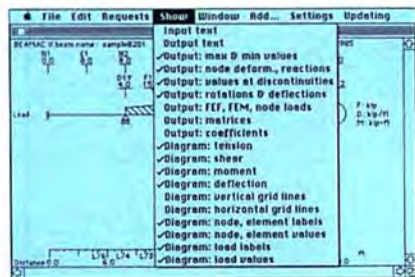
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crunch, and it works well with both Laser-

Writer and Switcher. All values can be formatted to either a fixed number of decimal places or can appear in scientific notation, and all metric and English system units are supported. Its calculations are carried out to 19-decimal place accuracy.

The actual size of the display is variable and can be as small as 4 by 7 inches, or as large as 48 by 96 inches. The larger sizes can be scrolled to view any portion.

The program is very flexible and will accept any number of any type of load, anywhere along the beam. Both concentrat-

ed and distributed loads are allowed in any combination required. For ease of data entry, a table of standard wide-flange sections is on the disk. Just copy the needed portions into your datasheet. Solutions are generated using the modified Cholesky (or band matrix) method.

Users get free publisher support, a free first update and a money-back (less \$5 restocking fee) guarantee.

This program is a vertical application program. If your livelihood involves beam calculations, it is probably necessary.—SB

M.U.D. (MACROMIND UTILITY DISK) ttttt

List Price: \$49. 512K recommended. Published by Hayden Software Company, Inc., 600 Suffolk Street, Lowell, MA 01854 (617) 937-0200.

MACROMIND HAS ENHANCED THE VALUE OF MUSIC-Works and VideoWorks with a new offering of utilities for these two programs. The disk also includes two new desk accessories, CheapPaint and Art Grabber+, required additions for any graphics software library.

MusicWorks owners will enjoy the Juke-Box, which will play a programmable set, or Playlist, of MusicWorks files without needing the actual MusicWorks program. Playlist files can be saved to disk. Tempo, volume, and active voices can all be set from within the application.

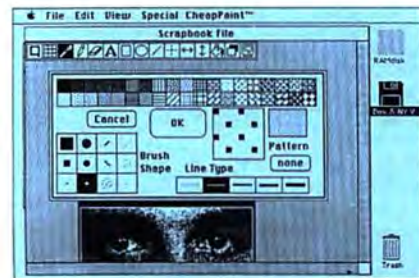
The VW Player is useful for creating movie disks with VideoWorks animation that can be sent to friends. A disk prepared

with a System file, the VW Player and the corresponding VideoWorks animation documents automatically boots directly into the animation. All the sounds work, and the sequence can be interrupted by clicking the mouse button. The movie can then be continued, or the disk can be ejected. Music to Video allows a single voice of MusicWorks music to be carried over to VideoWorks for custom music in animation sequences.

The real meat of this disk is CheapPaint. Imagine a desk accessory that has all the main features of MacPaint—ovals, boxes, lines, paint can, pencil, paintbrush, even FatBits! Fill patterns can be edited and nine brushes are available, as well as various line widths. Many tricks are included from Paint, including tone overlapping (watercolors). All very MacPaintish. A menu allows access to fonts and font styles. Fonts and font sizes can be changed through a keyboard command, allowing the user to select items that don't show up in the font menu due to space limitations. Scrapbook items each appear in their own "easel," and as an added bonus, multiple scrapbook files may be maintained and accessed from within

CheapPaint. This desk accessory is truly like having MacPaint under the apple.

Art Grabber+ is exactly like its predecessor, which let the user access and copy segments of a MacPaint file, except for one major difference: items larger than the active Art Grabber window may be selected and copied to the Clipboard. You can almost copy an entire MacPaint document



and paste it into the current application. This is a truly useful desk accessory!

This disk represents a tremendous value for any and all Mac owners. CheapPaint alone is worth the price.—DB

AMAZON tttt

List Price: \$49.95. 128K required, external drive recommended. Published by Telarium Corp., One Kendall Square, Cambridge, MA 02139. (617) 494-1200.

MICHAEL CRICHTON, AUTHOR OF THE ANDROMEDA Strain and writer/director of the classic fiction film "Westworld," wrote the scenario for Amazon, an illustrated adventure set in the modern-day Amazon jungle. Hani cannibals, corrupt police officers, and a volcano that's ready to blow add to the dangers explorers will find as they seek the Lost City of Chak and discover the fate of a previous expedition.

The explorer is not alone, though. A talking parrot named Paco comes along for the ride, offering his opinion on various



situations as intelligently as his late mentor, a professor, might have done. Paco's opinion can be asked by typing in his name.

The game features an unusual text parser, which lets adventurers shortcut directly to places they want to go without having to figure out how to get there. For example, to see your boss, Murphy, just type in "go Murphy" instead of a series of

"N", "S", and "Open Door" commands.

Some nice flourishes contribute to a realistic feel. When Murphy scans your file and the computer says, "You wait," you do wait for a couple of seconds before the action continues. Three levels of play let novices and masters enjoy the game at their own levels, and an extra disk is required to save the game.

The graphics are good, although animation sequences leave much to be desired. While non-Mac editions of the game feature fluid movement in each animation, the Mac version redraws the entire screen several times to simulate movement. The end result is choppy, but if you don't care about animation add another mouse to the rating.

Still, Amazon is a challenge, and its storyline is remarkably well-crafted. Michael Crichton proves that he's not only a world-famous author—he's also a good computer game designer.—TFH

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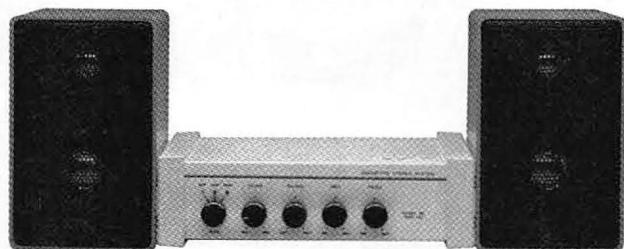
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THE POWER USER'S MANUAL

High Performance Hints & Tips
for Your Macintosh

MacUser



You Didn't Know That??? 86 Things You Just Gotta Know!

WANT THE KIND OF CONTROL OVER your computing that real pros have?

This month, *MacUser* unlocks some of the mysteries about making your Mac perform flawlessly. This compilation of tips and tricks is just the beginning. Read on to get the real inside story on the *Finder*, *MacWrite*, *MacPaint*, *MacDraw* and the *ImageWriter*—and if you have your own tips you'd like to share with other Mac users, send 'em on in to *MacUser* Tips, 25 West 39 Street, New York, NY 10018. We'll share them with all of you every month.

THE FIRST COMMANDMENT: KNOW THY HARDWARE

- 1** Don't put your external drive on the left side of the Mac. The machine's power supply can cause interference with disk reads and writes.
- 2** Keep all disks away from magnets. Information is stored magnetically, so exposure to a strong magnetic force will scramble data permanently.
- 3** To eject a disk from the internal drive, press COMMAND, SHIFT and 1 simultaneously. To eject from the external drive, press COMMAND, SHIFT and 2.
- 4** Make sure your disks have different, meaningful names, and are clearly marked. That way you won't have to insert your entire disk collection when the Mac asks for a particular disk.
- 5** Never block the vents on the top and sides of the Mac. Without air circulating through it at all times, the Mac can overheat and/or crash.
- 6** Some disks, especially games and other commercially produced software, can only boot from the internal drive. So, don't get too upset if the machine claims that a heavily copy-protected disk in the external drive is "unreadable." Try it in the internal drive before tearing your hair.

7 Make a newly inserted disk the startup disk by opening the new disk on the desktop. Then open the System folder and, while holding down the COMMAND and OPTION keys, double-click on the *Finder* icon. The Mac whirrs away, and when it's finished, the new disk occupies the startup position on the desktop.

8 Never shut the Mac off without first ejecting all disks. This protects against accidentally damaging disk files.

9 If your disk Bombs when inserted, you might be able to get around this by holding down the COMMAND and OPTION keys while the Mac tries to boot the disk. Only use this procedure in emergencies, since you'll lose folder titles and window sizes—though not folder contents.

10 Another way to get into a bad disk is to start out with another disk, then eject it once the desktop is drawn. Insert the damaged disk. If the data hasn't been totally fried, the Mac should ask if you want it to repair the disk.

11 If your disk doesn't show a Bomb icon, but merely gets spit out, it isn't damaged at all. It just lacks a System file.

12 If the Mac won't accept a badly damaged disk for erasure or re-initialization, there's a way to fool it into thinking it is reading a blank disk: First, use the *Finder* to eject any disks

Compiled by

Tracie Forman Hines

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in the drive. Then look carefully at the right-hand side of the disk drive slot, where you'll find a small black lug next to a metal pin. Carefully press this down and the Mac thinks you just inserted a blank disk, prompting the dialog box that asks if you want to initialize it. Insert the bad disk into the slot and click the Initialize box. Needless to say, all files on the disk will be lost — but this is only a way to reclaim the disk, not the data.

13 If the sad Mac face comes up, making it impossible to eject the disk from the *Finder*, reset the Mac while holding down the mouse button. The disk should pop right out of the internal drive. This trick won't work on disks in the external drive.

14 In dire cases, eject a disk by pushing a straightened paper clip into the small hole just to the right of the disk drive slot.

FINDER FOIBLES

15 When scrolling through a Minifinder box looking for a file to open, press the first letter or two of the file's name to "express" straight to the section you want.

16 Once the file name is highlighted in black, you don't have to mouse over to the OPEN button. Just press RETURN to open it.

17 Double-clicking on the file's name also opens it from a Minifinder.

18 Eject a disk quickly from the desktop by dragging the disk icon to the trash can. This only works with *Finder* version 4.1 and higher, and not on the startup disk.

19 COMMAND, SHIFT and 3, pressed together, takes a *MacPaint* "picture" of what's currently on the screen, if there's enough disk space to store it. If not, a beep lets you know it can't be done.

20 Rename a disk, file or folder by clicking once to highlight it, then typing the new name. Click anywhere else on the screen to save the new name to disk.

21 Dump an image of the active window to the ImageWriter by pressing COMMAND, SHIFT and 4.

22 Dump the entire Mac screen to the ImageWriter, menu bar and all, by pressing COMMAND, SHIFT, CAPS LOCK and 4.

23 When deleting files from the desktop, press the **OPTION** key while dragging a locked file to the trashcan. This automatically unlocks the file.

24 Files thrown in the trashcan are not removed until you specifically EMPTY TRASH, launch any application, or take any action that takes you off the desktop. Emptying the trashcan sends its contents off into permanent electronic oblivion.

25 If you inadvertently cut or backspace over important information, remember that COMMAND Z (UNDO on the EDIT menu) usually restores the last action taken.

26 If you want to cut part of a document to reposition it elsewhere, make sure to use the menu command CUT once the text portion has been highlighted. Pressing the backspace instead loses the information permanently if you don't UNDO immediately, especially if the text section contains more than 50 characters. When edited with the CUT command, the data remains in the Clipboard until something else is cut or backspaced. To avoid losing any work, paste the cut data where you'll want it to be immediately after Cutting.

27 Don't name files with any words that the Mac might think is part of its operating system, like "Minifinder." It confuses the machine and often results in the file being permanently lost.

28 If you use an older System, store the Empty Folder in the System Folder to reduce desktop clutter.

29 If you use *Finder* version 4.1 or higher, you can perform super clean-up operations by holding down the **OPTION** key while selecting the CLEAN UP option. The icons are shuffled into place much faster, and are put into locations near the top of the window.

30 Ever notice the desk accessory apple flashing away wildly while you work? Try turning off the alarm in the Alarm Clock desk accessory by selecting ALARM CLOCK from under the apple menu and clicking on the key symbol at the far right.

31 The *Font/DA Mover* defaults to font mode when launched. To open directly into the desk accessory mode, hold down **OPTION** while launching the program.

32 There's a "secret" key combination that's not shown in the Key Caps desk accessory. Press **OPTION**, **SHIFT** and ~ (the key just to the left of 1). Depending on the point size and font selected, you can access the "secret" or special characters in most fonts. The shapes vary in usefulness—in 12-point Geneva, the combination results in a rabbit silhouette.

33 Important applications or files that shouldn't be tampered with should always be Locked. Choose GET INFO from the FILE menu and click on the LOCKED box. An X in the box means that the file can't be thrown away or changed in any way. Click on the box again to unlock.

34 If your *Finder* doesn't include a SHUT DOWN command, a quick way to eject all disks is to first close all windows, then press COMMAND and A to select all the disk icons on the desktop, and finally quickly press COMMAND and E to eject the selected icons' disks.

35 Move a background window without making it active by pressing the COMMAND key while dragging the window by its title bar.

36 *Finder* version 4.1 contains a potentially dangerous bug: If you select NEW FOLDER on a disk that's already been ejected (but still has its image on the desktop), the folder appears in white. If you then return the disk to the drive, the files turn from their dimmed image back to black and white, but the folder becomes dimmed. Files moved to this folder risk being permanently lost.

37 Reserve the first page or two of large scrapbooks for an index. Otherwise, you'll have to move through them page by page.

38 An easy way to tell if a file is locked is to select the file on the desktop and move the cursor over

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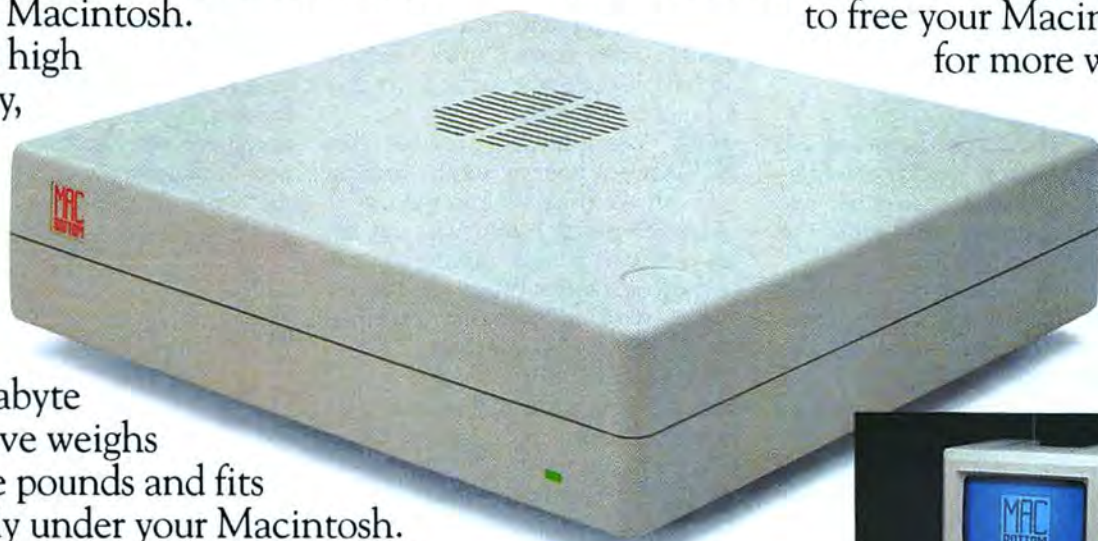
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the filename. If the file is not locked the cursor changes shape to an I-beam; if it is locked, the cursor remains an arrow. This is usually simpler than choosing GET INFO.

39 Running out of memory in an application? Reduce the size of the Clipboard as much as possible by copying a single letter into it. Do this procedure twice to ensure that you have removed the original clipboard contents.

40 To copy a file onto another disk, just drag the file icon over to the recipient disk. This avoids a file name like "Copy of (whatever)."

IN MACWRITE . . .

41 Use the ENTER key to delete areas of text quickly. Holding down ENTER while selecting text causes the selection to disappear as soon as ENTER is released.

42 If you use lots of special graphics characters in your work, shrink the word processor window small enough to keep the Key Caps window open at the bottom of the screen.

43 Double-click on a word to highlight it without having to drag the cursor all the way across it. Whatever you type in next will replace the highlighted word.

44 *MacWrite* has been known to lie. When it says it can't print a document, the problem is usually one of the following things:

a. The document is too long. Print out a few pages at a time.

b. There's not enough space left on the disk to save the document to the buffer. Either delete some files from the disk, or print the document a few pages at a time.

c. The printer isn't hooked up properly (you know this is the case if the trouble occurs right after the machine says "Looking for the ImageWriter/LaserWriter."). If the connections are all connected, go to CHOOSE PRINTER under the Apple icon and select the appropriate hardware. If nothing shows up in the dialog box, it means you have to QUIT the application and check to make sure the disk contains the right files.

45 Keep an eye on how much disk space is left by choosing ABOUT

MACWRITE from the Apple menu.

46 When pasting a *MacPaint* picture into *MacWrite*, you can stretch or shrink the image by placing the cursor over one of the three squares that appears on the bottom border. Drag the mouse while still clicking. The drawing reshapes itself when the mouse button is released. Once changed this way, only pressing UNDO immediately returns the picture to its original proportions.

47 To accent a letter with a diacritical mark, hold down the OPTION key and press the key that types in the desired mark. Release both keys, then type in the letter that requires the accent.

48 Want different spacing between your lines than you can get with the three built-in space controls? Select any blank space on the lower of two lines and change its size to the font size just larger than the one you're working with (for example, when using 12-point fonts, put a 14-point blank space in the second line). The entire line moves down a bit to accommodate the 14-point phantom character.

49 Headings really stand out with a double underline. To accomplish this, first press COMMAND and U, then the SHIFT and the HYPHEN key. Type a few double underlines, move the cursor back a few characters, and click the mouse while the cursor is positioned between double underline characters. Then, just type in the heading.

50 *MacWrite* can be used as a poor man's database. Just use SEARCH, FIND and FIND NEXT to zip through the document for names, phone numbers, cities or addresses.

51 Make an em dash — like the ones surrounding these words — by typing SHIFT, OPTION and HYPHEN, all at the same time.

52 Preconfigure any form letters you use often, then save the form to its own file name (such as "Invoices"). Whenever you need that form, simply open it, fill it in, and use SAVE AS . . . to retain a copy for your records. When you quit and the Mac asks whether to save changes, say no. This keeps the form ready to use for the next time.

53 When pasting *MacPaint* pictures into *MacWrite*, the image might look distorted. This is especially true with circles. To keep the image looking the way it should, choose PAGE SETUP from the FILE menu and click the TALL ADJUSTED box in the ORIENTATION option. This stretches the picture horizontally, usually correcting distorted images in the process.

54 Choosing the WIDE box under PAGE SETUP also adjusts distortion; the text is printed out sideways.

55 If you need to have two words together on a line and want to be sure *MacWrite* doesn't insert a line break, press OPTION and SPACE in between the two words. This inserts a non-breaking space that tells the Mac the words are to be treated as one.

56 Ever backspace over text you didn't mean to erase? Press COMMAND and BACKSPACE to restore the last letters backspaced over. This will restore up to 50 accidentally erased characters.

57 If you want to select a large part of your document, you don't have to spend time dragging the cursor across the text. Instead, click at the end of the text, then use the scroll bar to get to the beginning. Hold the SHIFT key down while clicking the mouse. All text between the two clicked points is instantly highlighted.

58 Lost the cursor in a large document? Hit ENTER to rapidly scroll to the cursor's present location.

MACPAINT ARTISTRY

59 Take the express route into FatBits by selecting the pencil tool, then hold down the COMMAND key and point to the area you want to work on. Click the mouse and presto! Instant FatBits.

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60 When the pencil is selected in FatBits, hold down the OPTION key to turn the pencil into a Grabber hand. When the key is released you're back at the pencil.

61 If you have a pattern on-screen that you'd like to add to your permanent collection, select a pattern you think you can live without and choose EDIT PATTERN from the GOODIES menu. Instead of copying the pattern pixel by pixel on the grid, just click the mouse on the part of the screen showing the pattern you want. The new pattern replaces the old one and becomes a permanent part of your PATTERNS menu.

62 If you want to change fonts in the middle of adding a text line in MacPaint, press the ENTER key and select the new font from its menu. The only drawback to this method is that you can't backspace past the point the cursor was at when ENTER was pressed.

63 Get ultrabold characters by entering text using OUTLINE from the Style menu, then fill in the white space with the paint bucket.

64 Give lettering a psychedelic feel by selecting it with the marquee and pressing SHIFT, COMMAND and E simultaneously several times. With each successive press, the letters become more strangely outlined.

65 Customize the size of the eraser from the 16 x 16 pixel square by selecting the paintbrush and choosing white as the color.

66 To save space, store several small MacPaint illustrations in a single file. The empty screen space around a document in MacPaint requires more than 2K of memory.

67 Make multiple copies of a MacPaint picture by typing COMMAND and OPTION while clicking and dragging the image.

68 Keep multiple copies in a straight line by pressing SHIFT, COMMAND and OPTION.

69 To keep multiple copies' patterns intact, choose GRID before making the copies. Grid lines are eight pixels apart.

70 Another way of keeping patterns under control while stretching is to hold the SHIFT (constrain) key down.

71 When making multiple copies of a MacPaint image, choose a wide line width for a lot of space between each copy. Thin line widths result in copies spaced close together.

72 Resizing images to fit a particular area is easy. First, copy the image to the buffer, either by using the SCRAPBOOK or the COPY command from the Edit menu. Then, use the marquee rectangle to choose the size of the image. Finally, paste the image. It automatically resizes to fit the marquee.

73 Free up disk space by deleting the ImageWriter driver from the MacPaint disk. The application doesn't require the driver to print.

74 The Resource Editor can be used to trim MacPaint down by about 13K by cutting out the Short Cuts and Introduction screens. These are stored as PICT resources 2401 and 2400. Simply use Resource Editor to clear them.

75 Press the COMMAND key while selecting QUIT to reboot.

76 Place one patterned shape over another without blotting out the original shape by pressing the COMMAND key while selecting the paintbrush, spray can, paint bucket or shape drawing tools. At the point of overlap, both shapes' patterns change to reflect the blend.

77 Take a MacPaint snapshot of interesting screens in your programs by pressing SHIFT, COMMAND and 3. The images will come in handy, especially for non-artists. Later, customize graphics to your own use with FatBits.

MACDRAW MADE EASIER

78 Get a feel for how horizontal layouts will look by selecting WIDE from the PAGE SETUP option in the PRINT... menu. The screen will display the page horizontally.

79 When moving images around the page, press the OPTION key while moving the object to see the graphic image instead of a rectangle.

ABOUT THE IMAGEWRITER

80 To cut down on the time the ImageWriter pauses before it prints the last line in a document, press the SELECT button once. The

printer immediately prints the line. Hit SELECT again to advance the paper forward enough to tear off the page.

81 If you can't find ImageWriter ribbons in your local store, buy NEC 8023, C.Itoh 8510 or DEC LA50 ribbons, which also fit, instead.

82 Horizontal lines across gray or black areas of your printout can be avoided by using higher grade fanfold paper, high quality single sheets, or by using an older ribbon to print large areas of gray.


83 If your ImageWriter scrolls an extra sheet through when printing, fill in the From and To boxes in the Print... dialog box. If your document is six pages long, type in From 1 To 6. If it's a single page, type in From 1 To 1.

84 Print several files in a row by selecting them from the desktop with the selection rectangle, then choosing PRINT from the File menu.

85 To print multiple files in a specific order, go to the Finder and press SHIFT-CLICK to select documents. When PRINT... is activated, they'll print in the order you selected them in.

MACTERMINAL CURSORS

86 MacTerminal lets users simulate the cursor keys while being connected to a remote computer. Hold down the OPTION key to transform the cursor into a four-way VT100 arrow cursor, move it where you want it, and click. The appropriate cursor key sequences will be transmitted to the remote computer.

Special thanks to the Macintosh Users' Group of Corvallis, MacUser UK, Ian McKinnell, Mike Saenz and all the editors of MacUser for their tips and hints. 

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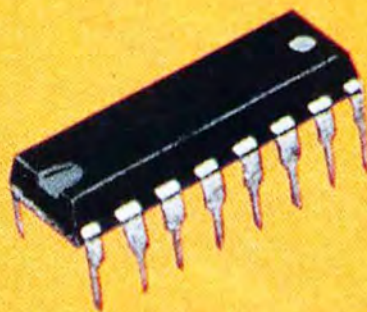
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PICTURE THIS: A COUPLE SPLURGING on a special trip to the big city get into their rented limousine and discover a Mac in place of the usual television set. "Click Me" is the first thing they see on the screen, and upon doing so, they're presented with a map of the city they're in, along with full help facilities (pop-up windows attached to help buttons). The map is divided into regions, and clicking in a region zooms into a close-up of the area, complete with symbols for all the currently trendy restaurants. They can even ask the Mac to show them all the pizzerias

BY DAVID BIEDNY





that serve sushi, and they'll see highlighted food icons against a dim cityscape, with a digitized picture of the restaurant.

Now visualize a freshman electronics lab meeting for the first time in the semester. The lab is filled with gear, some of which may be familiar to the new students, some of which may not be. Usually, at least two of the lab sessions are spent getting familiar with the equipment and the location of each item in the lab. That won't happen this semester, though. The entire lab is laid out on the Mac as a *Business Filevision* file. Students can get a full



build'ing *n.* 1. anything
2. the work or business

of-fice (ôf'is, af'-) *n.*
ice done for another
of one's work 3. a
trust, as in government
or business that is a
etc. is carried on 5
rite

GET THE PICTURE!

description of each piece of gear, its function, correct position in the lab, and any other information relevant to correct and safe usage. They can learn, have fun, and get computer experience all at the same time, an educator's dream.

When the original *Filevision* was unveiled, it was hailed as a revolutionary advance in the field of database management. Nothing like it existed for any other microcomputer (or for larger machines, for that matter). But there were problems in paradise. The limitations in screen space, inability to bring graphics in from the outside, and other factors limited the usefulness of the program.

Well, *Filevision* is back, and this time, the folks at Telos did it right.

DATAGRAPHS

Business Filevision is a database. It takes information, arranges it into a predetermined format, and allows the user to access and manipulate the data in a variety of ways. It's just like all the other nonrelational databases (it can only work with one file at a time), except for a slight twist: it works on a graphic base.

The basic premise behind the original *Filevision* was simple. Each individual graphic element on the screen was associated with either data or another *Filevision* file. *Business Filevision* takes the original concept and builds on it, making it practical to create graphic databases easily.

BUILDING A GRAPHIC DATABASE

Databases don't just happen. They must be created, built or set up. That first step is often the hardest part of using a database program. While *Business Filevision* is no different than many other programs, its setup is very flexible. Users are not bound to strict rules, although the terminology of the program differs from normal database terminology (for example, besides records and fields, *Business Filevision* deals with objects and types). This terminology must be mastered to use the program effectively. Let's examine a simple example, one that could be used by a large company to introduce new employees to the office layout. In the example, there are some clearly defined

categories: the background (consisting of any static text and graphics), the "floor" buttons (which link to other files), and the help button (which opens a pop-up window). Each category, or type (as *Business Filevision* calls it), of object has a unique record format. The background elements of a drawing are quite different from, say, house symbols in the foreground. Up to 16 different types of objects are allowed per file. Each file can have that number of object types, so that a file summoned up through a link can have a totally different set of types.

Each button on the main screen is linked to a floor plan file. Double-clicking on a button opens the floor plan file. Each room has a data record describing the room, company position of the occupant and other relevant information. Double clicking on a room brings up the data record display. The buttons need not have been actual buttons, but could have been any graphic object or text. This process allows many layers of files to be linked, achieving a graphic "zooming" effect.

The graphics elements can also be the objects of a search, so that, for example, the offices of all executives that make more than \$50,000 a year can be highlighted against a dimmed background. This dynamic relationship between graphics and data is the key to *Business Filevision*.

Records contain data fields and annotation fields. Annotation fields contain static information that will not be used in searches, sorts or other variable computations. For example, a company logo used on reports would occupy an annotation field. Calculated fields are also available, allowing a field to be the result of a mathematical calculation involving two or more other fields. Nested sorts can be specified for up to three fields upon printing, and the printed report format allows calculated fields (including counts, totals, averages and standard deviations).

Records can also exist without associated graphic elements, and can later be attached to elements, allowing the definition of all record layouts of all types before any graphics are created. Record layouts can also be

copied and pasted within the file, or transported into a new file.

Data screens can be as large as 30 x 30 inches, permitting the user to create records larger than the Mac screen. The data window has the usual horizontal and vertical scrolling bars, and individual fields can be larger than the screen display.

One of the most interesting features of the program is the use of pop-up windows. An object on the screen can be grouped with another object so that the second object will only appear on-screen when the first one is clicked on. For example, a button on the screen can be clicked on once to invoke a Help window without actually branching to a data screen or another file. In the sample file on the program disks, icons representing houses have small floor plans attached to them. These plans only appear on the screen when the house is selected. To close a pop-up window simply click on any other part of the screen. This unique concept provides an extra layer of graphic information, without interfering with the rest of the file.

The graphics that are the heart of *Business Filevision* programs can be created within the program or brought in through the Clipboard. Lines, circles, boxes, freehand lines, polygons, arcs and text can all be created within the program. Selecting a Type and drawing something or pasting in a graphic element from the Clipboard generates a new record, ready to accept data.

Each *Business Filevision* graphics file consists of an 8 x 10 inch page, of which only 6 x 4 inches is visible in the main screen window. The miniature page below the tools palette is used to scroll the active window around on the document, as well as to view the position of selected objects that aren't visible in the main window. *Business Filevision* allows the whole 8 x 10 inch page to be worked on at any time, much like *MacDraw*. When working in the Show Page mode, objects may be drawn, stretched, shaded or manipulated exactly as they would be in the main window. The only tool not active in this mode is the text tool. New or repetitive symbols (such as houses on a map) can be created in the symbol editor *FatBits* style. The cur-

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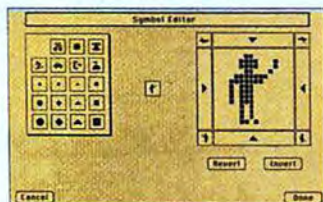
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BUSINESS FILEVISION - THE WORKS

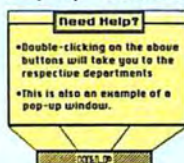
Symbol Editor



Showpage



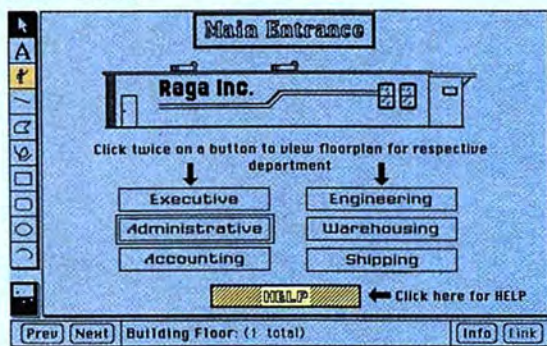
Pop-up window



File Specifications:

- Max. file size: 4 megabytes
- Max. # objects/file: 32000
- Max. # types/file: 16

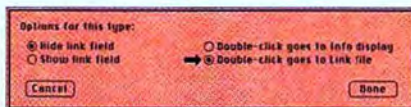
Main Screen



Screen/Objects Attributes

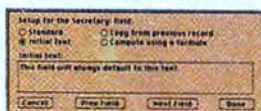


Object linked to Info screen



Object linked to another file

Field Attributes



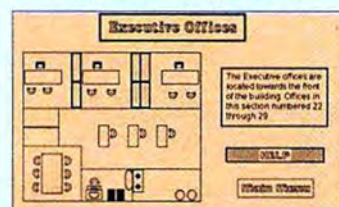
Data Screen



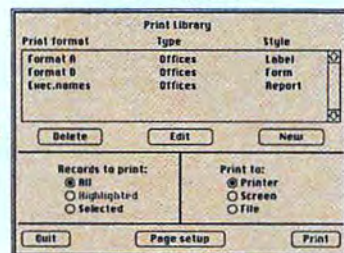
Field Specifications:

- 2000 characters/field
- Max. length of field name: 31 characters
- Max. # fields/record: 99
- 4000 characters/record

"Zoom-In" Linked File



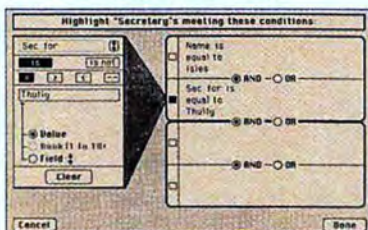
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Print Styles:

- Forms
- Labels
- Reports

Search Screen



results

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Move the mouse and turn a teacup into a rowboat.

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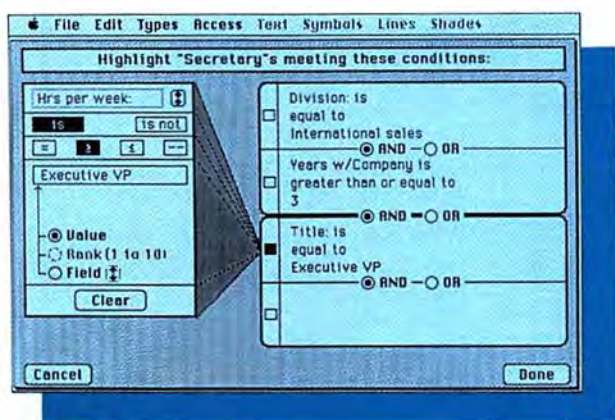


FIG. 1: Up to four criteria can be specified for a search. All Executive VPs in the International Sales division with the company for more than 4 years will be highlighted on the screen after clicking the Done button.


BUT IS IT A DATABASE?

When the original *Filevision* hit the market, it was almost a solution begging a problem. Most professional data processing people couldn't visualize the concept of a graphically based system, and the typical Mac owner read the superlative reviews, went out and bought the program, was amazed by it, and then placed it on a shelf, never to use it again. The single most detrimental factor was that graphics had to be created within the program, a difficult task indeed.

Now thanks to the graphic importing capabilities of *Business Filevision*, a wide variety of graphics formats (*MacPaint*, *MacDraw* and *MacDraft*) are now available to the user. Files created with the original *Filevision* package can be transferred to the *Business Filevision* using the translation utility included with the program. But that's not the only port to the outside world now offered. An optional utility (available directly from Telos only) brings data from programs that support DIF and SYLK formats into *Business Filevision* files, as long as the original fields conform to the length specifications.

So it's safe to say that *Business Filevision* is not only a database, but it breaks new ground in the concept of a database, and it can even communicate with other databases. *Business Filevision* is an extremely powerful piece of software.

The program works on a 512K, two-drive system, but a hard disk is strongly recommended. Performance on the two-drive system is both slow and restricted to how much information will fit on the data disk. Fortunately, *Business Filevision* comes with a hard disk install program. This intelligently designed program can be run twice, so if your hard disk crashes, you can get *Business Filevision* up and going again without waiting for a replacement disk to arrive in the mail.

Business Filevision is an excellent example of what a Macintosh program should be and do. The Mac interface is used to its maximum capacity, allowing graphics and data to coexist in a dynamic, intelligent fashion. As a database, the program delivers, and adds a new dimension to the term. As a graphic database, it stands alone. 

rently selected symbol always appears on the tools palette.

Business Filevision is easier to use if the System has some special desk accessories added to it. Hayden Software's *Art Grabber+* and *CheapPaint* allow graphics to be preconfigured in *MacPaint* and moved into *Business Filevision* quickly. In *Business Filevision*'s Show Page mode, an entire *MacPaint* file can be pasted into a file as a single background object using *Art Grabber+*.

GETTING THE FACTS ON PAPER

The text data (or "normal") portion of a file can be printed out in a variety of ways. Standard forms, form letters, labels and columnar reports are all part of its standard repertoire. The program can also handle mail merges (field names are inserted into reports that are configured as letters). Like the record layout, the print for-

mat can be up to 30 x 30 inches, allowing very flexible form designs.

Selective printing of parts of files is a bit awkward. The user must first go through the on-screen selection routine, and then invoke a print command that will only apply to using the selected records. This process could have been made easier by incorporating a search facility directly into the print command.

Fields can be printed with or without their field names, and the system date and time as well as the page number may be included in a report. One of the nicer features of the program is that it can use any of the Macintosh typefaces for printing, especially useful when doing form letters. The program offers full LaserWriter support for all its printing functions. There should be enough printing versatility to accommodate even the most demanding users.

BUSINESS FILEVISION: REPORT CARD

Overall Rating:

Follows Mac Interface:
Printed Documentation:
On-Screen Help: none
Performance:
Support:
Consumer Value:

Comments: *Business Filevision* is a unique program, useful for applications other databases can't touch.

Best Feature: Accepts graphics through the Clipboard.
Worst Feature: Program cries out for a hard disk.
List Price: \$395. Requires 512K and external drive, hard drive recommended.

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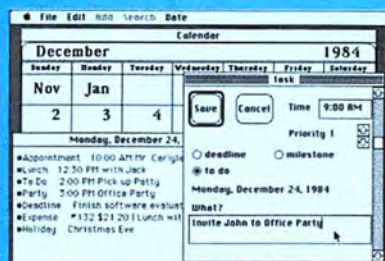
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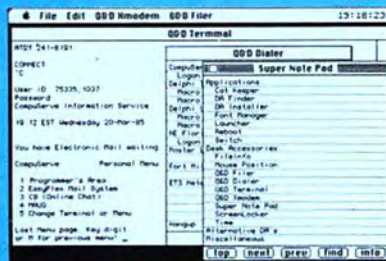
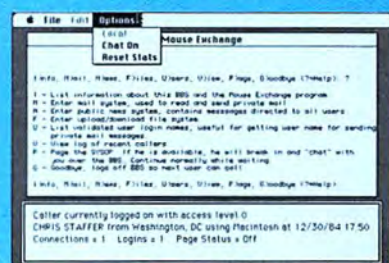


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Mouse Exchange™ Terminal. This program is a simple, yet sophisticated terminal emulator from the people who brought you 'Free Term' on Apple's software supplement. It emulates multiple types of terminals, has a built-in screen editor, and easy-to-use macros and dialer functions. Upload and download in ASCII, XMODEM, and MacBinary. *Works on the 128K Macintosh, and with ALL modems.*



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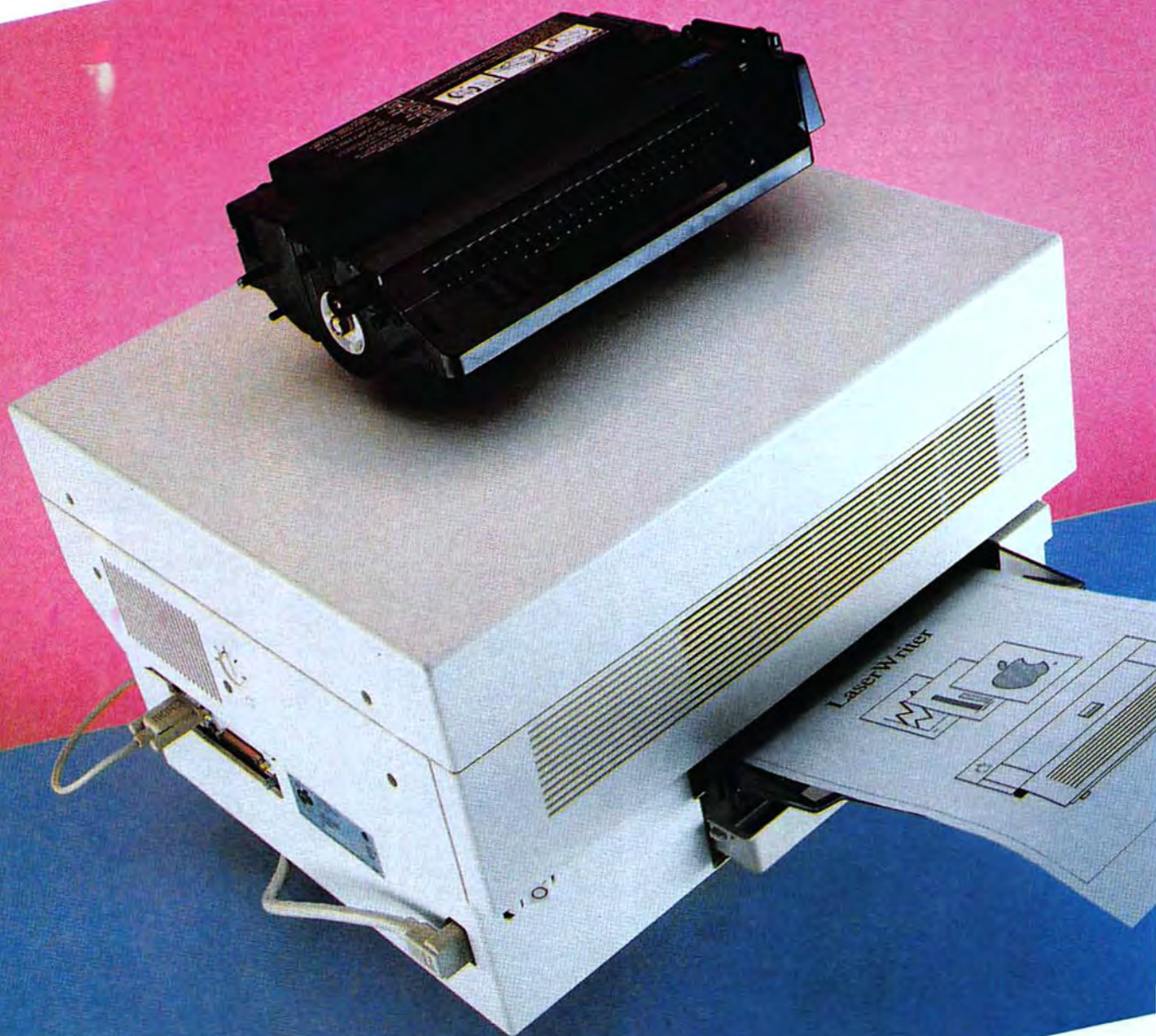
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by Jerry W. Jewell

THE LASERWRITER REVEALED

Like lightning the
ideas, methods and
techniques discussed
here will illuminate
your own creativity.

LET'S START WITH A QUICK QUIZ.

What's the most expensive single piece of computer equipment you have? If you own a LaserWriter, odds are that's it.

Next question: How much time and study have you put into getting the most out of your programs? Have you done the same for the LaserWriter? Or is it just another printer?

Here's a quick course in getting the most and best word processing output from your LaserWriter. While all major word processors work with the LaserWriter, some work better than others and one

works best. That one is *MacWrite* 4.5. If you don't have it, but do have an earlier version (2.2 or 1.0) take your master disk to any authorized Apple dealer and ask for your free upgrade. Be sure to make a copy first, because version 2.2 is still good for many uses, especially when the ImageWriter is the printer.

The reasons that *MacWrite* 4.5 is best are twofold. It has been optimized for print speed and, by far, prints fastest on the LaserWriter. It also prints the last page of documents first, so they wind up in order in the output tray.

If *MacWrite* isn't powerful

enough for your purposes and you use *Microsoft Word*, be sure that you upgrade to version 1.05. That version works significantly better on the LaserWriter than 1.00, although even 1.05 doesn't match *MacWrite* 4.5's outstanding performance.

WHY A LASERWRITER?

Before you rush out to buy a LaserWriter, consider how you normally use a printer. Decide if the following limitations would severely affect you: the inability to print on multipart or continuous forms, use colored or T-shirt iron-on ribbons, adapt to a ThunderScan digitizer or

THE LASERWRITER REVEALED

precisely align images on the paper. These are all beyond the LaserWriter's abilities, but are performed quite well by the ImageWriter—so keep your old printer for these uses, even if you decide to go laser.

What the LaserWriter does excel at is producing superb quality text and graphics. It can print on letter or legal size paper from cassettes and can be manually fed odd size paper, including envelopes and overhead transparency material. While the LaserWriter manual claims it can accept paper as thin as 8-pound stock, it prefers a high rag content paper of 20- to 24-pound weight. Anything lighter (and cheaper) tends to feed double sheets or curls excessively, causing jamming when printing the back side.

PAPER POWER

The Macintosh/LaserWriter combination is often the heart of a small business. They can print professional quality letterheads, envelopes, correspondence, brochures and mailers, and handle all the office's accounting and database functions.

Creating custom letterheads is quick and easy as long as only the built-in fonts are used. Try using a more formal font such as Times for the logo. Set the company name in larger type to set it apart from the street address or use Italic, Bold, Outline or a combination of these. Figure 1 shows a letterhead for XYZXYZ Corp. It can be composed in a few seconds as part of the letter.

To create letterheads that include custom art work or fonts, use *MacDraw* to make the original designs. Try to avoid using *MacPaint* when creating original art, as the images cannot be scaled as accurately as in *MacDraw*, and the *MacPaint* images do not print as sharply as *MacDraw* objects do. *MacDraw* objects can be scaled even after they have been pasted into a *MacWrite* document without losing too much clarity. The eyes in Figure 2 show the print clarity of the same image printed from *MacDraw* and *MacPaint*.

The easiest design editing and sharpest results are obtained by creating the original design at roughly eight times the desired final size.

XYZXYZ Corp.

123 Main Street • Anytown
SomeState • 00000

Fig.1

Reduce the art to approximately half the original size by dragging one corner toward the center of the image. Then print it after selecting "Reduce to 25%" on the Page Setup dialog. Include the text of the address by grouping it with the logo. This allows virtually any size logo to be generated just by dragging one corner of the grouped object.

You may need different sizes for the letterhead than you do for envelopes or other documents. Be sure to pick the font size you want the final print size to be if you are not going to reduce the image during printing. Keep in mind that when you scale a *MacDraw* object that includes text, the text stays the same size and only the drawing portions of the object changes scale. Scale both together by transferring them as a single object into *MacWrite*. Once there, pick up a corner and scale both together.

After your letterhead is designed, you can either paste it into every letter you wish to print or create a template that is simply the design at the top of an otherwise blank sheet. Type your letters onto the template and be sure to Save As... rather than Save....

An even better solution is to preprint a small quantity of letterhead.

The preprint option will save the most printing time, especially if you have a complicated logo, but this option requires that letterhead be inserted into the cassette every time you want to use it. Large and complicated graphic logos take a long time to print the first copy because a tremendous amount of information must be generated and stored in the LaserWriter. This process can, in extreme cases, take minutes. However, once the printer is set up, it can produce even complicated graphics at a rapid pace, often approaching its eight page per minute maximum speed. A final point: It is usually easiest to preprint the letterheads directly from *MacDraw*.

For really quick business letter printing first type the recipient's address centered about six lines down from the top. Then choose the Landscape option from the Page Setup dialog box and manually feed an envelope that has the return address and logo preprinted on it. After printing the envelope, select left-justification on your document's Ruler and complete the editing. Then print the whole letter onto preprinted letterhead from the cassette (remember to switch back to Portrait orientation). This method wastes a sheet of paper from the cassette when you manually print the envelope, but requires the least amount of typing.

BOTH SIDES NOW

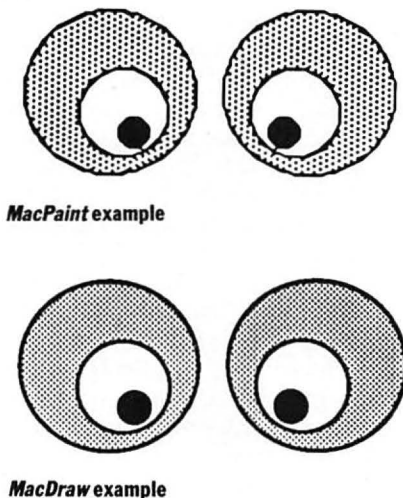
To print your work on both sides of the paper is a bit tricky, but follow these instructions to save yourself a great deal of time.

1. Make sure your document includes everything. All spreadsheet data, graphics or other information should be included in the document. And there has to be plenty of room on the disk for the Print file.

2. Print one copy of the document from the paper cassette.

3. Take the finished pile from the

Fig.2



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THE LASERWRITER REVEALED

output tray and place it face down in front of you. Lift the top two pages off and slide them to the right, creating a new pile. Now remove the next two sheets placing them on top of the new pile, and continue removing two at a time until the original pile is exhausted. You should end up with a pile where the order of the even and odd sheets has been reversed. For a ten-page document the order would be 9,10,7,8,5,6,3,4,1,2 with the 9 on top. Since the LaserWriter prints the last page first, when you place this stack back in the printer with page 9 on top it will print page 10 on the back of page 9, page 9 on the back of page 10 and so on until the document is printed. You'll end up with two double-sided copies of the document.

4. Now take the stack and place it back in the paper cassette face up, top toward the printer. Be sure to remove any excess curl to the paper before putting it back in the cassette. The next to last page of your document should be on top.

5. Choose Print again. If the printer jams during the second printing, switch to better paper or unjam the printer, look at the top two pages in the cassette to determine where to stop the printing and restart the print from page 1 to the page where it jammed.

LARGE FONTS, SMALL FONTS

MacWrite does not support font sizes greater than 24 points or less than 9 points. That doesn't mean that you can't have fonts larger than 24 points or less than 9 points. In fact, you have several options. For very large fonts you can often create the entire document with the right margin set at 4-1/4 inches and print at 200% of the original size. This works well for single page poster signs. For documents that require very small fonts the full width of the page, create the reduced section of text in *MacDraw* and paste it in as an object.

An even better option is to obtain the *MacWrite* document called FNTLIB.UTL which is on the Club Mac Bulletin Board, other bulletin boards and available from many users' groups. This includes actual size

LASERPOWER FOR PENNIES

The LaserWriter has a suggested retail price of \$5,995. Add to this \$100 for two AppleTalk connector kits, and more for paper, a spare toner cartridge and a stand, and the total cost will be around \$6,500. If this is amortized over 120,000 copies (five years at 2,000 copies per month) and 1 to 2 cents per page is added for quality paper and 3 cents per page for toner, maintenance and cleaning supplies, the cost per copy is roughly 10.4 cents.

If you can find a LaserWriter at a discount you might shave a penny off that figure. The LaserWriter's price should drop significantly through 1986 as other manufacturers come out with competitive and

compatible laser printers.

The workhorse ImageWriter is much cheaper to buy and run. On the same use basis (120,000 copies over 5 years) it will cost about 3 cents a copy (mostly ribbons and paper). ImageWriter repairs, if necessary, will be much cheaper than all but the easiest LaserWriter repairs.

You should also consider the LaserWriter's tax impact (mostly depreciation and investment tax credit) and the costs you would normally spend on typesetting and printing letterheads and envelopes. In a multiuser environment you can also take into account money saved from sharing a printer.

examples of the entire range of font sizes from 3 to 48 points. FNTLIB.UTL is also known as WRTFNT.BIN and can be found in many places under that name. WRTFNT.BIN is in DL7 of CompuServe's Mac User group (PCS-23).

To use a particular font size just copy a section of the text of that size onto the Clipboard, close the FNTLIB document, open your own document and paste it into that section of text. Remember to stay within *MacWrite* to retain the font size attributes. An alternative is to start your document at the end of the FNTLIB file, deleting the unnecessary text at the end of your editing.

A warning is necessary here. If you open two copies of *MacWrite* under *Switcher*, one with FNTLIB.UTL open and the other with your document open, *Switcher* might trash your document. The reason for that is that *MacWrite* creates temporary work files for its own use as it works and both copies of *MacWrite* are busy creating temporary files with the same names, or at least trying to. If the copy of *MacWrite* where your document is gets confused, no more document.

FNTLIB.UTL can play another valuable role. With it on the disk you could place only one small version and one large version of each font in the System and use the FNTLIB.UTL file as a repository of font

sizes. This would allow you to have very small System files. The actual fonts used by the LaserWriter when it prints are built into it and only need to be in the System file to improve screen appearances. Only the ImageWriter needs the font (and one double the desired size if high-quality printing is desired) to do printouts. The drawback of deleting fonts is that the scaled fonts do not look as crisp on the Mac screen. Saving 80K or more could be worth it, though. By retaining only the two smallest and the largest font sizes of Courier, Helvetica, Times and Symbol it is possible to free up nearly 33K from the System disk. The screen images for the sizes above 9 point are quite readable.

Here's a list of important rules about fonts on the LaserWriter.

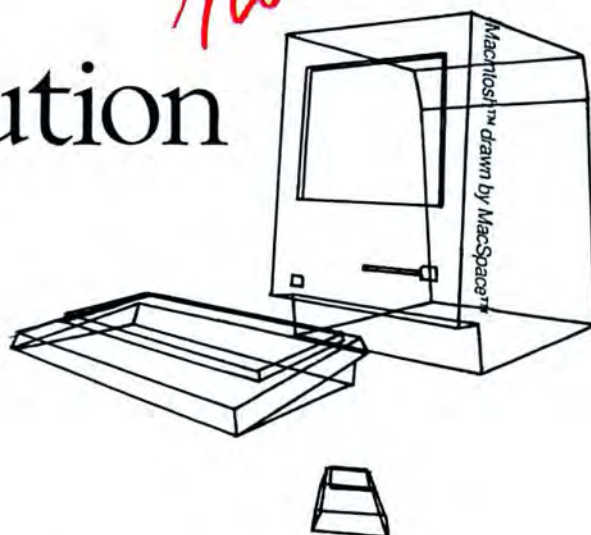
1. Always use the built-in fonts (Helvetica, Courier, Times and Symbol) for highest quality. Clicking on the "Font Substitution?" option will foul up page formatting if the document was not written entirely in Times, Helvetica, Courier, Symbol or some combination of these.

2. Use simple fonts like Helvetica for large tables of numbers of informal documents.

3. Formal fonts like Times are great for letterheads, reports and business proposals.

4. Letters and correspondence should use the Courier font for the "typed look." □

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M A C O F F I C E



***Apple's new
hierarchical file
system opens new
hard disk vistas for
Mac users.***

A HARD MAC IS GOOD TO FIND

HAVE YOU HEARD ABOUT HFS?

No, he wasn't the 33rd President of the United States—in fact, "he" is an "it." HFS is Apple's new Hierarchical File System, and it finally gives hard disks attached to (or inside) the Mac the power they have been lacking until now.

The old file system, known as MFS or Macintosh File System, was not designed to handle the number of files that rapidly appear on even the smallest hard disks. Many users who tried to fit a large number of files on the early, first generation Mac hard disks saw the "The destination disk directory is already full. OK?" message. That meant that the space allowed for the disk's internal map or directory was full. There was usually plenty of space left on the disk; there just wasn't any more room to store titles and locations. That was a truly sorry state of affairs.

Second-generation Mac hard disks used ingenious partitioning software. The concept of "drawers" spread through the Mac hard disk world. Drawers are simply electroni-

cally defined disks. They must be mounted and "ejected" just like regular disks and their directories are still limited to a single level and a reasonably small number of files. Some drawer software manages to create larger directories than 128 or so, but the directory size is still limited.

MFS is a flat or single-level system. All the files on a disk (regular or hard) are at the same relative level with respect to each other. HFS has multiple, ranked levels; that's what hierarchical means.

Folders in MFS have only visual significance. They are used to reduce desktop clutter and organize files. The hierarchical nature of HFS changes that. Folders have a new meaning in this system. They now represent real subdirectories, not simple storage places for files. They can contain subdirectories of their own.

The number of files that can be supported on an HFS disk is extremely large (well over 1000). While each subdirectory is still limit-

By Steven Bobker

A HARD MAC IS GOOD TO FIND

ed, there's no reason to ever approach those limits. Directories that are nearly full will still have the same sluggish performance that categorizes nearly full MFS directories. But the cure now is simple. Don't get a new computer, just create new folders. The best run HFS desktops show very few items and take their users to the files required through a logical train of folders. There doesn't seem to be any restriction on how deep the folder nesting goes.

What all of that means is a revolution in how hard disks are organized. Prior to HFS, hard disks required some method of partitioning their contents into discrete areas or volumes, usually called drawers. Working with drawers is just like working with regular disks. Users can have several drawers open at once and operations are quick since all are on the hard disk, but drawers are still discrete volumes. Moving or copying a file from one drawer to another results in a copy of the file in each place.

Working with HFS is completely different. Dragging a file to another folder results in the file actually moving into that folder's directory. Only one copy of an application need be kept on the hard disk and any document that needs it, no matter where it is located, or how deep it is buried in some directory, it will find it. No longer does the application's drawer need be mounted. Everything is always there, ready to go.

The new system has its good and bad points. Versions current at press time are on disk and add RAM patches to the current operating system. This system is nowhere near as speedy as it'll be when the current patches are put into the new ROM (which should be very soon, if it has not already appeared). Still it is a very powerful and convenient system. Once you get used to it (a process that might take a week or so), nothing else is satisfactory.

The version we reviewed (that shipped with the early HD20 hard disks, including Finder 4.59, which in Apple's curious way is marked Version 5.0 in places) lacks features that most drawer partitioning soft-

ware provides. For example, there is no print spooling function, although Apple promises one soon. Drawers and partitions can usually be password protected, allowing data security if a machine has multiple users. Right now HFS users must use commercial or public domain file encryption programs if their data must be protected from prying eyes.

A VERY HARD APPLE

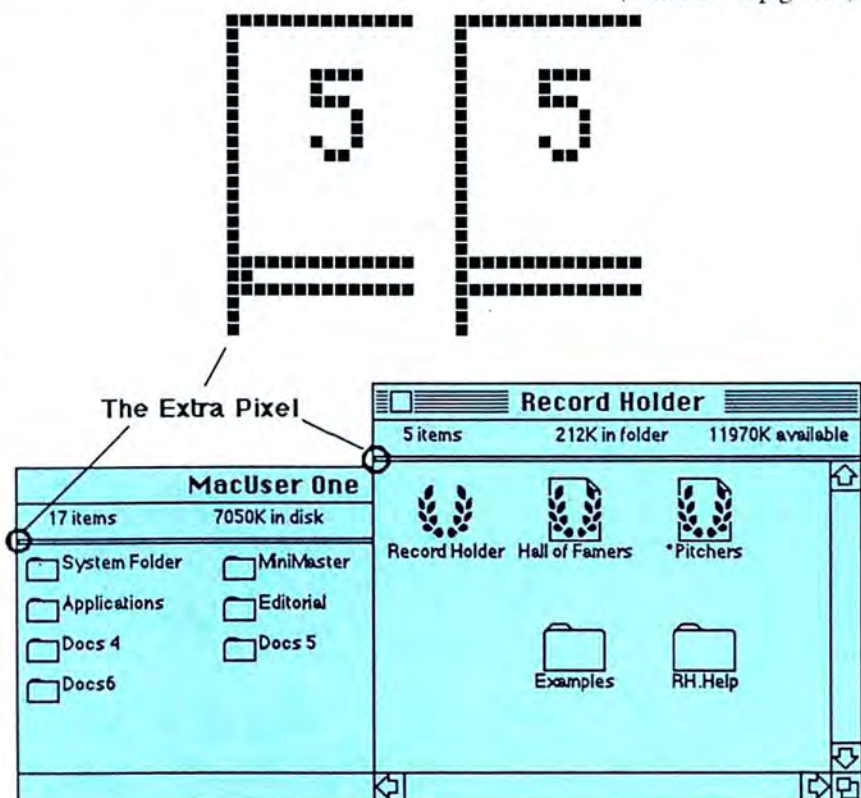
The first hard disk to be designed to use the Mac's new file system is Apple's own Hard Disk 20. This 7-pound, 3-inch high unit fits neatly under the Mac. The rear view gets a bit tangled, since the unit adds its own connector (to the Mac's external disk drive port) plus its own power cord to the clutter at the back. The case matches the tan of the normal Mac case, so some thought was obviously given to coordinating the appearance of the Mac and the Hard Disk 20. Unfortunately, the extra 3 inches added to the height of the combo spoils the Mac's classic

proportions and give it a distinctly robotic look. However, if there is room, the Hard Disk 20 can be placed behind the Mac or to its right.

Another physical problem is that the top of the case is rather smooth. The Mac will move if a disk is pushed in with moderate force or if the programmer's switch is firmly depressed. Simple indentations for the Mac's tiny feet would have solved that problem.

The drive is very quiet, just about the quietest hard disk available. It can be heard in a quiet room, but not at all in an ordinary office environment. This was a pleasant contrast to the sound level provided by some early Mac hard disks, and, in particular, to a souped-up IBM PC-XT that had, among other additions, a fan and two 10-meg hard disks. The thing sounded like a DC-3 when it was powered up. Since the drive is quiet it is more likely to be left on overnight, generally a healthy thing for hard disks.

(continued on page 137)



The extra pixel on the extreme left between the double lines indicates that this folder is on an HFS volume. If that pixel is missing, the disk is an MFS disk.

IS THIS DRIVE HYPER?

The biggest, fastest hard disk available at press time is General Computer's HyperDrive 20. It's also the only internal 20-meg drive available (although more should be out by the time you read this). The drive and its circuit board are mounted inside the Mac, toward the bottom, righthand corner. It connects to the digital board with a special clip that allows easy installation and removal.

The HyperDrive also has a small fan that mounts above the actual drive. The fan is at least as noisy as the drive, though neither makes an objectionable amount of noise. With its fan, the HyperDrive runs cooler than an ordinary 512K Mac.

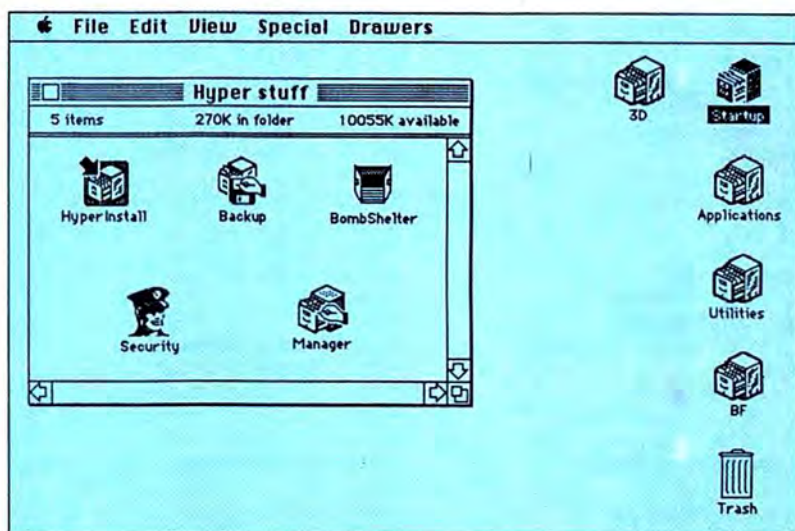
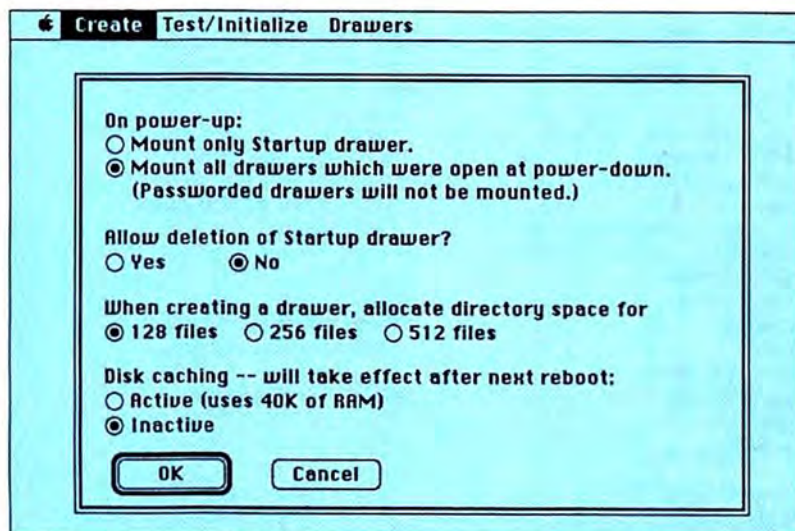
The drive is a pleasure to use. It has an excellent and complete set of utilities. These include a manager for creating, deleting and otherwise handling drawers; an easy-to-use, efficient backup tool; and a security program that password locks any drawer.

Drawers are usually mounted (selected) and unmounted using a well-designed desk accessory called "Drawers." The *Manager* application can also be used, but it is not as convenient. The desk accessory puts an extra menu at the right end of the menu bar. Drawers are selected or deselected by choosing them on this menu.

The *Manager* program is the key to optimal drive utilization. It lets users set a maximum number of files (128, 256 or 512) that a drawer's directory can handle. Actually, you're setting a physical size for the directory, so those numbers are approximate. Very short file names will allow more files to fit, very long names will fill up the directory faster.

The only disadvantage to having a directory of more than 128 files is that when using some applications requiring large amounts of memory, there may not be enough memory to use the "Drawers" desk accessory to mount and unmount other drawers with large directories. In those cases the *Manager* can be used.

The HyperDrive can also use 40K of the Mac's RAM as a cache. That's not really enough to make a signifi-



cant difference in operating speed, although it will have some positive effects. The cache should be selected at all times, except when running a program that requires the full 512K memory, like *ThinkTank 512*. If you plan to use this program on your HyperDrive, be sure to get version 1.2 or higher (1.2 is available as a free upgrade to version 1.1 owners, directly from the publisher only).

The *Manager* is also used to optimize space usage. The HyperDrive is not very good at allocating space, using 256K chunks. This portion of the *Manager* will reclaim some 256K areas, but that still leave a

lot of space essentially wasted.

Performance is outstanding. The HyperDrive is speedy and easy to use. Just remember to back up drawers on a regular basis. The HyperDrives show higher than usual sample variation (different machines seem to differ in many characteristics: noise, reliability and so on). User reports indicate that HyperDrive 10 and 20s have a higher than average repair rate. However, it seems to travel safely and well.

Service and support from the maker, GCC, is normally both speedy and excellent. Certainly consider this drive, especially if you travel with your Mac.

The call is

✓denotes Mac XL compatibility.

SOFTWARE

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✓Fontastic (create your own fonts) \$27.

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Curtis Manufacturing	
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FX-185	call
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Ergotron	
MacTilt	75.
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MacEnhancer	159.

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A+ Optical Mouse	59.
N² Products	
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Mac to Printer cable (6 feet)	19.
Paradise Systems	
Mac 10 (10 megabyte hard disk)	769.
Mac 20 (20 megabyte hard disk)	1029.
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Switch Box	36.
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- No sales tax.
- All shipments insured; no additional charge.
- Allow 1 week for personal and company checks to clear.
- UPS Next-Day-Air available.
- COD max. \$1000. Cash or certified check.
- 120 day guarantee on all products.*
- To order, call us anytime Monday thru Friday 9:00 to 9:00, or Saturday 9:00 to 5:30. You can call our business offices at 603/446-7711 Monday thru Friday 9:00 to 5:30.

SHIPPING:

Continental US: For printers and drives add 2% for UPS ground shipping (call for UPS Blue or UPS Next-Day-Air). For all other items, add \$2 per order to cover UPS shipping. We will automatically use UPS 2nd-Day-Air at no extra charge if you are more than 2 days from us by UPS ground. **Hawaii:** For printers and drives, actual UPS Blue charge will be added. For all other items, add \$2 per order. **Alaska and Outside Continental US:** Call 603/446-7711 for information.

free, the service is

Satori			Blue Chip			Miles Computing		
BulkMailer	.....	\$79.	✓Millionaire (stock market)	.....	\$30.	✓MacAttack (3-D tank simulation)	.....	\$27.
Scarborough Systems			✓Tycoon (commodities)	.....	30.	Harrier Strike (3-D flight simulation)	.....	27.
Mastertype	.....	25.	✓Baron (real estate)	.....	30.	Mindscape		
Sierra On-Line			✓Squire (personal finance, reqs. 512k)	.....	30.	Racter	.....	27.
✓MacOneWrite (cash disbursements)	.....	137.	BrainPower			Balance of Power	.....	30.
✓MacOneWrite (accounts receivable)	.....	137.	✓Think Fast (improves recall)	.....	23.	Déjà Vu (murder mystery)	.....	33.
Silicon Beach Software			✓Chipwits	.....	26.	Origin Systems		
✓Accessory Pak 1	.....	24.	Broderbund Software			Exodus: Ultima III (fantasy adventure)	.....	38.
Simon & Schuster			Lode Runner	.....	24.	PBI Software		
The Mac Art Department	.....	24.	Cyborg (sci-fi text adventure)	.....	24.	✓Feathers & Space	.....	21.
Paper Airplane Construction Kit	.....	24.	Ancient Art of War	.....	27.	✓Strategic Conquest	.....	29.
Typing Tutor III	.....	31.	CBS			Fokker TriPlane Flight Simulator	.....	35.
SMB Development			✓Murder by the Dozen	.....	25.	Penguin		
MacMate	.....	35.	Creighton Development			Crimson Crown	.....	24.
SoftStyle			✓MacCommand	.....	21.	✓Pensate	.....	24.
Epstart	.....	27.	Epyx			✓Xyphus	.....	24.
Jetstart	.....	27.	Rogue (great graphics)	.....	24.	✓Transylvania	.....	24.
Toshstart	.....	27.	Temple of Apshai Trilogy	.....	24.	✓The Quest	.....	24.
Tlstart	.....	49.	Winter Games	.....	24.	Priority Software		
Laserstart	.....	59.	Gamestar			✓Forbidden Quest	.....	24.
Decision Map	.....	79.	Championship Star League Baseball	.....	22.	✓Gateway (sci-fi fantasy adventure)	.....	25.
Software Publishing			Hayden Software			Psion		
PFS:File/Report	.....	100.	Masterpieces	.....	24.	Psion Chess (3D and multi-lingual)	.....	31.
Springboard			Word Challenge II	.....	24.	Scarborough Systems		
Art a la Mac Vol. 1-People and Places	.....	23.	Sargon III (9 levels of chess)	.....	29.	Run for the Money	.....	29.
Art a la Mac Vol. 2-Variety Pack	.....	23.	Perplexx	.....	24.	Make Millions	.....	29.
State of the Art			Infocom			Sierra On-Line		
✓Electric Checkbook	.....	45.	✓Seastalker (junior)	.....	24.	Frogger	.....	24.
Symmetry			✓Cutthroats (standard)	.....	24.	Championship Boxing	.....	24.
✓Quick Disk (requires 512k)	.....	21.	✓Enchanter (standard)	.....	24.	Ultima II (role-playing adventure)	.....	35.
T/Maker			✓Hitchhiker's Guide (standard)	.....	24.	Silicon Beach Software		
✓Click Art Personal Graphics	.....	29.	✓Planetfall (standard)	.....	24.	Airborne!	.....	21.
✓Click Art Publications	.....	29.	✓Wishbringer (standard)	.....	24.	Enchanted Scepters	.....	24.
✓Click Art Letters	.....	29.	✓The Witness (standard)	.....	24.	Sir-Tech		
✓Click Art Effects	.....	29.	✓Zork I (standard)	.....	24.	Mac Wizardry	.....	36.
✓ClickOn Worksheet	.....	46.	✓Zork II (advanced)	.....	27.	Spectrum Holobyte		
Telos Software			✓Zork III (advanced)	.....	27.	GATO (submarine simulation)	.....	26.
✓Filevision	.....	99.	✓A Mind Forever Voyaging (advanced)	.....	27.	Telarium		
✓Business Filevision	.....	219.	✓Infidel (advanced)	.....	27.	Amazon	.....	27.
Think Educational			✓Sorcerer (advanced)	.....	27.	Dragon World	.....	27.
✓Mind Over Mac	.....	29.	✓Suspect (advanced)	.....	27.	Fahrenheit 451	.....	27.
✓MacEdge II (math & reading)	.....	29.	✓Deadline (expert)	.....	29.	The Other Valley Software		
Vindex			✓Spellbreaker (expert)	.....	29.	Monkey Business (arcade action)	.....	21.
✓MacCalendar	.....	51.	✓Starcross (expert)	.....	29.	Delta Patrol (arcade action)	.....	21.
Warner Software			✓Suspended (expert)	.....	29.	Unicorn		
The Desk Organizer	.....	55.	Invisicluces (hint booklets)	.....	6.	Futura (sci-fi adventure)	.....	24.
GAMES			Magnum			Utopia (science fantasy game)	.....	24.
Activision			✓Gypsy (the Computer Oracle)	.....	23.	Animal Kingdom (ages 6-12)	.....	27.
Hacker	.....	27.	Mark of the Unicorn			Science and language arts program	.....	27.
Mind Shadow	.....	27.	✓Mouse Stampede (highly addictive)	.....	23.	Mac Robots (pre-school program)	.....	27.
Aegis Development			1-800/Mac&Lisa			Vindex		
MacChallenger (flight simulation)	.....	23.	550U			✓Funpak	.....	23.
Ann Arbor Softworks			MacConnection™			✓MacCheckers/Reversi	.....	28.
Grid Wars	28.	MacConnection			✓MacGammon/Cribbage	28.
						✓MacVegas	34.

MacConnection™

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Please circle 82 on reader service card.

THE PAPER

Keep your head above water in the paperwork sea.





CHASE

BY STEVEN BOBKER

THE MICROCOMPUTER REVOLUTION took a sudden and somewhat strange turn recently. For years we had been reassured by the best minds that the power of the micro would make offices obsolete and that paper would become something that only the unenlightened rest of them would have to deal with. We, the pioneers, the believers and the new converts, began to believe.



THE PAPER CHASE

As reality intruded we began to look around. The traditional office is disappearing, but it's not changing in the way that we were led to expect. People are not being displaced at all. Machines are changing and the way they're being used is changing, often radically. But the people are still there.

Why is that? In simplest terms, people are still there and always will meet and gather and exchange ideas because we need the subtleties — the meaningful glances, the winks, the tones of voices that can't be transmitted over wires or optical cables or through microwave transmission. We need the camaraderie, the chance to not have to talk only business, the warmth of human contact.

When in the office we still deal mostly with paper. That seems a bit strange, since local area networks *do* work and are rapidly improving. So there's no solid reason why we still have so much paper around. It's just not necessary. Or is it?

Human nature again seems to be the culprit. We like to hold the results of an analysis in our hands. It seems more permanent, more secure. And, if the preparer is skilled, the hard copy will look better than it could on any screen.

That's the real reason why our generation, and the next, and the next, will continue to use paper for many if not most business and personal purposes. It looks better. And appearances count, especially in the business world. Would you go to an important meeting without thoroughly preparing yourself on the issues to be discussed, or without making sure that you looked your best? No matter what you are doing, appearance makes a difference. That's as true of a report to the boss as it is of the invoices sent to customers.

A few years ago, before Mac, microcomputer-generated forms and reports were crude and not very attractive. The printing was often hard to read and graphics were nonexistent. Micro output wasn't very impressive. It was hardly worth it. So the myth of the paperless office began to form.

The Mac, particularly when combined with the LaserWriter, has opened new vistas. Attractive forms and reports can now be easily generated. They are good enough to

MegaForm produces high quality forms that can be filled out on the spot or on a one-by-one basis if required. Forms can also be accumulated, or "archived," and then printed out in a group.

MegaForm offers users a wide range of help screens. Help can be selected from any point in the program. Users then select the exact topic from this scrolling window. The Help feature covers all basic operations.

Items	Qty	Price
Trousers	3	\$3.00
Coats	5	\$8.25
Shirts	11	\$9.79

MegaForm help selections

- A5 Creating Cells
- B1 Filling Out The Form
- B2 Cell Types
- B3 Filling From a Table
- B4 Setting Up a Table
- B5 Filling From a Formula
- B6 Filling From MegaFiler

Select Quit Add help Remove

be sent to customers, to be used in sales presentations, to be used to convince the boss that an idea has merit.

The best way to handle a moderate number of forms on a recurring basis is to use either a forms processor that can be tied to a file or data manager, or a database with strong forms design and generation capacity. Several products fit this bill. *MegaForm*, with its associated file manager, *MegaFiler*, is worth considering. *FileMaker*, *Microsoft File* and *LaserBase* are standalone databases with good graphics integration and form design capability.

FORMING FORMS

MegaForm was the first product of its kind and is still the most versatile forms processor available. It can be used alone to create and complete forms, or it can import data from *MegaFiler*.

Using *MegaForm* is straightforward, if not quick. Many basic forms, including an invoice, a tax form, an expense form and a payroll check with attached file are already provided on the

accompanying Forms disk. These should all be looked at. If the exact form you need isn't included, it might still be possible to use one as a starting point, to save much time and effort. In particular, it sometimes pays to remove some of the embellishments on the ready-made forms, since that will speed form printing up.

Forms are created and modified using tools similar to those provided with *MacPaint* and *MacDraw*. *MegaForm*'s range of tools is not as large as with those programs, but it is more than adequate for the form design process.

The actual forms can be any size up to a whopping 24 by 36 inches, and can contain more than one page. Graphics that are beyond the capability of *MegaForm*'s tools can be imported from *MacPaint*, although heavy doses of graphics dramatically affect printing speed. When designing practical *MegaForm* forms, strive for eloquence through simplicity. Such efforts will repay themselves many times over

when the forms are finally printed.

The forms themselves are made up of defined areas called cells. The cells can contain text, numbers or formulas. Like a spreadsheet, the information in a cell can come from a number of sources (the keyboard, a *MegaFiler* file, a formula or a table) and can change, depending on what occurs or is entered elsewhere on the form.

The spreadsheet analogy describes how the cells in *MegaForm* interact with each other. Formulas are entered into a nonexpandable formula window; a formula must fit into that limited space. Cell data can also be derived from lookup tables. The results taken from one table can link to other tables. For example, an invoice form can calculate discounts based on the total amount of the order and then calculate the shipping charge, based on entirely different breakpoints.

Continuing the spreadsheet analogy, number cells have a set of predefined functions available. The function list is sparse but useful. The five functions include a serial numberer for invoices and other numbered forms (users can specify the starting number of the series); minimum and maximum functions that compare the values in two specified cells; date, which returns the current date in the chosen date format; and title, which returns one of six predesignated titles.

FILLING FORMS

MegaForm lets users fill out their forms in a variety of ways. Standard Mac editing and moving conventions have been followed. The only problems arise when working with complex forms. Keyboard, cursor and, most noticeably, scroll bar control is slow. This can make filling out forms more of a chore than it need be. Each form must have one cell that is filled out manually, but this restriction can be circumvented by designing a form that uses its manually filled cell to force the completion of many more forms. For example, filling in a name on a master index card could be designed to force the creation of an index, a new record and an updated customer record.

Completed forms can be saved to disk (archived), printed or closed and returned to later. Archiving is usually best used when the forms have serial

These figures show the quality and range of *MegaForm*'s help screens. This one shows how to create graphics in your forms.

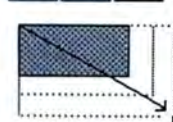
To draw one of *MegaForm*'s three shapes,



1. Select a pattern,



3. Select a shape,



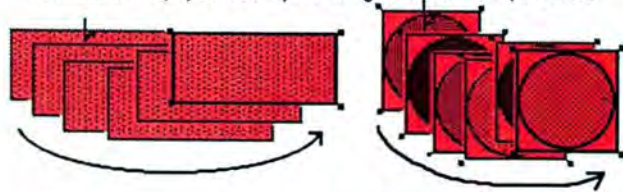
4. Drag the pointer across the page.



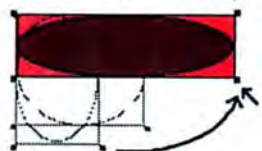
Hold down Shift when dragging to create a perfect square or circle.

Modifying graphics is as easy as creating them. This Help screen shows all the necessary techniques. Having graphic help like this just a click or two away is a major advantage.

To move a shape, select it, and drag it to its new position.



To change a shape's size, select it and drag on the small black spots.

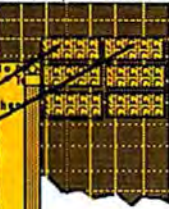


Setting up a table

The form design



The unprintable area



The cells that make up the table's columns might come from the unprintable area of the page.

The comparison cell and the cell that gets the resulting value might both be in the form design.

The Define cell window

numbers, since you can print a whole set of archived forms with one print command. Archiving permanently freezes each filled out copy of the form; it can't be modified later. This feature can be both drawback and advantage. It creates an audit trail, vital in all serious accounting and book-keeping applications. It also makes error correction unduly complex.

The printing commands are extremely versatile. Apart from the whole range of usual options, users can

print multiple copies of the same form, placing a different title on each. For example, an invoice could be printed as a three-part form, with the first copy marked "Master," the second "Shipping," and the third "Customer." Previously archived forms are printed by selecting a serial number range.

Printing is, as mentioned earlier, slow. The addition of graphics and the need to calculate or look up data slows down what is always a slow process on Macintoshes. The program works

THE PAPER CHASE

with the LaserWriter, but has not been optimized for it. Printing is the weakest part of the program.

Archived forms can be examined, but not changed. A well designed search function (that supports wildcards) makes bringing the desired form to the screen simple.

The link to *MegaFiler* works well, but users may not find *MegaFiler* good enough for their file management needs. *MegaFiler* is a relatively simple file manager that has been surpassed by many newer products.

MegaForm requires a 512K Mac with an external disk drive. Since it keeps copies of all forms produced and archived, it is best used with a hard disk.

The documentation is well written and covers all situations that the user will ever be in. Given this good documentation and the program's strict adherence to the Mac interface, it is easy to learn.

MegaForm will work with *Switcher*, although it requires a partition larger than 128K (180K worked well, it might work with slightly less). The program is copy protected, although several commercially available utilities can install it on a hard disk.

The problems with *MegaForm* appear to be generic. If similar programs and methods are developed, they should not be expected to do much better. The main problem is simply one of productivity. It takes too long to create a form, fill it in (even using the *MegaFiler* link), and print it out. A good clerk with an electronic memory typewriter should be able to fill out far more forms than this program, except when the forms have a great deal of math involved. There, *MegaForm* will be an excellent solution.

DATABASING FORMS

If the *MegaForm* solution won't meet your needs, consider *FileMaker*, an excellent nonrelational database. This easy-to-use program features exceptional report generating. Each file contains basic information that can be drawn on by any number of reports. Report creation is very similar to *MegaForm*'s, although there are fewer tools. Graphics can be imported from *MacPaint*, and data in text-only (ASCII), BASIC sequential or SYLK format can be imported.

Printing speed is about the same as *MegaForm*'s, which is to say not good. The LaserWriter works with the program, but no special effort to optimize its performance appears to have been made.

FileMaker runs on a 128K Mac, although (as with all databases) its performance is sluggish. It works best with a hard disk and as much RAM (512K or more) as possible. The program is not copy protected.

Microsoft File and *LaserBase* are similar to *FileMaker*. They vary in details and abilities. Neither has quite the form generation ability of *FileMaker*, but both will be adequate in most situations. *File* is the most powerful database in the group, while *LaserBase* offers password protection of its files. Picking one of them as a forms generator will be both a matter of circumstance (if you already have one, there isn't sufficient reason to get another just to do forms) and taste (they all work in different ways).

But wait a minute. If the databases' form generation capacity is so good (it is) and they're such good databases, why consider *MegaForm* at all? *MegaForm* has some valuable features that none of the databases contains. It will alert users about incomplete forms or data entries of the wrong type. It will not allow many errors that an ordinary database lets slip by. The help screens (which are comprehensive) concern themselves solely with forms generation and processing. It preserves an audit trail, since forms cannot be changed after they're archived.

SINGULAR FORMS

Some forms or reports only require a single copy or are produced infrequently. The easiest way to deal with them is to create them from scratch in one of the drafting or page layout programs, or acquire and use the form from a commercial disk of templates.

Programs such as *ReadySetGo*, *MacPublisher*, *MacPublisher II* and

The first step when using *MegaForm* is to design a form. In some cases it is easier to take an already supplied form and modify the design. An ample range of tools is supplied for this purpose.

File Edit Form Range Font Style MegaForm

Accept Cancel Sample

Redesign form Payroll Check With File

4587 La Suenos Rd, Alta Coma, Ca 93004

Name	Period ending	Date
d	Rate per unit	Gross pay
Gross	Fed. Inc.	Soc Sec
State Inc.	NET PAY	

The contents of each cell must be defined by selecting options from the dialog box at the top of the screen. The lower half of the screen shows the actual form.

File Edit Form Range Font Style MegaForm

Define cell

Name rate Sample

Fill from: ☐ Keyboard ☒ Formula ☐ Table

Type: ☐ Text ☒ Number ☐ Date

Justify: ☐ Left ☐ Center ☒ Right Next cell gross

Format: ☐ Currency ☒ Commas ☒ Parens ☐ Words Decimal pl. 2

Fill form Payroll Check With File Serial # 5

Employee No.	Name	Period ending	Date
employeeenum	name2	period	dc
Units worked	Rate per unit	Gross pay	
units		gross	
Gross	Fed. Inc.	Soc Sec	State Inc.
This pay gross1	FIT	FICA	SIT
			NET F

PageMaker can produce attractive forms easily, and are the best way to produce one-of-a-kind or infrequently used forms. They're even easier to use if *MacPaint* graphics are imported into them through products like *Paint Cutter* from Silicon Valley Software and *Art Grabber+* from Hayden, although *MacPublisher's* Camera desk accessory is a wonderful tool also.

The commercial template packages are a very mixed bag. Some offer *MacPaint* documents to be filled in. These should be avoided unless you intend to copy the *MacPaint* documents into *MacDraw* before working on them. Adding large amounts of text to *MacPaint* documents isn't worth the frustration it costs. It's simply too hard, and the results won't be good enough. Precise alignment is too difficult on all but the most trivial forms.

Some of the template packages provide *MacDraw* templates, a better choice. At least *MacDraw* allows precise positioning and neater end results.

The commercial template forms don't print well, particularly on the LaserWriter. They were not designed with the LaserWriter's requirements and resolution in mind. Aside from not printing well, they print very slowly. For example, most of the forms on *MacDraw Business Forms for Macintosh* by Datafood Software Company took over 15 minutes each to print on the LaserWriter. That's not acceptable unless all you want to do is watch the Mac struggle with the LaserWriter.

FILING IT ALL AWAY

Forms are going to be around for a long time, certainly as far into the future as anyone can see. Since they're going to be around they should be handled as professionally as possible. That means neatly, attractively and without error. They should be easy to produce, not a time-consuming chore.

Mac users have a wide choice of products to help them achieve those goals. Until that time far in the future when the paperless office finally does arrive, getting the best look on paper for the least effort is simply a matter of good business sense — there's no longer any reason for sloppy, unprofessional forms. The old excuse that "That's all

FileMaker is a database with strong report or form design capability. Forms, which are reports, are designed using the tools at the left side of the screen. This medical insurance claim form can be easily modified to serve other applications.

This is what the actual *FileMaker* form looks like. Users can see all the forms in a file using the booklike boxes at the top left. Data is not entered directly into these forms, but is inserted from the basic file, which doesn't have to look at all like the form.

The screenshot shows a window titled "Claim Form I.W." with a menu bar (File, Edit, Select, Gadgets, Format, Font, Style). On the left is a vertical toolbar with icons for "First", "Prev", "Next", and "Last". The form fields include: "DATE OF BIRTH" (Mo, Day, Yr), "SEX" (MALE, FEMALE), "RELATIONSHIP TO EMPLOYER" (SELF, SPOUSE, CHIL), "EMPLOYER" (Employer), "IF YES, EFFECTIVE DATE" (Mo, Day, Yr), "AREA CODE" (Area), "PHONE NUMBER" (Phone number), "PROVIDER NAME" (Provider name), "ADDRESS" (Provider address), "CITY" (Provider city), "STATE" (Sta), "ZIP" (Zip), and "DATE OF 1ST SERVICE" (Mo, Day, Yr).

The screenshot shows the same "Claim Form I.W." window, but now filled with data. The "Records" counter on the left shows "2". The form fields are populated with: "DATE OF BIRTH" 7/23/46, "SEX" FEMALE (checked), "RELATIONSHIP TO EMPLOYER" SELF (checked), "EMPLOYER" Mills Masonry, "IF YES, EFFECTIVE DATE" (checked), "AREA CODE" 213, "PHONE NUMBER" 555-1212, "PROVIDER NAME" Dr. Willard Whippert, "ADDRESS" 456 Rockalong Lane, "CITY" Beverly Hills, "STATE" CA, "ZIP" 977, and "DATE OF 1ST SERVICE" 2/5/85.

the IBM (or fill in your favorite) can do" isn't valid anymore. In the new

electronic office, the Mac's output will stand out. ☞

MEGAFORM: REPORT CARD

Overall Rating: ...

Follows Mac Interface:
Printed Documentation:
On-Screen Help:
Performance:
Support:
Consumer Value:

Comments: Good, solid form generator. Useful for producing moderate volume of forms daily.

Best Feature: Ease of filling out multiple forms, especially if data is already in a *MegaFile* file.

Worst Feature: Tie between slow printing and inability to import data other than from *MegaFile*. List Price: \$295. (*MegaFile* is an additional

\$195.) Requires 512K, hard disk recommended.

Published by Megahaus Corp., 5703 Oberlin Dr., San Diego, CA 92121. (619) 450-1230.

Special Note: *FileMaker* rates five mice in our MiniFinder section. If it is to be used primarily as a forms generator, it should be considered a four-mouse product. Similarly, *File* and *LaserBase* rate four mice and three mice, respectively, as databases. If used primarily as forms generators and processors, both should be considered three-mouse products.



THE MODEM IS Put your Mac in touch with the world by connecting to a national database. THE MESSAGE

by

Michael D.

Wesley

TELECOMMUNICATING, PARTICULARLY in easy Mac style, is a lot like eating ice cream. Some people can take it or leave it. Sort of, "It's OK. So what." Other people just can't get enough once they get started. Once that first connection is made (see "Your First Connection," *MacUser* Vol. I, Issue 3, p. 84), it's easy to get hooked on telecommunicating and want much more. Calling up your friend with a Mac isn't enough. You know there's more out there. The question is "Where?" The next place to check out is one of the national databases, such as CompuServe, The Source or Delphi.

These databases serve hundreds of

thousands of computer users worldwide. They are set up to provide access to huge amounts of information from almost any remote terminal in the United States or, in most cases, anywhere in the world. They provide services from news and weather to stock quotations, electronic mail to electronic games, online magazines to encyclopedias and other reference materials. This information can be read on-screen or dumped into a disk file for later use. It is even possible to have a conversation with other users from around the world, not just one on one but in a conference setting where everyone can talk to everyone.

Three obstacles prevent many people from taking advantage of the services national databases offer. The first is awareness, both that the services exist at all and that they really do offer enormous benefits. The second obstacle is inertia. Getting started with anything is difficult, and making the first connection to a huge data storehouse can be intimidating. The final obstacle, once the connection has been made, is knowing how to chart a path through the many services, directories and functions of the database.

Here we'll take a first-time explorer through the jungles of telephone lines and expose the hidden mysteries of one national database, Compu-



THE MODEM IS THE MESSAGE

Serve. The procedures are very similar to those used by both The Source and Delphi, so a new telecommunicator should be able to use this guide to find the way into any of the three services with little difficulty.

The easiest and best place to begin is to purchase a Starter Kit. The CompuServe kit is not specific to Macintosh, and can be purchased at most computer retailers. Its list price is \$39.95, but is often heavily discounted. And it includes a credit of \$30 (no matter how much you actually paid for it) against future use. Included in the kit are a user identification number and a temporary password. Both are required to connect to the service. (They exist to provide security against unauthorized use of an account.)

The manual that comes with the kit contains frequent and stern warnings against sharing your user ID or the password with anyone. Take these seriously. Once you subscribe to a service, you are responsible for time charged to your account.

The manual also includes information about subscribing to CompuServe, as well as telephone access numbers for your area, types of services available and means of navigating through the information. Although the manual doesn't seem very clear to a new user (in fact, it can be a little overwhelming at first), the manual should be kept handy because it answers most of the questions that will eventually come up.

A poster included in the kit provides a road map to the available services. This is also a valuable guide to keep as a reference. Although it cannot include all the databases that are on line and may be out of date, it does make it easier to find a topic.

Before establishing a connection, several areas of the manual should be read very carefully. The first concerns billing information. CompuServe charges an hourly rate (in addition to any telephone toll charges that may apply) that varies according to the local time where the connection is made. The hours between 8AM and 6PM, Monday through Friday, are Prime Service hours and are charged at a higher rate. Rates are lower between 6PM

and 5AM weekdays, and all weekend.

CompuServe charges can be billed to credit cards or deducted directly from a checking account. Billing information, such as current charges and account balance, can be accessed within CompuServe. Track your time spent on line and your charges very carefully. The service can be very economical if used wisely, but it is also easy to accumulate large bills through carelessness.

Other areas of the manual that should get at least a quick glance are the description of services, new user information, and the descriptions of the menus.

LOGGING ON

When you are ready to log on and become official, check all the connections to your modem, then start your communications program and check the settings. Most Macintosh terminal programs have a menu selection for setting the speed and format of transmission. The speed, called the baud rate, can be set at either 300, 1200, or 2400 if the modem in use can operate at 1200 or 2400 baud. Some modems may have to be switched manually to the correct speed. (Note that 1200- and 2400-baud transmissions are faster, so you can get more information in a shorter time. For this reason, 1200- and 2400-baud hourly rates are higher than 300-baud rates.)

The format of a transmission describes the number of bits of information the computer sends for each character. These settings are usually made by clicking buttons in a dialog box. The format should be set to either 7-bit ASCII, even parity, one stop bit, or to 8-bit ASCII, no parity, one stop bit.

Now look in the Starter Kit manual for the CompuServe access number nearest you. In the front section there is a listing of numbers for most of the metropolitan areas of the United States, and for areas within Canada. These phone numbers let you connect to CompuServe through a network, and many times will save long distance charges. The manual sometimes lists two separate numbers for an area. The first number is for 300-baud transmissions

and the second for 1200-baud. Numbers for 2400-baud service are new, and you'll have to obtain them on-line, after you've logged on. Once you have connected to the service, the most accurate and up-to-date phone number list can be accessed by typing GO PHONE.

Enter the CompuServe phone number in your terminal program and dial. In many programs, this is done by selecting a menu choice. *Smartcom II* makes the process even simpler. Just click on the phone icon, enter the number, and click OK. Some public domain terminal programs do not have a menu choice for dialing, but almost all programs can be dialed by typing ATD, followed by the phone number then a carriage return. (Leave out the spaces and parentheses, but don't forget the area code if the call is long distance.)

The program indicates when a connection has been made, and should also tell you the baud rate. Then you are left with a blank screen. At this point it is necessary to send CompuServe a special character, Control-C, a holdover from the early days of teletype terminals. Some terminal programs have buttons or menu choices for special characters like this, or you can press COMMAND-C directly from the Macintosh keyboard. If you are using a terminal program written in *Microsoft BASIC*, COMMAND-C will not work. To send a Control-C from one of these programs, press the ENTER key.

After receiving the Control-C, the system prompts you to enter a user identification number. This number is included in the Starter Kit, in a sealed envelope. It must be entered exactly as it is printed, with no spaces, and followed by a carriage return. (The carriage return is always used to tell the system to act on a command or entry.)

The next prompt asks for the entry of the password, also included with the kit. This is a temporary password, and will be replaced as soon as you have subscribed. The password should also be typed in exactly as printed, including slashes or other special characters, then RETURN.

If the user ID and the password

were entered correctly, a Welcome screen comes up to indicate that you have successfully logged on to the system for the first time. CompuServe recognizes the ID as a new user number and leaps directly into the subscription process. It is necessary to subscribe to CompuServe before using the time included in the purchase price of the Starter Kit.

The subscription process follows a questionnaire format and is very straightforward. The system takes you through it slowly, step by step. Fortunately, the time required to complete the subscription information is not charged. But it speeds up the process to have credit card or bank information handy before log-

ging on. As a subscriber, you are given a new password that will be valid from then on, although you can change your password, and, in fact, should change it frequently. The steps you take to do this are outlined in the manual.

After this initial signing up, the system displays the CIS (Consumer Information Service) menu, also called the main menu. This menu will be the normal starting point after logging on from now on.

The system uses menus to make it easy to get around within the myriad CompuServe databases. The menu choices are numbered, and a selection is made simply by typing the number of a particular option and

pressing RETURN. The system prompts you for a choice in plain English, and follows the prompt with an exclamation point (!).

The ! prompt indicates that certain types of commands will be accepted by the system, in addition to a numbered choice. These navigational commands make it easier to get to a specific place quickly, if you know in advance where to go. For instance, CompuServe telephone numbers can be listed by typing GO PHONE, as mentioned above. You can also receive more information by typing HELP after this prompt.

Selecting a choice from the main menu brings up another menu. For instance, selecting Home Services

HOW A MODEM WORKS—THE ELECTRONIC RAINSTORM

If you picked up a telephone and listened in on two Macs telecommunicating you would hear a loud, raucous noise that would sound a little bit like a rainstorm bouncing off a tin-plated roof. The Macs communicate their information by sending high-pitched tones back and forth on the telephone line.

To understand this we have to first examine how computers such as the Macintosh store information and data internally using an industry standard called the ASCII code.

Computers operate in a binary language of 1s and 0s. All computers, even your Mac, really know how to do is to throw millions of microscopic, internal switches very quickly to off or on states.

Let's say that you type the letter "A". The Macintosh treats that letter as a series of 1s and 0s. In the ASCII code a letter "A" is defined as the sequence 1000001. "B" is 1000010, and so on.

Within the computer these two numbers, 0 and 1, are converted into voltages that travel on the printed-circuit wires, or bus. A low voltage is a 0, a higher voltage is 1.

A modem simply converts these

voltages into tones that can be sent over the telephone. At the 300-baud speed, voltages that mean 1 are encoded by the originating modem to a tone of 2,225 Hz (vibrations per second) and voltages that mean 0 are encoded to 2,025 Hz. This process is called modulating your computer's signal.

The complementary process is called demodulating. While the first modem is sending tones at 2,225 Hz and 2,025 to mean 1 and 0, the answering modem is also talking by sending tones back down the telephone line. But it has to pick two different tones — in this case 1,270 and 1,070 Hz for 1 and 0, respectively — in order to keep its information separate.

Each modem catches the other modem's tones and demodulates the tones back into voltages that the computers can operate on. This process of *modulating* and *demodulating* led to the name *modem*.

Remember that A was 1000001 in binary? That is seven 1s and 0s so the ASCII code is called a 7-bit code. But as each of the bits (the 1s and 0s) composing a letter is sent, how would each computer modem know

where a letter stopped and a new one began?

At 300 baud each 7-bit letter is prefaced by a start bit, an extra zero that tells when the letter begins. And, after each letter is a stop bit. These two extra numbers enable a computer to know when one letter stops and the next begins.

So, picture each letter as nine tones sent sequentially. Obviously if each tone took 1 second to send it would take nine seconds to send a letter and telecommunications would be murderously slow. Luckily, computers can recognize a tone faster than most humans ever could hope to.

The length of a single tone's transmission is how baud rates are calculated. Baud rates are determined by mathematically taking the reciprocal of the time duration of the shortest signal element. Some quick figuring will show that a 300-baud transmission rate means that each tone is being sent in 3.3 milliseconds. (A similar method to the above is used to achieve 1200-baud transmission. The newer 2400-baud modems use a method beyond the scope of this article.) —NLS



THE MODEM IS THE MESSAGE

will display a menu of additional choices related to the home. These might include news and weather, games, home banking or even the Electronic Mall, a computerized shopping service where you can order everything from magazine subscriptions to fine jewelry. Selecting the Electronic Mall will display another menu, and so on, until you have pinpointed the exact area you want to use. Typing M after a ! prompt will move you back up to the previous menu. Typing T will return you to the Top menu, the main CIS menu.

If you are uncertain of where something is located, or if it exists at all, you can search for a specific topic. First select the number for Index from the main menu, then select Search for Topics of Interest. Searching for Macintosh reveals MAUG, the Micronetworked Apple User Group, which has a Macintosh users' group. We will look at MAUG in detail a little later.

By selecting List ALL Indexed Topics from the Index menu, you can even receive a complete listing of CompuServe topics and their locations. It might be a good idea to do this once, then keep the index handy and update it as changes are made on the system.

Unless you are a speed reader with perfect recall, you will want to "download" the index so you can have a copy of it. Although the index could be printed out directly, this takes a lot of expensive time. The best thing to do is save it as a disk file, then print it out after leaving CompuServe. Each terminal program handles this process a little differently. With *Smartcom II*, simply click on the disk icon. Or you can save the entire session as a file. Other programs usually have a menu selection for saving data to disk. The Index file lists shortcuts after each name that let you reach the topic directly via the GO command.

The first few times on any service, it is best just to explore a number of areas to get used to the operation of the menus. But once you develop a little familiarity and you know what you want to find, it is best to bypass unnecessary menus by using the GO

command. This saves a lot of time, and on CompuServe, The Source or Delphi, time is money.

There are several areas where people can communicate directly with one another. Special Interest Groups (or SIGs), exist for a number of interest areas, and often include forums for an interchange of ideas. There are religious, political, and educational forums, forums for users of specific computers, even a rock music forum. The forums are usually accessed through a menu choice called Groups and Clubs.

Many of the forums require you to become a member by entering your name and user ID. In this way, people using the forum know how to contact you. It also protects members of the forum from obscene language and other inappropriate behavior. CompuServe subscriptions can be canceled for such activity.

The primary forums for Macintosh users are MACUS and MACD or MACDEV, the Mac special interest groups on MAUG. MACUS provides resources for all Mac users, while MACD is aimed primarily at programmers and developers. Entering GO MACUS after a ! prompt will bypass all the intermediate menu levels and enter you directly in the Macintosh area.

The Mac User's area is divided into ten sections, 0 through 9, each having a specific focus. Each section covers a specific subject area and the associated libraries hold files relating to those subjects. Section 0(SS1) is for group business and administration and its data library (DL0) contains a number of valuable help files relating to the forum. Other sections and data libraries contain hardware information (DL2), public domain and shareware software (a lot is in DL1), software and hardware reviews, and more.

Text files and software can be downloaded directly to the Mac. Once you have entered a forum or have reached the last menu level at a particular point, you are asked to enter a function command. The prompt is the word Function followed by a colon. Function commands let you look through files that have been saved, take files off the data


library or leave a file you created, and more.

To examine the files in a specific data library, there are two commands, SCan (or simply S) and BROWse (only the first three letters have to be typed in). Scanning will list the files stored in the library by name, and will also list a selection of keywords that describe the file.

Browsing lets you also see a paragraph description of the information in the file. Typing DOW will download the entire file to your screen, or to disk if the file is being saved, or "captured." This is done in the same way as saving the Index file.

Messages can be sent in several ways. A full electronic mail system exists for private messages to individuals. In addition, open messages can be left on bulletin boards and forums. To leave a message, type out what you want to say in your word processor before going on-line. Save it as a text-only file. Then access CompuServe and find the area you want, say a section in MACUS. "Upload" the file by typing L after the function prompt. Reading messages that other people have left is accomplished by typing R.

You can conference with other members of the Mac community who are logged on at the same time. Using a utility called VMCO (for Visual/Vocal MAUG Conferencing Utility) you can even see and hear the other members of the conference as they speak. Icons depicting members in various states (angry, happy, sad) can be saved and will be seen by everyone in conference. *MacInTalk*, Apple's speech synthesis software, is also included so what you type can be heard by the members of the conference as well. The speech patterns can be customized so they approximate your own.

There is much more to a national database. Government reports, business and financial services, research reports, multiplayer games, and more can be found for those who are interested. Getting involved is the first step. Once you've gotten your feet wet, the national databases will provide an information pool of huge dimensions, with waters as deep as anyone could want. 

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by

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and

Ian McKinnell



FIRST DRAFT

Move over, MacDraw—there's a new kid in town

IN THE BEGINNING THERE WAS *MacPaint*, and computer artists gathered round their Macs with joy and wonder. And it was good.

But pixels weren't enough. "We need objects, we need objects," cried the masses. And there was *MacDraw*. And the people were productive.

But soon the people had used and abused every little feature that *Draw* provided them. "We want more!" was heard in every town and city.

And so there was *MacDraft*. Was it The Answer?

Yes and no. *MacDraft*'s list of capabilities reads like a wish list for everyone who works with *MacDraw*, but has run into the subtle limitations that that program imposes. Some of *MacDraft*'s fans say it will one day replace *MacDraw* as reigning king of the power graphics world. Although *MacDraft* is a program with a lot of potential, it has

enough quirks and bugs to take much of the glitter away, leaving a program with some programming holes, the worst kind.

DRAFT CRAFTING

MacDraft is an object-oriented drawing program, a descendent of the *MacDraw* family of software. In these object-oriented programs, each shape is defined as a mathematical set, a series of attributes. A circle is not a spherical grouping of pixels, as it is in the bit-mapped *MacPaint*; it's an equation that describes what a circle should look like on the screen and when printed. There are two benefits to this scheme. A graphic element mapped in an object-oriented format takes up far less memory than its bit-mapped counterpart. That object can also be manipulated as an individual element, even after it's been completed. This allows

users to create multilayered drawings, and to modify a specific element or layer without affecting other elements of the drawing.

Most people who own and use *MacDraw* will probably want to get *MacDraft*, mainly to take advantage of the scaling and rotating capabilities that *Draw* doesn't offer. But they should be prepared to give up some important features of *MacDraw*.

The ideal solution would be to use both programs to complement each other's weaknesses. Unfortunately, it turns out that these graphics programs are not really blood brothers, but closely related cousins. Objects can be moved between the two programs through the Clipboard, but *MacDraft* can't open *MacDraw* documents saved in the PICT format.

MacDraft's opening screen is very similar to that of *MacDraw*. A tool palette graces the left side of the

FIRST DRAFT

window (of which four can be open simultaneously, as in *Draw*), and has the standard line, circle, rectangle, polygon, freehand and text tools. The currently selected line width and fill pattern also appear in this area. The "A" character representing the text tool is displayed in the currently selected font.

The advanced capabilities of *MacDraft* show themselves when the arc tool is used. Arcs can be drawn in two ways. The user can either draw a circle, and the program automatically generates an arc using the circle's

radius as the arc's radius, or can "thread" an arc through 3 points. The size and radius of the arc can be modified at any time. These two methods allow most types of curves and arcs to be created. Circles can be drawn to size based on either their radius or diameter.

A glaring omission are quarter ellipses, a feature found in *MacDraw*. These can't be generated in any way within *MacDraft*. Although quarter ellipses can be imported from *MacDraw*, they can only be rotated in 90 degree increments once in *MacDraft*.

An extremely good and useful feature allows users to split an existing reshaping handle on a polygonal shape into two handles, allowing better determination of where handles will be on the polygon. Free-hand lines are drawn with the pencil tool, and portions of the lines can be erased (with the eraser end of the pencil!). Objects created in freehand mode can be reshaped with handles. Also located in the tool palette is a duplication tool (although most people will probably continue to use COMMAND-D, the shortcut for the DUPLICATE menu command), and a unique panning feature that allows scrolling to a part of the page not visible in the active window.

A total of 64 fill and pen patterns are provided, allowing far more variations than *MacDraw*'s 36 patterns. Apple's *Resource Editor* can be used to modify the preset patterns of both *MacDraw* and *MacDraft* by editing the locations and pixel configurations of patterns (they exist as PAT# resources) in the programs.

One of the most important abilities of *MacDraft* is rotation. Any object or group of objects can be rotated in either 5 degree or single degree increments. The interaction between the mouse and screen needs some cleaning up here—sometimes the objects will rotate in the direction intended, at other times they'll move in unexpected ways. Objects pasted in from *MacDraw* can also be rotated (except quarter ellipses), and moved back. One annoying problem with rotated objects crops up when the LaserWriter is used. The edges of objects tend to get clipped (the thicker the line width, the more noticeable this effect becomes). Rotated objects pasted into and printed from *Draw* have the same problem.

MacDraft has a variety of predetermined scales that can be specified for each document. Sixteen different scale settings are available (from 1 to 1, to 1 inch equals 100 feet), and the sizes of objects in a document window adjust automatically when the scale is modified. More of *MacDraft*'s power shines through when an object is copied from a document with a specific scale into a document with a different scale setting. The

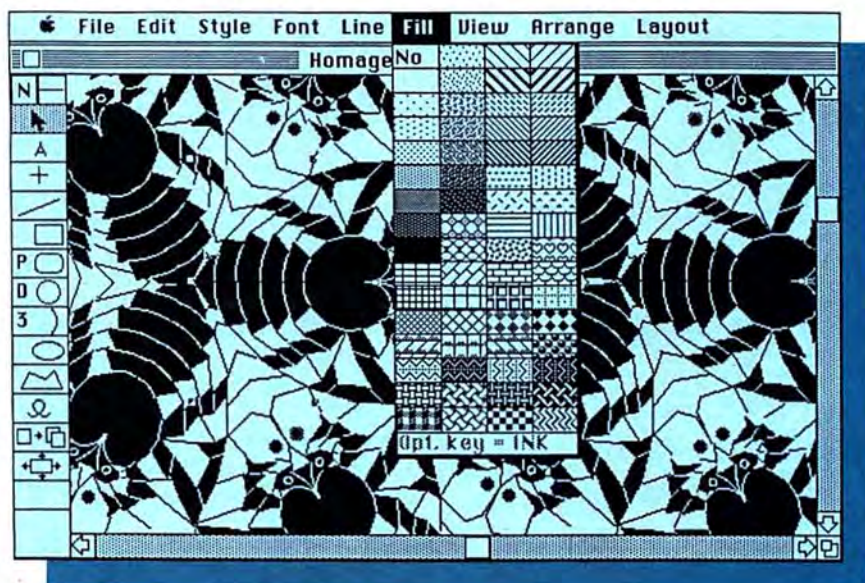


Fig. 1: *MacDraft* offers a large selection of Pen and Fill patterns.

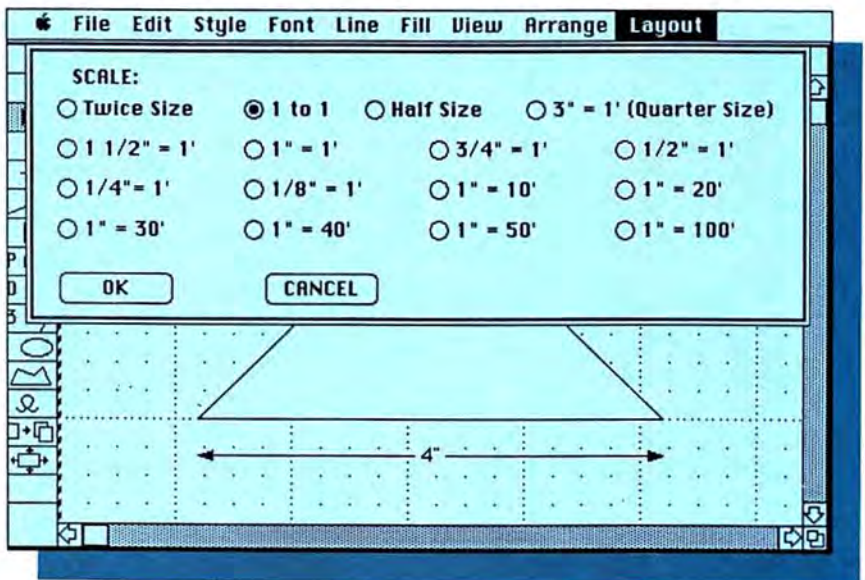


Fig. 2: Each drawing window can have a different scale. When measurements are toggled to metric values, the unit values of this window change accordingly.

object maintains its real size in the new scale. To complement *MacDraft*'s scaling powers, the program can generate dimensioning lines, which are double arrowed lines with sizes displayed in the current scale. These are handy for mechanical drawings that need displayed measurements for planes, surfaces and so on. A Show Size feature interactively displays the dimensions of an object as it is being drawn, and also shows the degree of rotation.

In *MacDraft*, the user can draw in various page size modes. The pro-

gram supports documents up to 4 x 4 feet, smaller than the 8 x 4 of *MacDraw*. A zoom command covers a range of magnification levels, from a full page (or pages) on the screen to a FatBits resolution mode. FatBits in an object-oriented program is a dream come true. One of the biggest complaints about *MacDraw* is its lack of a FatBits mode. When zooming in, a selection box appears that allows the user to choose the exact area to be worked on in detail.

MacDraft handles text much like any other Mac application. All of the

standard font attributes are included. When a drawing's scale is modified, the text can be set to change to the new scaled size, or can remain the same size as entered. Formatting is the same as in *MacDraw*. Drawing a box on the screen, leaving it selected and entering text will force the text to fit within the boundaries of the box. This is particularly useful when doing multicolumn layouts, except that the font attributes can only be specified for each block of text. This means you can't change a single word within a block to bold face type, for example. There's also no way to place blocks of text precisely on the screen, since all users see while moving the block is an outline of the text area.

Rulers can be displayed on-screen and toggled between metric and standard modes. They can also be switched to display in the unit of the current scale selected for the document. They cannot, however, be customized for variable division markers as they can in *MacDraw*. The grid feature (which restrains placement of objects to discrete positions, simplifying precise alignment) makes up for this, since its divisions can be set for different lengths (a feature not found in *Draw*). A small inconvenience is the use of the Option key as the constrain key. Most, if not all, Mac programs use the Shift key to constrain movement horizontally and vertically. This deviation from the Mac interface is unnecessary.

Printing is fairly straightforward, and *MacDraft* supports both the ImageWriter and the LaserWriter. A major reason for using *MacDraft* is to take advantage of the LaserWriter's high quality graphics. The program works especially well with the printer due to the compatibility between QuickDraw and PostScript (the page description language in the LaserWriter). Printing rotated objects is a bit of a problem, as they exhibit varying amounts of edge clipping. This is to be expected, as rotation only looks good when programmed directly in PostScript.

One of the biggest drawbacks with *MacDraft* involves the most basic and essential operation of selecting an object. Sometimes simply

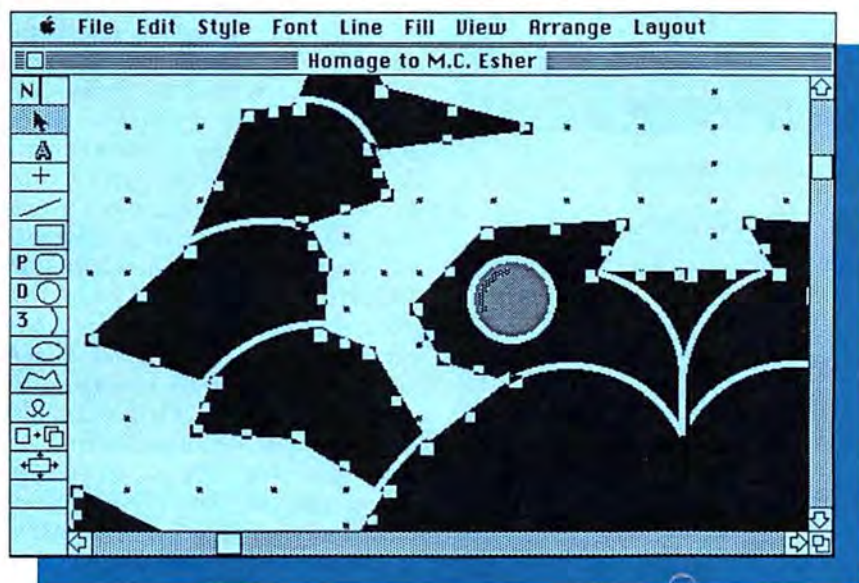


Fig. 3: One of *MacDraft*'s magnification levels. Each tick (small squares in background) is equivalent to a pixel.

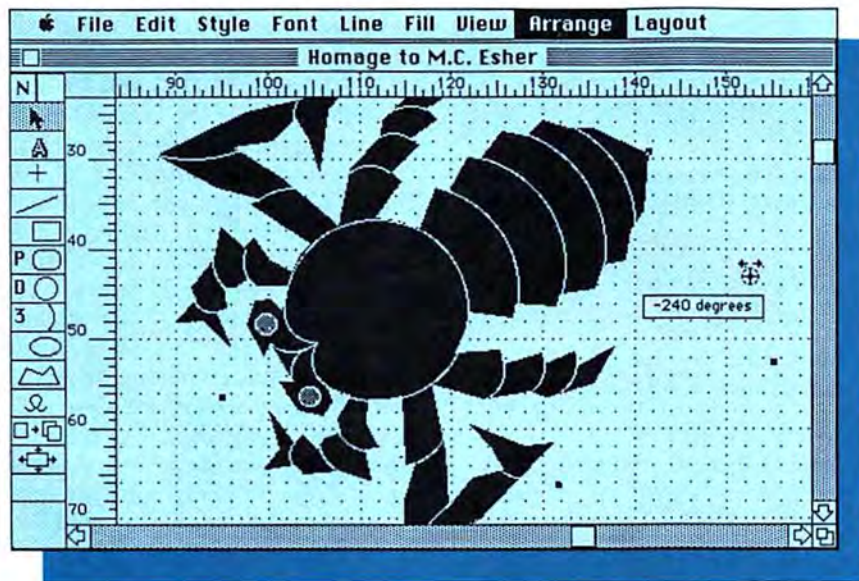


Fig. 4: The Show Size command works with the Rotate command to interactively display the angle of rotation. Objects can be rotated in 1 or 5 degree increments.

FIRST DRAFT

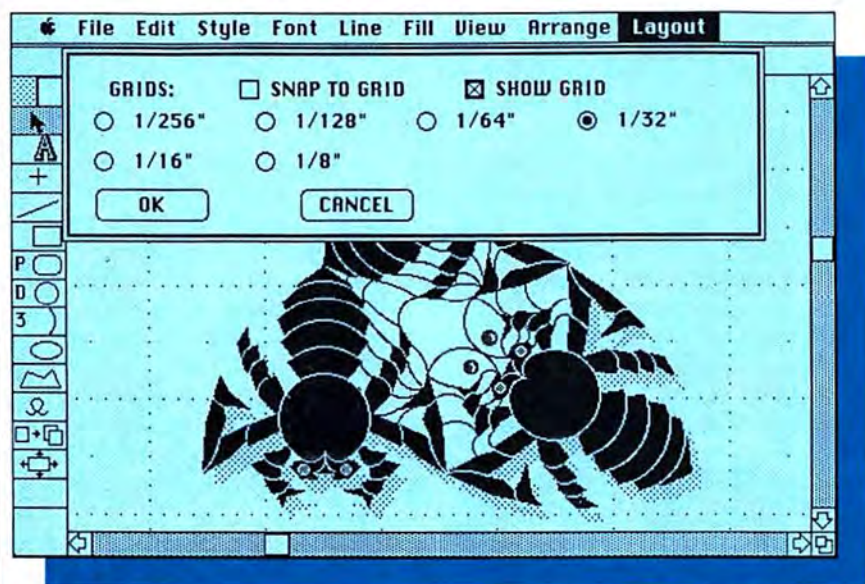


Fig. 5: Grid increments can be modified to allow precise positioning of objects.

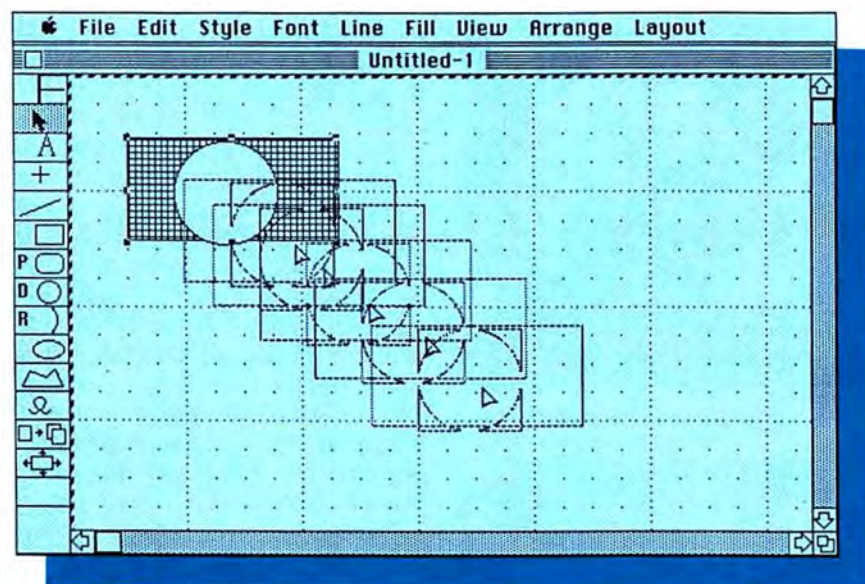


Fig. 6: The on-screen animation shows the outlines of objects as they're moved. This feature slows down screen regeneration when moving complex grouped objects consisting of many elements.

MACDRAFT: REPORT CARD

Overall Rating: ●●●

Follows Mac Interface: ●●●
 Printed Documentation: ●●●●
 On-Screen Help: none
 Performance: ●●●
 Support: ●
 Consumer Value: ●●●
 Comments: Unique features will appeal to graphics professionals, but program needs more work.
 Best Features: Can rotate objects, works to scale, FatBits mode.

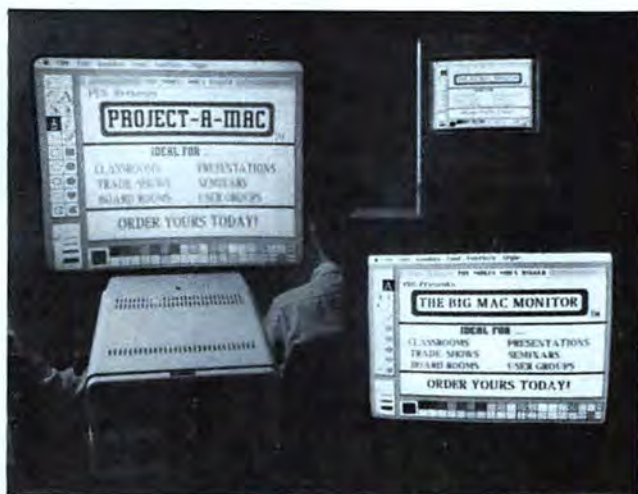
Worst Features: Cannot stretch grouped objects, hard to select objects in crowded screen, version reviewed has minor bugs.
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pointing at an object and clicking will, in fact, select that object. Regrettably, this is not usually the case. On a screen with a reasonable number of elements, it can become quite a chore to isolate and grab a specific element. This has something to do with the "feel" of *MacDraft*. The authors apparently went to a lot of trouble to provide very pleasant on-screen animation when moving objects, but, unfortunately, this slows down things considerably. Moving complex grouped images can be a time-consuming process, and selecting a single element from a screen full of images can actually take minutes. The problem is magnified in the high magnification modes.

Another major problem is how the program treats grouped objects. Creating a complex image out of a series of simple elements is a common task in this type of a program, and *MacDraft* can group a series of elements, but once that is done, the grouped image cannot be resized. The bugs in our Escher rendering had to be created in the original size, instead of drawing all the elements to a large scale, grouping them, and then shrinking them down to achieve the final size desired. It is much easier to draw large (for small details), and then shrink down to size. One solution is to move a grouped object from *Draft* into *Draw*, resize it, and then paste it back into *Draft*.

BACK TO THE DRAWING BOARD

MacDraft could be a good program, maybe even a great program. It is an excellent companion to *MacDraw*, and loading both into *Switcher* (256K memory partition for *Draft*, 128K partition for *Draw*) gives users the power and advantages that neither possesses alone. The fact that there are some bugs and inconsistencies in this program takes a bite out of the mice we would have given it. Cleaned up and debugged, it could be a strong contender in the drawing software arena. In its current state (version 1.1), it's sort of like having a Mustang GT sports car in Manhattan. You know this baby can cook, but if only they'd fix those potholes! ☹



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MACazine — Jan. 85

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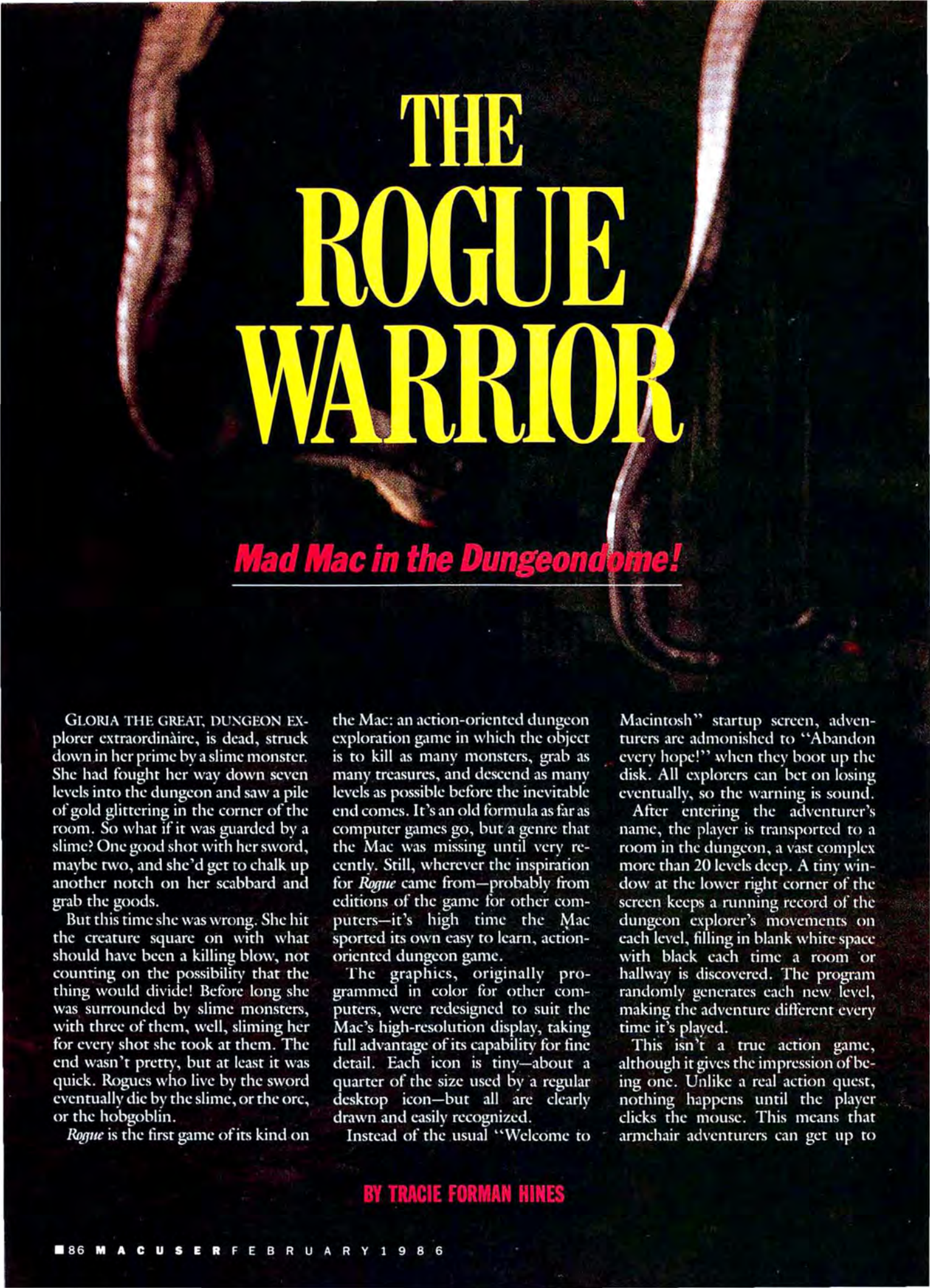
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Mad Mac in the Dungeondome!

GLORIA THE GREAT, DUNGEON EXPLORER extraordinaire, is dead, struck down in her prime by a slime monster. She had fought her way down seven levels into the dungeon and saw a pile of gold glittering in the corner of the room. So what if it was guarded by a slime? One good shot with her sword, maybe two, and she'd get to chalk up another notch on her scabbard and grab the goods.

But this time she was wrong. She hit the creature square on with what should have been a killing blow, not counting on the possibility that the thing would divide! Before long she was surrounded by slime monsters, with three of them, well, sliming her for every shot she took at them. The end wasn't pretty, but at least it was quick. Rogues who live by the sword eventually die by the slime, or the orc, or the hobgoblin.

Rogue is the first game of its kind on

the Mac: an action-oriented dungeon exploration game in which the object is to kill as many monsters, grab as many treasures, and descend as many levels as possible before the inevitable end comes. It's an old formula as far as computer games go, but a genre that the Mac was missing until very recently. Still, wherever the inspiration for *Rogue* came from—probably from editions of the game for other computers—it's high time the Mac sported its own easy to learn, action-oriented dungeon game.

The graphics, originally programmed in color for other computers, were redesigned to suit the Mac's high-resolution display, taking full advantage of its capability for fine detail. Each icon is tiny—about a quarter of the size used by a regular desktop icon—but all are clearly drawn and easily recognized.

Instead of the usual "Welcome to

Macintosh" startup screen, adventurers are admonished to "Abandon every hope!" when they boot up the disk. All explorers can bet on losing eventually, so the warning is sound.

After entering the adventurer's name, the player is transported to a room in the dungeon, a vast complex more than 20 levels deep. A tiny window at the lower right corner of the screen keeps a running record of the dungeon explorer's movements on each level, filling in blank white space with black each time a room or hallway is discovered. The program randomly generates each new level, making the adventure different every time it's played.

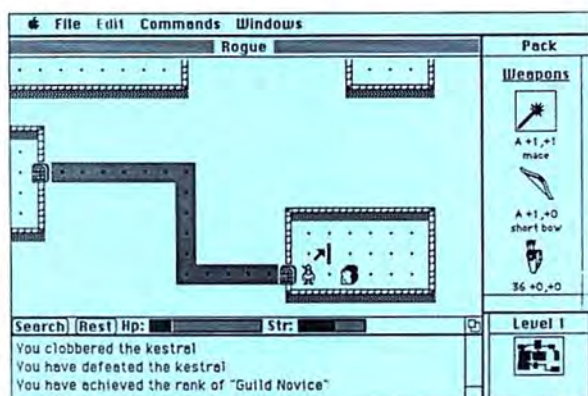
This isn't a true action game, although it gives the impression of being one. Unlike a real action quest, nothing happens until the player clicks the mouse. This means that armchair adventurers can get up to

BY TRACIE FORMAN HINES



PHOTO: HAROLD SINCLAIR/STYLING: JACKIE SHAPIRO

THE ROGUE WARRIOR



Pick up items like food or magic wands by moving onto the space they occupy.

what it does? Click on it once to highlight it, then select INFO from the COMMAND menu to see any notes that might have been entered about purple potions.

Each game is randomly generated by the computer, meaning that room locations and effects of scrolls, potions, wands and rings are completely different each time the game is played. That, coupled with more than two dozen different dungeon levels to explore, keeps *Rogue* fresh and exciting, even for those who've played it a hundred times before.

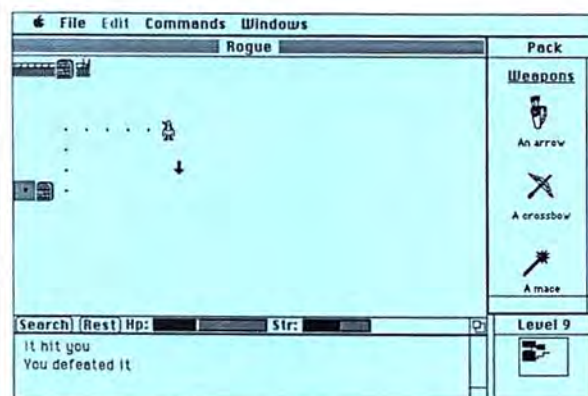
There are some passages and doors hidden from view. If a player is pretty sure from checking the map that a secret door or hallway is hidden just out of sight, chances are that it is. Click on the SEARCH button, which makes the character scan the immediate area, a few times to uncover the secret path. Searching doesn't always work the first few times it's attempted, but persistence can pay off big dividends.

As the explorer gains battle experience he or she gains levels, working from Guild Apprentice all the way up to Fighter, Rogue, and even more illustrious titles. Strength and hit points rise with each new experience level, making the hero progressively harder to kill and a more formidable opponent in battle.

Of course, monsters on the tenth dungeon level are much bigger and meaner than their cousins on the first level, so Rogues need as much help as they can get! Creatures like bats, orcs and hobgoblins are relatively easy marks; trolls, leprechauns and centaurs are far more likely to kill even advanced heroes.

As players descend the depths, they'll be in for some nasty surprises—there's a monster that rots the adventurer's armor every time it strikes, and another that saps strength permanently. The only way to restore lost strength points is to find and use the proper potion.

Time does indeed heal all wounds, and the character can mend just by spending enough time moving around. To take the express route to better health, click on the REST button located just above the text win-



The hero gropes in darkness after drinking a potion of blindness. Luckily, the effects are temporary.

answer the phone in the heat of battle and come back to pick up the action exactly where it left off. In a true action game, that character would be long dead—killed by a monster, or even starved to death—unless the game had been saved first.

An arrow cursor shows which direction the hero is moving in. Just point and click to take a step. Pointing several spaces away and then clicking results in the character hurrying to the spot clicked on. Rogues can move in this express mode to the boundaries of the room or hallway, always stopping at doorways and staircases.

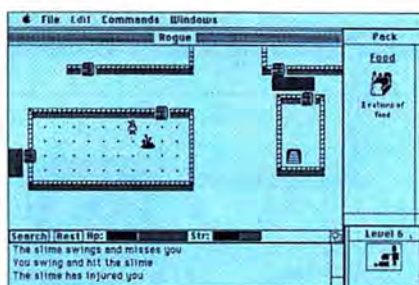
Combat is as simple as movement. To fight a monster, just point the cursor towards it and click. A text box at the screen bottom keeps a running tally of who does what to whom.

Taking treasures is just as easy: simply move to the spot the loot occupies. The new item is immediately added to the inventory window, which scrolls to show categories including armor, weapons, potions, scrolls, wands and rings.

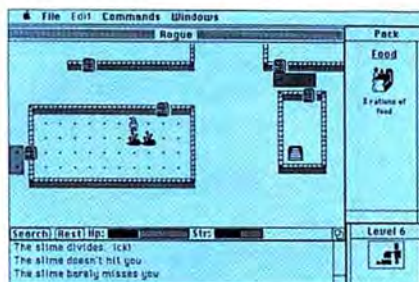
All items currently in use are indicated by a box around the object icons. To try out new weaponry, scroll through the inventory window and click to highlight it, then go to the COMMAND menu and select WIELD.

A armor is slightly more complicated, since the explorer will first have to drop the item being worn, then double-click on the new suit. (Make sure to pick up any dropped armor, though, since extra suits come in handy deep in the dungeon.)

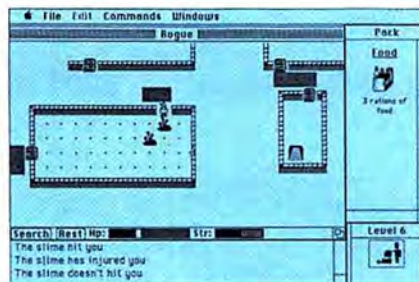
To use a potion or scroll, or wear a ring, just double-click on it. Potions and scrolls can each only be used once, and they're generally risky items to try. A potion could be a healing tonic or could raise the hero a level and give the character more strength and hit points—or it could be a potion of paralysis or blindness, forcing the hero to grope around in the darkness and fight off "invisible" attackers. As scrolls and potions are used, an information window pops up so players can type in notes about the item. Found a purple potion and forgot



Slime monsters are especially tricky. Hit one the wrong way and—Zap!—



There are two.



Sometimes the best offense is a good defense.

dow. Hitting SHIFT while clicking makes ten game turns pass, healing characters faster but also exposing them to possible attack while just standing around. Healing potions also restore lost points, but they're hard to come by.

Food is an important factor in the game. Characters who go too long without it get hungry. Unsatisfied hunger leads to weakness, which saps strength and makes heroes less able to carry the items they've found. Besides, faint characters can't move—or strike blows—as often as healthy ones, making them an easy mark for even the lowliest monster.

Adventurers pressed for time can save the game for later play. When the inevitable happens and the character is killed, the Mac displays a tomb-

ROGUE: STRATEGY

Although *Rogue* doesn't qualify as a bona fide strategy game, these tips are guaranteed to keep your character alive and kicking at least an extra level or two. Happy hunting!

Slime monsters have a tendency to split when you hit them. Before engaging a slime monster in battle, maneuver it into a doorway. That keeps the new slimes from ganging up on you, hitting you twice, three or even four times for every swipe you take at them.

Keep an eye on your hit points, represented by the small bar just above the text window on the left. If your character is badly damaged, rest up before moving much farther. Rest faster by hitting the SHIFT key while clicking on the REST button. Just don't do this too fast, since monsters might sneak up and attack you while you still have ten "express" rest turns to go.

Make sure you only engage one monster at a time in battle whenever possible. The easiest way to do this is to stand in the hallway just outside

a doorway and let all the creatures in the room rush you, one at a time.

The effects of potions and scrolls vary from game to game. Just because the topaz potion raised you a level in the last game doesn't mean it's not a paralysis potion this time around. Scroll and potion effects are only consistent in the game currently being played. If the game says you have a bad feeling about a particular potion, drop it.

Searching usually doesn't turn up hidden doors or passageways the first time you look. Sometimes it takes five or even twenty separate search clicks to unearth a door you know must be there, or a way out of a seemingly dead-end room. Express the search by hitting the SHIFT key while clicking on the SEARCH button.

If a monster doesn't head straight for you when you enter a room, it's probably sleeping. While you don't gain any experience for leaving it alone, sometimes it is indeed better to let sleeping monsters lie.

stone complete with the hero's name, the date he or she died, and the kind of monster that delivered the death blow. Final score is tallied in three areas: how much experience the character accumulated in battle, how much gold was found, and which of a rumored 26 levels was visited before being killed. Up to ten high scores are displayed in the *Rogue* Hall of Fame, and to make it easy to spot which score is the newest, the name of the most recent character is highlighted with an outline font.

Rogue won't win any awards for its strategic complexity or lightning-fast action. But it is the kind of game that draws players back for "just one more," tantalizing adventurers with the possibilities of getting just one level further into the dungeon or discovering just one more type of monster. Players looking for a game that offers lots of replay value and simple, no-frills fun will enjoy spending some time with *Rogue*. After all, there's a little bit of larceny in all our hearts. ☞

ROGUE: REPORT CARD

Overall Rating:	●●●●
Follows Mac Interface:	●●●●
Printed Documentation:	●●●
On-Screen Help:	●●
Performance:	●●●●
Support:	●●●●
Consumer Value:	●●●●

Comments: Action-oriented dungeon exploration game; easy to learn, hard to master; emphasis on strategy instead of hand-eye coordination.

Best Feature: Each game is an adventure by itself.

Worst Feature: Unclear documentation; no chance of truly winning.

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IF MICE HAD WINGS...

Flight simulators make

the Mac fly high!

by Arnie Katz

REMEMBER THOSE COMMERCIALS that celebrated "The Wings of Man"? The phrase referred to the supposed supremacy of the airline that sponsored the ads, but it could be applied to home computers with equal justice. Thanks to your Mac you can fly like an ace—and you don't even have to leave the comfort of your chair to do it.

Most people will never take the throttle of even a single-engine plane, much less a jet or the space shuttle. Flying requires a rare combination of skills and natural abilities that few of us possess, not to mention a full wallet and a lucky opportunity.

Flight simulators, originally designed to teach people how to fly, have permitted more than a million people to revel in the vicarious experience of flight as they soar into the sky on computerized wings. These programs reduce aerodynamics to a series of algorithms that generate a real-time representation of the situation from the pilot's viewpoint.

Flight simulators are not games. There is no opposition, no competitive goal. Though some flying programs include combat scenarios to give trigger fingers a workout, the real "business" of such software is to convey the experience of controlling an aircraft as authentically as possible.

This design agenda sometimes leaves novices a bit perplexed, at least at first. Flight simulators don't seem to obey the laws of software. Because they attempt to "shrink" an intricately complex situation to the dimensions of a small screen, they frequently come with voluminous documentation and require users to practice for awhile before they can make the craft do anything interesting.

This is 180 degrees away from the conventional philosophy of home computer software. Abandon thoughts of user friendliness and instant starts if you want to earn your Macwings.

Flight simulators have achieved

enormous popularity despite these handicaps, because the genre offers something very special. Such programs provide Mac owners with totally involving, fast-paced mental and physical tests. Once the disk boots and the cockpit view and control panel flash onto the screen, it's just you and the machine on a "field" limited only by the craft's fuel capacity and speed.

Although the Macintosh's entertainment software library is still relatively small, publishers have recognized the allure that flight simulators hold for its sophisticated audience. As a result, there are already three excellent products in this category. Better still, they don't overlap even a little bit. *Fokker Triplane Flight Simulator* is based on the famous World War I aircraft favored by Germany's fearsome Flying Circus, *Harrier Strike Mission* puts you in the cockpit of an ultra-modern Jump Jet, and *MacChallenger* takes the concept into outer space.

SLOW

Designer Donald A. Hill, Jr. had to make some pretty obvious compromises with reality to create *Fokker Triplane*, the electronic replica of Baron Manfred von Richthofen's favorite aircraft. When flying one of these highly maneuverable early warplanes, pilots used "seat of the pants" navigation more than the then-primitive instruments. Today's flier requires no such skill, because the detailed instrument panel, which occupies the lower third of the screen, includes such niceties as an artificial horizon, throttle indicator, and ADF (Automatic Direction Finder).

Fokker Triplane has two modes, pause and flight. The former gives access to the pull-down option menus, while the latter activates the control panel and starts the simulation itself. The player moves the cursor into the control stick area to enter flight mode and presses the TILDE key (to the left of the

1 on the keyboard) or backspace to return to pause mode.

The option windows set the conditions for the 20,000-square-mile "playfield" and its seven airstrips (four friendly, three hostile). The GAME menu primarily controls the function and sensitivity of the keys used in the program. It also allows the computer to select one of three missions—"Touch 'n Go," "Dogfight," "Seek 'n Destroy"—or the demo. WIND governs the strength and direction of air currents, CLOUD determines ceiling (the level above which you can't see anything), ADF posts the distance and heading needed to reach a pre-selected destination in the appropriate place on the control panel, and FAMOUS PILOTS honors players' great performances.

Although the player can control the Fokker with the keys, the mouse is the keystone of the command system. In the active mode, a sighting cursor replaces the standard pointer. By moving this marker around the throttle box on the screen, the player can climb, dive and turn the WWI craft. The keys provide several different views from the plane, move the rudder for fine adjustments during aerobatics and landings and fire the guns in scenarios that require it.

The disk also includes ten starter documents that immediately put the player in situations ranging from lining up and landing practice to dogfighting and balloon busting, letting the user practice in weak areas.

The 46-page documentation should please both purists and the impatient. There are instructions that get the bird into the air quickly as well as lengthy discourses on the theory and practice of flight.

FASTER

The intricate landing technique learned in *Fokker Triplane* is worthless in *Harrier Strike Mission*, because the McDonnell Douglas AV-8B Harrier II

IF MICE HAD WINGS

is a cousin of the helicopter, and can take off and land almost vertically. Not that flying the Jump Jet is any easier; it is quite different.

The most important controls, probably unfamiliar even to flight simulator veterans, are the thrust and throttle. The former directs the four jet nozzles on the underside of the aircraft. The ">" key directs the jets to the rear to produce forward motion, while the "<" key points the nozzles toward the ground for hovering. The throttle regulates the percentage of power coursing through the nozzles.

Generally, 75% is the setting for normal flight operations, though adjustments are necessary during landing and takeoff.

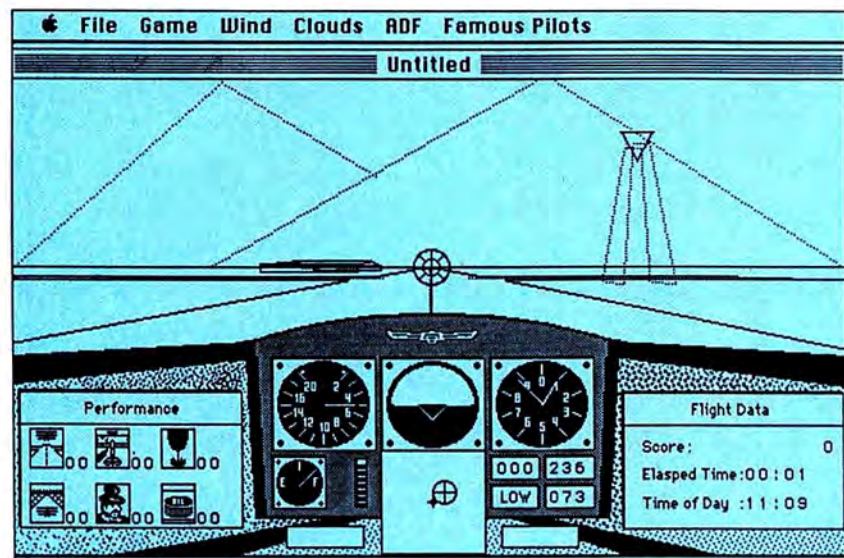
The control stick, which can be directed with either the mouse or a "hardware only" joystick, works differently in the "novice" and "expert" modes. The easier setting incorporates the effect of a rudder, while the harder (and more accurate) version requires the pilot to bank and then climb in order to execute a turn. The "expert" mode actually gives more control over the Harrier and facilitates

fancy maneuvers like barrel rolls and outside loops.

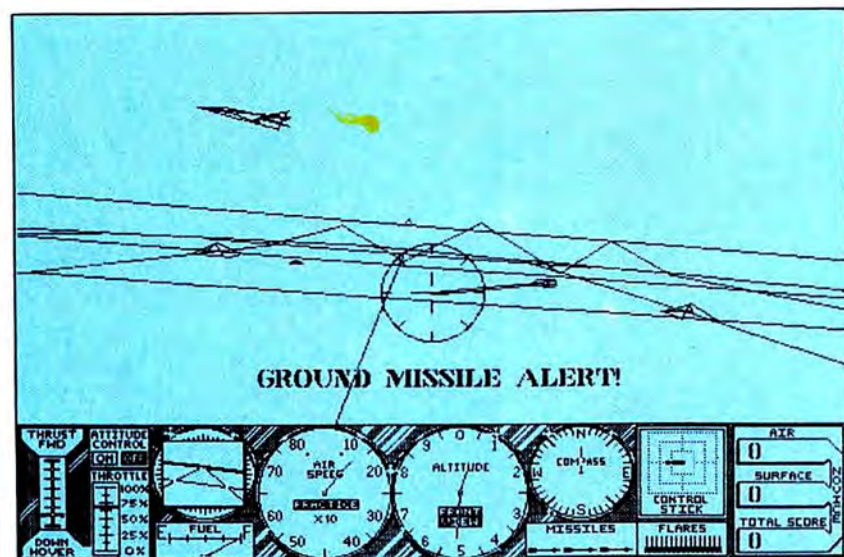
Unlike most titles in this category, *Harrier Strike Mission* balances flying with an exciting combat scenario. After taking off from a friendly aircraft carrier, the Harrier must fly north to the enemy's island stronghold and wreak devastation with its 30mm Aden cannon and AIM-9 Sidewinder missiles. Tanks and interceptors fire surface-to-air and air-to-air heat-seeking missiles to prevent the Harrier from wiping out the enemy headquarters, landing field and fuel depot.

The mission is exciting and enjoyable, but the scoring system has a gigantic flaw. The program awards more points if the pilot lets the tanks and planes leave their bases on the island before destroying them. While it may be tougher to hit a plane whizzing through the air than one that's stationary on the ground, realistic tactics dictate smashing them before they swing into action.

The 32-page rule book presents the copious instructions in a more conversational tone intended to ease the learning curve. It works to some extent, although the chatty style causes an unusual number of repetitions. The documentation touches all the bases, but a summary section might have helped first-timers.



PBI Software's *Fokker Triplane*



Miles Computing's *Harrier Strike Mission*

SUPERSONIC

What's even more futuristic than a V/STOL machine? The space shuttle, of course! *MacChallenger* replicates the challenge of guiding an orbiting craft to a safe landing at the Kennedy Space Center or Edwards Air Force Base.

Because this simulation focuses on landing to the exclusion of all other facets of manned spaceflight, it treats this operation in minute detail. The would-be astronaut must control such factors as the pitch (the direction of the craft's nose), bank (side-to-side tilt), speed, landing gear, compass and VOR (Very high frequency Omnidirectional Range) in order to keep this flying brick from littering the countryside with multimillion-dollar debris.

Menus allow the armchair astronaut to establish weather conditions prior to initiating descent by clicking DE-ORBIT. The more adverse the conditions, the higher the potential score.

Other factors influencing the post-landing rating include the amount of time the autopilot is used, the time it takes to set the shuttle down and the quality of the actual landing.

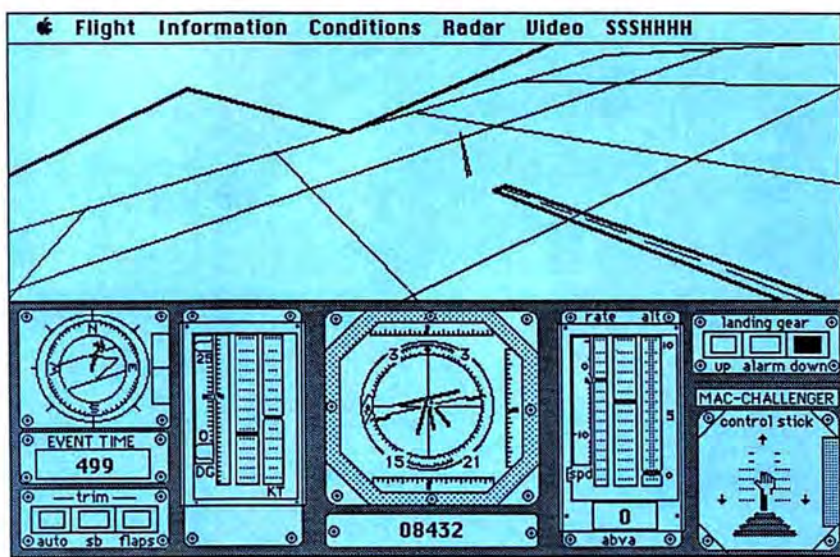
Of the three flight simulators described in this article, *MacChallenger* makes the best use of the Macintosh's features. The highly developed window system can furnish all kinds of aid, including a summary of the rules and a diagram of the control panel. There is also a set of information screens for those who would like to know more about what makes the shuttle work.

The most unusual feature is *MacChallenger's* ability to make a video recording of the landing. The pilot clicks on the recorder prior to beginning de-orbit to make the tape. Upon completion of the mission, clicking PLAY on the same menu turns the Macintosh into a video control center. The user can pause, rewind, fast forward and switch among views produced by ten different cameras.

The documentation should be sufficient to teach most players the basics, but there are two other learning systems included. The autopilot brings the craft down for a perfect landing to show how it's done, and the videotape presents an opportunity to watch one's own attempt without the distraction of having to handle the controls. Novices are heartily advised to use both options. *MacChallenger* doesn't seem very tough as you first use the mouse to clutch the control stick, but few will master the knack of coordinating all the key elements the first few times.

The author, William Volk, has also included a somewhat whimsical feature worthy of mention. If you are playing *MacChallenger* at the office, a simple click on HIDE GAME covers the telltale screen with a simulated page from a popular spreadsheet program. It'll work as long as the boss doesn't ask you for a quick report on your calculations!

Macintosh owners who enjoy fast action laced with lots of strategy should definitely investigate all three flight simulators. They are, as a group, eye-pleasing and stimulating to play. So strap on your helmet, rev the engines and soar into friendly Mac skies!



Aegis's *MacChallenger*

REPORT CARDS

Fokker Triplane

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

Comments: A solid simulation of a famous World War I aircraft.

Best Feature: The freewheeling nature of actual flight.

Worst Feature: The somewhat sketchy graphics.

List Price: \$59.95.

Published by PBI Software, 1111 Triton Drive, Suite 201, Foster City, CA 94404. (415) 349-8765.

Harrier Strike Mission

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

Comments: This simulator is radically different than most others, because the aircraft it models is so distinctive.

Best Feature: Putting the aircraft

in the context of a definite mission gives fliers definite goals to aim at.

Worst Feature: The program includes only one mission. Variety would add to the replay value of the product.

List Price: \$49.95.

Published by Miles Computing, 21018 Osborne St., Bldg #5, Canoga Park, CA 91304. (818) 341-1411.

MacChallenger

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

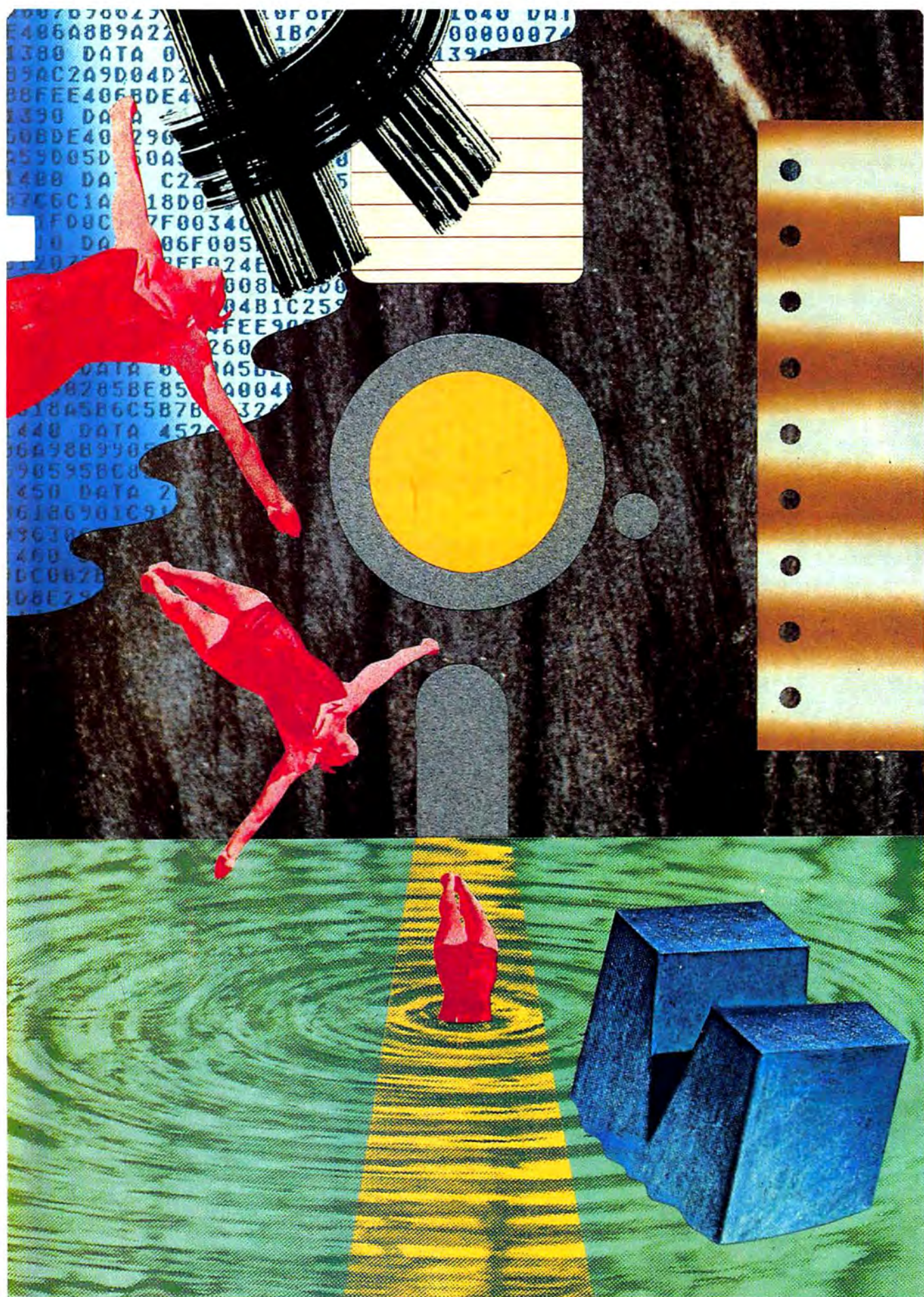
Comments: This space shuttle program provides an in-depth simulation of the crucial re-entry phase.

Best Feature: The ability to videotape a de-orbiting operation from ten different angles.

Worst Feature: The descent is a stern test of skill, but the lockstep nature of the procedure may pall after awhile.

List Price: \$49.95.

Published by Aegis Development, 2210 Wilshire Blvd., Suite 277, Santa Monica, CA 90403. (213) 306-0735.





by Sharon Zardetto Aker

BASIC: A DIP INTO THE ROM

*Harness the power of the ImageWriter from within
your own programs.*

THE REAL WORLD STILL DEMANDS results on paper. That's not about to change. The tune of the ongoing refrain is:

"Get hard copy on that."

"Let's see it on paper."

All the great screen graphics don't count in the long run. They disappear when the power is shut off. They're not really real.

Some programs, like *MacWrite* and *MacPaint*, have the ability to print what is shown on the screen. They are known as "what you see is what you get" or wysiwyg type programs. Programming languages don't do that sort of fancy printing automatically. When you program in BASIC, you have to tell the program exactly how to format its output. That's not hard, but it can get a bit complicated, so follow along as we explore how to control the ImageWriter and ImageWriter II from within your BASIC programs.

PRINTING FONTS

If your program uses the LPRINT command to send information to the ImageWriter, the printer handles it in the easiest, fastest way possible—that means draft quality. To print other

fonts and styles treat the printer as a device and use a special form of the WINDOW OUTPUT command.

When the printer is considered as an output device, it is addressed with the same syntax used for data files. The file name is always the name of the device—in this case, LPT1:. So start with:

**OPEN "LPT1:" FOR OUTPUT
AS #1**

What is usually the file number is now a device number. Once a device number assigned to the printer, output is directed to it with the WINDOW OUTPUT command:

WINDOW OUTPUT #1

Now all PRINT commands are automatically directed to the printer; it is not necessary to use LPRINT. Since ROM calls affect the current output window, they will now apply to the "printer window." (The standard WINDOW OUTPUT syntax, when referring to a screen window, does not use the # in front of the window number.)

When the printer is used like this, actual printing doesn't begin until the CLOSE command is encountered and executed to close the device channel. Try the "Fancy Font" pro-

PART 4

BASIC: A DIP INTO THE ROM, PART 4

Bold Chicago	Bold Geneva	Bold Monaco
<i>Italic Chicago</i>	<i>Italic Geneva</i>	<i>Italic Monaco</i>
<u>Underlined Chicago</u>	<u>Underlined Geneva</u>	<u>Underlined Monaco</u>
Outlined Chicago	Outlined Geneva	Outlined Monaco
Shadow Chicago	Shadow Geneva	Shadow Monaco
Condensed Chicago	Condensed Geneva	Condensed Monaco
Extended Chicago	Extended Geneva	Extended Monaco

Fig. 1: The printer can output fonts and styles when addressed as a device. It prints to its "window." This is the output from the Fancy Fonts program.

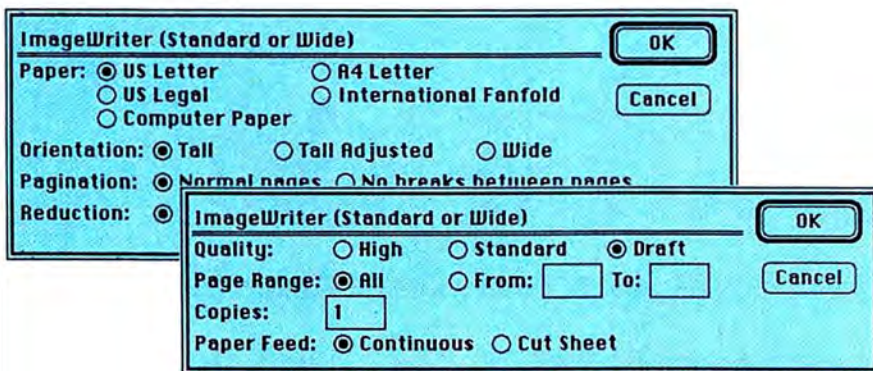


Fig. 2: These two print dialog boxes appear in turn when your program uses LPT1:PROMPT as the device name.

gram; it will produce the variety of printed output shown in Figure 1.

If your program needs to allow users to pick among the various page setup and printing options, access the system dialog boxes that present the familiar print options—quality, page

length and so on. Simply use "LPT1:PROMPT" as the device name in the OPEN statement.

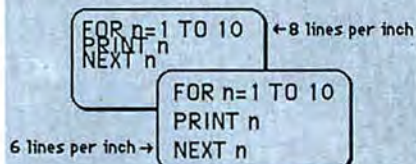
PRINTING GRAPHICS

ROM graphic routines (with the exception of the BACKPAT call) can be

LLIST

After a graphics dump caused by the LCOPY command or a Shift-Command-4 screen dump, the LLIST command prints listings in 8 lines per inch mode instead of the standard 6 lines per inch. This makes the program lines overlap. Reset the printer to 6 lines per inch with:

```
LPRINT CHR$(27)CHR$(65)
```



QUIRK 2.0

Microsoft BASIC, version 2.0, can't send control characters to the printer unless Returns are suppressed on the printer with the statement:

```
WIDTH LPRINT 255
```

After sending the control codes, restore Returns with:

```
WIDTH LPRINT 80
```

or any other character width desired. This was apparently not necessary with any of the 1.0x versions of BASIC (why would anyone still be using them??); neither is it necessary in BASIC, version 2.1.

sent to the printer, and standard graphic commands, such as LINE and CIRCLE, can also be used. (PICTURE also works for the printer, although the graphic PUT does not.)

When working with a screen output window, the limits of the usable coordinates are (1,21) to (510,338). These limitations do not apply to the printer, where the maximum coordinates are the size of a sheet of paper: (1,1) to (638,750).

Try the "Graphics Dump" program; it will send some simple graphics to the printer, utilizing the full sheet of paper. Remember though that the printing does not begin until the CLOSE statement is encountered; at that point, the cursor on the screen will change to the wristwatch. If the printing must be stopped or canceled Command-period will do it. Utilize this built-in convenience in your programs by putting up a dialog box that tells the

(continued on page 138)

ESCAPE TABLE

Escape Sequence

```
CHR$(27)CHR$(88)
CHR$(27)CHR$(89)
CHR$(27)CHR$(33)
CHR$(27)CHR$(34)
CHR$(27)CHR$(114)
CHR$(27)CHR$(102)
CHR$(27)CHR$(66)
CHR$(27)CHR$(65)
CHR$(27)CHR$(68)
CHR$(27)CHR$(90)
```

Effect

```
Begins underline mode
Ends underline mode
Begins boldface mode
End boldface mode
Reverses line feed direction
Restores normal line feed direction
Prints 8 lines per inch
Prints 6 lines per inch (default)
Prints all zeros with slashes
Cancels slashed zeros
```

Character Pitch Commands

```
CHR$(27)CHR$(110)
CHR$(27)CHR$(78)
CHR$(27)CHR$(69)
CHR$(27)CHR$(101)
CHR$(27)CHR$(113)
CHR$(27)CHR$(81)
```

```
Extended (9 characters per inch)
Pica (10 cpi)
Elite (12 cpi)
Semicondensed (13.4 cpi)
Condensed (15 cpi)
Ultracondensed (17 cpi)
```




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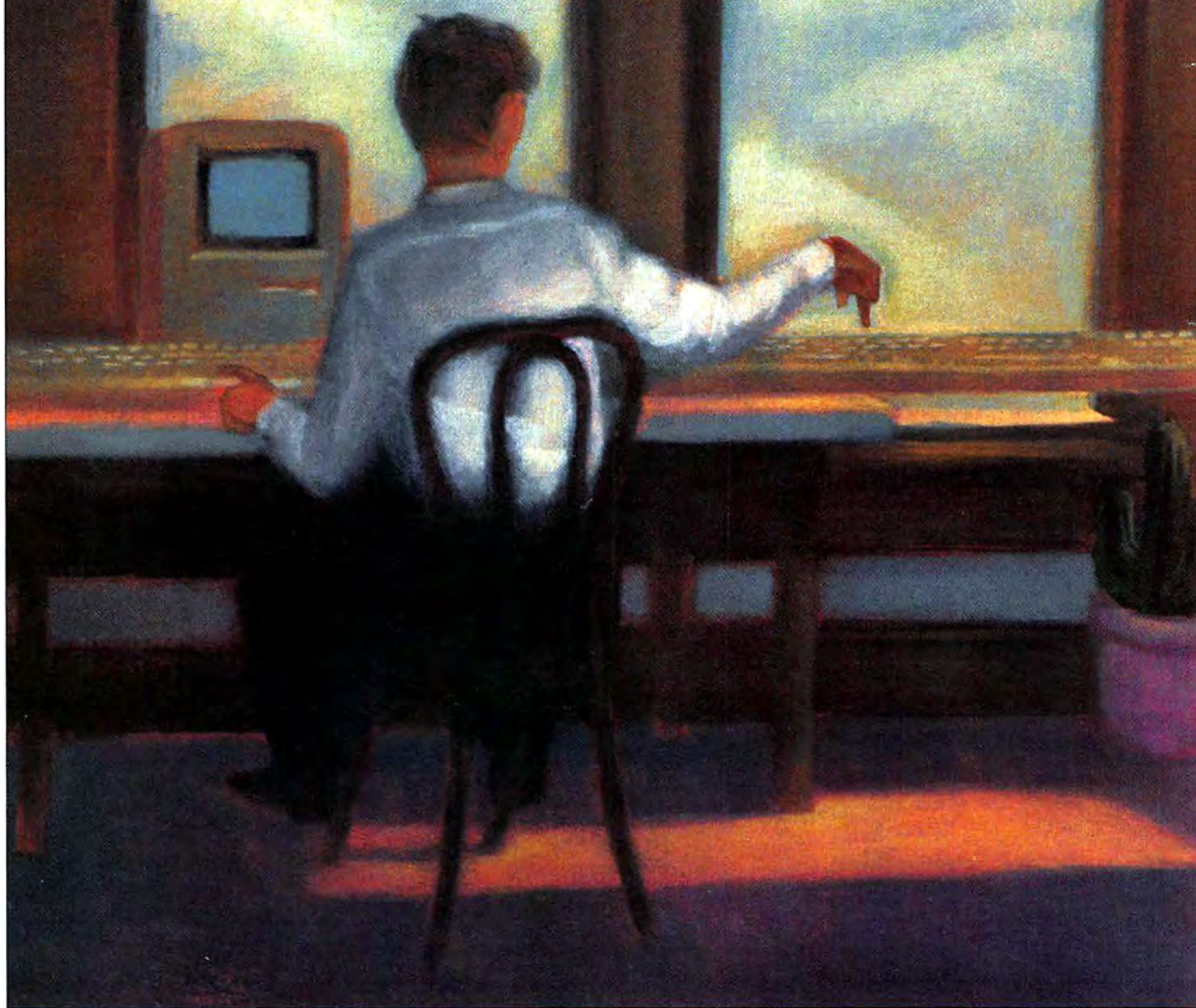
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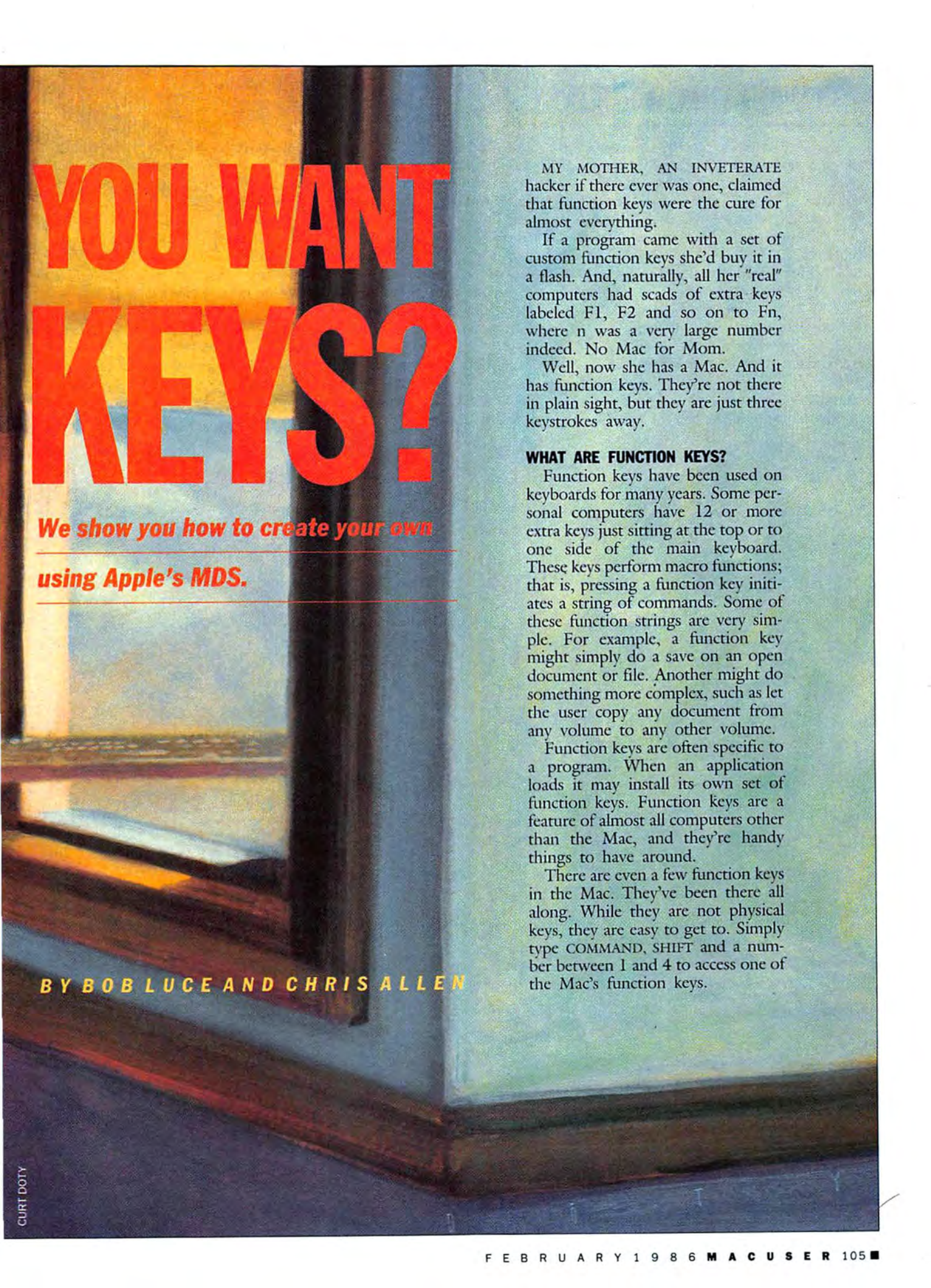
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YOU WANT KEYS?

*We show you how to create your own
using Apple's MDS.*

BY BOB LUCE AND CHRIS ALLEN

MY MOTHER, AN INVETERATE hacker if there ever was one, claimed that function keys were the cure for almost everything.

If a program came with a set of custom function keys she'd buy it in a flash. And, naturally, all her "real" computers had scads of extra keys labeled F1, F2 and so on to Fn, where n was a very large number indeed. No Mac for Mom.

Well, now she has a Mac. And it has function keys. They're not there in plain sight, but they are just three keystrokes away.

WHAT ARE FUNCTION KEYS?

Function keys have been used on keyboards for many years. Some personal computers have 12 or more extra keys just sitting at the top or to one side of the main keyboard. These keys perform macro functions; that is, pressing a function key initiates a string of commands. Some of these function strings are very simple. For example, a function key might simply do a save on an open document or file. Another might do something more complex, such as let the user copy any document from any volume to any other volume.

Function keys are often specific to a program. When an application loads it may install its own set of function keys. Function keys are a feature of almost all computers other than the Mac, and they're handy things to have around.

There are even a few function keys in the Mac. They've been there all along. While they are not physical keys, they are easy to get to. Simply type COMMAND, SHIFT and a number between 1 and 4 to access one of the Mac's function keys.

YOU WANT FUNCTION KEYS?

FKEYs 1 and 2 eject any disk in the internal or external drive, respectively. These FKEYs are a bit different than all other FKEYs in that they are coded into the Mac's ROM. They cannot easily be removed or replaced.

All other FKEYs exist in the System file as resources of type FKEY. FKEYs 3 and 4 can be found in the System file (just take a look at FKEYs with *Resource Editor*). FKEY 3 creates a *MacPaint* document of whatever is on the screen when the command is invoked, while FKEY 4 dumps an image of the current active

window to the ImageWriter. A special FKEY, invoked by typing COMMAND, SHIFT, CAPS LOCK and 4 all together, dumps the whole screen image to the ImageWriter. You could remove FKEYs 3 and 4 from the System in order to replace them with your own creations, but Apple does not recommend that they be changed or deleted. Key numbers 5 through 0 are available for custom FKEYs.

That's enough slots for six new function keys. Why would anyone want two new function keys, much less six? Apart from satisfying those

who demand function keys simply because they believe that only "real computers" have function keys, there are practical reasons.

Function keys can replace some desk accessories. That is their greatest value. Some modal functions (copying, deleting and renaming files are good examples) can best be done by FKEYs. Not having to have a desk accessory that does these things frees up one of the precious 15 desk accessory slots available in a System file. Since there are over a hundred desk accessories now available, picking only 15 to use in a

SHOWCLIP.ASM

```

; © Copyright1986 by Bob Luce.
; Include the standard system
; definition files

INCLUDE SysEqu.D
INCLUDE ToolEquX.D
INCLUDE QuickEqu.D
INCLUDE MacTraps.D

; Define any extra equates

minBkSize EQU 12
Hibernation EQU 52
SwitcherGlobals EQU $282

; Define a few useful macros

.MACRO PUSH.L
MOVE.L %1,-(SP)
.ENDM

.MACRO PUSH.W
MOVE.W %1,-(SP)
.ENDM

.MACRO POP.L
MOVE.L (SP)+,%1
.ENDM

.MACRO POP.W
MOVE.W (SP)+,%1
.ENDM

; Define our globals (Referenced
; off A6)

SavHibernation EQU -2
MyItemHit EQU SavHibernation-2
StorageSize EQU MyItemHit

; Define any register variables

SavDPtr SET D3

; First thing in FKEY code should be
; a short branch over the header

BRA.S Start

; Standard Header

DC.W 0 ;flag word
DC.B 'FKEY' ;resource type
DC.W 5 ;resource id
DC.W 0 ;version number

Start BRA ShowClip ;Jump over data

; Embedded data for the dialog item list

MyItemList DC.W 3-1 ;#items -1

theButton EQU 1 ;Item #
DC.L 0 ;Placeholder
DC.W 254,340,274,390 ;BoundsRect
DC.B btnCtrl+ctrlItem:ItemType
DC.B 2,'OK'

theUserItem EQU 2 ;Item #
DC.L 0 ;Placeholder

UserItemRect DC.W 5,5,247,395 ;BoundsRect
DC.B userItem+itemDisable ;ItemType
DC.B 0

TitleItem EQU 3 ;Item #
DC.L 0 ;Placeholder

TitleRect DC.W 254,5,274,330 ;BoundsRect
DC.B userItem+itemDisable ;ItemType
DC.B 0

IListSize EQU *-MyItemList

; Define some other constants

ClipWindow DC.W 50,50,330,450 ;Window bounds
Text DC.B 'TEXT' ;Define these here
Pict DC.B 'PICT' ;to save a few bytes

; Define the (Pascal) string data

STRING_FORMAT 2 ;Give us length bytes
WindowTitle DC.B 'System Clipboard'
NoClip DC.B 'Empty Clipboard'
ErrorMsg DC.B 'Unable to display Clipboard'
TitleString DC.B 'ShowClip Key'
STRING_FORMAT 0 ;No more length bytes
ALIGN 2 ;Just to be sure

; And now the main code

ShowClip MOVEM.L A0-A4/D0-D3,-(SP) ;Save registers
LINK A6,#StorageSize ;Create a
;storage block
MOVEQ #-1,D0 ;Hibernation(True)
BSR KillSwitcher ;Turn off Switcher
;if necessary
MOVE.W D0,SavHibernation(A6) ;Save previous
;value
LEA MyItemList,A0 ;Get a handle to our
MOVE.L #IListSize,D0 ;item list
_PtrToHand ;Handle is in A0
CLR.L -(SP) ;Room for Handle
CLR.L -(SP) ;NIL Storage
PEA ClipWindow ;BoundsRect
PEA WindowTitle ;Window Title
MOVEQ #-1,D0 ;Visible (True)
PUSH.W D0 ;noGrowDocProc ;procID
PUSH.W D0 ;Behind (-1)
CLR.W -(SP) ;goAwayFlag(False)
CLR.L -(SP) ;RefCon=0
PUSH.L A0 ;Items Handle
_NewDialog ;Create the dialog
MOVE.L (SP),SavDPtr ;Leave DPtr on stack
PUSH.W #theUserItem ;Item#
PUSH.W #userItem+itemDisable ;Item Type=0=UserItem
PEA MyItem ;Proc Ptr
PEA UserItemRect ;Display Rectangle
_SetDItem ;Add the first
;user item
PUSH.L SavDPtr
PUSH.W #TitleItem ;Item#

```


particular System can be an impossible task.

HOW DOES IT WORK?

The answer lies (as do the answers to most Mac programming questions) in *Inside Macintosh*. In the Toolbox Event Manager Programmer's Guide chapter sharp-eyed readers will find a cryptic reference to FKEYs. That's the starting point.

FKEYs are relatively simple programming projects. They are good places for beginners to get their feet wet. We'll show you how you can write your own FKEYs by describing what you need to know and giving you MDS source code for a sample FKEY called ShowClip Key.

To get the most from this article, you should be familiar with Apple's MDS 68000 assembly language and have a copy of *Inside Macintosh*. To install ShowClip Key or your own FKEY into a System file, you'll need *Resource Editor* or a new product by one of the authors of this article (Bob Luce) called *FKEY Installer*.

FIRST CONSIDERATIONS

In any application, function keys are executed as part of the call to `_GetNextEvent`. When the Event Manager sees a Command-Shift and a number key, it loads and executes the appropriate FKEY. Since `_GetNextEvent` is used by any Mac program that plays by the rules, function keys are available from any Mac program, even some that don't allow the use of desk accessories.

However, this is also the cause of

KEY ABUSERS?

FKEYs are addictive.

Soon you'll be moaning that there are only slots for six of them. You'll want more. You'll require more. You'll need more.

There is a cure for this addiction. It is a commercial program (written by coauthor Bob Luce) called *Master Key*. It will run any FKEY stored in a disk file. *Master Key* is an FKEY itself. The way to use it is to install it and the keys you use most often directly into the System file, accessing the rest of your FKEY collection through *Master Key*.

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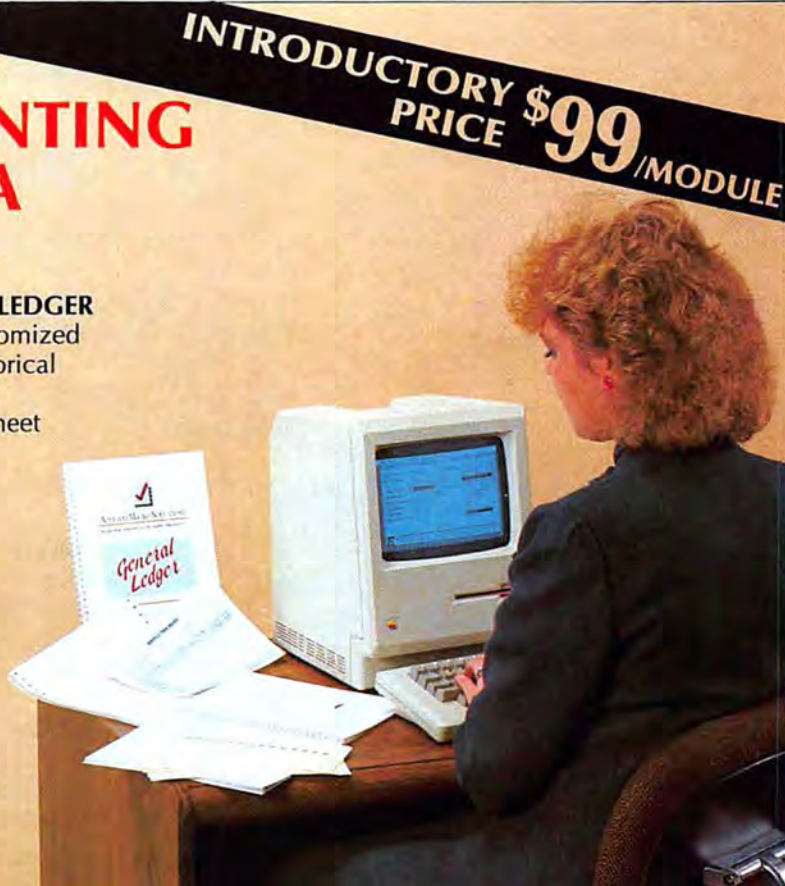
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YOU WANT FUNCTION KEYS?

the function key's greatest limitation. Since the main program will not see another event until the FKEY is finished, everything else is stalled until the function key has finished execution. So, unlike desk accessories that can be left open while you work with the open application, an FKEY must be closed before the main program can continue.

This limits the FKEYs to basically modal functions, but still offers a powerful way for new commands to be added to the system. These commands may even be available when desk accessories are not. By relegating some desk accessories that are modal in function to FKEYs, it is possible not only to gain a few more precious desk accessory slots, but to add fingertip control over desk accessory-type functions.

SHOWCLIP KEY

ShowClip Key is written in MDS 68000 assembly language, and should be easily adaptable to almost any compiled high level language. *ShowClip Key* simply draws any text or picture that is currently on the system Clipboard. It was written to demonstrate methods of overcoming some limitations placed on FKEYs, as well as their overall structure. Several fundamental Mac concepts are also demonstrated, from how to draw a picture in a window, to how to implement your own useritem in a custom dialog box. If a desk accessory can be likened to a "guest in someone else's home," then an FKEY might be described as an obnoxious guest who eats and runs.

An FKEY resource is simply a Pascal-type procedure with a few standard header bytes. Whenever the `_GetNextEvent` trap is called, one of the last things the operating system does is to examine the system global `JGNEFilter`, a long integer at memory location `$29A`. If the value stored there is not 0, the procedure pointed to is executed before the system returns control to the calling application. Usually this system global points to a routine in ROM that checks to see if the alarm clock should beep or if a number key has been pressed while the Command and Shift keys are also depressed. If

the keys have been pushed, the routine then looks through the System file for an FKEY resource of the same ID number as the key. If one is found, it is then loaded into memory and the procedure is executed.

THE FKEY HEADER

Apple has defined an FKEY as a procedure that takes no parameters and must start at the beginning. For this reason, each FKEY starts with a short branch instruction. This is followed by five words of descriptive data known as the FKEY header. The first instruction must be exactly one word long if you plan to use *FKEY Installer* or distribute your FKEY (in the public domain or otherwise) where someone might use *FKEY Installer* on it. The reason for this is that any backpatching done by the *FKEY Installer* (to resolve ID conflicts) expects to find the header bytes at fixed offsets.

The first word of the header is the flags word and is largely historical. The next four bytes are the resource type, in this case "FKEY." The following word is the resource ID. If *FKEY Installer* has to renumber the FKEY during installation, it will backpatch this word in the header. If it is necessary to know the resource ID of an FKEY, look here for that information. The final word of the header is the version number, which is never used by the system. It exists merely to allow differentiation between different versions of FKEYs. Following the header is the start of the main code.

IN-CODE RESOURCES AND VARIABLES

The first instruction past the FKEY header in *ShowClip Key* is simply a long branch over all of the FKEY's strings and dialog item lists. You'll probably notice in the sample program that there is a great deal of data embedded in the code, a practice that is not condoned by Apple. Unlike desk accessories, FKEYs can't have private resources in the System file, but this is not as confining as it may seem. Since the *NewDialog* function accepts a handle to a dialog item list rather than the ID number of a DITL resource, simply embed
(continued on page 120)

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OPEN TO THE PUBLIC

*Find your way through the
maze of noncommercial
software with this handy
guide to the classics.*

by
**Neil L.
Shapiro**

THE ONLY THING MORE AMAZING than Macintosh computers is the audience of people who own and use them. Ever since the Macintosh first came out, a community of people have pooled their efforts, talents and abilities to create a vast amount of widely available and noncommercial software for the Macintosh.

Often simply (and erroneously!) referred to as the world of public-domain software, these are the programs that appear on various users'

group disks and telecommunications services. They cover every aspect of using the Mac, from original games and entertainment to financial helpers and programming utilities to musical templates and beautiful graphics to fonts and desk accessories and much, much more.

The many programs and files fall into various classes. The first class, called "shareware," is a concept unique to personal computing. The author makes his or her software available on a trial basis. If the person who receives the program likes and will be using it, then that person is honor-bound to return a fee to the author.

The fee is usually a fraction of what a similar commercial product would cost, and is clearly indicated in the program and its documentation. Paying the fee also entitles the user to update information and support if the programmer provides it.

Other authors don't ask fees for their programs. Rather, they maintain ownership (copyright or patent) of the source (or program) code, but distribute the actual program for others to use noncommercially.

Software which is truly public domain is very rare. The author of such software has (perhaps in the source code of the program) renounced all claim to the program. Few authors will, or should, do this.

All these classes of software are available now for the Macintosh owner to enjoy. The problem is: Where to begin? It's almost an embarrassment of riches. There are so many hundreds, even thousands, of noncommercial programs available that if you just bought your Mac you may wonder how you'll ever find what you want or need.

Our table should be thought of as a guide to "classical" noncommercial software. The many choices represent what this author considers to be among the very best noncommercial programs available. The programs are listed by name and also by their name on CompuServe's MAUG group, along with where they are in that



OPEN TO THE PUBLIC

group's databases, the table includes a brief description of each program, and indicates if the programs are shareware.

MAUG (which stands for Micronetworked Apple Users' Group) is one of CompuServe's many Forums or bulletin board structures. I opened MAUG in 1978 and so it was already in place when the Macintosh was developed and released. Much of the noncommercial software for the Macintosh first shows up on an electronic service such as MAUG. Almost all programs in these categories appear there; the majority make their first appearances there.

Once a program appears on MAUG it is archived into a group of very large, but very organized, libraries. Right now MAUG has the largest collection

of noncommercial Mac software available to the public. All the programs in the table can be obtained from MAUG. (A modem and membership in the CompuServe Information Services network are needed to reach the MAUG area.)

Some of the programs listed are also available on other services and through user groups, if the author has also made the program available to those groups. (Programs and files direct from the MAUG databases may not legally be resold by other groups or networks.)

Some good places to hunt for noncommercial software include the ICONtact area of the Delphi Information Services network (another telecommunications service requiring a

modem), and disks from national user groups such as Berkeley Macintosh Users Group (BMUG) and the Boston Computer Society (BCS).

Note that the table does not include such things as *MacPaint* documents and templates for such programs as *ConcertWare* and *MusicWorks*. There are literally hundreds of fine pictures and graphics to enjoy and hundreds of musical files to delight every ear. There are also templates to be used with commercial programs such as *Multiplan* and *Filevision*. While I have included a wide selection, it is not complete. Many programs have been left out for lack of room, others by simple error that is mine alone. But the ones included should all be worth the trouble.

Here's the table. Happy hunting!

Name	MAUG Name and DL (S) = Shareware	Description
DA Key	DAKEY.BIN 1	Utility: Launch desk accessories on startup
PRAM	PRAM.BIN 1(S)	Utility: Sets contents of Parameter RAM (default font, boot drive, etc.)
MacWait	MCWAIT.BIN 1	Utility: Makes the watch hand rotate on "watch" cursor
Scroll Paint	SCROLL.BIN 1	Graphics: Load in <i>MacPaint</i> images and scroll them vertically
File Labels	FILEL.BIN 1	Database: One-inch labels with <i>Microsoft File</i>
Big Cursor	BIGCR2.BIN 1	Utility: Andy Hertzfeld presents a larger cursor for those with impaired vision
DAFont	DAFONT.BIN 1(S)	DA: Shows all font statistics (ID, point size, name, number, etc.)
Fast Eddie	FASTED.BIN 1(S)	Utility: Text editor (glossary, 11 cut-paste buffers, more)
MacClone	MCLONE.BIN 1	Utility: Very fast disk copier
ProCount	PRCNT.BIN 1	DA: Counts words in any text file
Abacus	ABACUS.BIN 1	DA: Unique abacus calculator
WayStation	WAYSTA.BIN 1	Utility: A minifinder that supports DAs, allows applications on multiple disks
Locate	LOCATE.BIN 1	DA: Shows mouse position; global or local coordinates
PainTor	PNTORP.BIN 1	Utility: Scrapbook pictures converted to <i>RMaker</i> resources
Wrap	WRAP.BIN 1	DA: Cursor wraps around screen (mouse off right, comes back on left)
QuickFile	QUICKF.BIN 1	Database: Bill Atkinson's index-card style program

Name	MAUG Name and DL (S) = Shareware	Description
SortMenu	STMEN2.BIN 1	Utility: Sorts font and DA menus alphabetically
Regress	REGRES.BIN 1	Statistics: Multiple regression on up to 20 variables
Cray 3	CRAY3A.BIN 1	DA: Quite advanced scientific, engineering, hexadecimal calculator
Font Tester	FTEST.BIN 1	Utility: 10 windows to preview fonts
MockChart	MCHART.BIN 1(S)	DA: A chart accessory: line, bar, stacked, hi/lo charts
MockPackage	MOCKPK.BIN 1(S)	DA: MockTerminal telecommunications, MockWrite, MockPrinter all together
Big Ben	BIGBEN.HQX 1	DA: Put the Tower of London on your desktop
Catalog	BCAT1.HQX 1	Database: Reads your disks, generates a 1st Base-readable catalog
MGraph	MGRAPH.HCX 1	Utility: Charting program written in <i>MS-BASIC</i>
Catalogger	CATDSK.BAS 1	Utility: <i>MS-BASIC</i> program to catalog your disk collection
A Clock	ACLOCK.OBJ 1	Utility: Application displays analog clock face
Nick's Dungeon	NICD 1	Database: Animated dungeons and dragons-style maze in a <i>Filevision</i> database!
RPN Calculator	DAMRPN.HEX 1	DA: RPN-style calculator
Dice Roller	DAMFRP.HEX 1	DA: Rolls complex dice needed for role-playing games
Decision Maker	DAMXDN.HEX 1	DA: Funny accessory to "help" make decisions
AppleTalk Pic	ATCONN.BIN 2	AppleTalk: <i>MacPaint</i> document; schematic diagram of AppleTalk connector

Name	MAUG Name and DL (S) = Shareware	Description
Default	DEFAULT.BIN 2	Utility: Changes default font in any application
1984 Script	1984AD.MAC 2	History: Transcript of the "1984" Super bowl commercial launching Macintosh
YAPU 2.1	YAPU.BIN 3	Utility: "Yet Another Printing Utility" and a very good one
Icon Maker	ICNMKR.BIN 3	DA: Makes an icon from a MacPaint or other screen picture
Dr. Who Finder	WHOFND.BIN 3	Finder: Set of resources (needs <i>Resource Editor</i>) for a Dr. Who Finder
UnWordstar	UNWS.BAS 3	Utility: Converts <i>WordStar</i> files into <i>MacWrite</i> files; requires <i>MS-BASIC</i>
Mouse Printer	MPRINT.BIN 3	DA: Mouse coordinates, and events; coordinates in local form
World Time	WTEDT.BIN 3	DA: Five different time zones in one display
MegaTalk	MEGTAL.BIN 3	Utility: Use Macintosh with <i>Megamax C</i>
Change Font	CHFONT.BIN 3	DA: Changes the default application font
AztecTalk	AZTALK.RSR 3	Utility: Use Macintosh with <i>Aztec C</i>
ETH Modula 2	MOD1.BIN 3	Language: The <i>ETH Modula 2</i> language (12 sequentially numbered files)
Stars	STAR31.BIN 3	Astronomy: Calculate, display, print highly accurate (and attractive) star charts
Font Librarian	FNTLIB.BIN 3	Utility: Very powerful font mover application
Resource Editor	RESED.BIN 3	Utility: Apple's <i>Resource Editor</i> (copyright: Uploaded with permission)
Multi-Scrap	MSCRAP.BIN 3	DA: More than one Scrapbook File per disk file
Reader	READER.BIN 3	DA: Read text files a page at a time
Tiny Finder	TYFNDC.BIN 3	Utility: A minifinder that uses DAs and has shut-down feature
Extras	EXTRAS.BIN 3(S)	DA: Extremely versatile, renames files, deletes, disk space and much more
FatMouse	FATMO.BIN 3(S)	DA: Displays FatBits image of what is under mouse cursor (and time, date, etc.)
Calendar	CALNDR.BIN 3	DA: Calendar comes up displaying current month
Resource Editor	REDIT.BIN 3	Utility: The European Resource Editor
New Keycaps	FONTMA.BIN 3	DA: Displays any font in the current System file
Icon Editor	ICN 3	Utility: Easy-to-use icon editor

Name	MAUG Name and DL (S) = Shareware	Description
FEDIT	FEDIT.BIN 3(S)	Utility: The most powerful disk-editor and file-recovery program. Excellent!
MacWrite Rescue	WRTRSC.BIN 3	Utility: Recovers most "unopenable" <i>MacWrite</i> documents
Check Register	CHKREG.BIN 3	Finance: Registers checks; requires <i>MS-BASIC</i>
Bubble Sort	SORT.BIN 3	Utility: A very fast bubble sort
Word Count	WC.BIN 3	DA: Counts words, characters, and lines in any text file
XLISP	XLP14A.BIN 3	Language: <i>XLISP</i> for the Macintosh
Page Setup	SETUP.BIN 3	ImageWriter: PREC resource for half page printouts
RAMstart	RAMSTA.BIN 3	Utility: A full-featured RAM-disk
McBug	MBUGNT.HQX 3	Utility: A debugger that does not require an external terminal
Telegraph	TLGRPH.BIN 3	DA: Steve Capp's unusual accessory makes dots and dashed from bits and bytes
Missile	MISSLE.HQX 3	Game: Dodge and destroy MIRV'd ballistic missiles
Anova Statistics	STATX1.HQX 3(S)	Statistics: Statistics package in <i>MS-BASIC</i> (13 files, 1 doc file, 6 samples)
C Shell	CSHELL.HQX 3	Utility: Simple shell used as a guide in doing an application in C
Q Sort	Q SORT.BAS 3	Utility: Q sort algorithm; requires <i>MS-BASIC</i>
Purge Icons	PICONS.HQX 3	Utility: Removes all icons from desktop file
Water	WATOR.C 3	Language: Fine game and associated files show how to program in C
SkipFinder	SKIP42.HQX 3	DA: Move from one application directly to another
RMaker	RMaker.HCX 3	Utility: Apple's <i>RMaker</i> (copyright: Uploaded with permission)
Editor	EDITOR.HCX 3	Utility: Apple's <i>Editor</i> (copyright: Uploaded with permission)
Custom Sizes	PREC3.HCX 3	ImageWriter: Custom paper sizes for ImageWriter 15
Perpetual	PERPET 3	Utility: A perpetual calendar; requires <i>MS-BASIC</i>
Uriah Heap	URIAH.HCX 3	DA: Shows contents of heap area of memory
Comet	COMET 3	Astronomy: Plots cometary orbits; requires <i>MacPascal</i>
Menu Editor	MENUED.HCX 3	Utility: Apple's <i>Menu Editor</i> (copyright: Uploaded with permission)

OPEN TO THE PUBLIC

Name	MAUG Name and DL (S) = Shareware	Description
Accounting	DSDEMO.BIN 4	Finance: Accounting; requires <i>Dollars & Sense</i>
Revenue	REVTEM.BIN 4	Finance: Revenue; requires <i>Multiplan</i>
Pinball	PINBAL.BIN 5	Game: Pinball game; requires <i>Pinball Construction Set</i>
Star Trivia	STAR 5	Game: "Star Trek" Trivia
Dungeon of Doom	DOFD.BIN 5(S)	Game: One of the very best real-time adventure games
Three-D	3DTT.BIN 5	DA: A 3D version of tic-tac-toe against the Mac!
Orion	ORION.BIN 5(S)	Game: Simulates a faster-than-light trip through local space
Canfield	CANFIE.BIN 5	Game: Canfield solitaire
Artillery	SHOTS.BIN 5	Game: Two-player artillery duel; requires <i>MS-BASIC</i>
Social Climber	SCLIMB.BIN 5(S)	Game: Arcade excursion through a tall, dangerous building
SoundPlay	SNDPLY.BIN 5	Entertainment: Sound effects player (many associated sound-effects files)
Bagels	BAGELS.BIN 5	DA: A version of <i>Bagels</i> (similar to <i>Mastermind</i>)
New Life	NULIFE.BIN 5	Game: 256 X 256 version of <i>Life</i> (many associated universe files)
Robot Battle	RB2512.PIT 5	Game: Program fighting and animated robots; requires <i>MS-BASIC</i>
Wizard's Fire	WIZARD.BIN 5	Game: Arcade game wherein you destroy missile-like bolts of fire
Core War	CWAR.BIN 5	Game: Programs try to stop each other in RAM! (Many fighter programs)
PicZle	PICZLE.HQX 5(S)	DA: Pictorial jigsaw-like puzzle
Pong	PONG.BIN 5	Game: Classical game Macimproved
Vampire's Castle	VC.BIN 5(S)	Game: Very professional illustrated adventure game
Hangman	HANG4.BIN 5(S)	Game: <i>Hangman</i> with Macintosh interface
Brickles	BRICK4.BIN 5(S)	Game: Fast arcade game, a super-duper, multipaddle <i>Pong</i>
Hustle	HUSTLE.BIN 5(S)	Game: Arcade action as snakes grow and must avoid each other
Bash Big Blue	BASHBB.HQX 5	Game: Arcade smashup of strange Blue invaders
Concentration	CONCEN.PAS 5	Game: Memory management in humans. Requires <i>Mac-Pascal</i>
Backgammon	BACKGA.HCX 5(S)	Game: 3D version of backgammon

Name	MAUG Name and DL (S) = Shareware	Description
Reversi	IAGO.HEX 5	Game: Game of <i>Reversi</i> which <i>Othello</i> is based upon
Daleks2	DALKS2.HEX 5	Game: Escape from robots!
Go	GO.BAS 5	Game: Two-player version of go; requires <i>MS-BASIC</i>
User Groups	MUGS.TXT 6	Community: List of over 50 users groups
Apple Team	APPLCO.TXT 6	Community: Transcript of conference with Apple personnel
Andy Hertzfeld	ANDYCO.TXT 6	Community: Transcript of conference with Andy Hertzfeld
Dave Winer	WINER.CO 6	Community: Dave Winer of Living Videotext
Mac Team	CO0123.TXT 6	Community: Dan Cochran and others from Apple in conference
Don Brown	DBROWN.CO1 6	Community: Conference with Don Brown before he programmed <i>Sidekick</i>
Doug Clapp	CLAPP.CO1 6	Community: Author Doug Clapp (<i>Macintosh, Complete!</i>) in conference
Bill Atkinson	ATKINS.CO1 6	Community: Bill Atkinson in conference
John Dvorak	DVORAK.CO 6	Community: A Devil's Advocate in conference
Mark Pelczarski	PELSKI.CO 6	Community: Penguin Software's Penguin-in-Chief. (Frnk!)
Steve Wozniak	WOZ1.TXT 6	Community: Steve Wozniak before Mac was released
Boston Two	BOSWRT.BIN 7(S)	Font: An extremely legible and well-designed font
Austin	AUSTIN.BIN 7	Font: Technical math and logic
Natalie	NATALI.BIN 7	Font: Sans-serif
Diatom	DIATOM.BIN 7	Graphics: Drawing program based on Fourier transforms
Steel	STEEL.HEX 7	Font: Calligraphic-looking
Font Display	FNTDSP.BIN 7	Font: Displays and prints fonts
Labels	LABELS.PIT 7	Graphics: Makes diskette labels
Trash Cans	TRASHE.BIN 7	Finder: Very strange replacement icons for the trash can.
Toilet	TOILDO.BIN 7	Finder: Don't just throw away bad files, flush 'em!
IBM Trash	IBMTRA.BIN 7	Finder: IBM-styled trash can
LED	LEDFO.NBIN 7	Font: LED; emulates seven-segment LED readouts
Chicago	CHCOF.BIN 7	Font: Three new sizes
Lake Geneva	LAKGEN.BIN 7	Font: Fractions, diacritical marks
Madison	MADSF1.BIN 7	Font: Nordic runes

OPEN TO THE PUBLIC

Name	MAUG Name and DL (S) = Shareware	Description
Milwaukee	MILWK1.BIN 7	Font: Sort of an inverse Geneva
Monaco	MONACF.BIN 7	Font: Three new sizes
NeueTelu	NEUTEL.BIN 7	Font: Designed for making "Dungeons and Dragons" maps
Seattle	SEATTF.BIN 7	Font: A 12-point size
Paint Mover	PNTMVR.BIN 7	Graphics: Bill Atkinson's own accessory program for <i>MacPaint</i>
Alice	ALICE4.BIN 7	Font: Enhanced version of font in <i>Through the Looking Glass</i> game
Multiplan Font	MPFONT.BIN 7	Font: Use in <i>Multiplan</i> for extended display possibilities
Hebrew	HEBREW.BIN 7	Font: All letters and vowels
JoyPaint	JOYPNT.BIN 7	Graphics: View and scroll <i>MacPaint</i> pics with simulated joystick
United States	USMAP.BIN 7	Graphics: Map of 48 states, each state a separate object
Star Fleet	STFONT.BIN 7	Font: A "Star Trek"-inspired font in four sizes
Fractals	FRACTL.HQX 7	Graphics: Draws fractal curves
Boxie	BOXFNT.BIN 7	Font: Elegant and legible
Video Player	VWPLAY.BIN 7	Graphics: Demos Videoworks-made animations. (Many animations available)
Stiletto	KNIFE.BIN 7	Font: Arty, boldface, sharp-looking!
Halley's Comet	COMET.BIN 7	Astronomy: Halley's comet star maps in <i>MacPaint</i>
Wichita	WCHTA.BIN 7	Font: Similar to Geneva, better printing
Monaco	MONACO.BIN 7	Font: New and altered sizes
International	INTFON.BIN 7	Font: International symbols, characters, letters
Spokane	SPOKAN.FNT 7	Font: Blocky, nice-printing
Oblique	OBLQ12.BIN 7	Font: Slightly decorative, useable for text
Painter's Helper	PNTHLP.HQX 7(S)	Graphics: Enhances <i>MacPaint</i>
Uncial	UNCIAL.HQX 7	Font: Caps and small caps
Squint	SQUINT.HQX 7	Font: <i>MacPaint</i> document is a guide to tiny fonts available
Hanford	HANFRD.HCX 7	Font: Boilerplate (almost invisible!)
White Shadow	WHITES.HCX 7	Font: White font to be used against grey background
Princeton	PRFON2.HCX 7	Font: Math and Greek characters
Courier	COURIE.HCX 7	Font: New sizes
Quick View	QIKVUE.HCX 7	Graphics: Shows upper-left corner of <i>MacPaint</i> files very fast

Name	MAUG Name and DL (S) = Shareware	Description
Isengard	ISEN.FON 7	Font: For fans of Tolkien's Elvish
Rivendall	RIVEND 7	Font: For fans of Tolkien's dwarvish languages
Camelot	CAMLOT.HCX 7	Font: Medieval-looking font
Dali	DALIFO.HEX 7	Font: Surrealistic
Walla Walla	WALLA.FNT 7	Font: 6-point and readable!
Banner	BANNER.HEX 7	ImageWriter: Print any length banners in huge letters
MacPat	MACPAT.BAS 7	Graphics: Design your own patterns; require <i>MS-BASIC</i>
Pretty Good Terminal	PGTERM.BIN 8(S)	Telecommunications: Features MacBinary protocol, VT-100, macros
Bulletin Boards	MACBBS.TXT 8	Telecommunications: List of current BBSs
Communique	COMQUE.BIN 8(S)	Telecommunications: Full-featured term program; requires <i>MS-BASIC</i>
BetaBoard	BETADO 8(S)	Telecommunications: Full-featured BBS; requires <i>MS-BASIC</i>
VMCO	VMCO.BIN 8	Visual/vocal MAUG conferencing utility shows faces(!) in MAUG conferences
VCO	VCO.BIN 8	Visual conferencing utility for use other than on CompuServe network
Auto Log	ATOLGD.BIN 8(S)	DA: Autodials and logs on with terminal programs
Red Ryder	RR6E.BIN 8(S)	Telecommunications: Excellent, full-featured terminal program with MacBinary
TTERM	TTERM.BIN 8	Telecommunications: Term program with MacBinary
Packit	PACKIT.BIN 8	Utility: Packs and unpacks many files together for one up/download process
Binhex	BINHEX.BAS 8	Utility: Creates Binhex application to code/decode programs for up/download
Freeterm	FREETM.BIN 8	Telecommunications: Terminal program with MacBinary
VT-52 Emulator	VT52DA.BIN 8	DA: Emulate a VT-52 with any terminal program
Kermit	MACKER.SH 8	Telecommunications: Source code for Kermit protocol for the Macintosh
RLMTEP	RLMTEP.301 8	Telecommunications: Full-featured term program; requires <i>MS-BASIC</i>
MacTEP	MACTEP.187 8	Telecommunications: The granddaddy of all Mac telecomm! Requires <i>MS-BASIC</i>

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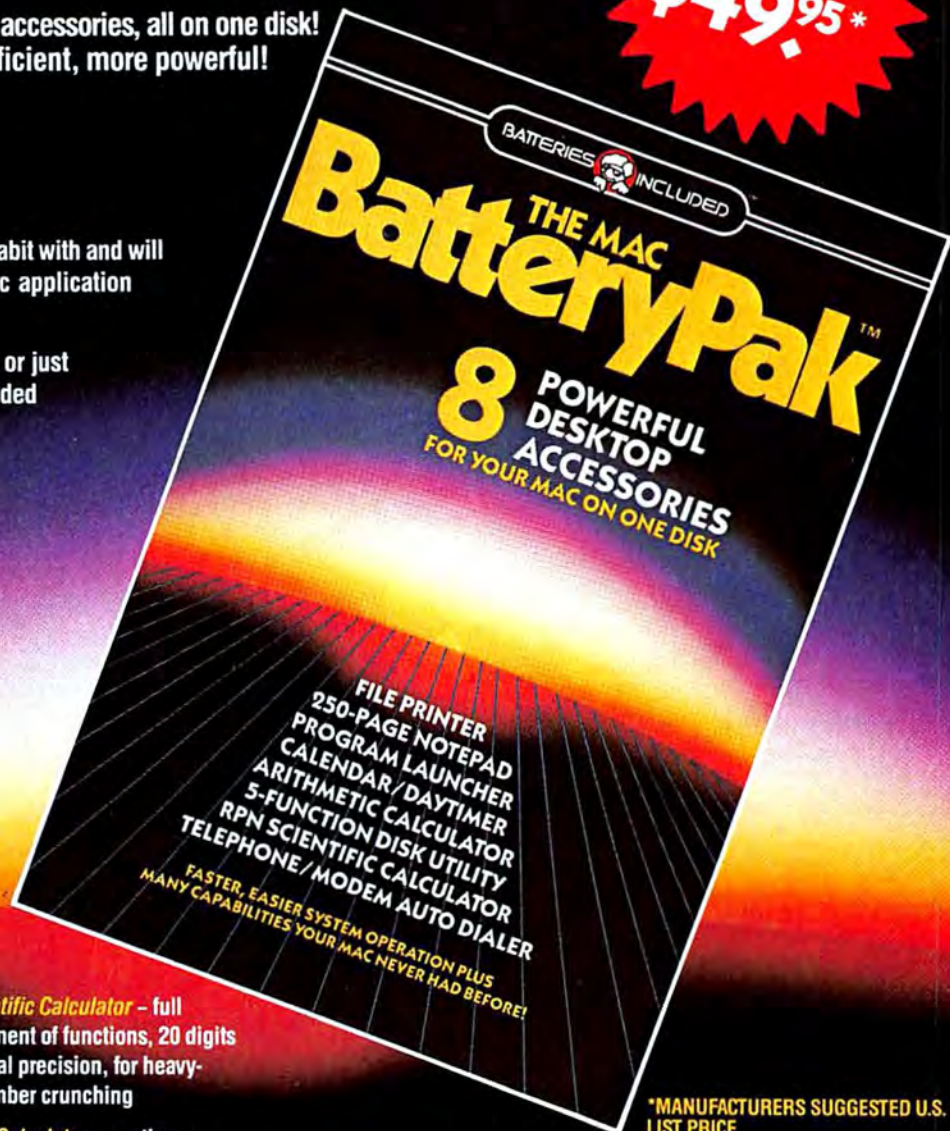
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ANSWERS FROM THE MAC TEAM

by Dan Cochran

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 St., New York, NY 10018. Dan will read all of your questions, but may not be able to answer individual queries. Watch this space for the pick of each month's Q & A crop.



When I create a graphic in *MacPaint* and then paste it into *MacWrite* it usually doesn't print out very well. I've tried all four possible combinations: standard quality, tall; standard quality, tall adjusted; high quality, tall; and high quality, tall adjusted. Only high quality, tall adjusted looks dark and dense. The others all have a faded, washed out look, even if they're printed one after another, using the same ribbon and paper. Why is this?

Ted Landau
Rochester, MI



What you see isn't always exactly what you get. The Macintosh display consists of an array of dots or pixels—512 in the horizontal dimension and 342 in the vertical dimension. The number of dots in both dimensions is 72 per linear inch.

A *MacWrite* document printed on the *ImageWriter* also consists of an array of dots; the number of dots printed per linear inch, however, is dependent upon the Orientation and Print Quality options that you select via the Page Setup and Print commands in the File menu.

	Quality	
	Standard	High
Tall	80×72	160×144
Tall Adjusted	72×72	144×144
Wide	72×72	144×144

(Sizes in pixels per inch horizontally by pixels per inch vertically.)

The default Orientation option for *MacWrite* documents is Tall/Standard, which translates to a print quality of 80 dots per inch horizontally and 72 dots per inch vertically. This is because the quality of the printed text is dramatically improved by increasing the horizontal resolution to 80 per inch from the 72 per inch displayed on the Macintosh screen. Your *MacWrite* graphics, however, especially geometric figures such as circles and squares, might not come out exactly like you'd expect . . . your squares will be a little short in the horizontal dimension and circles might look a bit squished.

Most graphics won't be noticeably affected by this difference in aspect ratio. If your work requires precision, however, you can select Tall Adjusted from the Page Setup Dialog Box. This coerces the *ImageWriter* into printing 72 dots per linear inch, the same as the Macintosh display, in both the horizontal and vertical dimensions. Your squares will then be squares and your circles will be circles . . . but your text won't look so hot.

To get the best of both worlds you might try printing only the text portion of your document using the Tall option

and save some blank space for your graphic. Then run the same printout back through the *ImageWriter* and print only the graphic using the Tall Adjusted option.

My dealer recently convinced me that a *Quadram MicroPhaser* serial-to-serial print buffer would work with my Mac. I bought one, took it home, and it doesn't work. Neither my dealer nor the manufacturer can explain why. Is there any buffer for word processing output that will work, and if not, why not?

Radcliffe A. Joe
New York, NY

Most serial printers simply receive a sequence of single character codes (the ASCII set), one code for each character that is to be printed. For example, a typical *MacWrite* page of Geneva 12-point font will rarely exceed 3000 characters. If all *MacWrite* needed to do was send out a single byte of information for each character that it wanted to print, a serial buffer such as you describe, with 64K of memory, would be able to receive and hold at least 20 pages of material and free up your Macintosh for other work while the printer was busy. As a matter of fact, if you're content with selecting Draft quality from the Print Dialog box your buffer device should work just fine. Alas, to produce the print quality we've grown accustomed to, the *ImageWriter* must receive much more information than simply a one-byte code per character. A bit of elementary arithmetic seems in order here.

Let's figure out how many bytes of information the *ImageWriter* must receive to print a full page of *MacWrite* information. If you select High quality text from the Print dialog box and Tall Orientation from the Page Setup dialog box, the *ImageWriter* will be printing 160 dots per inch horizontally and 144 dots per inch vertically. For an 8" by 10" printed page we therefore have to send enough information to the printer so that it can image 1,843,200 dots!

$[(160*8)*(144*10)] = 1,843,200$

Each dot to be printed needs a bit of information to tell the printer whether it's black or white and the printer expects to receive its information in 8-bit words. You would, therefore, need 230,400 words of memory in a print buffer device to even store one page of MacWrite information!

For any buffer to pay its keep you'd probably want it to handle at least a 20-page document. That means you'd need a buffer with almost 2 megabytes of memory to make it worth your while. Such a device would probably cost a

minimum of \$1000. You can probably understand why no manufacturer has made one. Who would buy one?

A neat alternative is a product called *MacMate* from SMB Development Associates. *MacMate* is a software product that includes a RAMdisk program along with a software print spooler that lets you allocate up to 320K of Macintosh RAM as a print buffer. At \$49.95 it sounds like a bargain. Check it out.

What exactly are boot blocks? A friend told me my boot blocks were destroyed on a disk of mine that went bad. What were they talking about?

*Jane Ainsworth
Palo Verde, CA*

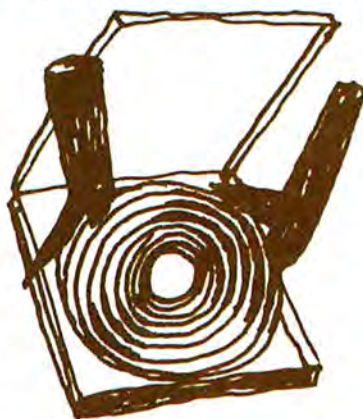
A Macintosh 3½" diskette is partitioned into 80 tracks. (Think of these tracks as a set of 80 concentric circles on the disk.) Each track on the disk is divided into wedges called sectors. Because the outermost tracks have a larger circumference than the innermost tracks and can hold more data, the numbers of sectors for any track is dependent on that track's physical location.

The first two sectors on any initialized Macintosh disk contain the boot blocks

you're referring to. These sectors contain all the start-up information for that particular disk, including the name of the System file, the name of the *Finder* file, the name of the initial program to run (usually the *Finder*), the name of the debugger (even if no debugger is installed there is a default name for one), the name of the Clipboard file, the maximum number of open files, and other important bits of information. If these two sectors have been trashed you'll either get a "Sad Macintosh" Icon when you boot or an offer to initialize the disk as it is "not a Macintosh disk." Exactly what happens depends on how badly trashed those sectors were.

The easiest way to solve the problem is simply to boot from your internal drive with a good disk, insert the problem disk into the external drive, and copy the files you need over to the internal drive. Unless your media itself is defective you'd then be able to erase the contents of the external drive (which will rewrite the boot blocks) and then move your files, including a System folder, back over to the external drive.

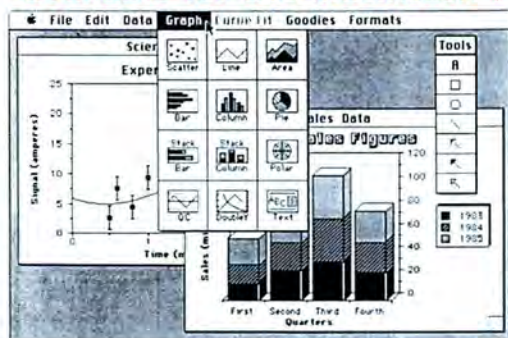
For more technical souls, John Mitchell's *Fedit* program will reconstruct the boot block information on a damaged



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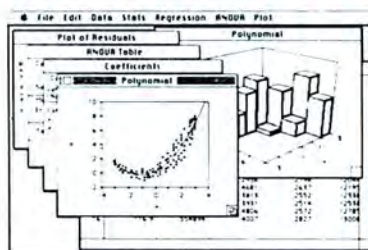
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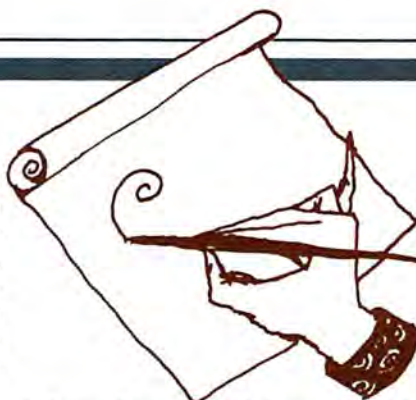
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disk. John's excellent *Fedit* documentation also gives the only thorough written description of the boot block format that I know of. *Fedit* is a shareware program available on many bulletin boards (including CompuServe, The Source, and Delphi) and from virtually all user groups. Its cost is \$30, modest for its enormous power and utility.

My friend sent me a copy of a new public domain program. She said it had a fancy icon but I don't see it. What could have happened?

*Jenny Smith
Cedar Rapids, IA*

Can't say for sure, but I've got a fairly good idea. When you copy a program from one disk to another a number of *Finder*-related resources need to accompany it. These *Finder*-related resources include the program's icon, and icons for documents the program creates. Each program has an on-off flag called a bundle bit that tells the *Finder* whether any such resources are present and need to be copied. If the bundle bit is set the *Finder* will copy the program's bundle resource to the new disk and bring along the appropriate icons. If the bundle bit



isn't set, that program's icons will get left at home on the original disk and won't be copied. Either ask your friend to set the bundle bit before sending you another copy or, since some terminal programs such as *MacTerminal* don't transmit that information, set it yourself using a *Set-FileInfo*-type program or *Fedit* (yep, it'll do that too).

I'm having some programming problems. My resources aren't always found by my program or where the program seems to want them, and sometimes I lose track of handles that aren't locked down when they should be. I've been told I can use the PurgeMem and CompactMem calls to help debug those problems. How do I go about that?

*Bill Frankel
Sonoma, CA*

[Answer by Jim Friedlander of Macintosh Technical Support.]

Your informant is right. There is a very handy technique for forcing these issues to the surface. Every time through your Main Event Loop call:

```
PurgeMem (MaxSize);
size:=CompactMem (MaxSize);
```

For those of you not using the Lisa Pascal Workshop, MaxSize is a constant equal to \$800000. PurgeMem will purge all purgeable resources and CompactMem will rearrange the heap, trying to find a contiguous free block of MaxSize bytes. Obviously, this will move things around quite a bit, so, if there are any unlocked handles that you have dereferenced, you will find out about them very quickly.

Don't be alarmed when you see the performance of your program deteriorate drastically—it's just because lots of resources are being loaded and purged every time through the Main Event Loop. You might want to have a debugging menu item that toggles between glacial and normal execution speeds.

Oh yeah . . . be sure to remove these two lines of code from the program before you ship it! ☹

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YOU WANT FUNCTION KEYS?

(continued from page 109)

the DITL template in the code of the FKEY, and then get a handle to it via the `_PtrToHand` function.

As with desk accessories, you have to pay special attention to global variables. The simplest method to avoid problems is to use the LINK instruction to create a stack frame large enough to house the variables. Another method is to create a relocatable or nonrelocatable storage block in the application heap, then set up one register, such as A4, to point to it. If the second method is used, remember to release the block when

the FKEY exits. The example here uses the stack frame method. The stack frame is accessed at negative offsets from the A6 register.

FKEYS AND SWITCHER

When an FKEY uses the `_ModalDialog` call or `SFGetFile`, it will also allow any desk accessories that are open to get their periodic events. These events allow such desk accessories as Alarm Clock and Quick-Grab to work when an FKEY is in operation. However, there is a problem if an FKEY uses the `_ModalDialog` call—*Switcher* compatibility.

If a switch should occur while the FKEY is in a `_ModalDialog` call (which also calls `_GetNextEvent`), *Switcher* will crash when the FKEY is closed. For this reason, it is very important to always lock out *Switcher* at the beginning of the FKEY code, and restore it at the end of the code. Use the KillSwitcher subroutine in the ShowClip Key program in your own FKEYs to lock out *Switcher* in your own FKEYs.

INSTALLING YOUR FKEY

The simplest way to get an FKEY into a System file is to use *Resource*

```

PUSH.W #userItem+itemDisable
        ;Item Type=0=UserItem
PEA DrawTitle ;Proc Ptr
PEA TitleRect ;Display Rectangle
_SetDItem ;Add the second
        ;user item
CLR.L -(SP) ;Use standard
        ;filterproc
PEA MyItemHit(A6) ;VAR ItemHit
_ModalDialog ;Wait for the OK button
PUSH.L SavDPtr
_DisposDialog ;Disposes of item list
MOVE.W SavHibernation(A6),D0 ;Restore
        ;saved Hibernation
BSR.S KillSwitcher ;value if necessary
UNLK A6 ;Dispose of globals
MOVEM.L (SP)+,A0-A4/D0-D3 ;Restore regs
RTS ;Bye

; KillSwitcher subroutine
;
; on entry: D0.W = Value to stuff in Hibernation
; on exit: D0.W = Previous value of Hibernation
;
KillSwitcher MOVEM.L A1/D1-D2,-(SP)
        MOVE.W D0,D2 ;Move value to D2
        MOVE.L SwitcherGlobals,D1 ;Get addr
        ;of Switcher
BEQ.S #1 ;globals, 0 means
        ;no Switcher
        MOVE.L D1,A1 ;Move it to A1
        ADDQ.L #1,D1
        BEQ.S #1 ;-1 means no Switcher
        MOVE.W Hibernation(A1),D0
        MOVE.W D2,Hibernation(A1)

#1 MOVEM.L (SP)+,A1/D1-D2
RTS

; Procedure MyItem (theWindow: WindowPtr;
; itemNo: INTEGER);
;
; (UserItem procedure to draw
; the clipboard's contents.)
;
; Stack Def
theLength SET -28 ;Holds length of text
theOffset SET -24 ;Offset from start of scrap
myHandle SET -20 ;Handle for _GetScrap call
PicRect SET -16 ;the pict's rect
theRect SET -8 ;the display rect
;theOldA6 SET 0
;theReturnAddr SET 4
;theItem SET 8
theDPtr SET 10

MyItem LINK A6,#-28 ;Set up a stack frame
MOVEM.L UserItemRect,D0-D1
MOVEM.L D0-D1,theRect(A6) ;Copy the
        ;display rect
SUBQ #4,SP
PUSH.L SP
_GetPort ;Save port on the stack
PUSH.L theDPtr(A6)
_SetPort ;Draw in our window
PUSH.L #000030003
_PenSize ;Use a 3x3 pixel pen

PEA theRect(A6) ;Draw the heavy border
_PenNormal ;Restore 1x1 pixel pen
PEA theRect(A6)
PUSH.L #000050005
_InsetRect ;Shrink theRect a bit
PEA theRect(A6)
_FrameRect ;Draw the thin border
PUSH.L #000040004 ;Inset the display rect
_InsetRect
TST.W ScrapState ;Is scrap initialized?
BMI EmptyClip ;No, so show empty
TST.L scrapSize ;Yes. But is there data?
BEQ EmptyClip ;No, so show empty
MOVEQ #0,D0 ;Yes. Is it TEXT?
MOVE.L D0,A0 ;NIL handle for inquiry
MOVE.L Text,D0 ;Put 'TEXT' in D0
BSR GetScrap ;Any TEXT in the scrap?
BPL GotText ;Yes. Display text
MOVEQ #0,D0 ;No. Is it PICT?
MOVE.L D0,A0 ;NIL handle for inquiry
MOVE.L Pict,D0 ;Put 'PICT' in D0
BSR GetScrap ;Any pictures in the scrap?
BPL.S GotPict ;Yes. Draw the picture

GotError PUSH.L #00180018 ;No
_MoveTo ;Move the pen
PEA ErrorMsg ;Draw the error message
_DrawString
BRA Out ;and exit item proc.

GotPict MOVEQ #minBlkSize,D0 ;Get minimum
        ;size handle
_NewHandle
BMI.S GotError
MOVE.L A0,myHandle(A6) ;Save it
MOVE.L Pict,D0
BSR GetScrap ;Get the pict
MOVE.L myHandle(A6),A0
TST.L D0 ;Successful?
BPL.S #1
_DisposHandle ;No. Show error
BRA.S GotError

#1 _HLock ;Yes. Lock it down
MOVE.L (A0),A0
MOVEM.L picFrame(A0),D0-D1 ;Copy picFrame
        ;into our storage
        ;so we can fix it
NEG.W D0 ;TopLeft is still in D0
SWAP D0
NEG.W D0 ;Negate the topleft
ADD.L theRect(A6),D0 ;Add in the offset
PEA PicRect(A6)
PUSH.L D0
_OffsetRect ;Fix the PicRect
CLR.L -(SP) ;Get a region handle
_NewRgn ;Leave it on the stack
PUSH.L (SP)
_GetClip ;Save current clip region
PEA theRect(A6) ;Clip to our rect
_ClipRect ;Draw inside the lines
PUSH.L myHandle(A6) ;Draw the picture
PEA PicRect(A6)
_DrawPicture
PUSH.L (SP) ;Restore the original clip

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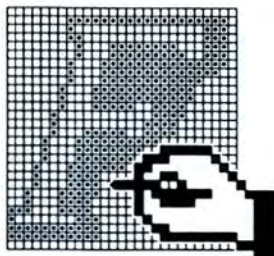
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YOU WANT FUNCTION KEYS?

Editor (*Resedit*) to simply paste it in. If you don't have much experience with *Resedit*, work on a backup copy of the System, one that will not cause you to tear your hair out if something goes wrong. Pasting in a new resource, such as an FKEY, is both simple and safe, but *Resedit* is still not a perfect tool.

Start the surgery by opening *Resedit*. First, select and open the FKEY file that you want to install. Copy (not cut!) it. Be sure to note its ID number (ShowClip is 5), then close the file.

Open the System file to get the

FKEY. You'll be presented with a listing of resources types in the System. Open the FKEY resource type. A new window will show FKEYs 3 and 4 and any others that are already installed. If there is already one with the same number as the one you copied, you'll either have to remove (by selecting it and then either cutting or clearing it) or renumber it using the Get Info function of *Resedit*. When all is OK, select Paste from the Edit menu and your FKEY will appear. Close everything down, saving as you go. When the desktop reappears press COMMAND, SHIFT

and the ID number of your FKEY and it will appear.

There's another, simpler way to do this if you have *Quick & Dirty Utilities, Volume 2* from Dreams of the Phoenix. That disk contains Bob Luce's program *FKEY Installer* that will do it for you at the click of a mouse.

Once you are familiar with the ShowClip Key and how it works, you can easily make it into a generic FKEY shell. From that base, you will find it easy to create your own FKEYs.

And satisfy everyone. ☺

```

_SetClip      ;region and then dispose
_DisposRgn    ;of our copy
MOVE.L myHandle(A6),A0 ;Dispose of
;the PICT
_DisposHandle ;now that it's drawn
BRA.S Out ;Exit item proc

GotText MOVEQ #minBlkSize,D0 ;Get a
;minimum size handle

_NewHandle
BMI GotError
MOVE.L A0,myHandle(A6) ;Get a handle
MOVE.L Text,D0 ;to the text in
;the clipboard

BSR.S GetScrap
MOVE.L myHandle(A6),A0 ;Save it
TST.L D0 ;Success?
BPL.S #1
_DisposHandle ;No. Handle error
BRA GotError

#1 MOVE.L D0,theLength(A6) ;Yes. Save length
;of text
_HLock (A0),A0 ;Lock it down
;dereference it
PUSH.L A0 ;Push pointer to text
PUSH.L theLength(A6) ;it's length
PEA theRect(A6) ;it's display rect
PUSH.W #teJustLeft ;left justification
;Show the text
MOVE.L myHandle(A6),A0
_DisposHandle ;Dispose of text handle
BRA.S Out ;Exit item proc

EmptyClip PUSH.L $500180018 ;Draw the
_MoveTo ;"Empty Clipboard" message
PEA NoClip
_DrawString

; Main exit. All four paths (GotText, GotPict,
; EmptyClip, GotError) exit here.

Out _SetPort ;Saved on stack
UNLK A6 ;Undo stack frame
POP.L A0 ;Get the return address
ADDQ #6,SP ;Pop the parms
JMP (A0) ;and return

; GetScrap subroutine
;
; on entry: D0 = preferred type (TEXT,PICT)
; A0 = Handle to pass to _GetScrap

GetScrap CLR.L -(SP) ;Room for function
;result
PUSH.L A0 ;Handle for copy
PUSH.L D0 ;resType
PEA theOffset(A6) ;VAR Offset
_GetScrap
POP.L D0 ;Return result in D0
RTS

; Procedure TitleItem (theWindow: WindowPtr;
; itemNo: INTEGER);
;
; (UserItem procedure to draw centered title line)
;
; Stack Def
;theOldA6 SET 0

```

```

;theReturnAddr SET 4
;theItem SET 8

theDPtr SET 10

DrawTitle LINK A6,#-4 ;Room for saved port
PUSH.L SP ;Same as -4(A6)
_GetPort ;Save port on the stack
PUSH.L theDPtr(A6)
_SetPort ;Draw in our window
PUSH.L #268<<16110 ;MoveTo(10,268)
_MoveTo ;Position the pen
PEA TitleString ;Draw the title line
_DrawString
_SetPort ;Restore the port
UNLK A6 ;Undo stack frame
POP.L A0 ;Get the return address
ADDQ #6,SP ;Clean parameters
;off stack
JMP (A0) ;and return

END

```

SHOWCLIP.R

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*resource definition file for
*ShowClip FKEY resource

ShowClip Key
FKEYQD15

type FKEY = PROC
ShowClip Key,5 (32)
ShowClip

SHOWCLIP.LINK

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ShowClip

;

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INTEGRATED SOFTWARE

Crunch is an icon-driven relational spreadsheet that features versatile charting and database capabilities. Strong financial logic, date and mathematical functions. Spreadsheets can be linked. The manual is clear and concisely written. Macros are not supported. \$195. Paladin Software, 2895 Zanker Rd., San Jose, CA 95134.—CP

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. Ensemble is compatible with MacWrite and MacPaint files, and any program using cut and paste operations. Capacity limited by RAM and disk size. Easy to use, general database with graphics. \$299.95. Hayden Software, 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, 10700 Northup Way, Bellevue, WA 98009.—CP

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. \$595. Lotus Development Corp., 55 Cambridge Parkway, Cambridge, MA 02142.—CP

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). Be sure to get version 2.0. \$295. ProVUE Development Corp., 222 22nd St., Huntington Beach, CA 92648.—CP

Quartet, an integrated program that works on a 128K Mac, is built around a powerful spreadsheet with a full range of functions. It can also be used as a database and provides good quality charts from spreadsheet data. Documentation is adequate but not too well organized. \$199. Haba Systems, 15154 Stagg St., Van Nuys, CA 91405.—CP

BUSINESS ACCOUNTING

Accountant's Choice is a powerful system built around a relational 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, Suite 210, 10201 Torre Ave., Cupertino, CA 95014.—CP?

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?

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 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 Software, Box 9739, Fargo, ND 58109.—CP?

Maccountant is a one-write system that provides only very basic ledger entries. Aging of accounts but no detailed records. Payable is basically a check writer. System setup and operation are very rigid. Errors in simple operations and disk crashes make Maccountant somewhat unreli-



able. \$275. Digital, Etc., 1749 14th St., Santa Monica, CA 90404.—CP?

MacOneWrite Cash Disbursements is 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?

Palantir is 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. But 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 Software, 12777 Jones Road, Suite 100, Houston, TX 77070.—CP?

Rags to Riches integrated accounting modules (General Ledger and Accounts Receivable) use 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?

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. Built in *SmoothTalker* gives verbal error messages or entries, if desired. Other modules planned. Requires 512K, printer and external drive. \$395. Future Design Software, 13681 Williamette Dr., Westminster, CA 92683.—CP?

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 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. A good, full-featured program. \$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.—CP

MacinTax 1984 is an excellent tool for preparing tax forms. Simple to use, with good built-in help. Will prevent or avoid most common tax preparation errors. Can output IRS approved forms. \$75 (for 1985 edition). SoftWeave, Bldg. D, 400 Mobil Ave., Camarillo, CA 93010.—NCP

Tax-Prep 85 allows users to prepare their taxes on a series of incredibly detailed, linked *Multiplan* templates. A cross checker assures form to form consistency. Can output IRS approved forms. \$99.95. Requires *Multiplan* and external drive. EZWare Corp., 17 Bryn Mawr Ave., Bala Cynwyd, PA 19004.—NCP

TaxWizard '84/85 does adequate tax preparation. Forms and schedules are linked. Easy to use, marred only by inability to produce final, IRS approved forms. \$64.95. Gamma Productions, Suite 102, 817 10th St., Santa Monica, CA 90403.—NCP

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 Products, 3420 Ocean Park Blvd., Santa Monica, CA 90405.—CP

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. Be sure to get version 1.1, 1.0 is too slow. Publisher offers free telephone support (800 number). \$149.95. Forethought, 1973 Landings Dr., Mountain View, CA 94943.—NCP

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 Products, 3420 Ocean Park Blvd., 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

Helix 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 application, excellent where relational database application is required. Supports multiple windows. Requires a 512K Mac and an external drive, but is slow on that configuration. A hard disk is really required to use *Helix* effectively. \$395. Odesta, 3186 Doolittle Dr., Northbrook, IL 60062.—NCP

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The Housekeeper is a home inventory database. Users can keep track of assets for both tax and casualty purposes. Specialized reports are easily generated. \$59.95. Aegis Development, Suite 277, 2210 Wilshire Blvd., Santa Monica, CA 90403.—NCP

I Know It's Here Somewhere stores information in a simple filing system. Ideal for general household or small business use. File formats are flexible and 31 samples are included. 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 Software, 600 Suffolk St., Lowell, MA 01854.—NCP

LaserBase is a versatile database that allows full integration of graphics in its records. Files can have multiple levels of password security. Good use of the Mac interface. \$149.95. Kette Group, 13895 Industrial Park Blvd., Minneapolis, MN 55441.—CP

MacLion is a true relational database program. Can handle all databasing requirements although set up may require outside (consultant) help. Has a built-in programming language (LEO) and can be customized for any application. Reasonably flexible and easy to use once a database is set up. Can handle very large files as well as multiple files. \$379. Computer Software Design, 1904 Wright Circle, Anaheim, CA 92806.—CP

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 Corp., 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. Sorting is limited to approximately 5000 records on 128K Mac. Easy to use, well designed and full featured. \$195. Microsoft, 10700 Northup Way, Bellevue, WA 98004.—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). Organizational Software Corp., 2655 Campus Dr., Suite 150, San Mateo, CA 94403.—CP

pfs: File/Report provides two programs on one disk. *File* is a reliable, easy to use text database. Use it to design simple forms, maintain records, and, in concert with *Report*, generate reports in list format or as designed forms. This package was an early entry into the Mac marketplace and more powerful and versatile products are now available. \$175. Software Publishing Corp., 1901 Landings Dr., Mountain View, CA 94043.—CP

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. Switcher and AppleTalk compatible. Personal Bibliographic Software, PO Box 4250, Ann Arbor, MI 48106.—CP?

NUMBER CRUNCHING

BEAMAC II is for civil engineers. It performs full graphic and numeric analyses of any statically determinate or indeterminate beam. Simple to use, good use of the Mac interface. Money-back guarantee. \$295. Erez Anzel, 5T, 5800 Arlington Ave., Riverdale, NY 10471.—NCP

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.

Especially useful while working in a word processor. \$79.95. T/Maker Co., 2115 Landings Dr., Mountain View, CA 94043.—CP?

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. *Multiplan's* best feature is the ability to link areas of one worksheet to portions of another. \$199.95. Microsoft, 10700 Northup Way, Bellevue, WA 98004.—CP

StatView is a high-powered statistical calculation package. Easily and efficiently handles all the common statistical techniques and tests and many uncommon ones. Has a user definable area as well. Easy to use and well documented. \$199.95. BrainPower, Suite 250, 24009 Ventura Blvd., Calabasas, CA 91302.—CP?

StatWorks is another high-powered statistical calculation package. Simple to use, with a more than adequate range of tests available. Still has some bugs in its reporting functions. Not LaserWriter compatible. \$125. Cricket Software, Suite 206, 3508 Market St., Philadelphia, PA 19104.—CP?

GRAPHICS & DESIGN

Animation Toolkit I lets users prepare "film clips" of moving objects which play back at varying speeds, 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, 3081/2 S. State St., Ann Arbor, MI, 48104.—NCP

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 Software Company Inc. 600 Suffolk St., Lowell, MA 01853.—CP

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 Company, 2115 Landings Dr., Mountain View, CA 94043.—NCP

DaVinci Building Blocks features predrawn blocks of brownstone, 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 Software, 600 Suffolk St., Lowell, MA 01853.—CP

DaVinci Commercial Interiors is a professional-level package of layout aids for interior designers and architects. Features predrawn office sections with furnishings included as a font that the user installs into a System. \$199.95. Hayden Software, 600 Suffolk St., Lowell, MA 01853.—CP

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, shadow, underline and outline). \$49.95. Altsys Corp., PO Box 865410, Plano, TX 75086.—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. Generally easy to use. \$19.95. PBI Software, 1155B-H Chess Dr., 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.

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Best suited for letterheads, memos, other business use. Excellent manual. \$39.95. Simon & Schuster, Computer Software Division, 1230 Avenue of the Americas, New York, NY 10020.—NCP

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, Suite 212, 7136 Haskell Ave., Van Nuys, CA 91406.—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, Suite 212, 7136 Haskell Ave., Van Nuys, CA 91406.—NCP

MacAccessories Professional Type Fonts comes in two flavors: **Text** and **Headline**. Both sets consist of 16 digitized fonts, very similar to commercial typefaces. These extremely clean fonts are among the best available. The Text set comes in sizes ranging from 12 point to 24 point, while the Headline fonts are from 24 point to 72 point. The large fonts have to be seen to be believed; they're really good. Some of the very large (48 and 72 point) fonts will only work a 512K Mac (they take up lots of memory!). \$49.95 Text (1 disk). \$69.95 Headlines (2 disks). Kensington Microware, 251 Park Ave. South, New York, NY 10010.—NCP

MacDraft is the step beyond *MacDraw*. This object oriented drafting program is packed with advanced features such as rotation, zooming, auto dimensioning and scales. A professional level product. \$239. Innovative Data Design, Suite 8, 1975 Willow Pass Rd., Concord, CA 94520.—CP

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* documents, but not manipulated. \$195. Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014.—NCP

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. Comes with Macs. Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014.—NCP

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, 1260 Boylston St., 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?

Chart is the standard to be matched in presentation graphics programs. Users can easily create area, bar, column, line, pie, scatter and combination charts. A total of 42 styles are provided. Limited to 100 data items (64 in a series) on a 128K Mac, approximately twice that on a 512K Mac. \$125. Microsoft, 10700 Northup Way, Bellevue, WA 98009.—CP

M.U.D. (MacroMind Utility Disk) is a disk of various utilities for *MusicWorks* and *VideoWorks* owners. It also contains

CheapPaint and *Art Grabber+*, graphics desk accessories that are for graphics enthusiasts. Hayden Software, 600 Suffolk St., Lowell, MA 01854.—CP?

PageMaker is an advanced layout and makeup program. Can easily create multiple page documents. Output is optimized for LaserWriter. Good documentation. \$495. Aldus, Suite 400, 616 First Ave., Seattle, WA 98104.—CP

QuickPaint is a desk accessory that allows browsing through *MacPaint* documents. Selected portions of documents can be expanded to fill the screen. Disk also includes a wealth of very high-quality clip art. \$49.95. EnterSet, Suite 408, 410 Townsend St., San Francisco, CA 94107.—CP

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. \$125. Manhattan Graphics, 163 Varick St., New York, NY 10013.—NCP

Slide Show Magician lets users easily design and show their own text and art presentations in the form of a slide show. The program accepts documents created in *MacWrite* and *MacPaint*, plus any clip-art style graphics helpers. Movie-like special effects options include wipes, barn doors, venetian blinds, and fades. An option lets users install working buttons on the screen. \$59.95. Magnum Software, Suite 337, 21115 Devonshire St., Chatsworth, CA 91311.—NCP?

Underware Ribbon allows users to create *MacPaint* images and transfer them to cloth, typically to t-shirts. Fairly easy to do, although care is required. The transferred images can be colored using the special pens provided. Set of a ribbon and five colored pens \$24.95. Underware Diversions, 1550 Winding Way, Belmont, CA 94002.—NCP

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, excellent manual and many on-disk examples. \$99.95. Hayden Software, 600 Suffolk St., Lowell, MA 01854.—CP

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 Software, Suite 100, 12777 Jones Rd., Houston, TX 77070.—CP

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

Mouse Exchange BBS turns a Mac into an electronic bulletin board system. Allows private electronic mail, public message areas and file distribution. Users can be granted different access levels with password security. External drive or hard disk recommended. \$39.95. Dreams of the Phoenix, PO Box 10273, Jacksonville, FL 32247.—NCP

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. Lacks keyboard macros. \$149. Hayes Microcomputer Products, 5923 Peachtree Industrial Blvd., Norcross, GA 30092.—NCP

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Telescope is the power telecommunicator's terminal program. Can be configured to emulate any terminal and has all the advanced features (except unattended operation). Unfortunately 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

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.—NCP

1stPort is a data transfer program that is more than adequate as a simple terminal emulator. It can handle many document formats, including SYLK, DIF, 1stBase and plain ASCII, and has a built-in text editor, making this program easy to use with remote message and electronic mail services. \$95. DeskTop Software, 244 Wall St., Princeton, NJ 08540.—CP

WORD PROCESSING

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. Dictionary is small. \$79.95. Hayden Software, 600 Suffolk St., Lowell, MA 01854.—NCP?

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

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

MacSpellRight is a spelling checker, 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 of the current version (4.5) include document size limited by disk space, global search and replace, page numbers indicated in the scroll bar and excellent LaserWriter compatibility. Free. Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014.—NCP

MegaForms 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 Corp., 5703 Oberlin Dr., San Diego, CA 92121.—CP

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, 10700 Northup Way, Bellevue, WA 98009.—CP

QuickWord is a word processing accessory that adds sophisticated glossaries to *MacWrite*. Simple to install and use, yet powerful and efficient. \$49.95. EnterSet, Suite 408, 410 Townsend St., San Francisco, CA 94107.—NCP?

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

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, Suite 535, 1011 E. Touhy Ave., Des Plaines, IL 60018.—CP

ThinkTank 128 is a basic outline processor. The interface is not the standard Mac interface, but is simple to use and efficient. The program is speedy. Printer support is limited, but files can be printed in a draft-style mode. Only for 128K owners; 512K owners should get *ThinkTank 512*. \$145. 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 (without mouse) is possible. Can store and paste graphics into outlines. Slide show features allows high presentations to be created. Good report formatting and printing capability. \$245. Living VideoText, 2432 Charleston Rd., Mountain View, CA 94043.—CP

DESK MANAGERS

Battery Pak is a set of eight 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. Be sure to get version 1.1. \$49.95. Batteries Included, 30 Mural St., Richmond Hill, Ontario, L4B 1B5, Canada.—NCP

Day Keeper Calendar is the ultimate computerized appointment and notebook, the *Day Runner* of computers. Holds a year's worth of information in each calendar document (you can have several). Starting from the basic display of a whole month you can easily see details of days and individual entries of many sorts. If you need a computerized appointment book this is it. \$39.95. Dreams of the Phoenix, PO Box 10273, Jacksonville, FL 32247.—NCP

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.—CP?

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. Highly recommended for doctors and dentists' offices. Less useful for offices less dependent on the human factor. \$149.95. Layered, 85 Merrimac St., Boston, MA 02114.—CP

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, filing. \$149. Emerging Technology Consultants, 1877 Broadway, Boulder, CO 80302.—CP

My Office lets you handle your files and papers in much the same way you did before you got a computer. Now your folders and files are all in the computer and you can easily find anything, print anything or even print everything. Excellent use of graphic symbols makes this program the easiest to use of its type. \$129.95. DataPak, Suite 401,

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14011 Ventura Blvd., Sherman Oaks, CA 91423.—CP

Quickset is a set of five 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, financial and statistical calculators and a file encryptor. \$49.95. EnterSet, 410 Townsend St., San Francisco, CA 94107.—CP

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. All work well. \$84.95. Borland International, 4585 Scotts Valley Dr., Scotts Valley, CA 95066.—NCP

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 Software, Suite 201, 11212 Dalby Pl., San Diego, CA 92126.—NCP

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, Suite 100, 9700 S.W. Capitol Highway, Portland, OR 97219.—NCP

Disk Ranger is a speedy cataloging program that doubles as an efficient labelmaker. Comes with pinfeed labels. Works with regular and hard disks. \$49.95. Mainstay, 28611B Canwood St., Agoura Hills, CA 91301.—NCP

Epstart lets Mac users use most Epson printers. Required, but not included, is a serial printer interface. Data can be sent to the printer via either the printer or the modem port. The documentation is clear. \$45. SoftStyle, Suite 205, 7192 Kalanianoale Hwy., Honolulu, HI.—NCP

Jetstart lets Mac users use Hewlett-Packard's tiny, quiet ThinkJet printer with their Macs. Installation is quick and simple and the program works without any hitches. Data can be sent to the printer via either the printer or the modem port. \$45. SoftStyle, Suite 205, 7192 Kalanianoale Hwy., Honolulu, HI.—NCP

Laserstart allows use of a Hewlett-Packard LaserJet printer with a Mac. This printer is significantly cheaper than the LaserWriter and has adequate text printing features. It cannot efficiently handle Mac graphics. The software is simple and easy to install. It works perfectly. Data can be sent to the printer via either the printer or the modem port. Comes with a cable to connect the Mac and the LaserJet. \$95. SoftStyle, Suite 205, 7192 Kalanianoale Hwy., Honolulu, HI.—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. \$50. Mainstay, 28611B Canwood St., Agoura Hills, CA 91301.—CP

Mac Disk Catalog is a utility that will quickly organize a moderate size disk library. It's easy to use and has powerful reporting and label making features. \$39.95. New Canaan MicroCode, 136 Beech Rd., New Canaan, CT 06840.—CP

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

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.—CP?

MacMate combines RAMdisk and print spooling functions in a compact package. Both parts are efficient, work well and have on-screen help. This is the best product in its category. \$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. \$75. 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. \$99.95. TOM Programs, Suite 34B, 1500 Massachusetts Ave. NW, Washington, DC 20005.—NCP

Mac-Tracks allows users to store a series of keystroke and mouse movement operations to any command key. The various controls and index (so that you can see what you already created) reside in the Apple menu as a desk accessory. Documentation is inadequate and behavior is sometimes not what you expect. Invaluable in some places (*Smartcom II* and *Jazz*), it needs some improvement before it gets much use. \$29. Assimilation, 485 Alberto Way, Los Gatos, CA 95030.—NCP

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. Fairly intimidating due to its enormous power. Has a good manual. \$60. Micro Analyst, 5802B Gloucester, Austin, TX 78723.—NCP

'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

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. Easy to use, although not too intuitive. 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. ILLIUM Press, Suite 151, 8285 SW Nimbus, Beaverton, OR 97005.—CP?

Quick & Dirty Utilities, Volume One is a disk chock full of the handiest programs you have ever bought. Included are a super disk cataloger, a desk accessory mover and more. Several desk accessories including a menu bar clock and a terminal are on the disk. "Fileinfo" 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

Quick Disk is a RAMdisk utility. Users can create RAMdisks up to 350K on 512K Macs. Works well and has good documentation. \$34. Symmetry Corp., Suite 103S, 3900 East Camelback Rd., Phoenix, AZ 85018.—CP?

Switcher is Andy Hertzfeld's contribution to Mac productivity. This program lets users run several programs at once (up to eight 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 Com-

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puter, 20525 Mariani Ave., Cupertino, CA 95014.—NCP
TurboCharger is a disk-cache program. It works by storing frequently used portions of a disk in a memory buffer and it can dramatically speed up operation (250 to 500% improvements are common). Features include auto-start-up 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

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

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

ExperLISP is a very buggy, but still incredibly useful, programming language for high-level programmers. The more you use it, the more you'll figure out about it. System crashes are too common for a language this useful and expensive. \$495. Requires 512K and either an external or a hard drive. ExperTelligence, 559 San Ysidro Rd., Santa Barbara, CA 93108.—CP

ExperLogo is a version of the popular teaching language, Logo. Features three-dimensional graphics using "bunnies" rather than the usual "turtles." Very speedy, smooth program. Comes with an excellent manual. \$149.95. ExperTelligence, 559 San Ysidro Rd., Santa Barbara, CA 93108.—CP

Hippo-C Level 1 offers a good basic learning environment for newcomers to the C programming language. The program's limits and restrictions are severe and standalone applications cannot be created. A good place to begin the study of C. Has a useful print spooler desk accessory. \$149.95. Hippopotamus Software, Suite 12, 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.—CP?

Mac C is a good, highly Mac-oriented implementation of this popular development language. Latest version (4.0) has 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 Mac version, \$745 Mac XL version. ALSoft, PO Box 927, Spring, TX 77383.—NCP

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 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, Suite 12, 4701 Randolph Rd., Rockville, MD 20852.—CP

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. Good documentation includes a copy of the Motorola 68000 handbook. Also included is a copy of the "phonebook" edition of *Inside Macintosh*. \$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. Superb usage of the whole Mac interface makes this the best way to learn Pascal. The documents are mostly references, get one of the tutorial textbooks in your bookstore. \$125. Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014.—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; be sure to get the latest. \$150. Microsoft, 10700 Northup Way, Bellevue, WA 98009.—CP

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, 10700 Northup Way, Bellevue, WA 98004.—CP

EDUCATION

ChipWits is a combination game and teaching tool. Players create programs to maneuver robots through a set of eight 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. BrainPower, 24009 Ventura Blvd., Calabasas, CA 91302.—CP

MacEdge and **MacEdge II** each contain eight 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. Average educational value, can be fun to play. \$49.95 each. Think Educational Software, 16 Market St., Potsdam, NY 13676.—CP?



MINIFINDERS



MacMuscle is a fitness program that lets users generate weekly workout schedules. Features include a detailed chart of the body and its 24 major muscle groups. An animated figure demonstrates the primary exercises. Calculates training pulse rate which is shown by an animated heart and sound. Limited program that emphasizes weight training. \$89.95. Tech 2000 Software, 263 Lugonia St., Newport Beach, CA 92663.—CP?

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, Suite 100, 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 Corp., 2445 Faber Place, Palo Alto, CA 94303.—CP?

Nutri-Calc uses a large database of nutritional information. Users can plan good, healthy diets and print out shopping and menu lists. \$79.95. CAMDE Corp., 46 Prince St., Rochester, NY 14607.—CP?

Smoothtalker trains your Mac to say anything you want. Users can program the pitch and tone of each syllable to simulate true speech patterns. Not too useful—but a lot of fun to play with! Latest version includes a female voice. Male and female can be mixed in same document to provide entertainment. \$149.95. First Byte Software, 2845 Temple Ave., Long Beach, CA 90806.—CP

Think Fast allows users to improve their recall and recognition abilities. Tests include compare, copy and recall exercises. Users choose the level of difficulty, speed and risk-taking. Has session and summary reports to provide feedback and permanent records. Good for users of all ages. Children will find it fun. \$39. BrainPower, 24009 Ventura Blvd., Calabasas, CA 91302.—CP?

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 Software, 600 Suffolk St., Lowell, MA 01854.—CP?

ENTERTAINMENT

Airborne is classic arcade-style game with "real" sound effects. The player sits at a gun position on a low rise and defends against an assault from flying enemies. Game noises digitized from actual recorded sounds add to the game. \$34.95. Silicon Beach Software, Suite 201, 11212 Dalby Pl., San Diego, CA 92126.—CP

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, One Kendall Sq., Cambridge, MA 02139.—CP

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 Software, 17 Paul Dr., San Diego, CA 94903.—CP

Balance of Power is the world's first computer peacegame. This simulation allows players to become either the President

of the United States or General Secretary of the Soviet Union. Extraordinary artificial intelligence routines and general play make this a classic. \$54.95. Mindscape, 3444 Dundee Rd., Northbrook, IL 60022.—CP

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 Software, 6740 Eton Ave., Canoga Park, CA 91303.—CP

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

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 Software, PO Box 5847, Stanford, CA 94305.—CP?

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 adventurers. \$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

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. \$54.95. Mindscape, 3444 Dundee Rd., Northbrook, IL 60062.—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

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, Suite 100, 6300 La Calma Dr., Austin, TX 78752.—CP

Feathers and Space is an arcade game. Heavy flapping birds assault you and your troops. Protect your camp via a single spaceship with full lateral movement but a barrier halfway up the screen. Very average game. \$34.95. PBI Software, 1155B-H Chess Drive, Foster City, CA 94404.—CP

Felony provides 12 mystery games in a package. One or more players visit various clue sites, deciphering numbered clues with the enclosed booklet. The first one to solve the case wins. \$44.95. CBS Software, One Fawcett Pl., Greenwich, CT 06836.—CP

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

Forbidden Quest is a text adventure with pictures. Begins in a spaceship, with you in extreme danger. The game provides several levels of on-line help, from simple hints to actual solutions. The disk is accompanied by five graphic prints, called Artext, of specific scenes with hidden

MINIFINDERS

clues. Very playable if a bit mundane. \$44.95. Priority Software, Suite 22, 635 Sanborn Rd., Salinas, CA 93901.—CP

Gateway, another Artext game, comes with three 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. Both *Forbidden Quest* and *Gateway* have pull-down menus for conditions, inventory and game operations. \$49.95. Priority Software, Suite 22, 635 Sanborn Rd., Salinas, CA 93901.—CP

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, Suite 325, 1050 Walnut St., Boulder, CO 80302.—CP

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 Software, 21115 Devonshire St., Chatsworth, CA 91311.—CP

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

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 Software, Suite 12, 985 University Ave., Los Gatos, CA 95030.—CP

Infidel is a text adventure in which the player, left alone in the **\$\$\$** desert, must find and plunder a lost pyramid. Good

sentence parser, bad Mac interface, twist ending. \$44.95. Infocom, 125 CambridgePark Dr., Cambridge, MA 02140.—CP

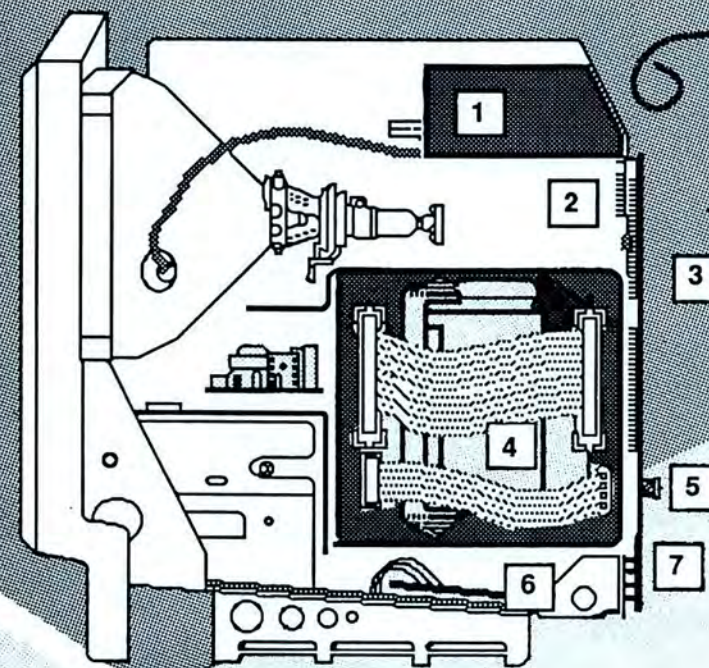
Legacy is a two part text/graphic adventure. A magical orb in Drab Castle must be found through the use of spells and careful adventuring. Well-constructed game and fun to play. \$39.95. Challenger Software, PO Box 1478, Homewood, IL 60430.—CP

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 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. Defeat the horde and get treated to a graphic fireworks display over the town. \$49. Miles Computing, Suite 212, 7136 Haskell Ave., Van Nuys, CA 91406.—CP

MacBackgammon with Cribbage provides graphic versions of **\$\$\$** these classic games. Variable skill levels allow the user to set game difficulty. At the expert level both games will challenge experts. The graphics are attractive but slow the games down quite a bit. \$49. Videx, 1105 Northeast Circle Blvd., Corvallis, OR 97330.—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 let's 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, Suite 277,



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2210 Wilshire Blvd., Santa Monica, CA 90403.—CP

MacCheckers with Reversi will provide a stiff challenge to experts. You can adjust the degree of difficulty to your taste. The graphics and animations are excellent, although slow. The checkers portion can be very hard to beat when the skill level is set to expert. The reversi (which is very similar to Othello) is somewhat easier, even at the expert level. \$49. Videx, 1105 Northeast Circle Blvd., Corvallis, OR 97330.—CP

MacJack II is a blackjack game pitting users against the house. Includes good graphics, insurance against dealer blackjack, splitting and doubling, and table limit that rises with your stake. The game plays very well, and can be quite addictive. \$39.95. DataPak, Suite 401, 14011 Ventura Blvd., Sherman Oaks, CA 91423.—CP

MacPoker looks and plays just like *MacJack II*, one player against the house. This format is not as successful or interesting with poker as it is with blackjack. Dealing and play are slow and few playing options are provided. Game is limited to five-card draw. \$39.95. DataPak, Suite 401, 14011 Ventura Blvd., Sherman Oaks, CA 91423.—CP

MacVegas contains seven complete casino-style games: baccarat, blackjack, craps, keno, poker, roulette and slots. All are fairly standard but generally well designed. House rules can be altered by selecting establishment from a menu. The games are all fun to play, but not particularly absorbing. \$59. Videx, 1105 Northeast Circle Blvd., Corvallis, OR 97330.—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 Software, 6740 Eton Ave., Canoga Park, CA 91303.—CP

Mind Over Mac features five games: *Master Code*, *Third Dimension*, *On-The-Contrary*, *Trivial Intrigue* and *Destroyer*. Entertainment for the whole family. Good graphics paired with synthesized sound and on-screen help (each has a Rule menu). \$49.95. Think Educational Software, 16 Market Street, Potsdam, NY 13676.—CP?

Mouse Stampede is an infectious *Centipede*-like game with mice, bats, cheese (normal and moldy), turtles, flies, paint brushes, knives, shopping carts and sneakers on the attack. Activated cats will gobble mice until full. Game is fast-paced, high scoring and generally fun to play. \$39.95. Mark of the Unicorn, 222 Third St., Cambridge, MA 02142.—CP

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. This is the best backgammon player currently available. \$39.95. Newsoft, PO Box 4035, Newport Beach, CA 92661.—CP

Pensate is a truly mind challenging strategy game with multiple levels of difficulty and a play-ahead feature where users must plan moves in groups of up to four turns. The graphics very well handled and the challenge addicting.



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\$39.95. Penguin Software, PO Box 311, Geneva, IL 60134.—CP

Perplex 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 and good graphics. \$39.95. Hayden Software, 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

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

Pyramids of Peril is an action-strategy adventure in which a single explorer must unravel the mysteries of the pyramid. Computer maps automatically; combat is engaged in with the mouse. \$39.95. Aegis Development, Suite 277, 2210 Wilshire Blvd., Santa Monica, CA 90403.—CP

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, #1, 980 Henderson Ave., Sunnyvale, CA 94086.—CP

Rouge 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 Court, Sunnyvale, CA 94089.—CP

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 Software, 600 Suffolk St., Lowell, MA 01854.—CP

Squire is a financial simulation that features a unique, real-life mode that lets you set your own financial goals, then play out your strategy using IRAs, stocks, commodities, collectibles, and property. \$69.95. Blue Chip Software, 6740 Eton Ave., Canoga Park, CA 91303.—CP

Starting a New Business is a short tutorial structured as a text game. Players choose one of the three choices displayed on each new screen to pick one of three businesses to start, then try to run it profitably. Can be mastered in one or two sessions, but worth a look just the same. \$59.95. Queue Intellectual Software, 5 Chapel Hill Dr., Fairfield, CT 06432.—CP

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

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

Through the Looking Glass consists of 3 programs by *Finder* author Steve Capps. Included are a fast paced arcade game based equally on chess and "Alice in Wonderland," the maze application from the guided tour disk and a

large digital clock. \$29.95. Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014.—NCP

Trivia has questions in Sports, History, Geography, Literature, and Entertainment, on-line instructions and playing options. Up to six players compete. Players set time of response, target score for win. Categories limited, questions replay if game not saved. Own questions can be added from *Word* or *MacWrite* files. \$24.95. Mirage Concepts, #108, 4055 W. Shaw, Fresno, CA 93711.—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 Software, 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 cooperate to explore the vast wilderness of Sosaria; dungeons, oceans, and the Moon Gates help solve the adventure. Outstanding translation of the Apple II smash hit. \$59.95. Origin Systems, 340 Harvey Rd., Manchester, NH 03103.—CP

Universe 2 is the most complete space adventure yet created. It has so much data that it requires 3 disks! Good, playable game, marred by poor parser in the text adventure sections. Requires 512K. \$69.95. Omnitrond Software, PO Box 3, W. Simsbury, CT 06092.—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 skills levels make this a game for all. \$34.95. Shapechanger Software, 113 E. Tyler, Athens, TX 75751.—CP

Will Writer 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. Legissoft/Nolo Press, 950 Parker St., Berkeley, CA 94710.—CP?

Winter Games is a set of 6 Winter Olympic events. These action games are exciting and the package makes good use of the Mac's graphic and sound capabilities. \$39. Epyx, 1043 Kiel Ct., Sunnyvale, CA 94089.—CP

The Witness is a full-text adventure 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 02140.—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. New version has improved graphics. \$39.95. Hayden Software, 600 Suffolk St., Lowell, MA 01854.—CP

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 Software, 830 Fourth Ave., 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

MINIFINDERS



MUSIC

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 their Mac. \$69.95. Great Wave Software, PO Box 5847, Stanford, CA 94305.—NCP

Deluxe Music Construction Set, 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

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. There are many public domain music files available to play. The manual is clear and thorough. \$79.95. Hayden Software, 600 Suffolk St., Lowell, MA 01854.—CP

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 Corp. 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. Simply raising the Mac 4 inches off the desk results in a more efficient viewing angle for users. \$99.95. Ergotron, PO Box 17013, Minneapolis, MN 55417.

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.

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). It is a pleasure to use and will perform even better when the new ROMs are available. The lack of utility software (spooler, backup, security) is its only drawback. \$1499. Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014.

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.

MacNifty Joystick Converter plugs into the mouse port and allows use of any standard nine-pin joystick or controller, such as those manufactured for Atari or Commodore 64 computers. Package includes a tiny Amiga-style joystick, a pint-sized powerhouse that literally operates with a single finger on the stick. Cursor movement speed is adjustable. \$44.95. Kette Group, 13895 Industrial Park Blvd., Minneapolis, MN 55441.

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. Plugs are friction-fit, not screw-fastened like most Mac peripherals, so in some cases may loosen by themselves. \$34.95. Kette Group, 13895 Industrial Park Blvd., Minneapolis, MN 55441.

MacStation is a compact workstation for a Mac, ImageWriter and external drive. Made of strong plastic, it is reasonably attractive. Well vented; will not cause a Mac to overheat. Only flaw is that paper feed doesn't really work; users need space behind the unit to store paper. \$95. The MicroRain Corp., PO Box 96008, Bellevue, WA 98009.

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. Works well with all Mac software, including *MacDraw* and *MacPaint*. Allows concurrent use of the mouse. \$495. Summagraphics Corp., 777 State St. Extension, Fairfield, CT 06430.

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 Technologies, 3100 Patrick Henry Dr., Santa Clara, CA 95052.

Magi 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, Suite 104, 10300 Greenbelt Rd., Seabrook, MD 20706.

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, Suite 530, 50 S. Main St., Salt Lake City, UT 84144.

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, Suite 503, 1 Weatherly, Mill Valley, CA 94941.

Omni-Reader scans optical character (OCR) text and inputs the text in Mac software. Requires carefully prepared text and is very slow as the actual scanning is done by hand moving the scan hand in guide over the text. \$799. Oberon International, Suite 630, 5525 McArthur Blvd., Irving, TX 75038.

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.

Numerical 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. Compatible with 15-inch ImageWriter, but not ImageWriter II. Output has been optimized for LaserWriter. \$229. Thunderware, 21 Orinda Way, Orinda, CA 94563.

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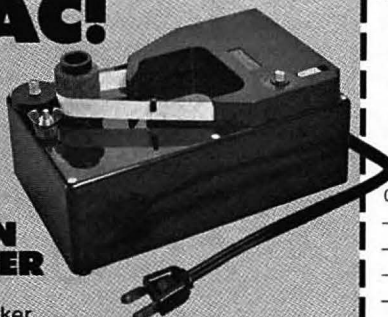
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A HARD MAC IS GOOD TO FIND

Performance is good, but not spectacular. Most disk operations occur two to three times faster than they do when using floppies. Launching *MacWrite* from a half full disk takes approximately 11 seconds. That compares to about 25 seconds for a launch from a 3.5-inch disk. The largest speed increases will be seen when saving files and transferring files.

It is neither fair nor easy to compare this drive to, say General Computer's HyperDrive HD-20 or PCPC's MacBottom 20, since it uses a different file system. Some of the apparent slowness of the Hard Disk 20 is related to HFS, which is still not quite finished. For one thing, HFS will eventually be in the new ROM and should be an order of magnitude (ten times) faster than the current disk-based version.

Optimal performance is achieved by careful organization and by never having too many folders open at one time. HFS will allow a large number of windows, but will insist on slowly redrawing each one every time the user returns to the desktop. Returning to the desktop (quitting an application) is the one place where our version of HFS really falls down. The directories and subdirectories are recomputed and checked each and every time. Returning to a desktop showing a single window can take as long as 30 seconds. After

working with a 512K Mac that is using a disk caching scheme, HFS feels like it takes forever.

There are a few techniques that will improve performance. Keep as few items and folders as possible on the main desktop (in what is known as the root directory). You'll have to keep some applications there, since they will not work in a subdirectory. For example, current versions of *Smartcom II* only work in the root directory. But, as a rule, keep as little here as possible.

Every week or two take the time to rebuild the Desktop file (by holding down the OPTION and COMMAND keys when starting up). This will generally take a few minutes, but it is worth it to clean out the unnecessary icons and information. Since HFS is constantly updating and rebuilding that file, keeping it as small as possible will save a lot of time.

The Hard Disk 20 that we reviewed was totally reliable, never even hinting at a problem. There are not enough units in the field to judge, but based on its solid construction it should be reliable.

This is the hard disk of choice for Mac owners. Its combination of solid construction; quiet, reliable operation; and powerful software can't be beat. And it's going to get better. The new ROM and the promised utility software will enhance an already great product. ☒

GETTING HFSED

Apple's new Hierarchical File System (HFS) will be built into the ROM of whatever new Mac line computers are announced. So that's the first, but least practical way to get HFS. Simply get the NextMac.

Most of us will upgrade to HFS via a ROM swap. At press time the details were still murky, but HFS will be built in to new, 128K ROMs. (The present ROM is only 64K, but the 128K ROM chips are the same size and have the same number of pins that the current chips have, so they'll fit into the old spots perfectly.) The new ROM will have many other new features, but right now the exact composition is not clear enough to predict what will be included and what will not.

Upgrading will involve a trip to your Apple dealer, and either a board swap or a chip swap (the ROM actually exists on three chips). This upgrade will not be free, and may be tied to the installation of 800K double-sided drives.

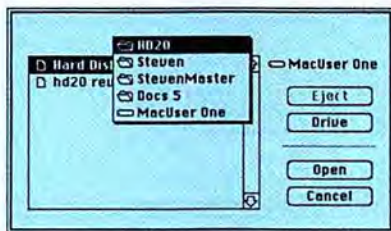
HFS will also be included on the Startup disk supplied with all HD-20 hard disks. That version will patch the System and, since it won't be installed in ROM, it will be significantly slower than versions in ROM. It is intended primarily for people with older Macs who don't want to pay for an upgrade and don't need the added file handling capability and power of HFS.

A MINIFINDER WITH A MENU

What differences will you actually see when you use HFS? Not many really. The major changes are in the Standard File dialog boxes. These are the boxes that appear when you select OPEN, SAVE or SAVE AS.

The small box with the scrollable window is now a much larger box with a big scrollable window and an auxiliary menu for HFS volumes. That extra menu allows users to quickly reach any folder higher in the hierarchy of folders.

The new system takes a while to get used to. It rewards careful orga-



nization and layering of documents, but is harsh on those who overuse its ability to compartmentalize. It is easy to put a file somewhere, not

give its folder a descriptive name, and utterly lose track of where the item is. Then you get to play hide and seek in your multiple level maze. Turning the operating system into an adventure game also slows down performance significantly.

Disk caching schemes don't work well right now. That's mostly because the RAM patches that HFS must install take up too much memory. Efficient disk caching programs should be available as soon as the new ROM chips are out. And they should be used.

BASIC: A DIP INTO THE ROM, PART 4

CONTROLLED ESCAPES

Most escape sequences have complementary commands to turn them off—which is a good thing, since you can do things like make the paper roll backwards with every line feed! There are two ways you can cancel printer commands: turn off the printer so it will “forget” the commands, or reset it to all the defaults by using the escape sequence:

CHR\$(27)CHR\$(99)

Some commands are canceled as soon as a conflicting command is issued. For instance, condensed mode printing will end if the code for ultracondensed printing is sent. But, some commands will just be combined: if you are in underline mode and send the command for boldface, you’ll wind up with underlined boldface.

(continued from page 98) user “Press Command- to Cancel Printing.”

CONTROL CHARACTERS

The ImageWriter accepts a very large set of special formatting and control instructions. These are called *control codes* and they determine how or where things are printed. Control codes are sent directly to the printer with LPRINT, not by the “printer as a window” technique. The codes are sent by “printing” their ASCII values. “LPRINT CHR\$(12)”, for instance, sends control code number 12 to the printer.

Some useful control codes are:

CHR\$(12)—the Form Feed character; it advances the paper in the printer to the top of the next page.

CHR\$(10)—the Line Feed character; it advances the paper a single line.

CHR\$(8)—the Backspace character; the print head will move back a space and then continue printing. Use this to print a European-style 7, for instance, by printing the 7, backspacing, and printing a dash.

CHR\$(14)—signals the printer to

begin printing in Headline mode. All characters will be printed in double-width boldface until turned off or until the printer is reset.

CHR\$(15)—turns the Headline mode off.

THE GREAT ESCAPE

There are only a few control codes that can be sent to the printer as single characters, since most character codes represent letters, numerals or other symbols. To solve this dilemma, “escape sequences” were devised. A special escape code—**CHR\$(27)**—is sent to the printer. That signals the ImageWriter that the next code(s) should not be taken literally, but as a special command. **CHR\$(80)**, for instance, is the letter “x”; but sending it to the printer after the escape code tells the printer to start printing in underline mode. Many of the escape sequences control the way the text will appear on the hard copy; this is convenient because your program can control some aspects of text appearance without using the WINDOW OUTPUT

routine. The Escape Table lists some useful escape sequences; each begins with the escape code. The proper syntax for using escape codes looks like this:

LPRINT CHR\$(27)CHR\$(80)

The codes following the **CHR\$(27)** can also be expressed as a string of the appropriate character:

LPRINT CHR\$(27)“x”

There are six sequences listed in the Escape Table that change the character pitch—how many characters per inch are printed. Use “Pitch Program” to print out a sample of each.

The ImageWriter manual contains lists of all the possible codes and what they do. A bit of manual study will be rewarded with great looking hard copy from your programs. □

FANCY FONTS

**OPEN “LPT1:” FOR OUTPUT AS #1
WINDOW OUTPUT #1**

FOR n=0 TO 6: face=2^n

CALL TEXTFACE (face):READ face\$

CALL TEXTFONT(0):PRINT face\$

“Chicago”

CALL MOVETO(155,16*(n+1))

CALL TEXTFONT(1):PRINT face\$

“Geneva”

CALL MOVETO(295,16*(n+1))

CALL TEXTFONT(4):PRINT face\$

“Monaco”

NEXT n:CLOSE #1

**DATA Bold, Italic, Underlined,
Outlined, Shadow, Condensed,
Extended**

GRAPHICS DUMP

DEF FN r(a,b)=INT(RND*a)+b

RANDOMIZE TIMER

OPEN “LPT1:” FOR OUTPUT AS #1

WINDOW OUTPUT #1

FOR n=1 TO 21 STEP 5

LINE (n,n)-(638-n,750-n),b

NEXT n

FOR n=1 TO 15

x=FN r(425,75):y=FN r(600,75)

CIRCLE (x,y),FN r(45,5):NEXT n

FOR n=1 TO 15

x=FN r(425,75):y=FN r(600,75)

FOR arms=1 TO 20

CALL MOVETO(x,y)

**CALL LINE (FN r(100,-50),FN
r(100,-50))**

NEXT arms, n:CLOSE #1

PITCH PROGRAM

FOR a=1 TO 6: READ pitch

FOR n=1 TO 10

LPRINT CHR\$(27)CHR\$(pitch)n;

NEXT n:LPRINT:NEXT a

LPRINT 7;CHR\$(8);“-“

LPRINT ">";CHR\$(8);"_“

PRINTS

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Fig. 3: Using the Backspace control codes lets users overprint characters.

Fig. 4: Headline mode is double-width boldface.

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A HELLISH ADVENTURE GAME NEARLY RUINS A WRITER'S LIFE

by John C. Dvorak

I love computer games that are action packed and require good hand-eye coordination. A popular genre, though, is neither action-packed nor does it require any more coordination than that needed to chew gum. These are the so-called adventure games. They come in all sizes and shapes. More than a few people have become multimillionaires by selling this stuff to masochistic adventure game players.

There is probably no better computer available to play these time-consuming, life-wasting, slow-moving, habit-forming games than the Macintosh. Adventure games, to me, prove that computers will someday be shown to have a negative effect on America's productivity.

The idea of an adventure game started years ago with surreptitious game software put on large mainframe computers by bored techies working for large boring companies. The system operator could, usually on the graveyard shift, wile away his or her time playing "Adventure." The original game was all wordage.

It works like this: The computer tells you that you are in a glen and you tell the computer that you want to walk north. Then the computer tells you that you have stumbled upon a bottle with a note in it. Then you tell the computer to "pick up bottle" and then "read note."

Before long you are in a house or on an island looking for treasure or something. Days or even months could be spent while you map out the entire adventure. To me, it's a boring concept. But what do I know.

The current hot hot hot adventure game software company is Mindscape of Northbrook, Illinois. Mindscape is publishing adventure games based on everything from Stephen King books to a software version of the James Bond movie, "A View to a Kill."

So I got a copy of an adventure game for the Macintosh called *Deja Vu*. It's the "in" game and everybody is playing it. It's the next generation of adventure-type games. Instead of just words, there are high-resolution pictures that sometimes move. When you want to take an article, you use a mouse to pick it up and move it into a window called "Inventory." There is still wordage (at the bottom) that tells you what you're look-

niently hanging from a wall hook. I made about 15 attempts to leave the bar and grill or find a secret passage or anything before nearly giving up.

Now it doesn't bother me that the doors are locked and can't be opened by incantations or punching. What irks me about *Deja Vu* is that I was in the main lobby of the bar and grill and I had a .38 police special with three bullets. I tell the computer that I want to leave out the front door and the computer tells me the door is locked. So I shoot the door. It's a glass door next to a huge glass window. The computer tells me I've missed. Oh really??? Where did the bullet go? So with two blasts I shoot out the huge plate glass window. The computer reports that I've shot out the window. So I decide to leave through the busted window. The computer says I can't go through the window. Why not? I try to bust out more of the glass with no effect. So I can't get out and within a few minutes I lose the game. For some unknown reason, you can lose certain adventure games—using too much time, I suppose.

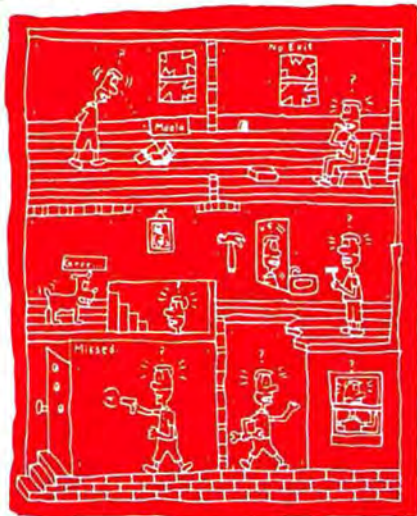
The next day I got the urge to play some more. This game can't beat me, I thought to myself. I figured I'd try out the Persenics VCS hypersonic mouse that you strap on your head and it makes the cursor move around on the screen. This gave me an excuse to play the game some more. The neighbors spotted me with the strange headset while I wiggled my head to get the cursor in position. Their blinds quickly slammed shut. So much for good ideas and the neighbors.

I finally discovered a key in a wallet and got out of the imaginary bar and grill to adventure further. Later in the day some friends got involved with the game and discovered more secrets. A week went by. Unshaven, I was still complaining about the game. Soon I began to understand certain attitudes towards my columns. I hated this game but continued to play it like a possessed madman.

Finally I unplugged the machine once and for all, had a stiff drink and, bleary-eyed, went to bed. I suppose there will be more and more games like this in the future. I shudder to think.

Deja Vu, a perfect gift to give to someone who likes adventure games and will waste time finding the trick needed to finish the thing. Only give it to someone you want to irritate.

So I'm still looking for an adventure I like. I'm not sure what that means. ☞



ing at. The wordage also makes sophomore comments when you do something dumb like open and close a door too many times for no apparent reason. These snide remarks, obviously written by a hostile dork, we can do without.

Like I said earlier, I hate adventure games and *Deja Vu* did nothing to change my mind—especially after the third day. In fact, the game is so obnoxious and irritating that I felt morally obliged to report my misery. For one thing, as a novice adventurer, I hoped that I could at least get out of the room in which the game placed me. The game premise starts out with me waking up in a bathroom after I have been drugged. I wander around a bar and grill after having picked up a gun that was conve-

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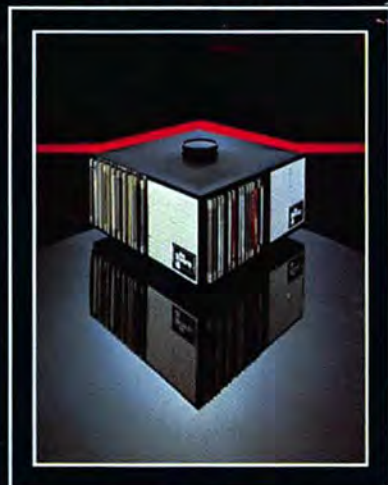
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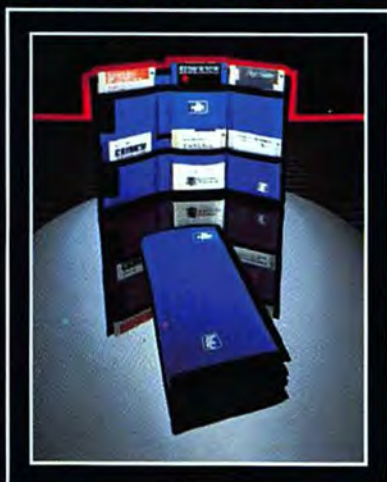
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