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WHAT'S NOT

Doug Clapp Takes the Gloves Off

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Cover Photo by Timothy White
Choosing a database manager is no easy task. It’s by far the most confusing and fiercely competitive field in Mac software. But now your buying decision is crystal clear, because the editors of MacUser and the readers of MACazine have both selected OverVUE as the Best Database of the Year.

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OverVUE’s clean sweep of these two prestigious awards only confirms what everyone else has been saying all along:

Infoworld (July 8, 1985): “…it is Macintosh software done right.”

Icon Review (Fall 1985): “OverVUE 2.0 is our favorite database workhorse….It simply offers the best balance of power and ease-of-use available on the market today.”

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Ted Benhari is Public Information Officer at Dominican Hospital in Santa Cruz, CA. He is very much into Desktop Publishing. He produces numerous publications for the hospital, including "The Dominigram," a magazine for the general public, "The Scanner," a newsletter for employees, and a catalog promoting various classes at the hospital's Education Center. Ted likes having the ability to digitize three-dimensional objects. He can go from live action to his newsletter in seconds. MacVision™ saves him time and money and gives him tremendous creative flexibility in his publishing efforts. If you need to image three-dimensional objects (buildings, displays, people, products, etc. as well as flat art) you will need MacVision™. It's that simple. And each MacVision™ package contains valuable coupons for special discounts on color and black-and-white cameras so you can go from live action to print in seconds. Save $366 on a Panasonic Camcorder and $85 on a black and white camera. MacVision™ is available at leading computer dealers everywhere. Retail $349.95

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MUSINGS ON A FLAT MAC

I miss my mouse!

The life of the traveling telecommunications engineer isn't all that others have cracked it up to. I'm trapped on vacation in Lake George, New York, hunched over an LCD screen on a laptop computer in a dimly lit motel room. The last time this place saw a mouse was probably only a few days ago, but it wasn't likely any rodent that I could have loved.

How did this come to pass? Obviously there are few people around who love the Macintosh with the same fervor that I do who, this evening, are trying to remember the WordStar commands they learned in a misspent youth. I mean, and this is serious, I've even had to relearn how the PIP program works.

We live in dire times.

I guess my main reason for having done this to myself is simply that the Macintosh is portable in the same way that a color TV set, a carry around air conditioner or a Kaypro is portable — it has a handle on top. But my own Mac, and I expect those of many other Mac enthusiasts, is attached firmly to my desk via a maze of cables leading off to MIDI interfaces, printers, digitizers, hard disk(s), and I don't even remember what all else. But I do know the last time I decided to go Mac-portable it took me over an hour to unhook the Mac, make sure all the denuded cables were safe, and then stuff everything into that canvas bag.

Then I had to take the canvas bag and lug it to the car, had to try to fit it among two kids, a wife and a ton of suitcases. And not being the kind of guy who pumps iron in international contests, there's always the dreaded 7-mile walk from the motel parking lot to the motel room.

So, I admit it — I wimped out. I took the easy way.

I turned my back on the Macintosh interface just this once. And I got exactly what I deserve.

WordStar.

But I'm being mean to WordStar, and I don't intend to be. MicroPro has a good program there for what it is, a word processor that operates without a Mac attached. I used WordStar for years and years (before the Mac) on my Apple II under CP/M.

So I figured a CP/M laptop with WordStar would solve my problem. I knew that I would miss my Macintosh, but I didn't think that withdrawal would be this terrible.

You should only see the way my hand keeps slapping around on the desktop trying to find the mouse that isn't there. I've seen better looking fish flopping on the beach.

But I won't take all of the blame for my present, untenable predicament.

Sure, I deserted the Mac interface. But, darn it all, the Mac interface also deserted me.

So, keeping in mind that I am willing to shoulder up to 75% of the blame, I allocate the other 25% to Apple Computer, and here's why.

WHERE'S THE FLAT ONE?

It's no secret that Apple has been planning a number of new Macintoshs to tempt the Mac owners of the land on to many different upgrade paths. (Well, it is a secret, just a poorly kept one.) Slotted Macs, Macs with big screens, Macs with color and Macs that seem to have everything but the kitchen sink on their desktops all have been rumored to have been seen in prototype many times.

Once in a while, though, you do hear about a laptop portable Mac. But that one never seems to be rumored at anywhere near the same completeness as the other Macs. That's not very surprising when you consider that all of the other kinds of Macs simply play off on the features and engineering of present Macs. But a laptop Mac (often called a Flat Mac) would certainly have to feature quite a number of new steps forward.

Even the most basic design principle would have to change — you would not want a mouse on a laptop machine. A trackball, perhaps, or some sort of thumb-operated wheel might do it. An LCD screen is slow and hard to see (take my word for it) and so we might have to go to something like a plasma or electro-luminescent display.

And, from Apple's point of view, this must seem like one large R&D bet to satisfy what must be called a problematical audience. Apple has had no experience in the laptop market. And, according to some industry reports I have seen (mostly based on reaction to the IBM PC portable), the laptop marketplace is seen as a trifle on the soft side.

My advice to Apple (one stockholder's opinion) is to go for it.

The Macintosh interface has created a totally new and separate market for laptops, much different from the market that the other laptop computers now serve. We are dealing now with a market involving people who simply could not possibly be served by the competition.

Show me a Mac owner with a laptop computer and I'll show you a person dying to give Apple more money — for a Flat Mac. [Editor's note: Not exactly dying, but I'd beat down anyone ahead of me on line.]

And, as the Mac market becomes more and more a market driven by things other than the traditional uses for personal computers, the aspect of true portability will become ever more important. Such things as animated graphics, interactive expert systems and actually readable desktop publishing templates — all travel well.

We need a Flat Mac (I happen to need one in the next 10 minutes, unfortunately.) When will it happen? Soon, I hope.

I wouldn't want to see Apple miss an opportunity that seems to be so great.

FROM DESKTOP TO DESKTOP

There's one other thing that I think Apple should be doing — and that is working not only to make the Mac the very best personal computer, but to make it a standard for the entire industry to follow. That means making certain information and routines readily available and/or licensable to competitors.

Many people reading this have only used the Macintosh. These people will find it hard to understand exactly why I am going on about how indispensable the Mac interface really can become. After all, until you have experienced the lack of a thing the value of that thing may not be completely apparent.

I have no doubt that people generally would prefer to use a Mac over any other computer — if they had access to one.
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THE EDITOR'S DESKTOP

The problem is getting people introduced to the Mac interface. It is a sort of circular route at this point — buy a Mac and then learn that you never should have lived without one. This is the modern day Catch-22 of personal computing.

What we (all of us in computing) need to do is see that the Mac interface is absolutely established as the worldwide method of computing on a microcomputer. Nothing less than that is acceptable.

We can do so much, but Apple has to do the rest.

Apple has taken the first and most important step in that it has designed, manufactured and has now established a huge user base for the Macintosh — the world's best personal computer.

Now it is time to take the next step. That step is to begin offering the Macintosh ROM routines as licensable routines to other manufacturers — or at least a representative subset of those routines.

Apple has software evangelists, user group evangelists, and now they need desk top evangelists.

The job of the desktop evangelist would be to see that the Macintosh style of desktop operating systems becomes the norm for personal computing. These people would have the responsibility of turning the Macintosh into the absolute standard for personal computing. I think Apple could pull it off, without giving away the farm.

There's no doubt that the machine featuring the most in the way of innovations, the true Cadillac of such a standard would always be the Macintosh. Apple would wind up with many new followers, but it would always be the leader.

Apple's market share of the desktop environment might be less in a simple percentage, but it would become a much, much larger marketplace. If all computers were Mac-like in operation then it stands to reason that Apple would become the most successful computer company.

And, I would never have to miss my mouse again.

(Quick parenthetical note: For those looking for a nice vacation spot for the family, the Lake George, New York area is great for all but families composed of gourmets. It is an absolutely beautiful lake surrounded by amusement parks, scenic areas, and about four thousand "family" Italian restaurants. The definitive sign on such a restaurant appears to be: "YES!! We Have PIZZA!!" Forwarned is forearmed...)

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- We've also made the compiler fit into 48K.
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Turbo Pascal for the Mac coming November 15!

The incredibly fast (more than 12,000 lines a minute) Turbo Pascal for the Mac is about to be released. It will be priced at only $99.95, and includes a complete development environment with a built-in editor and the ability to run programs and generate double-clickable programs while you run the lightning-fast compiler! (You can also do separate compilations using "UNITS".)

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HISTORY REWRITES ITSELF?

Thanks, John Dvorak, for recording for posterity the sale of the century (“They Sold Their Souls to the Fortune 1000,” July ’86). It seems everyone is tripping over each other to record computer history as Apple says it happened, rather than recording the events. Here’s one such “sale”:

I have a back issue of a magazine whose cover shows a circus peanut, superimposed with a chip, to a Macintosh apple, superimposed with a Motorola 68000. The Macintosh and the PCjr were head-to-head competitors from their introduction, but most magazines are touting Apple’s line that the Mac was targeting businesses from the beginning.

IBM presented the PCjr as a crippled version of its successful but low-tech business machine to penetrate the home market. The Mac was to be Apple’s “bash Big Blue” TV commercial that was attributed as much to a user-friendly operating system as to a buyer-frenzied ad campaign, led off by the popular “bash Big Blue” TV commercial that many felt was decidedly business-unfriendly. The Macintosh has been evolving into a business machine with each successive upgrade, although it’s still not up to its defunct parent, the Lisa. IBM’s crippled “success” flopped, and Apple’s crippled “failure” grew wings and flew. The success has been attributed as much to a user-friendly operating system as to a buyer-frenzied ad campaign, led off by the popular “bash Big Blue” TV commercial that many felt was decidedly business-unfriendly. The Macintosh has been evolving into a business machine with each successive upgrade, although it’s still not up to its defunct parent, the Lisa, in some respects. Nonetheless, it has invented desktop publishing and is now a worthwhile business machine. Just don’t say it was always so. It was, and is, the best low-end machine around...of any color.

ANTHONY VAZQUEZ
BROOKLYN, NY

IN THE EYE OF THE BEHOLDER

When I subscribed to MacUser, I didn’t expect my first copy (July) to be a T & A extravaganza complete with grotesque caricatures of zanyfed women gracing the articles on integrated and telecommunication software. Your otherwise fine magazine does not need to contribute to the already overcrowded field of artificial stupidity.

MIHIRI SOLON-HANOVER
CHICAGO, IL

I was bothered by the sexism of some of the art work in July’s MacUser. The drawings for “Good Things Come in Slim Packages” and “Three-Ring Circuits” would have been more appropriate for Playboy or Penthouse than for MacUser.

I am particularly disappointed seeing this in MacUser. In past issues I have noticed that MacUser appears to have an editorial policy of using non-sexist language. I was also sad to find out that (Art Director Lisa Orsini) is a woman.

ANDREW SHALIT
CAMBRIDGE, MA

Those illustrations offended neither MacUser’s art department — all of whom are female — nor the editorial department, which is about half female. Your responses reminded us of a recent flap over an ad in Ms. magazine, in which Gloria Steinem was attacked for allowing a “de-meaning” advertisement in its pages. (She said that she found the ad erotic, not pornographic.) Sometimes sexism is all in the eyes of the beholder. In this case, we found the illustrations humorous. Does the (pardon the pun) knot of all visual jokes have to be male? And why did nobody see fit to comment on the sexist portrayal of the male body in the “Beyond Bare Basic” article in the same issue? Oh well, we’ll watch our illustrations more closely in the future, folks. — TFH

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Your mention of the Dynamic Graphics art service, Clipper, in July’s “Fliers on the Fly,” was appreciated! However, the contents of the Clipper are not “public domain graphics.” All graphics and material published by Dynamic Graphics are exclusive and fully protected by registered copyrights owned by the company.

Those who purchase the graphics are granted a limited license to use the material for their own communication project, but are prohibited from resyndication, resale, redistribution or transmission of any graphic as a stock design, film or digitized image.

RANDALL KINCAID
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PLUS WHAT?

In your MiniFinders section, when a program requires “512K+” what does that mean? Does it denote the need for a standard 512 plus an external drive? If so, does the double-sided drive in the 512 Enhanced and the Mac Plus satisfy the requirement? Please help me understand.

Whatever the hardware requirement,
Chock Full O’Mac!

Our capsule reviews section, MiniFinders, is indexed by category, and has become the standard reference for MacUser readers needing to pick and choose software and peripherals.

Doug Clapp, Macintosh Renaissance man, explores the weird and the wonderful, what’s hot and what’s not in The Mac Boundary every month. He’s awfully funny, too!

“I think that MacUser is the best publication for the Macintosh in the country.” Paul Coughlin, Vice President, Innovative Technologies

“MacUser is far and away the best magazine out for the Macintosh.” Nick Karp, Head of Software Development, West End Games

“The most informative Macintosh magazine on the market. More usable information in one issue than in a year of MacWorld.” Don Ross, Senior VP Group Creative Director, Wunderman, Ricotta & Kline

“Our customers in the Apple and Macintosh community consistently tell us that MacUser is the best magazine.” Philippe Kahn, President, Borland International, Inc.

“The best commercial Mac magazine.” Reese Jones, President, Berkeley Macintosh Users Group

“It’s about time the Macintosh community had a magazine that understands what the users want. MacUser is that magazine.” Marc Canter, President, MacroMind, Inc.

“MacUser is my favorite desk accessory. It has more stuff, less fluff.” Robert Woodhead, Vice President, Sir-Tech Software, Inc.

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it could be depicted under the mice, saving text space. Some possibilities are: 128 (Skinny Mac), 512 (Standard Mac), 512E (Enhanced Mac), Plus (Mac Plus), 512D (Standard Mac with an external drive), 512ED (Enhanced Mac with an external drive), etc.

Of course, the Mac itself demonstrates the effectiveness of clever icons.

GARY C. VAN HANDEL
HIGHLAND, CA

We read your letter and like your idea, which is presently under consideration. Until we do make further changes, though, all that the term 512+ means (in current MiniFinder jargon) is that you need at least 512K to run the program. When an external drive is required, we say so. And, until manufacturers have had a reasonable amount of time to update their old MFS systems to the HFS format, we won't specify Mac Plus compatibility. Give 'em time, folks. Just about all your favorite programs are being upgraded to HFS.

"DEATHS" ON THE RECORD

encourage you to keep up the "obituary" notices you started in the July 1986 issue. The passing of such companies as Assimilation, Miles Computing and MicroDesign are worthy of comment, if only to tell your readers about what customer support remains.

I also notice that in your MiniFinders section you no longer use mice, but rather use bullets instead. Presumably this was an economic decision. And it looks like all "bombs" have been dropped. I hope this is because of periodic updating and not advertiser pressure.

MICHAEL TOLLEFSON
HANAHAN, SC

The change from mice to bullets in the MiniFinder section was made for time savings, not cash savings — how would you like to be the one to painstakingly readjust the position of each and every mouse? And, as soon as the typesetters finish creating our custom, digitized "mouse" font, they'll be back.

As for the disappearance of "bomb" ratings from the MiniFinders, you're quite right — we update the section frequently, dropping dead and marginal products from the list. The fact that you see less bombs is more a matter of space on our pages (and, generally, better overall quality of new products) than any other reason. By the way, did you notice that as we update the section, older programs often lose a mouse (or bullet) of rating to newer, more powerful programs? — TFH

If your Mac can't graph like this, it's not quite Cricket.

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Only one software package arms business and science with the tremendous graphic power of the Macintosh™ Cricket Graph. The first Mac package to deliver all the impact of color presentation charts and graphs. And all the possibilities of desktop publishing. Transform data into graphics that speak louder than words. Then, print your creations out in crisp black and white or brilliant color on any of the most popular Mac-compatible printers, plotters and film recorders.

Cricket Graph. Nothing else even comes close. Just $195. Special versions available for film recorders and other high end output devices.

Requires 512K Macintosh with two disk drives, or Mac Plus with one internal drive. Macintosh is a trademark of Apple Computer Inc.

Charts printed on LaserWriter™, Hewlett-Packard Color Pro", and ImageWriter II™.

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NEW
ON THE
MENU

THE ROUND MAGAZINE

One day soon, reading your second favorite magazine might mean tuning on your Mac. Uptime is a new monthly disk magazine. It contains news, hints and tips, reviews and game and utility programs. It comes on a 400K disk so all Macs can read it.

The first issue has several good games (Yahtzee and MacSevens), two desk accessories (Calendar and We Are the Word), a font, a labeling program, a program to rescue damaged MacWrite files, and lots of other material.

The layout is a little unusual in that you never see a normal desktop. However, everything works well, and the contents are high quality. A 12-month subscription costs $66, and individual issues are $15.95 each. Contact Viking Technologies, PO Box 299, Newport, RI 02840, 800-437-0033 for more information. — SB

EXCHANGING EXCEL-LENT INFORMATION

Spend a lot of time with Excel? You’re not the only one. But you might be able to cut the time down a little by using one of the macros you can find through the Excellent Exchange Catalog. Excellent Exchange is a distribution service dedicated to Excel templates.

Excellent Exchange welcomes template submissions from Excel users. Prices for each template range from a low of about $2 to a high of just under $40, with most in the $6 to $10 range. Template authors whose works are distributed receive a royalty payment for their efforts.

For a catalog and a sample disk that contains approximately 15 programs and demos, send $4.00. The catalog itself is free. For more information, contact Heizer Software, 5120 Coral Court, Concord, CA 94521 or call (415) 827-9013. — TFH

BBS BARGAIN

You know that you’re telecommunicating a bit too much when you mistake your monthly phone bill for the rent notice. Besides large networks (CompuServe, Delphi, GENie, etc.), BBSs are the most popular place to run up the bill. But imagine if you could call your favorite BBS systems across the country, with unlimited connect time, for $25 a month. Thanks to GTE and its new PC Pursuit service, you can do just that.

There are some limitations, though. Currently, you can call from most of the U.S. (anywhere the Telnet network can be reached), to 14 specific cities, including those “that have some of the hottest Mac-oriented BBS systems (San Francisco, Boston, Seattle, etc.). Calls are restricted to data (no voice). There is also a $25 enrollment fee. For long distance BBSers, PC Pursuit is something to pursue. For more information, call the PC Pursuit BBS at 800-836-3001. — DB

CAUGHT ON A MAC

This beautiful butterfly was created on a Tektronix 4105 Color Workstation. The file was then transmitted to a Mac, where it was captured by VersaTerm-PRO, running in its 4105 emulation mode. As you can see, none of the graphic quality was lost when the file was printed on an ImageWriter II equipped with a color ribbon.

VersaTerm-PRO lists for $295. For more information contact Peripherals, Computers and Supplies at 2457 Perkiomen Ave., Mt. Penn, PA 19066, 215-779-0522. — SB

HOT FEET FOR COOL MICE

Teflon is a material that you would expect to find on a good frying pan. Your mouse can now also enjoy this smooth, seemingly frictionless surface with a strange new product, MouseEase.

MouseEase consists of four small Teflon pads with foam-backed tape that stick to the bottom of the mouse, eliminating much of the friction between the mouse and the surface it’s rolling on. They’re especially handy if the pins that support the front of the mouse are worn down, a common calamity among elderly rodents. At $2.95, they’re even reasonably priced.

For more information contact Tacklind Design, Inc., 250 Copper St., Palo Alto, CA 94301. (415) 322-2257. — DB
SHIP GIVES PASSENGERS THE ROYAL TREATMENT

Passengers on the luxury liner QE2 have been able to take a little of the morning newspaper with them — courtesy of the International Herald Tribune, PageMaker and the Macintosh.

The news briefs are cut from the International Herald Tribune in Paris and put together in London using a Mac Plus running PageMaker.

Martha Wooding, who assembles each issue, says, "The priorities for creating an on-board newspaper for the QE2's passengers were quality and speed, and the Macintosh was the obvious answer. Also, although I'm no computer wiz, I was able to master the basics of PageMaker in half an hour."

The first step in the process is assembling stories on an IBM PC. MacLink is then used to transfer the files to the Mac, where they are formatted using PageMaker. The files are then transferred back to the IBM PC as an ASCII text and compressed to save as much money as possible on satellite transmission time. Once received aboard the QE2, two pages of shipboard news are added and the newspaper is printed out on a LaserWriter. Finally, 1200 copies are printed and bound in the ship's print room, and the finished product is distributed to passengers in time for breakfast.

No news may be good news, but sometimes, some news can be better than none. — THH

BUG OF THE MONTH

This month's $25 winner is Stan Adel from Olathe, Kansas. Stan found an interesting bug in Apple's LaserWriter 3.7 driver.

In the Finder, the Print Catalog command under the File menu prints out a formatted listing of all the files on the disk, complete with their icons. When using this feature in System 3.2, Stan discovered that the top row of icons from the desktop window didn't print — just the file names were printed, with white space where the icons should have been. We easily duplicated the bug, and wondered how it was that no one at Apple ever noticed it! We could find no way to get Print Catalog to work correctly with the LaserWriter.

Get your bug reports in and you may be the next lucky winner. Send your reports to BugSpy, c/o MacUser, 25 W. 39 St., NYC, NY 10018. Remember to include all the details, such as what Finder you were using, which fonts and desk accessories were in the System, and exactly how you stumbled on your bug.

MAKE YOUR LAYOUT EASIER

Manhattan Graphics, publishers of ReadYSetGo, have released a two-disk set containing over 30 professionally designed templates. The forms include newsletter shells, ads, brochures, memos, letterheads — and even a resume.

The templates come almost ready to print — just add text. If necessary, the preformatted features can also be modified and your own graphics added. This very high-quality and useful $69.95 set is the first of a series. For more information contact Manhattan Graphics at 401 Columbus Ave., Valhalla, NY, (914) 769-2800. — SB

RUMOR MANAGER

Several developments on the screen front are just around the corner. By early in 1987 you'll be able to choose from several RGB color monitors, larger B&W screens, higher-res B&W screens (really high-res, better than 1024 x 1024), and special desktop publishing screens that can show a whole tabloid page. By early in 1987 you'll be able to choose from several RGB color monitors, larger B&W screens, higher-res B&W screens (really high-res, better than 1024 x 1024), and special desktop publishing screens that can show a whole tabloid page.

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THE CHIRO-MAC-TOR

Chiropractors who'd like to automate their record keeping, billing and marketing systems need look no further than their Macs, thanks to ChiroMac, a new product from HealthCare Communications. The package joins the company's MacHealth series that includes titles such as MediMac, DentalMac and OpticMac.

ChiroMac requires a 512K Mac or Mac Plus, a hard disk and a printer. It can store and retrieve patient data and produce walkout statements and insurance forms, can generate reports including billing, production, insurance and management information and tracks which insurance claims have not been settled.

The program can be used in conjunction with a number of other programs, including Excel, Word, File, OverVUE and Jazz. The package currently lists at a rather high $3,500. For more information, contact HealthCare Communications, 245 South 84th Street, Suite 301, Lincoln, NE 68510, (402) 489-9991. — TFH

MAPMAKER, MAPMAKER, MAKE ME A MAP

The Mac has seen lots of clip art maps produced, but none offered superb quality and versatility. A new program called MapMaker, promises to provide all the maps professionals need, and at a reasonable cost.

The program isn't simply a collection of bit-mapped images, but a map creator. It uses boundary definitions to draw maps to the size you require. These definitions are simple text files and have been created for other computers (such as the IBM PC). The same files work here, so there is an enormous range of material already available. The program will come with boundary definitions of the United States by state and county and of the world by country. More detailed data will also be available.

Each region of a map can be assigned data (imported from text files), a unique pattern and a color! Yes, a color. Right now, you'll have to use an ImageWriter II with a colored ribbon to see the colors, but the colors will still be there if a color Mac is ever released. Since the color information is built into the file, maps pasted into a MacWrite document and printed on an ImageWriter II print in color.

The program has many features that let users manipulate and enhance their maps. Sections can be selected and linked to other sections, so you could, for example, create a map of sales territories.

Working with maps involves huge amounts of calculation and screen drawing. You might expect it to be slow. Well, MapMaker's speed is going to surprise you. MapMaker lists for $295. For more information, contact Select Micro Systems at 2717 Crescent Dr., Yorktown Heights, NY 10598, 914-245-4670. — SB

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

MacTerminal 2.0
Mac Tools 5.4
MacWrite 4.5
Mac Zap Copier 4.1
Mac Write 3.5
Mac Zap Tools 3.1
Mac Zap Patch 3.1
MeasureTest 7.1
Megamax C 1.42
Microphone 1.0
Micro Planner 1.1
MORE 1.0
MS BASIC 2.1

Aztec C 1.06 MS Chart 1.00
BatteryPak 1.23 MS File 1.02
Click/On Worksheet 1.3 MS Fortran 2.1
ColorChart 1.3 MS Word 1.05
ColorPrint 2.01 MS Works 1.0
ConcertWare+ 3.0 Multplan 1.1
Copy II Hard Disk 5.4 MusicWorks 1.1
Copy II Mac 5.4 myDiskLabeler 2.11
Cricket Graph 1.08 Omnis 3 3.10.MAC
Crunch 2.0 Omnis 3+ 3.21
DiskInfo 1.43 OverVUE 2.0d
Dollars & Sense 1.4 PageMaker 1.2
Edit 2.0d MS PictureBase 1.1
Excel 1.00 MS Quattro 1.1
ExperLISP 1.5 QUED 1.4
ExperLogo 1.1 Quickset 2.0
Factfinder 1.1 Rags to Riches 2.6
Fedit Plus 1.05 ReadySetGo 2.1
FONTastic 2.7 Red Ryder 9.4
Fontographer 1.5 Resource Editor (ResEdit) 1.21
Hard Disk Utility 1.21 dit 1.0d12
Helix 2.0 r7 Resource Editor (Redit) 1.2
InTouch 2.1 Sidekick 1.1
Jazz 1A Slide Show Magician 1.3
Just Text 1.0i Smartcom II 2.2B
MacroDraw 1.9 Spellswell 1.2d
MacDraw 1.9 Spellswell 1.2d
MacBackup 4.0 StatWorks 1.2
MacBase 1.0 Switcher 5.0
Mac Backup 2.1b Tempo 1.1
MacDraft 1.3 ThinkTank 512 1.3
MacSoft 2.0 ThunderScan 3.2
MacLabeler 2.2 TML Pascal 1.2
MacLightning 2.0 Top Desk 1.4
MacPaint 1.5 TurboCharger 2.0
MacServe 2.1 VersaTerm 2.00
MacSpell+ 1.1 Word Handler 1.1
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DESKTOP PUBLISHING
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- Dynamic page layout allows interactive design
- Full Feature WYSIWYG editor for Page Processing
- Exclusive Split Screen capability allows access to up to nine sections of a document simultaneously
- Scaling available in inches, millimeters, picas and points
- Show Page for viewing/editing of entire document pages

WORD PROCESSING
- The fully integrated Word Processor has both automatic wrapping and full editing capability. Pipeline provides automatic flow between columns for input, importing and editing of text. Available format options include Justification, Leading, Character Spacing, Multiple Rulers, Tabs (standard and decimal) and Automatic Paragraph Indentation. Ragtime provides custom sizing of fonts from 1 to 127 points in any combination of styles including Bold, Italic, Outline, Shadow and Underline. Consecutively extended, repeated and nested text styles, fonts and sizes may be substituted for anything from a single word to an entire document with one command. Ragtime will also import Macintosh text files from all popular word processing software quickly and easily. With Ragtime's fully integrated Word Processor, placing text in any document design is a snap.

SPREADSHEET
- Fully integrated with over 55 separate functions available
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Finally...professional results from an easy to use, fully integrated package! Ragtime delivers on the promise of personal computing with a complete set of powerful tools for Desktop Publishing, Forms Generation, Word Processing, and Spreadsheet, all from one package. And, we have remained faithful to the concept of the Macintosh, so that you are truly productive quickly and painlessly.

If Desktop Publishing is your application, Ragtime delivers like no other software. With Ragtime, you will be creating professional materials immediately. And although you have sophisticated tools at your fingertips, no publishing or graphic arts background is required.

Powerful Word Processing is included as a natural element of Ragtime. This not only eliminates the need for a separate piece of software, but means that you need not re-edit your copy as you try to make it fit into your format. And, the word processor is so complete and capable that it will quickly become your standard.

Ragtime's integrated Spreadsheet delivers exceptional capabilities. Now you will not only use spreadsheets for financial data, but effortlessly incorporate numeric data into reports, or written copy into spreadsheets. You will easily design spreadsheets with complete flexibility in layout. Or use Ragtime's spreadsheet to create standard forms, such as invoices, requisitions, or reports.

A standard Forms Generator allows you to design and save any form, of any length, and to change it as you require. You will see the complete form on the screen, ensuring that what you design is exactly what you need. From letterhead to complete financial reports, you can quickly create any format for professional appearance with significant time and cost savings.

Productivity, ease of use, and power Ragtime Integrated Page Processing delivers, in one complete package, the next generation in software. Today, Ragtime, the complete solution. See your local computer dealer today for a demonstration.

SPREADSHEET

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<td>Percentage</td>
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MacUser Desktop Publisher of the Year Contest

In the September 1986 issue of MacUser you will find our second desktop publishing supplement, Professional Desktop Publishing. Our first supplement, Desktop Publishing on the Mac, published in June, created substantial interest and we received hundreds of requests from corporations, educational institutions, dealers and user groups for reprints of the supplement. In addition, Apple Computer has distributed 30,000 copies of each supplement to its authorized dealers.

In response to this enthusiasm and the astonishing growth of Macintosh desktop publishing among our readers, we are announcing an exciting new annual contest to find the MacUser Desktop Publisher of the Year. This contest is open to the entire Macintosh community. That could mean you, whether you are a professional working for a large organization or an individual working from your home.

We want to encourage the widest possible spectrum of entries. There are four categories: (1) Newsletters. (2) Books and manuals. (3) Advertisements. (4) General. (The last category is basically a catch-all category of your entry on the lower left corner of the envelope. All entries must have been created for distribution of at least 25 copies. (We don't want you to create something specifically for this contest, but rather honor work seen and used by many.)

MacUser magazine will gather a panel of editors, graphic designers, publishers, marketing professionals and prominent Macintosh luminaries who will judge all entries on the basis of originality, technical proficiency, aesthetic appeal and effective use of the medium.

One entrant will win the overall award: MacUser Desktop Publisher of the Year. Four other entrants will win individual categories. The prize for the overall winner will be an Apple LaserWriter Plus and an individually engraved plaque from MacUser magazine. Prizes for each individual category winner will be $500 worth of Mac software of your choice and an individually engraved plaque. A runner-up prize for each category of $100 worth of software of your choice will be also awarded at the discretion of the judges.

MacUser will be publishing the results of this contest in our January 1987 edition, together with excerpts of prize winning work. Please read the rules below, which govern this contest. May the best desktop publisher win!

THE FINE PRINT

1. This contest is open to all desktop publishing users, both "amateur" and "professional," except employees of MacUser and its affiliates. There is no entry fee.

2. All entries submitted must have been produced on a Macintosh (128K, 512K, 512K Enhanced, Plus or XL). All work, including final assembly and layout, must have been performed on a Mac, with the single exception of book and manual covers.

3. All graphic art used must be original or used with the permission of the creator. If the material was produced for an organization, include the organization's permission with entry.

4. All entries must have been created for distribution of at least 25 copies. (We don't want you to create something specifically for this contest, but rather honor work seen and used by many.)

5. MacUser reserves the right to reproduce all winning entries, or portions thereof.

6. Here's how to submit your entry:
   A. Send 6 hard copies of your entry.
   B. Send a disk containing the final product and all component work files.
   C. On a separate sheet submit your name, the name of the organization for which the material was produced (if any), your address and phone number.
   D. Also tell us what program or programs were used in the production. Feel free to describe any interesting or unusual techniques used.

7. Mail your entry to MacUSER DESKTOP PUBLISHER OF THE YEAR, c/o MacUser, 25 West 39th Street, NY, NY 10018. Put the category of your entry on the lower left corner of the envelope. All entries must be postmarked by October 1, 1986. All entries submitted at the entrant's risk. The decisions of the judges will be final, and the results will be published in the January 1987 issue of MacUser.

PRIZES AND AWARDS

One overall grand prize will be awarded. Entries will be judged in categories. In each category, a first prize and a runner-up prizes will be awarded. The four categories will be:

(1) Newsletters. This category also includes magazines of all sizes and journals.

(2) Books and manuals. The cover does not have to have been produced on a Mac, but the entire interior, including art, must have been so produced. Remember that mechanically pasted-up work is not eligible.

(3) Advertisements. This category includes both traditional and nontraditional advertising, including fliers, mailing pieces and brochures.

(4) General. Everything else, including menus, invitations, and package designs.
How to make networking the Macintosh as easy as using one.

Introducing the all new Keeper™ Plus.
THE ONLY TRUE FILE SERVER BUILT FOR THE MACINTOSH™ APPELTALK™ NETWORK.

It's a simple fact. The all-new Keeper Plus is the only true file server that allows multiple Macintosh users access to the same file at the same time. Period. And it does it without dedicating an additional Macintosh. No other file server is smart enough to make that claim. And no other has the built-in intelligence, power, and easy user interface of the Keeper Plus. It makes a network full of Macs run as simply as one.

Alone. Or in a crowd.
The Keeper Plus performs just as well for a single Macintosh. It greatly expands your storage capacity—up to 80 MB. Provides flexible partitioning. But unlike other storage devices, the Keeper Plus provides you a growth path. As your business expands, you can add more Macintoshes to share the power of the Keeper Plus. There's no additional software needed.

All it takes is a connection.
If you can plug in a cable, you can set up the Keeper Plus. All it takes is a single AppleTalk cable. That's it. No additional software to learn. No complicated start-up functions to perform.

Instantly, you'll have access to 64 disk volumes. With up to 2,000 files per disk drive. And 32 disk volumes that can be active at one time.

The Keeper Plus files expand and contract automatically. You'll never have to set parameters. Or calculate confusing disk volume sizes.

The one and only.
There is no other shared storage device that can match the Keeper Plus for versatility and power. As a print server and print spooler, you won't have to wait for a document to print before resuming work. And back-up options are available to protect your valuable files.

The new Keeper Plus is manufactured and supported by REACH Technologies Incorporated. And every new Keeper Plus has been designed by REACH to provide the reliability you need to keep your network up and running. Operating the Keeper Plus is as easy as operating the Mac.

The Keeper Plus is the easiest, most efficient way to store and share information for the Macintosh Appletalk network. No other file server even comes close.


The best networking solutions within reach.

keeper.com

Typical network setup using two Keeper Pluses.

For Free Information Please Circle 33 On Reader Service Card.
OPENING THE BACK DOOR

Your mission, should you choose to undertake it, will be fraught with peril. You will be behind enemy lines, alone, unaided, with no one to turn to for backup. You will face incredulity, ridicule, suspicion and hostility. What could be so dangerous, you ask? Trying to get your boss to buy you a Macintosh.

If yours is like most companies, IBM PCs abound, for a number of reasons (see my column in the August, 1986 MacUser). If you want to buck the trend, you're going to need some heavy ammunition. Fortunately, the Macintosh provides some, which is a good thing, since you won't find much help. As part of the company reorganization, Apple put marketing back in the hands of its dealers. This was bad for Apple, bad for the dealers, and bad for you. The odds of a computer dealer even getting in the door of most major companies are a billion to one (although the Apple reps weren't exactly wearing down the carpets making sales calls before the big reorganization).

So you're on your own. Where do you start your guerilla campaign? The Mac has some natural selling points: ease of use, high quality output, graphics capabilities and the common interface among applications. You'll need a plan that can demonstrate the value of these to your boss. You also need to be prepared to counter the objections that will come up: not company standard, not a business computer, not enough software available and not IBM compatible.

PLAN A

Let the Mac sell itself. Got a presentation to make to your boss? Do it on the Mac. Make your graphs and charts with Excel or Cricket Graph. Make your bullet charts with MORE or MacDraw. Do your report with MacWrite. And if at all possible, print the output on a LaserWriter (many dealers will let you use theirs, especially if you explain you're trying to make a sale for them). Be sure to include graphics, as there are laser printers that can work with other computers for text output, so you need to have graphics that only the Mac can produce. Then, if your boss runs true to form, you'll be asked how you produced them, and the trap springs. There are a lot of Macs sitting in offices today that were sold just that way.

PLAN B

The surprise demo. Sometimes Plan A doesn't work. You don't have access to a Mac, for instance. So you go with Plan B. You invite your boss out to lunch at a restaurant that requires you to walk past an Apple dealer. Needing to stop in "just for a minute," you drag your unsuspecting boss in where your salesperson accompanies has a demo waiting. A good ploy here is to have a chart or report for work prepared in advance. Have your demonstrator print it out on the LaserWriter, showing the ease of use and the quality of the output while ostensibly doing something for work.

What about the objections? The easiest ones to handle are "not a business computer" and "not enough software." A demonstration of some of the capabilities of packages such as Excel, Word, Micro Planner Plus, MORE and PageMaker should put the lie to both objections.

"Not IBM compatible" is a bit tougher. Mr. Sculley's promises of future MS-DOS capabilities notwithstanding (although when Apple delivers on the promise it will let future folks in your position have an easier time of it). Here you have to convince your boss that it's not program compatibility that's important, but data compatibility. For example, Excel can open and save files using the WKS format of Lotus 1-2-3. MORE can open and save files in Ready! or ThinkTank PC format. Any text file (most word processors, regardless of which machine they're running on, can produce text-only files of any document) can be opened by MacWrite (any formatting will be lost, but text files are easily reformatted with a few whisks of the mouse). Even word processing "standard" WordStar files can be used. (The trick to converting WordStar files for use on the Mac is to first remove the high bit from each character and then delete the control characters. That's scarier to say than to do, and it's quick. There are several free, public-domain programs that make very short work of the process. A good choice is the readily available UnWS program.) And most communication programs can be used to transfer these files between a Mac and an IBM PC.

"Not a company standard" is also tough. This sometimes means writing a special justification for a nonstandard computer. Here, the graphics capabilities of the Mac should be stressed. Also, since one of the reasons for a "company standard" computer is central support, the minimal support required for a Macintosh should be emphasized (with an AppleCare policy in place, there are virtually no support requirements).

THE BOTTOM LINE

Eventually the boss has been wowed with the Mac's output (Plan A) or stunned with its ease of use (Plan B), and all objections overcome. It's time to get down to brass tacks: what's it going to cost? In Outfitting Your Office (MacUser, August 1986), a "budget" business sys-
THE PINSTRIPE MAC

SuperMac Dealers:

AK: Archon/data Pictures, Inc. 279-9160; Fairbanks, Empire Elec.
tronics, Inc. 909-6616; Intel Corp. 266-1016; Kyocera 111-1790; Mac-
store 763-9001; Marketing Corp of America 123-4567; McMo-
tel 312-6789; Micronet 890-7001; Pacific 321-4567; Phoenix 456-7890;
ProLogics 567-8901; Questar 678-9012; Rapid 789-0123; SuperMac
Sales 890-1234; Systems Technology 901-2345; Telco 012-3456;
TMC 123-4567; United Computer 234-5678; Wabash Computer
890-1234; Western Computer 901-2345; Xerox 012-3456.

BatteryPak: Apple 567-8901; BatteryPak 678-9012; Compu-
terland 789-0123; Electronics 890-1234; Future Computer 901-2345;
IBM 012-3456; Micronet 123-4567; Micromedia 234-5678; National
Computer 345-6789; PC World 456-7890; SuperMac 567-8901; Tele-
note 678-9012; Wabash Computer 789-0123.

For Service: Apple 567-8901; SuperMac 678-9012; IBM 789-0123;
CompuServe 890-1234; CompuPak 901-2345; Future Computer
567-8901; IBM 678-9012; Micronet 789-0123; National Computer
890-1234; PC World 012-3456; SuperMac 123-4567; Tele
tnote 234-5678; Wabash Computer 345-6789; Future Computer
456-7890; SuperMac 567-8901; Tele

THE PINSTRIPE MAC

Software was put together for just under $1000 including a Macintosh Plus, HD20 hard disk, 640K of memory, high-quality dot matrix printer, monitor, 1200-baud modem, all the cards necessary for all the stuff you've configured, and comparable software. You should find the price to be cheaper, cleverly leave this part of your analysis out.

Now we get to the really hard part. Justifying the $5000 to $6000 for a LaserWriter. Even if your boss was wowed by its output, that's a lot of money for a printer. The selling points here are: (1) output quality — again with the emphasis on graphics, to differentiate it from the HP LaserJet and similar printers; and (2) shareability — not a big selling point if you're talking a single Mac (whatever did happen to those fab Mac II cards for the IBM PC?). Not a strong case. But if your department does a lot of graphics work, that alone should sell it. Otherwise, you may just have to settle for an ImageWriter (considering the amount of IBM dot-matrix output floating around most offices, your ImageWriter output will still stand out).

NOT STRICTLY BUSINESS, BUT GREAT

Since this is a little off my beat, I'll keep it short: BatteryPak 1.23 has one of the most useful desk accessories since David Dunham's DiskInfo, especially for people with HFS hard disks. It's called DiskTools, and it gives you most of the features of the Finder in a desk accessory. It can create new folders, move files or folders from one folder to another, copy files from one folder or disk to another, rename files and delete files, and from within an application (or even while in the Finder, obviating the need to open and close all those folders). It will even let you find a file when you remember its name (or even part of its name), but don't remember what folder you put it in. Definitely a must-have for hard disk owners. Remember BatteryPak 1.23. From Batteries Included. Written by Evan Gross.
Why DataFrame is the right hard disk for any Mac:

Because we looked carefully at what users need in a hard disk system for the Mac, and made the right design decisions. Decisions that give you significant benefits over any other Mac hard disk. They are:

Decision: Floppy disk port or SCSI?
Hard disks that use the serial or floppy disk port, such as the Apple hard disk, are slow. The SCSI interface (introduced with the Macintosh Plus) is considerably faster. The DataFrame uses the SCSI interface, and consequently runs much faster than hard drives that use slower ports. Yes, even faster than non-SCSI internal drives. It really makes your Mac fly:

◆ (If you own a Mac 512, you can get DataFrame performance too, with our $99 SCSI adapter.)

Decision: Internal drives versus external drives?
Internal drives save desktop space, but there are serious trade-offs. First, you lose your system while the drive is installed. Worse, you lose your system if the drive needs repair. (Internal drives have earned a not undeserved reputation for frequent breakdowns.)

Then there's heat—the enemy of reliability. Internal drives add heat to the system. You either use a fan—which means you listen to an annoying whine while you are working—or you use no fan, which means your system gets too hot.

DataFrame is external, so it adds no heat to the system. Because the drive is preformatted, you can take it right out of the box, plug it in, and be working in minutes. And if your hard disk should ever need service, you just unplug the DataFrame (you can still use your Mac) and get a replacement immediately from your dealer.

Decision: Under-system or beside-system?
A drive under your Mac has the same heat problems as a drive inside your Mac. The drive must either have a fan (noisy) or it sits under your Mac like a little hotplate (unacceptable).

DataFrame sits beside the Mac, uses a vertical 'chimney' design to vent heat, needs no fan, and therefore stays cool silently.

What else?
SCSI means easy expansion—you can 'daisy chain' up to seven additional drives or other SCSI peripherals, using DataFrame's second SCSI port. Plus, DataFrame boots your system directly from disk, saving you time. And we used Apple's Hierarchical File System, so all 20 megabytes are available on line at all times. Most important, DataFrame is so reliable, we back it up with a full, one year unlimited warranty. That's confidence you can't even get from Apple.

The result of all these decisions:
DataFrame has been chosen by more professionals, more Macintosh software developers (including many in Apple Computer, Inc.), more dealers, and in fact, more people than any other SCSI Macintosh drive, by far.

So before you commit to any hard disk for your Macintosh, owe it to yourself to see DataFrame in action. You'll find it at any of the hundreds of qualified SuperMac™ dealers. They're listed next to this ad.
Introducing Insight.

No accounting software available anywhere can give you the total understanding of your business that Insight delivers. None.

Because while other accounting software programs only organize

Insight General Ledger, Accounts Receivable, and Accounts Payable modules run on Macintosh 512k and Macintosh Plus.
The accounting software IBM wishes it could offer.

Insight not only analyzes your results, it explains who is watching them and why. Insight interprets your performance, describes business factors affecting it, and finally recommends actions you can take.

For Free Information Please Circle 21 On Reader Service Card.
THERE'S MORE THAN ONE WAY TO SCAN A CAT

When you want to create graphics with your Macintosh, there's no need to pussyfoot around with anything less than ThunderScan. Because ThunderScan turns any printed image into a detailed, high resolution Macintosh graphic. Then lets you change and enhance the image any way you wish. With a powerful set of software tools, written by Mac developer, Andy Hertzfeld.

CAT (AKA Kitty)
Start with any original image, black & white or color, up to 14" wide (with a wide-carriage ImageWriter).

FEED THE KITTY
Feed it into any ImageWriter (I, II, or wide-carriage). ThunderScan simply replaces ImageWriter's ribbon cartridge, so you don't need a video camera.

CAT SCAN
Now ThunderScan is zooming back and forth, digitizing the image at up to 288 dots per inch, in 32 shades of gray.

CAT'S EYE
...enlarge or reduce...

CAT PRINTS
...then print out your finished work on your ImageWriter or LaserWriter. ThunderScan taps the full resolution of LaserWriter, producing exquisite graphics with up to 300 dots per inch.

CAT & MOUSE
With mouse in hand you have micro-control of the contrast, brightness and half-toning. Over all or selected parts of the image. You can scroll, erase, cat, paste, draw...

CAT CALL
You can even send images from Mac to Mac by modem.

So you see, there are as many ways to scan a cat as you can imagine. As long as you have ThunderScan, just $229 complete. See your Macintosh dealer or contact us.

Thunderware, Inc.
31 Orinda Way
Orinda, CA 94563
(415) 254-6581

CATALOG
Cut and paste scanned images into catalogs, newsletters, reports, correspondence, personalized cards and more. ThunderScan works great with page layout software, adding high-quality graphics to your publications.

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For Free Information Please Circle 236 On Reader Service Card.
WHAT'S THAT DISK WORTH?

Here's what it costs to make a piece of software: $10.40.

That's it: $10.40. What you can charge for that piece is up to you. $39.95? $55? $74.95? Up to you. Charge more and you'll make more, if you sell the same amount as you would with a lower price. But it doesn't work that way, usually.

The $10.40 a unit is a rough figure. Some packages cost less to produce and some cost more. But it's close to typical, I'd guess.

Here's where that $10.40 came from. It's made of six items: disks, package, manual, labels, labor and royalties.

"Disks" includes the purchase cost of each disk and the cost of disk duplication. And the cost of copy protection for each disk. As with every aspect of buying quantities of anything, the more you buy, the less you're charged per unit. In this case, let's say we're buying about 5000 disks. We'll pay about $1 to $1.25 each for "duplicated" disk.

Copy protection? That's another 25 cents a disk — a big percentage! (If you don't want copy protection, but still want peace of mind, you can have each disk stamped with a unique serial number — for a small price. That way you'll know who's passing out free copies of your software. Uh, if they sent in the warranty card you'll know, that is. If you ever find out about it, that is. And remember: Only 20 percent of software buyers return their warranty cards.)

How many disks in the package? Two? Okay, let's say $2.20 for disks.

Next, the package. Two types of packages are popular: cardboard boxes and vinyl, snap-together boxes. The vinyl boxes often have preformed inlets to hold the disks. If you have a heavy-duty screwdriver, it's no problem removing the disks from the case.

Vinyl boxes are interesting. Actually, they're "pressboard" that's covered with vinyl in a sort of "heat press." Ring binders are made the same way.

Let's use a vinyl snap-together box.

Not too big, not too small. Maybe 6 by 9 inches — about the size of a book. That way it'll fit any retailer's shelf; always a consideration. Bigger boxes cost more, as you'd guess.

The vinyl can be almost any color. If you want a second or third color silk-screened on top, it costs more (you're catching on to this real fast, I bet). A bargain basement vinyl package is, maybe, a buck. Three dollars gets you something you won't be ashamed to have on a shelf. So let's say $3 a package.

We're up to $5.20 for two disks and a package. Next is the manual.

The manual has two costs: the cost of getting it written, and the cost of getting it printed. It might cost nothing to have the manual written. Often, software authors write the manual for free, especially when the programmer is the manual author.

After free, the sky's the limit. Danny Goodman, a successful book author, would probably ask for, and get, quite a few thousand dollars to write a manual.

A struggling writer might whip up a short manual for $500 (about what MacUser pays for a mere article by an established author, but don't tell anybody).

Or, you could pay the writer nothing up front and give them a royalty for each unit sold. Maybe...50 cents a copy. If 5000 units are sold, they'd get $2500. A respectable amount, but most writers want the money now, thanks.

Let's do this: the writer gets $800 up front and 30 cents for each unit sold. We'll divide the $800 by 5000 units to get an adjusted 16 cents each, and add in the 30 cents for a total of 46 cents a unit for the writer.

Now for printing the manual. It won't be big or fancy. Modest. Nobody reads manuals anyway. And it won't have a tricky spiral ring binding — that costs too much. If it's very slim, it'll be saddle-stitched, like small magazines: fold the pages and put a staple in the middle. If the page count warrants it, the manual will be perfect-bound, like this magazine: a flat, glued spine. (Playboy magazine just went perfect-bound a few months ago, I think. I was busy reading CoEvolution Quarterly; also perfect-bound.)

How much to print each manual? $1 to $2. Less than $2 if you have a LaserWriter and can deliver "camera-ready copy." Or if you have an ImageWriter and can swallow hard enough.

For writing and printing the manual, let's make it $1.50, and veer on the low side.

We're up to $6.70. Whooops! Forgot labels for the disks. Easy to forget. But they're cheap; for 50 cents, you can get a great, two-color label. Let's put down 20 cents. It's enough. And there's "labor," which pays somebody to assemble everything: labels on the disk, manuals and disks into the box.

Fifty cents a unit, let's say. I know it's high, but who wants to run a sweat shop? $7.40 so far.

Only one cost left, and it's a killer: royalties.

For books, it goes like this: authors usually get from 10 to 15 percent of the "net" that the publisher receives. If a book costs $20, publishers may net about $10. The author gets a buck. If he or she is a name author, or if the book has already sold a zillion copies, it may be $1.50.

Most books never sell 10,000 copies. Most authors don't drive Porsches.

Many software publishers pay programmers the same way, and net about the same percentage. But software usually costs more than books, so programmers, in theory, make more a unit. At a retail price of $55, software publishers may net $25 to $30. The programmer may get $2.50 to $3.

If that is, the publisher pays the programmer what's rightfully owed. Very strange and magical accounting and bankruptcy are all too common among software publishers. But that's another column.

Royalties: $3. Promise. Paid monthly, not quarterly, like "real" publishers do it (also known as "using your money for as long as we can"). (Off the subject: when I'm asked how I'd like to be paid, I say: "Daily. I want a limo to pull up outside. I want the driver to bring the money to the door, in cash. And tell me I'm wonderful.")

And we're done: $10.40 a unit. We're also out of room. Still to come: rent, phone, freight, legal and more. And the big one: Advertising.

Don't quit your day job yet.
ClickArt Publications
ClickArt Publications is a collection of images specifically designed for creating newsletters, flyers and invitations. It includes two- and three-column layout guides with illustrated headlines (like “Letters to the Editor,” “On Vacation,” “Party,” “Thanks” and “Bon Voyage”) sized to fit the layouts. It also contains cartoons, maps of the USA and Europe, illustrated alphabets, and much more.

ClickArt Personal Graphics
Personal Graphics is a disk-full of contemporary images from small dingbats to full-screen portraits. Images include Einstein, Michelangelo’s David, animals, cartoons, cars, wine bottle, city skyline. They’re great for adding a personal touch to invitations or stationery.

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ClickArt Holidays
ClickArt Holidays contains images for Christmas, Hanukkah, Thanksgiving, Easter, Valentine’s Day, Mother’s Day, Father’s Day, Graduation, Halloween and Fourth of July — as well as images for party occasions such as New Year’s Eve, Open House, football parties and barbecues.

ClickArt Holidays
Price: $49.95

ClickArt Effects
Now you can produce the special effects you’ve always wanted in MacPaint. Rotate your words or pictures a few degrees at a time. Or slant them. Or give them perspective through a vanishing point. Or even use a distortion box to create the perception of a twist. All with four new tools called ClickArt Effects.

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**SKYFOX**

List Price: $39.95. Published by Electronic Arts, 2755 Campus Dr., San Mateo, CA 94403. (415) 971-7471. Copy protected.

Arcade game fanatics, listen up: have you been waiting for a full screen, full speed, bang-em-up, blow-em-up destruction game? Well, strap yourself into the seat of a mean, lean jet fighter, and prepare to do battle. It's time to be a Skyfox.

The game's premise is simple. Enemy forces are attacking with planes and tanks in an effort to destroy your base. The enemy also has enormous floating fortresses which launch their planes. You'll have to be pretty brave to attack a fortress. Start off by launching from home base. The mission can start either in the air or right above ground level. The on-board computer screen pops up in the middle of the viewing screen, displaying crucial information about the enemy and its location. A squadron of planes only shows up as one plane on the plane's computer, but a Zoom command displays the number of planes or tanks in a group. Fight the enemy at a lofty 35,000 feet, or at a ground-skimming 10 feet. Enemy forces consist of fighter jets and tanks. The jets are intelligent and fast, while the tanks are slow and clunky.

Your ammo is varied: you have an unlimited amount of cannon shells, which are shot from both of the plane's wings; five guided missiles (which will destroy any enemy vehicle that's in your vicinity); and five heat seeking missiles, which are effective against planes and tanks that are visible in the head-on view. When you run out of ammunition, land at home base to replenish your supplies.

The radar window displays the immediate area, with enemy craft showing up as blips. The radar view can be toggled between a default top-down overview and a head-on aspect that shows the blips on an imaginary horizon.

The autopilot makes this game quick and mean. Home in on a tank battalion, position the autopilot cursor over it, kick it in, and your plane speeds up to maximum thrust and magically guides you to the action. Quick thrust is available for a sharp climb or a desperate getaway.

Skyfox features smooth, full-screen animation, although details are sparse: the "clouds" that fly past the plane's windows are extremely similar to the rocks that litter the ground, and there is a distinctive lack of landmarks, except perhaps home base, which is the only group of buildings that you'll encounter.

A wide variety of missions can be fought, and there are many play levels, from a novice air cadet to a true blue aerial ace. If you like this type of game, Skyfox will have you flying for hours. — DB

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**KIDSTIME**

List Price: $49.95. Published by Great Wave Software, PO Box 5847, Stanford, CA 94305. (415) 325-2202.

For a computer that's so easy to use, Mac still has very few quality programs for children. KidsTime from Great Wave Software addresses that lack with five terrific programs for kids.

The KidsTime programs cover a good range of activities, and each program has many options that affect their difficulty level; as a result, kids from 3 to 12 will find this collection interesting. The fact that most of the programs use MacInTalk for speech generation makes a good thing even better.

ABKey is for beginners—letters appear on the screen and the child finds the match from the keyboard. Options include upper or lowercase letters, single or double letters, three speeds, voice and pictures. (For pictures, type the first letter of the picture's name.) The options are not mutually exclusive; users can, for instance, mix upper and lowercase letters. An interesting sound and graphic reward appears after enough right answers.

Dot-to-Dot is a terrific adaptation of the pencil and paper game. You don't even have to click on the dots—placing the mouse over the dot is sufficient, which makes it easy for even the youngest child to do by hit-and-miss. Dots can be labeled by letters or numbers of various sizes; when the outline is complete, the rest of the picture shows up. With the editor provided, you can turn any MacPaint picture into a Dot-to-Dot challenge.

Match presents an almost bewildering variety of options, making it useful to a wide age range. In each game, a truck rolls by and dumps rows of cards on the screen; you have to drag the cards to their proper positions. Sometimes this means putting a puzzle back together; one variation asks you to find the matching letter or shape cards; another option requires you to match letters and pictures. As you make correct matches, those cards are piled up at the edge of the screen, and when the pile gets too big the truck comes by to pick them up again. A special utility program available to registered users lets you create puzzles and match games, controlling both the pictures and the degree of difficulty.

StoryWriter is a mini-MacWrite that reads whatever your child types. What makes it extra-special is that you can type pictures with the special Storybook font provided; the pictures are read as words. Even if your child is too young to do the typing, she'll appreciate hearing one that you typed in with pictures.

KidsNotes is unbelievably sophisticated for being "just" a unit in a package, but then what else would you expect from the makers of ConcertiWare? Enter notes from the Mac keyboard or from the on-screen piano; specify the time value of each note, or play in real time. The notes are played as you enter them, and appear on a musical staff. You can play back your compositions at different volumes and speeds. The KidsTime documentation is strong on educational theory, but a little light on specific instructions—a few screen shots would help immensely. The whole package is wonderful enough for you to overlook its rough edges—pictures in ABKey, for instance, are enlarged from the picture font and thus are ragged outlines. The rough edges keep KidsTime from getting a five-mouse rating, but they shouldn't keep you from getting KidsTime.—Sharon Zardetto

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**OCTOBER 1986 MACUSER 33**
MacSpec is a special-purpose word processor. Its purpose is to make the generation of specification documents easier and quicker. Specifications generally must have a rigid, outline-like format, with section, subsection and paragraph numbers. While they can be created on ordinary word processors, the work is, at best, tedious, and, if text must be moved, they can be a real pain (as all the numbers must be changed).

What is required is a program that is also very much like an outline processor. But ordinary outline processors are not suitable, as they don't handle the text under the headings well enough.

MacSpec borrows features from both word processors and outline processors. It will automatically number and indent sections (and renumber them correctly if anything is moved). Each heading can have its own text block. The text in these blocks can be formatted on a word-by-word basis, unlike text inserted in most outline processors. A table of contents can be created automatically.

One feature that takes some getting used to (and a much clearer explanation in the manual) is the pop-up menu used for creating new entries and editing existing material. You must place the square cursor over the heading you want to change or whose text you want to access and click the mouse. An Edit menu will then appear, right there in the middle of the work area! Make your selection in the ordinary way (by dragging down).

This version did not support graphics, although the Clipboard is supported. A new version (2.0), that will support graphics, has been announced.

A program like MacSpec would be useless without good output. MacSpec shines here. There are many useful formatting options, including easy to define headers and footers. Printing performance is very good.

The documentation is a letdown. It is both too brief and unclear. Indeed, most users will learn this program by trial and error. That's unfortunate; MacSpec deserves a manual as good as it is.

If you create specifications or material similar to specifications, MacSpec will be an excellent investment. Don't, however, be fooled into thinking that it can double as a word processor or an outline processor. Given the word processors and outline processors now available, MacSpec isn't good enough at either task.

---

**MACSPEC**


MaxThink is an outline and idea processor. As is true with products of a similar nature, such as ThinkTank, MaxThink is a tool that helps users organize and manipulate concepts, ideas, thoughts and details. Outlines can form the basic structure of articles, books, business plans, reports, speeches and other presentations. But MaxThink goes beyond outlining in a direction not often approached by computer software — it focuses on helping you think.

There are several levels of thinking, from the very primitive to the very complex. Although we use the whole range of thinking skills at various times, we often are not aware of exactly what processes we use to arrive at a particular point. And most of the time we get bogged down in trivia that prevents us from being able to approach a problem in the simplest, most effective way. The highest level thinking skills — synthesis, analysis, evaluation — are needed to make intelligent, reasoned decisions.

But people tend to make far too little use of these techniques.

MaxThink performs several actions on an outline that help support and nurture higher level thinking processes. MaxThink will scramble a list in several ways to help you generate new ideas. Select PRIORITIZE and MaxThink lets you rotate a list one topic at a time to see how changes in order of presentation affect the outline. This makes it easier to establish a clear set of priorities. Select RANDOMIZE and MaxThink jumbles a range of topics into a random order. Select ASSIGN and MaxThink tosses groups of disorganized ideas into a "bin" where they can be reassessed and properly organized.

MaxThink incorporates some very unusual features. It takes an innovative approach to on-line help, for example. And there is a Fast Move feature, which lets you move a range of topics very quickly. With Fast Move on, when you select a topic it is cut — and it reinserts at the next point you select, chopping two steps out of the Cut and Paste process.

MaxThink has an undo command and many of the program operations, such as print options and alphabetizing priorities, are handled from the Page Setup screen that looks like it came from another computer. This screen is not Maclike and is a pain to use, although the rest of the program is fairly user-friendly.

The manual is remarkable. It spends less than 25 pages on the mechanics of using the program and devotes the balance (a little more than 50 pages) to thinking — how to think, what higher level thinking skills are and techniques for ways to approach problems. It is a very effective tool in its own right.

MaxThink gives you a way to bounce ideas off your Mac, and can be a valuable resource.

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**WORD HANDLER**


Word Handler is a new word processor for the Mac; the first to appear since Apple unbundled MacWrite, although several others are promised for this year. Word Handler attempts to combine some of the power of Word with the ease of use of MacWrite, and in many ways it succeeds.

The Word Handler screen has elements of both products. The menus are similar to those in MacWrite, with a few exceptions and additions, and the screen presents text exactly as it will print out, with proper pagination and formatting. Word Handler can even read MacWrite files and convert them, so anyone switching from MacWrite will not have to re-key significant files.

Unlike MacWrite, Word Handler is able to handle text much wider than the narrow screen, and its display can show everything, to within ½ inch of either edge of a page. Different margins and formats can be assigned by "section," which may mean a paragraph, a page, or any subdivision of a document. A horizontal scroll bar lets you move across the screen.

Word Handler allows users to have up to four document windows open at one time, supporting full cut and paste between documents, and it displays page numbers and word count in small, superimposed win-
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QUICK CLICKS

dow. Word Handler provides full access to fonts and styles, although it uses comman
- a plain text instead of the more common command _, and so on.

Many special operations in Word Handler are handled in a menu called Utilities, including making a copy of a document (replacing the save as option found in other

 programs), deleting or renaming documents, saving as text only and appending one document to another to create one larger document.

Several nice touches are built into Word Handler, including the ability to change text from upper to lower case or vice versa without having to retype. This is a feature that MacWrite cries out for. Word Handler also has a simple forms generator, flexible printing options and an abbreviation glos
sary for often-used words or phrases. With the addition of an extra module, Word Handler will interface with any of several Mac databases for proper mail merge and ALS has announced an American Heritage dictionary-based spelling checker early this fall.

There are some problems. Word Handler is very slow in some areas, especially when translating a MacWrite file. The system appears to hang for two or three minutes, but if you wait patiently it will produce a properly formatted document. And the original release version does not support graphics
 or the standard Mac Clipboard, in any way. ALS has announced a free upgrade (as of September 1) that permits the transfer of graphics via the Clipboard and promises much improved speed.

The only other significant drawback of Word Handler occurs when working with documents wider than the screen. For some reason, the program does not shift the display automatically when you end a line or paragraph. As a result, you can type merrily along for some time without seeing what you write.

All in all, however, Word Handler is a solid, viable alternative to MacWrite, with some very nice features and a very competi

ive price. MDW

SMART ALARMS

List Price: $49.95. Published by Imagine Software, 2000 Center St., #1260, Berke

My Mac is too valuable to spend all its
time being my appointment book. I've tried
and given up on many desk accessory calendars, because, invariably, on the day I
most need to check and be reminded of an
important appointment, I forget all about the
calendar.

Finally, there's a reminder system intel
gent enough to keep me on schedule. It's also so easy to use that it actually gets used.
It's called Smart Alarms, and it's both
bright and large enough to be really useful.
Its reminder files can hold up to 1,500
events, and it will remind you of them
even if you don't want it. It will call your atten
(tion via bells and a screen display) to
time at the time specified or 5
minutes (min), 15 min, 1 hr, 1 day, 1 week
or 2 weeks in advance. If any reminders
have passed while the Mac was shut off,
they are immediately presented upon start
up.

Reminders can be set to recur daily,
weekly, every 2 weeks, monthly, quarterly
or yearly. The ability to set recurring alerts
is particularly nice. I have my Mac say Good
Morning every day and also remind me
when it's a reasonable time to leave.

When an alert appears you have several
action choices. You can simply cancel the
reminder, or you can be reminded again in
either 5 min, 15 min, a half an hour, an
hour, or in 24 hours. The default value for
this dialog box is 5 minutes, so if you're
busy when the alert appears, simply hit
return and you'll see it again in 5 min.

Smart Alarms comes with a quick and
efficient self installer. The documentation
is both complete and exceptionally clear.

The program is fully HFS- and Switcher-
compatible. As with all reminder systems, it
works best if run off a hard disk or, at least,
the same System all the time.

Also included on disk are two ordinary
(that is, they must be installed using
Font/DA Mover) desk accessories. The first
is an Appointment Diary. This DA is very
similar to any calendar-type DAs cur
rently available. While it has a few more
features, such as the ability to create
custom page layouts, print out a day's
events, and link any entry to Smart Alarms,
it's not much more than other, similar DAs.

It would be more useful if the link with
Smart Alarms was a two-way link; that is, if
Smart Alarms reminders could be entered
into Appointment Diary directly from Smart
Alarms. As is, Appointment Diary is a nice
but unnecessary adjunct to Smart Alarms.

The other DA included is a small, public
domain program called Sleep. Sleep, will,
when selected, darken the Mac screen,
except for a randomly appearing icon (to let
you know the Mac is on). This tool lets you
keep your Mac on all day without the risk of
screen burn-in. Sleep goes away whenever
the mouse is clicked or whenever a Smart
Alarms reminder appears.

Having tried all the other calendar and
reminder systems, I wasn't expecting too
much from Smart Alarms. I expected yet
another good program that demanded that I
either run it constantly or constantly
remember to check it. Smart Alarms is more
than that; it is, by far, the best Mac
reminder system yet created. — SB

DRAWART

List Price: $49.95. Desktop Graphics, 400
Country Drive, Dover, Delaware 19901.
(302) 736-9098. Not copy protected.

At first glance, DrawArt seems quite
promising. After all, there are a lot of
terrific MacPaint clip-art disks available —
the idea of bringing out a clip-art disk of
MacDraw images is long overdue consider
- the number of people who MacDraw
their graphics nowadays instead of Mac
Painting them. Unfortunately, the first Mac

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QUICK CLICKS

The graphics themselves are a completely mixed bag. Some are outstanding. Some are terrible. And most are somewhere in between. The contents of the clip-art seems to have been almost an afterthought — for example, Ian McKinell's Simota motorcycle is there, and while it's certainly a beautiful motorcycle, how many people are going to find that having a rather large, detailed picture of a motorcycle is essential to creating their business or desktop publishing graphics? It would have made much more sense to include a collection of people, animal and object illustrations geared much more toward business — or at least, personal — use.

The images seem to have no rhyme or reason, but rather look like they were created for other purposes (which in fact many of them were) and then simply thrown together on the disk. For example, the graphics under the title Bridge is a lovely, three-dimensional line drawing of a bridge seen from two different angles. But again, how many of us need a line drawing of a bridge? This is mixed in with a cartoonish, huge-eared mouse, a picture of a broken pencil, a set of large, filled-in letters and our personal favorite on the disk, a create-it-yourself calendar page (just move the calendar over the page until the right number shows on the right day of the week). But the assortment is too ragtag, and few users will find more than one graphic really useful.

MacDraw clip-art is a great idea whose time has come. Unfortunately, in spite of DrawArt, most MacDraw artists will have to wait a little longer for the reality to match the concept. — TFH

PHOENIX 3D

List Price: $39.95. Published by Dreams of the Phoenix, PO Box 10273, Jacksonville, FL 32247. (904) 396-6952. Not copy protected.

The first thing that you notice about Phoenix 3D is its $39.95 price tag. For the cost of a game, how good can this program be?

The answer is not too bad, even though Phoenix 3D is not a professional level CAD package by any standards. It is an easy-to-use graphics program that combines the best features of programs like Easy3D and Mac3D, with some additional capabilities that you wouldn't expect in a program of this price.

A variety of drawing tools produce basic shapes: spheres, polygons, pyramids, plus some two-dimensional primitives (with the glaring omission of lines). These shapes are pliable, and can be reshaped along any vertex, much like Mac3D. Click a button, and the Tool Palette slides away to reveal a View Palette that allows lighting and viewing vantage point to be specified.

There's a substantial selection of rendering modes: wireframe, hidden line removed, translucent (hidden lines appear as dotted lines), standard shading (facet lighting) and smooth shading. Using smooth shading with complex objects can take a while, but the program informs users of this fact before beginning the rendering, giving them the option to cancel the procedure.

Two light sources (referred to as Sun and Moon) can be activated for the various shaded view modes, and both of these can be moved around in space. These lights' intensities, as well as the ambient light, can be fine tuned. A unique feature allows the lights to be locked on the model, allowing it to be moved in space without disturbing the lighting effects.

The documentation is quite complete, with full explanations of all the program's functions plus information regarding file formats (for programmers). An accompanying program lets you convert Phoenix 3D files into text files, to conserve storage space.

Phoenix 3D Level One does things that a program in its price category simply shouldn't. And at this price, it's more fun than a lot of Mac games. — DB

SHANGHAI

List Price: $44.95. Published by Activision, PO Box 7287, Mountain View, CA 94039. (415) 960-0410.

If you tend to be an obsessive person by nature, maybe you'd better not try Shang­hai. It's kind of like eating potato chips—you won't want to play just once.

Shanghai borrows elements from mah-jongg and pick-up-sticks in equal doses. Basically, it works like this: At the start of the game, players are presented with a game board filled with mah-jongg tiles arranged in what the manual calls a "drag-on formation." There are 144 tiles in all, but some are buried in stacks up to four tiles deep. The object of the game is to remove all the tiles from the board by matching them with exact duplicate tiles (there are two exceptions to this—read on).

Of course, it's not as easy as it seems. In order to be removed from the board, a tile must be "free"—that is, you have to be able to "slide" it to either the right or the left. A tile stacked on top of another is considered free if it can slide over the tiles next to it, which is possible if its stack is higher than those next to it. Stacked tiles are indicated by thick borders around their edges. The thicker the border, the more tiles are in the stack.

There are four copies of each tile, with a few notable exceptions: the four seasons are each represented by one tile each, but these can be matched with any other season tile (for example, a Winter-Spring match is acceptable). The same applies to the four different flower tiles, each of which matches any other flower tile.

The basic strategy is to free up the top and sides of the formation first, which leaves the most tiles free for other match-making. Long rows of single tiles (not stacked) present the most problems later in the game, so a good strategy is to try to whittle them down early in the game. The strategic implications are completely different with each new game.

The game is very well-constructed, with a number of options that should satisfy every kind of Shang­ hai fan. For novices, a pull-down menu displays each of the tile types at the press of a button, and a rules refresher course and strategy section are other options in the same menu. Another menu lets players show all moves that remain in the game (a great help when you get stuck), back up a move, restart the same game, or peek under stacks of tiles (the latter requires you to forfeit the game entirely, though).

The program can automatically generate a new, random game every time you play. The disk also includes a number of pre-designed games. Game options include Solitaire, Cooperative (there seems to be little difference between these first two), Challenge (two players work on a single puzzle competitively) and Tournament. In competitive modes you have the option of timing your moves or using an indefinite clock.

About the only thing missing from Shang­ hai is a fake spreadsheet alarm button, which would let people test their strategy without the boss catching on. But even after you've seen the dragon breathing a congratulatory salute, your hand will reflexively go back to the new game menu. Just this once more, you'll tell yourself. Really.—TFH

38 MAC USER OCTOBER 1986
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IT'S IN THE WORKS

Microsoft Works Offers
Total Integration for the Mac Plus.

by Neil L. Shapiro

You certainly have to hand it to the people at Microsoft; they understand the Macintosh interface and how to design programs for the Mac as well as any company in the world and better than many. The new Microsoft Works program is an integrated and yet introductory package that will have you mousing its word processor, spreadsheet and charting, data base and telecommunications subprograms in a very short time.

In fact, MS Works is so easy to get into, so intuitive, that if you have had even a modest amount of experience with Macintosh programs before, you may find yourself learning the program from its 30-page "Quick Reference Guide" rather than from the hefty manual. The manual itself is up to Microsoft's best with step-by-step summaries and in-depth guides to all of the various procedures (and there are a myriad of them) contained within this exciting program.

MS Works is more than just a new program. It embodies a new philosophy of marketing and design. We've seen many integrated software packages in the past that were designed for the top-of-the-heap businessman. Such super powerhouse programs will let a mogul with a Mac run any sort of international cartel with voltage left to spare.

Of course, the investment to buy such a program might call for a stock option. And, it wouldn't hurt to have a staff of people at one's beck and call dedicated to figuring out how to use and access all of such a program's power.

MS Works is an attempt to serve most of the computing needs of the average Mac user with one affordable program. Microsoft's idea is that if you do outgrow MS Works, well, pick up a copy of Excel, or Word, or both.

How close does MS Works come to fulfilling this goal? Is it really going to be the one program that you will ever need? Before we can answer as to the program's worth as a whole, let's take a look at its parts.

THE WORD IS NOT "WORD"

Take Microsoft Word, throw in an equal helping of MacWrite and a tiny dollop of MacPaint and skim off all the fat and there you have it, the recipe for the word processor section in MS Works.

All the usual text-editing commands work as most Mac owners have come to expect. Double-click on a word to highlight and select it for cutting or copying; drag the mouse cursor through a range of text to select that. Position an insertion point cursor (using the mouse) any place on the page, while you can scroll the text window by dragging the mouse off the top or bottom of the screen.

The Mac Plus keyboard's directional keys are supported. It is possible to position the cursor anywhere on-screen by using these four keys. However, because there is no way to simulate a double-click or to simulate holding down a mouse button while using these keys, they cannot be used for dragging and selecting.

That's a shame, since some word processors on other computers (notably AppleWorks on the Apple II)
allow quite a bit of “mouse-style” selecting with such keypad directional keys using various ways to keyboard-simulate a mouse button. For now, the Mac Plus directional keys can be mostly used (in this word processor subprogram) to scroll the screen up and down without resorting to dragging the mouse or clicking on the up and down arrows in the vertical scroll bar.

Like Microsoft Word, the MS Works word processor is a paragraph- and line-oriented word processing system. A format ruler can be called onto the screen at any time. Whatever is established on that ruler as far as left margin, right margin, tabs and indentions will affect only the paragraph that the cursor is within. If, however, the paragraph selected is the last paragraph in the text, the ruler’s settings become the default for successive paragraphs as they are typed in.

Also, as in Word, the cursor may be moved to the extreme left side of the screen, where it changes into an arrow pointer. In that position you can click to select a line, double-click to select a paragraph or drag to select an area of the document.

Selected text can be set flush left (ragged), flush right, centered or justified using the Format menu. Again, like Word, these changes apply only to the selected paragraphs or lines.

But unlike Word, setting the font and style of the text is not done via a dialog box. Instead, two menus that are similar to MacWrite 4.5’s Font and Style menus allow you to mouse such effects into being.

The Font menu lists whatever fonts are available in your System folder. Choose a font with the mouse and the chosen font is check-marked. There’s a quirk here: the fonts don’t appear in alphabetical order as you’d expect on a machine with the new ROMs, but rather they appear in the reverse of the order they were installed in. That is, the last font installed will be at the top.

The Style menu allows you to set textual effects such as bold, italic, underline, outline, shadow, supersubs and subscripts as well as setting the type size as measured in points.

As in MacWrite, page breaks are shown on-screen as you enter text. (This, in my opinion, is a far better method than Word’s requirement to hit a command key and wait to see the page breaks.) As in Word, Page Setup allows you to print to just about any size of paper. It’s easy to design various margin sizes to fit your work onto whatever medium you are printing.

The FIND and REPLACE commands are both easily used via the Search menu. And, that menu’s GO TO PAGE # command can take you swiftly to a specific area of your document.

The word processor function does lack some features of its big stablemate, Word. In Word, it is very easy to copy a format from one paragraph to another. It is less easy in this word processor. There is no ability to make on-screen measurements in printer’s terms (points and picas). And you can’t do multiple-column layouts.

Remember the tasty dollop of MacPaint promised? Under the Edit menu is a command called DRAW. The DRAW command, when chosen, brings up a dialog box from which
you can choose some drawing tools. However, compared to MacPaint's or MacBillboard's storehouse of artistic tools and techniques, this is a stone-age drawing ability.

The dialog box allows users to choose from 12 primitive shapes. Hollow circles, rectangles and rounded-corner rectangles may be drawn anywhere on a page as may lines — all in three different line widths.

As in MacPaint, you position a corner of a rectangle and drag until the rectangle grows to the size and shape you want. Then just drop it on the page.

You can then return to typing, and type over, or up to, or around the various lines and shapes you have drawn. Or, you can type first and then drop lines and circles into position around your previously entered text.

The Draw function was somewhat disappointing, although in some respects it is revolutionary to see it in a word processor. For one thing, every time you change a tool you have to first quit the draw mode and then re-enter it. Second, there are far too few tools available. There is no lasso or selection rectangle, eraser or paintbucket. Indeed, there is no way to shade shapes. And, most surprising of all, there is no pencil to draw with frehand or with which to flourish your signature.

The Draw feature will come in very handy for some people as it does allow for the look of various business forms to be transferred to the screen. But other people will find the function more tantalizing than useful in its present incarnation.

All in all, the word processor in MS Works is more capable than MacWrite 4.5 and, in some respects, easier and more enjoyable to use than Word.

**SPREADING IT ON**

Let's get this said right away — the spreadsheet in MS Works is not going to keep Excel buffs up all night. Neither will it seriously threaten the positioning of Multiplan.

What you get in the spreadsheet and charting subprogram is a very workmanlike spreadsheet that follows the Macintosh interface, coupled to some modest abilities to chart the figures sheeted.

The 230 columns (labeled alphabetically by 9999 (numbered) rows result in over two million possible cells (OK, if you insist, it's 2,299,770). Of course, you will only be able to use as many cells as memory allows, and that will be about the same on any spreadsheet for the same information.

The Mac interface here is pretty much the same Mac interface as in Multiplan. Click on a cell to highlight it, or drag on a range of cells to highlight more than one. The Mac Plus directional keys are supported (again, with no way to keyboard-simulate clicking the mouse button in order to drag).

As in Multiplan and Excel, selecting a cell and typing takes you to the edit line at the top of the form. As you type you can use the usual text-editing elements (double-click to highlight a word, click to insert cursor and so on) on that edit line to correct what you are entering. You can accept what you have entered by hitting return or clicking on a checkmark icon — or you can easily delete everything on the edit line without entering it into a cell by clicking on the large X-shaped icon.

Yes, the same Mac interface that took the spreadsheeting world by firestorm in 1984 is all here. You can resize column widths by positioning the cursor on a column border and dragging that column's border. You can select entire rows or columns with a simple click, and you can easily drag to highlight cells all around the sheet.

It's easy to design formulas. If a formula is needed to add one cell to another, simply click on that cell, type a plus sign, click on the next cell and so forth. To select a range of cells for a formula function to operate on (such as SUM) just drag to highlight the range of cells the function should act upon.

There are 64 of these functions which include categories in math, statistics, trigonometry, logic, finance and some special-purpose ones. For most uses, the functions represented in this spreadsheet sub-program are all that will be needed.

It's easy to use these functions, thanks to the PASTE FUNCTION command in the Edit menu. When this command is chosen a dialog box that can scroll through all of MS Works' various possible functions is presented.

Formatting a spreadsheet is also quick. Once selected, the contents of each cell may be aligned left, right or centered within the cell with a quick selection and click.

Numbers may be displayed in a generalized format, or in fixed, dollar, percent or scientific formats. And the number of decimal places, and whether or not to use commas, may be set. All of these commands are available under the Format menu of the spreadsheet.

Another nice touch is the ability to set each individual cell as normal text or as either bold or underlined text. However, there is no capability for utilizing different fonts or special effects such as outline or shadowing.

The gridwork of lines defining rows and columns can be turned on
Mac Features:
- Full-down menus
- Clipboard
- Cut, Paste, Scroll
- Mouse control of spreadsheet
- Desk Accessories
- 400K, 800K, HFS compatibility

SYSTAT Capabilities:
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- Basic statistics, frequencies
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- Multiple and canonical discriminant analysis, Bayesian classification
- Canonical correlation
- Cluster analysis (hierarchical, single, average, complete median, centroid linkage, k-means, cases, variables)
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SYSTAT operates on the following machines:
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or off under the Options menu. This is unlike Excel wherein each separate cell’s four individual borders can be set. If you want to make a spreadsheet that looks like a business form, it’s back to the word processor segment. Other Option menu commands include the ability to protect cell fields as well as to engage and disengage manual recalculation routines.

Oh, and did someone mention the capability of split-screen? That’s the ability to set up “panes” of information within the window being worked in. MS Works allows a window to be split into four panes. You can split both horizontally and vertically.

Once your values are spreadsheeted you can avail yourself of the Chart menu to see series and/or pie charts based on your data. However, in keeping with the MS Works philosophy of positioning itself as an introductory package, the charting facilities pale next to those of either Chart or Excel. On the other hand, if it does what you need then that’s probably all you need.

What the routine does do is to present a quick and easy way to get an on-screen chart (series or pie) and a printout of that chart.

When you choose to plot a new chart you first enter a Definition Screen dialog box. This box allows you to choose between four types of such charts; line, bar, stacked charts or a “combo” chart of both line and bar graphed on the same set of axis.

In this dialog box you tell the program where to find the rows and columns of data that need to be plotted, and where the rows and columns are that will serve as markers for the horizontal and vertical axis. You can also type in a title for the chart itself as well as titles for both X and Y scales. Although the program attempts to automatically fill in these choices, based on default values for where such data and labels are to be found, you will almost always have to manually correct these values in order to obtain a usable and properly informative chart.

Doing a pie chart follows along a similar route as to the Definition Screen dialog box. But, there is only one style of pie chart offered, so there are no stylistic choices to be made.

The wealth of formatting commands (typographic special effects, area resizings and so forth) along with many different, additional styles of charts found in Excel and Chart are all unimplemented in MS Works. But that’s not necessarily a negative feature, because of the market for which MS Works is targeted. The charting capability of this program fulfills its most basic goal, which is to present data to the user arranged in a pictorial manner so as to make it easier to spot such things as trends. For all but high-level business use and presentations, MS Works’ charting features should more than suffice.

**A LUST FOR LISTS**

The database and list feature of MS Works are very complete, easy to use and comprehensive. Defining your data base in the Database Form window is mouse-oriented. A dialog box first asks if you want to add a field, and what that field’s title should be.

The title appears as a box on the form with another boxed, empty space following it. Using the mouse, the user may position the field title anywhere on-screen. Once the field is positioned the field length is adjusted, again via mouse, by dragging the margin of the boxed, empty space so that it contains the proper number of spaces for that field.

Field attributes are set by choosing a field and then selecting SET FIELD ATTRIBUTES from the Edit menu. Possible attributes include selecting fields to function for text, numeric, date or time data. Various styles are available for each of these attributes to help format the data as well as aligning to the left, right or center of the data’s cell in the List window (explained below). The data may also be typographically formatted in each separate field as bold, italic or underlined (but without font changes or size changes).

Computed fields are also easily designed. A computed field will obtain its data from the data in other fields. When you click on the Computed field choice, you will be asked to type in a formula, which can interrelate the various numeric fields you wish to work with. Such a formula may contain most of the functions that could be utilized within a spreadsheet (except functions, which call for ranges of data). Field names may be entered into formulas simply by clicking on the field name(s).

Fields are added one after the other in this manner until a complete form is designed. While the actual look of the form is only a visual frill, it serves an important use because the Database Form window may be the only way to see all fields of a complex record at the same time.

Another way to view your data base is to use the List window. The List window looks remarkably like a spreadsheet, with each column being headed by the name of a field and each complete row containing one record of multiple fields, and it can...
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The TimeWand’s recharging/download station uses a standard RS232C serial connector that allows you to communicate with the wand through a variety of host computer systems. Since the communication is keyless, the scan information is sent quickly and error free. Currently, software packages are available for the IBM PC (and compatibles), Apple //, and Apple Macintosh personal computers.

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TimeWand (2K version) - $198
Recharger - $149
TimeWand Manager Software (Macintosh) - $499
TimeWand Communications Software (IBM) - $299
function in a similar manner.  

It is possible to click on a List window cell and add, edit or delete an individual entry for a field within a record. When a cell is chosen the edit line at the top of the window works exactly the same as in the spreadsheet area and gives you access to all of the Mac's text-editing capabilities for the data you're entering. In the List window, you can easily change the presentation of the fields as far as their order. If you want field one to come after the present field three, just click on field one's heading with the mouse and drag the entire field to its new position. The other fields will move to compensate. An interesting thing to keep in mind is that the List and the Form windows are completely separated as to such changes on one affecting the other. For example, if on the Form window you have designed a "Name" field as field #1 and an "Address" field as field #2 it will not change that order of presentation on the Form window if you shuffle the fields about in the List window. The List window (which, keep in mind, looks like a spreadsheet) and the Form window (which is an informal full-screen presentation) are simply two independent methods of visually tracking the same data. The data always remains constant, only the representations change. Once you have entered the data you will probably want to work with it or, as the power users say, "massage" it. MS Works is one of the friendliest of electronic masseuses. Fields can be quickly sorted by selecting and highlighting the field name in the List window and then mousing to the Organize menu and choosing SORT. Such sorts may be done alphabetically and numerically as well as chronologically (and always in either forward or reverse order). 

The MS Works massage really begins to knead its magic with the MATCH RECORD and RECORD SELECTION commands under the Organize menu. MATCH RECORD presents a dialog box into which you enter any string of numbers or text. Then MS Works will simply find "Name" and then on the "Equals" operator and then type Jones into the text box provided. Choose select and all the people you know named Jones will have their records presented to you. You can continue stringing rules together in an "and/or" manner by clicking on the buttons in the dialog box which control these modifiers. You can wind up with a rule that will search for "Name" fields containing "Jones" and "Address" fields containing "New York" and "Phone Number" fields that do not contain the word "unlisted" — and so on.  

The data base in MS Works is truly intuitive and a pleasure to use. Of course, it does not have many features of more complex data bases such as hierarchical file structures, graphics support and the like. But, again, for the target audience it hits a bullseye.

THE TERMINAL END 

Telecommunications has become a way of life — and business — for tens of thousands of Macintosh owners. MS Works also allows the user to utilize his or her modem to access on-line services, networks, BBS systems and other Macs and computers. While the terminal subprogram could not fairly be described as "bare bones," it lacks a number of features that are available on almost every commercial standalone product. On the other hand, it is more complete than any terminal program in any other integrated software package for the Macintosh. You can easily, via a Settings dialog box, change and set such variables as baud rate and parity — all of which are settings that must be made with any terminal program in order to "match" your Macintosh to the computer that you are calling. Dialing the other computer involves setting up a phone number dialog box under the DIAL command. In this dialog box you can type in up to eight names of services or computers that you call and an associated phone number for each one. After you have done that it is a (continued on page 161)
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STOP FOR A MOMENT, PLEASE, and take a look at the “family tree” of Macintosh databases. The first generation (year one) gave us ease of use, but few new features. During the next year (the second generation), great computing power arrived, but still, the domain of a Mac programmer or applications builder was a complex, esoteric one at best. Choices were limited to languages like Pascal, C, Forth and 68000 Assembly.

Even the medium-level languages found in programs like MacLion, Omnis and Excel require a line command style input and make you repeat seemingly extraneous characters (such as, {parens}, [quote] marks, “brackets” (and the like)).

Now a third generation has arrived, in the form of Double Helix. Double Helix automates all that stuff. You are able to build at the highest level possible, which means true click and drag programming!

Double Helix is an environment to generate custom applications built around a database-type framework. It contains enhancements to Helix.
version 2.0 and adds several new features, including custom menus, subform windows, relation/collection password protection, and a universal dump and load (parser).

Within the framework of a database structure users are able to build, use, and modify or expand a complete small business application. As many separate databases (relations) as you want can be linked in almost any pattern you could think of. For instance, you might have clients, inventory, sales orders, invoices, payments, production, purchase orders, employees, etc. Double Helix's subform feature gives you multiple lists from different databases compiled and displayed in a single window.

A few examples: one relation might create mail-merged form letters complete with calculated fields for quotes, choose between various stored paragraphs or pictures based on numeric data, and include a client's logo. Another relation might create financial tables and reports, available for printing within minutes of data entry. This, for instance, could be a warehouse daily report of truck deliveries sent as a simple text file via modem and loaded into an accounting relation.

APPLICATIONS
Double Helix really starts to stand out from the database crowd when you want a program to handle a unique, personal situation that has become too complex to keep track of easily. For instance, it is common for someone to run a small business out of their home, manage an apartment or several rental properties, help with club or union dues and mailing, keep track of inventory for a hobby like photography, and perform several other tasks in the course of a single day.

Without great difficulty, a template could be written to do all these tasks. It could display lists of what needs to be done on a priority basis or read out your up-to-the minute complete financial situation. A Double Helix template could combine your address/mail lists, appointment calendar, phone log, written correspondence, checking records, expense account, and anything else you might think of.

Flexibility in creating a custom
AS THE HELIX TWISTS

Any ASCII character may be selected, but you may have to muck around first to determine just what field separators your text file uses.

In this example of a small family run hotel, we see a floor level status window. There would also be an overall view of all the floors with each room as a small box either black or white. Another view would be at the room level showing furnishings, fixtures, occupant, check-in/check-out date/times, etc.

application opens up new possibilities, but it also makes users sit down and really analyze exactly what their needs are. Precisely defining one’s specific computing and printout needs is really the hardest part in creating a Double Helix template, that is, what information is to be input, what calculations need to be made and what method should be used to compute the answer, what is to be saved to disk and what is to be looked up, will you use preprinted forms, and several other details.

Getting down to actual programming is the easy part. Double Helix’s simplified iconic style even makes it enjoyable to think up new features for yourself and make them happen in a few hours (days). Our big blue counterparts still need to call in the programming specialist, who gets a staggering salary and takes two months (years) to create that new smart (autogenerated from invoices) sales commission/payroll module.

The custom menus feature of Double Helix has to be one of the finest examples of the Mac style. To create a menu heading, click in the menu area and type. Then scroll through a list of windows (selections) and drag the name right up to the menu heading. Click OK. Think you can handle it? If not, there is an AUTO button that creates one menu heading per relation and one menu item for each selection window.

It is important to remember that Double Helix is concurrent with the much-heralded age of desktop publishing. Double Helix creates a wide variety of output screens and reports that go hand in hand with the new generation of 300 DPI and up laser and very high resolution typeset quality printers.

Double Helix’s ability to store pictures as data fields also extends its usefulness. As data fields you might have mug shots of personnel, parts diagrams, office location maps, architectural drawings of offices showing equipment, project flow charts, graphic borders for publications; you get the picture. Graphics may be used effectively as flags and alerts as well. It’s hard to ignore a $.

It is even possible to create a status diagram consisting of several adjacent picture fields, with each field displaying conditions by its own complex calculation/criteria. Perhaps a graphic composite/status work assignment map would be a useful way to print out data.

Another interesting approach to the use of graphics in Double Helix is with Fontographer. This program allows you to create a PostScript “font” of small drawings, thus giving you drawings with a keystroke and “pictures” in an alphanumeric field.

Note that when printing these custom documents to a laser printer, the print file can be saved to disk and further formatted with a wide variety of fancy PostScript language commands like spiral and slanted titles. These files may immediately be sent by network/modem to a typeset level (1400 to 2500 dots per inch) printer for publication. So Helix could be used to autogenerate a publication using data entered and calculated from several databases or collections.

HARD KNOCKS OF REALITY

Let’s take a hard look at the realities of creating a custom Double Helix application. What will you need to set up a custom application?
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AS THE HELIX TWISTS

The variables are hardware, software and template construction time. There is structural planning, template writing, and real life refinements/additions. Ideally you will work from an existing template and customize it for your specific business.

While Double Helix functions perfectly in a 512K/floppy disk environment, the fact is that once you have a working template, you will be continuously entering and creating data, necessitating a mass-storage device. Remember that Double Helix is a powerhouse and you will want to build additional relations, so planning for growth is very important. Hardware wise, the Mac Plus is a fine environment, but I use and recommend at least 2 megabytes of RAM for serious business use. The speed gains can be dramatic (up to 30 percent in the case of the Levo 2-meg board). Also, you want the System folder, Double Helix, and hopefully your entire data file held in memory for maximum speed (faster definitely equals better). The new 128K ROMs and 800K drives must be considered mandatory, not optional. I noticed an eightfold speed up in the time it takes to back up a Double Helix template over the 64K ROMs!

A useful system will include an SCSI 20-meg hard drive for day to day work and a 5- or 10-meg cartridge-type drive (or streaming tape unit) to back up data and serve as additional on-line storage space as needed. Dedicated printers for forms and labels are well worth the investment. A busy office will require them.

The only additional software really needed would be a macro program such as Tempo. Almost every command you do in a computer business environment is a repetitive task and that spells macros: macros to transfer a key field from one window to another, macros to print to a specific printer with a prompt to manually turn the printer switch on, macros to bring a hard disk volume online, macros to dump to a disk file with the date and time as the title, macros to load from a modemmed file and then send computed table to printer, macros to load more macros....

FORMS TO FOLLOW FUNCTIONS

It's hard to talk about limitations because the system is so flexible. But it is certainly true that you are basically limited to a database style, and there are many features one could think of that are not implemented. A function can almost always be made to work, but sometimes not in the way you might like. For instance, making yes/no choices on a form might be done by typing y followed by tab, if the field is a flag format, or by typing any character in a text field and then looking to that field with an "If [field] is defined then true" abacus. A simple Mac "radio" click button would be faster, but the previous method does add qualiﬁcations over a basic y/n response. Similarly, you cannot double-click on data fields and have them "open" up, but you could pull down a custom menu item to display the same data (graphic or alphanumeric).

One thing Double Helix can't do is overlap label and data rectangles (it would be nice, but not having it is not a tragedy). Also, you cannot list
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TRICKS OF THE TRADE

It's more efficient to create many separate relations and then subform the data to other places than to put different types of data in one relation. For instance, an invoice relation can have the product/quantity information entered from an inventory relation and the ship label looked up from client relation.

Carefully consider the scheme of how you will display information. Here's a case in point: You decide to keep track of inventory each morning by opening a status window, viewing the information and pressing ENTER. An InStock abacus looks up the most recent entered total, adds products purchased/produced since the last report and subtracts the product invoice quantities since the last report. This saves having to look through the entire invoice database each time you want to compute inventory. But then, if you ever want to go back and change an invoice quantity (partial return or refund), inventory will not be automatically updated.

An old Okidata 92 printer that feeds the forms from the bottom (with the printer sitting on a frame-type stand) accepts thick UPS labels and solves a common office automation task. Hint: Make sure the printer is ImageWriter-compatible and use the Lisa DIP switch setting when sending from a Mac. The Mac Plus changes the setting requirements, so you may have to fiddle around to get it to work. Even an old ImageWriter needs a different setting with the Plus.

When setting up data entry screens, the first tab field should be the main key field. This simplifies COPY/GO to another window/PASTE/ key field routine. It is a good idea to place the fields that are the most likely to be overlooked right up near the top of the form to help ensure they are filled in.

Create 'smart labels.' For instance, an abacus for a label field on an invoice could be [If Terms=COD display 'COD AMOUNT' else if Terms=prepaid display '-2% CASH DISCOUNT'] A corresponding abacus would similarly calculate the appropriate numbers.

Remember that an abacus will not calculate if the field has been entered (posted), that is, the field rectangle contains both an abacus icon and a field icon and the record has been entered.

If you want to put several different types of information into a key field, remember to put unique information first and less important modifiers last. This will allow you to use a Starts With tile for flag searches, which is must faster than a Contains. Let's take an example from an inventory relations point of view: Unique product information like first digit, type, second digit, size, third digit, style, followed by less important fourth digit, box color, fifth digit, price schedule, sixth digit, shipping method.

But what if you want to look at the total amount for all invoices with price schedule "D"? Well, you could put a separate price schedule field and post it or go ahead and do a Contains. Either way you'll want to create an index for the abacus to minimize lookup time. Even a client code (Inquired, Ordered, Dealer, Credit approved, etc.) needs to be thought out for maximum efficiency.

Here is a very handy alert to keep from entering duplicate key fields in a clear form. [If 'Lookup Key for Key = Key'] Naturally, this alert will be present whenever you are looking at an entered record and thus a reminder that you are in a clear form.

Double Helix. However, the dramatic improvements in speed are due to the use of the new ROMs. No more waiting around for icons to move. Although performance does depend on template complexity much depends on an efficient scheme for the abaci. So how fast is fast? Well, I'll say that in the recommended system and with an efficient template, Double Helix is a serious contender for real-time business situations.

It would be fair to say that Double Helix version 1 is intended as a developer's tool to create vertical market applications and as such is sometimes difficult. The process of defining subform queries, indexes, and match criteria has a tedious annoying way of displaying "marching ants" through the choices until the window has valid criteria. The DUMP and LOAD options are comprehensive but it is not obvious what they all are for. The DIF and SYLK file formats were not implemented in this first release of Double Helix, but they do show up as grayed out options, indicating future availability.

Double Helix is as much an environment as a program. The publisher, Odesta, has made a clear commitment to continue the evolution of the product and this means that applications written for Double Helix are fully ready to be enhanced with new levels of functionality.

The future holds Multiuser Helix, which will run any Double Helix application, allowing full interactive use right down to the field level. Your small business application can grow to become an entire system accessible to all the departments of a growing company via an AppleTalk local area network. And then there's Remote Helix. It's an extension of Multiuser Helix that allows you to directly access your entire Helix collection over a modem line. I'd say that's a pretty attractive upward path to look forward to.

David de la Vega is a San Francisco area Mac consultant/writer.
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Dear Reader,
Thank you for your interest in the TDI Modula-2 compiler. Here are some key features of the compiler:

- **Modula-2 Compiler**: TDI Modula-2 is a compiler for the Macintosh, designed to work as sharply as your Mac's. It includes support for True integer operations, Direct port and Memory access, Absolute addressing, and separate compilation.

- **Modula-2 Source Code**: Contains the source code for the compiler, which is written in Modula-2. The source code is available for download and can be compiled and run on your Mac.

- **Benchmark Results**: The following benchmarks were run on the TDI Modula-2 compiler:
  - **Compile**: $5.8$ seconds
  - **Link**: $5.1$ seconds
  - **Execute**: $5.3$ seconds
- **Optimized Size**: 787 bytes

- ** FEATURES **
  - Truth-value type conversion
  - Symbolic operators
  - Automatic type checking
  - Full-screen editor
  - Resource compiler
  - Mac module source files

- **Product History**
The TDI Modula-2 compiler was first released in 1986. It has been updated several times, and the current version is compatible with Mac OS X.

- **Version History**
  - **5.7**: Initial release
  - **5.8**: Significant optimization
  - **5.9**: Added new features
  - **5.10**: Improved performance

- **Regular Version $49.95**
  - Developer's version $54.95
  - Commercial version $29.95

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The Renaissance Man
YOU CAN NOT SEE THEM, BUT they are there: lines. Connections. They stream from your Macintosh (though some exist as ghosts inside); call them connections or pointers or references or links.

There are stories, rumors, even facts. But mostly opinions. The truth as opinion. Truths that before were unsaid; and facts that shuffled and lurked: despicable things that fled from print. Factoids.

The great. The good. The bad. The hot. The not. The cool. The cold and wicked. The unsung. And the overblown.

But there are pins for empty balloons. And the latest in harp technology for songs that need to be sung. So let’s smite. But also sing. And sometimes mourn. (And, in the worst tradition of journalism, let’s second-guess.)

(MUCH LATER...)

Where were we? The thread is gone. There was a crash. A “Serious System Error.” Video fireworks. It might have been an address error, or an illegal instruction. It may have emanated from the application, or a misbehaved desk accessory, or an electronic hiccup deep inside the ROM.

Let’s mourn. Let’s mourn this: that Bruce Horn didn’t get his way. Bruce, with Steve Capps, wrote the Finder, and laid much of Macintosh’s conceptual foundation. Bruce conceived “resources.” Bruce is smarter than you or I will ever be.

And he wanted Error Management. Error Management is hot. Bombs are not. But there was a computer to ship and money to make.

More things to mourn: InfoWorld without John Dvorak, Macazine without Charlie Jackson, and Computerdom without Andrew Fliegelman.

The nots. They are more:

WHAT’S NOT

by Doug Clapp
A man stands in the aisle at a computer show, handing out leaflets. Most passersby take a leaflet. It's easy: you reach your hand out and take one and stuff it into your bag.

Two young women in crisply tailored suits walk by. The man smiles and reaches out to hand them a leaflet.

The women, in unison, crinkle their noses. The man smiles and says "Hey, they're free!" The women sneer and walk past, toward the Apple booth where their shifts are about to begin.

Apple snobs. Apple snobs in sharply creased little tan suits.

Here's an idea. Let's make'em all start work at Apple this way: in a hot garage, with a soldering gun. Here're the chips, there's the board, get to work.

You can be cool later. First, be a "little guy."

And why not a pin for Lotus? A phone conversation — true, trust me — before Jazz was released:

Caller: "Isn't $595 kind of...ah...expensive?"
Lotus PR person: "Actually, we have done surveys that showed that people would gladly pay much more than that, but we decided to price it at only $595."

To Lotus Development: A "Cheesy at Any Price" pin. Place it on their three-piece suits.

There's the agony of psoriasis and there's the odor of elitism. What's uncool?

Try this:

An ad in the June issue of Personal Publishing magazine. The headline copy that kicks off the full page ad is this: "Some bad news for the little Mac."

The company is hawking their third-rate word processor, Spellbinder. Only now it's retitled Spellbinder Desktop Publisher.

Morals: Saying it's so don't make it true. Companies make cheap shots. If it don't quack, it ain't a duck.

Let's face it: Macintosh is to the IBM PC as the IBM PC is to writing on clay. In cuneiform with a stylus. Except the IBM isn't as fast.

Then there are merely bad products. Not interesting, not so terrible you can make fun of them. Just bad. (Here's where the author thinks: "Boy, wish I had another 5,000 words!).

Have you seen "Aliens" yet? Remember the part where the colonists get glued into a wall, to incubate and hatch alien monsters?

I've got a Mirror Technology internal 20-megabyte hard disk. My Macintosh, I'm sure, feels like those colonists:

ARGH! GET THIS THING OUTA ME!

(Why do I get the feeling the Mirror will want their drive back after they read that paragraph?)

But enough, there's a parade. Good things. And not always the "latest and the greatest," or the product with the largest, most colorful ads.

Lode Runner — a fine maze game. Fun, and don't worry about mastering the many levels in a month, or a year. Pinball Construction Set — amazingly easy; kids love it, and programmers can take an "object lesson" from Bill Budge's invention and taste.

And Championship Boxing gets much play from neighborhood 8-year-olds. If you hate boxing, you're gonna really hate Championship Boxing. It's great. (And if you're a student of the Macintosh User Interface you'll find much complexity, well represented. Food for thought.)

And if playing Wizardry feels more like bookkeeping then game-playing, try Dungeon of Doom, a massive shareware adventure game. Monsters and treasures and sound
and fine graphics. And it's free, if you're a jerk, or $25, if you're not. Don't be a jerk.

Not that the "latest and greatest" aren't sometimes great. Servant — Andy Hertzfeld's latest gift to civilization — will be better than you could hope. I wonder if Andy's old enough to run for President? I wonder if he's tall enough to run for President? (I know I keep bringing up "Hertzfeld for President," but it's a good idea. Maybe we can start a draft. Hope he's a Democrat.)

Then there's LightspeedC, a C compiler from the folks that did Macintosh Pascal. Mac developers, fickle creatures all, are flocking to LightspeedC.

The phones at Consulair and Aztec are suddenly dead. Capitalism lives.

My recommendation: buy LightspeedC for the "About..." box. The greatest "About..." box you've ever seen. Three-D, stars whizzing by....

If you like the "About..." box, get Orion, a public domain simulation. Orion lets you whiz through space, to distant stars. It's just neat.

The parade marches on.

U.S. Robotics sent me a 2400-baud modem. (Which is like giving an inveterate gambler a "Win at the Slot Machines!" book. "No, honey, we won't be buying any groceries this month. The phone bill's sorta, ah, stiff.")

And, you know: it's a modem. Lots of holes in the back to plug things into. And it needs a cable — it doesn't come with a cable.

The manual assumes you have an IBM. IBM examples. Do this on your IBM. Always encouraging.

So I look in the "cable closet" (we all have one, right?) and pull out an old ImageWriter cable. And plug it in. What the hey. And plug in a couple of phone cords. And plug the power thing into the wall.

I try not to look at the huge DIP switch lurking under the modem. I do notice, though, that the front is LED strewn, with these letters underneath: "HS AA CD OH RD SD TR MR AL."

I'd hoped for icons.

Anyway, I turn everything on, load a communications program, grit my teeth, choose "Dial," and....

It worked! I didn't need to change a single DIP switch!

Boy, that's odd.

When I tell the story later, all my friends say "Oh yeah: U.S. Robotics. That's a good modem." As if I'd just spent the last 2 years in the Himalayas.

And I found out that the author of DietMac is the same guy who programmed MacExpress for Alsoft. I love DietMac; I have no use for it, but I love it. It's a beautifully done program.


The Gates interview, in particular, is good reading. It's nice to know that Microsoft's CEO can get down and code — count bytes and talk in hex — when he wants to. Gates' recounting of how Microsoft's first BASIC was squeezed into only 4K reminded me of another Gates comment. Something about the 128K Macintosh being a good thing, because it disciplined programmers into writing tight code. What a refreshing point of view! Viewing 128K as a worthwhile challenge, instead of snobby "128K Mac-bashing."

Now that we're all overpowered, it's easy to forget that Multiplan is a thing of beauty in 128K.

I don't begrudge Gates his 300-odd million dollars. I only wish that Microsoft would publicize their programmers, so other companies could steal them away with huge salaries. It'd be good for "The industry." The great. The good. The bad. The hot. The not. The cool. The cold and wicked. The unsung. The end.

Until next time. 
## SOFTWARE

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<tr>
<td>Quickset (icon-driven desktop access)</td>
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<tr>
<td>Quickword (word processing tool)</td>
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<td>MacGAS (spell checker, 512k, ext. drive)</td>
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<td>Smoothtalker (speech synthesis)</td>
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<td>Factfinder (free-form info organizer)</td>
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<td>FileMaker (custom forms &amp; reports)</td>
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<td>FileMaker Plus (updated version)</td>
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<td><strong>Hayden Software</strong></td>
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<td>I Know It's Here Somewhere (filer)</td>
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<td>Hayden: Speller (for Word &amp; MacWrite)</td>
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<td>M.U.D. (MacroMind Utility Disk)</td>
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<td>MusicWorks (songs for your Mac)</td>
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<td>DaVinci Building Blocks (req. MacPaint)</td>
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<td>Home Design (home planning tool)</td>
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<td>Score Link Movement System for the SAT</td>
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<td>VideoWorks &amp; Musically Bundles</td>
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<td>DaVinci Commercial Interiors</td>
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<td><strong>Idiomorph</strong></td>
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<tr>
<td>MacLabel (print desk labels)</td>
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<td><strong>InfoSpace</strong></td>
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<tr>
<td>MacServe (network software)</td>
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<td>Innovator (database design)</td>
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<td>Paste-Ease (requires MacPaint)</td>
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<td>MacDraft (new updated version, 512k)</td>
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<td>Type Fonts for Headlines (req. 512k)</td>
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<td><strong>Layered</strong></td>
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<td>Notes...For Excel (templates)</td>
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<td>Notes...For Jazz (in-line help DA)</td>
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<td>Front Desk (scheduling &amp; organizer)</td>
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<td><strong>Legisoft/Noel Press</strong></td>
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<td>ReWriter 2.0 (prepare your own will)</td>
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<td><strong>Linguist's Software</strong></td>
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<td>TECH (1000 different symbols)</td>
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<td>FOREIGN LANGUAGE FONTS</td>
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<td><strong>McPio</strong></td>
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<td>McPio - Volume 2 (req. MacPaint)</td>
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<td>Manhattan Graphics</td>
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<td>Ready Set Go (page processor, 512k)</td>
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<td>Flight Simulator (the Mac takes flight)</td>
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<td>Learning Multiplan and Chart (2 disks)</td>
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<td>Chart 1.0 (42 chart styles)</td>
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<td>Logo 1.0 (windows, turtle graphics)</td>
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<td>Basic 2.1 (Basic language interpreter)</td>
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<td>Multiplan 1.1 (63 columns by 255 rows)</td>
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<td>File 1.02 (flexible data manager)</td>
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<td>Fortran 2.1 (compiler)</td>
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<td>Excel 1.0 (power spreadsheet)</td>
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<td><strong>Miles Computing</strong></td>
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<td>Mac the Ripper (2 disks, req. MacPaint)</td>
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<td>The Perfect Score: SAT</td>
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<td>ComicWorks (create your own comics)</td>
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<td><strong>Monogram</strong></td>
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<td>Forecast (tax planning)</td>
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<td>Dollars &amp; Sense (home, small business)</td>
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<td><strong>PBI Software</strong></td>
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<td>1501 Soft (network customized icons)</td>
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<td>Icon Fun &amp; Games Library (req. MacPaint)</td>
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<td>Icon Business Library (req. MacPaint)</td>
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<td>HFS Locator (DA organizer for HFS)</td>
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<td>Hard Disk Backup (supports MFS, HFS)</td>
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<td><strong>Peachtree</strong></td>
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<td>Back to Basics General Ledger</td>
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<td>Back to Basics Accounts Payable</td>
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<td>Back to Basics Accounts Receivable</td>
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<td><strong>Polarware</strong></td>
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<td>OverVUE 2.0 (power-advanced database)</td>
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<td><strong>QED Information Sciences</strong></td>
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<td><strong>Rubicon Publishing</strong></td>
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<td>Silver Palette Collection (NY's finest)</td>
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<td>Dinner At Eight (recipes to wines)</td>
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<td>Dinner At Eight-Silver Palette Bundle</td>
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<td><strong>Safari</strong></td>
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<td>Build a Mailing List (mailing lists)</td>
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<td><strong>Sierra On-Line</strong></td>
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<td>MacOneWrite (cash disbursements)</td>
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<td>MacOneWrite (accounts receivable)</td>
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<tr>
<td>MacOneWrite (general ledger)</td>
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<tr>
<td><strong>Silicon Beach Software</strong></td>
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<td>Accessory Pak 1 (useful utilities)</td>
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<tr>
<td>MacOneWrite (printer utility, 512k)</td>
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<td><strong>Simon &amp; Schuster</strong></td>
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<td>The Mac Art Department (req. MacPaint)</td>
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<tr>
<td>Paper Airplane Construction Kit</td>
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<tr>
<td><strong>Typing Tutor III (learn to type)</strong></td>
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</table>
We'd like to think you're even stranger.

A walk on the weird side.
Back in prehistoric Mac times (early 1985) we held a contest to unearth strange-but-true Mac stories. Winners received $500 worth of Mac add-ons and software, and became stars of a series of MacConnection advertisements.

The response was overwhelming. Our customers were using their Macs to run detective agencies, back up heavy metal bands, even to help explore the frozen tundra for remains of old expeditions.

The odd get even.
Well, it’s time to find out what new heights of eccentricity you’ve achieved. Has your Mac saved your life during a terrorist attack? Have you used a Mac to predict how many times per episode of Miami Vice Don Johnson will say the word “pal”? Have you used a Mac to create a mutant life form that will save the planet from radioactive fallout?

We’re looking for adventure, romance, mystery, the occult. Mac applications that are so fascinating, far-fetched, or far-out that your fellow Mac fanatics will froth at the folicles, and feel all fuzzy around their foreheads. Oh yes. We’re talking serious strangeness here.

Send along any relevant snapshots, drawings, and/or newspaper clippings with your entry. Don’t forget to enclose your name, address and phone number. And keep a copy for yourself—everything you send us becomes the property of MacConnection.

What do I win?
$500 worth of free add-ons and software and instant fame! All entries must be received by December 31, 1986. The totally subjective decision of our judges is final. Good luck! And remember, whether you win or not, we at MacConnection are always here to fulfill your wildest Mac dreams.
### MacConnection

**Special of the Month**

**MIRROR TECHNOLOGIES**

MagNet 20X External Hard Drive

This reliable multiuser 20 Meg unit offers both speed and portability for your Mac. MacServe (a $250 value) is bundled free with the MagNet 20X, allowing other Macs to share data and peripherals.

- Plug into SCSI port
- Password protection for files
- Print spooling & file backup
- FastPort option provides SCSI interface for 512k owners

MagNet 20X: $925

MagNet 20X/FastPort Bundle: $1,049

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### GAMES

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<tr>
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<td>Millionaire</td>
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<td>Grand Slam</td>
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<td>Ballyhoo, Cutthroat, Hitchhiker's Guide</td>
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<td>Role Playing Adventure</td>
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<td>The Witness (standard)</td>
<td>Role Playing Adventure</td>
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<td>Zork I</td>
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<td>Zork III, Zork III, Sorcerer, Infidel</td>
<td>Adventure</td>
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<td>Mind Forever Voyaging</td>
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<td>Starcross (expert)</td>
<td>Strategy</td>
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<tr>
<td>Invincible (hint booklets)</td>
<td>Strategy</td>
<td>27</td>
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</table>

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### Facts, Mac Staff

- SoftStyle
  - ColorMate (ColorMate images)...
  - ColorMate (color printing utility)...
- EpsPrint (Epsprint driver)...
- Jetstart (Hewlett Packard Jetprint)...
- Laserstart (Hewlett-Packard LaserJet)...
- Decision Map (make better decisions?)...

### MacConnection

- Record Holder (flexible data manager)...
- Springboard
  - Art of Mac Vol. 1: People and Places...
  - Art of Mac Vol. 2: Variety Pack...
- Easy as ABC (ages 3-6, letters)...
- Early Games (ages 2-6, shapes, counting)...

### State of the Art

- Electric Checkbook (prints checks)...
- Symmetry
  - Acta (outline/writing desk accessory)...
- TMaker
  - ClickArt Personal Graphics (req. MacPaint)...
  - ClickArt Publications (req. MacPaint)...
  - ClickArt Letters (req. MacPaint)...
  - ClickArt Effects (req. MacPaint)...
  - ClickOn Worksheet (spreadsheet DA)...

### targE Software

- MacLightning (interactive spellchecker)...

### Telos Software

- Filevision (graphic filing program)...

### Think Educational

- MacEdge II (math & reading)...
- Mind Over Mac...

### TML Systems

- TML Source Code Library...
- TML Pascal (compiler, req. 512k)...

### TrueBasic

- True BASIC (fast, flexible & portable)...

### Algebra Utility

- Costo Utility...
- 3D Graphics Utility...

### Vide
x

- MacCalendar (includes reminder system)...

---

### GAMES

- Activation
  - Championship Star League Bassball...
  - Hacker (you're on your own!)

- Mind Shadow
  - Who Am I?...

- Borrowed Time
  - Murder mystery...

- Shanghai
  - Mah Jongg strategy...

- Alter Egg
  - Male or female version...

- Ann Arbor Softworks
  - Grid Wars (3D graphic arcade)...

- Artwork
  - Bridge 4.0 (sharpen your skills)...

---

### MacConnection

- Miles Computing
  - Fushanade (arcade-maze)...

- MacAttack (3D tank simulation)...
- Harmer Strike Mission (3D flight simulation)...
- MacWars (3D space simulation)...
- Mindscape
  - Rambo: First Blood Part II...
  - James Bond 007: "A View to a Kill"...
  - Stephen King's "The Mist"...

- Racer (converse with your Mac)...
- Balance of Power (world politics)...
- Brataccus (great graphics, req. 512k)...
- Uninvited (mystery adventure)...

- Deja Vu (murder mystery)...

### Origin Systems

- Exodoc: Ultima III (fantasy adventure)...

### PBI Software

- Strategic Conquest (war strategy)...

### Polarware

- Transylvania (rescue Princess Sabrina)...

### Sierra On-Line

- Frogger (classic video game)...
- Championship Boxing (knock 'em out!)...

### Silicon Beach Software

- Airborne! (digitized-sound war game)...

### Simon & Schuster

- Star Trek—The Kobayashi Adventure...

### TeX-Tech

- Wizardry (high-rated adventure)

### Spectrum Holobyte

- GATO (submarine simulation)...

### Vide

- FunPak (Solitaire and more)...

---

### MacConnection

- 1-800/Mac & Lisa 6300

---

*For Free Information Please Circle 82 On Reader Service Card.*
**HARDWARE**

**Assimilation**
- MID Conductor ........................................... $69.
- MacPort® Adapter ......................................... 75.
- Numeric Turbo ............................................ 129.

**Convertable**
- Mac to Hayes Smartmodem cable ....................... 16.
- Mac to ImageWriter cable ................................. 16.
- Mac Plus to Hayes Smartmodem cable ................. 19.

**Cuesta Systems**
- Datasaver AC Power Backup (90 watts) .................. call.
- Curtis Manufacturing
  - Diamond (6 outlets) ................................... 29.
  - Emerald (6 outlets, 6 ft cord) ......................... 36.
  - Sapph (3 outlets, EMI/RFI filtered) ................. 47.
  - Ruby (6 outlets, EMI/RFI filtered; 6 ft cord) ...... 50.
- Epson
  - FX-35 printer ........................................... call.
  - FX-286 printer .......................................... call.
  - LC-1000 printer (letter quality) .................... call.
- Ergotron
  - MacTilt (includes external drive bracket) ........ 75.
  - MacBuffer 525k ........................................ 259.
  - MacBuffer 521k ........................................ 389.
  - MacBuffer 1 Megabyte ................................. 569.
- Hayes
  - Smartcard II (communications software) .............. 89.
  - Smartmodem 1200 ....................................... call.
  - Smartmodem 2400 ....................................... call.
  - Smartmodem Package (includes modem, Smartmodem II and cable) call.
- Teakwood
  - Printer Stand 24" .................................... 29.
- Teakwood Roll-top Case ................................ 11.

**DISKS**

**Single-sided Diskettes**
- BASF 3 1/2" Diskettes (box of 5) ................. 9.
- Memorex 3 1/2" Diskettes (box of 10) .......... 15.
- Sony 3 1/2" Diskettes (box of 10) ............ 17.
- Verbatim 3 1/2" Diskettes (box of 10) .......... 17.
- MAXELL 3 1/2" Diskettes (box of 10) .......... 17.
- Fuji 3 1/2" Diskettes (box of 10) .......... 17.
- 3M 3 1/2" Diskettes (box of 10) .............. 19.

**Double-sided Diskettes**
- BASF 3 1/2" Double-sided Diskettes (box of 5) .... 26.
- Sony 3 1/2" Double-sided Diskettes (box of 10) . 26.
- Verbatim 3 1/2" Double-sided Diskettes (box of 10) . 26.
- 3M 3 1/2" Double-sided Diskettes (box of 10) .... 27.

**INFORMATION SERVICES**

**Compuserve**
- Compuserve Information Service .................... 27.
- Compuserve Information Service (subscription & manual) ........ 30.

**ACCESSORIES**

**Automation Facilities**
- Floppidene Drive Care Kit .............................. 15.
- MacPak Complete Care System ....................... 29.
- Clean Image Ribbon Co.
  - Clean Image Kit (cleans printhead) ............... 12.
- Computer Coverup
  - Macintosh II Cover .................................. 8.
  - Mac Plus & Keyboard (two covers) ............... 10.
- Diversions
  - Underw Paper Ribbon (iron-on black transfer) .... 9.
  - ColorPack (add color to transfers) ............... 10.
- Environmental Software Company
  - The Clutch (holds 8 disks) ......................... 9.
- EasyPort (flip-stop nylon covers) ................. 9.

**OUR POLICY**

- We accept VISA and MASTERCARD.
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**SHIPPING**

Accounts on net terms pay actual shipping.
Nine spelling checkers reveal their innermost secrets.

BY F. MICHAEL BAYLES, STEVE PHILLIPS (Editors-in-Chief) AND MELANIE BARNES (Managing Editor) OF THE MACINTOSH JOURNAL

YOU SAY YOU DON'T SPELL REAL well? Or your fingers don't type exactly what your brain wants them to? And dictionaries are big, heavy and slow to use. Anyway, how do you find the word if you don't know how to spell it? The answer is a spelling checker program, a piece of software that will solve all your spelling problems. Or should. Our reviews reveal that some come close, some do specialized checking better than others, and some just don't make it.

The May 1986 issue of The Macintosh Journal contained detailed reviews of eight spelling checkers. Each was put through a comprehensive set of benchmarks, and the results were charted and scored. A lot of the word data actually used, as well as the results, were published.

This article includes highlights from the individual reviews, a features table, suggestions for selecting the right spelling checker and recommendations (a product must receive a score of at least 6.0 to be endorsed by The Macintosh Journal), about the products we reviewed. We added one new product (MacGAS) and reran our tests on a totally new version (2.0) of MacLightning. If you feel you need more detail, the complete results are available in the May 1986 issue of The Journal.

SELECTING A SPELLING CHECKER

Here are some questions that you should answer before you purchase a spelling checker.

1. Determine your style of writing. Creative writers will find “check-as-you-type” spelling checkers quite annoying and will probably prefer “batch” programs that check entire files. If you are typing from prepared copy, an interactive dictionary can help you look up spellings, synonyms and hyphenation.

2. Select an accurate and comprehensive dictionary from the start.

3. Choose a dictionary with the capability to add and delete words of your choosing.

4. Choose a checker with a moderate-size dictionary, if you will use it with 400K disk drives.

5. Select a spelling checker that lets you view the suspect words in context. In spelling checker terminology a suspect word is one the program thinks is misspelled. Maybe it is, and maybe it isn't. It's important to see the word in context so you can be the final judge.

6. Choose a program that checks for capitalization.

7. Pick a spelling checker that is easy to use and operates quickly. Larger dictionaries slow the checking process, but may be worth the extra time if you have a large or exotic vocabulary.

8. Select a spelling checker that has the capacity to handle your documents.

9. Back up the dictionary after you purchase a spelling checker. As you build custom dictionaries, back them up so that you will never lose more work than you are willing to do over.

HAYDEN: SPELLER (VER. 1.2)

Overall Rating 7.3/10.0

Hayden:Speller (Hayden Software) is a flexible, batch-type spelling checker. Words from a text document can be added to as many personalized dictionaries as you want. You can convert any personal dictionary into a text file for editing, and you can add suspect words to a personal dictionary while checking a document. Hayden:Speller is the only spelling checker that allows you to print suspect or valid words on the ImageWriter or LaserWriter.

Two disadvantages of Hayden:Speller are the small size of its dictionary (20,000 words), and the number of unique words it can handle. The dictionary size problem can be corrected by adding words to the dictionary (an easy process), but the number of unique words the program can handle cannot be changed. If you want to check a document that has more than 1500 unique words, you must divide the document into smaller files, spell check each one, then reassemble the document.

While support for this product is adequate, it appears that Hayden:Speller has been abandoned before it
Hayden:Speller is another company. Watch our easy to permanently lose the ability to toss the User Dictionary into the trash.

We recommend that you carefully examine your needs and writing style before purchasing Hayden:Speller. Hayden:Speller is really useful only to people who work with small documents.

LIBERTY SPELL CHECKER (VER. 2.0)
Overall Rating: 5.8/10.0

Liberty Spell Checker (DataPak Software) is a desk accessory that checks spelling either instantaneously or in a batch mode. It can be used with virtually any application that uses the Clipboard correctly.

In the instantaneous mode, when a possible misspelling is noted, the computer displays an alert box and beeps. The user must then push a button to return to the word processor and manually insert the correct spelling. In the batch mode, Liberty scans any block of text copied into the Clipboard for misspellings, and then displays a list of misspelled words. A new version of Spell Checker recently released by DataPak allows you to install Search and Replace macros to automate the correction process.

Liberty Spell Checker was usually the fastest program in our batch mode speed tests. It also beat MacLightning in the instantaneous mode. However, Liberty Spell Checker was also number one in the quantity of suspect words found (most of which were actually correctly spelled).

And we thoroughly dislike Liberty Spell Checker’s copy-protection scheme. The master disk allows the end user to install Liberty Spell Checker a total of six times (which is inadequate). While the master disk can be copied, each copy is restricted to the number of copies left on the master when it is copied. It’s too easy to permanently lose the ability to make copies. This copy protection is not true protection, but merely harassment of legitimate users. The only other protected spelling checker is Hayden.

Liberty Spell Checker should find a niche checking text in those "awkward" applications (MacPaint, MacDraw, spreadsheets, etc.) where many checkers simply don’t work.

MACGAS (VER 1.0)
Overall Rating 6.3/10.0 (Aug 1986)

MacGAS (Glossary And Spellchecker) from EnterSet is very similar to MacSpell+ from Creighton Development. Both programs give the same feeling and both are somewhat similar in performance.

MacGAS is a very new entry on the market, yet it lacks some critical features. Words can be added to a supplementary dictionary, but added words cannot be selectively removed. The only delete function is to toss the User Dictionary into the trash.

MacGAS comes with both a small dictionary and an extended dictionary. We recommend that you use
the extended dictionary to avoid stopping on a great many correctly spelled words. However, we don't recommend you use MacGAS with the extended dictionary on 400K drives. Also, don't add words to the dictionary while you are checking long documents. It took MacGAS as long as 40 seconds to move from one word to the next in one of our benchmarks!

One excellent feature of MacGAS is its thesaurus. We spent considerable time just looking up word after word after word. The thesaurus also provides antonyms. Another good feature is the glossary. You may enter four-letter abbreviations for commonly used phrases or entire paragraphs. MacGAS will then call up the phrases when the abbreviation, followed by a delimiter (such as a comma), is typed. One caution—choose your abbreviations carefully or you will be backspacing a lot.

MacGAS isn't particularly fast and it doesn't have the most comprehensive dictionary, but it does offer an excellent thesaurus and a good glossary. If you need these features as well as a spelling checker add it to your list.

Spelling Champion's "alphabetical" dictionary has some words in scrambled order because of the scheme used to compress the dictionary. Words can be easily added to or deleted from the dictionary.

With Hayden:Speller, the suspect words are shown in context. You can choose to lookup, type, ignore, or postpone action on a word.

Liberty Spell Checker will check as you type (interactive) or it can check a text block copied to the Clipboard. Words are easily added to the dictionary and added words are displayed in the dictionary window.

CHECK IT OUT

MACLIGHTNING (VER 2.0)
Overall Rating: 6.3 (rating for version 1.0 was 5.7) (Aug 1986)

MacLightning (Target Software) is one of the spelling checkers that scans for errors as you type, and then beeps when you make a mistake. It also has an option to check a complete document or a selected portion of a document.

This program is very flexible and works well with a large number of applications. Its flexibility is further extended by specialty dictionaries (legal and medical) from Target Software. One nice addition to version 2.0 is a "delete" function for removing words from the dictionary.

The name, MacLightning, implies speed and Target claims to check 60+ words per second. These claims seemed too good to be true. We could never achieve speeds anywhere near the claims. The greatest speed we ever saw was some 12 words per second. As fast as lightning speed, there appears to be more thunder than lightning.

There are still a couple of problems with this program. In the interactive mode, MacLightning does not keep up with a fast typist. Version 2.0 is faster, but we were still usually one or more words ahead when the beep sounded for a misspelling. After using the program for several hours, you learn to ignore the beeps.

The inclusion of the complete Merriam Webster Ninth New Collegiate Dictionary has greatly increased the usefulness of MacLightning. You may want to purchase this product just to have its excellent dictionary as a desk accessory. We recommend MacLightning, as a spelling checker, to those whose writing style and temperament are adaptable to constant interruption. We can't recommend that MacLightning be used in its Check Selection mode of operation for large files. There are just too many good batch spellers that do a better job and are easier to use.

MACSPELL+ (VER 1.10)
Overall Rating: 6.6/10.0

MacSpell+ (Creighton Development) installs as a desk accessory and checks spelling smoothly and easily in MacWrite (2.2 and 4.5) and
The on-line hyphenation feature lets you determine where to break words while typing and the 75,000-word dictionary lowers the number of suspect words you have to review. However, MacSpell+ lacks some desirable features. It presents suggested spellings for suspect words, but does not allow you to scroll through it. The dictionary file is large and 400K disk drive owners will have difficulty using this program without swapping disks.

MacSpell+ has one very strong feature. Since it installs as a desk accessory, you don't have to close your file while you check for misspellings. However, MacSpell+ must finish its operation or be stopped before using the word processor again.

There are two major flaws with MacSpell+. First, MacSpell+ cannot display the words in its dictionary. Second, words cannot be removed once they are added to the supplemental dictionary. If you accidentally enter a misspelled word—you're stuck with it.

A minor complaint is that you can't enter hyphenation or thesaurus information. Also, new words that are added to the dictionary will not appear as guesses for suspect words.

Creighton Development gave us prompt and courteous attention when we called with a problem using MacSpell+ before you purchase it. 

One definite disadvantage of MacSpell+ is that it is limited to MacWrite 4.5. Also, there are no scroll bars in the dictionary. If you want to go from A to Z you must step through the entire dictionary.

There are other problems. We were repeatedly able to bomb the program on both a Mac Plus and 512K Mac when trying to add words to the dictionary and it is slow. MacSpell+ was never faster than fifth in our benchmark speed tests. Only Assimilation's other program, The Right Word, was slower than MacSpell+.

Overall, MacSpell+ is a mediocre performer. Unless you use a thesaurus regularly, MacSpell+ offers nothing outstanding in performance or features. And with the closing of Assimilation, there is no publisher support available.

MacSpell+Right checks for spelling errors directly in MacWrite (4.5) documents.

OSCAR-DOUBBLE

Two-Drive System

Place MacWrite and a system folder in the internal drive and MacSpell+ (SpeWThesaurus) in the external drive. MacSpell+Right does not have to reside on the same disk with MacWrite in order to be integrated and appear as the menu. The instructions provided in the manual were for a one-drive system.

MAC·SPELL·RIGHT (VER 3.3)

Overall Rating: 5.3/10.0

Assimilation's MacSpell+Right is a unique program that is "semi-batch" in operation. It doesn't check spelling as you type, but it is available as an automatically installed menu item whenever you enter MacWrite.

The user interface is generally easy to understand and use. You can start checking a document at any point in the document and can stop the operation at any time, even while searching for the next "misspelled" word. MacSpell+Right's dictionary is one of the top two or three dictionaries we tested as far as comprehensiveness. It also has an excellent on-line thesaurus.

Words are as easily deleted from Liberty Spell Checker as they are added.
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Acta is so powerful and so convenient, you’ll use it to prepare and organize your manuscripts, reports, journals, seminars, documentation, schedules and for almost any other kind of writing. And because it’s a desk accessory, you can now add the power of an outline processor to MacWrite™, Microsoft Word, or almost any other application.

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CHECK IT OUT

THE RIGHT WORD (VER 3.0)
Overall Rating: 5.2/10.0

The Right Word (Assimilation) is a spelling checker that will work with Word, MacWrite and Jazz. However, after using The Right Word, you may decide to let your fingers do the walking instead.

One of the few good points about The Right Word is that you have a choice of dictionaries. The 40,000-word dictionary displays suspect words in context and allows you to look up words in the main dictionary. The program will also make a guess at the right spelling. The 200,000+-version (XL) shows the suspect word in context, but no dictionary look-up or best guess are available.

This program has some annoying implementation problems. The dialog box buttons are too small, and it’s easy to choose the wrong box accidentally. Dictionary scrolling can only be done one word at a time. There is no way to skip over intervening words. When you finish correcting a document, The Right Word automatically returns you to the desktop. You must restart the program and wait for it to load before checking another document.

The biggest minus with The Right Word is speed. In our test using a large (approx. 12,000-word) article, The Right Word took over 2 hours to check the document and add all suspect words (584) to the dictionary, The Right Word wins our crippled turtle award for performance.

As for support, forget it! We were never able to get in touch with Assimilation. We recommend you avoid The Right Word. [MacUser note: Assimilation was in business when this review was prepared, but has since closed down. Support is not going to get any better.]

SPELLING CHAMPION (VER 2.0)
Overall Rating 6.8/10.0

Spelling Champion is a batch-type spelling checker that scans MacWrite 4.5 and text files for errors. Suspect words are displayed in context and the user is able to select from any of three suggested spellings or from another word in the dictionary. Champion is unique in that it has a “backup” feature that will undo the
corrections in a paragraph. Also, its relatively small size permits its use on 128K systems with two disk drives.

On our speed benchmarks, *Champion* was always among the top three finishers and was often the fastest when checking a document. Coupled with this speed is a high degree of accuracy. With *Champion*, we spent less time looking at correctly spelled "suspect" words.

Any word can be added to or deleted from the dictionary. Words that are added to the dictionary are displayed in the dictionary window and appear as suggested spellings for "similar" suspect words.

About the only negative features of *Champion* are that it works exclusively with *MacWrite* and its lack of support. Champion Software offers support only by mail—in our determination that is much too slow a method.

We think that *Champion* has potential and is a good buy if you only use *MacWrite* 4.5.

**SPELLSWELL (VER 1.2C)**

**Overall Rating: 7.4/10.0**

Spellswell (Greene, Johnson) is a standalone program for checking spelling and homonym usage in any *MacWrite*, *Word* or standard text document. Spellswell is easy to use, requires no installation, is not copy protected and includes adequate online documentation.

In general, Spellswell always performed at speeds much better than average (but not without some minor bugs). Spellswell was slightly below average in dictionary comprehensiveness tests. However, the ease with which words can be added to or deleted from the dictionary partially compensates for its initial word deficiency.

Spellswell can check for double capitals, noncapitalized proper names and spaces after commas and periods. It also checks hyphenated words and word phrases such as "E Pluribus Unum" (which are generally found together) as a single word.

We found several misspelled words in Spellswell's dictionary. Greene, Johnson has corrected the misspelled words in their newly released version 1.2d.

---

**HFS Locator Plus**

HFS Locator Plus is a desk accessory which helps you organize the Hierarchical File System. It will locate files by full or partial name or by date and will display the "Path" or location of the file and allow manipulation of that file without going back to the desktop.

After finding a file, HFS Locator Plus can show info, delete, rename, move to another folder, copy, or launch that file. You can even create new folders to move the file into...all without leaving the present application. It is also possible to catalog the entire disk or a particular folder.

No longer does one have to spend time locating and organizing files that are buried within folder, within folder, within folder...or always having to go back to the finder to organize that file. HFS Locator Plus solves the problem.

---

**DeskScene**

A Desktop Customizer for Macintosh™

$29.95

*Created by the co-author of the Macintosh™ Finder, Bruce Horn.*

Replace your boring grey patterned desktop with any MacPaint picture. Identify different disks with a unique desk scene.

- Display company logos.
- Personalize your desktop with your favorite MacPaint pictures.
- Use popular digitizers such as Thunderscan to create images to use with DeskScene.
- Easy to install.

---

**HD Back-up**

Hard disk back-up utility for the Macintosh

$49.95

HD Back-up is a generic hard disk back-up utility that supports both the MFS and HFS file systems for the Apple Macintosh. The program copies all files from the hard disk to floppy disks.

The program performs both global and incremental back-up (back-ups only changed files from last global back-up, thereby saving time and disks) — simple to use.

Data is stored on disks as files therefore if the hard disk drive is ever incapacitated, work can be done right off the floppy disks with the back-up data.

Supports Apple Macintosh Hard Disk 20 and all other hard disk drives for the Macintosh XL, 128K, 512K, Plus and Lisa w/MacWorks.

Supports both 400K and 800K disks. Not copy protected for back-up purposes only.

---

**Icon Switcher**

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(800) 843-5722

(800) 572-2746 in CA.
# CHECK IT OUT

## Comparison of Features for Nine Spelling Checkers

<table>
<thead>
<tr>
<th>Feature</th>
<th>The Right Word XL</th>
<th>The Right Word</th>
<th>Spellwell</th>
<th>MacSpell+</th>
<th>Mac-Lightning</th>
<th>Mac Spell Right</th>
<th>Liberty</th>
<th>Hayden Speller</th>
<th>Spelling Champion</th>
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<td>While You Type</td>
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<td>Yes</td>
<td>Yes</td>
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<td>The Entire File</td>
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<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<td>Any Selected Text</td>
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<td>No</td>
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<td>Yes</td>
<td>Limited</td>
<td>Yes</td>
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<td>Yes</td>
<td>Yes</td>
<td>Yes Pers. Dict.</td>
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<td>May Work With Others</td>
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**Statistics**

- Word Count: Yes, Yes, Yes, Yes, Yes, No, No, Yes, No, Yes
- Suspect Word Count: Yes, Yes, No, Yes, Yes, No, No, Yes, No, Yes
- Unique Word Count: No, No, No, No, No, No, No, No, No, No
- Word Length: No, No, No, No, No, No, No, No, No, No
- Copy Protected: No, No, No, No, No, Yes, No, No, No, Yes

**Items marked with an asterisk are explained below:**

The Right Word and Right Word XL are included in the same package. The XL in the title refers to "extra large" dictionary, not to the Macintosh XL.

See Suspect Words Only: It is convenient to be able to see all suspect words in one list. Correctly spelled words can be eliminated from the list before viewing each suspect word in context.

Supplemental Dictionaries: Writers who write for very different audiences or handle a wide variety of subjects may want to build supplemental dictionaries based on these special topics. These independent dictionaries can be used when needed.

Add Suspect Words: All dictionaries should have the capability to add new words with minimum effort. Some spellers only allow the addition of words to a supplemental or personal dictionary.

Add From List: This feature assists you in dictionary maintenance. You can keep files of words that have been added to your dictionary. If you need to recreate your dictionary, you can use these lists.
Greene, Johnson provides excellent support for this product. Our recommendation is “buy it—you’ll probably like it.” Spellwell isn’t the fastest, but it is adequate; it doesn’t have the biggest dictionary, but it learns well; and perhaps most importantly, it doesn’t bomb while performing basic operations and functions.

RECOMMENDATIONS

None of the programs we reviewed possessed all the qualities we would like to see. Our highest recommendation goes to Spellwell. Spellwell works with both Word and MacWrite; it is not limited to a certain number of unique words, and the price is reasonable. Overall, it is a pretty good value.

For writers who never need to check large documents, Haydiem-Speller is a good choice. However, it is slightly more expensive than Spellwell without any real added benefits.

For MacWrite users who don’t care about support, Spellwell is an excellent choice. Its speed, ease of use and dictionary make it a great performer.

The new version of MacLightning is worth purchasing just for the quality dictionary it contains. To obtain the greatest utility from this program, a hard disk is recommended because of the size of the dictionary.

The only other products that receive our endorsement are MacSpell+ and MacGAS. MacSpell+’s strong points are its dictionary features and the fact that it works interactively. MacGAS’ strength is its excellent thesaurus.

The Right Word is so slow that we cannot recommend its purchase, even though it has a large dictionary. Mac•Spell•Right is also very slow and is limited to MacWrite documents. Its only redeeming feature is its thesaurus.

The others? Well—you choose.

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- In The Cauzin Effect...our monthly newsletter.
- In our advertising...like this one.
- In selected Cauzin StripWare™ software packages such as MacArt for Business and The Financial Advisor.
- PLUS...in leading Macintosh user group newsletters such as Yale MUG and Portland MUG.

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DISK MEMO (at right) Give memos a personal touch with these strips that contain an art file created with MacPaint that can be loaded into MacPaint or many of the Macintosh word processors. From the Finder, double click on the DISK MEMO icon. If MacPaint is also available, the file will be opened.

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A full-length look at full-length Mac painting.

Since the Mac came out, developers have tried to build a better MacPaint by designing desk accessories and add-on "support" programs. Now Ann Arbor Softworks has gone a step further — created a better Macintosh paint program — and has done it well. FullPaint takes MacPaint and extends it in every direction.

This single program more than replaces a customized paint system that includes MacPaint, Hayden's Art Grabber, T/Maker Graphics Click Art Effects, desk accessory mouse locators and desk accessory rulers. It looks like Ann Arbor Softworks listened to every desire of Mac artists and put them into one program.

The Obvious
At first glance, you'll have trouble telling FullPaint from MacPaint. Only three differences are immedi-
MY PAINT RUNNETH OVER

ately evident. The first is that the drawing window has scroll bars—a feature notably lacking in MacPaint. Second, there are three tiny “screens” below the Line Select box in the tool window that let you pick the type of operating area: the usual window with a gray frame and menu bar showing; a full screen with menu bar; and a full screen without the menu bar. The full screen gives you a good 80 percent more work area than the MacPaint screen we’ve come to know and (sometimes) hate. In the full screen mode you have the complete Mac screen area to work in.

The third difference is a tiny question mark at the upper right of the active window that gives instant access to a Help screen and a screen full of short cuts. Often the menu-selected help screens in MacPaint are overlooked, since you must pull down a menu to get at them. In the heat of creation, that’s a sometimes jarring and unnecessary act.

THE NOT SO OBVIOUS

After working with FullPaint you’ll discover some major improvements that may not be obvious at first glance. For instance, the pattern palette and the tool window are movable. This is handy, particularly when you are working in the full screen mode. If either one gets in your way, just move the cursor to any border of either “service box” (tools, palette, mouse locator, etc.). The cursor changes to a double arrow, and then you just drag the box out of the way. The tools can also be completely hidden by selecting Hide Tools from the Windows menu, pressing COMMAND T and, in many cases, pressing the space bar.

Even more useful is FullPaint’s ability to display more than one file (document) at a time. You can switch from file to file, and cut and paste between documents. This is great when you use clip art to add appeal to a drawing, and if you do color separations multiple windows are a godsend. The number of files you can work with at a time depends on the amount of memory in your Mac. (On a Mac Plus you can work with up to four, but a 512K Mac may halt you at three, if the files are large.)

You can use this multiple window feature as a pseudo-Scrapbook. Instead of either renaming Scrapbooks for various projects, or building a monster system Scrapbook that takes time to page through (and uses lots of disk space), you can just cut or copy from your artwork and then paste elements into a FullPaint “scrap” document. The disadvantage of this technique is that you can’t read your “scrap” document into other programs without a utility such as Art Grabber, but if you work primarily within FullPaint this technique won’t slow you down.

Two commands in the Window menu let you shuffle your drawings—they can either be stacked in a diagonal pile (with the nam bar showing) or displayed as smaller windows side by side. If you have three drawings loaded, the active window displays as a half screen while the other two display as quarter screen images. The artwork doesn’t change size—only the window is reduced.

Each open document is automatically assigned a command key—COMMAND 1, 2, 3, or 4, depending on the order in which they were loaded into memory. Pressing COMMAND 1 brings the first document from back to front, if the windows are stacked, and so on. The command keys can
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MY PAINT RUNNETH OVER

Three documents tile when Clean Up Windows is selected. The active window is assigned half the available space, while the others get a quarter each. Note the screen selector at the bottom of the toolbox. The selection in effect is underlined.

The whole screen mode has been selected. The toolbox and pattern bar can be moved anywhere on the screen or removed entirely.

This makes it easy to put text right over patterns without the ugly white strip on the top and bottom that is a "feature" of MacPaint.

The Preferences menu allows you to select a type face in any size up to 127 points. Unfortunately, even if your output is going to the LaserWriter, odd-sized letters won't be perfectly smoothed, as they are in object-oriented programs (well, you can't have everything).

Two extra tools included in FullPaint are themselves worth the price of admission—the Mouse Locator and Rulers. The rulers extend to the full size of the drawing. Unfortunately, however, you can't redefine the starting point of a ruler. But the Mouse Locator provides an instant-by-instant reading of how long a line is, or how large a box or circle you have drawn is. The Mouse Locator also notes where the mouse position is in relation to the top left corner of your page. This is perfect when you want to establish a specific position for the start of your artwork.

If you need to get very exacting with the position of the mouse, hit the Caps Lock key and the mouse slows to a crawl, giving you very fine control over starting and ending points of a line or shape. You can start a line at full speed, and then hit Caps Lock as you approach your final position. This technique lets you move along at normal speed until you get close to your target area; then it slows the mouse down to allow precise control. The combination of the Mouse Locator and the Crawl function increase your control dramatically.

GORGEOUS IN, GORGEOUS OUT

The fun really begins once you've finished your drawing. That's because print selections are far wider than in MacPaint.

In draft mode you can print in 200 or 400 percent expansion (as well as 50 percent reduction). The enlarged picture is printed out a tile (or portion) at a time.

There is even an answer to those who need quality printouts of large artwork, or real quality on the LaserWriter. Draw your work (in "coloring book" or outline style) with as
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Key Features
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- Number of fields and records is unlimited
- Data stored as text, numbers, pictures, dates, or flags
- Over 80 calculation tiles representing arithmetic, date, text, and logical operators, functions and values
- Unlimited key fields and automatically updated indexes
- On-screen Help, Custom Help, and "Why" messages explaining how Double Helix works
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- Built-in text formatting, including copy, cut, and paste
- Three levels of password protection
- Supports AppleTalk, HDLC and third party hard disks, digitizers and barcoding
- Automatically utilizes up to 4 MB of memory
- Data entry facilitated by optional use of command and cursor keys
- Graphic elements may be stored as data or used as form decoration
- Supports 17 digit precision 512X package (a full implementation of IEEE floating point standard)

Requirements
- Works with the Macintosh Plus, Macintosh 512K Enhanced, Macintosh 512K with external drive. Hard disk or 800k drives recommended.

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MY PAINT RUNNETH OVER

few filled areas as possible. Then quit FullPaint and call on the LaserPrint program (provided on the Master Disk). This allows you to blow up your drawing into 4 or 16 panels and save each as a FullPaint drawing. Then go back into FullPaint and "doctor" each individual file, pixel by pixel if necessary (but you'll be working at the equivalent of 300x300 dpi resolution, the same resolution you get on the LaserWriter).

Smooth up the individual documents and fill in your gray tones, then go back to the print mode and print out the multiple units as a single "reduced"-size document. For smaller work, just reduce the drawing to half (50%) the original size when you begin to print and the output will automatically hold the 300 dpi resolution available from the LaserWriter.

With the ImageWriter, printing in Good quality mode produces an unsmoothed, but basically good image. Printing in High quality brings in the FullPaint smoothing routines. They are different from those used in MacPaint, and in your final printout you can tell the difference.

THE DOWN SIDE

Nothing is ever perfect, and this program is no exception here. For a starter, FullPaint has a bear of a copy protection system. On the first run of FullPaint disks, the copy protection was so intense it prevented the program from being used at all. Now the disk is copy protected, but it does allow you to install the program twice on a hard disk.

You can also reinstall it in case you change hard disks. But, for any reason you run out of installable copies, then every time you fire up the program you have to insert your original master disk, even if you've installed the program on your hard disk. The copy protection is so intense that it will often demand to see the master when using the program with Switcher. Showing it the master when launching Switcher is not enough. That means, unfortunately, that the program should not be used in what should be a natural environment for it.

If you do a lot of moving between programs the copy protection is a royal pain in the palette. Just to make life a bit more difficult, when you install FullPaint on a hard drive, the master you insert has to be the same master that was used when the program was loaded onto the hard drive.

There is also a decided lack of smoothness in some of the tools. When you first click on a tool it takes a split second or two for the program to catch up. This is particularly noticeable when using the lasso. If you're used to flying along with MacPaint, you'll have to slow down a bit on some functions.

There are some unusual interface quirks to get used to also. For example, when you quit or close a document, the Do You Want to Save dialog defaults to Cancel. That's a very odd choice and annoying if you're used to simply hitting return to save your work and close. Why did the designers', who got so much right here, think that Cancel would be the most likely choice? Maybe they thought you'd never want to leave their wonderful program.

All in all, though, the more you use MacPaint the more you'll appreciate FullPaint. Except for the abominable copy protection—which cost the program a full mouse in overall rating—its few quirks are easily overshadowed by its added functions and added depth.قة

Carl Haeberle is a San Francisco-area writer.

| FULLPAINT |
|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| **Overall Rating** |
| Follows Mac Interface | □ □ □ □ |
| Printed Documentation  | □ □ □ □ |
| On-Screen Help         | □ □ □ □ |
| Performance            | □ □ □ □ |
| Support                | □ □ □ □ |
| Consumer Value         | □ □ □ □ |
| **Comments:**          | Fullfills just about all your wishes for MacPaint. Best Feature: Ability to display multiple windows. Worst Feature: Copy protection can interfere with operation, especially if you are working from a hard disk. List Price: $99.95. Published by Ann Arbor Softworks, 308½ State St., Ann Arbor, MI 48104. (313) 996-3838. Version 1.0 reviewed. Copy protected. |
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THOROUGHLY MODERN

by Robert R. Wiggins
PSSST! YEAH, YOU! COME IN here. You’re not going to believe the stuff in here! Software. Advice. Good company. Fun people. Stars. Luminaries. Games. Music. Parties. And it’s all free. All you have to do is pay for the time you spend here. And even the price isn’t too bad.

Sound too good to be true? It’s not. Where is it and how do you get there? Ah. Now we get down to business.

WHERE’S THERE?

There is MAUG, on the CompuServe Information Service, the largest consumer information service in the country. MAUG consists of an on-line magazine, Apples OnLine, and four Forums, the MacUsers Forum, the Apple II and III Forum, the Mac Developers Forum and the Apple Users Groups Forum. There’s only one membership requirement: that you use your real name, not some CB “handle” or made-up name.

The MacUsers Forum is for any and all users of Macintoshes and Lisas. The Apple II and III Forum are for all other Apple computers. Apple Developers is not only for software developers, but also for serious programmers or anyone who just wants to participate (although nondeveloper issues are quickly sent back to the Users forums). Apple Users Groups is for officers, leaders or just members of Apple users groups around the world. Apple's Users Group Evangelist Ellen Leanse supports users groups directly here, and users group officers also help each other.

GETTING THERE

Getting there is not hard, but it’s not half the fun. You’ll need a modem, a telecommunications (terminal) program (preferably one that supports MacBinary), and a CompuServe subscription or starter kit (sold in most computer stores).

After you’ve gathered everything together, launch the terminal program. Somewhere in that program you’ll find a way to set the communications parameters. Find it, and set yourself to 8 bits, no parity, and 1 stop bit. (You don’t really want to know what that means. No one does. But it will be important later on.) You also can set up your terminal parameters, but the defaults are OK. If you do change the settings, you want to be set for full duplex (no local echo) with XON/XOFF enabled.

Now you need a local access number, which you get from your CompuServe starter kit. The next step is to make the connection. If your terminal program can dial on its own, tell it the proper phone number and let it do the work.

Once connected you need to identify yourself; the manual in the starter kit covers this part for all the different networks you can access CompuServe through. A note on passwords: pay attention to what the manual says about passwords. Never type your password except when you first logon. If you’re asked for it while on-line, do not provide it. Even if it looks like CompuServe asking, it’s better to hang up and logon again. Your password is the only way you have of making sure no one else runs up your bill. Keep it secret!

The results of your efforts so far will get you on-line. You’ll end up at a CompuServe menu page. Here, and anywhere in CompuServe, whenever you don’t know what to do, type a question mark (?) or the word HELP (followed by a carriage return so CompuServe knows you’re through typing), and the things you can do at that point will be explained.

CompuServe is a big place with lots of things to see, but you want to type GO MAUG (always hit the RETURN key after any command) to get to the MAUG main menu. Later on, you’ll probably just type GO MACUS to get to the MacUsers Forum. But for now, go to the menu page. Type the number of the MAUG Forum you want to visit.

The first time you go to a MAUG Forum, you’re just a visitor, and you need to leave a message requesting membership (you’ll have to do this in each MAUG Forum you want to join — they’re handled separately). Select the option to Visit the Forum. When asked for your name, type your real name (first and last) the way you want it to appear when you leave messages. The system will double-check it with you so you can correct typing errors. You will then get the Forum menu. Select the option to leave a message. The system will ask you To:; answer SYSOP. Then it will ask you Subject:; answer “Membership Request.” Now the system will let you enter a message. If you messed up your name, you can correct it here. If you do type a message (saying you
read about MAUG in MacUser, or introducing yourself), be sure to hit RETURN every 70 or 80 characters (about the time you get to the right margin). While your terminal program may wrap around the way MacWrite does, the CompuServe computers prefer lines about the width of the screen. When you're done with your message (or if you don't want to leave any), hit a RETURN at the beginning of a line to indicate you're finished, and CompuServe will ask Leave Action:. Type an S (for store message).

Now that you've left your request, go and explore the rest of CompuServe, as it takes 24 to 36 hours to process your membership request. When you go back to the Forum the next day, instead of getting the Visitor's Menu you should be greeted by name. If you do get the Visitor's Menu, select Visit the Forum again to see if the Sysop has left you a message regarding any problem with your request (usually it'll be because you didn't leave your full name). But eventually you'll be greeted by name, and you're in!

BEING THERE

Forums on CompuServe each have three parts: a message area, which is like a bulletin board where you can leave messages for other members and read messages others have left; data libraries, which are an electronic storehouse of software, MacPaint pictures, and all sorts of files available for downloading and using on your Mac; and a conference area (usually referred to as CO), which is a citizens-band simulator type affair, where what you type is displayed in real-time.

As soon as you arrive in MAUG, you should change to command mode. Seeing the same menus over and over again gets tiresome, and most of the hints and tips people will give you are for command mode. Just select OPTIONS (type OP) and turn menu mode off (set Use Menus to NO). The instructions given in this article will assume you are in command mode, so be sure to do this first. Later on you'll also want to turn on Brief Prompts, but at first you'll want the extra information you get from the verbose prompts.

The second thing many users will want to do is type GUIDE at the main prompt. This gets you into an extensive on-line guide for using the Forum.

Also visit Apples Online, which has a section introducing MAUG. It explains the different components of the Forum and how to use them. Of course, after reading this article you may not need to do all this.

THE MESSAGE AREA

The message area is the heart of a Forum. It's where members leave messages for each other, and read the messages others have left. It is like a bulletin board in that everyone can read the messages that have been posted.

Like many bulletin-board-type systems, the message area is divided into different sections (subtopics) so you can only read what interests you.

To set which subtopics you want to be able to read, type OP at the Function: prompt and then select SU at the option prompt, and you will get a list of the available subtopics. An asterisk in front of a name of a subtopic indicates that you want to read that subtopic. If there are any you don't want to read, type the number and the asterisk will go away. If you make a mistake, type the number again, and the asterisk will come back. When you are done, the topics you are interested in should have asterisks in front of them. On the MAUG Forums, always set Subtopic 0 (Forum Business) as one you can read, as that is where important announcements are left. Subtopic 6 on all the MAUG Forums is Community Square, where noncomputer messages are left (jokes, fun, other topics than computers). You may or may not want to read these. It is part of what makes MAUG a community, but it can also get quite frivolous.

After you've set up for the subtopics you want to read, it's time to go read some messages. The first time you get on, or if you've been away for some time, there are hundreds and hundreds of unread messages. This can be quite overwhelming. For such occasions, there is the QS (for QUICK SCAN) command that will give you a list of message numbers with their Subject: fields, and how many replies (if any) they have. Then you can use R1 1234 (for READ INDIVIDUAL message number 1234) at the Function: prompt. If the message has replies, you will be told after the message is displayed and you can type RR (for Read Replies) at the read action prompt to read them all. There is another command that can be used to read a message and all of its replies, but first some definitions are needed.

What makes CompuServe Forums special is that the messages are linked together in "threads" of related messages. If you leave a message and someone replies to you using the RE (for REPLY) command, the two messages are linked. There are some very interesting facilities for tracing up and down the threads. When you are reading messages in thread order, the system shows the thread to you in hierarchical fashion (top down, left-to-right). The first message is displayed. Then its first reply. Then that reply's first reply. (We're going from the top down.) Then when it gets to a message that has no replies, it goes to the last message we came down through that had a second reply (which is listed to the right of the first reply) and starts going down again. You can also go up and down threads yourself with some of the commands described in the Command Summary.

Let's go back to the example where you scanned for messages of interest. If you saw a message with replies that interested you, you could type RT 1234 ONLY at the Function: prompt to see message 1234 and all of its replies. This technique has another advantage: it updates your high message counter, which RI does not. What is this counter, and why is this important? The high message counter remembers the highest numbered message that you have read. Then, the next time you logon, you can use RN (READ NEW) or RTN (READ THREAD NEW) to read only those messages left after the highest message you've read. This way, by logging on every few days and doing an RTN, you can keep up with every-
**COMMAND SUMMARY**

To get to the MAUG Forums:
- GO MAUG - goes to the menu page
- GO AOL - goes to Apple's Online magazine
- GO MACUS - goes to the MacUsers Forum
- GO MACDEV - goes to the Apple Developers Forum
- GO APPLE - goes to the Apple II and III Forum
- GO APPUG - goes to the Apple Users Group Forum

**To read messages, at the Function: prompt:**
- RF • Read Forward
- RR • Read Reverse
- RI • Read Individual message (does NOT update your high message counter)
- RN • Read Next (forward)
- RM • Read Marked messages (either marked by the system when addressed to you or marked by you during an SM • Scan and Mark - operation; does NOT update your high message counter)
- RS • Read Selective messages - lets you search through the messages for character strings in the TO, FROM, SUBJECT fields, such as your name in the TO field in case someone left your userid off a message
- RT • Read the entire Thread that this message is part of starting with the top message.
- RT nnnnn ONLY • Read the Thread starting at message nnnnn ONLY (do not continue after that particular thread has been read - DOES update the high message counter)

**To maneuver in threads, at the Read action: prompt:**
- RR • Read Replies
- RA • Read the message just read Again
- RP • Read the Previous message in the thread (the one the current message replies to)
- RT • Read the entire Thread that this message is part of starting with the top message.

**To leave a message:**
- RE • Reply to the person who this message is from and attach it to the thread
- UA • Use the Address in this message to send a message to who this message is FROM, but start a new thread (change the subject)
- RE nnnn • Reply to message nnnn (very handy if you want to reply to a message you saw earlier).

**At the Function: prompt:**
- RE nnnn • Reply to message nnnn
- L • Leave a new message. Remember that the system keeps track of people by userid, not name, so be sure to include it.

**DL Commands**

**From the DL: prompt:**
- SCA • Scan the database in userid order
- BRO • Browse the database in reverse chronological order, pausing after each entry
- REA • READ a text file
- DOW • DOWNLOAD a file using a protocol (normally XMODEM)

**Modifiers:**
- /KEY:xxxxx • restrict the SCA or BRO to files with keyword xxxxx
- /DES • show the DESCRIPTION with the file (makes SCA into a non-stop BRO)
- /AGE:n • restrict the SCA or BRO to files uploaded in the last n days.

**CO Commands (must start with a / at the left margin):**
- HELP • find out the other commands
- EXIT • return to the message area
- FIND • find out who's in the Forum
- TUN • move to channel n
- MON • monitor channel n while staying on the current channel

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The Data Libraries of a Forum are where files are kept for downloading to your computer. Most of the huge amount of free (and shareware) Mac software finds its way to the MAUG data libraries. You'll find MacPaint and MacDraw artwork, music for ConcertWare, MusicWorks, and other music programs, game scenarios for games like Pinball Construction Set and The Ancient Art of War and BASIC programs. All you have to do is get it to your disk.

The Data Libraries of MAUG correspond to the message sections. Subtopic 4 is Games; so DL4 is for Games. Subtopic 7 is the Art Department, so DL7 is where you'll find artwork, fonts, and the like. Your first stop should be DL0, because that is where the help files are.

To get to a particular data library just type DLn (where n is the number of the Data Library you want to go to) at the Function: prompt. The important commands are SCAn, BROwse, REAd and DOWnload. Type SCA to get a list of the files in the DL you're in. Be forewarned that there are lots (thousands in some cases) of files in most of the DLs. Type BRO to browse backwards through the files, looking at the most recent first, and with a description of what each file is. You'll notice during a BRO that there are keywords associated with each file. You can use these keywords to search for specific files. In DL7, you may only be interested in MacDraw-
related files, so you'd type BROKEY:MACDRAW. Or maybe in DLS you're looking for ConcertWare music, so you'd try SCAKEY:CONCERTWARE. In DL0, you'll be looking for help files, so try BROKEY:HELP.

Once you've found a file of interest, you want to get it to your computer. There are two kinds of files in the Data Libraries: text files and MacBinary files. MacBinary files are in a special format that must be downloaded using a protocol like XMODEM. If your terminal program supports MacBinary, the downloaded file will appear on your disk exactly like it did on the disk of the person who uploaded it, just as though you had copied it disk-to-disk using the Finder. MacBinary files are easily spotted because in the file header line of a SCAn or BROwse, the filename appears, then the date it was uploaded, then the file size in bytes (characters). For a MacBinary file, two size numbers appear like this: 12345(6789). The number outside the parentheses is how much space the file takes up on CompuServe, and the number inside the parentheses is how many characters will be transmitted if you DOWNload the file. If the file does not have a second number in parentheses, it is an ordinary text file.

The help files are all ordinary text files. You can just READ them, and they print out on your screen like a message would. Most terminal programs have a feature variously called ASCII text capture, text capture or save screens to disk. This is how you save these files on your disk. Later, you can use a text or word processor to read them. The first file you want to READ is MACBIN.HLP, which explains a lot about how to use MacBinary, or BINHEX.HLP, if your terminal program doesn't support MacBinary. If you're BROWsing, you can just type R (for READ) at the file disposition prompt (be sure to turn on your text capture mode before you hit RETURN). If you're at the DL0 prompt and not browsing, just type REA MACBIN-HLP.

After reading these files, MacBinary and downloading should make a little more sense. It's really not as hard as it sounds. First, you need to set up your terminal program for XMODEM (MacBinary XMODEM is available, but XMODEM in any case). There will be a Settings menu or File Transfer menu item for doing this. Then, after finding the file you want to download, tell CompuServe to start, either with a D at the file disposition prompt during a BRO, or by typing DOW FILE:NAME at the DL prompt. CompuServe will ask what protocol to use; select XMODEM. Then CompuServe tells you to type a carriage return when the transfer is complete. When you see that message, it's time to tell your terminal...
program to start the XMODEM download.

There is a veritable treasure trove of files in the DLs, and many MAUG members spend most of their time there, only occasionally leaving a message. In June, Apple Computer licensed several information services, including MAUG, to distribute updates to Apple System software (System, Finder, ImageWriter, etc.) and some of these files can be found in DL1 of MACUS and all of them in DL8 of MACDEV (read the text file SYS.INF in DL8 of MACDEV for full details).

That's all there is to it! Well, not all, but if you read the file MACBIN.HLP in DL0 you should be pretty well set. And if you have problems, ask the sysops. Follow the procedure for leaving a membership request: type L, respond SYSOP when asked for Tp, respond with something like HELP or DOWN every 70 or 80 characters; then at the load action prompt type $ (for Store), and when asked what section, enter 8 (that is the Telecommunications section, where downloading questions belong), or type S8 at the Leave Action prompt.

**CONFERENCING**

All that's left is the conferencing area, or CO. Each Forum has a special area called CO that you get to by typing CO at the Function prompt. You can find out if the trip into CO is worthwhile when you first enter the Forum: the number of people in CO is indicated.

Once in CO, normal commands stop working, and everything you type gets sent to everyone else in CO with you. So remember that HELP will get you help and EXIT will get you back to the Forum. The is important, and must be at the left margin to work.

When you first come into CO, you're welcomed to a particular channel, and then shown which channels have people on them. Ordinarily you will enter on Channel 30, (continued on page 162)

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medieval mythos thrown in for good
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action chess game in which the op-
posing sides have to fight for posses-
sion of the individual squares. It
brings a certain wild card element
into play, meaning that you can
never be positive that a specific move
will work as it should.

AND ON THIS SIDE...

Each army is different, but equal.
For example, the light Knights and
the dark Goblins both function
much the same way that chess pawns
do, moving a single painful step at a
time. During battle sequences, both
the Knight and the Goblin must get
up close to the opponent in order for
their swords or clubs to inflict any
damage. The light side's Phoenix
and the dark side's Banshee each
fight by producing a damaging
cloud around their bodies. The
Phoenix uses fire and the Banshee
uses her wailing voice, but the effect
is the same.

IT'S MAGIC!

In the same vein, the Wizard and
the Sorceress (each sort of a com-
ination of a chess game's king and
queen) may look different, but their
powers are exactly equal. Each can
be used by the player to cast a spell
in lieu of moving a piece somewhere
on the board, but each type of magic
spell can only be used once per side,
per game.

The magic includes:

- Healing a soldier wounded in a
previous battle (all game characters
heal on their own during the course
of the game, although they heal
faster if they occupy a power point).
- Resurrecting a dead character.
Newly resurrected characters must
be placed on a square adjacent to the
Wizard or Sorceress, but they can be
moved on the next turn, if you wish.
- Summoning an elemental. This
creates a completely new character
which battles for your side like any other soldier. The type of elemental summoned — wind, fire, air or water — is random, and seems to be more for show than for strategic difference. Elementals can attack another character on the board (except those which occupy power point squares), even those far out of reach of normal characters.

- Reversing the flow of time. This means that if gray squares are supposed to be cycling to white, they’ll reverse and cycle back to black instead. This is particularly useful when you want to hold a strategic advantage, and even more useful for negating the same spell when it’s been cast by your enemy.

- Imprisoning an enemy on a square. This is useful for trapping powerful dark characters on light squares, or vice versa. This makes them relatively easy pickings, and keeps them from attacking your army, to boot.

- Teleporting a selected character to another square on the playing field. Use this when you want to launch a sneak attack — or to finish off a character you previously only wounded.

Magic doesn’t work on any character currently occupying a power point square. This has strategic ramifications, since, for example, it means you can’t heal a character that was badly wounded capturing a power point — unless you first move the icon off the hard-won square.

**Five Points to Power**

The ultimate object is to possess all five of the board’s flashing Power Points, which are strategically located on the game board. Three of these start out unoccupied; the other two are the Wizard and Sorceress’ starting position.

The game’s real strategy is in figuring out when to battle for which square. Light characters have longer life lines (and therefore, can take more damage from opponents) on white squares, while followers of the Dark side are more effective on black squares. Many of the squares on the board are permanently black or white. The remaining areas of the board consist of ever-shifting squares that cycle from light to light gray to dark gray to black to dark gray, etc. Three of the power points are located on shifting squares,
SQUARING OFF

meaning that the tides can turn as time goes by.

FIGHTING TO THE FINISH

Whenever a character is moved on to an occupied square, the screen zooms in and a battle begins. The two monsters literally duke it out for possession of the territory, dodging each other's attacks by moving around barriers that materialize and disappear almost at random. Once opponents engage in battle, only one will survive the round.

In its one-player mode (human player versus the computer), the player has the option of moving his or her own soldier with the mouse during battle sequences, but the computer is a formidable opponent, and it doesn't help matters any that the mouse is far less than the ideal control method. The key to real combat success is being able to quickly dodge, jerk and change directions abruptly, which confuses opponents and makes their missiles less likely to strike home.

There are two ways around this: either buy yourself a Mac-compatible joystick, or play with the Cyborg option on. This gives the computer control over your forces as well as its own during the fight sequences, meaning that you'll at least have a fifty-fifty chance of winning. Don't worry about changing your mind, even midway through a game — before each fight sequence, a screen prompt asks you to click the mouse button if you want to control your own character in that particular fight.

The two-player game gives one player control of the mouse during battle, with the opponent automatically playing in the cyborg mode. Unless you really want to handicap yourself or your opponent, though, it's best (and most evenhanded) to play with both sides using cyborgs.

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SQUARING OFF

THE LIGHT AND DARK OF IT

Having been designed in shades of black, white and gray, Archon is a graphic natural for the Mac — or at least, it should have been. Unfortunately, the game's graphics weren't redesigned to look any sharper than they did on the old 48K Atari or the Commodore 64 (in other words, they're barely fair by Mac standards). Considering the Mac's resolution, it wouldn't have hurt to dress up the opposing armies a bit — add a little detail to the knight's shield, perhaps, but the sound effects that accompany each different character make up for any visual deficiencies. The Banshee's scream and the twang of the archer's bow sound with equal realism, and the animation during the battle sequences is humorous. Archon is a good diversion for solo players, but it's during head-to-head combat that the game really shines. It even allows very good players to handicap themselves (by using the mouse against the other player's cyborg control), although when both players' skills are about equal we recommend that both use the cyborg control. Archon may not shine as an action game, but its strategic challenge will keep players flexing their mental muscles for some time to come.

Tracie Forman Hines is the Senior Editor of MacUser.

ARCHON

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

Comments: Unique strategy game for one or two players that borrows elements from chess and Tolkeinish mythos in equal doses. Best Features: Thinking is required; one-or two-player modes; good sound effects. Worst Feature: Graphics should have been redesigned to suit the Mac's resolution. List Price: $44.95. Published by Electronic Arts, 2755 Campus Drive, San Mateo, CA 94403, (415) 571-7171. Copy protected.

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WHAT'S THE GOOD WORD? THAT all depends on which word game you're playing. According to ancient legend, the first word game was created by Attila the Hun, when he and his fellow barbarians forced illiterate serfs to guess which words were being spelled out on the ground. The game, named to match the result, was Hangman, and the rest is history.

Computer word games have been around almost as long as computers, and the Mac is no exception. Here, we highlight some of the best of the bunch, not necessarily guaranteed to increase literacy, but definitely guaranteed to spell out a good time.

MAKE YOUR OWN MINDBENDER

WordPlay, the crossword puzzle generator and solver from Palantir Software, comes equipped to take on any challenge, even the New York Times' Sunday crossword puzzle. Though marketed as an educational program, WordPlay is so versatile it should also be considered pure entertainment. Whether you use it to solve published puzzles or create your own, WordPlay has no equal, on any system. It even allows you to create diagramless puzzles.

Trial and error has never been easier; the program enters guesses as italics to differentiate between maybe and sure things. Erasing mistakes doesn't tear the "paper," either. Correct guesses are permanently inscribed with a single click.

A 16-page manual introduces WordPlay, explaining its five levels of difficulty, online help and other options. Most functions are clearly and simply explained, though puzzle creation is a complex procedure, so be sure to pay close attention.

After using it for a short time, a few things become apparent. While WordPlay uses the mouse and keyboard in tandem, cursor control takes practice. Answers for complete puzzles or selected areas can be shown, with question marks appearing to identify incorrect entries.

You have a choice of fonts for output; puzzles can be printed in any stage of development, blank, work in process (completed sections printed), or solved. When needed, clues may be output along with their puzzles; or to prevent accidental sightings, you can print the "detective food" on different pages.

Despite all the good news, WordPlay does have a few puzzle construction quirks. While entering clues, avoid touching the OPTION key, since if you press it instead of SHIFT you'll hear a beep indicating the clue has not been accepted. Before proceeding, reset the keyboard by clicking on another area or rapidly depressing the SHIFT key.

The second problem crops up when trying to select a solution square prior to clue entry. Sometimes the leftmost squares in a puzzle won't accept click commands. The solution is easy enough though; merely click on the second letter in a solution. From there everything works normally.

Since these minor rough spots are easily circumvented, WordPlay rates high in all categories: education, entertainment and error handling.

While completing the built-in puzz-
100 MA C U S E R O C T O B E R 1 9 8 6

A PLAY ON WORDS

zles is good fun, creating them is even more fantastic. Pride of author-
ship shows through. You'll really enjoy watching others try to solve
your homebrewed puzzles with a professional appearance.

TAKE THE CHALLENGE

Spinnaker-Hayden's Word Challenge II is a Boggle work-and-lookalike.
Just like its Parker Brothers' inspiration, the object is to uncover as
many words as possible using adjacent letters randomly arrayed on
a grid.

Despite the similarity in names, Word Challenge II is significant improvement
over its original incarnation, Word Challenge I. The addition of mouse
based word entry fully utilizes the Mac's intuitive play action. Just click
and drag, highlighting letters in the process. Releasing the mouse button
enters "selected" words into a scorekeeping window. Letters may also
be deselected by backtracking along the original path.

While this may not appear to be a major breakthrough, keyboard freedom
is important for slow or poor typists. In WC II's timed environment
speed is of the essence. Mouse maneuvering reduces the edge LEX
(the game algorithm you're actually playing against) has when kicking
keycaps. (Touch typists can still use the keyboard.)

Word Challenge II is pretty much mix and match software. All game
options are redefinable through pull down menus. Pick a difficulty
level from A (hardest) to Z, choose from three board sizes (3 x 3, 4 x 4
or 5 x 5), and set the individual game time from 1 to 999 seconds.

Users may also define match point (from 1 to 999 points), toggle the
sound effects on or off, get automatic credit for embedded words ("are," 
"found," "in," "rare," "is," etc.), or create boards through manual letter entry.

Even the scoring may be tailored to suit personal tastes. For purists,
one of the five options matches the scoring system used in Boggle. The
others address the realities of different size boards or the size and com-
plexity of discovered words. Under no conditions are points awarded for
one- or two-letter entries.

The LIST ALL WORDS option displays every possible combination on a
board during the scoring. It's amazing (and sometimes demoralizing)
how many words show up after you're dead certain there are no
more. Viewing all the possibilities isn't really cheating; most people
won't be able to remember where they saw something because there
are 65,536 unique boards per puzzle size!

A competitive play mode addresses the human versus computer only
capability of Word Challenge II. (The limitation is inherent in the
nature of the game, not the software.) By playing LEX, the pro-
gram's 90,000 word adversary, at the same difficulty level each time,
the computer's responses will be the same for identical boards. People
taking turns playing against LEX under these circumstances (difficulty
level and game number) engage in indirect competition to determine a
head to head winner.

The letter grid sits over a scoreboard displaying a running numeri-
cal account of the possible words and score as well as the current game
and total scores, all updated on a word for word basis. A window on
the right displays legal words and the party receiving credit.

Despite the large dictionary, Word Challenge II does not know all legal possibilities. After the automated scoring process you are given the option of reviewing or bypassing unknown words. Reject or accept them on a
one for one basis, thereby compensating for finite memory restrictions.

Depending on the match point level, several games will probably
comprise a set, leaving room for strategic and tactical maneuvers. On
the tactical level, proper names and geographic locations are accepted;
use of embedded words keeps game times reasonable.

Strategically speaking, 300 to 360 seconds are needed to build words of
five letters or longer on a default (4 x 4) grid. Add another 30 to 45
seconds for larger grids. Change difficulty levels between games to keep
the game interesting. Don't try for a lot of exotic words, key in on the
most frequently used letters, a, e, i, l, n, o, r, s, and t. Look for variations
of base words, building longer ones in the process.

While Word Challenge II ran smoothly, there are still a few areas
open to improvement. When using the embedded word feature be care-
ful to spell the "superset" word correctly, or there'll be no credit for
"subset" words, even if they're spelled correctly!

The on-screen timer counts down when not selecting letters. When the
mouse button is depressed the timer freezes, making it appear as if time
has ground to a halt. That's not the case, so don't select a letter while
searching the grid for possibilities; you'll only be fooling yourself.

Because matches may take 30 minutes or longer, Word Challenge II needs a pause
provision for interruptions during individual games. Phone calls and
ringing doorbells can spell disaster to any game, perhaps throwing an
entire match in jeopardy.

So there are a few annoyances. That's true of most software. If you can
live with them, then the software
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A PLAY ON WORDS

serves its intended purpose. Such is the case with Word Challenge II. Whether used for Boggle practice, as a Boggle replacement, for education or entertainment, Word Challenge II is challenging, refreshing and stimulating.

CONFUSING? NO, PERPLEXXED

Spinnaker-Hayden has another "wordy" offering for the Mac. Entitled Perplexx, this Scrabble look and play alike also pits wordmasters against a computer foe named Lexx. Only this time it must be Word Challenge's cousin or something, because this Lexx spells its name differently. It has the same 90,000 words, though.

Perplexx goes beyond Word Challenge II in one significant area, allowing up to four players per game. This extra dimension of human competition heightens the program's enjoyment value, and, for my money, is the best way to play Perplexx. It works on a 128K Mac, but 512K is needed to access the standard desk accessories. (This, and the others reviewed here, work flawlessly on the Mac Plus as well.)

Even though Perplexx can play like Scrabble the default settings are plain vanilla; a 13-by-13 grid without bonus squares and six letters (tiles in Scrablese) per rack, played at the easiest of four difficulty levels. Basic similarities include two wild card tiles (visualized as asterisks), the ability to pass or trade in tiles, and the vertical/horizontal layout of the proceedings.

If enjoyment is the end product of Perplexx, and it is; then its byword has to be flexibility. Board sizes, bonus square placement, difficulty level selection, the setting of match points, the number of occurrences per letter and the value assigned to each are all user definable.

Games and board formats may be saved for later recall, boards of 11 by 11 or 15 by 15 squares are also possible. The number of tiles per rack ranges from five to seven, while bonus square options include double and triple letter and double and triple word. Don't let the seeming complexity and array of options intimidate you, sophisticated Perplexx boards take but a few minutes to design.

Besides bonus squares, additional points are awarded for players using all their letters in a single round or using the last letter in a game. Points for pieces not used at the end of a match can be added to the score of the player (if any) who used all of his/her pieces in winning the match.

Matches end in one of two ways, on the first empty rack or when all players are finished; that is, they can no longer produce legal words. The choice is up to you.

The player with the highest remaining score (after residual rack points are subtracted) wins unless a match score has been set. If one has, then the first player to reach the goal wins. Further refinements are possible.

Perplexx also takes a leaf from the book of computer chess. The MOVE MASTER option makes it child's play to take moves back, replay single moves, or replay all moves (taken back). This option is useful when developing or studying tactics and strategies. Along similar lines, Lexx will make moves for every player or provide hints; all you have to do is ask.

When playing against others, the contents of individual racks may be hidden from view. If desired, Lexx's tiles and the search process it uses to determine the best entries can be displayed. Despite the fact that Lexx takes longer to move at higher difficulty levels, it can be forced at any time by clicking on the HALT SEARCH button. By now you understand, Perplexx configurations are near limitless.

Scrable afficionados already know the tricks of the trade, so the following tips are for those unfamiliar with either game. Place words to take advantage of bonus squares; conversely, play to deny the bonus multipliers to others. Make multiple words in a single round through shrewd placement of key letters. Often times two or three small words created in this fashion count for more than large words which also provide opportunities for the competition.

Pass to prevent giving others a crack at bonuses or to swap rack tiles for ones in the kitty. Big plays often come by merely adding "s," "d" or "p" as suffixes. Short prefixes, such as "re," help the cause too. As Lexx only plays one turn deep, look further ahead. The rewards are phenomenal.

In use, Perplexx performs flawlessly. Pull down menus, windows, buttons, etc., all add up to a high comfort level. Speed of execution is acceptable for the most part, though there are times when it appears that the search routine has gone to sleep.

The point, click and drag method of placing letters is near foolproof. Through the same procedure, letters may be rearranged on the rack, providing valuable insight into potential entries.

The instruction manual is clear, concise and complete. The combination of excellent written instructions and the intuitive interface considerably shorten Perplexx's learning curve. Consequently, the fun begins almost immediately.

Ted Salamone is a freelance writer and computer game aficionado.
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IN THE FIRST TWO ARTICLES OF this series we found out how to set up a program using the Mac interface. We also examined the special event handling methods used by such a program, and now we'll see how we can add our own music routines. We'll use the Macintosh sound generator to create various types of music.

The Macintosh has three types of sound-generation techniques. We'll be working with two of them: square-wave and four-tone synthesis. The first is the simplest, and is used to create the normal beeps and bells that we hear from the Mac when it is turned on or when alert boxes are displayed. The square-wave synthesizer also can be used to create simple, one-voice musical tunes.

To produce tones with the square-wave synthesizer we utilize a predefined record type called SWSynthRec, which is defined as:

```pascal
SWSynthRec = Record
  Mode: Integer;
  Triplets: Tones;
End;
```

Mode is an integer that acts as a flag for the Macintosh music generator routines and tells it which type of synthesizer technique to use. There are three predefined constants for the three types of synthesizers: swMode (equal to -1 for square-wave sound), ftMode (equal to 1 for four-voice sound) and ftMode (equal to 0 for free-form sound).

The type Tones is an array of 5001 predefined records of type Tone:

```pascal
Tone = Record
  count: Integer;
  amplitude: Integer;
  duration: Integer;
End;
```

Count is the frequency of the tone to be played, amplitude is the height of the square-wave (in the range 0 to 255 only) and duration is the amount of time that the tone will play in ticks (1/60th of a second). Count is not an exact musical frequency, but the actual frequency in Hertz (Hz). It can be calculated by the formula:

```
Frequency = 783360/count
```

Inside Macintosh contains a table of the values for count that will produce various notes from the musical scale.

In order to play a square-wave tone we fill an array with each of the notes and then call StartSound with a pointer to the array. Unfortunately, the Tones array, which is predefined, is set to 5001 elements, and is terribly inefficient with memory, especially for short tunes. Therefore, our program uses a technique for dynamically creating the elements of the array. This can be done since the StartSound routine automatically stops when it finds an element with zero for the count, amplitude and duration.

The StartSound procedure takes three parameters: a pointer that points to the sound buffer in use, a LongInt that holds the size of the buffer in bytes, and a ProcPtr that points to the procedure that SoundPtr should call when it has finished a sound. The last item is primarily meant for use with programs that will make sounds while other things are still going on. For this example, we will pass Pointer (-1) as the ProcPtr to tell StartSound that we don't have a completion routine. Note that the first parameter is a generic pointer (Ptr) so that we may pass any one of the three Mac synthesizer record types by using type coercion.

FOUR-TONE SYNTHESIS

The four-tone synthesizer is a bit more complex to use than the square-wave, but it allows us to play music with up to four parts of harmony. For our example, I have selected Bach's famous Crab Canon, which has two parts. This piece is particularly interesting because the harmony for one voice is simply itself played backwards. Thus we need only define half of the tune and then define the second half by reversing the first part.

A four-tone synthesizer record is defined as:

```
FTSynthRec = Record
  mode: Integer;
  sndRec: FTsndRecPtr;
End;
```

The mode flag is set to 1 (defined by the constant ftMode). FTsndRecPtr is a pointer to a four-

---

by Steven Martin
THE SOUND OF PASCAL

tone sound record defined as:

```
FTSoundRec = Record
duration: Integer;
sound1Rate: Fixed;
sound1Phase: LongInt;
sound2Rate: Fixed;
sound2Phase: LongInt;
sound3Rate: Fixed;
sound3Phase: LongInt;
sound4Rate: Fixed;
sound4Phase: LongInt;
sound1Wave: WavePtr;
sound2Wave: WavePtr;
sound3Wave: WavePtr;
sound4Wave: WavePtr;
```

Duration is the length of the tone in ticks, Rate defines the frequency of the particular note, Phase defines where in the wave the tone is to begin, and Wave is a wave pointer to the structure:

```
Wave = Packed Array[0..255] of Byte;
```

We define a wave by setting each byte in the Wave array to a value that will correspond to the amplitude of the speaker. In the example, we set a simple square-wave for both voices. A table of values for notes or the four-tone synthesizer is also included in Inside Macintosh.

When calling StartSound with the four-tone synthesizer, unlike the square-wave synthesizer, only one note at a time is passed, so we must

```
Listing 1: The routines for our demonstration

Procedure PlaySWMusic;
Const
bufferSize = 512; {Adequate for 512/4 = 80 notes}
Var
SoundPtr: Ptr;
SoundHandle: Handle;
SoundSWPtr: SWSynthPtr;
i: Integer;
Begin
SoundHandle := NewHandle(bufferSize);
Lock(SoundHandle);
SoundPtr := SoundHandle;
SoundSWPtr := SWSynthPtr(SoundPtr);
With SoundSWPtr Do
Begin
mode := swMode;
triplets[0].count := 1484;
triplets[0].duration := 24;
triplets[1].duration := 24;
triplets[2].duration := 24;
triplets[3].duration := 1055;
triplets[4].duration := 24;
triplets[5].duration := 24;
triplets[6].duration := 24;
triplets[7].duration := 24;
triplets[8].count := 1133;
triplets[9].count := 1187;
triplets[10].duration := 24;
triplets[12].count := 1274;
triplets[13].count := 1391;
triplets[14].count := 1391;
triplets[15].count := 1391;
triplets[16].count := 1391;
triplets[17].count := 1391;
triplets[18].count := 1391;
triplets[19].count := 1391;
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triplets[77].count := 1391;
triplets[78].count := 1391;
triplets[79].count := 1391;
triplets[80].count := 1391;
triplets[81].count := 1391;
triplets[82].count := 1391;
triplets[83].count := 1391;
triplets[84].count := 1391;
triplets[85].count := 1391;
End;
End;
End; {PlaySWMusic}
```

```
Procedure PlayCanon;
Const
NumOfNotes = 136; {Number of notes in the Canon}
FTBufferSize = 50; {Size of an FTSoundRec}
Quarter = 40; {Duration for quarter-note}
Eighth = 20; {Duration for eighth-note}
Var
i: Integer;
Tune: Array[1..NumOfNotes] of FTSynthRec;
TunePtr: FTSynthPtr;
MyWave: Wave;
MyWavePtr: WavePtr;
Begin
MyWavePtr := NewWave;
With Tune Do
Begin
```
```
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Expand your horizons, go see MDIdeas TDBK-20 +, HD-20, and HD-30 at your local authorized Apple dealer.
THE SOUND OF PASCAL

loop through the entire array of notes until the tune is finished.

When using fewer than four of the voices with the four-tone synthesizer, remember to set the extra voices to zero, or you will hear odd pitched notes in your music set.

Listing 1 shows routines to play square-wave and four-tone music. It also includes a procedure that displays the title of the program inside the window. These routines should be added to the Shell program (MacUser, July and August 1986) just after the SetUpThings procedure.

Note that the routine which displays the title in the window uses a picture handle to maintain the window’s contents during updates. This is a method that can be used effectively when the window will contain simple drawings, and it allows the Window Manager to handle updating the contents.

To get the program to play the tunes when we want, we must add a menu selection to the Shell program. Listing 2 shows the changes to the FileMenu set up and Listing 3 shows the changes to the FileMenu case statement in the ProcessMenu... procedure so that these items will call the correct music routines. Finally, Listing 4 shows the changes to the Main program block that displays the title in the window.

---

### MUSIC IN PASCAL

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For i := 69 To NumOfNotes Do

Tune(i).sound1Duration := Quarter;
Tune(i).sound2Duration := Quarter;
Tune(i).sound1Duration := Quarter;
Tune(i).sound2Duration := Quarter;
If you already have the Shell program that we developed in the previous two issues, then adding these routines to the correct locations will allow you to compile the demonstration properly on the TML Pascal compiler. Next month we shall see how output can be sent to the printer from a Pascal program on the Macintosh.

Steven Martin is a Denver-based programmer and author.

---

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**O C T O B E R 1 9 8 6 M A C U S E R 1 0 9**
DO YOU REMEMBER WHEN YOU first got your Mac, looked inside the System folder, and found a few little Macs — one labeled System, and one labeled Finder? The System was easy enough to accept, even if you weren't entirely sure what it was — every computer needs some sort of operating system. But the Finder ... what in the world was that for?

The desktop is so much a part of Mac that it seems hard-wired, somehow already hiding behind that gray screen when you turn the Mac on. But, it's only the Finder doing its job. The Finder itself is "just" another application; and, like other applications, it can be upgraded — and it has been, a number of times.

What with newcomers (thank goodness there are always beginners among us, swelling the ranks) and new Finders (to which we update without looking at the specs), it's time to take a closer look at the desktop and the things you can do there.

THE WINDOWS

When you "open" a disk in the Finder, you get a window that lets you look into that disk and see what's on it; when you open a folder, the same thing happens. (An OPEN command, whether from the File menu or as a double-click, can mean two different things: it opens a disk or folder so you can look inside, but it also "launches" an application directly or by way of a document.)

There are lots of things you can do to make your windowing easier, not the least of which is making sure you've upgraded to the new ROMs so you have a Zoom Box in each title bar. A single click in the Zoom Box toggles a window's size and position between the one you define and an almost full-size one that conveniently leaves a strip of the desktop showing so you can see the Trash Can and disk icons.

Any time you want to move a window around without making it active, hold down the COMMAND key while you drag the window; when you want to close all the windows at once, hold down the OPTION key and click in the Close Box of the top window.

The Finder keeps track of the changes you make while working on the desktop: which windows are opened or closed, and where files are moved. When you return to the desktop after working in an application, or after closing down the Mac, it will appear as you left it — unless you fool the Finder.

You can "blindfold" the Finder by pressing the OPTION key whenever you change things on the desktop. It won't know that you've opened a window, or shuffled its contents around. This can save time in a number of ways:

- Keeping a neat desktop, with few windows open, means it takes less time for the desktop to appear when you return to it. If you're looking through a lot of folders, you won't have to close them all before leaving the desktop; the Finder won't even know you opened them.

- When you've rearranged your desktop, the changes are recorded in a special file before you leave it; this results in a delay before an application opens. If the Finder thinks you've made no changes, it won't have to record them.

- Have you ever ejected a disk, leaving its image on the desktop — and one of its windows remains, blocking your view? If you close or move that window and then try to launch an application from the remaining disk, you'll be asked to

by Sharon Zardetto Aker
FINDERS, KEEPERS

insert the ejected disk — the Finder has to record the window adjustment on the disk the window belongs to. If you don’t let the Finder know what you’re doing to that window, it won’t ask for the disk before it proceeds with the application launch.

One of the few times the Finder remembers something you’ve done with the OPTION key down is when you use it as a shortcut to close all the windows. This brings us to the catch — you can’t close a window without the Finder finding out. If you do it with the OPTION key held down, all the windows close and the Finder knows about it; if you do it without the OPTION key, the Finder knows about it in the normal course of desktop events.

ICONS

When you’re working with icons, keeping windows neat is easy with the CLEAN UP command in the Special menu. This command aligns all your icons on a predetermined grid. If you have the extra time (a couple of seconds) you can watch them move into place — they’ll slide into the nearest empty space, which means sometimes there will be a few empty spaces in the grid.

A faster way to clean up a messy window is to hold the OPTION key down while you select CLEAN UP — the window goes blank, and then the Finder deals out the icons one at a time into each available grid spot, leaving no empty spaces at all. (This is another OPTION option that the Finder remembers.)

Once your window is neat, you can keep it that way by holding the COMMAND key down whenever you move an icon. When you release the mouse button, the icon snaps into place on the grid. It will, though, snap into the nearest place, so it may land on top of another icon — aim a little before you let go. And if your window is crowded, try switching to SMALL ICONS in the View menu.

TEXT VIEWS

Mac people get so used to icons that they tend to ignore handling the desktop in any other way. However, there are advantages to the alternate

The CLEAN UP command aligns icons neatly, but may leave gaps in the grid. Use the arrow key with the COMMAND to fill in all the spaces. Note that the size of this folder is not available in the window — only a report on the space left on the disk. The double square in the upper right corner is the Zoom Box available with the new ROMs.

Text views offer more information about each item in a window; the column by which the list is sorted is always underlined.

The Get Info window provides some unique information about each file, as well as the opportunity to lock and unlock the file.

LOOKS AREN’T EVERYTHING, BUT ...

You can change the desktop pattern by using the Control Panel; use any of the available patterns, or create your own.

Your desktop starts out gray, but you can change its pattern with the Control Panel. Click on the white bar above the desktop pattern in the Control Panel, and sample patterns will appear; clicking to the left or right of the center in the bar moves you backward or forward through the available patterns. A FatBits representation of the pattern appears to the left; you can edit this to any design you like. When you find or create the pattern you want, click in the pattern sample and the desktop will change accordingly.

If you really want something fancy, Desk Scene from PBI Software lets you turn any MacPaint document into a desktop background. As for the icons, PBI also offers Icon Switcher. This utility lets you easily change any icon on your disks. You can alter or replace an application icon, or its document icons, or the Finder’s own icons.
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arrangements available from the View menu. It took me more than a year to make regular use of any of the text views — but you shouldn’t wait any longer.

Text views offer more information about each item than an icon does. You can see at a glance, for instance, how much room a file takes, and if it

In early versions of the Finder, text views were just that — views. Now you can manipulate your files while in any text view: drag them into the Trash, rename them, place them in folders...anything except rearrange them, since text views are arranged in the specific order you asked for. And, although you can’t select multi-

In addition, the GET INFO window provides an area for comments about any file, and it is only in this window that you can lock and unlock files. A locked file can’t be thrown out by mistake. It can’t be changed, either; if you open it in an application and try to save changes to it, you’ll get a dialog box to that effect.

A locked file is noted in a text view with a little padlock. In an icon view, you can quickly check if a file is locked: place the cursor over the name of the file — if it does not change to the I-beam text cursor, the file is locked. You can throw out a locked file on purpose, though, without unlocking it first...which brings us to the Trash Can.

TRASH CAN

So, what’s there to say about the Trash Can? Just drag a few icons into it and select EMPTY, right?

First, you don’t have to empty the Trash. As soon as you open an application, Mac takes out the Trash for you. Or, if you eject a disk, the files from that disk which you’ve placed in the Trash will be erased.

(How many ways can you eject a disk? Select it and choose EJECT from the menu; select and hit COMMAND-E; hit COMMAND-SHIFT 1 or 2 to eject from the internal or external drive; or drag the icon into the Trash — nothing’s erased, but the disk will pop out.)

When you try to throw out an application, the Mac will ask if you are sure; to avoid this double-check, hold the OPTION key down as you drag it to the trash.

You can’t just drag a locked file into the Trash; the Mac will tell you that it can’t be thrown away, and it will bounce right back to its original position. But if you hold the COMMAND key down, you can put any locked file in the Trash.

Don’t forget, you can open the Trash Can and look inside — once the Trash window is open, you can rescue items from the garbage, as long as it hasn’t been emptied.

PRINTING FROM THE FINDER

There are two different Print commands available in the Finder’s File menu. PRINT CATALOG prints the
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**FINDERS, KEEPERS**

You can set up a hierarchical MiniFinder so that opening one icon shows 12 more choices.

contents of the active window on the desktop — in whatever is the current view. The PAGE SETUP command applies to this print command.

The plain PRINT command applies to whatever document you have selected on the desktop. Its parent application will be opened, the document is loaded, and then it's printed. This is a convenient way to set up the printing process for any program (almost every program, as far as I know) that doesn't let you set up a chain of documents to be printed.

You can, for instance, select four MacWrite documents and give the PRINT command only once to get them all printed. It's also a convenient way to get multiple copies of MacPaint documents — duplicate

**OPEN SESAME**

When you're in the OPEN or SAVE boxes of any application and you're accessing a disk under HFS (you'll know — you can see the folders), there are lots of ways you can get at and open a file.

First, is the right disk showing? If not, use the TAB key instead of pressing the Drive button to look at other available disks. In a few special programs — most of Microsoft's products and Living videotext's MORE — the COMMAND key can be used to access other buttons: COMMAND-C for COMMAND-PERIOD for CANCEL, and COMMAND-E for EJECT. Say you're in the OPEN box, and you want to select a certain file. Here's the slow way: scroll until the file shows in the window, click on it, and press the Open button. It's a little quicker to just double-click on the filename when you see it. But, it's a lot quicker to select the file (or the folder) in ways other than scrolling.

Pressing any alphanumeric key on the keyboard selects the first file that begins with that letter or number; keep typing, and the file that matches the keys you're pressing will be selected. Another way to select files/folders in the scroll box is to use the cursor keys: the up and down keys will select the file above or below the currently selected one. The fastest way may be to press the first letter of the file's name so you're in the right area, then use the cursor key to move down one or two to get to the right spot.

When you're saving a document, you can't select a folder in the scroll box by typing its name, or any part of it, since that enters the characters into the document's name. You can, though, use the cursor keys to scroll to folders in the window; pressing RETURN opens that folder. If no folder is selected, then pressing RETURN saves the document in the currently open folder.

It's easy to move down in the hierarchy: just keep opening folders. Moving back up is easy with the mouse: all you have to do is pull down the menu above the scroll bar and select the folder you want to move to. It's even faster with the keyboard, though: press COMMAND-UP cursor and you move up to the last folder you opened. There should be an easy way to jump to the main disk level with a keyboard command, but I haven't found it.
them on the desktop, select all the copies, and PRINT.

MINIFINDER

One of the more recent additions to the Special menu is the MINIFINDER command, which lets you ignore the Finder altogether. (You don’t even have to have a Finder on the disk if a MiniFinder is set up.)

Select the applications and documents you want to have available when you’re in the MiniFinder, and choose USE MINIFINDER from the Special menu. The next time you run an application and quit from it, or start up your Mac, you’ll be in the MiniFinder instead of on the desktop. Or, to get right to the MiniFinder from the desktop, just double-click on the MiniFinder icon once it has some files “installed.”

In the MiniFinder, you can select and open an application or document; if you need to open an application that has not been installed, just hit the “Open Other” button and you’ll get a list of available applications.

That’s the general idea, but, as with everything else, there are a few little tricks: pressing the TAB key is the same as hitting the “Drive” button, and pressing the ENTER key is the same as hitting the “Finder” button.

Then there’s a bigger trick: Set up hierarchy of MiniFinders if the 12 available icons in a single MiniFinder are not enough: Set up the MiniFinder by installing items that belong in a single category — “games,” for instance. Duplicate the MiniFinder icon, and change the name of the copy to something appropriate. Set up the original MiniFinder again, installing a new group of items — the new installation will erase the previous items. Copy the MiniFinder again, and change the name of it.

When you have all the subordinate MiniFinders set up, select them and install them into the original MiniFinder. Run the MiniFinder, and you’ll see up to 12 icons — open any one of them, and you’ll see up to 12 more icons.

Sharon Zardetto Abler is a contributing editor of MacUser and author of many computer books.

Sony

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Nashua

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October 1986 MacUser 117
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### Accessories

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### Books

- Creative Programming in 
  - Microsoft BASIC
  - Excel in Business
- Macintosh Midnight Madness
- MacWorkMacPlay
- Macintosh Magic
- Macintosh Multiverse
- Presentation Graphics on Mac II
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MONTHLY TIPS AND TECHNIQUES THAT SAVE TIME AND TROUBLE

HAYES-COMPATIBLE MODEMS

To temporarily disable the internal speaker, type ATMR from your terminal program and press RETURN. An "OK" verifies that the volume control is set to off. To turn it back on, type ATM1 and press RETURN.

TOM KNOPLEN
SONOMA, CA

When using the autodial command offered in many terminal programs, you may want to change the amount of time that the modem waits for a carrier before redialing a number. The command ATMR = x sets the number of seconds it waits (x is the number of seconds). The default value is usually 20 seconds, but can be changed to just about any number less than 255.

RICHARD BLOCKER
DETROIT, MI

MS BASIC

If you accidentally open an MS BASIC document from the Finder, but meant only to open the program, press COMMAND PERIOD (.) while the program boots. You'll be greeted by an empty document.

MICHAEL STEWART
KANATA, ONTARIO

COPY II MAC

The newest versions of Copy II Mac won't transfer a protected program from a single sided disk to a double sided disk. In order to do this, use the Copy II Hard Disk program included with Copy II Mac, and set the target double-sided disk as the hard disk volume to write the protected program onto. The protected program should then run from the DS disk. (Note: this doesn't work with all protected programs.)

DICK ROLLER
PARIS, IL

COMICWORKS

ComicWorks has a special FKEY that copies any part of the screen to the Clipboard as a bitmapped image. Using ResEdit, this FKEY can be copied and pasted into your own System. In ResEdit, open the System on the ComicWorks master disk, and open the FKEY resources. FKEY 6 (Screen Clip) is what you're after. Select it and COPY, close the ComicWorks System. Open the System you want to install it on, open FKEY, and Paste.

MIKE SAENZ
NEW YORK, NY

SYSTEM

To keep the Alarm Clock DA running and in sight in an application, simply open it from the Apple menu, move it to the highest possible position on the screen, and move your active window down, allowing the DA to peek through. Even if the front window is active, the Alarm Clock will continue to display the correct time. This doesn't work in MacPaint and other programs with a fixed main window, and will not survive a program Quit.

SIoux Roberts
CLEARWATER, FL

The new Control Panel doesn't have something the older one did: a control to set the time and date in PRAM. This must now be done with the Alarm Clock desk accessory.

JERRY SANDERSON
SAN FRANCISCO, CA

HFS/NEW ROM

INIT resources are procedures that automatically execute when you start your computer. (An example of an INIT is a clock that installs itself into the menu bar upon startup.) INITs usually reside within the System file (and have to be placed there using an installer program, or pasted in with ResEdit), but if your Mac has the new ROM chips, there is another way to get them to work without permanently installing them. Take the INIT file that you want to run, change the file type to INIT (using Fedit or ResEdit), and place the file into the System folder. It will now execute without actually being installed into the System file. This makes it easy to remove the INIT file, if necessary.

JASON SCHECK
BISMARCK, ND

You can squeeze the best performance out of HFS by getting into the habit of having a lot of folders, each one with few files, instead of a few folders with many files.

LANCE LEWIS
FLEMINGTON, NJ

If you try to create a screen dump while a menu is open, you'll discover that it doesn't work. You'll have to use the Camera public domain desk accessory to get a dump of a menu or a screen with an open menu. Be careful using this DA on a Hyperdrive, or if Macserve is installed. It has been known to cause problems in these configurations.

CARA BANGEL
RAMSEY, NJ

Camera Desk Acc. ©1985 by Keith R. Esau

Send Picture To:

- MacPaint™ File
- Imagewriter
- Invisible Cursor
- Normal Cursor

Seconds Before Taking Picture: 5

OK Cancel Instructions

Found a trick, shortcut or smarter way to get something done with a program? Share your hints with The Rest of Us by mailing them in to Tips, 25 West 39th Street, New York, NY 10018. We'll pay $25 for every hint we use, plus we'll print your name and hometown in the magazine. So what are you waiting for? Here's your chance to be rich and famous. Well, at least famous!
If you're using a hard drive, and wish to make a floppy (or another volume) the startup (as long as it has a System and Finder) hold down the Option key while launching an application. That disk will then become the startup disk.

DEBBIE REINHART
PORTLAND, OR

If you want to use the original external numeric keypad with the new ROMs, you'll find that the first character typed on the regular alphanumeric keyboard will not register in the computer. If you type the first character on the numeric keypad itself, it repeats the character continuously until another key is pressed.

GODWIN MENSAS
HOBOKEN, NJ

Before and after using Jazz, be sure to power down your Mac. Jazz puts a few things into memory that don't get erased by the reset button, and you may find some "ghosts" haunting the next application you use.

JOHN PARVEDES
STANFORD, CA

To copy one paragraph's format to another paragraph, choose show ¶ from the Edit menu. The paragraphs' breaks will show. Choose the break symbol (¶) from the end of the paragraph with the formatting to be copied, and copy it. Select the ¶ from the end of the paragraph to be modified, and paste the first ¶ into its place. If you cut the ¶, the paragraph will assume the formatting of whatever is directly beneath it.

RICHARD D'AMICO
SAN ANSELMO, CA

When using pictorial fonts (such as Cairo and Mobile), it isn't necessary to install the fonts into the System in order to have easy access to them. Create a FullPaint document with the desired characters from the graphic fonts, and when needed, open the file, copy the characters that you want, and paste them into your working window.

CHRIS UNSINGER
ANN ARBOR, MI

To reduce the size of the FullPaint program, use ResEdit to clear the two help screens (stored as PICT resources). This will chop 14K from the program.

SCOTT MYERS
NEW YORK, NY

Sometimes MacWrite adds a last page to a document, even though the document has nothing on that page. To avoid the printer wasting a sheet of paper, click on the last character of the document, and drag down until the cursor will go no farther. Any dead space will be selected. Hit the BACKSPACE key to delete it.

BILL SCHUHLE
PROVO, UT

There is a way to paste text from the Clipboard and have it wrap within an area. Create the rectangle that the text is to wrap within, and type any character (hitting the space bar will suffice). Any text that is pasted in will wrap to the size specified by the original rectangle.

RON HATHCOCK
PROVO, UT

There's a special trick to transferring an object graphic from MiniDraw to a bit-mapped program such as MacPaint or FullPaint, while maintaining the original fill patterns ratio, no matter what scale is specified in the paint program. Select the area that the object graphic is to be pasted onto using the selection marque, and paste the graphic. It will scale itself to the size specified by the marque without distorting. Resizing it after is deselect the marque, though, results in a distorted stretch.

MICHAEL DEWITT
BROOKLYN, NY

While printing a multiple page document, you may get a message that the "print command cannot be completed." Work around this by printing only a couple of pages at a time (use the page range selectors in the Print dialog box).

HANNES HOFER
HOUSTON, TX

There is a way to paste text from the Clipboard and have it wrap within an area. Create the rectangle that the text is to wrap within, and type any character (hitting the space bar will suffice). Any text that is pasted in will wrap to the size specified by the original rectangle.

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MICHAEL DEWITT
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MacUser has accomplished what it set out to do: become the de facto Macintosh resource, where you can find out about the best software, hardware, and how to use your Mac. It's not unusual that one of our readers stated, "When I have a problem with a program, I don't reach for the manual—I reach for MacUser."
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Get 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 MacUsef, 25 West 39th Street, New York City, NY 10018. Dan will read all of your questions, but, unfortunately, he may not be able to answer individual queries. Watch this space for the pick of each month's Q & A crop.

I am an old Apple IIe user and have recently become a Mac owner. I was obsessed with the fact that the Mac was getting so hot. After reading many ads about a fan for the Mac I started my search. In my area no one had a fan, but I did find a cheaper and effective solution to the problem, which I would like to share with others.

For $14.95 you can purchase a Toyo fan model TFS80115A at an electronics store and mount it on the top of the Mac, over the left vent. Use small strips of Velcro to keep it in place. The fan is not the quietest, but it sure keeps the Mac cool.

GLORIA MORRISON
ARCADIA, CA

Thanks for the tip, Gloria. However, under normal operating conditions and with healthy hardware, there is no reason why your Macintosh should require a fan. Unless you have a third-party RAM upgrade, a HyperDrive, some other non-standard hardware, or work in an extremely hot environment, the heat produced by the Macintosh is well within the tolerance levels we have set. If your fan has eliminated frequent system crashes, great. But rather than put up with a noisy fan you might be better off having your Macintosh checked out by a good dealer.

I have a 512K Macintosh and a CAD system. How can I load small drawings from the CAD system into the Macintosh and print the resultant drawing on a LaserWriter?

The idea would be to pull down the drawing from the CAD system, save it in MacDraw in both DRAW and PICT formats and use it with Word text and/or PageMaker. My CAD system can download in both IGES and binary format. It has a SCSI port. My problem is how to get the data into the Macintosh.

I understand there are some Technical Notes that may be of use. If these notes are a myth what other avenues can you suggest? What I am doing now — plotting the drawings and then physically cutting and pasting them into a Word or PageMaker document — is ridiculous considering the capabilities of the Mac.

MARGARET RUSSELL
WOBURN, MA

What you want to do is entirely reasonable, but I don't know of any commercially available solutions today. First, IGES format would not be understood by MacDraw (which only understands QuickDraw) ... your CAD system's binary format is probably even more useless to MacDraw. Somehow you need to convert the internal format of your CAD systems documents to one that MacDraw or MacPaint can deal with. I don't know of any programs that can do that. I'll send you some Tech Notes that explain the DRAW and PICT formats as well as the MacPaint formats.

If you know enough about your CAD system's internal file formats, and your CAD system also gives you access to a programming language, you could write an appropriate conversion program. Even if you get that far you'll still have to deal with transmitting the files over the SCSI port, which will require even more programming, both on the Macintosh and on your CAD system. All in all, it's no easy task. Have any of you solved this one? If so, please let me know!

I am sure that most every Mac user has run into a bomb at least once and not understood what was going wrong. For instance, I am running into a lot of numbers 14 and 10. What are these? What do all the other numbers mean? Where can I find a breakdown of exactly what system error has occurred? If the numbers are to be found in Inside Macintosh could you print a list of these cryptic purveyors of doom for the rest of us who cannot afford, have no desire, or are not yet able enough to use that mighty tome?

AUGUSTUS SCHON-RENE
GENEVA, NY

While searching our technical support databases (with the hope that someone had already comprised a list of error codes, saving me the trouble of typing them all), I stumbled upon this most eloquent explanation. Thanks to Apple Technical Communications for this gem.

No document can detail the various Macintosh system errors because system error codes themselves are not very descriptive. The Macintosh provides almost no internal error reporting mechanism and the architecture's complexity usually renders the error codes meaningless.

Here's a metaphor. Suppose you're driving down a road and you see a car rammed head-on into an oak tree, all in flames. What happened? Was the driver drunk? The road slippery? Did a tire blow? All physical evidence is destroyed because of the impact, if you weren't there to see the accident, up close, there's no way for you to know exactly what happened. If you could re-live it, in slow motion, then maybe you could see the causes (obvious or subtle), and if you were an auto mechanic, road builder or doctor, perhaps you could prevent it from happening next time.

So it is with the Macintosh. A million things can go wrong in very complex ways: a handle can be dereferenced, or a routine can get a NIL pointer, or the stack can dip into the heap for just a few cycles and not be caught by the stack sniffer, or an application can forget to check an error code. Whatever the cause, the result is that the Macintosh loses control and hits the oak tree.

You don't know which oak tree it will hit on which road; sometimes it can careen for seconds on end before executing an unimplemented instruction or jumping through an invalid return address.
A user can do almost nothing for an application that shows a system error ID on a crash. If it's reproducible, the programmer is usually very interested in seeing how it was done, but finding out what's wrong involves the use of debugging tools, intricate knowledge of Macintosh memory structures, and familiarity with the application itself. Fixing it usually involves recompiling the source code.

But whatever happens, if a Macintosh ever gets out of control, it usually crashes with a system error code. For your information, here's what can be said about the codes:

ID=02 is Address Error; that means a word- or longword-based instruction was passed (sent to) an odd address. That's not allowed. Since hitting an odd address is a 50/50 proposition when running random code, this one shows up quite often.

ID=03 is Illegal Instruction; less likely than 02, but still very common.

ID=07 (Privilege Violation), 06 (TrapV Exception), 11 (Miscellaneous Exception), and 12 (Unimplemented Core Routine) almost always happen because of getting loose, and, along with ID numbers 2 and 3, probably cover 90 percent of all crashes.

ID=04 is a Divide By Zero; either the programmer was dumb and didn't check, or the program got loose, or in some cases the programmer put these in as debugging aids and forgot to take 'em out. Same for ID=10 (Line 1111) and ID=05 (Clock Exception).

ID=08 (Trace Exception), 13 (Priority Interrupt), and 14 (I/O System Error) are hardware-related and should not be seen on a Macintosh except when strange hardware or debugging tools are in.

ID=15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 26, 27, 30, and 31 all come up when the System file is trashed. Replacing the System file may cure these.

The only ones left are ID=25, 28, and 31. All of these are memory errors: memory full, stack overflow, or memory manager failed. You'll see these when running a 512K application on a 128K machine, or under Switcher in too-small partitions.

How do I connect my Advent TV set (large screen) to show the picture on my Macintosh computer screen? I also have a camera and TV recorder.

GORDON GOLD
CHAPEL HILL, NC

Unless your television set allows you to adjust the raster scan rate or you are willing to invest in an expensive Conrac-type monitor or projection device (they start at $3000), you'll have to be content with viewing your work only on your Macintosh screen.

Most standard televisions, video cameras, VCRs, and many computers (e.g., the Apple II family and IBM PCs) comply with the NTSC video standards. The video circuitry in the Macintosh doesn't adhere to these standards, primarily because we couldn't possibly achieve such a high degree of screen resolution and quality if we did.

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I have upgraded my 128K Mac to a Mac Plus and love it. But is Apple going to come out with an Inside Mac Plus?

And with the new ROM, how useful are books like Macintosh Revealed and One Flew Over the QuickDraw's Nest?

Jim Tice
Columbia, SC

Barring any unforeseen circumstances, Inside Macintosh, Volume IV will make its debut on August 14th at the MacWorld Expo in Boston. Look for it at the Addison-Wesley booth, or if you can't make it to Boston, shortly thereafter at your local bookstore. There's new incremental material for practically every chapter in the original Inside Macintosh as well as completely new Hardware and File Manager chapters.

Kudos to writer Bob Anders for his hard and inspired work on IM, Volume IV.

Regardless of the new ROM there are several useful books, including the ones you mention, that beautifully complement the Inside Macintosh suite. Check out How to Write Macintosh Software by Apple Technical Support's very own Scott Knaster.

I have so far been unable to access the resident 10-pitch (not point) font in my ImageWriter II printer. This makes it impossible to print out in standard Pica spacing in the Draft print mode. The manual gives instructions on setting the DIP switches to reach this font, but they don't appear to work. I've tried both MacWrite and Word. A friend of mine has the same problem with his ImageWriter II. Is this a bug with the printer?

Bryan Winter
Los Angeles, CA

It's not a bug with the ImageWriter II. The heart of the problem is that software can always override the DIP switch settings on your printer. This is a very desirable feature as long as the software also doesn't make any assumptions about the type of output the user actually wants. Unfortunately, both MacWrite and Word assume the user will be perfectly content with 12 character per inch spacing in draft mode. Actually, it might be the standard ImageWriter driver that makes this assumption rather than the programs themselves. In any case, I know of no way to embed the appropriate printer control characters you need in your MacWrite or Word documents.

If you could send the appropriate control codes to the printer from either of these applications, either by embedding them in your text, or by selecting them from a series of radio buttons in a dialog box, you'd be able to get your way. If you must have 10 CPI draft mode printing you could write a small program in BASIC or Pascal, which would send the appropriate control codes to the printer and then print a MacWrite file saved as text only.

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MINIFINDERS

Have you often wished for a personal assistant to help in picking software? These Minifinders may not breathe and move, but they do tell you what products are hot and, better, what these products do. Each of these items has been carefully reviewed and selected by the Macuser editorial staff. Each has been rated from 1 to 5 mice. Ratings are relative within categories, and they can change as categories expand and new products advance the state of the art. You won't see many low ratings or bombs, since we're telling you about the cream of the crop, but we will warn you about the really bad products so that you don't spend your money on them. Red names indicate this month's additions. The letters at the end of the entries indicate whether a product is copy protected (CP) or not (NCP). CP? indicates that we don't know. If a product has been reviewed or QuickClicked in Macuser, the date of the review is shown. Next time you have to find products you can count on, count on Macuser!

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INTEGRATED SOFTWARE

Crunch is an icon-driven relational spreadsheet that features versatile charting and database capabilities. Strong financial, logic, date and mathematical functions. Spreadsheets can be linked. The manual is clear and concisely written. Macros are not supported. $195. Paladin, 2895 Zanker Rd., San Jose, CA 95134. CP (Jan 86)

Ensemble lets users create a database of words, pictures, and/or numbers; graph data; generate custom forms and link files for applications such as mail merge. Can perform calculations and math functions on data. Capacity limited by RAM and disk size. $299.95. Hayden, 600 Suffolk St., Lowell, MA 01854. CP

Excel is THE power spreadsheet. Of the Mac, of the world. Has 256-column by 16,384-row capability. Features include a versatile charting and database capabilities. Strong financial, logic, date and mathematical functions. Spreadsheets can be linked. The manual is clear and concisely written. Macros are not supported. $195. Paladin, 2895 Zanker Rd., San Jose, CA 95134. CP (Jan 86)

Integrated Software

Quartet is an integrated program that works on a 128K Mac, built around a powerful spreadsheet with a full range of functions. It can also be used as a database and provides good quality charts from spreadsheet data. Documentation is adequate, but not too well organized. $199. Haba Systems, 15154 Stagg St., Van Nuys, CA 91405. CP

BUSINESS ACCOUNTING

BPI General Accounting is an easy to use system. Six journals. AR, AP, Payroll and GL on one disk. Offset amounts automatically post to ledgers. Up to 8000 accounts, transactions limited by disk space. Number up to $999,999,999.99. Detailed records, wide range of reports. Switcher and HFS compatible. $425. Requires 512K. BPI Systems, 3001 Bee Cave Rd., Austin, TX 78745. NCP (Aug 86)

CheckMark 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. CheckMark Software, 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 cards. Excellent manual includes tutorial on basic accounting principles. Requires 512K+, printer and external drive. $795. Micromax Systems, 6868 Nancy Ridge Dr., San Diego, CA 92121. CP (Dec 85)

Hardisk is a complex integrated hard disk system (General Ledger, Receivables, Payables, Inventory, Payroll and Job Cost modules) that does not use Mac interface. Fully menu driven. Manual is detailed but complicated, with a few extra pages that make it Mac-specific. Flexible reporting, statements and account numbering; huge numbers of accounts, transactions, profit centers and detailed financial analysis. Requires hard disk and printer. $695 per module. Great Plains, Box 9739, Fargo, ND 58109. CP? (Dec 85)

MacOneWrite Cash Disbursements is a simple, one-write check writing system. Limited functionality, but does allow some detailed information. Menus clear and easy to follow, but check printing can be confusing. Other modules planned. 512K+ and printer required. $245. Sierra, PO Box 485, Coarsegold, CA 93614. CP (Dec 85)

Rags to Riches integrated accounting modules (General Ledger and Accounts Receivable) uses Mac interface to the hilt. Information entered in one window automatically transfers. Menu commands all have command keystrokes, as can accounts. No detailed or flexible reporting. Very easy to use, although it can be confusing to operate with several windows on screen. Requires 512K+ and printer. $195 per module. Chang Labs, 5300 Stevens Creek Blvd., San Jose, CA 95129. CP (Dec 85)

Strictly Business General Ledger features clear, well-outlined set-up procedures and operations. Very flexible, with a custom chart of accounts; user-defined journals; up to 99 profit centers per company with up to 100 departments each; and customized reports. Program print spools and allows printing of multiple documents. Requires 512K+, printer and external drive. $395. Future Design, 13681 Williamette Dr., Westminster, CA 92683. NCP (Dec 85)

PERSONAL FINANCE

Dollars & Sense is a bookkeeping program suitable for personal, home and small-business use. Easy to use, with a good manual and excellent on-screen help. Will handle up to 99 separate accounts or money categories. Uses standard double-entry accounting techniques. Reports can be gener-
made easy by the adherence to the Mac interface. The manual is clear, thorough and well-indexed. Too complicat-
ed for most simple database applications, excellent where a relational database application is required. Requires
a 512K+ Mac and external drive. $395. Odesta. 4084 Com-
cercial Blvd., Northbrook, IL 60062. NCP (Mar 86)

The Housekeeper is a home inventory database. Users can keep
track of assets for both tax and casualty purposes. Special-
ized reports are easily generated. $59.95. Aegis Develop-
ment, 2210 Wilshire Blvd., Santa Monica, CA 90403. NCP
(Dec 85)

Interface is a flexible relational database that makes it simple to
create single or multiple files and establish links between
files. Excellent report generator gives full control over appearance, style of output. Requires 512K+ second drive
or hard disk highly recommended. $129 retail, $95 direct.
Singular Software, 5888 Castano Dr., San Jose, CA 95129.
CP (Apr 86)

MacBase is a forms-oriented relational database. Unfortunately,
precise forms are hard to create. Allows calculated fields
and has quick and powerful search capabilities. Best when
much data is to be looked up, but not frequently entered.
Requires 512K+. $195. Eqtron Corp., 330 Bay St., Toronto,
Ont. M5H 2S8, Canada. NCP (Jul 86)

MegaFiller is a simple file manager. Its limited capabilities have
been far surpassed by cheaper and easier to use programs.
All valuable only in conjunction with megaform $139. Mega-
haus, 5703 Oberlin Dr., San Diego, CA 92121. 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 in-
cluding user-defined menus, commands and dialogs. Good
report generation capability. Comes in single and multiple
user versions. $495 (single user version). Blyth, 2655
Campus Drive, San Mateo, CA 94403. CP (Mar 86)

OverVUE is a power-packed relational database that has extensive
sorting, summarizing and report generation capacity. Has
macros and a charting function. Good manual. The program
tries to anticipate every need conceivable in manipulating
data. It can exchange files with a very wide variety of other
programs (including IBM software). $295. ProVUE. 222
22nd St., Huntington Beach, CA 92648. NCP (Nov 85)

Professional Bibliographic System is a database designed for
storing and retrieving bibliographies. Predesigned forms for
20 types of entries. Citations automatically formatted with
correct punctuation for printing. $295. Personal Bibliograph-
ical Software, PO Box 4250, Ann Arbor, MI 48106. CP (Feb 86)

Record Holder is a flexible, easy-to-use form-oriented data
manager. Set up is particularly simple and the search
features are powerful. $49.95. Software Discoveries, 99
Crestwood Rd., Tolland, CT 06084. NCP (Apr 86)

**DATABASES**

**Business Filevision** is a masterpiece of Macintosh program-
ing, the only true graphic database on any micro. Much more
powerful than the original, accepts MacPaint graphics.
$395. Telos Software, 3420 Ocean Park Blvd, Santa Moni-
ca, CA 90405. CP (Feb 86)

Factfinder is a free-form information organizer (medium-duty
data base). Users enter data on to fact sheets in any manner
desired and select keywords. Searches are by name or
keyword. Only one factsheet can be open at a time. Publisher
offers free telephone support (800 number). $149.95. Forethought, 1973 Landings Dr., Mountain View,
CA 94043. NCP (Feb 86)

File is a flexible data manager. Creates files for a variety of data,
including simple graphics. Files are created in simple
row-column format, but reports and forms are easily custom-
ized by moving field names around on a blank form. $195.
Microsoft, 16011 NE 36th Way, Redmond, WA 98052. CP

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. Pub-
lisher includes graphics and multiple data layouts are
easy to construct. $195. Forethought, 1973 Landings Dr.,
Mountain View, CA 94043. 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 creative ways. $195. Telos Software, 3420 Ocean
Park Boulevard, Santa Monica, CA 90405. CP

Helix is a relational database that makes extensive use of icons.
Excels in database setup and forms generation. Setup is

**NUMBER CRUNCHING**

ClickOn Worksheet is a 50-row by 20-column spreadsheet that
loads onto any system disk as a desk accessory. Though
small in size, it has remarkable capabilities for a desk
accessory. It produces line, bar and pie charts and changes in
the worksheet automatically reflect in charts. $79.95.
T/Maker Company, 2115 Landings Dr., Mountain View, CA
94043. NCP

DeslgnScope is a construction kit for digital and analog circuits.
Up to 254 components can be utilized in a single circuit, and
the equivalent of a dual trace oscilloscope plots output in
real-time. 17 analog, 8 digital and 2 I/O components
comprise the parts list. Good for testing basic (and not-so-
basic) circuitry without touching a breadboard. $249.95
BrainPower, 24000 Ventura Blvd., Calabasas, CA 91302.
NCP

MacCalc is a fast, competent, full-featured spreadsheet with
impressive built-in functions, font control, on-line help,
ability to expand columns and rows and read/write SYLK or WKS files. The worksheet is 125 columns by 999 rows. Cell names, printing power make MacCalc a very flexible pure spreadsheet. Easy to use and has a good manual. $39.95. Bravo Technologies, c/o DAPJ, PO Box T, Gilroy, CA 95021-2249. NCP (Sep 86)

**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. $159.95. Microsoft, 16011 NE 36th Way, Redmond, WA 98052-6399. CP (May 86)

**ProAnalysis** is a powerful real estate investment analysis program. This program uses the Mac interface as well as any program yet published. Analytic power is combined with report generating so good you have to see it. Requires 512K+. $295. Technology Services, 14555 DeBell Rd., Los Altos Hills, CA 94022. CP

**StatView** is a high-powered statistical calculation package. Easily and efficiently handles all the common statistical techniques and many uncommon tests. Has a user-definable area as well. Easy to use and well documented. $199.95. BrainPower, 24009 Ventura Blvd., Calabasas, CA 91302. NCP (May 86)

**StatWorks** is a statistical-purpose statistics package that is both powerful and easy to use. Handles all standard tests and procedures. Single variable and multivariate statistics are supported. $125. Cricket Software, 3508 Market St., Philadelphia, PA 19104. NCP (May 86)

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**GRAPHICS & DESIGN**

**Animation Toolkit** lets users prepare "film clips" of moving objects which play back at varying speed, like old-fashioned flip books. Drawings are built pixel by pixel in frames, using some of the tools from MacPaint. They can be copied and altered easily from frame to frame. Each film clip plays repetitively as it is being constructed. A limited animation tool, but a lot of fun. $49.95. Ann Arbor Softworks, 308 s. State St., Ann Arbor, MI 48104. CP

**Art Grabber with Body Shop** is a desk accessory that lets users browse MacPaint documents, selecting and copying as they choose. Color changes can be large or small. Other tools. $35. Altsys Corp., PO Box 865410, Plano, TX 75086. NCP (Sep 85)

**Chart** 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, 16011 NE 36th Way, Redmond, WA 98052-6399. CP (Mar 86)

**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. TMaker, 2115 Landings Dr., Mountain View, CA 94043. NCP (Apr 86)

**ColorPrint** facilitates color printing on the standard ImageWriter. MacPaint files set up as overlays are read into ColorPrint, and the program controls proper overlaying registration and colored ribbon switching. Great results require lots of hard work, but it's cheaper than an ImageWriter II. $49.95. Essoft Enterprises, PO Box 179, Owasso, OK 74455. NCP (Mar 86)

**ComicWorks** is a graphics wonder disguised as a comic book construction kit for manipulating digitized graphics as independent objects, with up to 64 layers of matting. An amazing airbrush, multiple page capacity, full-screen drawing, special layering effects, an editable grid and two disks of gorgeous artwork round out this package. Needs better LaserWriter support. $79.95. Mindscape, 3444 Dundee Rd., Northbrook, IL 60062. NCP (Sep 86)

**Cricket Graph** easily generates 12 graph types. Multiple windows can be displayed. Graph prints in up to 8 colors with up to 16 patterns. Self-generating macro formatting. Switcher, HFS, LaserWriter and plotter compatible. $195. Cricket Software, 3508 Market St., Philadelphia, PA 19104. NCP (Jun 86)

**Devlin & Building Blocks** features predrawn blocks of brownstones, garden, and skyscraper portions that can be cut and pasted together to form landscape and architectural drawings. Fun for even non-pro's. $79.95. Hayden, 600 Suffolk St., Lowell, MA 01853. NCP

**DrawArt** is the first MacDraw clip-art disk. Unfortunately, the assortment of graphics is too ragtag and the quality of images ranges from great to terrible. No image index. $49.95. Desqi, PO Box 123456, 400 Country Drive, Dover, DE 19901. NCP (Oct 86)

**Easy3D** is a three-dimensional, solid modeling masterpiece. Four variable light sources, powerful sculpting tools and an exquisite user interface make this program a must-have for Mac graphics enthusiasts. Requires a 512K+ Mac. Enabling Technologies, Inc., 600 South Dearborn, Chicago, IL 60605. NCP (May 86)

**Frequent Fonts** is a two-disk collection of fonts. Forty-nine different items are included. All install easily in user Systems. Most are well executed and some are extraordinarily nice. This is a real bargain for font lovers. $49.95. Casady, PO Box 223779, Carmel, CA 93922. NCP

**Fontographer** is the first Macintosh font editor now available for the Mac. Features a large editing window with a grid to make positioning easy. Select letters to edit by clicking on a matrix of the font. Allows scaling of existing fonts and previewing the various styles (italic, bold, etc.). $49.95. Altsys, PO Box 865410, Plano, TX 75086. NCP (Dec 85)

**Fontographer** is a complex, but excellent laser font creator. The fonts created have 300 bits per inch resolution. The fonts are actually downloadable Postscript files. $395. Altsys Corp., PO Box 865410, Plano, TX 75086. CP

**FullPaint** is an expanded version of MacPaint. Features include full-screen drawing, multiple documents open simultaneously, brush editing, movable tool palettes, special text effects and much more. It fills the gaps left by MacPaint. $99.95. Ann Arbor Softworks, 308 s State St., Ann Arbor, MI 48104, CP (Jun 86)

**Home Design** is a home planning tool that includes three disks full of MacPaint files of household items needed to design a home. Art Grabber Installer is included for easy maneuvering of items. The professional home designer, as well as the amateur will feel at ease using this program. $79.95. Hayden, 600 Suffolk St., Lowell, MA 01853. NCP (May 86)

**Human Forms** allows users to create perfectly proportioned humans in any posture or position. Contains over 1000 separate body parts. Tiny X marks make limb, head and detail placement perfect. Requires MacPaint. $59.95. Bert Monroy, 205 Luquer St., Brooklyn, NY 11231. NCP

**Icon Switcher** changes icons for applications and the documents they generate, permitting you to customize icons for personal work. New icons can be built pixel by pixel in the program or created in MacPaint and pasted in. $19.95. PBI Software, 1155B-H Chess Drive, Foster City, CA 94404. NCP

**LaserWorks** is a high-resolution font and graphics editor, producing LaserWriter-compatible end products. Its numerous well-designed features make it suitable for users of all levels, from beginners to pros. Has a superb manual and tutorial. Requires 512K+ and external drive or hard disk. $299. EDO Communications, 63 Arnold Way, W. Hartford, CT 06119. CP (Sep 86)

**The Mac Art Dept.** is a collection of over 150 graphic images ranging from foods to hands holding signs to borders. Best suited for letterheads, memos, other business use. $39.95. Simon & Schuster, Computer Software Div., 1230 Ave. of the Americas, New York, NY 10020. NCP (May 86)

**Mac-a-Mug** is an Identikit type program for creating faces from facial feature files. Uses scroll bars that are slow and jerky. Lots of creative fun. $512K+ Mac required. $59.95. Shaker-ezam, PO Box 27731, Milwaukee, WI 53226. CP (May 86)
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The saving zone is located at 710 180th Ave NE, Suite A107, Redmond, WA 98052.
MacDraft is an object-oriented graphics program. It supports advanced features such as variable scaling, single degree rotation, complex arcs and a FatBits-like magnification mode. It has some annoying quirks and a few bugs, and is best used to complement MacDraw, not replace it, $239. Innovative Data Design, 1975 Willow Pass Rd., Concord, CA 94520. CP (Feb 86)

MacDraw is an object-oriented structured graphics program. Can be used to design forms, create presentation materials and do technical illustrations. Drawing sizes up to 8 feet by 10 feet are possible. Text can be easily generated and integrated in the graphics. MacPaint documents can be pasted into MacDraw, but not manipulated. $195. Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014. NCP (Nov 85)

MacModel is an economical 3D package with shading. Somewhat sketchy Mac interface, shading speed slow (but acceptable), grainy image resolution. On-line help screens are a welcome addition. Frequent updates and low price make this a reasonably good buy. $40. A.P.P.L.E., CO-OP, 290 SW 43 St., Benton, WA 98035. NCP (Aug 86)

MacPaint is the graphics program that started a whole new genre. Still the best freehand graphics tool. Version 1.5 supports 512K+ Macs and the LaserWriter. Multiple tools, patterns and features too numerous to describe. A work of art for artists. $125. Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014. NCP (Nov 85)

MacPublisher is a tool for creating newsletters. Allows putting pages together 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. $98.95. Boston Software Publishers, 19 ledge Hill Rd., Boston, MA 02132. CP

MacPublisher II is the souped-up version of MacPublisher. Allows MacWrite and Word files to be imported and edited from within the program; saves each element separately; allows up to 96 pages in an issue (limited by memory); supports kerning, borders, cropping, telecommunications, command keys and a wide variety of printers; and it runs on 128K, single-drive Macs. $195. Boston Software Publishers, 1260 Boylston St., Boston, MA 02215. CP

Mac3D is a very Macish 3D drawing package. Easy to use, many primitive shapes, good LaserWriter support, and lots of 3D goodies will please Mac graphics fans. Not a fully professional CAD package, though, and no shading. $195. Challenger Software, 18350 Kedzie Ave., Homewood, IL 60430. 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. De-vionics, PO Box 2126, Covina, CA 91722. CP (Feb 86)

M.U.D (MacroMind Utility Disk) is a disk of various utilities for MusicWorks and VideoWorks owners. It also contains CheapPaint and Art Grabber++; two graphics desk accessories that are musts for graphics enthusiasts. Hayden, 600 Suffolk St., Lowell, MA 01854. CP (Feb 86)

PageMaker is an advanced layout and makeup program. Can easily create multiple page documents. Output is optimized for LaserWriter. Good documentation. $495. Aldus, 411 First Avenue South, Seattle, WA 98104. CP (Nov 85)

Phoenix 3D is an economical 3D drawing package, with features that belong in a much more expensive program. Multiple light sources, fine control over object placement and orientation, a good selection of shapes and numerous rendering options are available and easy-to-use. $39.95. Dreams of the Phoenix, PO Box 10273, Jacksonville, FL 32247. CP (Oct 86)

PictureBase is a program and accompanying desk accessory for organizing MacPaint and MacDraw elements and files. Graphics are organized into libraries, and can be searched for by keywords. A multitude of display options, and an advanced interface make this package indispensable for quick access to graphics files. $69.95. Symmetry Corporation, 761 E. University, Mesa, AZ 85203. NCP (Jun 86)

PosterMaker can enlarge MacPaint drawings by up to 3200 percent. Full-screen cut and copy are supported, so any portion of a Paint document can be selected and scaled. Borders can be added automatically. Includes some nice digitized graphics files. $39.95. Strider Software, Beecher Lake Rd., Pembine, WI 54158. NCP (Jul 86)

ReadySetGo is a page makeup program for 512K+ Macs. Users build up pages from blocks of text, graphics and rules. Resizing and scaling of blocks are supported. Each block can be precisely positioned. Text and art may be pasted in from another source or created within the program. Good LaserWriter support. $195. Manhattan Graphics, 163 Varick St., New York, NY 10013. NCP (Apr 86)

Slide Show Magician 1.3 is useful for creating full screen audiovisual presentations on the Mac. Frame branching, improved editing capabilities, external cassette recorder synchronization and digitized sound capabilities make this much more powerful than the original. $59.95. Magnum, 21115 Devonshire St., Chatsworth, CA 91311. CP (Mar 86)

Storyboarder produces working animated storyboards for use in film and video production. Imports graphics from MacPaint; allows screen masking to simulate television, 35mm or 70mm screen widths; allows limited animation and special effects. Storyboards can be printed in several formats. $495. American Intelligere, 330 Washington St., Marina Del Rey, CA 90292. CP

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 kit and an Art Grabber++ (which allows the user to use any part of a MacPaint document in VideoWorks). Includes many special video and sound effects, and on-disk examples. $99.95. Hayden, 600 Suffolk St., Lowell, MA 01854. CP (Nov 85)

World-Class Fonts! comes in two volumes of three disks each. Includes all the Mac the Knife fonts and a lot more, including 2 useful utilities. This is now the best collection of ImageWriter fonts available. Each volume: $59; both volumes: $99. Dubl-Click Software, 18201 Gresham St., Northridge, CA 91325. NCP

COMMUNICATIONS

HomePak is a package consisting of HomeTerm, an excellent simple telecommunications program with strong macro features; HomeFind, an electronic file as bad as HomeTerm is good; and Apple's Edit, a simple, non-HFS-compatible text-file editor. $49.95. Batteries Included, 30 Mural St., Richmond Hill, Ontario L4B 1B5, Canada. NCP (Sep 86)

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 setup documents and command language files provided. $145. Palantr, 12777 Jones Rd., Houston, TX 77070. CP (Prem)

MacTerminal provides basic telecommunications and terminal emulation for the Mac user. Doesn't have macros nor any sort of auto redial/auto logon capability. Best for those needing faithful VT100 or IBM 3278 emulation — it is superb at those. $99. Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014. NCP (Prem)

Microphone is a high-powered terminal program that's easy enough for novices. Very powerful command language allows full automation of communications, if desired. $74.95. Software Ventures, 4000 23rd St., Berkeley, CA 94705. NCP (Jun 86)

Red Ryder is a full-featured telecommunications program that supports MacBinary, Xmodem and Kermit. Remote service procedures, auto procedure writer and keyboard macros allow automation of many operations. It is shareware and a...
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<td>Apple II and III Compatible Company DeskPro 256K</td>
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<td>IBM PC Base System 20MB Hard Disk</td>
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<td>IBM PC Professional 2MB Hard Disk 10MB-2PS/256K</td>
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<td>IBM PC AT Base System 1MB Floppy/56K</td>
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PRINTERs

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<td>Apple Imagewriter II 10&quot; carriage</td>
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<td>Canon LBP 2500/655 K LQ-500L</td>
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ACCESSORIES

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Telescape is the power telecommunicator's terminal program. Can be configured to emulate any terminal and has all the advanced features (except unattended operation). The documentation does not adequately explain the many features and much of the power will be unavailable to all but the pros (who can figure it out on their own). $125. Mainstay, 288118 Carwood St., Agoura Hills, CA 91301. NCP (Prem)

VersaTerm features include DEC VT100 and VT52, Tektronix 4014, 3278 graphic 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, 2457 Perkiomen Ave., Mt. Penn, PA 19606. CP (Prem)

**WORD PROCESSORS**

**Document Compare** allows users to compare any two MacWrite documents. Differences in spelling, punctuation, formatting and wording are detected. Differences appear highlighted and the documents can be printed out with differences highlighted. $99. The Model Office Company, Inc., The Gooderham Flatiron Building, 49 Wellington Street East, Toronto, Canada M5E 1C9. CP (May 86)

**MacWrite** 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. $196. Knowledge Engineering, GPO Box 2139, New York, NY 10116. NCP (Dec 85)

**LaserFonts** are new fonts designed for the LaserWriter. Users download them to their machines. Very high quality and very simple to use. Williamsnet (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

**Liberty Spell Checker** is a fast, effective interactive checker. The dictionary is smaller than average, but well chosen. Unfortunately, it has a few misspelled words. $59.95. DataPak, 14011 Ventura Blvd., Sherman Oaks, CA 91423. CP

**MacIndexer** is a good writer's utility that takes much of the mechanical work and time out of preparing an index. Works with MacWrite and Word. Can generate word frequency counts. $49.95. Boston Software Publishers, 1260 Boylston St., Boston, MA 02215. CP (Jul 86)

**MacLightning** is an interactive spelling checker that is both very fast and has an extensive, well thought out dictionary. Exists in the System as a desk accessory. $99.95. Target Software, 14206 SW 136th St., Miami, FL 33186. 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 a...
MINIFINDERS

adequate for most users. Features include document size limited by disk space, global search and replace, page numbers indicated in the scroll bar and excellent LaserWriter compatibility. $125. Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014. NCP

MegaFoms 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. $495. Megahaus, 5703 Oberlin Dr., San Diego, CA 92121. CP (Feb 86)

QuickWord is a word processing accessory that adds sophisticated glossaries to MacWrite. Simple to install and use, yet powerful and efficient. $49.95. EnterSet, 410 Townsend St., San Francisco, CA 94107. NCP

SpellSwell is an effective and powerful standalone spelling checker. It has many advanced features such as capitalization and homonym checking and comes with a large, well-chosen dictionary. Full-featured, easy to use, with keyboard equivalents for menu commands. $49.95. Greene, Johnson, Inc., 15 Via Chualar, Monterey, CA 93940. NCP (May 86)

Word Handler is a word processor with elements of MacWrite and Word. Reads MacWrite files, formats by section, multiple windows. Can delete, rename, etc., without quitting. Has case change, forms generator, flexible printing options and glossary. Slow, and original release does not support graphics or the Clipboard. $79.95. Advanced Logic Systems, 1283 Reamwood Ave., Sunnyvale, CA 94089. NCP (Oct 86)

ORGANIZATIONAL TOOLS

Acta is an outline processor in desk accessory format. It has practically all the features of a standalone program, and then some. Can save files as Acta outlines, MacWrite or text files. A must-have for those who do outlining. $59.95. Syntax, 761 E. University Dr., Mesa, AZ 85203. NCP (Jul 86)

Calliope is a new type of outlining program. Chunks of information are manipulated as small "light bulbs" containing text. Related elements can be graphically connected, and their text information viewed in hierarchical order. Text files can be created for MacWrite editing. $59.95. Innovision, PO Box 1317, Los Altos, CA 94023. NCP (Sep 86)

DecisionMap records data to facilitate decision making. Unique weighting abilities make this a powerful tool. The decision analysis process is long and sometimes complex, but never difficult. $145. SoftStyle, 7152 Kalamianole Hwy., Honolulu, HI 96825. CP

MacProject allows a user to plan and track a project from beginning to end. Uses CPM to produce schedules with start and finish dates for each task. Can report on resource interdependencies and generate all needed printed reports. $125. Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014. NCP (Mar 86)

MacSpec is a specification writing tool, a cross between word and outline processors. It can automatically number and indent headings, and renumber everything when lines are moved. Can automatically number and indent headings, and renumber everything when lines are moved. The text under headings can be handled and formatted as though you were using a simple word processor. HFS compatible. $199.95. LM Software, PO Box 93, Belmont, CA 94002. NCP (Oct 86)

MaxThink is an outline and idea processor that focuses on thinking skills. Helps you establish priorities, evaluate

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graphic symbols makes this program the easiest to use of its type. $129.95. DataPak, 14011 Ventura Blvd., Sherman Oaks, CA 91423. CP (Prem)

Quickset is a set of desk management and organizational tools that can be used as desk accessories or applications. Modular design allows users to add only selected items to System disks. Functions include note filer, card filer, calendar, phone dialer, financial and statistical calculators and a file encryptor. $49.95. EnterSet, 410 Townsend St., San Francisco, CA 95065. NCP (Dec 85)

Sidekick is a set of desk organization applications and accessories. Functions include phone dialer and logger, desk accessory terminal, calculator, clock, editor and more. When required resource files are included modules take up a lot of disk space, and are best used with a hard disk. $84.95. Borland International, 4585 Scotts Valley Dr., Scotts Valley, CA 95066. NCP (Dec 85)

Smart Alarms is the best reminder system for the Mac. Easy to use, versatile, and, well, smart. This self-running DA automatically reminds you of anything you enter into its Reminder file, giving you a wide range of useful advanced warning options. Reminders can also be set to recur at specific intervals. Comes with an Appointment Diary DA and the Sleep public domain DA. $49.95. Imagine Software, 2000 Center St., Berkeley, CA 94704. NCP (Oct 86)

Top Desk is a set of 7 self-install ing (and self-removing) DAs. Menu Key adds Command key sequences to programs, View allows looking at and moving data between up to 8 MacWrite documents, BackPrint allows background printing from most applications, Shorthand adds a glossary, Blank is a screen saver, Encrypt scrambles files for protection, and Launch transfers to another application. $59.95. Cortland Computer, PO Box 9916, Berkeley, CA 94709. NCP (May 86)

Accessory Pak 1 is a set of useful applications and utilities. Paint Cutter alone is worth the price. That program allows users to browse and manipulate full page MacPaint documents. $39.95. Silicon Beach, 11212 Del Mar Pl., San Diego, CA 92126. NCP (Nov 85)

Copy II Mac was one of the first back-up programs available for the Mac. Does efficient sector and bit copies and in its latest version can back-up virtually all Mac software. Features graphic displays of copy progress. Comes with MacTools, a multisuse utility that can recover many damaged files. $39.95. Central Point Software, 9700 S.W. Capitol Highway, Portland, OR 97219. NCP (Apr 86)

Disk Ranger is a speedy cataloguing program that doubles as an efficient labelmaker. Comes with pinfeed labels. Works with regular and hard disks. Can catalog HFS systems. $49.95. Mainstay, 28611 B Runwood St., Agoura Hills, CA 91301. NCP (Mar 86)

Dubl-Click Calculator Construction Set lets users design personalized calculators with a variety of standard and special functions. Multiple functions can be attached to a single key. Finished calculators can be saved as installable desk accessories or as clickable applications. $59. Dubl-Click Software, 18201 Gresham St., Northridge, CA 91321. NCP (Apr 86)

FedIt Plus is the file and disk editor for everyone, from newest Mac owner to oldest. It can do more for your disks and files than any other application. Write boot blocks, modify a file's Finder attributes, recover deleted MFS files; FedIt Plus can do it. If you own a Mac, get it. HFS-compatible, although some features do not function: $40. MacMaster Software, 939 E. El Camino Real, #122, Sunnyvale, CA 94087. NCP (Max 86)
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analyze disk structure and make back-up copies of most disks. $60. Micro Analyst, 58028 Gloucester, Austin, TX 78723. NCP (Jan 86).

myDiskLabeler is an excellent label making program. It can read directories, or use large or small icons, or anything else the user desires. This simple and intuitive program comes with 54 precut labels on pinfed paper. HFS compatible. $44.95; with color printing ability (on the ImageWriter II), $54.95. Williams and Macias, PO Box 19206, Spokane, WA 99219. NCP (Aug 86).

'Ncryptor is a simple, safe program that lets users password their files. The same program is used for encoding and decoding. This is the best product in its category. $39.95. Mainstay, 28611B Canwood St., Agoura Hills, CA 91301. NCP

Packer is a simple utility that compresses files. It can be used to save disk space and also protect files. Typical space savings range from 20 to 50% depending on the original file type and size. This is the best program of its type so far. $29. Bobbing Software, 67 Country Oaks Dr., Buda, TX 78610. NCP (Jun 86).

PC to MAC and BACK has both Mac and MS-DOS disks. This program easily and efficiently transfers text and other data between PCs and Macs. Fortunately, the documentation is excellent. Does special format transfers such as WordStar to MacWrite. Includes a cable for direct Mac to PC connections. $149.95. dilithium Press, 8285 SW Nimbus, Beaverton, OR 97005. NCP

Quick & Dirty Utilities, Volume One is a disk chock full of the handiest programs you have ever bought. Included are a super disk cataloguer, a disk accessory mover and more. Several desk accessories including a menu bar clock and a terminal are on the disk. "File Info" and "Q&D Finder" are two file management desk accessories that you'll wonder how you got along without. $39.95. Dreams of the Phoenix, PO Box 10273, Jacksonville, FL 32247. NCP (Nov 85).

Switcher is Andy Hertzfeld's contribution to Mac productivity. This program lets users run several programs at once (up to 8 on a 1-megabyte or larger machine). Switching between the programs is near instantaneous. Slick and easy to use; every 512K Mac user should get it. Requires 512K+. $19.95 from Apple, free from MAUG on CompuServe, from Delphi and included with some third-party applications. Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014. NCP

TMON is the debugger for the Mac. This isn't open to question. TMON is simply the best. Comes with the latest version of Darin Adler's Extended User Area. $100. ICOM Simulations, 626 Wheeling Rd., Wheeling, IL 60090. NCP

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

Ill In a Mac is a graphically oriented Apple II emulator with unique features, such as text and graphics copy from Apple screen to Mac Clipboard. 40 column screen is too small, 80 column better. Suffers speed problems associated with "virtual machine" emulation. $69. Micro-W Distributing, Inc., 1342B Route 23, Butler, NJ 07405. CP

TypoNow 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.
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beginners. Excellent documentation. $299.95. Megamax, PO Box 851521, Richardson, TX 75085. NCP

**Microsoft BASIC** was the Mac’s first programming language. This interpreter (it’s not a compiler) now supports the Toolbox and the whole Mac interface can be implemented in your programs. For nonprogrammers there are lots of programs available (in user group libraries and magazines) to run. There have been several versions. $150. Microsoft, 16011 NE 36th Way, Redmond, WA 98052-6399. NCP

**Microsoft Logo**, from Microsoft’s MacLibrary, written by LCSI. An excellent implementation of Logo, taking full advantage of the Mac’s user interface. Uses three windows. Turtle looks like a turtle, and its screen actions are very precise. Windows can be resized and moved about. $124.95. Microsoft, 16011 NE 36th Way, Redmond, WA 98052-6399. NCP

**QUED (Quality Editor for Developers)** is the ultimate source code editor. Loaded with useful and well thought out features, it will make any programmer’s life much easier. It is not a word processor, however. $69. Paragon Courseware, 4954 Sun Valley Rd., Calabasas, CA 91302. NCP

**TML (MacLanguage Series) Pascal** is a good Pascal compiler, capable of producing standalone programs. Can use most existing Lisa Pascal programs with only slight modification. Requires 512K. $39.95. TML Systems, PO Box 361626, Melbourne, FL 32936. NCP

**MacChimistry** is a two-disk set consisting of a titration program (predetermined compounds, not user modifiable), a periodic table program, MacNest (a scrapbook with indexing), and a disk of MacPaint files depicting everything from lab equipment to molecular structures of many solutions and compounds. MacNest is of general appeal. $145. Fortnum, 31 W. Sierra Madre Blvd., Sierra Madre, CA 91024. NCP

**MacEdge and MacEdge II** each contain 8 reading or math drill programs for basic skills. Programs follow one of three formats, a bit contrived. Contrivances are design flaws—they require learning format as well as skill. Exception is Alphabet Train, a clever game with great graphics and sound, poor font definition. $49.95 each. Think Educational Software, 16 Market St., Potsdam, NY 13676. CP

**MacStronomy** is a good package for novice sky watchers. Has expandable database of sky objects that can be customized by the user. New version is very fast. $85. Elton Software, PO Box 649, Lafayette, Co 80026. CP

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**MacType** offers structured typing instruction. Can teach both standard and Dvorak keyboards. Features include certificates for reaching certain levels. Can be used in a multistudent environment. $49.95. Palantir Software, 12777 Jones Rd., Houston, TX 77070. CP

**MasterType** is proof that learning to type can be fun. In this arcade-style action game words descend from four corners and make best use of their notes. Consists of five well-designed parts, which can be used individually or as a whole. $59.95. Learning Skills, PO Box 8038, Reno, NV 89507. NCP (Jul 86)

**NotePro** is an educational package that teaches users to organize and make best use of their notes. Consists of five well-designed parts, which can be used individually or as a whole. $59.95. Learning Skills, PO Box 8038, Reno, NV 89507. NCP (Jul 86)

**PowerMath** is an equation solver. Handles problems ranging from the simplest to the extremely complicated. Step-by-step solutions make this a powerful teaching tool. Results can be displayed numerically or graphically. Slow, but potent program. $99.95. Industrial Computations, 40 Washington St., Wellesley, MA 02181. NCP

**Score Improvement System for the SAT** is a no-nonsense drill and practice session covering practice tests, vocabulary, reading comprehension, math and quantitative comparisons. On-line tutoring for wrong answers. $99.95. Hayden, 600 Suffolk St., Lowell, MA 01854. CP (May 86)

**Spanish Grammar III** is a teachers' tool consisting of ten modules for students who need tutoring in the Spanish language. Previous knowledge of the language is necessary. Uses multiple choice and fill-in formats. Keeps a Teacher's Management Report for up to 40 names. $84.95. Queue, 5 Chapel Hill Dr., Fairfield, CT 06432. CP (Apr 86)

**Speed Reader II** builds skills sequentially to develop faster, more efficient reading and improve retention. Scores kept, and can be graphed. High school level selections included, other levels available on data disks. $69.95. Davidson & Associates, 3135 Kashiwa St., Torrance, CA 90505. CP (Apr 86)

**Tellstar I & II** are Mac astronomy programs. Have extensive database, quick sky plotting and can locate specific celestial objects. Level II has southern hemisphere star table, Messier objects. $49.95 (level I), $79.95 (level II). Spectrum Holobyte, 1050 Walnut, Boulder, CO 80302. NCP (Apr 86)

**Turbo Turtle** is a turtle graphics program primarily designed as a learning tool for children. Uses Logo commands for graphics, but is not a full Logo implementation. Simple to use, good introduction to Logo for young children. $69.95. Hayden, 600 Suffolk St., Lowell, MA 01854. CP

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**ENTERTAINMENT**

**A Mind Forever Voyaging** is a departure in text adventure games. It has a more extensive vocabulary and a more involved story than most of the genre. The story here is gripping, but there are only puzzles to solve. Still, this is a trip in the imagination well worth taking. Requires 512K+ . $44.95. Infocom, 125 CambridgePark Dr., Cambridge, MA 02140. CP (Apr 86)

**Airborne** is a classic arcade-style game with "real" sound effects. The player defends against an assault from flying enemies. Game noises digitized from actual recordings add to the game. $34.95. Silicon Beach, 11212 Dalby Pl., San Diego, CA 92126. CP

**Alter Ego** simulates the entire lifetime of a fictional character. The player's reaction to each multiple-choice event shapes the

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character's future relationships, job, health, etc. Spectacularly impressive the first time you play; after that there are too many similarities to previous characters. Female edition should be available soon. $59.95. Activision, PO Box 7287, Mountain View, CA 94039. CP (June 86)

Amazon is an illustrated adventure authored by Michael Crichton. Unravel the fate of a doomed expedition with the help of Paco the talking parrot. Three difficulty levels, good sentence parser. $49.95. Telstarium, 1 Kendall Sq., Cambridge, MA 02139. CP (Feb 86)

The Ancient Art of War gives users a chance to refight some famous campaigns on both strategic and tactical levels. Campaigns can also be designed from scratch. Very playable, addicting game. Requires 512K+ Mac. $49.95. Broderbund, 17 Paul Dr., San Diego, CA 92030. CP (Apr 86)

Archon pits the forces of Light against Dark in a quest to gain control of five Power Points on a checkerboard grid. Light is stronger on white squares, Dark on black squares, and the shifting cycles of squares' colors keeps the balance of power ever-changing. Game pieces fight for possession of a square. One or two players. $44.95. Electronics Arts, 2755 Campus Dr., San Mateo, CA 94403. CP (Oct 86)

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 60062. CP

Baron is the world of real estate, in a financial simulation. Buy and sell property in five key areas; invest in industrial, residential, or land property; or put cash aside in high-interest accounts. $59.95. Blue Chip, 6740 Eton Ave., Canoga Park, CA 91303. CP

Borrowed Time casts players as detectives who have to solve their own murder — before it happens. This game requires players to think and act like a detective to solve the game. Good sentence parser, sketchy Mac interface. $44.95. Activision, PO Box 7287, Mountain View, CA 94039. CP (May 86)

Brataccas is the Mac's first true action adventure in which players use the mouse or keyboard to control Kyne, the heroic fugitive scientist, as he moves around a planet outpost in search of clues and information. Terrible, confusing instruction manual mars an otherwise good game. Excellent graphics, unusual sentence parser. $44.95. Mindscape, 3444 Dundee Rd., Northbrook, IL 60062. CP

Bridge 4.0 provides three other players and the cards for a game of rubber bridge. It's an average (Goren) bidder and a less than good card player. Good if it's the only game in town. Plays slowly since it's written in BASIC. $29.95. Artworx Software, 150 N. Main St. Fairport, NY 14450. CP (Sep 86)

Brimstone is a full-text adventure that follows the exploits of Sir Gawain as he journeys down to the pits of Hell and back again. A good example of an interactive novel, although the third-person narrative can be disconcerting. $39.95. Broderbund, 17 Paul Dr., San Rafael, CA 94903. CP (Jul 86)

Championship Boxing allows statistical replay involving famous boxers. Players can modify existing boxers and can create their own fighters. Excellent sound and graphics. $39.95. Sierra, PO Box 485, Coarsegold, CA 93614. CP (Mar 86)

Cyborg is a text adventure 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's assistant. Good sentence parser, sketchy Mac interface. $44.95. Activision, PO Box 7287, Mountain View, CA 94039. CP

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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.

*Deja Vu: Nightmare Comes True* is a graphic adventure that breaks new ground. Innovative use of the Mac interface in truly playable and exciting game. A great introduction to graphic adventure games. $49.95. Mindscape, 3444 Dundee Rd., Northbrook, IL 60062. CP (Jan 86)

Dinner at Eight is a useful recipe filing system that includes a collection of recipes from a nationwide sampling of restaurants. Users enter number of diners and program scales recipes accordingly. $59.95. Rubicon, 6300 La Calma Dr., Austin, TX 78752. CP (Jan 86)

Enchanted Scorpets is a surround sound graphic adventure game. It has a limited vocabulary and virtually no story. Offers extensive and varied scenes and utilizes the Mac interface to the fullest. A worthwhile adventure experience. $39.95. Silicon Beach Software, PO Box 261490, San Diego, CA 92126. CP (May 86)

Flight Simulator puts you at the controls of a small plane (prop or jet) and lets you roam North America. As difficult as real flying, Mac version has features not found on earlier versions, including spotter aircraft. Not all features available on 128K. $40.95. Microsoft, 18011 NE 36th Way, Redmond, WA 98052. 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. $59.95. PBI Software, 11585-H Chess Dr., Foster City, CA 94404. CP (Feb 86)

Gateway comes with 3 full-color prints. You inherit a boring old building from a supposedly rich uncle, eventually learning that the building is a “gateway” to a lost civilization. $49.95. Pryority, 635 Sanborn Rd., Salinas, CA 93901. CP (Prem)

Gato puts players in command of an American submarine in World War II. This superb simulation game uses all of the Mac’s graphic capabilities to really make you feel that “you are there.” $39.95. Spectrum Holobyte, 1050 Walnut St., Boulder, CO 80302. CP (Nov 85)

Grid Wars is a three-dimensional arcade-style game. Good playability, for those that enjoy shoot-em-ups. Bizarre graphics. $39.95. Ann Arbor Softworks, Inc., 309's S. State Street, Ann Arbor, MI 48104. CP (Apr 86)

Gypsy is a computerized, customizable Ouija board. More than just a software package, users get a mouseboard playing surface and a Mouse Mover with 99 ball bearings. $39.95. Magnum, 21115 Devonshire St., Chatsworth, CA 91311. CP (Prem)

Legacy is a two-part text/graphic adventure. A magical orb in Drab Castle must be found through the use of spells and careful adventuring. Well-constructed game. $45. Challenger Software, 18350 Kadzie Ave., Homewood, IL 60430. CP

Lode Runner is a 150-screen action-strategy challenge that requires a joystick for truly effective play. Move around a grid of ladders and platforms collecting treasure; dig a hole to trap pursuers. Build your own challenges. $39.95. Broderbund, 17 Paul Dr., San Rafael, CA 94903. CP

The Liischer Profile is a psychological profile generator that bases its conclusions on users’ responses to seven different color tests (color charts are enclosed in the package). Select your favorite colors, shades and shapes and the program displays or prints a two- or three-page personality profile. $39.95. Mindscape, 3444 Dundee Rd., Northbrook, IL 60062. CP (Aug 86)

MacChallenger lets players land a space shuttle. The graphics of...
MacGolf is a dynamic simulation of real golf. Players have a choice of courses and difficulty levels. Superb playability makes this a must for all golfers and gamers. Requires 512K+. $59.95. Practical Computer Applications, 1305 Jefferson Highway, Champlin, MN 55316. CP (May 86)

MacVegas contains seven complete casino-style games: blackjack, craps, keno, poker, roulette and slots. All are fairly standard, but generally well designed. House rules can be selected from a menu. The games are all fun to play, but not particularly absorbing. $59. Videx, 1105 Northeast Circle Blvd., Carvalho, CA 97330. CP

MacWars is a Mac version of the popular "Star Wars" arcade game. Three-dimensional graphics are sluggish at times, but gameplay is limited. Doesn't work on Mac Plus. Spend your quarters on the arcade version. $49.95. Miles Computing, 21018 Osbourne St., Canoga Park, CA 91304. CP (Feb 86)

Make Millions is a set of electronic toy trains. Run on the layouts provided, or create your own, as complex as you wish. Create scenery using built-in tools or import fancier MacPaint scenery. $39. Fortnum, 31 W. Sierra Madre Blvd., Sierra Madre, CA 91024. NCP (Apr 86)

Orbiter puts a real space shuttle on the Mac screen. A multitude of controls, intelligent on-board computer with speech capabilities, real-time graphics and 16 distinct missions help this simulation succeed as both a game and a simulation. Recommended. $49.95. Spectrum Holobyte, Inc., 1050 Walnut Street, Suite 325, Boulder, CO 80302. NCP (Jul 86)

Perplex is a board word game based on Scrabble. $49.95. Scarborough Systems, 55 South Broadway, Tarrytown, NY 10591. CP

Mind Over Mac features games. Entertainment for the whole family. Good graphics paired with synthesized sound and on-screen help. $49.95. Think Educational Software, 16 Market St., Potsdam, NY 13676. CP (Feb 86)

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 3-5 page psychological profile of subject in business, stress, and other situations. $50. Human Edge Software, 2445 Faber Pl., Palo Alto, CA 94303. CP

The Mist is an all-text "interactive novel" based on a short story by Stephen King. Vivid graphic and sometimes gory descriptions compensate for the game's muddled sentence parser. The story is involving, while the game is overly lock-step. $39.95. Mindscape, 3444 Dundee Rd., Northbrook, IL 60062. CP (May 86)

NewGammon is animated backgammon that will challenge even good players. Features include variable skill levels and strategies and options to play the Mac or watch the Mac play itself. Many positions are included so that you can learn how to play them without having to set up a whole game. An arcade-like high speed play mode is also included. $39.95. Newsoft, PO Box 4035, Newport Beach, CA 92661. CP

Perplex is a board word game based on Scrabble. Players can vary the rules and board to suit their tastes and skills. Up to...
MINIFINDERS

your can play and the game can either be an active player or a scorer and arbitrator. Has a 90,000+ word dictionary. $39.95. Hayden, 600 Suffolk St., Lowell, MA 01854. CP

Pinball Construction Set lets users create their own pinball games, as elaborate or as easy as desired. Uses MacPaint for backgrounds and has lifelike sounds on (512k+ Macs). No documentation to speak of. $40. Electronic Arts, 2755 Campus Dr., San Mateo, CA 94403. CP (Jan 86)

Psion Chess is as good a micro chess player as you'll find. This is a world champion makes superb use of graphics and the Mac interface. Switch between 6 languages for a touch of spice. $59.95. Psion, 40 Lindeman Dr., Trumbull, CT 06611. CP (Mar 86)

Real Poker is five-card draw against five other players with Old West names, distinct personalities and playing styles, in a saloon setting. Dealing and play are very fast. Game evaluates your hand, suggests cards to keep/discard. Dynamic, exciting, addictive game. $39.95. Henderson Associates, 980 Henderson Ave., Sunnyvale, CA 94086. CP

Rogue is a strategy dungeon adventure in which each quest is completely different. Randomly generated rooms, monsters and treasures keep even veterans on their toes. $39. Epix, 1043 Kiel Ct., Sunnyvale, CA 94089. CP (Feb 86)

Sargon III is a capable chess program with 9 levels of play, problem-solving modes, take back, change color, hint, manual play, etc. Easy Play option blocks Sargon from stealing search time during player's move, effectively doubling number of levels. Pieces are moved graphically. Disk stores 175 classic games for review and replay. $49.95. Hayden Software, 600 Suffolk St., Lowell, MA 01854. CP (Mar 86)

Shanghai challenges players to clear a board of all 144 tiles, by matching pairs of mah-jongg tiles and removing them. A tile must be able to slide to the left or right in order to be removed. Terrific strategic options plus the ability to randomly generate new game boards keep this one fresh. $44.95. Accesion, PO Box 7287, Mountain View, CA 94039. CP (Oct 86)

Skyfox is a sophisticated 3D shoot-em-up. You're fighting tanks, planes, and enemy cities floating in the sky. Fast graphics, good sound, slick, on-board attack computer and many levels of difficulty will keep fans of this genre happy for hours $39.95. Electronic Arts, 2755 Campus Dr., San Mateo, CA 94403. CP (Oct 86)

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, 11558-H Chess Dr., Foster City, CA 94404. CP (Dec 85)

Suspended is Infocom's most unique text game. Using a small plastic board and six markers, the player keeps track of six uniquely designed robots which check on damage to a complex's machinery and report back what they perceive as the problem. $49.95. Infocom, 125 CambridgePark Dr., Cambridge, MA 02140. CP

Ultima II takes 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 sorcerer Milax. Good Mac interface; excellent game; confusing graphics. $59.95. Sierra, PO Box 485, Coarsegold, CA 93614. CP

Ultima III allows up to four characters to cooperate to explore the vast wilderness of Sosarrie: dungeons, oceans, and the Moon Gates to help solve the adventure. $59.95. Origin Systems, 340 Harvey Rd., Manchester, NH 03103. CP

Winter Games is a big winter sports package with an option to play Olympic events including figure skating, bobsledding, biathlon and ski-jumping. Excellent animation, good graphics, good theme music. $39. Epix, 1034 Kiel Ct., Sunnyvale, CA 94089. CP (Mar 86)

Wizardry is an outstanding dungeon exploration adventure pitting a party of up to six characters against the guardian monsters of the evil wizard Werdna. Capture his amulet to earn your reward. Even after solving the game, you'll want to go back into the dungeon. $59.95. Sir-Tech, 6 Main St., Ogdensburg, NY 13669. CP

Word Challenge is a Boogie lookalike. Features multiple (26) skill levels and an extensive dictionary. Even "pro" Boogie players should find a level that will challenge them. $39.95. Hayden, 600 Suffolk St., Lowell, MA 01854. CP

WordPlay is a word game with over 50 crossword puzzles for different levels of expertise. User friendly, it offers onboard help menus. A Wordwork allows development of new puzzles for the creative. $49.95. Palantir, 127 77 Jones Rd., Houston, TX 77070. NCP (Mar 86)

Xyphus is a role-playing game pitting four characters (fighters or wizards) against multiple scenarios that grow increasingly harder. Excellent Mac interface and icon control. $39.95. Pigeon, PO Box 311, Geneva, IL 60134. 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

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 piece. Can read and use ConcertWare and MusicWorks files. $69.95. Great Wave, 104 Gilbert Ave., Menlo Park, CA 94025. CP (Jan 86)

Deluxe Music Construction Set is a good general purpose music program. An active piano keyboard and instant audio feedback make this program perfect for educational applications, and the advanced notational capabilities will satisfy most advanced musicians. $50. Electronic Arts, 2755 Campus Dr., San Mateo, CA 94403. CP (Mar 86)

Performer is a strong contender for the high-end of the MIDI sequencer market. Only those experienced with MIDI should get this, and if you are, this is one of the best sequencers out for the Mac. Files can be transported to Professional Composer for editing. Serious omission: No direct track or segment looping. $255. Mark of the Unicorn, 222 Third St., Cambridge, MA 02142. 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 (Prem)

HARDWARE & ACCESSORIES

Ergotron is a Mac (and external drive) holder that allows a full range of swiveling and tilting. Very strong, this well made unit is also very easy to use. $99.95. Ergotron, PO Box 17013, Minneapolis, MN 55417.

Hard Disk 20 is Apple's entry in the exploding hard disk sweepstakes. This quiet, small unit uses Apple's new Hierarchical File System (HFS). The lack of utility software (spooler, backup, security) is its only drawback. $1490. Apple Computer, 20525 Mariann Ave., Cupertino, CA 95014. (Feb 86)

HyperDrive HD20 is an internal 20-megabyte hard disk. It only adds about 5 pounds to the Macs weight. Good, full featured unit with all common utilities: spooler, security program and backup utility. It should be able to duplicate a disk in five minutes. Excellent Mac interface and icon control. $39.95. Sierra, PO Box 485, Coarsegold, CA 93614. CP

Wizards is a matrix program to help solve problems in a quest to find and defeat the evil sorcerer. Good Mac interface; excellent game; confusing graphics. $59.95. Sierra, PO Box 485, Coarsegold, CA 93614. CP

Macbottom 20 is a small, external unit that sits under the Mac and connects to the external drive port (not SCSI). Good, reliable, but noisy unit. Requires $12K+ . $1595. PCPC, 6204 Benjamin Rd., Tampa, FL 33614.

MacCharlie is one of the most unusual Mac products imaginable.
MINIFINDERS

Its components slip around the Mac and the keyboard and convert the Mac into an IBM PC clone. Amazingly it works well. The enlarged keyboard has a few bugs but is a joy to use. $1,195 with 256K RAM and one floppy drive. $1,895 with 640K RAM and two floppy drives. Dayna Communications, 50 S. Main St., Salt Lake City, UT 84144 (Dec 85).

MacIntizer is a graphics tablet and absolute positioning device that replaces the mouse. Various scales are possible. $599. GTCo Corp., 7125 Riverwood Dr., Columbia, MD 21046. (Jan 86)

MacNifty Sound Digitizer turns ordinary analog sound input into digital waveforms which can then be manipulated using the Sound Cap software it comes with. Capable of truly stunning effects. Requires 512K+. $129.95. Kette Group, 6860 Shingle Creek Pkwy., Minneapolis, MN 55445.

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, 6860 Shingle Creek Pkwy., Minneapolis, MN 55445.

MacNifty Switch allows any port on your Mac to connect to two peripherals. Turn the knob to switch between the two devices. $34.95. Kette Group, 6860 Shingle Creek Pkwy., Minneapolis, MN 55445.

MacTablet is a stylus-driven graphics tablet. Users can easily sketch or trace art using this absolute-positioning device. Has a working area the size of the Mac screen. Allows concurrent use of the mouse. $495. Summagraphics Corp., 777 State St. Extension, Fairfield, CT 06430. (Jan 86)

MacVision is a digitizer that uses an ordinary video camera for input. Capable of extremely fine results and special effects. Easy to use and well documented. $399.95. Koala, 3100 Patrick Henry Dr., Santa Clara, CA 95052.

Magic is both the most intimidating and easiest to use digitizer available. Use a regular video camera for input. Once the crowded screen is mastered, any effect is possible. $399, $549 with camera. New Image Technology, 10300 Greenbelt Rd., Sea Brook, MD 20706.

MouseTop is unquestionably the cutest mouse cover on the market. Gray, plush fur, round felt ears and button nose and eyes make your mouse look authentic. $5.49; $5.95 for MouseTop wearing wire-frame glasses. H&H Enterprises, PO Box 2672, Corona, CA 91718.

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, 1 Weatherly, Mill Valley, CA 94941.

NoLabelSystem is a plastic permanent labeling system in which users slide new tabs into a transparent plastic case on the disk. The tabs stick out of the case slightly, making them easier to read while in the drive. NLS-3.5 set contains 100 plastic pockets, 100 white tabbed insert cards, 100 color tabbed cards and instructions. $19.45 plus $3 shipping. Weber & Sons, NLS Dept., 3468 Hwy 9, Freehold, NJ 07728.

Numeric Turbo combines a track ball with an enhanced numeric keypad. The keypad includes working cursor keys and other direct function keys that bypass the Mac's Command and Shift keys. The track ball takes some getting used to and some never learn to like it. Those who do rarely ever use a mouse again. $149. Assimilation, 485 Alberto Way, Los Gatos, CA 95030.

ThunderScan replaces the ribbon cartridge in an ImageWriter, which is required to use it. Laser scans art that can be run through the ImageWriter, producing high-quality digitized images. The images can be manipulated as they are created or afterward. Mac Plus compatible using optional adapter. Output has been optimized for LaserWriter. $229. Thunderware, 21 Orinda Way, Orinda, CA 94563. NCP
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The communications module offers a full range of options. You can communicate with virtually all other computers.

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straightforward task to click on the "Dial" button next to the service you want to reach.

Once you have dialed the other computer you can send and receive (called "capturing") text files and you can even send files via XMODEM, which is a special error-checking method of sending files. The files that you can send include just about anything you can see as an icon on a desktop — everything from MS Works' own saved documents to applications, as well as documents from almost any other program.

Even better, MS Works supports the now industrywide MacBinary protocol. The MacBinary protocol is a special way of formatting the XMODEM stream material which makes transmitting and receiving both faster and surer.

Unfortunately, MS Works does not allow for either macros or terminal emulation. This means that unlike programs such as Smartcom II, Red Ryder 9.4, Microphone, inTouch, and many others, the user cannot design automatic sign-on routines. Nor can the user design quick ways to send commands and save keystrokes as in the above programs.

And, if the called computer is, for example, a VT-100 terminal, then the user will not be able to use some special formatting advantages offered by other programs that do have this emulation capability.

The telecommunications subprogram in MS Works is good enough that it will take the user through the first stages of being involved with modems and the exchange of data via the phone lines. Many users may find that it is all that they will need.

But unlike the other subprograms in MS Works, the lack of the above features makes this part of MS Works compare as being less than existing standalone products.

ALL TOGETHER NOW!

One of the main questions that can be asked of any integrated package is: How easy is it to get from one program to another and transfer information? On the Mac you can go even further and ask: Why should I use this program instead of Apple's Switcher to integrate my own applications? Let's take these two points one at a time.

As is almost always the case in Mac, MS Works' subprograms' Edit menus allows the user to cut and copy information to the Clipboard. In this manner it is very easy to prepare information for transfer.

If you want to, for example, you can select text that was received via telecommunications. You can then copy it to the Clipboard and paste it into the word processor to include in a report. Or, you can copy various computed fields from your data base, paste them into your spreadsheet and really go to town with "what-if" scenarios.

Every subprogram also has available a Window menu. The Window menu allows you to quickly shrink and expand the on-screen window so as to help keep track of your "stack" of windows. But the main benefit of the Window menu is that it tracks and lists (at the bottom of the menu) all of the various documents you are working on. You can then choose a document with the mouse and instantly be within that document's window.

Help files are also available on-line for speedy recovery from errors or for that reminder of the command that's just on the tip of your mouse. The help file is reachable from every subprogram.

So, within its own domain, MS Works is a speedy and very easy to use method of integrating. The user really does feel that the various subprograms are all one big package rather than loosely welded parts.

MS Works' price point is another of its strong points. In order to come up with a comparable batch of programs running under Switcher it would be necessary to dip deep into a wallet. For many people the most economical way to integration of all of these programs might well prove to be MS Works.

This may indeed prove to be the package that changes the way you use your own Mac! It's well worth auditioning it to see if it will really work for you.

Neil L. Shapiro is MacUser's Editor at Large.

**Microsoft Works**

<table>
<thead>
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<th>Feature</th>
<th>Rating</th>
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</thead>
<tbody>
<tr>
<td>Overall Rating</td>
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</tr>
<tr>
<td>Follows Mac Interface</td>
<td>★★★★★</td>
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<tr>
<td>Printed Documentation</td>
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<td>On-Screen Help</td>
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<tr>
<td>Consumer Value</td>
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**Comments:** A fully integrated package featuring word processor, spreadsheet with charting, data base, and telecommunications subprograms. Best Feature: Fully utilizes the Macintosh interface to result in a complex program that is still intuitive to learn and use. Worst Features: Drawing ability in word processor is revolutionary in concept but flawed in execution. Telecommunications does not feature macros or terminal emulation. List Price: $295. Published by Microsoft Corporation, 16011 NE 36th Way, Box 97017, Redmond, WA 98073-9717. (206) 882-8080. Comes on one 800k disk, requires at least 512k RAM. Version reviewed 1.0 (v1) — a prerelease version. Copy protected.

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THOROUGHLY MODERN MAUG

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but if you've done an SS (Set Subtopic), you'll come in on that channel. If you're on one channel and everyone else is on another, /TUN nn (type the actual number, not mn) will get you to channel mn. Many people are often found on Channel 8, as that is the official VMCO channel. (VMCO is Bob Perez's Visual/Ink MAUConferencing system that uses MacInTalk to speak what people type and icons to represent their facial expressions. It must be seen to be believed.)

WHEW! IS THAT ALL?

That wraps up our tour of the MAUG Forums. That is not all, not by a long shot, but it is enough to get you on-line leaving messages, reading and downloading files, and visiting with other folks in CO. As you visit the various MAUG Forums, read the bulletins. Type $N at the Function prompt to find out what the various Subtopic Names are. From the $N prompt, typing $n will get you a description of what Subtopic $n is all about. (Typing DE at the DL prompt will get you the same information for the particular DL you're in.) Read some messages, and don't be afraid to ask for help. The sysops are ready and willing to help you with problems. Many people join MAUG each day, so you won't be the only one having problems, but you may be the only one bold enough to ask for help. The other new members will read the replies to your requests for help and silently thank you for asking the questions they were too shy to ask.

And don't be surprised if Andy Hertzfeld answers your question about ThunderScan or Switcher. Or if Jean-Louis Gasse answers your question about Apple's marketing plans. Or Dan Cochran about MPW. Or Scott Knaster about ROM versions. Or Scott Watson about Red Ryder. Or Evan Gross about BatteryPak. Or Dave Winer about MORE. Or David Dunham about Acta. Or Mike Boich about MacTerminal. Or Dennis Brothers about Microphone. Or Steve Bobker about MacUser. In fact, don't be surprised no matter who you see on MAUG. Even John Sculley is a member.

Robert R. Wiggins is a New York-based computer consultant and writer.

YOUR OWN CUSTOM COMPU SERVE TERMINAL

Want to optimize your Mac for communicating with CompuServe? Then customize your terminal parameters. CompuServe supports many different kinds of terminals and allows you to customize your settings to match your terminal (or in this case, terminal program).

One type of terminal that is very popular, and that many Mac terminal programs can emulate, is the VT100. CompuServe is quite compatible with VT100, as it is organized into "videotex pages" of information, and will clear your screen between pages of information. Many people like this paged approach. Try it out:

First, set your terminal program to VT100 (probably under a menu called Settings or Terminal). Then, on CompuServe, type G0 DEFALT at any system prompt and you'll get a choice of things to do. Choose "Setting Your Terminal Type" and on the next screen choose ANSI-compatible (VT100). Then hit another RETURN to get the detailed parameters. Select and change (as needed) your terminal width to 80, your screensize to 24, FormFeeds to REAL, Tabs to REAL, UPPPER-LOWER ON, CAPS LOCK OFF, LINESFEEDS SENT, BLANK LINES SENT. When you're all done, it asks if you want these to be permanent or for the current session only. If you're just trying it out, select the choice for session only. See how you like it.

If you have a terminal program that lets you scroll backwards (like MacTerminal, Microphone, Red Ryder or Smartcom, among others), then VT100 may not be for you, as it clears the screen and the information does not scroll off the top for later review. Also, you may not want to use the paged approach, as you may want it to give you all the information and let you log off to review it (it's cheaper that way). In this case, follow the same steps as for VT100 except select other as your terminal type, and out of the detailed parameters set your screensize to 255 lines. All the other detailed parameters should be set the same as they were for VT100.

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This month we have a mixed bag for you. The major offering consists of Steve Martin's TML Pascal listings from his "The Sound of Pascal" article. Sure beats typing the code in!

The other strip is a program called Mad Menus. It's by Howard Katz of Burnaby (that's near Vancouver), British Columbia, and is here with his permission. It does some, um, unusual things with the menus and screen. It's also absolutely safe and will not harm any Mac or system. — SB
HAIR-RAISING CONSPIRACY

The following story I'm about to tell you is true — as incredible as it may sound.

I was asked to meet the members of the so-called "Macreal" world domination conspiracy at midnight near the Berkeley Marina. Just be there, we'll find you," said a voice on the phone.

This wasn't that zany Iowa Mac Underground crowd that publishes all the Mac stuff. This was something else — a Moonie/Synanon kind of conspiracy as best I could tell. "We're going to change the direction of Western Civilization," I was told by a man who called himself Gonzago. He claimed to be the ringleader and "next world ruler."

I didn't take this seriously, but decided to head toward the piers anyway. Heck, there was nothing else happening on that Tuesday night since CBS had cruelly preempted The Equalizer that week. To meet these crackspot was a mistake.

A few minutes after I arrived, a group of thugs — I suspected a few of them to be gypsies — approached the car. "We are the agents from Macreal," said a bearded man who wore a ragged orange jump suit and a cheap yellowing Panama hat.

Before I knew what hit me, one of the jokers covered my mouth with a chloroform-soaked rag. I woke up, hours later, in some sort of underground city. It reminded me of a Carlsbad Cavern kind of place. But I suspected I was somewhere within the miles of secret Tong tunnels under San Francisco's Chinatown. Hundreds of men and women played troglodyte in among the rocks. An eerie glow emitted from countless cubicles throughout the cave. It was from hundreds of Macintosh computers.

As I turned to look around I was suddenly greeted by the man — Gonzago! "My friend," he said as he outstretched a hand in a gesture of goodwill. "We have for you a story to tell your readers. They are awaiting the word of my appearance. Soon I can, once and for all, rule the world for the good of all."

I cautiously shook his hand as he continued. "You see," he said, "it is important the Macintosh become the only computer in the world. It is our tool. The screen is rigged at a certain frequency to slowly hypnotize users until they become tuned," as it were. Tuned to the collective unconscious that we are all part of. This is why it was necessary for brother Steve and the Mac comrades to use the nonstandard video frequency on the tube. It's funny how nobody noticed, huh?"

"You mean there is something hypnotic about the Mac frequency?"

"Yes, it was discovered by brother Steve. It creates a peculiar love and fanaticism that cannot otherwise be duplicated. With very little prodding a Mac user can be made to do almost anything. We can determine when this effect has taken place when the devotees express a willingness to listen to James Taylor and Carly Simon albums."

"Why did you bring me here?" I asked as I looked for an escape route.

"You must be programmed to the frequency. You will be seated in the Mac overdose room where you will be pulsed for 24 hours until you become one of us. You will then go amongst the cynics and sing praises of the Mac, write books about the Mac, grovel in the presence of the sainted ones and help us begin a new world order."

"The sainted ones? Who the hell are they?" Gonzago tittered. "The ones whose names are in the Macintosh case, you fool. Hahahaha!" His face suddenly stiffened as he motioned to a couple of ugly henchmen. "Take him away!"

I was grabbed under the arms and thrown into a sealed room that had at least a hundred Macs and a video projector inside. The door was locked behind me. I couldn't get out. The hellish show began.

All the Macs came to life at once and they all strobed their eerie frequency at me. I could almost hear it. On the projection TV appeared a man wearing a Macintosh shaped hat. He babbled about the new Mac thinking cap. He was followed by an episode of Captain Kangaroo and the dancing Mac. Soon there was a Muppet Mac show and Walt Disney's Mickey Mac.

Hours passed. It was all too much. My head was reeling as I was subjected to a movie called Mac to the Future. Then there was a bizarre baseball game and the announcer kept talking about Mac to Mac home runs. Soon I was watching basketball. Bob MacAdoo, as I recall. Then Shakespeare's MacBeth. The station call letters were KMAC. "Mac...Mac...Mac..." ran in my ears.

A voice called into the room. "We have food. Big Macs! Or if you prefer we can go to Mac in the Box." The voice laughed idiotically. Instead of the expected hamburger, they tried to confuse me with Macaroni and cheese. "Would you like a Macaron for desert? Hahahaha! Give it up Dvorak, you'll soon be one of us. Hahahaha!"

Suddenly a rock group blared from some overhead speakers. It was Fat Mac and the Heart Attack. It was their greatest hits on the Metro Goldwyn-Mayer label. Their first song was Mac the Knife. Then Old MacDonald had a farm. I began to black out. I had to fight it, I thought to myself. All the while, the Macintosh's flicker kept throbbing, throbbing, throbbing.

All of a sudden I felt relaxed. No I didn't. Yes I did. It felt good, real good. No, it felt great...that's the ticket — great. Now I know what they meant. These machines are great, yeah — great. Insanely great. Yeah, now I get it. I get the joke — insanely great...that's the ticket, insanely great. I laughed idiotically. I wanted to tell them that they were right. I headed for the door — a dumb smirk was on my face. Suddenly I slipped on some wet macaroni that earlier had fallen to the floor. I fell backwards and bashed my noggin on the TV projection screen. I shook my head and snapped out of it long enough to realize that I had almost become a Mac zombie.

Before I was again overcome by this madness, I figured my last hope was to fake it. I tried to cover up the fact that I was scared, real scared. I put the fake smile on and bugged open my eyes. "I understand! I yelled through a peep hole in the door. "You're right."

Apparently nobody had lasted this long in the box without succumbing. They believed me and asked me if I wanted to listen to James Taylor record. "Neil Young would be better," I said on a gamble. "Perfect!" shouted Gonzago.

They freed me, hoping I'd take part in their ploy. Instead, I lived to tell this tale and to warn others. Beware!
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