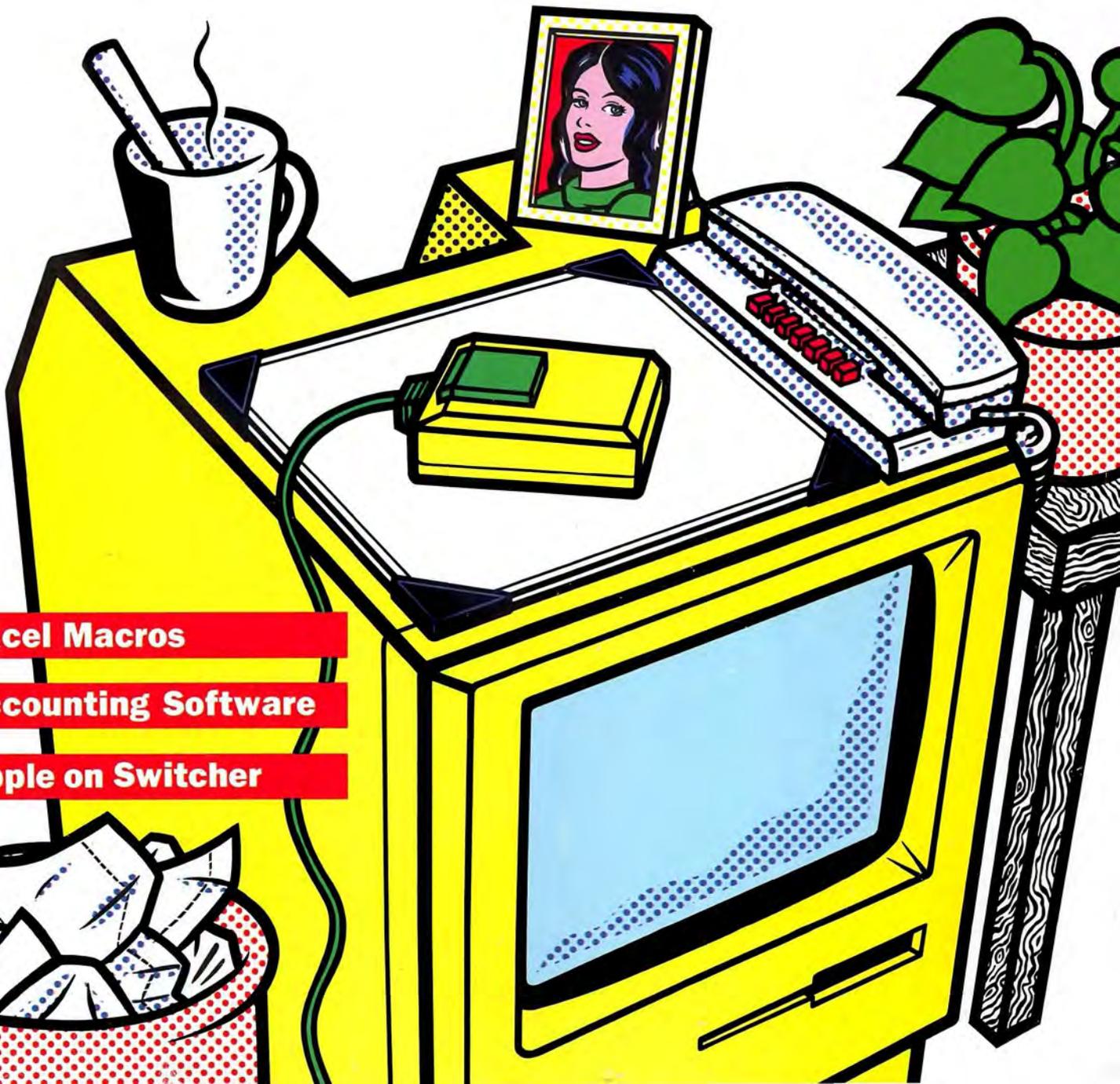


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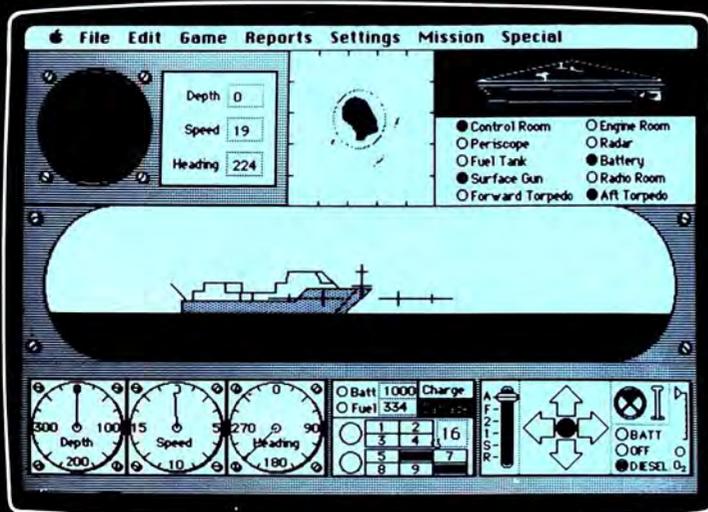


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**ASSOCIATE EDITOR** Tracie Forman Hines  
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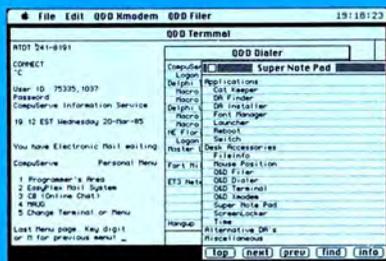
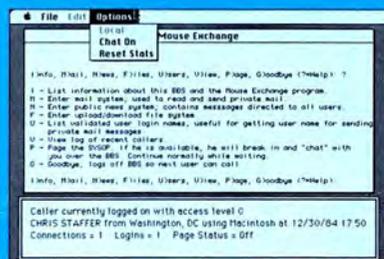


**Day Keeper™ Calendar.** This program helps you organize your day to day appointments, goals, expenses, and customer billing. It makes personal time management easy with flexible reporting and sophisticated searches. Day Keeper is designed for the individual who needs easy and complete time accounting. *Works on the 128K Macintosh, and with 'Switcher' — takes advantage of the larger screen on the Macintosh XL.*

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

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

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

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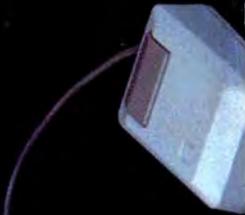
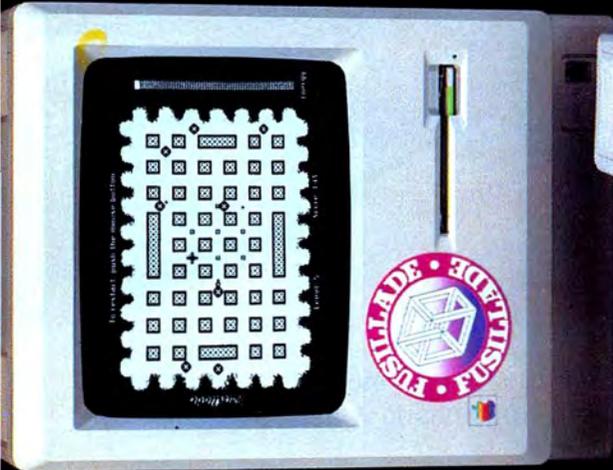
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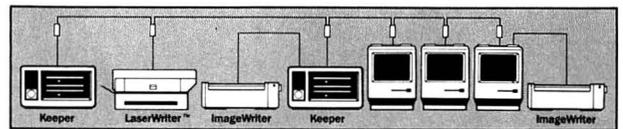
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# PLAY IT TO THE LIMIT

## THE MACINTOSH IS A TOY COMPUTER.

Before you think that I've lost my mind, or that my esteemed colleague John Dvorak is masquerading as the editor this month, let me explain that I think all microcomputers are toys. At least, they are if they're what computers should be.

The Macintosh is a *great* toy.

Spreadsheets, word processing, accounting software, all of these products have their important place. But, to me, what makes a computer really exciting is when it's used as a tool to extend the human imagination, to change how people spend their solitary leisure hours, and to impact on how they socially interact with other people.

## Measure by Measure

Games are a very important part of any computer's software repertoire. Sure there are many individuals who would never think of mousing off a spreadsheet template to launch an adventure game. But games do something else besides entertain the user, they are a yardstick with which to measure the amount of creativity that can be jammed into a CPU. In some respects, games delineate the farthest boundaries of a computer's graphic and even number-crunching abilities.

The same computer power needed to move a complex, bit-mapped image across a screen faster (or slower) than the twitchiest reflexes, is the same power that (speedily or not) recalculates a spreadsheet. Utilization of such power is a function of the creativity of the programmer and of the resources of the computer system. Often, these are resources undreamed of by the computer's original design team.

Someday, if you feel like going on an antique hunt, take a look at a 1979 version of *Space Invaders* on an Apple II and compare it to a modern program such as *Skyfox* (from Electronic Arts).

To have set out to program graphics like *Skyfox*'s in 1979 on an Apple II would have been to dream the impossible dream. Indeed, no one at Apple Computer would likely have believed the machine capable of such graphic potential.



## Doubting Thomases

But, what about color? The Mac today is already capable of *Skyfox*-like graphics but in black-and-white. When the Mac first came out many people quickly pointed out that without color the Mac could "never" be a game machine. In fact, some gaming software companies immediately went on record against even planning any products for the new, black-and-white machine.

I was greatly disturbed by this at the beginning of the Macintosh marketplace. Without game programmers pushing away at the Macintosh, pulling and prodding QuickDraw into a roiling mass of entangled code and original routines, I feared the Macintosh might never reach its true potential.

Well, the Macintosh has already proven that early critics were color-blinded.

Certainly there are some game concepts upon which the lack of color has a negative impact. But, the best creative games—on the Macintosh as on any other computer—are those which take full advantage of the unique potentials of the machine upon which the software runs. The programs that push, the programs that insist the computer do a little bit more, a little bit faster, those are the game programs which will change not only gaming on the Mac but also business graphics, spreadsheeting speed and more things that we cannot foresee.

But history always tends to repeat itself, particularly in computing where it sometimes seems that no one has any idea at all of what happened as long as two or three years ago. (And, when you talk of five or six years ago people think of Paleolithic cave dwellers squatting about a campfire with their Altairs.)

Every computer I've yet seen goes through a period when creativity of programming takes a second place to getting products to a marketplace. And every computer I've yet seen has gone through some period wherein gaming software copies or mimics other fields.

It used to be that computer programmers would hustle off to the coin-op arcade with a barrel of quarters, a Polaroid camera, and a notebook. Pretty soon there were more versions of *Defender* and *Space Invaders*, *Star Castle* and other coin-op ware then you could shake a joystick at.

Then Atari Inc. stepped in and, with a series of full-page ads, made it very clear that—at least for games they had designed—they were willing to legally protect their audio/visual presentations. Suddenly you saw less outright copies of existing arcade games and a funny thing began to happen.

The microcomputer arcade games got better. As designers concentrated on the machines they were working on, it became apparent that creativity would pay off in better and more exciting products.

In the gaming world of today's Macintosh we are now seeing a repeat of the "new program code equals new idea" phase of marketing. While some games, such as *Balance of Power*, *Deja Vu*, *Harrier Strike Mission* and others take the Macintosh to new realms of excitement I also note a disturbing new trend toward mimicry.

Strangely enough, the programmers are not mimicking other computer systems—be it coin-op or micro—but are picking up on ideas from the boardgaming field. Perhaps it is because the Mac's resolution lends itself to reproducing printed materials on-screen.

For example: Name a game that is composed of a four-by-four matrix of randomly generated letters. The object of the



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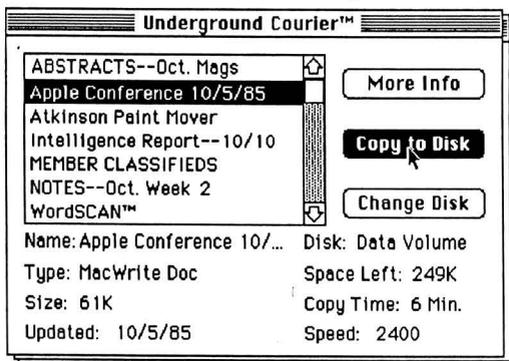
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## A Message from the Director

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

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

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Jerry Daniels, Director of Mac Underground-USA

game is to spell out words from letters which touch one another.

The game, of course, is called *Boggle* and is one of the country's most popular word-games. Brought out by Parker Brothers this collection of plastic cubes and gaming paraphernalia has been the focal point of thousands of parties.

Today you can buy at least two versions of this game programmed for the Macintosh. Both games add a computerized opponent for solitaire play but when we called one of the companies involved, the woman at the other end assured us that her program was "just like *Boggle*. It is *Boggle*."

Parker Brothers refused comment on the issue other than to say that neither company had licensed rights to the *Boggle* game. But the issue is not really one of licenses nor even of legality. It is, instead, an issue of creativity.

*Boggle* was not designed to be played on a computer. It translates well, the programs are fun. But what if the amount of effort needed to program had been better directed toward utilizing the Macintosh as a computer, as a graphic, whiz-bang machine that could do much more than plastic and cardboard? I don't know what the programmers *could* have accomplished. A three-dimensional board? Constantly shifting letter positions? The point is, they went for the copy.

There are many other examples of such unoriginality and not all involve the boardgaming world. Many programs on the Mac are being brought out by people who did the same programs for the Apple II years ago. So far, no one has gone so far as to forget to add pulldown menus but, graphically, some of these Apple II clones are a riot when viewed on the Macintosh. The Apple II's 'high-resolution' mode does not approach the Mac's pixel power; although the Apple II is color. There's one game that we can't help but break out laughing at whenever we launch it. The screen shows a scrollable world map but the continents are blocky, squarish, totally devoid of the detail possible (see *Balance of Power* for how a map should be drawn on the Mac). It just looks as if someone turned the color control on an Apple II monitor fully counterclockwise.

We've made the argument in the past that users owe programmers the reward of paying for their products rather than pirating them. But there is also a point that programmers owe their audience their best shot at pushing the Macintosh to the creative limit.

When you program on the Macintosh, don't be afraid to push. It's the only way to get from here to tomorrow. ☒

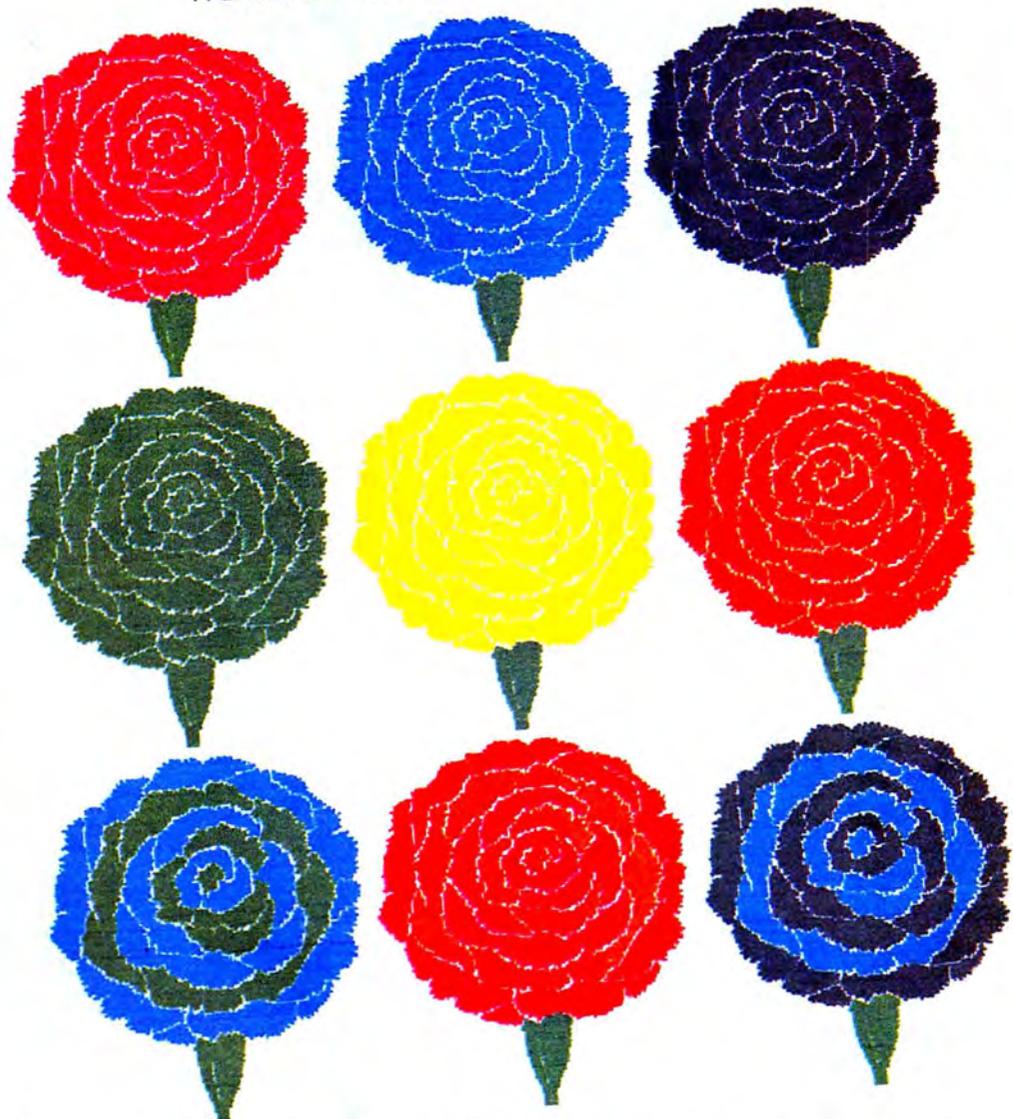
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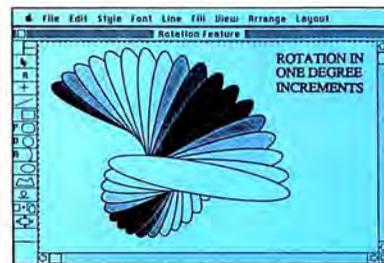
ZOOM: Zoom in on an area of your drawing, and magnify it up to 8x its original size to create intimate detail. Zoom out and see as much as 4x4' in a single window.

MacDraft offers a full complement of commonly used scales. Each has its own grid network. You create a library of frequently used shapes in any scale, copy and paste those shapes from one scale to another. Sizes will automatically be adjusted to the new scale. Work in decimals, fractions or metrics. Line lengths and angles are displayed to scale throughout the drawing process. This saves the task of computing the size of each object.

When you place a dimension line on your drawing, MacDraft displays the proper size of the object regardless of the scale.

MacDraft lets you zoom in on your drawing and magnify it up to 8x, enabling you to draw in intimate detail. With a resolution of 512 points per inch, you draw

with amazing precision. Zoom out and see as much as 4x4' in a single window. You maintain full drawing capabilities at any view.



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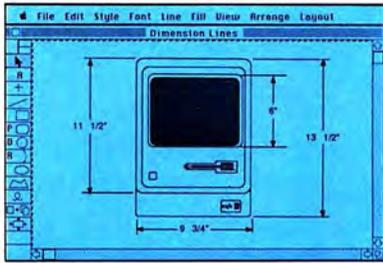
MacDraft allows you to automatically distribute multiple objects along a line—even if those objects are not the same.

Create rectangles with rounded corners. The corners are in proportion to the rectangle's size to prevent distortion. Dynamically change the radius of these corners to any size, based on scale.

Draw circles in one of two easy ways. To project between two points, choose circle by diameter. To project about a center point, choose circle by radius. Draw arcs in 2 ways: 1—Define the length

of the radius and project the arc to the desired angle; 2—Define any three points the arc passes through.

**F**or irregular shapes use MacDraft's polygon and freehand drawing tools, including dynamic editing and automatic closure. MacDraft will smooth your polygon or freehand shape to give you a contoured effect. Add line segments to your polygon or extra points to your freehand shape after each has been created.



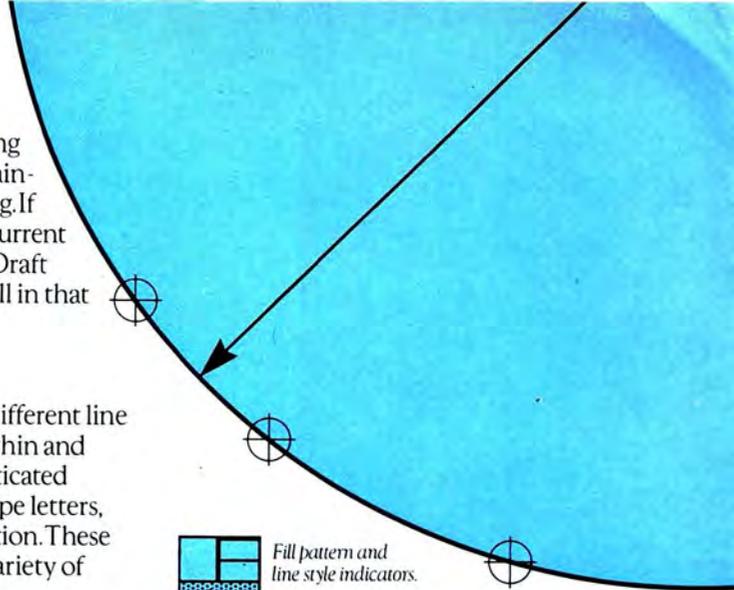
*DIMENSION LINES: MacDraft will display the proper size of the object, regardless of the scale of the drawing.*

The continuous drawing mode allows you to maintain the flow of drawing. If you draw beyond the current viewing window, MacDraft will automatically scroll in that direction.

**M**acDraft offers 9 different line styles including thick, thin and even --- dashed. Sophisticated text-editing lets you type letters, numbers and punctuation. These can be displayed in a variety of types and sizes.

MacDraft conforms to the Macintosh™ concept of copy and paste, allowing you to paste in objects from other applications such as MacPaint™ and MacDraw™.

Incredibly, MacDraft is only \$239. A good old-fashioned value that just may convince you to put away your drafting pencil. Forever!

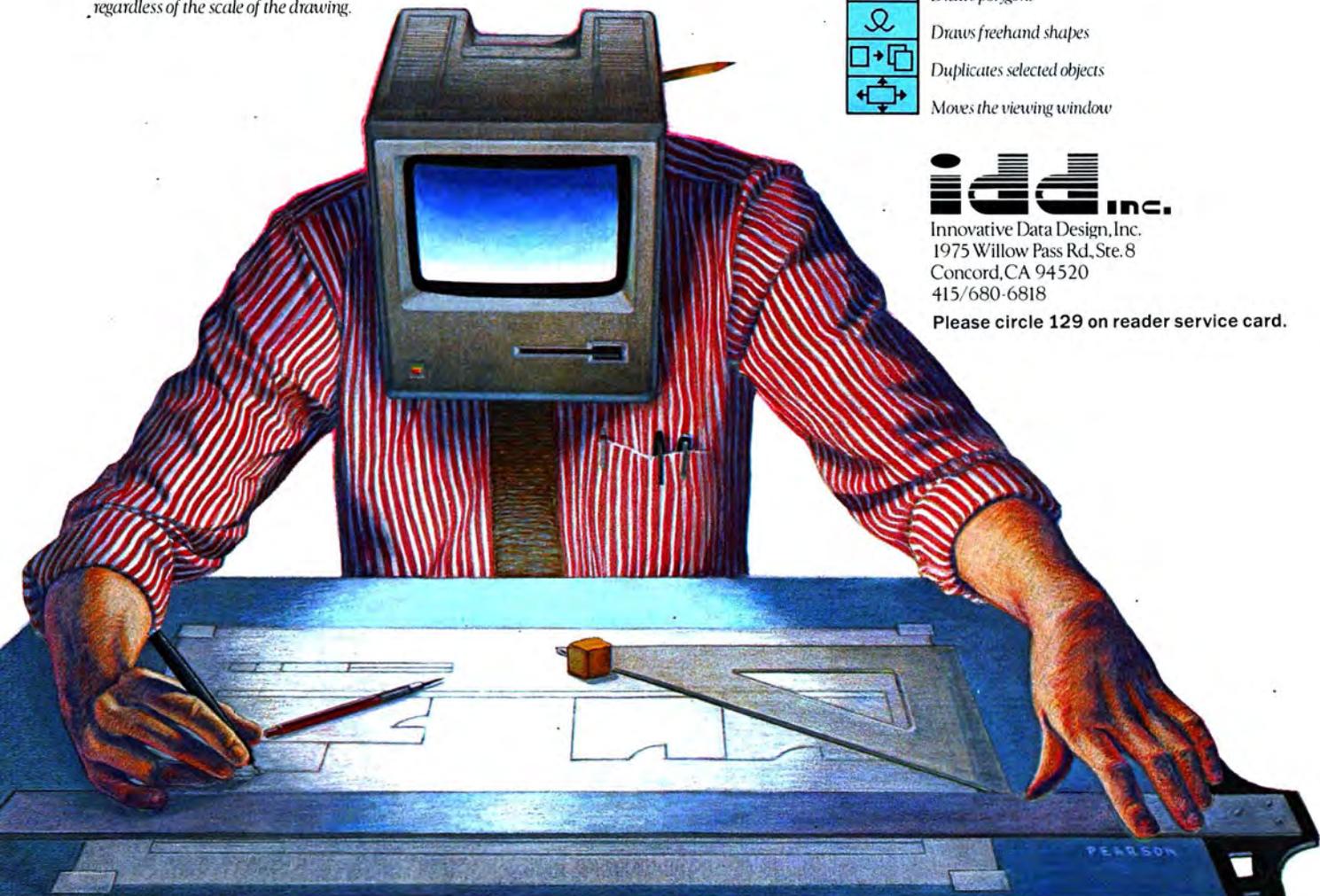


-  Fill pattern and line style indicators.
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-  Draws diagonal lines
-  Draws square-cornered rectangles
-  Draws rounded-corner rectangles w/proportional or constant radii
-  Draws circles by diameter or radius
-  Draws arcs by radius or 3 points
-  Draws ovals
-  Draws polygons
-  Draws freehand shapes
-  Duplicates selected objects
-  Moves the viewing window



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If you've been waiting to buy a hard disk for your Mac till Apple introduced their version, the long wait is over.

And look what they've given you. A disk drive that has the same footprint as your Mac. Makes it 3½" taller. And does who-knows-what to its carefully thought-out ergonomics.

That's why we think you should take a closer look at the Paradise MAC 10 and MAC 20.

Start with the case: instead of jacking your screen way up in the air, our drive sits right next to your Mac. And looks like it belongs there. In terms of styling, proportion, and balance, it's a perfect fit.

And that's just the surface. Inside, you'll find a full 10 or 20 MB. A lightning-fast 85 ms average seek time. An extra serial port. And the kind of reliability that lets us give you a one-year warranty.

So if you've been waiting for a hard disk that matches your Mac inside and out, go look at the MAC 10 and MAC 20. At better Apple dealers who know a good thing when they see one.

# The perfect hard disk for your Macintosh might not be an Apple.

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S Y S T E M S , I N C



I am a junior in high school and have owned my Mac for close to a year and a half now. I picked up a copy of the premier issue of MacUser at the MacWorld Exposition in Boston in August and found it quite helpful. The articles "The Art and Craft of Desk Accessories" and "The Gourmet's Icon Cookbook" gave me information that I couldn't find anywhere else. However, the source code listing for "Show Picture" is very long, and I have no guarantee it will run after I've typed it in. Will you provide "Show Picture" and future listings of source code on disk? It would be a great help to me and surely to others as well.

I have high hopes for MacUser. It will no doubt be an important tool for me. Please enter my subscription for MacUser for one year and bill me later.

Thank you.

Shawn Lee  
Somerville, NJ

*The source code will run. How can I say that? I typed it in and it compiled and ran. You cannot change anything though—disk names are significant.*

*We unfortunately can't supply listings on disk. All listings will be available in the programming section of the Mac special interest group on national databases, such as CompuServe and Delphi.—Steve Bobker*

OK, here is my check for 12 more issues of MacUser—starting with the November issue.

Some comments after reading your premier issue:

1. I like the "MiniFinder" section. It reminds me very much of the now defunct magazine for the Apple II computer, Softalk. In fact, I would like it very much if your magazine could evolve into a format similar to the one adopted by the Softalk magazine.

2. The next section I like is the "Inside Mac" section. But, I think "The Art and Craft of Desk Accessories" article suffered because of the unreadable small print of the listing. Why even bother to print such tiny characters?

3. I wish you will run some tutorial articles in the future. I think a lot of "intermediate" Mac users out there would ap-

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

preciate serial articles on languages such as MacForth, Basic, Pascal and Assembly. Tutorials on some programs such as Excel would also be welcome. In other words, there are many books in the bookstores teaching these things. If you could serialize such books in your magazine, it would be most valuable.

4. In summary, I hope your magazine will not contain too much "fluff". Review articles should be critical instead of sounding like ones written by the PR department of the product producer. Each issue should contain some articles that would put your reader in front of the Mac to use his intellect to explore further the possibilities of the Mac.

Good luck.

Thomas Kwei  
Wappingers Fall, NY

Congratulations on a dynamite premier issue, and best wishes for many more of the same! I agree with your statement of purpose, which is to "teach (us) how to take that hammer and build a boat with it." Too much page-space is already devoted in the existing Mac-magazines to expounding on new product features that could be gleaned from the manufacturer's own literature. Sure, tell us about the features, but also indicate what can and cannot be accomplished with the product as a consequence of those features. The most hopeful note in that direction I've seen in the first issue was in Steve Bobker's "Terminal Programs..." article. To my knowledge, this is the first mention, even as an aside, that the Microcom Modem is of exceeding little value for communicating with anything but another MNP-supporting modem: i.e., hardly anybody. While I realize that no magazine is going to willingly tread on an advertisers' toes, the unwillingness of the other magazines to point out this rather crucial limitation in their reviews strikes me as abandoning their responsibility to their readership. I hope that MacUser will continue to be as forthright in its reviews, and let the bombs fall where they're deserved!

"The Macintosh Boundary" is another big winner in my estimation. I'd like to see more *subjective* reports on using new language-development packages, rather than just another list of the "features". If Doug Clapp, or some other brave soul, can be induced to put in the time and

effort, I'd love to see a write-up on actually *using* my own pet love-hate project, NEON™. I think the "Inside Mac" feature has the potential for becoming the first programming tutorial actually directed to the majority of first-time Mac programmers: the terrified and more-than-slightly bewildered ones! While "MacTutor" does a fine job of instructing those "skilled in the art", it assumes a great deal of pre-existing knowledge of those little details that make a program run instead of crashing. It's precisely those "little details" that need to be explicitly spelled out, and that the typical programming article (or documentation, for that matter) leaves out because "everybody knows that!" Kudos and keep up the good work to Chris and Bill!

That's about it for now, except to wish that your 10th Anniversary edition be even more "Insanely Great" than your first issue!

Ed Arnold  
Chicago, IL

I disagree entirely with your "Hackers are pirating this and hackers are pirating that..." page 146. PROGRAMMERS ARE NOT THE PROBLEM, THIEVES ARE THE PROBLEM. You properly use the word hacker on page 3, "Roll your own DAs. An article for the Ultimate Hackers among us." So I guess this was just a slip. Though "An article for the Ultimate Hackers among us," feels more like a clause than a sentence.

Another error: "As soon as you remove the last desk accessory you have destroyed that disk!" You italicized this gem of misinformation! I have removed the last DA without destroying the disk. A disk w/o any DAs will cause problems for the finder (Get Info got garbled), and it can not be booted. But a disk w/o DAs is not destroyed. Just copy a new system file to the "destroyed" disk and it will be fine.

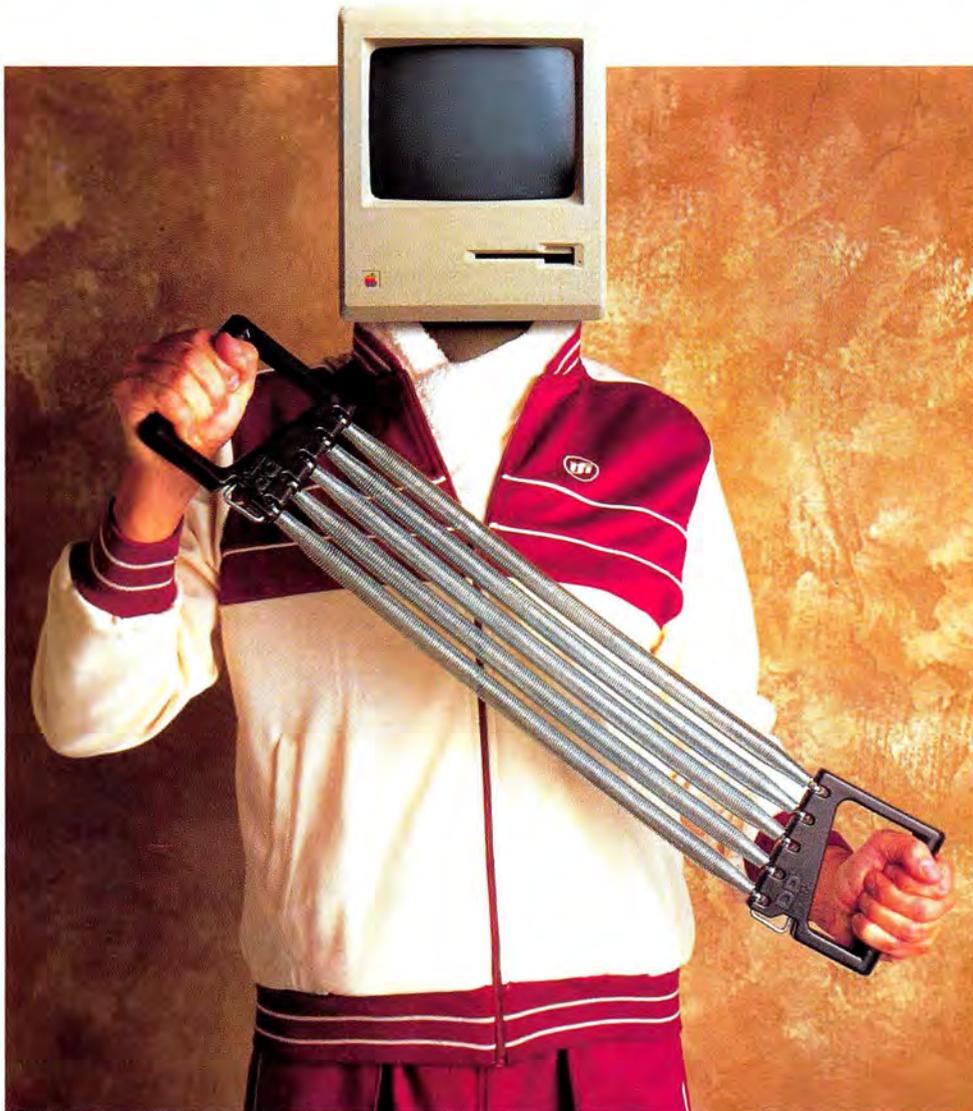
Paul Matzke  
Madison, WI

Enjoyed the first issue. However, I do have a nagging question that needs an answer. If a contributing editor meets the contributing anti-editor, do they kinda make an explosion like on STAR TREK, or what???

Good luck with the magazine!

Alfonso Querty  
The Mouseketeer Newsletter

# MAC & THE POWER USER



PHOTOGRAPH BY PETER SMITH

Notwithstanding the opinions of our esteemed contributing editor, Mr. John Dvorak (see page 152), there's an awful lot of rubbish talked about the Macintosh and the serious user.

## Is the Mac a wimp computer?

MacUser magazine doesn't think so. We believe the Macintosh is one of the *most* powerful personal computers in the world.

In common with every other computer, it has its limitations, its quirks and those tasks to which it is best suited. But that having been said, the vast majority of Macintosh

users truly coax only a fraction of the Mac's potential out of their system.

That's where MacUser comes in. As The Macintosh Resource, we'll bring out the best in you and your Mac. Increasing your productivity. Ensuring you value for money in your hardware and software purchasing decisions. Showing you new ways to solve old problems. Keeping you up to date issue after issue, article after article, review after review.

A subscription to MacUser should pay for itself, literally, many, many times over in the course of a

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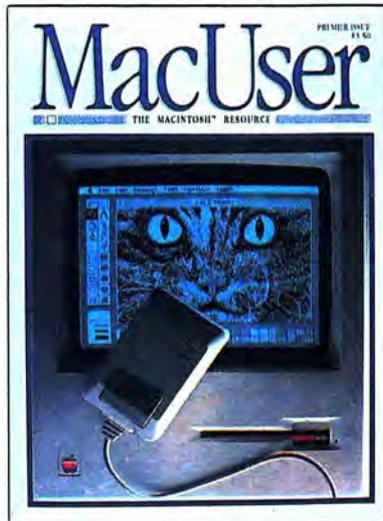
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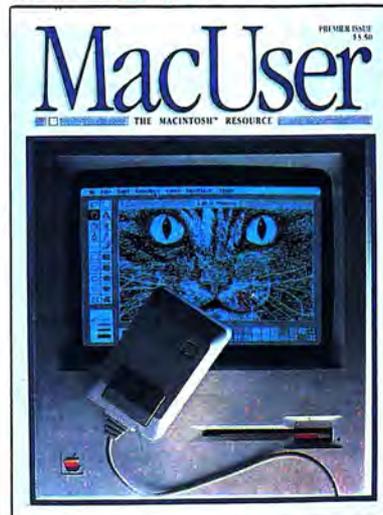
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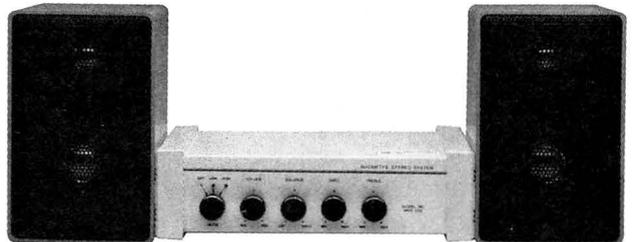
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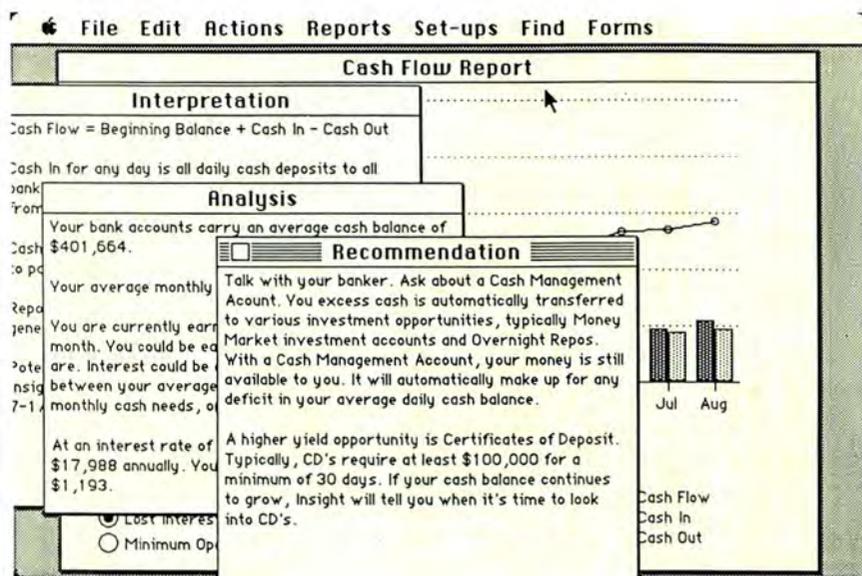


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# NEW ON THE M E N U



*Insight*, an accounting program from Layered Software (publishers of *Front Desk*), received a lot of attention at the Boston Expo in a pre-alpha version. Unlike other accounting software exhibited, *Insight* incorporated an expert system to improve financial planning and decision-making. The first level of the expert system is a report that charts information. Three additional levels are available on request: Interpretation, a general look at the category being viewed (such as Cash Discounts); Analysis, a look at your data specifically; and Recommendation, a specific course of action the program generates based on its analysis of your data. *Insight* is expected to be available by the end of the year.

## SET THE *TEMPO*

One of the most criticized non-features of *Jazz* is its lack of a macro facility. Macros are predefined sets of commands that are stored by the computer as Command key combinations. Pressing the appropriate key combination triggers the macro. Many people attribute the success of *Lotus 1-2-3* to its ability to automate a complex series of commands, so that the inexperienced user doesn't have to memorize the manual in order to get some work done.

Well, Macintosh owners are no longer out in the cold. *Tempo*, a new desk accessory (God bless desk accessories!) lets the user set up very intelligent macros within most Macintosh applications. Programs can be configured so that an operator could potentially complete a day's work without actually touching the mouse.

Among *Tempo's* major features are: pausing for text entry, the ability to do logical branches upon text input, user definable timed pauses and nested macros (one macro can call another), boilerplate text, and much more.

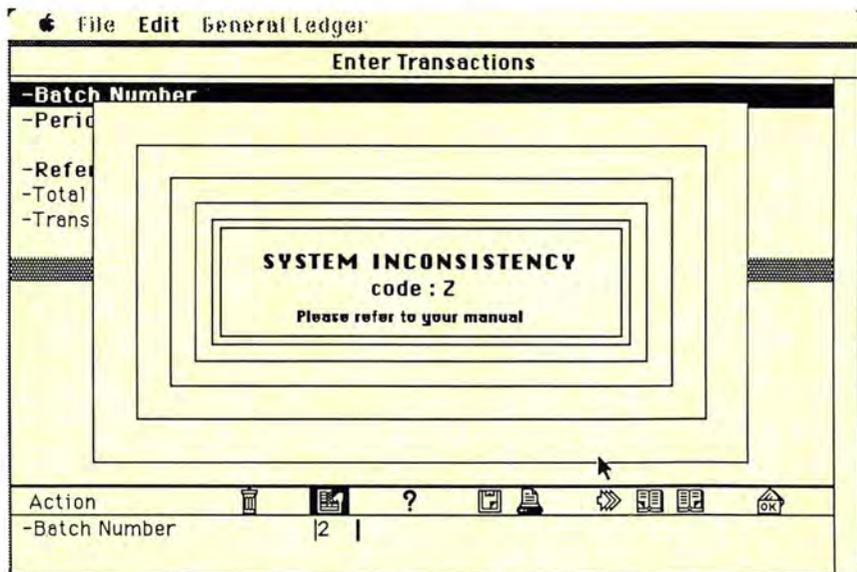
*Tempo* will find itself at home in a multitude of applications, from custom configured vertical databases to unattended telecommunications (automated uploads and downloads of files while you're asleep!). This is an important piece of software that we'll be looking at in detail in an upcoming issue.

## THE RUMOR MANAGER

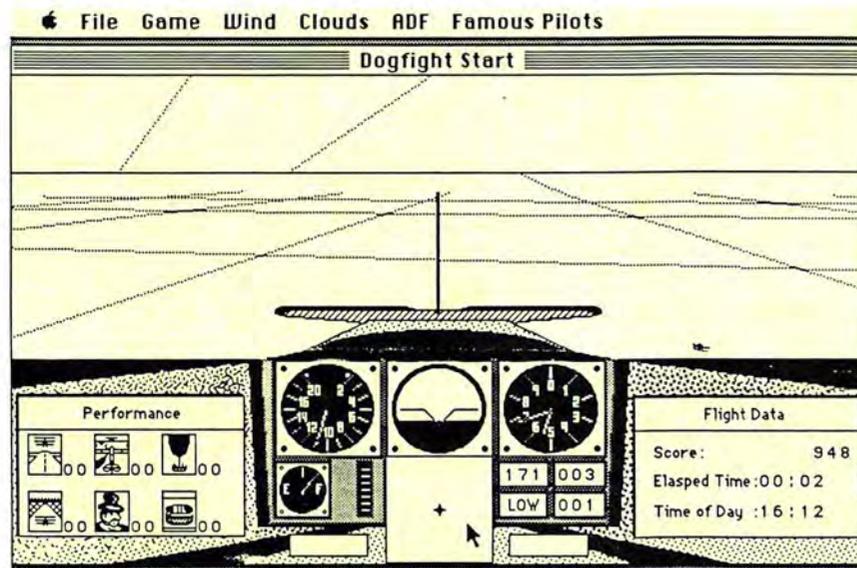
Two expansion-slot boxes for the Mac will be on the street soon. One will be from Apple — it's code name is "Constellation" — and it will have five slots...compact disks (CD) as read only storage will be out soon, maybe even before you read this...look for CD support from Apple and at least three third-party vendors...Ultima IV will contain several characters directly patterned on MacUser editors; yeah,

they really are like that...Apple's annual meeting will feature real fireworks and stunning price drops in the Apple II line, but Mac prices will stay up for a while...Digital Research's GEM will be announced in a Mac version. Why? I guess so you can emulate an Atari 520ST on your Mac...a program called MultiMac actually converts the Mac into a real multi-tasking machine, but Apple's not

too interested...Apple sold Mac-Basic to Microsoft for less than one third the cover price of this magazine, and it wasn't even Bill Gates' birthday...Steve Jobs will actually overcome all the roadblocks and build his 68020-based AI machine for the educational market...Wizardry addicts, the next scenarios will be even slower in reaching the market than the first scenario.



**CodeZ. Z = Omega. Omega is the end.** We were pretty sure the Mac was going to self-destruct when we saw this alert. Fortunately, it merely crashed spectacularly. We got this wonder trying to screen dump from *Palantir Financial Series*. We just clicked the small printer icon when no printer was attached. Simple, wasn't it?



## The Mac Flies High

*Fokker Triplane*, a brand-new flight simulator from PBI Software in association with Bullseye Software, will let Mac owners climb into the cockpit of a World War I fighter plane that can loop, dive, roll, bank, turn and perform combat missions. A combination of 3D graphics and sophisticated sound effects simulates flying through an area that covers over 20,000 square miles, bordered by a mountain range.

The game lets players shoot down enemies in a dogfight, fly under bridges, destroy enemy balloons and supply depots, recover enemy spy papers, or land on different runways. Maybe you can even chalk up another World War I Flying Ace to your credit! Suggested retail is \$59.95, available for 128K and 512K Macs.

## UPDATES

Version numbers continue their relentless climb. So far numbers greater than 10 (to the left of the decimal point!) have not been spotted but the day is coming. Here's our list (as of press time). — SB

ChipWits	1.1
Copy II Mac	4.2
Dow Jones Straight Talk	2.0
Finder	4.1
Fontastic	2.3
Front Desk	1.0
Gato	1.2
Hayden Speller	1.2
Helix	1.3
Jazz	1.0
Just Text	1.1
MacWrite	4.5
MacPaint	1.5
MacDraw	1.7
MacProject	1.0
MS BASIC	2.1
MS File	1.01
MS Fortran	2.1
MS Word	1.05
Multiplan	1.02
OverVUE	2.0
Quick & Dirty Utilities, Vol. 1	1.5
Red Ryder	6.0
Smartcom II	2.1C
Switcher	4.4
ThinkTank 512	1.1
TurboCharger	1.11
VersaTerm	1.52

## A BASIC Increase

Microsoft has released a new version of its BASIC language interpreter. Version 2.1 runs significantly faster than version 2.0. Short programs should show speed increases of 50 to 200% while long, involved programs can run up to 500% faster.

The new version will run all version 2.0 programs since the almost all of the changes are in how the program works, not in the syntax itself.

The speed improvement is mostly the result of a much improved way of handling the symbol table. In earlier versions, the symbol table (which is where the values of all the variables are kept) was created, stored and searched sequentially. The new algorithm uses a high-speed hashing techniques that greatly reduces the search time. The bigger the program, the bigger the symbol table usually is. So expect the greatest speed increase in the biggest, most complex programs.

*Microsoft BASIC 2.1* is much more intelligent than its ancestors.—SB

## Where Are the Laser Fonts?

When Apple introduced the LaserWriter, Mac users looked forward to a profusion of high quality typefaces. Now, almost a year later, all that is available are the original four (Times, Helvetica, Courier and Symbol).

Why haven't any new fonts appeared?

Fonts for the LaserWriter must be optimized to its 300 dot per inch (DPI) resolution. And there aren't many fonts like that out there.

There are some 300 DPI fonts in existence. Adobe Systems, creator's of PostScript, the language the LaserWriter uses, have quite a few.

While Adobe has a huge lead in LaserWriter fonts, other companies will be entering the market very soon, probably before Adobe's first release. Look for fonts from Knowledge Engineering, publishers of *Just Text*, and a LaserWriter font editor from Altsys Corp., publishers of *Fontastic*. The Altsys LaserWriter font editor will be available before Christmas and has a target price of \$450. An early version, seen in late August, was very slick.

[*Late Flash*: Century Software (2306 Cotner Ave., Los Angeles, CA 90064, (213) 829-4436) is shipping a new laser font and enhancements for the existing fonts. The new font is priced at \$29.95! The flood is beginning.]—SB

## Talking Heads on the Mac

Vimco is what it sounds like and what it looks like is as important as what it looks like. VMCO is the *Visual/Vocal MAUG Conferencing Utility*. It's a communication program that integrates *MacinTalk*, Apple's speech synthesis program, and the conferencing (or group meeting) software on CompuServe MAUG special interest group.

VMCO not only speaks what you and other people type but also shows the faces (in icon form) of the speaker and up to 19 other meeting attendees. Users create their own face icons and variations that include eight of the basic conversational emotions (grin, laugh, anger, and so on). The face icons come in two varieties: listening and talking. And users customize their voices by adjusting the speed and pitch.

Users log on to CompuServe and move to MAUG's CO (conferencing) area where nightly conversations have been going on since late August. In the first month of operation over 100 people created face files for others to use.

## A Winner of a Bug!

Finally, after tears were shed (that bug spray sure stings the eyes) we are pleased to present the first winning bug.

This month's winner is Patti Fitzgibbons of Long Beach, CA. She'll be getting a check for \$25 and the special *MacUser* bug award that will be sent to all who submit bugs.

Here's how Patti described her find:

"Those in the know call this insectoid 'Myra Breckenridge's Revenge.' Any female character in *Ultima II* has to undergo an involuntary sex change operation if she wants to raise any of her attributes. Sad, but true. If you trot your female player character into Hotel California (wouldn't you know it??) and let her loose on the desk clerk, the next thing you know she's a he. It looks particularly silly when 'his' name is Gwendolyn. No way to switch her back, by the way."

Thanks, Patti!

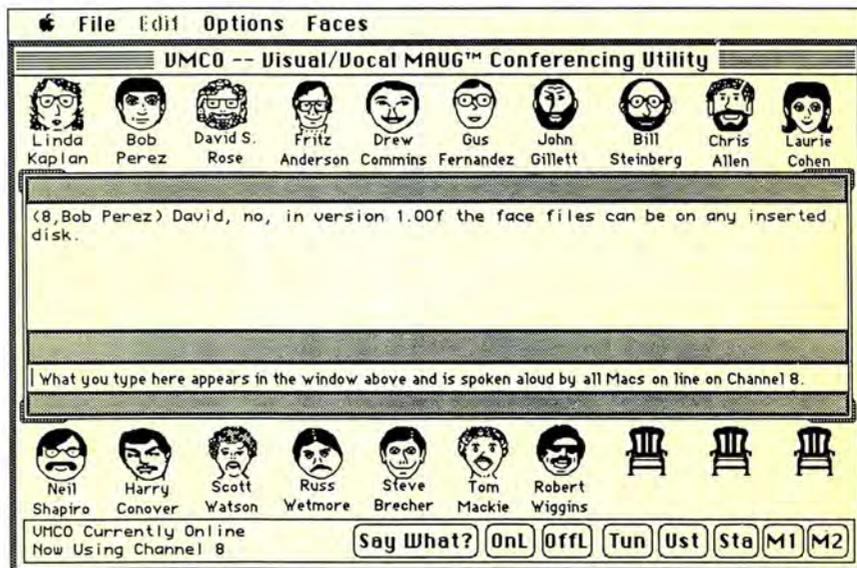
We're looking for next month's winner right now. Send your reports to **BUGSY**, c/o *MacUser*, 25 West 39th St., New York, NY 10018. Be sure to detail not only the bug, but exactly how you got it and what System (which fonts and desk accessories) you were using. Happy hunting!

## QUICKPAINT and QUICKWORD

*QuickPaint* is a desk accessory for accessing *MacPaint* files from within any application. Using the familiar Marquee box to select portions of the *Paint* document, images are pasted via the Clipboard into *MacWrite*, *MS Word*, *Jazz* or any other program which supports Clipboard function. *QuickPaint* also has a "miniview" feature with a scrollable window for showing the entire *Paint* document.

*QuickWord* is a desk accessory that allows the user to create glossaries of frequently used words, phrases or formulas. A library of abbreviations can be created by assigning each text string to a set of key characters (e.g., MC for Macintosh computer). Typing in the abbreviation and hitting the appropriate key (space bar, period, comma or quote mark) will replace the abbreviation with the predefined text. Multiple abbreviation libraries may be stored on disk and loaded as needed. The program may be selectively activated or deactivated, and library tables can be previewed and edited while within the application. *QuickWord* will also stamp the current time and date in a variety of formats.

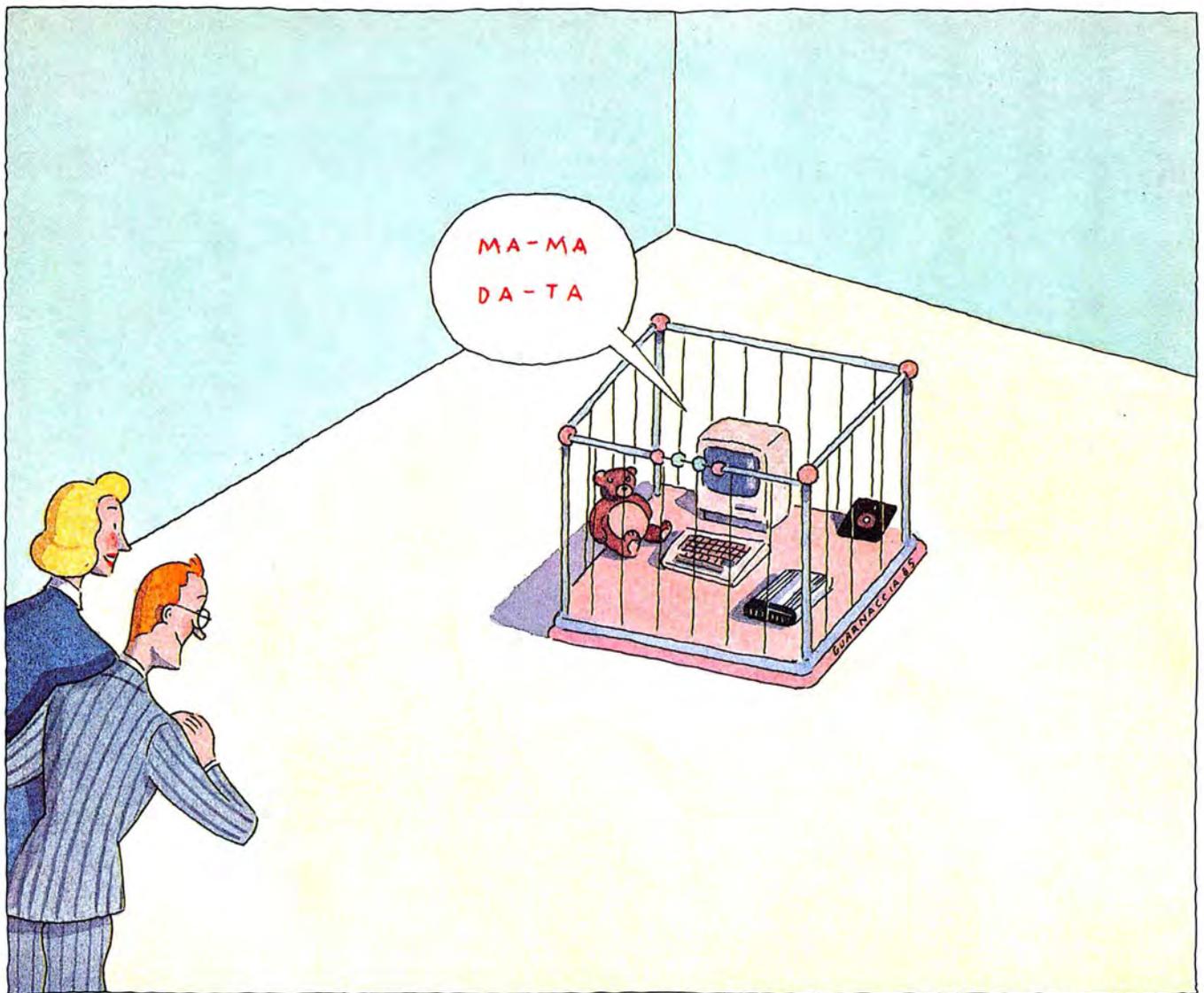
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The quality of most faces is rather astounding, with some even looking like the people they claim to represent. Watching and listening to actual people on your Mac is one of the most electrifying experiences imaginable. If you ever get on CompuServe be sure to get the VMCO software (it's free—you only pay for the connect time involved)

and in the words of VMCO: "Show your face!"

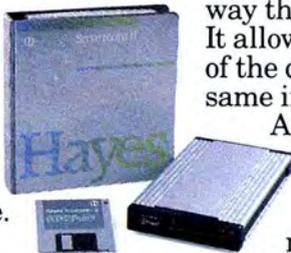
VMCO was written by Bob Perez and is based on VCO, written by Harry Chesley for use on the Delphi network. VMCO takes VCO to its next logical step. The next step, Bob assures us, is a program that makes your snappy responses for you, automatically.—SB



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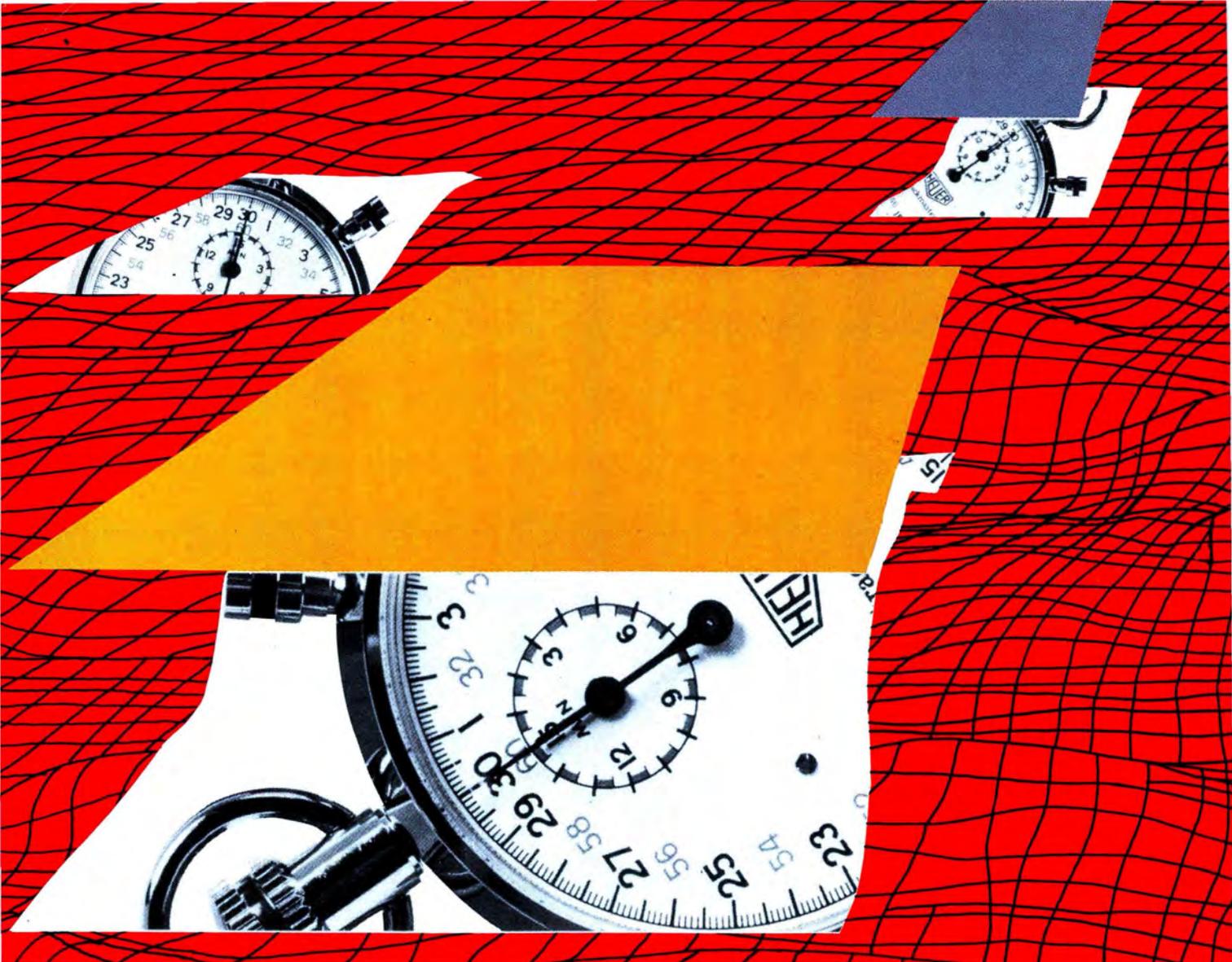
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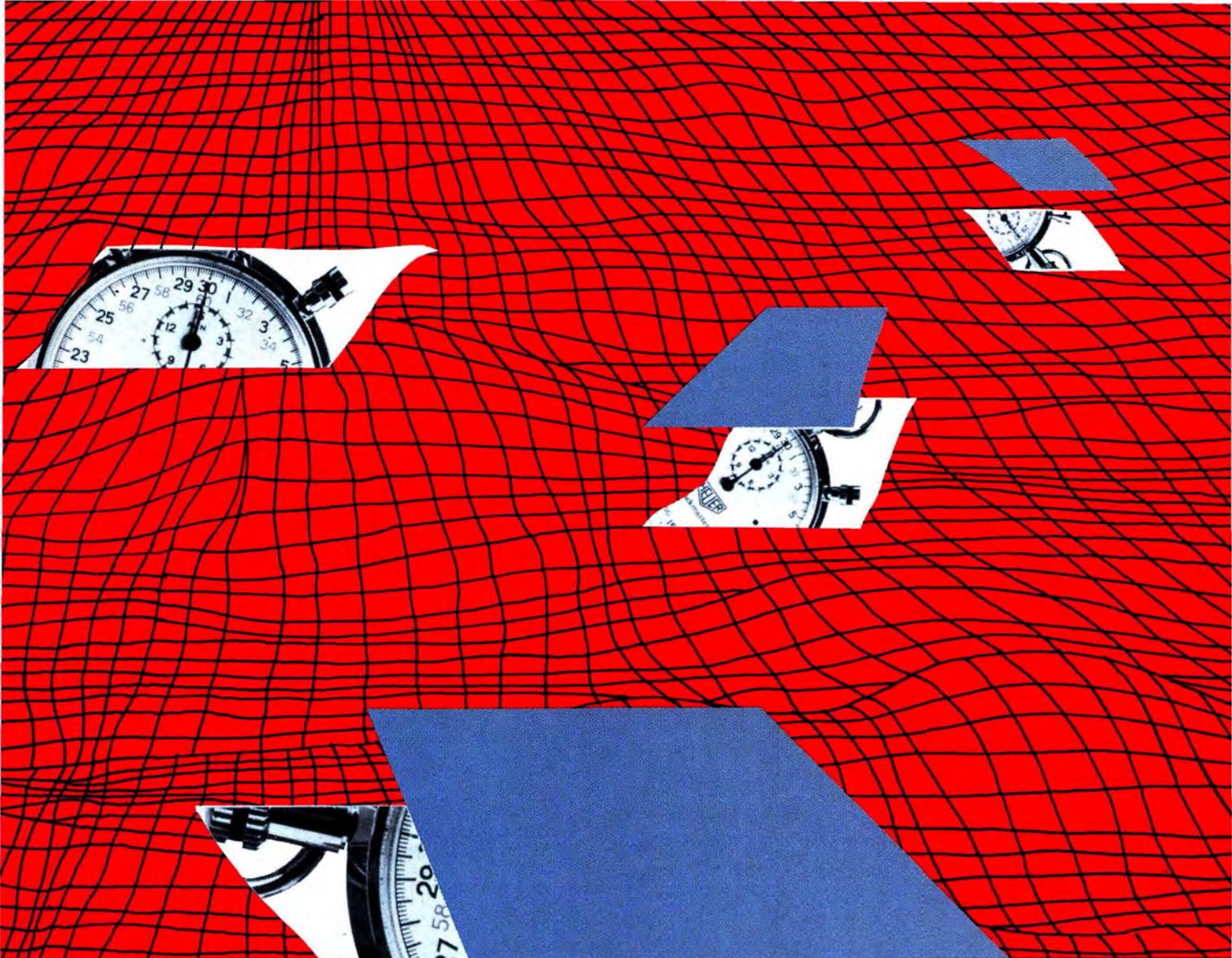
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# Like Mother, Like Daughter

We loved the Macintosh so much we gave it a daughter. And it's everything a daughter should be. The Max™ is a daughterboard that combines with a Macintosh motherboard and installs in minutes. The Max increases your computing power from 128K or 512K to a full 1.5 megabytes of configurable memory. Its RAM disk runs circles around even the fastest internal disk drives.

## The Max lets you do more.

You can run all your present software with The Max. Use data bases, word processors and integrated programs like Jazz to create more elaborate spreadsheets, work with larger documents, and file more data than ever before.

With The Max and Apple's Switcher, you can run up to eight applications at once – all at RAM speed!

If you crash, The Max forgives you. Unlike other RAM disks, The Max allows you to reset and recover your 1024K RAM disk intact.

## The Max is fast.

The Max doesn't waste your time. Move in and out of applications almost 10 times faster than a floppy disk – and 2 to 3 times faster than an internal disk drive. Boot MacPaint in 2.6 seconds, or MacWrite in 3.4 seconds!

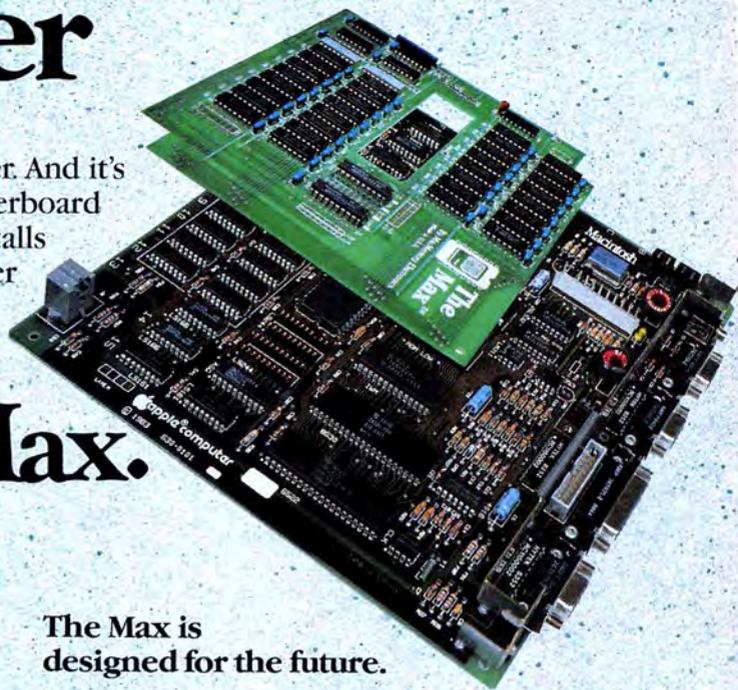
## The Max lets you configure.

The MaxRAM™ software included with The Max allows you to configure your Mac to suit your needs. Have 1024K of usable, contiguous application space with a 400K RAM disk. Or select a 512K Macintosh with a 1024K RAM disk. And MaxRAM software makes this possible without any modifications or patches to your Apple ROMs.

## The Max is cool.

Like the motherboard, the Max is cool and efficient. It adds only 1.3 watts to the power consumption, two to three times less than other memory expansions on the market.

# The Max.



## The Max is designed for the future.

Unlike memory expansions using older technology, The Max has been designed to be fully expandable. It is pin compatible with the soon-to-be-released megabit chips† and address-decoded for 4 megabytes of memory, the maximum the Macintosh can address.

## The Max is available now.

Contact your local dealer for more information about The Max. Kits are also available.



128K to The Max 1.5 Mb	\$795
512K to The Max 1.5 Mb	\$645
128K to 512K	\$249

The Max comes with a 90-day warranty against defects in parts, materials and workmanship. An extended service contract for your entire Macintosh, MaxCare™, is available through your dealer.

See your local dealer for more information about The Max, or contact MacMemory Inc., 473 Macara Avenue, Suite 701, Sunnyvale, CA 94086, (408) 773-9922.

## MacMemory Inc

† Due to the unavailability of the one megabit chip, MacMemory anticipates, but cannot warrant, expandability to four megabytes. The expected production release date is early 1986. Apple and Macintosh are trademarks of Apple Computer Inc. Jazz is a trademark of Lotus Development Corporation. The Max, MaxRAM, and MaxCare are trademarks of MacMemory Inc.



# Go EAST, YOUNG MAC

I BET MOST PEOPLE KNOW THAT the West Coast of the United States hangs out somewhere around California. Although we Americans as a whole are generally ignorant of geography outside our personal experience, California gets a lot of press, as well as considerable TV and movie coverage. Even my family in New England, Maryland and other eastern places (who as a rule never travel further west than Philly, and then only for business or family funerals) have seen the blue waters of the Pacific lapping gently against the shores of Hollywood, or flowing under the Golden Gate bridge toward the Transamerica Pyramid a little further north.

And everyone knows that Silicon Valley, the (perhaps slightly tarnished) golden land of opportunity for engineers who can communicate with electronic circuits is somewhere in California. Nine will get you ten most people don't know where in California, although they will probably have heard of such exotic places as Cupertino, Los Gatos, and Mountain View. Of course, Mac owners are more sophisticated than the average American, and thus are among the few people who could correctly locate Cupertino on a map of the Bay area.

So wouldn't everyone be surprised to learn that the West Coast in general, (and Silicon Valley in particular, or at least all of it that counts) was really in Boston?! It's true! Thanks to a cataclysmic seismic shift along the San Andreas fault, Silicon Valley held court in Boston for just under a week in August.

Actually, it wasn't an earthquake that actuated the shift, but several overbooked flights out of San Francisco. Whole families were forcibly removed from the plane that carried our staff and most of the Apple contingent. ("Would the Morris family, party of three, please come to the gangway. Bring your belongings with you.") One passenger warned people not

to take upgrades in their seating, shouting "Don't do it! It's a trick, it's a trick!" Another passenger left his ticket at the gate, but refused to budge from his seat when his name was called for fear the valuable space would be given to one of the many unfortunates roaming the aisles with a glazed expression in their eyes and two pieces of hand luggage clutched firmly in their grasp.

The flight itself went very smoothly (in fact, there was a bit of a party going on in the coach cabin), as did the hour-and-a-half cab ride from the airport to the Hotel Meridien, just over a mile away. We were met at the hotel by a lovely group of desk staff who said "Bon Jour!" with a distinct Bostonian accent and were running ragged trying to straighten out a disastrous shortage of rooms. At the same time that I was being told: "You are not arriving until tomorrow, Mr. Wesley. Yes, you have a confirmed reservation for tomorrow night. No, we have no more rooms available for tonight," the person who had arranged accommodations for the Apple staff was trying to make sure that his late arrivals were going to have a place to stay.

The show itself was held the following three days at the convention center in

South Boston, in a neighborhood we were told to avoid at all costs. But the glitz and glamour and confusion of a major show took precedence over fear as we prepared for the anticipated arrival of thousands of Mac users (and ran around the floor of the show scouting all the booths we wanted to visit in depth later.)

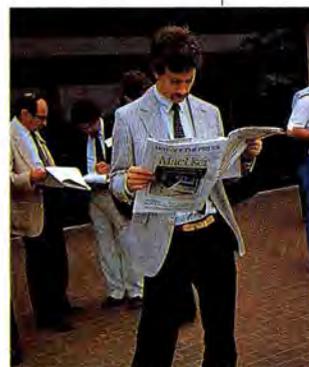
It was fun watching the other people from the West Coast try as hard as I did to look comfortable in a suit and tie. Dan Cochran pulled it off remarkably well, but a lot of us were clearly yearning for jeans and a t-shirt. (At least reason prevailed on the second and third days of the show as several of us wore sneakers with our three-piece suits.) I envied the gang from Silicon Beach software. Charlie Jackson and Company made no effort to pretend they weren't from California, and sported outrageous flowered shirts.

There seemed to be a lot of interested and excited people at the show, and many of the companies I talked to were pleased with the turnout. Business software companies were generally visited by people interested in business software, which made them happy. The games, graphics and music people were visited by almost everybody, which meant there was always



Michael Shatter Saenz shows off at the MacUser Booth.

The poor man was "Macless." (Paul Revere)



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a lot of noise and that sometimes made it difficult to sell things like accounting software in neighboring booths.

The Macintosh environment (the one generated outside the machine) is one of the few places where you can still find industry groupies. Everyone I spoke to on the floor had just ended a lengthy conversation with Bill Atkinson about improvements they had made to QuickDraw and was he interested, or had just received a glowing commendation for his product from Andy Hertzfeld, or recently bumped into John Sculley. Seems everybody wants to be an insider. (Of course when I ran into Andy at the MacUser booth...)

And it seemed that everyone in the industry was looking over everyone else's shoulder trying to make sure that nobody had a more recent version of *Switcher* or popular public domain utilities than they had. "You mean you don't have version — (insert any two digits separated by a decimal)?" And everyone was talking about new software they had just received to beta test, only to be one-upped by someone saying "Oh, I've had that for weeks."

There seemed to be a lot of people at the show who hadn't decided to buy a computer yet, and wanted to find out about Macintosh. I even got to brush up my sales skills when a nice man who was waiting, as I was, to talk to someone at the Apple booth struck up a conversation about what the Mac could do for him. I asked all the right questions a good salesman should ask to identify needs, then pointed him toward the best games and graphics booths.

The people from SoftStyle, a Hawaiian company that publishes printer drivers and a new program called *Decision Map* were attending their first ever computer show, and got a real kick out of all the attention their products were getting. That was nice. Their enthusiasm was highly contagious.

The worst part of the show was leaving, because I couldn't go straight back to the real West Coast. Instead I had to go to New York for a debriefing. Don't misunderstand — I think New York is a wonderful city indeed, but I get nosebleeds when I stray east of the Rockies for long periods of time. At least our offices are on West 39th Street, and my hotel looks out over the Hudson. With a little imagination, I can just see the tip of the pyramid rising over New Jersey. ☐

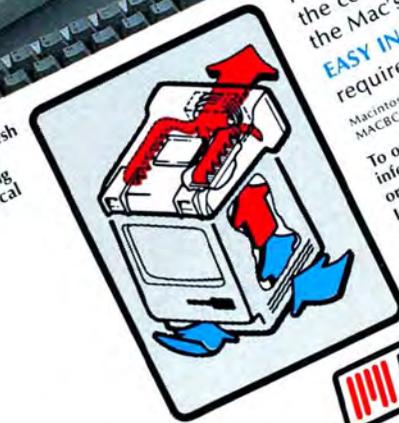
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FERRARA



# WHAT'S IN A NAME?

THERE WAS TALK ABOUT THE COLUMN'S title. Some of the ideas had been groaners, others dull or merely silly. I was surprised to see "The Macintosh Boundary," a name chosen by someone else. But like all names, once given it began to color my thinking, to lead my thoughts down new paths through landscapes that were once familiar. Boundaries...

The Boston MacWorld Expo is one day off. I'm in Los Angeles, at UCLA, at the 1985 National Conference on Artificial Intelligence. It's 1985, and the violent mating of corporate blue-suits and academic genius has spawned rules and machines.

In the old days, the ignorant confused Lisp with "Artificial Intelligence"—AI which doesn't exist, but someday might. These days, it's Prolog and OPS-5. From both come rules: ruled-based "automated reasoning." The blue-suits hawk the complex, expensive, rule-based software systems as "AI."

If naming is all it takes, AI is here. Everyone says they have it, so they must. Off in the corners, the academicians fret: what will happen to our funding (from the Defense Department, of course) if rule-based systems don't live up to their promise? And what if we get the blame? «They» said it was AI; «we» never said it was AI!

The darkest scenario is what the scholars call "The AI winter." The holocaust of reduced funding.

But that's in the corners. Out here, on the floor, are the machines. And what machines! There's the Sun-2/160 Color Sunstation, encased in Iic ivory, with a 19-inch monitor. The screen resolution is 1,152 by 900. The display is non-interlaced, sharp and rock-steady. It displays a maximum of 256 colors, from a palette of over 16 million colors. It's powered by a 10-MHz 68010 that runs without "wait states," accesses 4 megabytes directly or up to 16 megabytes of virtual memory "per process." For storage, there's the low-end 71-megabyte hard disk, the 280-megabyte hard disk or the preferred (wouldn't you rather...) 380-megabyte hard disk. It comes with

an Ethernet board, UNIX, C, Pascal, an assembler and, naturally, a mouse. It'd look great in the den. \$50,800 and it's yours.

Other machines are even snazzier. A 68020 machine is showing off graphics. A finely-detailed horse on the screen. Oo's and ah's. "How'd you do that? It's beautiful!" The corporate woman looks around, verifying that we're not overheard. "We brought it in with a *ThunderScan* and a Macintosh," she says. It's time to go to Boston.

Where Andy Hertzfeld is smiling and chagrined. He really believed in the 128K

things." She downplays the new machines.

If you've hung around IBM, you know the script. The attitude is helpful, the answer is "No." And behind it all, behind and underneath, you get the feeling—a tiny, tiny inkling, really—that her heart isn't on "The Macintosh side of things." She's competent and corporate, but she's no evangelist. Her eyes don't burn like eyes once did at Apple.

Next to me, the Marketing Manager says "You know, I feel some of the guilt for this. When the bigger companies came into this, so many of the kids got ripped-off."

Well, when a field has naivetic and lots of money. . . .

"What do you think of the show?"

Ah... Nothing comes to mind. No provocative or insightful comments. My feet are tired, how about that? "What'd you think?"

"I think everybody has their hands in everybody else's pockets. It would be simpler if we all just sat around a table and passed the money around. When everyone's money came back around, they could get up and leave."

"Gee, that's good. I'll use that."

Thanks, Jerry.

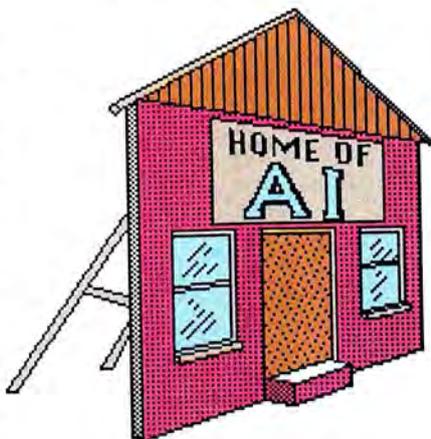
Steve Chernicoff is a happy man. The second volume of "Macintosh Revealed" is just back from the printers. The first volume, "Macintosh Revealed: Unlocking the Toolbox," is the hottest Macintosh book in the country. The two books will make Chernicoff lots and lots of money. When Apple releases the Macintosh version of Lisa Pascal (early next year), he'll make even more money.

He's a husband and the father of two children. The books are good; he deserves the success. He's spent 16 months on the project and it's been grueling. Now he's thinking about vacations and taxes and "the next book." A good man.

The talk is about publishers; whether they underestimate the desire of Macintosh owners for technical books.

The next book? "Do one on the ROMs from a subatomic level. It'll sell zillions."

Smiles. Steve Chernicoff is a happy man. You can bask in it and feel good. □



Macintosh, he says. He worked as hard as possible to make things small, to make them fit, to make a machine that could run well with only 128K.

"And of all the applications for Macintosh," he says, "the two I did—*ThunderScan* and *Switcher*—are the two biggest memory hogs there are!" He shakes his head at the irony.

The woman from Apple is not being uncooperative, not exactly. She's only doing her job, as she sees it. "If we give you advance access, everyone else will want access too."

It's only the first of many good reasons and hedges. She's not sure what stage the project is in. There aren't procedures yet. She's new to her increased, post-reorganization responsibilities. She's not yet familiar with "The Macintosh side of



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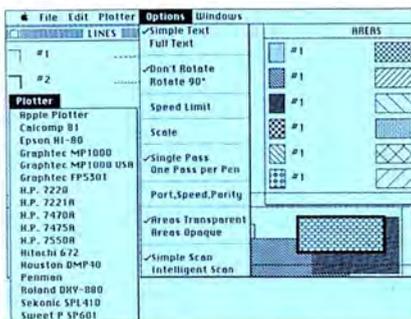
What's new, what's classic, what's happening in the world of the Macintosh? We'll try to keep you up to date with our monthly Quick Clicks.

## MACPLOT

List Price: \$162.00. MacPlot Professional version: \$325.00. 512K recommended. Published by Comservco, 800 Freedom Lane, Slidell, LA 70458. (504) 649-0484.

IT WAS SO FRUSTRATING TO HAVE A PROGRAM like MacDraw produce wonders on a LaserWriter, the "status quo" symbol of the upper echelon Mac clique, and yet, give those of us with the "classic" ImageWriter the feared jagged edges. But there was a solution that had been around for a while, something that the Paint haze wouldn't let us see — Plotters.

MacPlot 1.7 lets a 512K Macintosh access over 16 of the most popular brands of A and B size (up to 11x17 inches) plotters currently on the market, including the Hewlett Packard 7470A and 7475A, the Houston Instrument DMP -40, Epson HI -80, Sweet P SP -601, Penman Robot Plotter, and others. MacPlot also works under MacWorks on the Macintosh



XL/Lisa. It is a professional level utility that can support levels of overlapping elements, solid area fills, a vast selection of cross hatch patterns, variable speeds, etc.

Drawings from object oriented programs such as MacDraw (and soon MacDraft, so MacUser was told) are brought into MacPlot through the Clipboard. The program automatically determines the line widths and fill patterns that are in the drawing, and displays them in two windows, where pen col-

ors and hatch pattern (diagonal stripes) are assigned. Lines can be selectively omitted, and there is a fine level of control over the angle and spacing of the hatch lines. Cross hatches may also be used. Macplot can print its own resident text font (standard plotter fare), or can print Mac fonts (slow, ImageWriter looks better here). Drawings may be scaled to a wide variety of ratios, rotated 90 degrees, and the program can be set to work in a "one pen per pass" mode that will allow you to output 30 different pen colors and nibs. Templates with pre-configured hatching and color assignments can be stored on disk, and the variable printing speed comes in handy for creating overhead projector acetates. A high-level version of the program, Macplot Professional, works with E size plotters (3x4 feet).

The only thing that this program really needs is a Switcher hook for a good drafting program, something that was specifically optimized to work with MacPlot in the background. Anyone out there want to take the bait? —DB

## STRATEGIC CONQUEST

List Price: \$59.95. Published by PBI Software, 1111 Triton Dr., Foster City, CA 04404

CAN YOU WREST CONTROL OF THE WORLD from your Mac? It's not as easy as you might think. While Strategic Conquest does give you the planes, men and materials to do so it also makes sure that the armies controlled by the Mac are just as capable.

The game is played out on a scrolling mapboard that is 100 sectors wide by 60 tall. Only a portion of the map can be windowed at one time, but vertical and horizontal scroll bars make it easy to switch from one area to another. When the game begins, the map is terra incognita. Until the player begins exploring, the map is totally unseen except for the one sector that the player's home city is built upon. As each sector is explored the World Map grows and may be seen on a strategic overview map via a pull-down menu.

The first city produces one army right

away which may be marched via mouse commands into the surrounding blankness. As the army advances more and more terrain will become visible. Gradually, as more armies are formed up and marched, the lay of the land and many new, unconquered cities will be discovered.

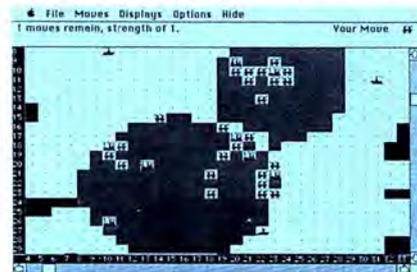
Once an unconquered city is found, it's up to the armies to move in and make the world safe for a Macintosh owner. Often at the expense of a few armies (cannon fodder in the RAM), cities finally fall to the conqueror and instantly begin producing new armies, ships and other weaponry for the obviously not very hated invader. So the first stage of the game is exploration, of mapping out the continent you find your first city upon and then finding new cities to conquer.

In the second stage, the opposing spheres of influence begin to expand from the two destined-to-be warring superpowers. Ships and planes cross the oceans to find new continents full of unconquered cities — or of enemy cities. While the player has spent the first stage of the game developing continental forces, the Macintosh has been going likewise on a different continent. Ambitious assaults occur at any time the player-run and the Mac-run armies

collide. Then it's war, and you may never feel like totally trusting your Mac again.

Strategic Conquest uses the Macintosh interface well. For example, it's possible to set up an automatic patrol route for a destroyer by clicking on each end of the proposed path of patrol.

One drawback to this game is true of many wargame simulations — the time it



takes to play. Stages one and two, exploration and conquest, can take hours. When stage three, war, is finally reached, that adds another few hours to the game. If you are familiar with the way such games eat up time, mouse up to the top of this review and add an extra rating mouse. —NLS

# C L I C K S

## MAC DISK CATALOG **ttt**

List Price: \$39.95. Requires 128K. Printer and external drive recommended. Published by New Canaan MicroCode, 136 Beech Road, New Canaan, CT 06840. (203) 966-6969.

"WHERE IS IT?! IT'S GOTTA BE ON THAT DISK." "No. No. No. it's that disk! Where are those other documents?"

Sound familiar? Does disk chaos rule your Mac? Can't afford to hire a software organization specialist to come and fix things up and put pretty labels on all the disks? Well, maybe, just maybe, there's hope on the horizon. The white knight's name is *Mac Disk Catalog* and it comes on a single 3.5-inch disk. *Mac Disk Catalog* efficiently catalogs disks, including all hard disks, and produces all sorts of reports: alphabetically by file name, sorted by volumes, by category, by type or creator or by date modified. And that's not all. It can also produce disk labels in several formats or 3 x 5 cards listing the contents of each disk.

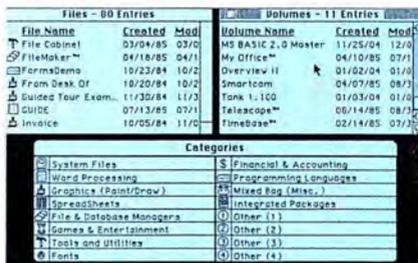
Use is simplicity itself. The manual is very

good, but the program is intuitive enough to use without it. To create a catalog, a new file is opened and the disk in the logging drive is automatically ejected. Then the disks to be catalogued are inserted. The directory of each disk is added to the catalog file and the disk is ejected within a few seconds. Creating catalogs is both fast and painless.

Users have several options that can be selected before disks are catalogued. There is a choice of what items will actually be catalogued. Normally the default selection of applications and documents is best, but in some cases users may wish to list system files and/or hidden files. *Mac Disk Catalog* also groups files by generic categories. The categories of many (over 50) current Mac applications are already programmed in, and it's easy to assign any item to any category. The Statistics menu displays the status of the current catalog and what's in each category.

Updating a catalog is semiautomatic. Inserting a disk that has already been listed in the current catalog brings an Update Dialog to the screen. Clicking on the appropriate action completes the update.

This is a RAM-based program, so there are some file size restrictions. The entire catalog file must be in RAM when the program is run-



ning. The program's upper limits are 500 volumes and 1092 files per catalog. Those limits are really only practical on a 512K Mac, as 128K Macs will run out of memory before reaching either limit.

The printing functions work well with the ImageWriter, but printing on the LaserWriter is unacceptable due to slow speed and improper positioning of the material on the page. Users are restricted to the set reporting formats; some choices (of fonts, styles and sizes) would significantly improve the program.

*Mac Disk Catalog* does an excellent job of bringing order out of chaos. If you've been plagued by disk disorder, *Mac Disk Catalog* is a worthwhile acquisition.—SB

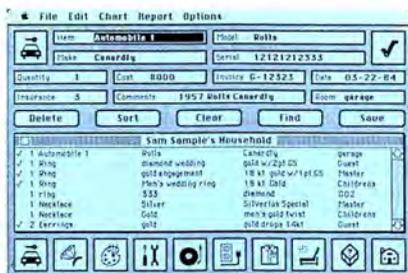
## THE HOUSEKEEPER **ttt**

List Price: \$59.95. Requires 128K or 512K. Printer and external drive recommended. Published by Aegis Development, Inc., 2210 Wilshire Blvd., Suite 277, Santa Monica, CA 90403. (212) 306-0735.

THE BUTLER DID IT! NO, *THE HOUSEKEEPER* did. That's right, *The HouseKeeper* version 1.2, a neat inventory program that is true to the Mac's interface and characteristics, can help keep track of all valuable property.

*The HouseKeeper* keeps a tidy record of household items by recording cost, complete description, and serial number for each entry.

Features include pictorial icon categories such as Cars, Jewelry, Art, Tools, Recordings, Electrical, Clothing, Furniture, Household and Miscellaneous — these span the range of things that may be considered valuable enough to keep on record. On-screen help takes you through the menus and their features.



Up to three insurance companies can be stored on a specialized notepad. When the notepad selection is entered in the "insurance" data field, *The HouseKeeper* then automatically links this data to the record being developed.

Eleven fields on the top of the screen allow input and editing of important statistics for any given item. Below the fields, a scroll window displays items in any category clicked on, from which the user selects an item by clicking on it, and all relevant information pertaining to this item will appear in the eleven fields for editing.

*The HouseKeeper* includes a very practical feature that allows the user to mark with a

checkmark (the cursor turns into a pencil when positioned in front of the item on the left side) any item that should stand out from the rest for any number of reasons. Marked items can be viewed in the scroll window all at once, or viewed by category.

Find and Sort functions enhance the ease of use in finding any entry within a category.

A report menu allows the user to print reports. *The HouseKeeper* will print out a police report without the hassles of having to depend on rethinking where things are, what was stolen or damaged in a fire. *The HouseKeeper* is there with all the information needed, plus more by a click of the mouse, when the situation calls for it.

The user can keep separate data files for each property owned. *The HouseKeeper* even allows the user to develop charts of the proportion of value within each icon category. This allows the user to see, at a glance where the bulk of money is.

The concise and supportive manual recommends a backup disk to be kept in a secure place, so you can indeed have peace of mind in case of a disaster.

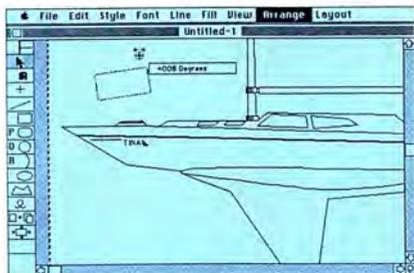
With *The HouseKeeper* as organized as this, who needs a butler?—DG

## MACDRAFT

List Price: \$239.00. Requirements: 512K Macintosh single disk drive, printer recommended. Innovative Data Design, Inc., 1975 Willow Pass Rd, Suite 8, Concord, CA 94520 (415) 680-6818.

FOR THOSE OF YOU SINGING THE PRAISES OF MacDraw, here's a new program that does things that MacDraw just can't do: MacDraft.

MacDraft allows up to four document windows open concurrently, with full cut and paste capabilities between the documents. Objects can be drawn to scale, and if you copy an object between two windows with different scales, it will be resized to conform to the scale of the receiving window. Up to 16 different scales are available, with the scale of a document changeable at any point during a work session. A show size command interactively displays the size (to within 1/100 of an inch), to scale, of any element that can



be drawn, and also the angle of displacement from the horizontal plane (for lines). Objects can also be rotated in 1 degree increments, and the degree of rotation is displayed interactively (updates itself as the rotation occurs). Architects and mechanical engineers, take note: MacDraft will also generate dimension lines (used to indicate the size of a plane).

MacDraft generates flexible arcs that can be defined by entering three axis points or by

specifying a radius. Circles can be generated from arcs, and vice versa. The familiar resizing handles of an element can be split in two, if you need a handle where there is none.

Unlike the fixed restraint grid in MacDraw, MacDraft allows variable grid sizing, and the grid can temporarily be disabled by pressing the command key. Very convenient, indeed. The program's most interesting capability is that you can zoom so close that the screen will go into FatBits. Drawing in FatBits in an object oriented program is a dream come true!

So is this program perfect? Not quite. In testing MacDraft, we discovered that the program was not fully optimized for the LaserWriter. Rotated objects don't quite print as expected, probably due to the complexity of interfacing QuickDraw to PostScript, the LaserWriter's resident language. Grouped objects can't be stretched. Serious problem. MacDraft also can't open MacDraw documents, which is inconvenient. This is a good program that needs a bit more work. —DB

## STARTING A NEW BUSINESS

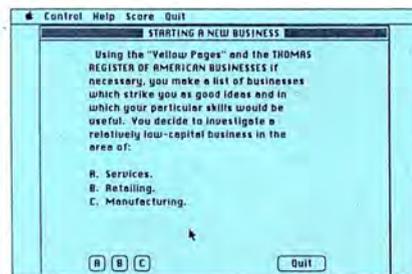
List Price: \$59.95. Requires 128K. Intellectual Software, 5 Chapel Hill Drive, Fairfield, CT 06432. (800)-232-2224.

ANYONE WHO'S EVER FANTASIZED ABOUT throwing off the corporate shackles and making it big on their own will find this tutorial, written in the form of a short game, both enlightening and entertaining. Starting A New Business guides novice entrepreneurs through the various stages of setting up a venture in retailing (computers, of course!), manufacturing (Teddy Bears), and services (as in "dating services," in this case).

With each new screen, the computer presents a problem, then asks players to

choose the most likely answer from a choice of three. Either click on the button or press the appropriate keyboard number and earn immediate feedback about your decision. Results could be anything from a 100-point bonus to the loss of your entire business through a foolish decision. Of course, it's better to learn hard lessons on a computer than when you're actually using cold cash!

The game is extremely easy to play, and it can be mastered in a single long, hard session. While it doesn't offer a whole lot of replay value (there's only one sure route to success in any of the three businesses), it does offer at least a glimpse into what your chosen business might mean in terms of time, money, research and unknown variables. Users also discover the names of organizations and publications that can help budding business people in those first hard



months. For that alone, it's worth a look.

Starting A New Business' strongest point is in its educational value for young and old alike. Although it's too short to qualify as a bona fide game, and doesn't offer enough hard facts to qualify as a real tutorial, it offers a first-hand look at the hard facts of business, from a first-timer's viewpoint. —TFH

## FRONT DESK

List Price: \$149.95. Requires 128K. Printer and second disk drive recommended. Published by Layered, Inc., 85 Merrimac St., Boston, MA 02114. (617) 423-9041.

PROGRAM NAMES SOMETIMES ACCURATELY describe their programs and sometimes, well, what does Jazz imply to you? Front Desk is a particularly accurate and descriptive name for this scheduling and record keeping program.

Front Desk was designed to handle the scheduling needs of the small professional office. It can handle up to 15 people, places or things. A single consultant could use it to track clients or a small group medical or law office could use it to schedule people and/or treatment and consultation rooms. While designed primarily for professional offices,

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
For All Staff																															
Neil Shapiro																															
Steven Bobker																															
Felia Dennis																															
Mike Westley																															
Tracie Forman Hines																															
Daisy Genouese																															
Whippo																															
Lisa Orsini																															
Steven Rosenfield																															
Christine Pines																															
Mindy Boland																															
Randi Kentor																															
Richard Herbst																															
David Bieding																															
Quiet Room																															

Front Desk can also be used in other situations to schedule fixed, billable resources. For example, a tennis club could both schedule its courts and keep track of income using this program.

The Front Desk manual should be studied by all Mac documentation writers. It's clear and describes the program in sufficient detail without bogging the reader down in masses of unnecessary verbiage. Front Desk is com-

plex enough that the manual should be read before setting up the program. The first and most important step in using Front Desk is setting up. There are three basic steps. First, the calendar is created, then the resources are defined, and finally services are defined and valued.

Calendar creation is straightforward. Users select the time period each screen will cover, how many past time units will be retained and who or what will be covered by each screen. The program works in 12-month periods, but allows multiple files.

After the calendar is created, the resources and services are defined. Services are assigned billing rates (either hourly, flat or no charge).

Any value — calendar, resource or service — can be changed at any time. If the boss decides to close the office for two extra days, the calendar can be easily changed. And if someone resigns, that person is simply deleted from the resource listing.



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

Once the program is set up, use is intuitive. For example, double-clicking on a calendar date displays a detailed schedule for that day. Scroll boxes let users freely move over the calendar's time span. This portion of the program is particularly well designed.

There is a Search function, which is unfortunately somewhat restricted. It only works on the Name field, and while the whole name does not have to be entered, the beginning of the field must be. For example, users can search for Jones by entering "Jon," but not "nes."

*Front Desk* has powerful report generation abilities that go far beyond merely printing out schedules. The appointment analysis report can be a valuable tool for determining who or what is profitable, and, equally, who or what isn't producing.

*Front Desk* has only a few drawbacks. When used in a busy office, it almost requires its own Mac to be used most efficiently. It should be running most of the time. The ideal way to use this program is with *Switcher* and a hard disk, so it is always available. Consultants who use it to track clients may find it

more useful.

Due to the graphic nature of its reports, it doesn't support the LaserWriter very well. And its user agreement restricts it to one machine. That might not be acceptable in an office where the scheduling chores are split among several machines. A one-owner, multimachine agreement would seem better.

*Front Desk* is a very good program for many small offices, but users should carefully evaluate their own situations to be sure its restrictions will work well in their environment. —SB

## FONSTASTIC

List Price: \$49.95. Requires 128K, 512K recommended for large fonts. Published by Altsys Corp., PO Box 865410, Plano, TX 75086. (214) 596-5970.

"IT WAS REALLY SAD. IT REALLY WAS. Terminal fontitis."

"How many fonts did she have?"

"Well over 100—and she couldn't find that surface integral symbol on any of 'em."

This tragedy never has to happen again. *Fontastic* is an easy to use, efficient font creator and modifier. It puts all the necessary tools at the user's beck and call. No longer do users have to suffer the trauma of font editing with *Font Mover* or *Resource Editor*.

When *Fontastic* is launched a font selection window appears. This window is the gateway to the program's editing features, and an excellent font mover. Fonts can be copied to other files, to new files created just to hold them or removed. All disk drives can be accessed. And font ID numbers can be changed



right here if there are any conflicts with existing font ID numbers.

Any selected font (except the copy of Chicago 12 on the startup disk) can be edited. Editing begins with another window that shows all the characters in the font in a grid arrangement. The right side of the window displays user definable sample text in the actual size and style of the selected font. The grid can also display the selected font, but it should generally be left in its default Chicago.

Individual characters are modified in yet another window. Once a letter is selected for editing on the grid, a large FatBits-like window appears. The pixel level editing uses familiar

tools, and the excellent manual explains the necessary typographic details so that users can intelligently edit characters.

Creating fonts, always a tedious business, is nevertheless straightforward. The best way to create a new font is to start with an existing font as a base and modify every character. Then Save As and store the font in a New file.

Entire fonts can be styled and scaled. Among the styling options are Expand (which adds to the width of each character), Condense (which narrows each character) and Invert (which changes black to white and vice versa). Horizontal and vertical scaling can occur independently. Scaling provides an easy way to create the double-size font necessary for high-quality printing on the ImageWriter.

*Fontastic* has some minor drawbacks. Even moderately large fonts will be too big to work with on a 128K Mac. And the font files created (even on a megaMac) are limited to 32K. That's not enough for most fonts over 24 points.

Overall, this program rises far above the other tools available for font editing and creation, and is a must in the library of any user who uses many fonts. —SB

## STATVIEW

List price: \$199.95. Requires 128K and external drive or hard disk. 512K (or more) and printer recommended. Published by BrainPower, Inc., 24009 Ventura Blvd., Calabasas, CA 91302. (818) 884-6911.

*STATVIEW* ANSWERS THE PRAYERS OF ALL THOSE who need to produce intelligent statistical analyses but find producing statistical analyses as exciting as watching grass grow on the front lawn. This program will do all of the most common analyses and produce both graphic and text reports. It's advanced enough to support the needs of everyday statistics users, but simple enough for first-time statisticians to be able to get useful results.

The program comes with a very good manual and a copy of the college level *Statistics for the Social Sciences* by Dr. Vicki Sharp. The manual is well written and packed with detailed examples. It also defines the product's limits clearly and openly.

*StatView* is essentially a superspecialized

spreadsheet with strong charting capabilities. The program has many built-in statistical and formatting functions and works in a very intuitive manner. *Multiplan* and *OverVUE* users will feel at home in no time at all.

Users have quick access to all normal statistics such as means, standard deviations, variances, medians, modes, frequency distributions and coefficients of kurtosis and skew. Comparative statistics are the result of a bewildering variety of techniques and tests. Most are already programmed in, and, if the user needs a technique or test not present, its formula can be entered in a special area.

Results can be viewed in text form or in any of several charting formats, including pie, bar and line charts and scattergrams. Charting and printing are both surprisingly quick.

Data can be imported from and exported to most popular spreadsheets and word processing programs. The necessary formatting instructions are models of clarity. Data can also be massaged to present the most attractive appearance.

The program is very large, so large that it will not fit on a disk with the regular Finder. Instead, a MiniFinder is provided. This can be disconcerting to users who have not used

MiniFinders before or who have not read the manual before trying the program. BrainPower could have provided a System on a separate disk a la *Jazz* and *Excel*.

While the program works on a 128K Mac, it is severely limited in the amount of data it can handle. A 512K Mac can handle roughly 17 times as much data as a 128K Mac.



BrainPower has promised an enhanced version of *StatView* (that will only work on 512K and larger Macs) in early 1986. That should really be something, since the current version is as powerful as many much larger packages, and much easier to use. If your work involves statistics in any shape, take a good look at *StatView*. —SB

# Set of Knives



## Mac the Knife

Yes indeed. A set of Mac the Knife Clip-Art and Font Volumes. One for most every application.

If you're the type that makes up a lot of forms or newsletters on the Macintosh, you've probably noticed that they could use some illustrations or something to make things look better. That's where Mac the Knife, Volume I: A Clip Art Treasury comes in. This best-selling program has literally hundreds of images to

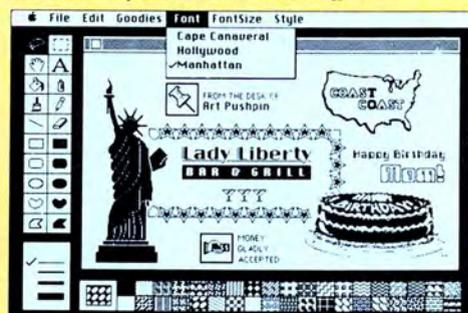
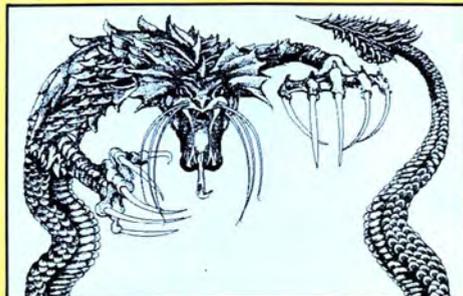


where Mac the Knife, Volume III: Mac the Ripper slashes in. This specially-priced two-disk set has the kind of imagery you've always wanted to see. Large and small drawings and useful illustrations, including many for almost any conceivable occasion from Hanukkah to Christmas to birthdays to Chinese New Year are drawn in magnificent detail. Included are a number of specialty headline fonts so you can do BIG LETTERS. Once you see it, you know why we call it...



styles and sizes – from decorative display typefaces to practical text fonts – come with concise documentation to get the fonts to where they can do you some good.

And finally, if you use your Mac in any one of a number of creative ways, you've probably noticed that if you can't draw, trying to bring life to your ideas in MacPaint can be frustrating. Yes, that's



choose from – great for presentations, business graphics, ads, coupons, flyers or just plain fun.

If you do a lot of word processing on your Mac, you've probably noticed that although the Mac has a lot of typefaces, you really don't have the flexibility someone with expensive real typesetting equipment has. That's where Mac the Knife, Volume II: World-Class Fonts comes in. Two dozen fonts in all kinds of

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Miles ahead of the pack.

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Makers  
of



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# THE MACRO MAKER

YOU'VE GOT *EXCEL*. THE SPEED IS impressive, the power of the worksheet is stunning, and the macro building power is astonishing. The tape recorder method of macro building makes macro creation easy—unlike anything you've ever seen before.

Macros are great and they can automate a lot of small simple repetitive tasks, but if that's all you use them for you're missing out on a significant part of *Excel's* power. Macros can do far more for you. You can build macros that perform very complex analyses which can then be called as often as needed, changing the arguments as required. No longer are complex financial analyses time consuming. Now the power of what-if

analyses are as near as a few keystrokes away. And if the list of functions doesn't contain everything you need, then you can macro that function in. Here's how.

## Macroing Investment Analysis

---

*Excel's* macro power can create valuable assistants for investors. Profitable decisions are just a macro away.

As an example, let's look at the field of options. Investors often need to determine the proper price of a stock option. This analysis isn't hard, but it can be tedious if all the steps must be remembered and entered each time the analysis is run. The better way is to

# New Uses for Excel

BY RICHARD REICH

# MACRO MAKER—NEW USES FOR EXCEL

called at will. The first step is to research the techniques to be used. No program, not even one as powerful as this one, can tell users how to perform complex financial analyses.

## Stock Options in Brief

An option is a right to buy or sell a share of a certain stock at a stated price at any time until a definite expiration date. The holder of an option may choose to exercise the option, that is, to buy (or sell if it was a put; buy options are also known as calls) the underlying stock, but there is no obligation to do so. The price at which the option holder may purchase the share is called the *exercise price*. The vast majority of stock options are uniform contracts traded under prescribed rules on exchanges such as the Chicago Board Options Exchange (CBOE).

Particular options are identified by the underlying stock, the exercise price and the expiration date. (The expiration date is conventionally stated as a certain month, e.g., October. This is actually precise because exchange-traded options always expire on the Saturday following the third Friday of the expiration month. Also, the maximum lifetime of such options is 9 months, so the year of expiration is always apparent.)

The appeal of options to speculators is simple: Imagine that Apple Computer, Inc. shares are selling for 14½ and Apple January 20's (that is, options to buy Apple at \$20 per share until the third Saturday of next January) are selling for ⅞. Suppose further that we believe Apple is due for a major market resurgence. You buy a hundred shares of Apple at 14½ for a total investment of \$1450 (commissions will add to that but will be ignored here for the sake of simplicity). I buy options on one thousand shares of Apple at ⅞ for a total investment of \$1250.

Assume we are right and Apple rises to 23 by mid-December. Your investment has appreciated to \$2300 — a very fine return. Consider the market value of my options: Each option grants me the right to buy a \$23 share for only \$20; thus it is worth at least three dollars, or \$3000 in all. Your handsome rate of return (over the holding period of the investment) is

about 60% but mine is at least 140%!

The price of this magic is that if Apple rises slowly to 19 by mid-January, you still have a nice profit while I lose my entire investment of \$1250 as my options expire, worthless. (Although that wouldn't actually happen. I would probably sell my options before they expire, settling for a loss or a relatively small profit.) The right to buy a \$19 share for \$20 is worth nothing if there is no time left for the stock price to rise.

Other option strategies are available, including many with very low risk characteristics. In every instance, however, a good tool for determining the "fair price" of an option is useful to the investor.

## The Black-Scholes Model

The Black-Scholes option valuation model, named for its two creators, is the best known tool for calculating the "fair price" of an option. In fairly simple terms, the Black-Scholes model determines the "fair price" of an option as a function of five variables: (1) the current share price of the underlying stock, (2) the exercise price of the option, (3) the time remaining until

expiration, (4) the prevalent interest rate of money borrowed for a period approximating the time to expiration and (5) the volatility of the underlying stock price.

Values for all but the last of these variables are readily observable. A stock's volatility is a statistical measure of the degree to which its price varies. Complex, but successful, techniques exist for estimating volatility.

The Black-Scholes formula states that the price of an option,  $C$ , is:

$$C = SN(d1) - Ee^{-rT}N(d2)$$

with

$$d1 = (\ln(S/E) + (r + v^2/2)T) / v\sqrt{T}$$

$$d2 = d1 - v\sqrt{T}$$

where

$N(\dots)$  = the cumulative normal distribution function

$e$  = the base of the natural logarithms (2.7183...)

$\ln(\dots)$  = the natural logarithm

$S$  = current stock price

$E$  = exercise price of the option

$T$  = time until expiration

$R$  = interest rate

$v$  = volatility (i.e., the standard deviation of the stock's price movement)

Building an *Excel* function macro to calculate this function requires that a good approximation of the cumulative normal distribution function be con-

**Fig.1:**This function macro generates a polynomial approximation of the normal distribution. It is a separate macro that will be called by the main Black-Scholes macro. It, in turn, could call yet other macros.

	A
1	Normal
2	=ARGUMENT("z",1)
3	=1/(1+(0.2316419*ABS(z)))
4	=A3*A3
5	=A4*A3
6	=A5*A3
7	=A6*A3
8	=0.31938153*A3
9	=-0.356563782*A4
10	=1.781477937*A5
11	=-1.821255978*A6
12	=1.330274429*A7
13	=EXP(-(z*z)/2)/2.5066232746
14	=A13*SUM(A8:A12)
15	=RETURN(IF(z<=0,A14,1-A14))
16	Adapted from D. B. Nickell, "Forecasting on Your Microcomputer"

**Fig.2:**This macro uses the Black-Scholes model to predict fair prices for options. It calls the macro of Figure 1 in line 11.

	A
1	BlackScholes
2	=RESULT(1)
3	=ARGUMENT("Stock",1)
4	=ARGUMENT("Exercise",1)
5	=ARGUMENT("Time",1)
6	=ARGUMENT("Interest",1)
7	=ARGUMENT("Volatility",1)
8	=SQRT(Time)
9	=(LN(Stock/Exercise)+(Interest+(Volatility*Volatility/2))*Time)/(Volatility*A8)
10	=A9-(Volatility*A8)
11	=Stock*NormalNormal(A9)-Exercise*EXP(-Interest*Time)*NormalNormal(A10)
12	=RETURN(A11)
13	Adapted from R. M. Bookstaber, "Option Pricing and Strategies Investing"

# Front Desk. The better way to manage your most precious natural resource.

Front Desk™ is a time and resource manager for Macintosh™ that understands a simple fact.

Time is money.

It'll help you coordinate the time use of lots of people. Or schedule facilities. Or loan out equipment. Or plan projects. Or track a sales staff's sales. Or whatever. For a major company. Or a one-man-show.

At first glance, it looks like a snazzy electronic appointment book. But Front Desk is no mere calendar. Not only does it organize *how* time is spent, it analyzes how *well* time is spent.

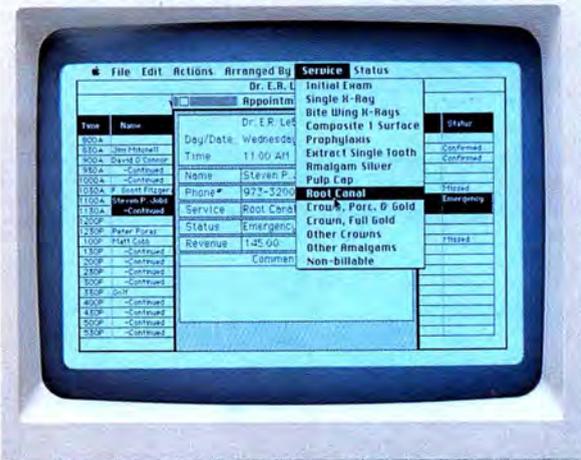
When you click open the simple appointment entry

form and select the service that's going to be performed (from a menu that you create), Front Desk automatically calculates the proper fee or rate. Then at any time you can print out an analysis report for last month showing how many hours

you or your staff spent—or how many dollars you brought in—by holding consultations, or selling wickets, or playing golf. And you can project how much you'll bring in on those services in the coming weeks or months.

This lets you see where your profits are coming from. Where your time is going. You can spot trends. Nip unprofitable ventures in the bud. And decide who gets bigger Christmas bonuses. In short, you'll get more done. In less time.

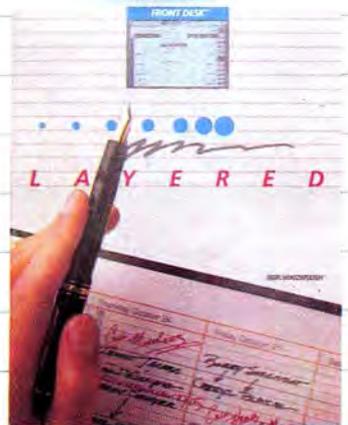
So dash down to your local computer store today for a look at Front Desk. And buy yourself some valuable time.



Front Desk lets you zoom from one person's calendar to the next. Or zip from a monthly view to a weekly view to a single day view. For one person or everyone.



Front Desk creates reports analyzing time use in terms of hours spent—and dollars generated—per person, per service.



Layered Incorporated, 85 Merrimac Street, Boston, MA 02114 (617) 423-9041

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# MACRO MAKER—NEW USES FOR EXCEL

structed. All the other functions used in the formula are standard in *Excel*.

## The Normal Function

Since the normal distribution function is likely to be useful in other macros, it should be written as a separate function macro that the Black-Scholes macro can call as needed. Figure 1 shows a polynomial approximation that is fairly accurate for argument values between -3 and 3.

## The Black-Scholes Function

With the normal function macro ready, the Black-Scholes formula can be directly transcribed as an *Excel* function macro (see Figure 2).

## ExpirationDate Function

The Black-Scholes formula needs the exact time remaining until expiration of the option being valued. Recall that the expiration date of an option is usually quoted as just the month it expires (and that options expire on the Saturday following the third Friday of that month). It would be useful to have a function that determines the expiration date from the name of the expiration month. With *Excel's* date arithmetic capabilities, the time (in days) until expiration can then be computed simply by subtracting today's date from the expiration date. The function needed, **ExpirationDate**, is shown in Figure 3. It takes two arguments: a text string representing the expiration month (e.g., "Oct") and the *Excel* date representation (a number) of today's date. The second argument is needed to establish the year of expiration.

**ExpirationDate** works by first assuming that the expiration month occurs in the same year as the date furnished as the second argument. It computes the date of the first day of the expiration month using *Excel's* ability to convert a text date to its numerical representation. The built-in **WEEKDAY()** function and a little modular arithmetic rapidly yields the expiration date — almost. The last step is to see if the assumption that the ex-

**Fig.3:** This macro computes the exact amount of time until a given option expires. This information is required by the macro in Figure 2 when it computes the Black-Scholes formula. **ExpirationDate** is called as an argument in the worksheet in Figure 5.

	C
1	ExpirationDate
2	=RESULT(1)
3	=ARGUMENT("ExpirationMonth",2)
4	=ARGUMENT("Today",1)
5	=SET_NAME("Year",YEAR(Today))
6	TryNextYear
7	=VALUE("1-"&ExpirationMonth&TEXT(Year,"-0"))
8	=WEEKDAY(C7)
9	=C7+MOD(5-C8,7)+16
10	=IF(C9-Today>0,RETURN(C9))
11	=SET_NAME("Year",Year+1)
12	=GOTO(TryNextYear)

**Fig.4:** A simple worksheet that uses the macros created here to evaluate the fair price of an option.

	A	B
1	Black-Scholes Stock Option Evaluator	
2		
3	Evaluation Date:	3 Sep 85
4	Issue:	Lotus
5		
6	Current Price:	20.5
7	Expiration Month:	Oct
8	Exercise Price:	25
9	Interest Rate:	9%
10	Volatility:	0.87
11		
12	Call Price:	\$1.15
13	Expires:	19 Oct 85

**Fig.5:** These two formulas are all that are necessary to generate the worksheet shown in Figure 4. Line 13 calls the macro in Figure 3, while line 12 calls the main formula (Figure 2).

	B
12	=BlackScholes!BlackScholes(B6,B8,(B13-INT(B3))/365,B9,B10)
13	=BlackScholes!ExpirationDate(B7,B3)

**Fig.6:** *Excel's* fancy formatting features allow worksheets to be dressed up. This is the same worksheet shown in Figure 4.

	A	B
1	Black-Scholes Stock Option Evaluator	
2		
3	Evaluation Date:	3 Sep 85
4	Issue:	Lotus
5		
6	Current Price:	20.5
7	Expiration Month:	Oct
8	Exercise Price:	25
9	Interest Rate:	9%
10	Volatility:	0.87
11		
12	Call Price:	\$1.15
13	Expires:	19 Oct 85

piration is in the current year was wrong. If so, **ExpirationDate** just loops back and recomputes the date using the next year.

## Small Worksheets with Big Power

Figure 4 portrays a very simple worksheet that uses the macros just described to evaluate the fair price of an option. It has only two formulas (Figure 5); the rest is data input, fancy formatting and labels. With *Excel's*

Table facility it is quite simple (and very quick) to perform various sensitivity analyses on this or other options. Further, graphic renditions of the results can be generated in moments. The results are shown in Figure 6.

## Adding Custom Functions

Spreadsheet users always need more functions. The work, any work, would have been much simpler if only a need-

*(continued on page 109)*

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# CORRALLING YOUR DESK ACCESSORIES



*Lots of companies want  
to help you straighten  
out your desktop.  
Here's an in-depth look  
at three new and  
exciting products.*

**BY SHARON ZARDETTO AKER  
AND STEVEN BOBKER**

## MAC USERS ARE NEAT PEOPLE.

We know that John Dvorak might not think so (see the November *MacUser*, page 156), but even Mac programmers and developers are neat people. In fact, the Mac is a neat machine, and a well-organized one, by design.

Why else would the very first option on the Special menu be "Clean Up"? Why else would the desk accessory concept be seen first on the Mac? And why else would there be such a proliferation of desk management and organization tools available?

In this roundup we will examine three packages that take a modular approach to desk organization. This approach has proven very popular, not only among Mac users, but with all PC users. The tools in these packages can be used as standalone applications or desk accessories. And they can be used in combination, although the total disk space requirements may require a hard disk.

All the packages come with their own installers and all the tools can be installed into the Apple menu without much difficulty. In fact, we were able to create a System file that contained all the desk accessories on all three products! The installers were all intelligent enough to note and resolve (correctly) conflicts in the driver ID numbers. The resulting System works, but is rather big; in fact, *nothing* else fits on the disk. But that's not the best way to use these wonderful productivity aids. The rest of this article will help you select and use the package that is best for you.

## BatteryPak

Batteries Included recently jumped on the desk accessory bandwagon; and, to mix a metaphor, it seems to have landed near the top of the heap. The seven accessories in *BatteryPak* are generally well-designed and useful additions to the Apple menu.

The "Phone Pad" bears only a superficial resemblance to the original "Note Pad." Its versatility begins with a 250-page capacity. You won't be afflicted with Clicker's Cramp when you flip through the pad,

either: you can go forward or back a page with Command-period and Command-comma, or use the Go To Page command to skip right to a desired section. You can even toggle on a feature that will automatically open the "Phone Pad" to the page it was on when you put it away.

What makes the "Phone Pad" really special, though, is that it has a Find option that will search for any text in it; in effect, you have a freeform database. So if you jot down a few thoughts regarding next Monday's meeting as they occur to you during the day, they'll be easy to find just by typing in any word contained in the notes. "Phone Pad" also features an autodial capability that will dial a number in either tone or pulse mode on any Hayes-compatible modem.

The "Calendar" is a good blend of simplicity and usefulness. The chosen

**BatteryPak's RPN Calculator is a scaled-down version of this complete Scientific Calculator. Both calculators can be operated entirely from the keyboard as well as by mouse clicks.**



month appears at the left of the "Calendar" window, while to its right is a Notes area linked to the selected day on the calendar; any day that has notes linked to it has a checkmark next to it. A single click will change the day, month or year on the calendar. There is a search option in the "Calendar" that lets you find any text in the notes.

If you do a lot of draft-quality printouts, the "File Printer" will be a blessing: it lets you print any text-only file and keep using your Mac while the printing goes on. This accessory does not work with a LaserWriter.

*BatteryPak* includes two new calculators; both use RPN (reverse Polish notation). One is a Hewlett-Packard workalike with all sorts of nifty scientific operators, while the other is a scaled-down version that takes up about 4K less on your disk.

The "Launcher" lets you move from one application to another without returning to the desktop. You have the option of changing applications without changing systems — this is useful if a second application is on a start-up disk with its own System file, but you want your current desk accessories and/or font choices to remain the same. "Launcher" also has a "Goodnight" button that shuts down your system, ejecting both of the disks and resetting Mac.

One of *BatteryPak's* most useful accessories is "Disk Tools"; it is also the only one with an obvious flaw. "Disk Tools" gives you four main options: Delete, Copy, File Info, and Disk Info. The last two are similar to the Get Info function of the *Finder*, supplying you with creation and modification dates, and size; you can also lock and unlock files and disks. The Delete

function, an operation surprisingly absent from most Mac applications, lets you erase documents from any available disk. With the Copy function, you can copy any file from one disk to another; Mac politely informs you just how many disk swaps (if any) are needed to complete the operation.

The "Disk Tools" flaw is annoying rather than fatal: there are too many steps involved in going from one option to another. Instead of getting Disk Info with a list of files that could then be chosen for copy or deletion, each of those operations involves a separate menu selection. You can't select multiple files to copy or delete, either. The "Disk Tools" are worth a few extra mouse clicks, but improvement in this area should be at the top of the upgrade list.

*BatteryPak's* documentation notes that installing "DiskTools" causes

# CORRALLING YOUR DESK ACCESSORIES

problems with *ThinkTank 512*, *MacDraw*, and *MacPaint*; the latter two have minor problems, but *ThinkTank* may crash. (*MacPaint* has trouble with "Launcher" and *MacTerminal* may crash with the "RPN Calculator.")

*BatteryPak* comes with its own *Mover* utility for installing and removing accessories; this neat utility also lets you try out an accessory before you go to the time and trouble of installing it. *BatteryPak's* manual is excellent; it describes how to use each accessory, gives hints for making the most of them, and even takes you through the wonderful world of RPN calculations step by step.

You won't have room for all these accessories on any application disk, but you probably won't want all of them, anyway. You shouldn't have any trouble installing two or three of your favorites in most systems. Even if you limit your use to just a few of *Bat-*

*teryPak's* accessories, you'll get your money's worth.

## QuickSet

*QuickSet* is a desk management package with five major functions. You can use any of its modules as standalone applications, or you install any combination of them as "sort of" desk accessories in any System.

"Sort of" desk accessories simply means that the modules do not appear as individual desk accessories, but the words *QuickSet* do appear in the Apple menu. When you select them you are presented with a stylized picture of an office with a desk in it. Clicking on the various objects on the walls and desktop brings that accessory into use, although the clock and the pile of disks are misleading. Clicking on them does nothing at all,

while clicking on the telephone opens the cardex. There is no phone dialing capability, although one is promised for version 2.0, along with a print spooler.

The picture is rather cute the first few times you see it, but becomes tiresome quickly. It is not particularly well executed artwork either; a little perspective would help immensely. It also takes up a lot of disk space (over 10K), since its use requires that a file called "The Desk" be on each disk. The space could be better used to store the rather large modules and the time that is spent going first to the picture and then to the module is simply wasted time.

The modules themselves are good, although they lack the consistent feel that *BatteryPak* and *Sidekick's* modules have. That's undoubtedly because *QuickSet* is a collection of programs by different authors, while the other packages were essentially each written by one person.

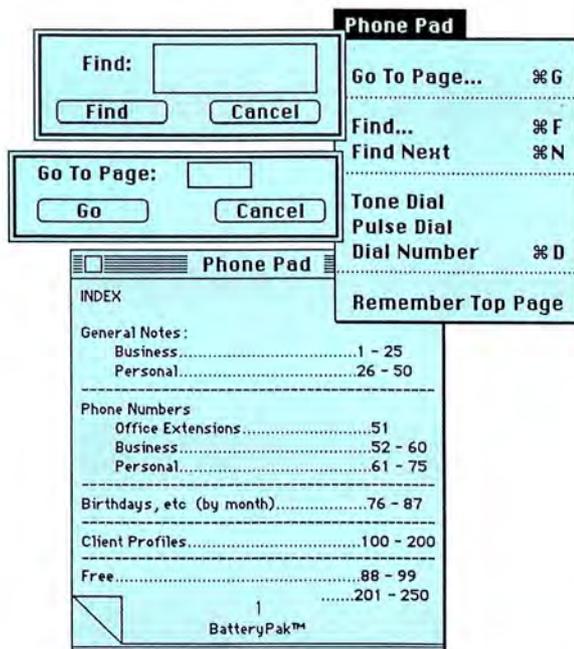
The best and most useful package is an icon-driven calendar. This calendar is really different than all the others. You can and should select from the 14 icons provided to indicate activities on the monthly calendar. The icons are not there just to make things pretty. While they make good visual signposts they are also the key to the calendar's search function.

The detailed daily schedules, accessed by double-clicking on a day in the monthly calendar, are also icon-driven. Selecting a time period and clicking on an icon marks that time period for an activity of that category and leaves space for details.

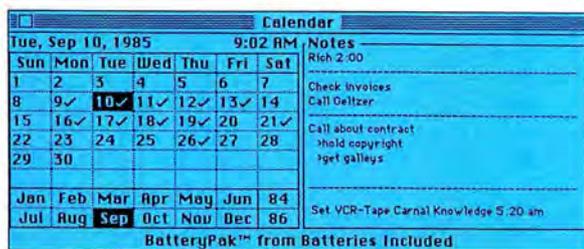
The calendar uses special data files, and you can have multiple data files. Thus several people can each have their own calendar. If multiple data files exist the program will ask which file is wanted when you open the program.

That brings us to the next module, the file encryptor. This neat little program asks you for the name of a file and then a password. When you complete those steps a new file that is safe from prying eyes is returned. To use that file, you must first use this same program to decrypt the file and to do that you must know the password. Thus each person using the computer

*BatteryPak's* Phone Pad is a freeform database thanks to its Find option. It has 250 pages, and can even dial a modem for you.



A click in the *BatteryPak* Calendar will change the day, month or year you're looking at. (You can go forward or back as many years as you want.) The days that are checked in the calendar have notes attached to them.



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# CORRALLING YOUR DESK ACCESSORIES

could keep a personal calendar (or card file or note pad) private. This is a good encryption program, certainly tops among those currently available.

The calculator is one of the most powerful tools of its kind seen on a Mac. It can toggle between statistical and financial functions, and follows the basic RPN model popular in the "real" calculator world. This calculator is a very sophisticated tool and most of the product's manual describes its features and uses. You can enter numeric values from the keyboard as well as by clicking on the keys. The calculator fully supports cut and paste operations (as do the other modules). Cut and paste is particularly important in a calculator because you really don't want to have to write down or remember the results of your calculations.

The calculator has a rather unique, but not highly developed, help function. You can call up a brief description of what each key does by selecting Help from the command menu and then clicking on the desired key. The descriptions are one dialog box long and sometimes too brief to really be useful.

That's not the only drawback to the calculator. The keys tops are lettered in 9-point Geneva (at least, that's what they look like) and show up in white on a black rectangle. While this makes the calculator look more like a handheld model, it also makes the keys hard to read. You can't use this calculator for extended time periods. The calculator's other major drawback is its size. It is huge (46K). The extreme size is probably as much a result of the help functions as it is of the sophisticated functions available. The publisher would perform a major service by providing an alternate copy of the calculator without the help feature. It would be much smaller and could be used in many more places.

You also have access to a note filer, which functions as a mini text editor, and a cardex, to keep your name and address list. Both modules have their own data files, and like the calendar, they support multiple data files.

The note filer lets you create files with up to 1680 lines of information in each file. Files are organized into notes that can be further subdivided into items. Creating and maintaining these files is simple and intuitive.

Notes can also be assigned one of the 14 basic category icons, and searches can be by icon as well as by data field. This is a very nice tool for organizing moderate amounts of information.

The cardex is a straightforward card filing system with a twist. You can assign up to five category icons to each card, and then search by icon as well as by last name or company.

You can obtain printed reports and screen images from the calendar, note filer and cardex if you are using the ImageWriter or other compatible printer. The print functions don't work on the LaserWriter.

Overall, this product is somewhat less than the sum of its parts. It has both winners and losers. The calendar is a big winner.

The amount of disk space used is a loser. Installing everything on a System disk will eat up more than 133K. And while you can have parts on a System disk and parts on data or application disks, the master program will not find and load the parts automatically when necessary. Instead you get an awkwardly phrased dialog box and have to search for and select the files you want to open.

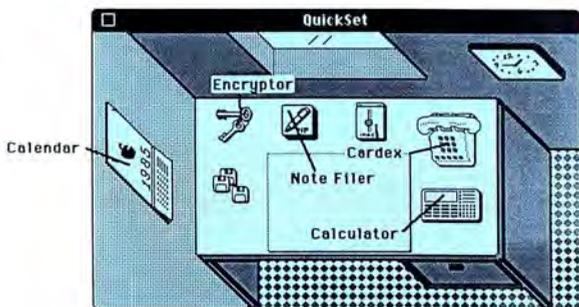
The commands are often a bit confusing and verbose. You frequently have to make extra command selections that better design would have avoided.

The user agreement restricts usage to one user on one designated computer. That's a shame. This is a product that, with its multiple data files, is an ideal candidate for multiple user usage. And the machine restriction means that I can't use the same program on my machine at work and on my machine at home. I could carry the data files back and forth, but I'd have to buy two copies of this program to use them in both places. While the price of a single copy is reasonable, the price of two copies sure isn't!

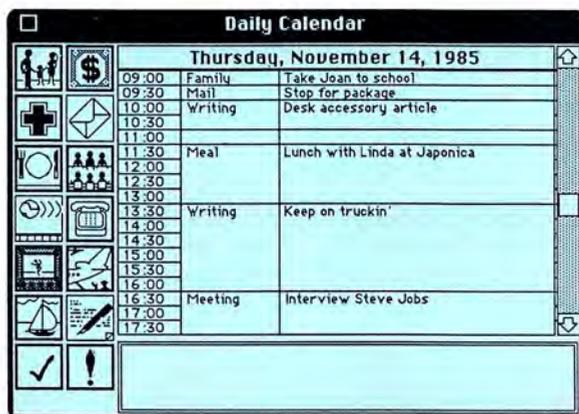
Unless you have a hard disk or a double-sided drive (they have to show up some day, right?) this product is best used in small pieces. Don't try to use all of the modules unless you have lots of space on your disks or don't mind a bit of disk swapping.

*(continued on page 112)*

QuickSet's modules are accessed from this "office" when the program is used in its desk accessory form.



QuickSet's calendar makes good use of icons. You can search and generate reports by icon categories.



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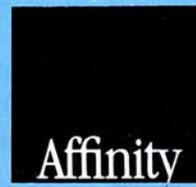
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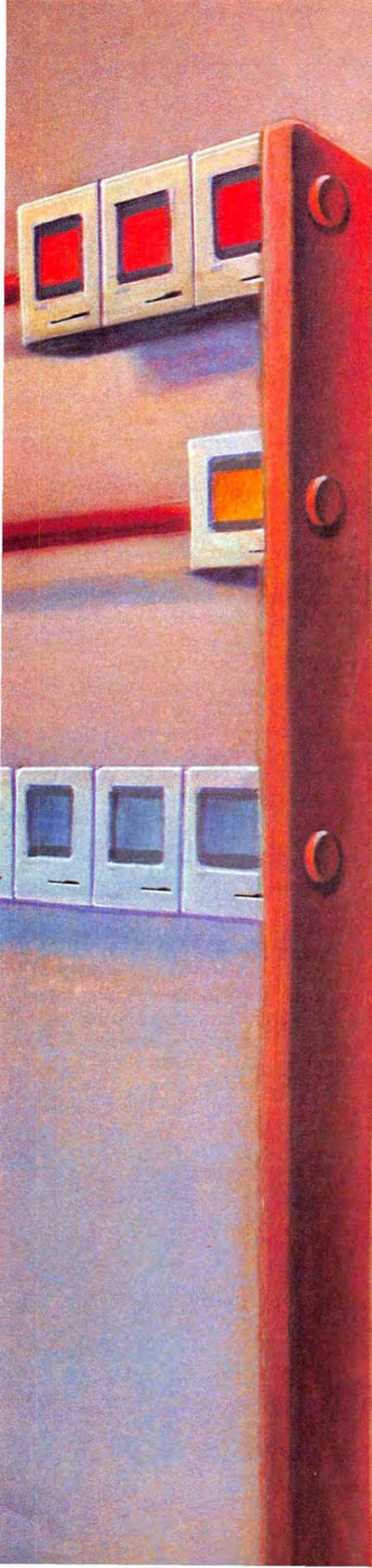


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# CALLING YOUR MAC TO ACCOUNT

***There is no accounting  
for taste, but the IRS  
(and others) seem to  
think that money should  
be tracked rather  
carefully.***

**BY MICHAEL D. WESLEY**

Consultant: Barry M. Mechanic  
(Arthur Young Company)

THE MOST BASIC ELEMENT IN THE running of a small business is accounting. To survive and succeed in a cut-throat environment, the businessperson has to be able to answer the fundamental question "Do I have any money?" at any given point in time, and must know what to do with the answer. Nevertheless, keeping accurate books is tedious and time consuming. And knowing how to format and understand financial data is a highly specialized skill.

Accounting is therefore one of the first applications that springs to mind when a business considers computerizing its operations. It seems logical that a computer would do a better job of tracking books than a person working by hand. After all, keeping records and number crunching are what computers do best. And the Mac does both with ease and style, so accounting on a Mac should be a breeze. Now for the first time, there are even a large number of accounting software packages available for the Mac.

# CALLING THE MAC TO ACCOUNT

Stop for a reality check. It pays to ask a couple of very hard questions and do a good deal of self- and business analysis before ever approaching computerized accounting. Because it may not be the way to go.

## In the Beginning

The significant questions are basically simple. "How will the business benefit from computerized accounts?" and "Do the benefits justify the expense (in time, effort, and money)?" To answer these questions there must be a clear picture of the type of accounts that need to be kept and the type and amount of information to be generated.

One thing that must be remembered is that accounting software will not save time in basic record-keeping. It takes as long to key information into a Mac as it does to write on a ledger sheet. And a Macintosh screen that looks just like a hand-written ledger sheet imposes its own structure on the accounting process. While it may simplify transferring over from a manual system, it may be more trouble than it is really worth.

The primary benefits of accounting on a computer are the ability to access information quickly, to transfer data automatically so that an item only has to be entered into the system once, and to generate reports that facilitate good financial decision-making.

Accounting programs are often placed (primarily by reviewers and competitors) into one of two categories, "entry level" and "full-featured." To anyone else, these categories mean very little. How is entry level defined? Does it mean a business has four employees and a turnover under \$1 million a year, or that the company requires fewer than 5000 transactions per period or both? And even if a company is small, shouldn't it have a system that has all the features it needs (which seems to say "full-featured.")

Before plunging into a system that may have too few or too many features for the business at hand, it is important to construct two very detailed and complete lists. One is for features the software "must have" to meet the company's needs, and the other is a

"wish list" of nice but not necessary attractions. It is unlikely that any program will fulfill all the "musts", so realistic decisions will have to be made. For instance, it might be possible to live with columns in the wrong place on the worksheet, or predefined account numbers different from the ones that are now used. It might not be possible to live with a limitation of \$99,999.00 per transaction.

"Must have" lists should make provision for growth. A given package may just meet the company's needs right now, but can the system then handle a sudden increase in volume two months from now? A good accounting program should have a working life of two years or more.

If the company's needs have been well-defined; if growth has been considered and planned; if benefits outweigh expense, and if an accounting system can be found that satisfies 80 to 90% of a company's "must have's" and a comfortable smattering of "gee it would be nice if's," then it is probably worth the investment.

## What to Look For

Ignoring labels and advertising hype, there are certain very important and very specific areas to evaluate.

- **Hard disk capability.** Trying to do accounting on floppies is an exercise in frustration. Disk swapping takes up horrendous amounts of time. And, if all the features you need can run on a 128K Mac with floppies, it is probably not worth the expense to computerize.

- **Functionality 1: Modules.** Accounting software appears in spurts. Some

products have only a general ledger at this time with other functions planned to appear over the next several months. A system may look good but be incomplete, in which case it might be best to wait.

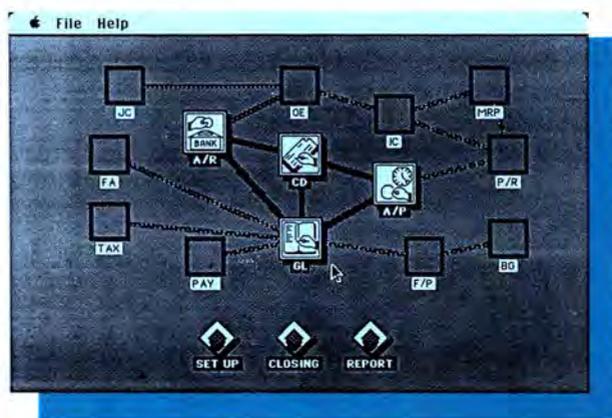
- **Functionality 2: Receivables and Payables.** Are Receivables really receivables, or just a journal with aging? Can you track things like freight and shipping charges on an invoice, or just a total amount and sales tax? Does the program automatically notify you when an account reaches a certain age? Does Payables warn when accounts are coming due and help you organize cash flow properly?

- **Integration.** A new entry should automatically update all related journals when it is posted. The program should either do this by itself or by prompting the user to insert the appropriate disk. A hard disk system should do all updating internally.

- **Style.** Some programs are virtual on-screen representations of the popular one-write style ledger sheets. One-write is a paper and pencil system in use by thousands of businesses across the country. Other programs have lots of windows and a freeform structure. Still others are simply ported over to the Mac from other systems and make almost no use of the Mac interface we all know and love. (This is not necessarily a bad thing, because mousing by itself does not make software easy to use.)

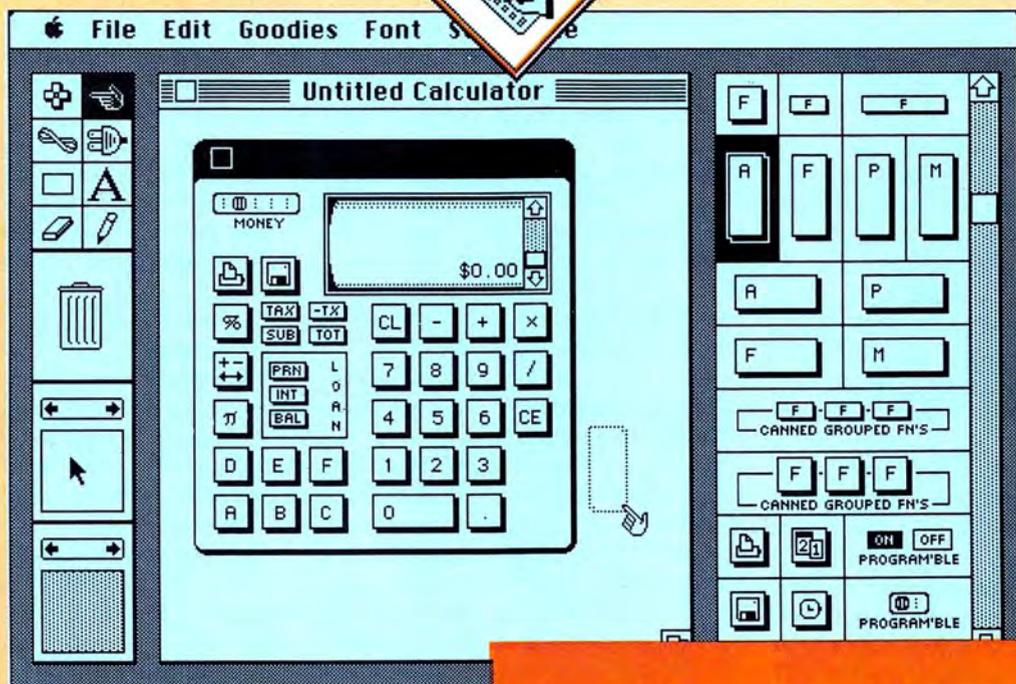
- **Size 1.** How many accounts, transactions, departments, profit centers, journals, etc. can the program handle? Keep in mind that a limitation on the number of transactions usually means all transactions combined. This is im-

Fig.1: Gallery Finance bypasses the standard desktop and replaces it with the "Road Map" shown here. Complete icons represent modules installed while the darkened lines indicate the modules' relationships to one another.

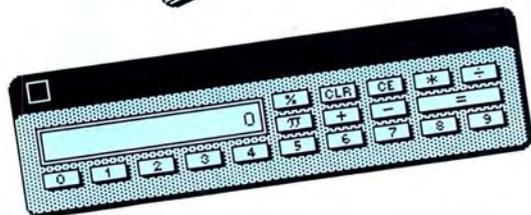


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# CALLING THE MAC TO ACCOUNT

portant when several modules exchange data, because an Accounts Receivable posting and its corresponding General Ledger entry are counted as separate transactions.

- Size 2. What is the largest number that can be entered as a transaction and what is the largest calculation result? This may be important. The program may accept a single entry up to \$99,999.99, but if this number is also the largest possible calculation result, nothing can be added to it.
- Reports. Does the program have built-in reports? Can reports be customized, so that a range of account numbers could be listed on a single line, if needed? Are reports detailed (listing data for every transaction) or summary (reporting only by period)? Can reports be displayed to the screen?
- Search functions. How easy is it to find customer or vendor information, or the exact amount of a specific invoice number?
- Security. In many small businesses, passwords may be unimportant. But if several people work on the accounts at different times, at least two levels of password protection may be needed.
- Check and invoice printing. Nice features that may not be needed, but seem to be touted fairly heavily by the software companies themselves.
- Customer and vendor data. Does the program let you store detailed reference cards, or can you only enter data on a single ledger line? Very important.
- Data interchange. Can data be saved to or ported from spreadsheets and databases?
- Documentation and customer support. How easy is the system to learn and use? Can you get phone support from the company? This is imperative, because computer salespeople do not have the time to learn accounting principles.
- Sample company on disk. It is normal to be very skittish about beginning a new accounting system with your own company's data. It helps to have sample files on disk for a tutorial entry to the system.

The programs reviewed here were evaluated on these points as well as their ability to do what the manufacturers say they can do.

## Accountant's Choice

*Accountant's Choice* is a very powerful system built around a relational database that is open to the user. A dozen functions, including basic operations plus Cost Allocations, Prior Posting (including posting to the twelfth month of a previous fiscal year), and Departmental Expense Reports are accessed through a single menu. A number of standard reports are provided with the system, but most can be customized if desired. Multiple journals are allowed and the number of accounts is determined by the amount of available disk space.

Data entry is very straightforward and well documented. Account information is entered through a File Builder; reports are customized and created with the Report Builder, both features of the database. Journal entries can be posted as a single item in a single month, or set up to recur every month. In addition, an entry can be an accrual (guess at an expense amount) that will automatically be canceled out the following month when the actual value is entered.

General Ledger can be used as a stand-alone or in concert with other *Accountant's Choice* modules. Unfortunately no other modules were available at the time of writing, so it was impossible to test the integration.

*Accountant's Choice* can be used on a system with two floppies but it should not. Searches and complex reports such as Trial Balance are very slow unless the program is installed on a hard disk.

Fig.2: MacOneWrite's Check Disbursement journal is a visual facsimile of a manual system, complete with simulated pegs. The worksheet slides down a peg after each check is written. The transaction journal beneath records all the checks.

Account	Amount	Account	Amount
100 Cash in Bank - Checking	125.00	200 Accounts Payable	0.00
	0.00		0.00

## CheckMark General Ledger

*CheckMark General Ledger* is a stand-alone Ledger with five journals built into the system: Cash Disbursements, Receipts, General, Sales, and Purchases. These journals cannot be altered, but they do provide the basic functions needed for payables and receivables within the General Ledger. Account ranges are also preset.

Menus are very straightforward as is data entry. Tutorial footnotes provide valuable on-screen help and guidance, but can be toggled off. Transactions are only posted at the end of each month but are saved after each session.

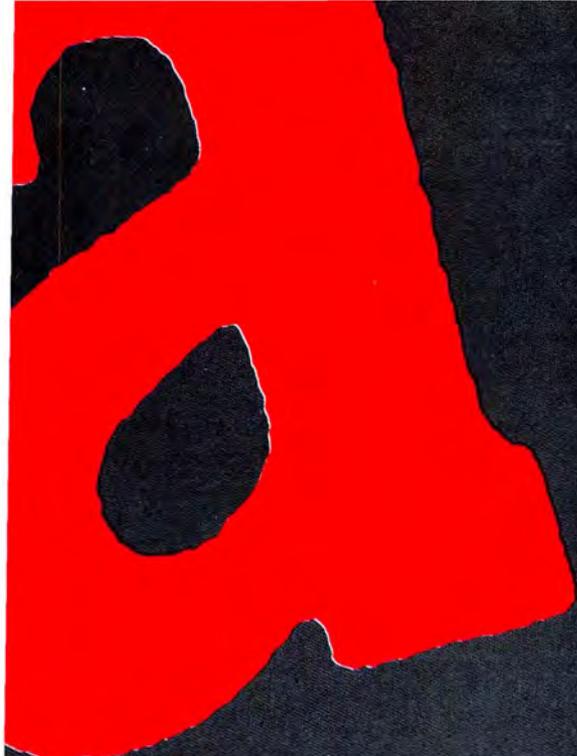
*CheckMark General Ledger* allows for copying an existing Chart of Accounts for multiple companies. Up to nine departments/ profit centers (the program uses the terms interchangeably) can be established.

Summary reports are built in but the user selects specific accounts to be included, providing some flexibility. Customer and vendor information is very minimal.

*CheckMark General Ledger* can run in 128K with a single disk drive with severe limitations. It can also be installed on a hard disk. This program is easy to use and the manual is excellent. It should not be used by anyone requiring detailed reports or customer data.

## Gallery Finance

*Gallery* is an integrated one-write system with General Ledger, Cash Disbursements, Accounts Payable and Accounts Receivable in the single



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# CALLING THE MAC TO ACCOUNT

*Finance* package. Additional modules can be added when needed (and as they become available).

The first time the system is entered, the user is prompted to use the Set-up procedure, a detailed step-by-step guided process for setting up the company's books.

Records for vendors, customers and employees are very complete and provide the opportunity to store detailed information. Discounting is allowed either through a standard discount or on an individual basis. Data entered in a journal is automatically posted to the appropriate record card.

Ledger sheets are predefined, but can be altered by the user to a certain extent. A set of on-screen worksheets can be used as guidelines to transferring from a pencil and paper system to *Finance*. The manual is excellent and even includes a tutorial section on basic accounting principles.

*Gallery Finance* is the best of the one-write systems reviewed because it provides the most information and is truly integrated. It should be used only with a hard disk regardless of the number of transactions. Unfortunately there is a Key disk which must be inserted each time the product is used as a means of copy protection and disk control.

An enhanced version of *Finance*, scheduled for late '85, will add check and invoice printing, order entry, and additional reporting capabilities not now included.

## Hardisk

*Hardisk* must be installed on a hard disk. It is a very complex and complete system essentially ported directly to the Mac from other systems. As such it makes very little use of the Mac interface. The program is fully menu driven with selections made by choosing a number. Although the manual is very detailed, it is also very complicated, with only a dozen or so added pages that make the program Mac specific.

*Hardisk* has flexible reports and statements in a wide variety of formats; flexible account numbering; huge numbers of accounts, transactions and profit centers, and detailed financial analysis. Modules integrate to prevent having to enter a transaction more than once.

The program is not easy to use. The lack of mousing facilities, windows, and a menu bar might be very difficult for a first-time user who is accustomed to the Mac interface. Nevertheless it is an excellent system for companies dealing with large numbers of accounts and transactions who need volumes of information all the time.

## Maccountant

*Maccountant* is a one-write system that claims to integrate General Ledger, Accounts Receivable and Accounts Payable on a single disk. In fact it provides only very basic ledger entries. Accounts Receivable provides aging of accounts but neither Payables nor Receivables allow for detailed records. *Maccountant* will track an invoice but it doesn't allow for detailed breakdowns of charges.

Accounts Payable is simply a check writer, with a few difficulties at that. Anything more than the name of the payee must be delimited by slashes and fit within the space allowed for the Description column. The people at Digital, Etc. are proud of the rigidity their system imposes because they feel that it forces the user to conform with Generally Accepted Accounting Principles (GAAP). However, the structure can be overpowering at times because there is very little flexibility.

There are also a few very interesting failings. Aside from problems with occasional crashes, *Maccountant* doesn't always recognize transactions for what they are. Paying an invoice already entered as a receivable sometimes creates an imbalance because the

values are added to one another. The journal will not close because the accounts are out of balance, but no amount of fiddling will change the total. (At one point, four entries that attempted to balance the error accumulated, although the system even indicated when they were supposed to be minused out. This left a total entry of \$500 for a single \$125 invoice and a journal that wouldn't balance.)

The manual is reasonably well written, but the printing (soft body text with very bold heads and highlights) makes it extremely difficult to read.

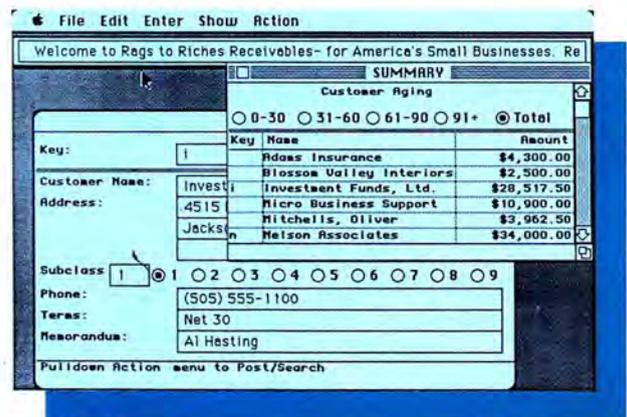
*Maccountant* tries to simplify computerized accounting by making it look exactly like the pencil and paper variety. It succeeds visually, but falls down because of lack of functionality and flaws in the programming. An improved version, tentatively called *Turbo Maccountant*, may be able to fix some of these problems.

## MacOneWrite

*MacOneWrite* from Sierra On-Line succeeds very well in providing a simple, one-write check writing system. At the time of writing, Cash Disbursements was the only module available. The system is very limited in functionality, although it does allow for entering more detailed information than *Maccountant*. Several nice (although perhaps not terribly valuable) features are included. The display looks exactly like a one-write ledger, including pegs along the left side of the ledger. When an amount is entered numerically for a check, the

(continued on page 114)

Fig.3: This appalling advertisement appears on the screen in each of the *Rags to Riches* modules on startup and can only be removed by choosing a menu item, Hide Message. On the positive side, note that accounts can have a macro key attached for quick access (COMMAND I automatically brings up data for Investment Funds, Ltd.).



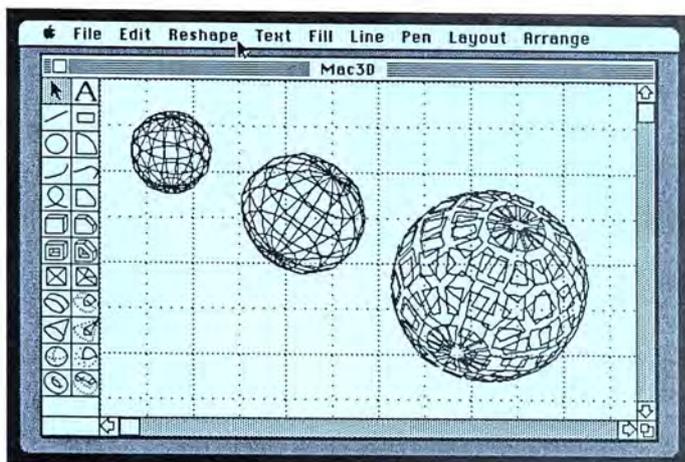
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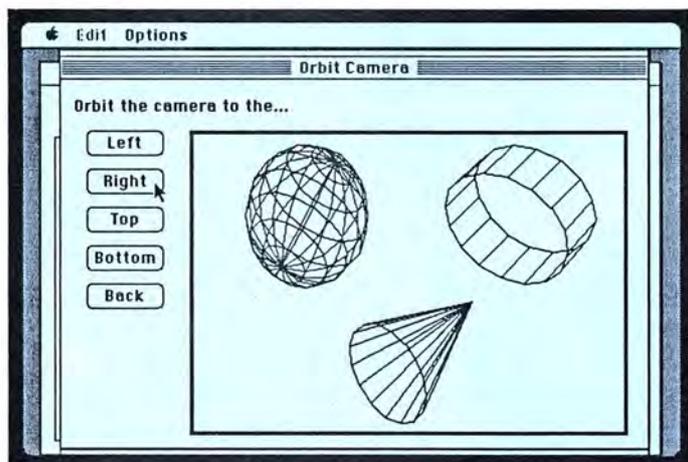


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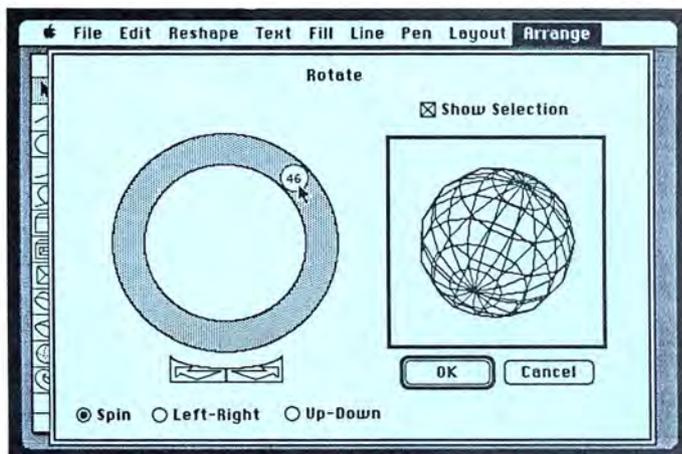
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# MacCharlie:

by Michael D. Wesley

THERE SEEMS TO BE SOMETHING inherently wrong with making a Macintosh look and function like an IBM PC. Just thinking about it fills one with horror and revulsion. An IBM compatible Macintosh? This is the stuff of which nightmares are made! ("Doctor, I was working along merrily in *MacPaint* when a sinister font took control of my screen. No matter what I did these strange, distorted letters kept saying 'Read fault error reading drive b:' — I'm sure there was a message in there somewhere, but it must have been in some strange forgotten language.")

There is such a clear choice to be made between the IBM PC and our beloved Mac. The PC is cold, unfeeling, unfriendly, and basically the enemy. It is the choice of those guys in stuffy white shirts and blue suits who make corporate decisions that protect their own behinds. The PC is anathema. It is Big Brother. It is the anti-Mac. Right? So there must be something wrong with hooking a box to the Mac to make it run IBM PC software. Right? Well . . . maybe not.

# WHERE IS THE SIN IN

*MacCharlie* is an IBM compatible computer without a monitor or full keyboard. *MacCharlie* plugs into the printer port of a Mac, and the ImageWriter connects to the back of *MacCharlie*. The two systems develop a symbiotic relationship, with the Mac receiving its power from *MacCharlie*, and *MacCharlie* using the Mac screen as a monitor. A keyboard extension with function keys and numeric keypad fits over the Mac keyboard like a cowl. The amalgam provides all the functions found on the somewhat eccentric IBM PC keyboard. *MacCharlie* has two disk drives and 640K of RAM.

The relationship between the two systems is a strange and fascinating one. *MacCharlie* is accessed by loading its application into the Mac and double clicking the *MacCharlie* icon found on the familiar desktop. A window appears with an 80-column by 25-line display. *MacCharlie* does a quick self-test of its RAM, then accesses the A (leftmost) drive looking for MS-DOS. When DOS is booted, a cryptic prompt, A>, indicates that the system is ready to go.

# SYNERGY?

**MacCharlie joins an IBM PC compatible computer to the Macintosh—  
Can they work together in peace?**

# WHERE IS THE SIN IN SYNERGY?

Although it may seem foreign to Mac users, this is all pretty standard stuff for those poor souls accustomed to using IBM PCs or compatibles. Except for a couple of things. Across the top of the screen is a menu bar with a little apple in the corner. The *MacCharlie* window has a scroll bar and a resizing icon. Hiding behind the window are a clipboard and a gray desktop. And there is an extra cursor that moves at the whim of a mouse. This means that you can run an MS-DOS application, like *Lotus 1-2-3* or *PFS:File*, and still have access to mouse selection, Cut and Paste functions and your favorite Mac desk accessories. (In fact, mouse operations take precedence over MS-DOS.)

This brings us back to the basic question: Why would anyone want to run MS-DOS applications on a Macintosh (unless he really enjoys self-flagellation)? The answer provided by *MacCharlie*'s creators, Dayna Communications, is that *MacCharlie* provides the best of both worlds. It recognizes the presence that BM has in offices but concedes style, ease of use, and specialized functions (a bit-mapped screen for one) to the Mac. *MacCharlie* even lets the two worlds communicate with each other on an intimate basis because it makes it easy to transfer files. Whatever the reasoning behind *MacCharlie*, and however wicked it may seem, working with the system is a kick in the pants.

## It Works!

*MacCharlie* functions in the same way as an IBM PC with the IBM monochrome monitor, which means it cannot handle any graphics. A program like *Lotus 1-2-3* will run for spreadsheet and database uses, but graphs cannot be displayed on the screen. The other great benchmark program for testing PC compatibility, *Microsoft Flight Simulator*, will not run on *MacCharlie*.

Even so, with the exception of a few quirks, *MacCharlie* proved to be remarkably compatible with all the MS-DOS software we could round up. The 10 function keys on the left of the now huge keyboard performed exactly the way they were supposed to. So did the 18 keys that form the numeric



TODD WEINSTEIN

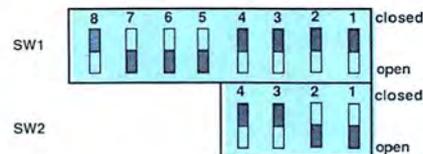
**MacCharlie piggybacks off the Mac monitor and keyboard. The Mac desktop, including desk accessories and Clipboard are always present behind MS-DOS.**

keypad on the right of the *MacCharlie* cowl. Internal operations such as loading and saving files, often the bane of "compatible" machines, were all handled smoothly.

Perhaps most amazing was the ease of printing. For those uninitiated to the world of MS-DOS, application disks must ordinarily be configured in detail for the type of printer being used with the system. The correct printer drivers must be installed for the software to be able to print. Knowing this, we were stunned to watch *PFS:File*, *Microsoft Word* (MS-DOS), and a vari-

ety of other unconfigured programs printing directly to the ImageWriter. The results were a little strange at first, but as soon as we changed the DIP switch settings on the ImageWriter (see Fig. 3), most things came out normally. Text was printed in the native ImageWriter font, with boldface, underlining, and other highlights selected in the software included.

There were, as mentioned, a few quirks in the operation. In some applications, the keys would not repeat when held down, even though they should have. In every instance, the MS-DOS applications were very slow, especially when the screen had to be redrawn. Odd bits of graphic characters appeared on the screen from time to time for no apparent reason. Even though *MacCharlie* has a built-in fan, the heat it generated after a few hours' work was extraordinary. And the system crashed off and on, perhaps because the Mac software still has a few bugs (an updated version was expected to ship October 1st). Or maybe the Mac just overDOSed.



**Fig. 3: To print directly to the ImageWriter with *MacCharlie*, the DIP switches inside the printer must be set to these positions. If printing is still a problem, check the number on your ImageWriter cable. The first 6000 printers had cable #5900121. *MacCharlie* is designed to work with the later cable #5900169, although updated software should correct any problems.**

*(continued on page 143)*



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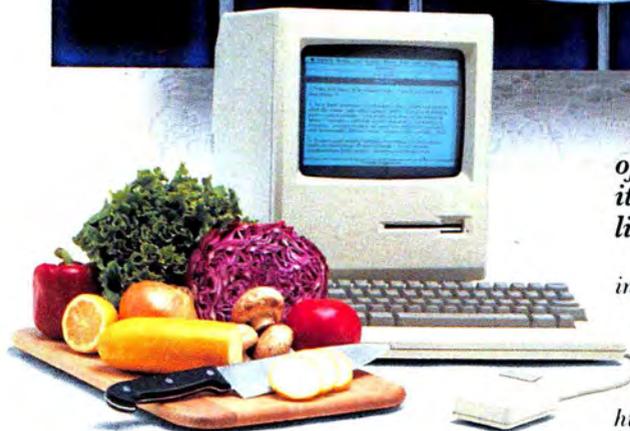
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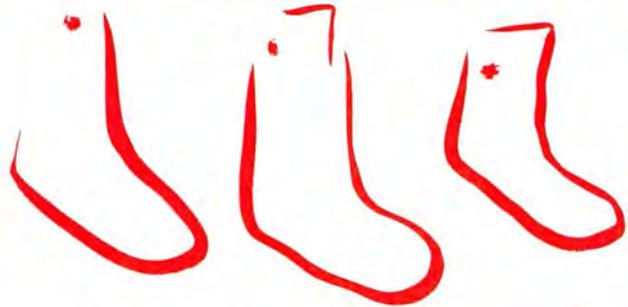
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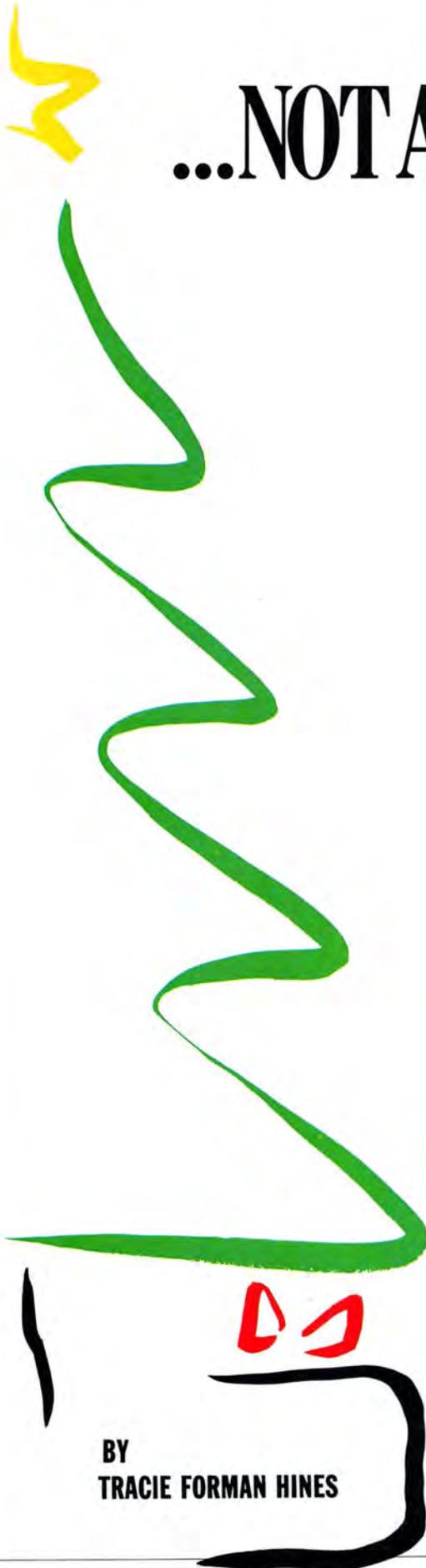
*ideas sure to*

*please that Mac*

*lover in your life.*

STILL STUCK OVER WHAT TO GET that Mac user in your life for the holidays? Shopping for holiday gifts is easier than you think when you think Mac. There are so many fun and useful items in this year's holiday goodie bag that it will be easy — and affordable — to please your Mac fan friends. Here's *MacUser's* first annual holiday shopping guide for your shopping (or hinting) pleasure.

# NOT EVEN A MOUSE.



BY  
TRACIE FORMAN HINES

# “... NOT A CREATURE WAS STIRRING,”



T-Shirts designed with Underware Ribbon



Kensington's Macaccessories Products



Doss' Tosh



Moustrak on Mouse Mover



MacTurboTouch



MacNifty Joystick Adapter

## Shirting the Issue

Artistic types will love having the chance to put their pictures on to T-shirts. A number of manufacturers offer ImageWriter ribbons that print on fabric. Some are packaged with a virtual rainbow of transfer ribbons, while others offer a basic black ImageWriter cartridge and an assortment of colored transfer pens.

Among those on store shelves in time for the holidays are Sharp's heat transfer ribbons (Sharp Color, PO Box 1442, Lancaster, OH 43130; \$12 each), the *T-Shirt Factory*; (\$54.95 for a complete set of color ribbons, from I/O Design, 19 Lafayette St., Rumson, NJ 07760), *Draw 'N' Wear Rainbow Ribbons* (\$14.95, from Frontrunner, 36 California Ave., Suite 712, Reno, NV 89509) and the *Underware Ribbon* with five Colorpens (\$24.95, from Diversions, Inc., 1550 Winding Way, Belmont, CA 94002). "Regular" colored ribbons that don't print on fabric are available at most Macintosh computer stores as well, averaging \$5-\$10 apiece.

## An Ounce of Prevention

Power surges can fry microprocessors faster than you can double-click, and surge suppressors are the best insurance. Kensington's *Macaccessories Control Center* combines surge suppression, static protection, line noise filtering and a three-outlet power strip with switches for each outlet.

The Macaccessories line also includes *Macaccessories Mouse Cleaning Kit and Mouse Pocket*, packaged with a Mouse Pocket, 25 foam swabs, 25 cleaning cloths, a bottle of cleaning fluid and a can of compressed air. To keep disk drives in peak condition, the *Macaccessories Disk Drive Cleaning Kit* offers a reusable cleaning cartridge, a bottle of cleanser fluid and 12 cleaning disks. The Control Center is \$99.95; Mouse Cleaning Kit, \$24.95, and Disk Drive Cleaning Kit, \$29.95. From Kensington Macaccessories,

Kensington Microware Ltd., 251 Park Avenue South, New York, NY 10010.

Of course, theft is the ultimate threat to any computer. Doss Industries provides a secure solution with the *Tosh*, a steel base that can be secured to the Mac and a desk without voiding the warranty, featuring room inside to store peripherals. The unit is vented and it doesn't block the reset switch, and an added bonus lets users tilt the computer for maximum viewing comfort. The *Tosh* costs \$149.95 from Doss Industries, 1224 Mariposa, San Francisco, CA 94107. Doss also offers a 360-degree swivel plate (\$35), an adhesive system for those who don't like bolting their computers down (\$15), and security devices for peripherals and a second disk drive (\$15-\$40).

## Of Mice and Men

Besides merely freeing up desk space, mouse pads help keep a controller's innards from accumulating movement-clogging dust and debris. A mouse pad like the *Moustrak* pictured here (\$7.95 to \$10.95 from Moustrak Inc., 3047 St. Helena Highway, St. Helena, CA 94574) will free up desk space, help keep a mouse in good working order AND leaving space in your budget for an extra — for yourself!

Magnum Software's *Mouse Mover* snaps on to the bottom of the mouse like a roller skate, freeing it up to glide over desk or mouse pad with ease. 99 tiny ball bearings allow for fluid motion. Available from Magnum Software, 21115 Devonshire Street, Suite 337, Chatsworth, CA 91311; \$19.95.

*MacTurboTouch* (\$129, Assimilation Process, 485 Alberto Way, Los Gatos, CA 95030) is a stationary track ball that functions as a mouse without the movement. It's fast, sturdy, and a great alternative to the standard Mac control system.

Those who still can't get used to the mouse will jump for joysticks when they un-



**Personics Headset**



**QuickStick**



**The Easel and the Pocket Pak**



**Dust covers by CompuCover and MacAttire**

wrap Kraft's *QuickStick* (\$79.95 from Kraft, PO Box 1268, Vista, CA 92083), a slim-style Kraft joystick with a light, square base and trim controls. The *MacNifty Joystick Adapter* (\$44.95 from Kette Group International, 13895 Industrial Park Blvd., Minneapolis, MN 55441) comes with a tiny, palm-sized joystick with two action buttons on its sides.

People who do a lot of typing don't like to take their hands off the keyboard to mouse up to the menus. Personics has a solution to the problem: Use your head! Their headset runs through an adapter to emulate the mouse's movements. The cursor is controlled by the user's head movements. Available for about \$150 from Personics Corp., 2352 Main St. Bldg. 2, Concord, MA 01742.

## The Story on Storage

Innovative Technologies' *Easel* and *Pocket Pak* make storing and transporting disks a breeze. Available in bright red or blue nylon, the *Pocket Pak* (\$13.95) provides lightweight protection for six disks. The *Easel* (\$19.95) stores twenty disks and folds up on itself via a velcro strip to form a pyramid for fast display. Both are available from Innovative Technologies, 5731 La Jolla Blvd., Suite D, La Jolla, CA 92037.

Several companies offer attractive and functional dust covers for the Mac and its peripherals. CompuCover's Dust Covers color coordinate with the Mac's basic beige, with sturdy, static-free plastic covers available in sets or individually. The deluxe Mac set comes with monitor, keyboard, and mouse covers for \$13.95; without the mouse cover, \$12.95. Individual covers for the monitor (\$9.95), keyboard (\$6.95) and external disk drive (\$5.95) are available from CompuCover, PO Box 310, Mary Esther, FL 32569.

Know a Mac user with a colorful personality? He or she can protect the Mac in high

style with *MacAttire*, a veritable wardrobe for the machine and its peripherals. Choose from navy, burgundy or silver gray with a stylish coordinating ribbon trim. The covers are made of nylon (machine washable and dryable) with an anti-static finish and waterproof, fire-retardant polyurethane coating. *MacAttire* includes covers for the Mac (\$21.95), standard ImageWriter (\$15.95), wide ImageWriter (\$16.95), external drive (\$7.95), Mac keypad (\$7.95), Macintosh XL (\$26.95), LaserWriter (\$23.95) and an eight-disk wallet (\$11.95).

## Call It Home

People who spend a lot of time watching their Mac screens will appreciate a *MacTilt* ergonomic stand, which elevates the computer a few inches off the desk and tilts to accommodate nearly any viewing position. Available from Ergotron (1621 E. 79th Street, Suite C133, Minneapolis, MN 55420; \$99.95), it's a boon for anyone who's ever suffered with the dreaded "Mac-Back" cramp.

If desk space is at a premium for your favorite Mac user, *MacStation* (from The MicroRain Corp., PO Box 96008, Dept. 150, Bellevue, WA 98009; \$95) organizes clutter and still lets the computer breathe. Three pieces assemble easily to provide space for the ImageWriter on top, plus storage shelves for a drive, mouse, and disks.

The mouse gets a house of its own with the *Mouse Pocket*, a small plastic holding case that attaches to the Mac's side with a strip of velcro. For a mere \$9.95, you can give Mac owners the gift of protection against spills, dust, and mouse-threatening mishaps. Available from Kensington Accessories, Kensington Microwave Ltd., 251 Park Avenue South, New York, NY 10010.

## The MacReader

Two must-haves for any information-hungry Mac owner are *The Complete MacIn-*



**MacTilt**



**MacStation with mouse in Mouse Pocket**

# "...NOT A CREATURE WAS STIRRING,"



**Thunderscan Digitizer**



**MacNifty Stereo Music System**



**The Mac Along and Mac Along Plus**

tosh Sourcebook (by Doug Clapp and Pat Ryall; Info Books, PO Box 1018, Santa Monica, CA 90406; about \$20) and *The Book of Macintosh Software* (by McCroskey, Mellin and Ritz; Arrays Inc. Book Division, 6711 Valjean Ave., Van Nuys, CA 91406; \$19.95). The former is an indispensable guide to using the Mac most effectively, while the latter provides a comprehensive overview of what's out there in the Mac software marketplace.

*Shatter* is an adult comic book actually drawn and designed on the Mac by artist Mike Saenz. Its genesis began with the images in the movie *Blade Runner* and grew in fantasy and dimension from there. A six-issue subscription to the bi-monthly costs \$10 a year (\$11 Canadian) and can be obtained by writing to First Comics, 435 North La Salle Street, Chicago, IL 60610.

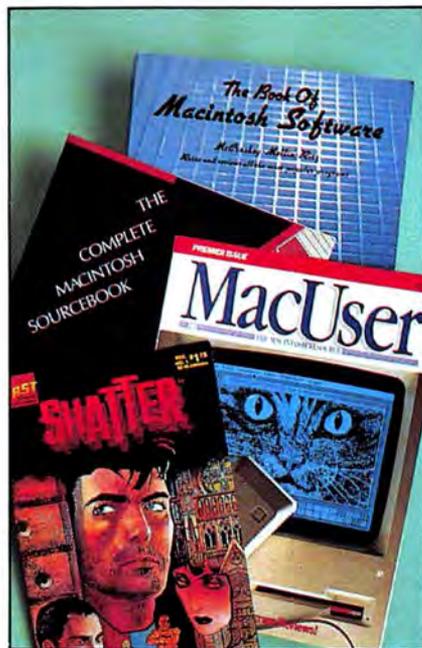
A gift subscription to *MacUser* lets that Mac fan in your life know you care enough to send them the magazine with the most news, reviews, and features about their favorite micro. See the subscription form enclosed elsewhere in this issue.

## Music and Art

What home publishing operation would be complete without a digitizer? *ThunderScan* (Thunderware, 21 Orinda Way, Orinda, CA 94563; \$229), pictured here, can digitize any photograph into the Mac's memory quickly and easily.

The Mac also has great sound potential, but it's not realized when listening to music compositions through its tiny speaker. The *MacNifty Stereo Music System* (\$79.95, from Kette Group International, 13895 Industrial Park Blvd, Minneapolis, MN 55441) simulates stereo sound by splitting highs and lows between its two speakers. It plays Macmusic the way it was meant to sound.

With the *Deluxe Music Construction Set* (Electronic Arts), you don't have to be a musician to create beautiful tunes with



**A Mac owner's must-haves**

ease. Features include easy entry and instant playback, all standard musical notations, and realistic instrument sounds.

## Porto-Mac

The *Mac Along* (\$29.95, from Comprotek Services, 8101 Cameron Rd., Suite 105, Austin, TX 78753) slides on to the side of the computer, providing storage space for all other Mac peripherals. It makes a handy alternative to heavy luggage for those who take the Mac along on short hops. The *Mac Along Plus* (\$89.95) adds surge protection and line filtering via built-in outlets and a power switch on the side of the unit.

The Mac leaves home in style in its sturdy, padded carrying case. The one pictured is the *Zip Bag Hard Shell* by Hybrid Cases, which features sturdy, shock-resistant ethafoam padding covered by waterproof, tearproof cordure. The case has room for the Mac, keyboard, mouse, external drive, and disks, with a sturdy shoulder strap attached for easy toting. Available from Hybrid Cases, 1121-20 Lincoln Avenue, Holbrook, NY 11741 for \$105 retail.

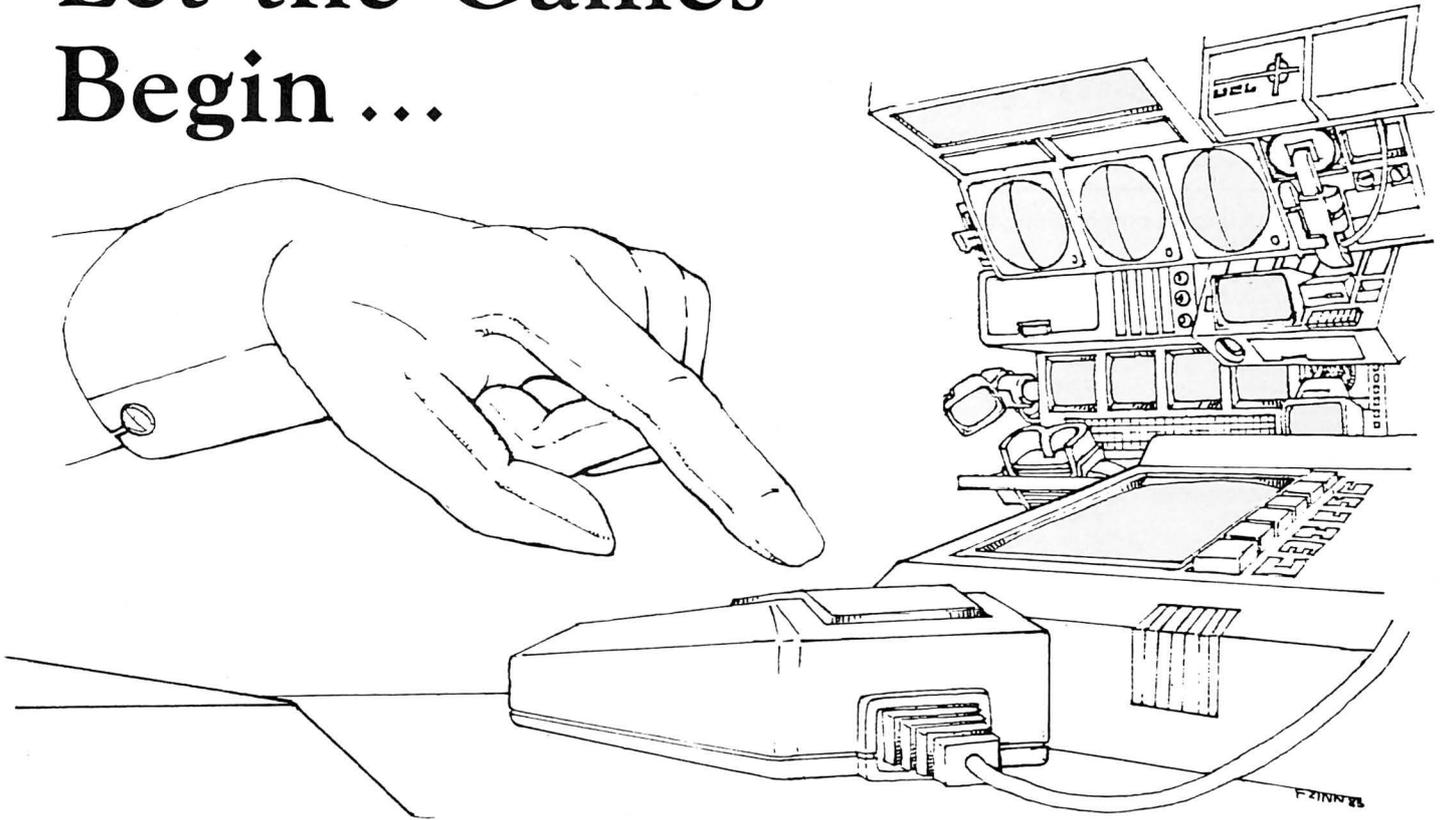
There are so many good gift ideas for a Mac owner that it's hard to know where to begin. About the only thing missing from the gift list lineup is an electronic partridge in a pear tree. 🐦



**Hybrid Cases' Zip Bag Hard Shell carryall**

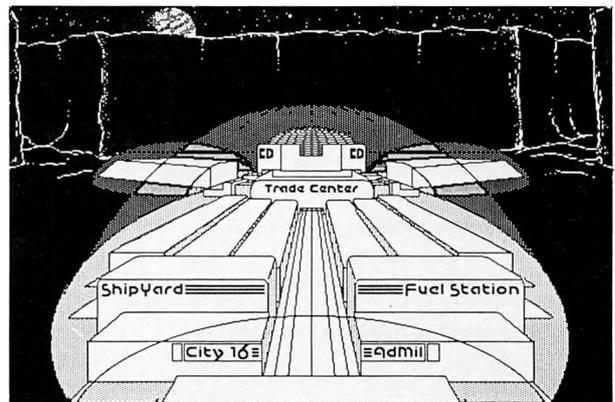
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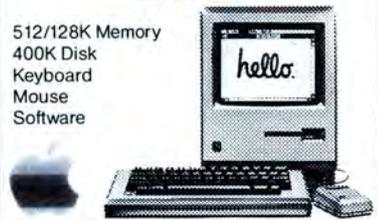
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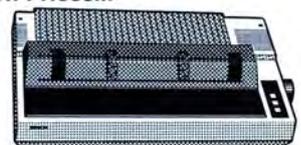
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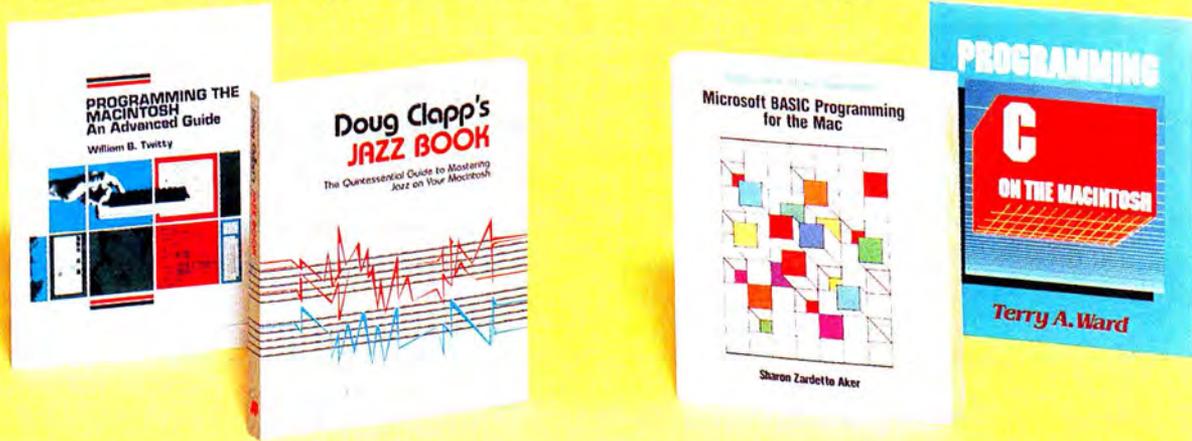
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# IS IT JUST TEXT?

BY STEVEN BOBKER

**Professional  
typesetting and page  
makeup combine in a  
state-of-the-art  
PostScript generator.**

## SPACE.

Typography is space. Space around shapes we call letters. Space between groups of letters we call words. And space in, through and around groups of words we call writing.

The advent of the typewriter began to take away from the importance of space, for the letters could only fit into allotted slots and the lines of type could only follow other lines by fixed spaces. Computer word processing both aggravated and ameliorated the situation.

The fonts or actual letters could now be varied to create new beauty, but the spatial relationships of the letters to

each other became even more firmly locked. And then computerized word processing began to dominate areas that had been traditionally serviced by professional typographers. For its cost was that much lower and the output was, well, "not that bad." For the money, it could be lived with.

Then came Macintosh, with its bit-mapped screen and output. Bit-mapping wasn't new, what was new was the cost and the ease of use that Mac provided. Now letters were no longer restricted to fixed size characters. Now styles were no longer restricted to a few fonts. And now the words did not have to fall into their neat and firmly ordered rows.

Applications were quickly developed to allow many sizes of type to be mixed with graphics. Very precise positioning of each element became possible. And then the LaserWriter appeared.

The LaserWriter provides roughly four times more resolution than either the Mac screen or the ImageWriter. So letters and words can be placed much more accurately than ever before on a microcomputer.

Still, it wasn't quite enough. Sure it was close. But quality printing isn't a

game of horseshoes. Almost doesn't count, at least to art directors and other printing pros.

As good as the LaserWriter is, its type output is visibly inferior to commercial typesetting. And every art director can see that, so a tool that produces files that can drive both LaserWriters (for proofing) and higher resolution PostScript-compatible output devices (for final output) is crucial.

How can that be done? How can the files that are produced by an ordinary word processor be used on a completely different device? The answer is PostScript, a new language that can be generated on any computer and read and used by both LaserWriters and higher resolution devices.

PostScript is a page description language that has many supporters in the printing trades. It's a definite front-runner in the race to be the standard language of the next generation of output devices. Right now it can be used with machines as crude as the 300 dot-per-inch LaserWriter and as sophisticated as Allied Linotype's Linotron 404 with its 2,400 dot-per-inch resolution.

The same PostScript files will drive

both machines. And PostScript files are simple ASCII text files, no high bits, no control characters, just text. That means that virtually all computers can transmit and receive them using ordinary phone lines and simple communications software.

So the files that users create on their Macs can be "proofed" on a LaserWriter and then transmitted to a shop with a Linotron. The highest quality type can now be set on a Mac and be available within minutes, if necessary.

*Just Text* is a program designed to solve the PostScript problem. It is primarily a word processor, but not the Mac standard what-you-see-is-what-you-get word processor. That's simply because the Mac screen can't begin to approach the resolution of *Just Text* in placing type.

*Just Text* uses embedded codes very similar to the long-established TTS codes that are rather intuitive and easy to learn. And the results will soon convert even the most hardened skeptics.

The manual covers the codes by both description and example, but there are a few surprises and undocumented (at least for the moment) features. For example, there are two commands, {sb} and {eb} that are not documented. A careful reading of the example documents in the manual indicates that these codes mean "start box" and "end box." Placing {sb} at the beginning of a text block and {eb} at the end creates a ruled box around the text block.

*Just Text* codes are also powerful positioning and layout tools—*Just Text* can produce finished, ready-to-print pages that include graphics right on the page. It's a complete tool. Let's look at its outstanding features in more detail.

## Typesetting 101

Real typesetting revolves around four basic parameters: font, point size, leading (space between lines) and measure (width of the line). The basic units are the point and the pica.

The Mac and PostScript both use 1/72nd of an inch as the point. Officially the point is slightly smaller but that doesn't matter as long as the system is consistent, and using 1/72nd of an inch allows "nice" interrelationships with inches. An inch is exactly 72

points, very easy to work with. All measurements in *Just Text* are in picas or points.

All page elements can be positioned on a page to the nearest point in both the horizontal and vertical directions. And if required, ruled boxes can be generated around text blocks.

The LaserWriter has thirteen built-in fonts (Times, Helvetica and Courier, each in regular, italic or oblique, bold and bold italic or bold oblique, as well as a special Symbol font). For the moment, that's it. Only these fonts can be used by *Just Text*. New fonts should become available by January 1986, and *Just Text* will support all new LaserWriter fonts as they are released.

The Symbol font can be used the same way any other Mac font is used or its characters can be used anywhere using a special *Just Text* command. Users will find a chart of the entire font and the character codes required in the manual.

## Basic WP

All real word processors word wrap. That is, that when the end of a line is reached on the screen the word processor takes care of moving any words that don't fit to the next line, and the user doesn't (indeed, shouldn't) hit a carriage return. Carriage returns or quad left (a traditional typesetting term) are only used to mark the ends of paragraphs.

*Just Text* uses the quad left command to indicate the end of paragraphs. Users can either type the TTS quad left code or generate it using the Enter key which functions as a minimacro. Lines can be set centered or flush right using similar commands (quad center, quad right). And a line (or single word on a line) can be forced to fill the entire measure with a "force justify" command. That's particularly useful for headlines and decorative effects (see Figure 1). *Just Text* doesn't support user-defined macros in this release (1.09) but that facility is planned for the near future.

Traditional typesetting assumes that there will be a variable amount of space between words, and leaves it up to the output device to determine the exact amount of space necessary.

Still, there are times when fixed

spaces are required. *Just Text* users have a full complement of spaces on call. They can have em spaces (spaces equal to the type's height—an em in a 10-point typeface is 10 points wide), en spaces (½an em), thin spaces (slightly larger than¼ em) and unit spaces (¼ an

## THE LASER TOOLS

*Just Text* comes with four utility programs that will make working with graphics a pleasure. The four are *Paint to PostScript*, *ThunderScan to PostScript*, *MacVision to PostScript* and *EditArt*.

The first three are similar in that they take a particular graphics file (each is designed for one type only) and convert it to a PostScript file.

Why bother to convert graphics to PostScript? Well, these PostScript files can then be incorporated in any *Just Text* or PostScript file or, since they are plain ASCII text, transmitted by phone lines to any other computer. And they can be enlarged, reduced or otherwise modified.

In fact, *ThunderScan* and *MacVision* files produce good halftone type output when converted to PostScript and printed. All the gray information that these documents pick up when they are created is retained. The Mac's screen, the ImageWriter and *MacPaint* can't show and print all the information that *Just Text* can.

Be aware however that PostScript is a verbose language and something like a full-screen 512 by 342 pixel *MacVision* document with 256 levels of gray will occupy roughly 350K when converted to PostScript! A hard disk is really nice when working with PostScript graphics files.

The final utility in the Laser Tools is *EditArt*. This is a tool that allows precise control over the page position, scaling and cropping of the graphics files that have already been converted to PostScript. Images can also be rotated freely.

A particularly good use for *EditArt* is to take an image that has been created at some enlargement (*ThunderScan* is particularly adept at this) and print it out on the LaserWriter at a reduction. The quality will be extraordinary—none of the obvious problems *MacPaint* has with such scaled work.

The Laser Tools are easy to use which is fortunate since they are not documented. At all.

# IS IT JUST TEXT?

em). Unit spaces come in both + and - sizes so letters can be spaced out or run together (kerned).

And if that's not enough there are two user-specifiable fixed space commands, one allowing the placing of  $\pm 16$  points of space in whole points and the other (the microspace) allowing the same  $\pm 16$  points in increments of 0.001 points. Users will have to use 300 of these microspaces to even be able to see a slight difference in LaserWriter output!

The microspace is a feature unique to *Just Text* and is much finer than is necessary for use on the LaserWriter. It was designed to provide precise positioning control on 1000 dot-per-inch machines.

## More Features

Professional quality typesetters must be able to produce justified, correctly hyphenated type. No current word processor other than *Just Text* can perform such functions. *Microsoft Word's* output can be justified, and it allows "soft" hyphens, but they are user inserted. *Just Text* will justify and hyphenate automatically, if commanded to. The hyphenation rules *Just Text* uses are those of the popular TEX type creation program. There is also a user-modifiable exception dictionary, so frequently used words that don't follow the rules can be handled. While *Just Text* usually gets its hyphens right, hyphenation is still one of the weaker parts of the program.

Indentation, another staple feature of word processors, can be treated in several ways. Blocks of text can be indented a set number of picas from either left or right or both. Hanging indents, where the first line of a paragraph is set and then all other lines are indented a specific amount, are controlled by a single command. There is also a hanging bullet command that sets a bullet (in a typesize 4 points larger than the size being used so it looks good), followed by a fixed en space, and then the text is set on a hanging indent (see Figure 2).

Correctly sized fractions are easy to set. The {fr} command allows a choice of any denominator and numerator. Superscripts and subscripts are also supported, making complex mathe-

## THE TEXT TOOLS AND OTHER GOODIES

One of the main drawbacks in *Just Text* is its text creation and editing window. Knowledge Engineering is aware of that and has provided a set of programs to help users. These programs translate standard formatted *EDIT* or *MacWrite* files into fully coded *Just Text* files.

Since both programs work quickly and accurately, files can be created in *EDIT* or *MacWrite* without a care for the TTS codes. These programs will add the necessary codes. Of course, the fine tuning that users would normally add when working directly in *Just Text* will be missing, but these programs are a good starting point and real eyesavers.

*ConcatFiles* and *SplitFiles* do just what their names imply. They take

files and either join or split them as required. That's important because the standard text editing window of *Just Text* is based on Macintosh's TextEdit function, restricting file sizes to 32K. Thirty-two K isn't that much when using graphics or some of the special (and extremely verbose) features of PostScript.

Users will also find handy small programs to collect patterns and icons from disks and programs to print both envelopes from files of names and addresses and custom disk labels. The envelope printer is particularly nice since, while it works in the LaserWriter's Manual Feed mode, it disables the instruction sheet that normally is printed in Manual Feed mode!

matical settings possible, albeit tedious.

Kerning (the ability of a typesetter to squeeze letters together or force them apart) is sometimes used on body (text) type to make it appear denser or to squeeze more material into a particular space. Headlines and display type are almost always kerned so that they look their best. *Just Text* can kern either letters or whole blocks of type with equal ease (see Figure 3).

Two kinds of tabs are supported—typewriter tabs and typesetting tabs. Typewriter tabs are simply places the cursor moves to when the Tab key is pressed. Typesetting tabs are more flexible. They allow style changing (e.g., bold or italic) and permit items to be flush left, flush right or centered in the tab column. While many word processors allow some flexibility none have the total flexibility of *Just Text*.

Most word processors don't deal

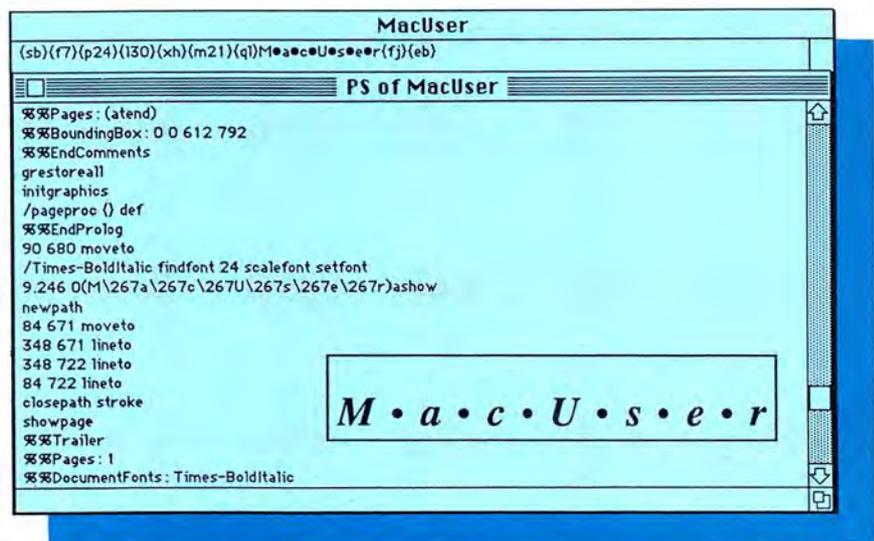


Fig. 1: The single line of code at the top generates a PostScript program, most of which is shown below (only some header lines are missing). This program forces the word "MacUser" to be spread out (force justified) over the measure or width (here 21 picas—{m21}). The final output, which includes the box rule, is superimposed on the PostScript program. This example shows how verbose PostScript is.

```

Hanging Indent w/Bullets
(i17)(ir7)(p9)(110)Our study of audience demographics for (f6)Pac-Man: The Movie(f4) indicates that, of
those attending:(q1)(a6)
(hb)Half thought they were seeing (f6)Star Wars,(f4) and apparently entered the theater by
mistake;(q1)(a6)
(hb)A quarter were feeble-minded 7(nd)11 year-olds;(q1)(a6)
(hb)The balance apparently cannot read, and failed to fill out the questionnaire.(q1)(a6)

```

Our study of audience demographics for *Pac-Man: The Movie* indicates that, of those attending:

- Half thought they were seeing *Star Wars*, and apparently entered the theater by mistake;
- A quarter were 7–11 year-olds;
- The balance apparently cannot read, and failed to fill out the questionnaire.

**Fig. 2:** The code at the top generates the results shown below. The bullets used on the indented material are set in a size 4 points larger than the text size (bullets: 13 point, text: 9 point). This is done automatically, since the bullets in the laser fonts are unattractively small.

very well with page makeup and all the currently available page makeup programs have only minimal word processing ability. *Just Text* lets users create any page layout desired, including multiple column formats. Layout will not be as simple as the best makeup programs allow and will certainly not be intuitive, but great precision is easily obtained and the overall process is straightforward. The overall layout should be planned on paper before entering it into *Just Text*.

## Output . . . What It's All About

After a document has been created it must be output. Getting hard copy is a two-step process.

The first step is to convert the document to PostScript. The PostScript compiler works like any ordinary

language compiler, providing clear and appropriate error messages if there are errors in the coding. The compiler is still not perfect and if it finds some errors there's the chance of a crash. That means that all files must be saved before using the PostScript compiler.

After a file is converted to PostScript, it can be saved as a PostScript file or sent straight to an output device (usually the LaserWriter).

Printing is incredibly quick—no more print dialog boxes—since PostScript is the LaserWriter's language. The selections normally made in a print dialog, such as number of copies, are handled by simple *Just Text* commands.

*Just Text* (and its accompanying tools) has the power to please the most discriminating type users. If there's no margin for error in your output, this is the tool. ☐

It's possible that the Mac user is such an individualist that he wants to "wear" (metaphorically speaking) his computer on his sleeve showing all the idiosyncratic and individualist aspects of his machine, and, therefore, his personality.

Note the attitude towards the IBM PC, in contrast. The IBM PC is the machine for the corporate drones all looking and acting the same. If they want to do something to their machine, they can do it inside the machine in a slot. They keep it hidden within.

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## JUST TEXT: REPORT CARD

Overall Rating \*\*\*\*\*

Follows Mac Interface:	***	the price.
Printed Documentation:	***	Best Feature: The ease of total spatial control of the output.
On-Screen Help:	None	Worst Feature: The editing window, with its tiny (9-point) type.
Performance:	*****	List Price: \$195. Requires 128K, AppleTalk and a LaserWriter. 512K Mac and second drive (or hard disk) recommended.
Support:	*****	Published by Knowledge Engineering, GPO Box 2139, New York, NY 10116. (212) 473-0095.
Consumer Value:	****	

Comments: The only real choice for professional quality typesetting on the LaserWriter and other PostScript-compatible printers. The Laser and Text Tools alone are worth

**Fig. 3:** Kerning whole blocks can lead to odd-looking results. The top block is set at -500 microspaces of kerning. (500 microspaces is 1/2 point or 1/44th of an inch.) The letters almost touch adjacent letters. The middle block is not kerned. This is the space the font's designer planned to have between the letters. The bottom block is set at +500 microspaces of kerning between the letters. When type is set to a narrow measure, or width, like here, some kerning can make the material look more attractive. However, there is a cost in total space used. The first two blocks use considerably less space than the bottom one. The type is the same size in each block. However, positive (+) kerning does make type look bigger, while negative (-) kerning makes type look smaller.

# Magnificent

↙ denotes Mac XL compatibility.

## SOFTWARE

### Altsys

↙Fontastic (create your own fonts) ..... \$35.

### Ann Arbor Softworks

Animation Toolkit 1 ..... 31.

### Apropos

Financial Planning (reqs. Multiplan) ..... 51.

Investment Planning (reqs. Multiplan) ..... 51.

### Arrays/Continental

Home Accountant ..... 52.

### Assimilation

↙Mac-Tracks ..... 22.

↙Mac-Memory-Disk ..... 22.

↙Mac-Spell-Right ..... 69.

### ATI

Teach Yourself Multiplan ..... 29.

MacCoach Training ..... 39.

Jazz Training ..... 39.

### Batteries Included

The Mac BatteryPak ..... 27.

*Eight powerful desk accessories.*

### Blyth Software

↙Omnis 2 (requires external drive) ..... 139.

↙Omnis 3 (requires 512k, external drive) ..... 249.

### Borland International

↙Sidekick (unprotected) ..... 45.

### BrainPower

↙PowerMath ..... 52.

*Symbolic equation solver, requires 512k.*

↙StatView (statistics package) ..... 99.

### Casady Company

↙Fluent Fonts (two-disk set) ..... 29.

### Central Point Software

Copy II Mac ..... 20.

### Chang Labs

Rags to Riches Ledger ..... 105.

Rags to Riches Receivables ..... 105.

Rags to Riches Payables ..... 105.

### Computer Software Design

↙MacLion (relational database) ..... 188.

*External drive recommended.*

### Creative Solutions

↙MacForth - Level 1 ..... 77.

↙MacForth - Level 2 ..... 128.

### Creighton Development

↙MacSpell+ (requires 512k) ..... 55.

### DataFood

↙DrawForms (requires MacDraw) ..... 30.

↙MacForms (requires MacPaint) ..... 42.

### Desktop Software

↙1st Port (communications software) ..... 48.

↙1st Merge ..... 48.

↙1st Base ..... 95.

### Digital, Etc.

↙Maccountant ..... 139.

### Dilithium Press

PC to Mac & Back ..... 79.

### Dow Jones

Straight Talk ..... 45.

Spreadsheet Link ..... 56.

Market Manager PLUS ..... 109.

### Dreams of the Phoenix

↙Day Keeper Calendar ..... 29.

↙Mouse Exchange BBS ..... 29.

↙Quick & Dirty Utilities Vol. 1 ..... 29.

↙Twelve-C Financial Desk Accessory ..... 29.

### Electronic Arts

Financial Cookbook ..... \$32.

### Enterset

↙Quickpoint ..... 29.

↙Quickset 2.0 ..... 29.

↙Quickword ..... 32.

### 1st Byte

Smoothtalker (version 2.0) ..... 57.

Speller Bee ..... 42.

KidTalk ..... 42.

*"Talking notebook" helps improve reading and writing.*

### Forethought

↙Typing Intrigue ..... 29.

↙Factfinder ..... 84.

↙FileMaker ..... 108.

### Great Wave Software

The Art of Fugue (Bach) ..... 12.

Instrumental Favorites ..... 12.

ConcertWare+ ..... 39.

### Harvard Associates

MacManager (business simulation) ..... 29.

Desktoppers (new desk accessories) ..... 29.

### Hayden Software

↙DaVinci Buildings ..... 29.

↙DaVinci Interiors ..... 29.

↙DaVinci Landscapes ..... 29.

↙DaVinci Building Blocks ..... 46.

↙DaVinci Commercial Interiors ..... 114.

↙Art Grabber with Body Shop ..... 29.

Turbo Turtle ..... 35.

I Know It's Here Somewhere ..... 35.

Musicworks ..... 45.

Hayden:Speller ..... 45.

Score Improvement System for the SAT ..... 57.

Videoworks ..... 57.

Ensemble ..... 155.

### Hayes

↙Smartcom II (communications software) ..... 86.

### Hippopotamus Software

Hippo Computer Almanac ..... 21.

↙Hippo-Lock (file security program) ..... 68.

Hippo-C - Level 1 ..... 79.

Hippo-C - Level 2 ..... 219.

### Human Edge Software

↙Mind Prober ..... 26.

↙The Communication Edge ..... 99.

↙The Management Edge ..... 127.

↙The Sales Edge ..... 127.

↙The Negotiation Edge ..... 148.

### Ideaform

↙MacLabeler (print disk labels) ..... 29.

### Innovative Data Design

↙Paste-Ease (requires MacPaint) ..... 35.

↙MacDraft (requires 512k) ..... 139.

### Kensington

↙Graphic Accents ..... 29.

↙Professional Type Fonts for Text ..... 29.

↙Professional Type Fonts for Headlines ..... 42.

*Requires 512k.*

### Layered

↙Front Desk ..... 77.

### Linguist's Software

↙Tech (1000 different symbols) ..... 69.

↙MacCyrillic ..... 69.

↙MacKana/Basic Kanji ..... 69.

↙MacKorean ..... 69.

↙SuperGreek ..... 69.

↙SuperHebrew (right to left) ..... \$69.

↙SuperFrench/German/Spanish ..... 69.

↙SuperGreek/Hebrew/Phonetics ..... 119.

### Living Videotext

ThinkTank 128k ..... 75.

↙ThinkTank 512k ..... 125.

### Lotus

↙Jazz (requires 512k, external drive) ..... 375.

### Magnum

↙McPic - Volume I ..... 29.

↙McPic - Volume II ..... 29.

↙The Slide Show Magician ..... 35.

### Manhattan Graphics

↙Ready Set Go 2.0 (requires 512k) ..... 65.

### Mark of the Unicorn

Professional Composer (reqs. 512k) ..... 249.

### Microsoft

Entrepreneur ..... 32.

Learning Multiplan and Chart ..... 38.

Chart ..... 74.

Logo ..... 75.

Basic (version 2.1) ..... 89.

Multiplan ..... 107.

File ..... 112.

Word ..... 112.

Fortran ..... 195.

Business Pack ..... 342.

*Includes Word, File, Chart, and Multiplan.*

### Miles Computing

↙Mac the Knife - Volume 1 ..... 21.

↙Mac the Knife - Volume 2 ..... 25.

### Mindscape

The Perfect Score: SAT ..... 47.

### Monogram

↙Forecast ..... 40.

↙Dollars & Sense ..... 81.

### Nevins Microsystems

Turbocharger (requires 512k) ..... 57.

### New Canaan MicroCode

Mac Disk Catalog ..... 25.

### Northwest Analytical

NWA StatPak (requires Basic, 512k) ..... 249.

### Odesta

↙Helix (requires 512k, external drive) ..... 219.

### Organizational Development Software

↙Consultant (idea management) ..... 119.

### Paladin

↙Crunch (requires 512k) ..... 165.

### Palantir

↙MacType (supports Dvorak keyboard) ..... 27.

↙MathFlash (math flash card drills) ..... 27.

↙WordPlay ..... 27.

Accounts Receivable (requires Basic) ..... 75.

General Ledger (requires Basic) ..... 75.

Inventory Control (requires Basic) ..... 75.

### PBI Software

↙Icon Switcher ..... 13.

↙Icon Fun & Games Library ..... 14.

↙Icon Business Library ..... 14.

### Peachtree

↙Back to Basics General Ledger ..... 88.

↙Accounts Payable ..... 88.

↙Accounts Receivable ..... 88.

### ProVUE Development

↙OverVUE (version 2.0) ..... 149.

### QED Information Sciences

Typing Made Easy ..... 36.

### Reston Publishing

Construction Estimator (reqs. Multiplan) ..... 45.

# Country Comfort.

(Or, how to buy Mac products with confidence).

Mail order magic in the high tech hills.

Welcome to MacConnection, that large and friendly mail order giant situated on the banks of the Ashuelot River in Marlow, NH. If you're ever up this way, stop by and visit our headquarters in the renovated Marlow mill building.

MacConnection has earned a reputation for thorough and considerate customer support. Maybe part of the reason is that we look at trees, rivers, and fields on our way to work, not high rises and smokestacks. It

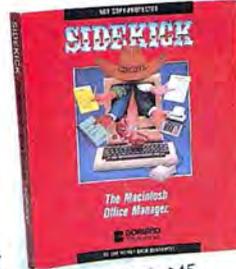


ReadySetGo \$65

helps to make us a little more patient, a little more relaxed, a little more personal. Our thousands of repeat customers appreciate that.

## Need a friend?

Our 800 number is available for customer service as well as for orders. Call us any time before or after the sale. There's no question that's too trivial or unimportant. Our trained Mac specialists have had to deal with the same confusions you're facing. And by working on Macs all day, every day they've learned to solve just about any dilemma imaginable. When there



Sidekick \$45

is a question we can't answer, we get on the phone to the manufacturer, and

stay on until we have a solution. You see, a lot of people talk about trying to strike a balance between technology and nature. Well, we've got an IBM system 38 in the basement and ducks in the park-

ing lot. We have bushels of Macintosh apples outside and bundles of Apple Macintoshes inside. It's a nice balance.

And, as you can see, our prices are as good as our support. That's the nicest balance of all.



OverVUE \$149



Harrier Strike Mission \$27



ThinkTank 512K \$125



Mac One Write \$137

# MacConnection™

14 MILL STREET, MARLOW, NH 03456 1-800/Mac&Lisa or 603/446-7711

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Please circle 82 on reader service card.

# Apple products.

<b>Videx</b>	
Funpak	\$23.
MacCheckers/Reversi	28.
MacGammon/Cribbage	28.
MacVeGas.	34.

## HARDWARE

<b>Assimilation</b>	
Mac-Port-Adaptor	69.
Mac-Epson-Connection	75.
Mac-Daisywheel-Connection	79.
Mac-Turbo-Touch	89.

<b>Compucable</b>	
Mac to Hayes Smartmodem cable	17.
Mac to Epson FX/RX/JX printer cable	17.
Mac to Apple modem cable	17.

<b>Creighton Development</b>	
Proprint	39.
Proprint (w/one cable)	54.
Proprint (w/two cables)	139.

<b>Curtis Manufacturing</b>	
Diamond (6 outlets)	28.
Emerald (6 outlets; 6 ft cord)	34.
Sapphire (3 outlets; EMI/RFI filtered)	44.
Ruby (6 outlets; EMI/RFI filtered; 6 ft cord)	50.

<b>Epson</b>	
FX-85	call
FX-185	call
JX-80	call
LX-80	call
LQ-1500 (letter quality dot matrix)	call

<b>Hayes</b>	
Smartmodem 300	call
Smartmodem 1200	call
Smartmodem 1200 Package	call
<i>Includes modem, software and cable.</i>	
Smartmodem 2400	call
Smartcom II (communications software)	86.

<b>IOMEGA</b>	
Bernoulli Box (5-megabyte storage)	1315.
5-meg Cartridge	39.
Head Cleaning Kit	59.

<b>Kensington</b>	
External Disk Drive Cover	8.
Mouse Pocket	8.
Mac Dust Cover	10.
Mac XL Dust Cover	10.
Imagewriter Dust Cover	10.
Wide Imagewriter Dust cover	10.
Mouse Cleaning Kit w/Mouse Pocket	16.
Universal Printer Stand	17.
Disk Case (holds 36 Mac disks)	19.
Disk Drive Cleaning Kit	19.
Tilt/Swivel	22.
Polarizing Filter	31.
Surge Suppressor	32.
Starter Pack (includes Tilt/Swivel)	53.
A-B Box	60.
Control Center	61.
Modem (300 baud)	89.

<b>Koala Technologies</b>	
MacVision (digitizer)	169.
<b>Kraft</b>	
QuickStick	45.
<b>Microcom</b>	
MacModem (Hayes compatible)	469.
<b>Microsoft</b>	
MacEnhancer	159.

<b>Mitsuba</b>	
Super 5 External Drive	\$239.

<b>Mouse Systems</b>	
A+ Optical Mouse	59.
<b>Paradise Systems</b>	
Mac 10 (10 megabyte hard disk)	1029.

<b>PBI Software</b>	
Switch Box	36.

<b>Systems Control</b>	
MacGuard (surge protection)	55.

<b>Video 7</b>	
MouseStick	39.

## DISKS

<b>BASF 3 1/2" Disks (box of 5)</b>	13.
<b>Verbatim 3 1/2" Disks (box of 10)</b>	25.
<b>Sony 3 1/2" Disks (box of 10)</b>	25.
<b>Fuji 3 1/2" Disks (box of 10)</b>	25.
<b>Memorex 3 1/2" Disks (box of 10)</b>	25.
<b>MAXELL 3 1/2" Disks (box of 10)</b>	25.
<b>3M 3 1/2" Disks (box of 10)</b>	25.

## INFORMATION SERVICES

<b>Compuserve</b>	
Compuserve Information Service	19.

<b>Source Telecomputing</b>	
The Source (subscription & manual)	30.

## MISCELLANEOUS

<b>American Tourister</b>	
Mac Carrying Case	69.

<b>Automation Facilities</b>	
Floppyclene (ten cleaning disks)	25.
Refill Kit (ten disks)	10.

<b>Clean Image Ribbon Co.</b>	
Clean Image Ribbon Kit	12.
<i>Designed to clean the print-head.</i>	

<b>Computer Coverup</b>	
External Disk Drive Cover	4.
Imagewriter Cover	8.
Wide Imagewriter Cover	8.
Mac & Keyboard (two covers)	10.

<b>Diversions</b>	
Underware Ribbon	10.
Underware Colorpens	10.
Jumbo Colorpens	13.
ColorPack	19.
<i>Includes one black ribbon and set of five Colorpens.</i>	

<b>Environmental Software Company</b>	
The Clutch (holds 8 disks)	9.
MacAttire	

*High quality rip-stop nylon dust covers for your complete Macintosh system. Available in navy-blue, burgundy-red, or silver-gray.*

External Drive Cover	7.
Numeric Keypad Cover	7.
Imagewriter Cover	11.
Wide Imagewriter Cover	13.
Mac & Keyboard Cover	15.
Laserwriter Cover	17.
Mac XL & Keyboard Cover	20.

<b>I/O Design</b>	
Imagewriter Color Transfer Ribbon	10.
Imageware	special
Imageware wide	special
Macinware	special

<b>Innovative Concepts</b>	
Flip & File (holds 25 disks)	\$10.
Flip & File (holds 40 disks)	18.

<b>Innovative Technologies</b>	
The Pocket Pak (holds 6 disks)	10.
The Easel (holds 20 disks)	14.
CompuBag	59.
<i>Well-padded carrying case for your Mac and accessories. Reinforced bottom.</i>	

<b>Kalmar Designs</b>	
Teakwood Roll-top Case (holds 45 disks)	14.
Teakwood Roll-top Case (holds 90 disks)	24.

<b>Microsoft Press</b>	
------------------------	--

Microsoft Multiplan: Of Mice and Menus	13.
Inside MacPaint	14.
MacWork MacPlay	14.
The Apple Macintosh Book	14.
Presentation Graphics on Apple Mac	14.
The Printed Word	14.
Macinations (intro to Basic)	17.

<b>Moustrak</b>	
Moustrak Pad	
Standard 7"x9" size	8.
Large 9"x11" size	9.
Imagewriter Pad	11.

<b>Pacific Wave</b>	
Flip Sort Micro (holds 40 disks)	12.
Flip Sort Micro (holds 60 disks)	15.

<b>Ribbons Unlimited</b>	
<i>Available in black, blue, brown, green, purple, red, yellow, orange and silver.</i>	

Imagewriter Ribbon	5.
Imagewriter Ribbons Six Pack	27.
Imagewriter Rainbow Six Pack	27.
<b>Smith &amp; Bellows</b>	
Basswood disk case (holds 90 disks)	19.

## OUR POLICY

- We accept VISA and MASTERCARD.
  - No surcharge added for charge cards.
  - Your card is not charged until we ship.
  - If we must ship a partial order, we never charge freight on the shipment(s) that complete the order.
  - No sales tax.
  - All shipments insured; no additional charge.
  - Allow 1 week for personal and company checks to clear.
  - UPS Next-Day-Air available.
  - COD max. \$1000. Cash or certified check.
  - 120 day guarantee on all products.\*
  - To order, call us anytime Monday thru Friday 9:00 to 9:00, or Saturday 9:00 to 5:30.
- You can call our business offices at 603/446-7711 Monday thru Friday 9:00 to 5:30.

## SHIPPING:

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

# savings on Macin

<b>Rubicon Publishing</b>	
✓Dinner At Eight (recipes to wines).....	\$35.
<b>Scarborough Systems</b>	
Mastertype .....	25.
<b>Sierra On-Line</b>	
✓MacOneWrite (cash disbursements)....	137.
<b>Silicon Beach Software</b>	
Accessory Pak 1 .....	24.
<b>Simon &amp; Schuster</b>	
The Mac Art Department.....	24.
Paper Airplane Construction Kit.....	24.
Typing Tutor III .....	31.
<b>SoftStyle</b>	
Epstart .....	29.
Jetstart .....	29.
Toshstart .....	29.
Tlstart .....	49.
Laserstart .....	59.
Decision Map .....	79.
<b>Software Publishing</b>	
PFS:File/Report .....	100.
<b>State of the Art</b>	
Electric Checkbook .....	45.
<b>Symmetry</b>	
✓Quick Disk (requires 512k) .....	21.
<b>T/Maker</b>	
Click Art Personal Graphics .....	29.
Click Art Publications .....	29.
Click Art Letters .....	29.
Click Art Effects .....	29.
ClickOn Worksheet .....	46.
<b>Telos Software</b>	
Filevision .....	99.
<b>Think Educational</b>	
Mind Over Mac .....	29.
MacEdge II .....	29.
<b>Videx</b>	
MacCalendar .....	51.
<b>Warner Software</b>	
The Desk Organizer .....	55.

## GAMES

<b>Aegis Development</b>	
MacChallenger (flight simulation).....	25.
<b>Blue Chip</b>	
Millionaire (stock market).....	30.
Tycoon (commodities) .....	30.
Baron (real estate) .....	30.
<b>BrainPower</b>	
Think Fast (improves recall) .....	23.
Chipwits .....	27.
<b>Broderbund Software</b>	
Lode Runner (you'll never sleep!) .....	24.
Cyborg (sci-fi text adventure).....	24.

## MacConnection Special of the Month

through December 31, 1985

### I/O DESIGN

#### Macinware

Sturdy well-padded carrying case designed to carry the entire Macintosh system including the external disk drive, keyboard, mouse, cords and manuals. Available in Navy Blue ..... \$49.

#### Imageware

Similar to the Macinware in construction. High density foam and 1000 denure Cordura nylon. Designed to carry the Imagewriter and a small supply of computer paper. Available in Navy Blue.

- Regular 80 column ..... 39.
- Wide 132 column ..... 45.

#### Macinware-Imageware Special

Buy both and save. With the selection of a Macinware carrying case and the choice of either the regular or wide Imagewriter printer case, your cost is only ..... 79.

### CBS

- ✓Murder by the Dozen..... 25.

### Creighton Development

- ✓MacCommand ..... 21.

### Epyx

- Rogue (great graphics) .....
 24. |

### Gamestar

- Championship Star League Baseball ...
 24. |

### Hayden Software

- Masterpieces .....
 24. |

- Word Challenge II.....
 24. |

- Sargon III (9 levels of chess) .....
 30. |

### Infocom

- Seastalker (junior) .....
 24. |

- Cutthroats (standard) .....
 24. |

- Enchanter (standard) .....
 24. |

- Hitchhiker's Guide (standard).....
 24. |

- Planetfall (standard) .....
 24. |

- Wishbringer (standard) .....
 24. |

- The Witness (standard) .....
 24. |

- Zork I (standard) .....
 24. |

- Zork II (advanced) .....
 27. |

- Zork III (advanced) .....
 27. |

- A Mind Forever Voyaging (advanced) ..
 27. |

- Infidel (advanced).....
 27. |

- Sorcerer (advanced) .....
 \$27. |

- Suspect (advanced) .....
 27. |

- Deadline (expert) .....
 29. |

- Starcross (expert) .....
 29. |

- Suspended (expert) .....
 29. |

- Invisiclues (hint booklets) .....
 6. |

### Mark of the Unicorn

- Mouse Stampede (highly addictive)....
 23. |

### Miles Computing

- MacAttack (3-D tank simulation) .....
 27. |

- Harrier Strike Mission .....
 27. |

### Mindscape

- Déjà Vu (murder mystery).....
 33. |

### Mirage Concepts

- Trivia (special price).....
 19. |

### Origin Systems

- Exodus: Ultima III (fantasy adventure) ..
 38. |

### PBI Software

- Feathers in Space.....
 21. |

- Strategic Conquest .....
 29. |

- Fokker TriPlane Flight Simulator.....
 35. |

### Penguin

- Transylvania .....
 24. |

- The Quest .....
 24. |

- Pensate .....
 24. |

### Priority Software

- Forbidden Quest .....
 25. |

- Gateway (sci-fi fantasy adventure) .....
 25. |

### Psion

- Psion Chess (3D and multi-lingual).....
 31. |

### Scarborough Systems

- Run for the Money .....
 29. |

- Make Millions .....
 29. |

### Sierra On-Line

- Frogger .....
 24. |

- Championship Boxing .....
 27. |

- Ultima II (role-playing adventure).....
 35. |

### Silicon Beach Software

- Airborne! (great graphics and sound) ..
 21. |

### Soft-Life Corp.

- Mac-Slots .....
 25. |

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### Spectrum Holobyte

- GATO (submarine simulation) .....
 27. |

### Telarium

- Amazon .....
 27. |

- Dragon World .....
 27. |

- Fahrenheit 451 .....
 27. |

### Unicorn

- Futura (sci-fi adventure) .....
 24. |

- Utopia (science fantasy game) .....
 24. |

- Animal Kingdom (ages 6-12) .....
 27. |

- Science and language arts program.

- Mac Robots (animation and speech)....
 27. |

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# YOUR FIRST



# CONNECTION

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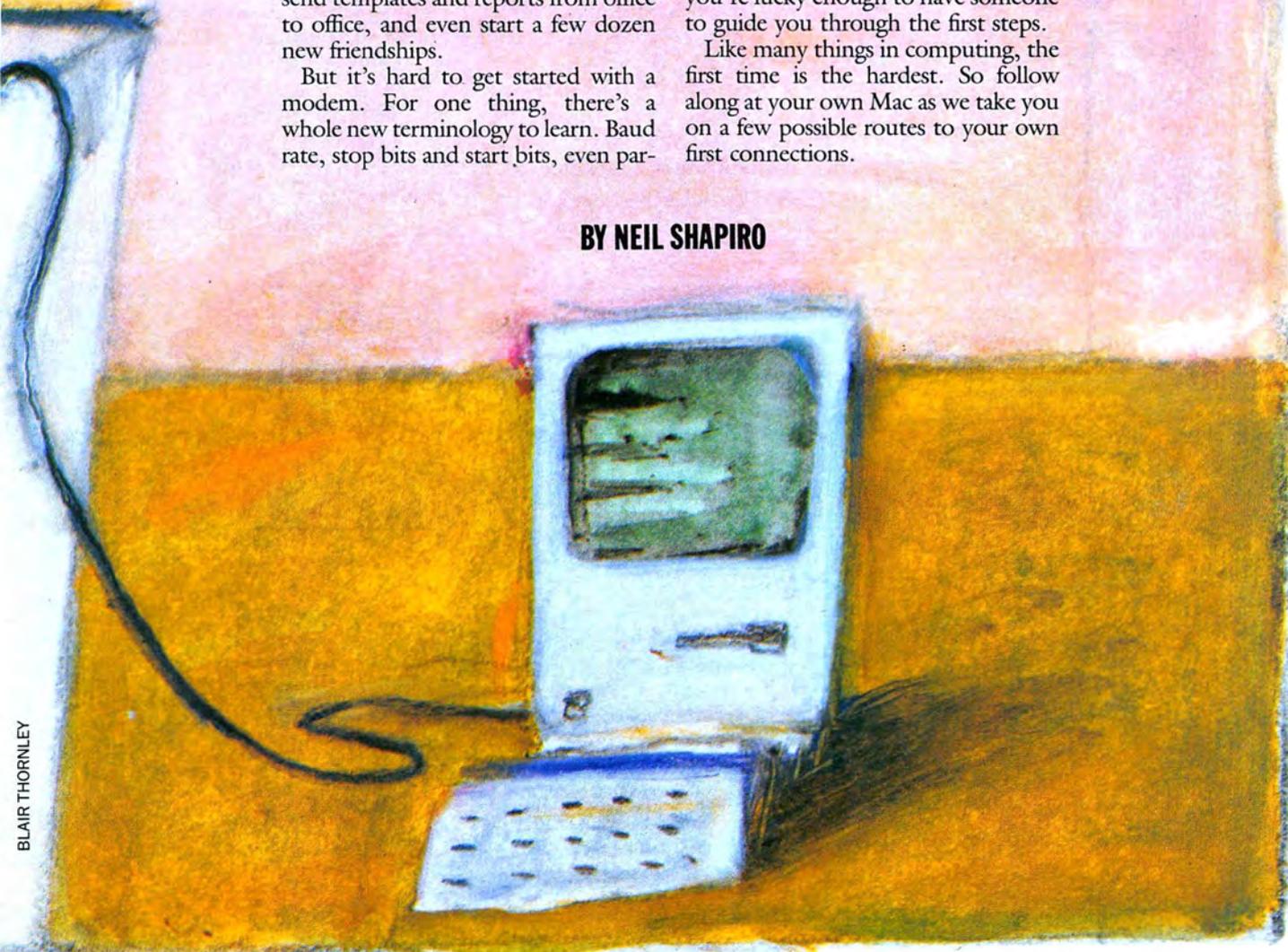
WANT TO CONNECT YOUR MACINTOSH to hundreds of thousands of other people who also own Macs and modems? With your Mac and your modem you can find thousands of public domain software programs, send templates and reports from office to office, and even start a few dozen new friendships.

But it's hard to get started with a modem. For one thing, there's a whole new terminology to learn. Baud rate, stop bits and start bits, even par-

ity, uploading and downloading—the vocabulary alone can discourage many people from becoming involved in telecommunications. However, it's really not much of a mystery if you apply yourself to unraveling it all, and if you're lucky enough to have someone to guide you through the first steps.

Like many things in computing, the first time is the hardest. So follow along at your own Mac as we take you on a few possible routes to your own first connections.

**BY NEIL SHAPIRO**



BLAIR THORNLEY

# YOUR FIRST CONNECTION

## Equipping Yourself

When you are in the market for a modem, there are two things to keep in mind: speed and compatibility.

Speed is measured in "baud." It used to be that the standard speed was 300-baud which is about 3 characters per second. But the newer 1200-baud modems are now more affordable than they used to be and more and more people are opting for these speedier devices. If you can afford to go the 1200-baud route, that is probably the best way to go.

Over the course of the past few years certain industrywide standards have developed regarding the commands modems get from the computers they are attached to. A command that will send one modem from its 300-baud rate to its 1200-baud rate should not tell a different brand of modem to hang up the phone! The Hayes Smartmodems were among the first modems to enter this field and, informally, many other manufacturers have adopted the Hayes commands. If a modem calls itself Hayes-compatible or something similar it is a good bet that most terminal programs will run the modem's operations fine. Apple modems are (with the exception of one minor feature) Hayes-compatible. Other modem brands such as U.S. Robotics and Novation, and many others, are also Hayes-compatible.

For a terminal program you will want one that is both simple to get started with and capable of meeting your expanding interests later on. In the first issue of MacUser an article called "Terminal Programs You Can Live With" gave a wealth of detail on many good terminal programs. In this article we'll be concerned mostly with using *MacTerminal* or *Smartcom II*, as they appear to, at present, be the programs used by the greatest number of people. But most of our hints may be applied equally to programs such as *in-Touch* and *Telescope*.

Once you have your modem and your terminal program picked out, it's usually a simple matter of following the modem's instruction manual to hook up the cable between the Mac's phone-icomed port and your modem.

When the Mac first came out, find-

ing such a cable was a real adventure as the Mac's plug is shaped differently from those found on most other computers. Now most dealers stock premade cables to connect just about every brand of modem to the Mac. But still, it is often the cable which causes people their first telecommunication headache. Make certain that you are using a cable specifically designed for modem communications. The most common error made, by dealers as well as everyone else, is to mix up an identical-appearing ImageWriter cable with the modem cables and then try to use it with a modem. An ImageWriter cable may fit between your Mac and your modem, but it will not work.

## Doing It

Once you have your modem connected to the phone line and to your Macintosh (which is running your terminal program), you're ready to enter into a whole new world.

To begin with, most first connections involve calling another—perhaps a friend's—Macintosh directly, or calling a local BBS (bulletin board system), or calling one of the national computer networks such as Com-

**Smartcom II's "Speed & Format" dialog box allows the user to set various parameters to match the modem being used to the modem at the other end of the connection. Most times only the baud rate, called transmission speed, will have to be changed.**

puServe, The Source, Dow Jones or Delphi.

Here are the techniques that will let you succeed at these tasks the first time.

## Going Mac-To-Mac

Most terminal programs will have documents on their disk with various settings already defined. On the *MacTerminal* disk, a document icon called Mac-To-Mac will, when double-clicked, bring up the program ready to go. *Smartcom* has a similar document. But if the icon is missing or if your terminal program does not have such a document, here are the various settings that must be properly chosen. Here we are concerned specifically with the *MacTerminal* and *Smartcom* programs but similarly-named settings will be found in most other terminal programs.

To set-up a Mac-To-Mac document for *MacTerminal* you will need to first mouse over to and pull down the "Settings" menu. Under this menu you will have to make changes in the three dialog boxes you get by choosing, in turn, "Terminal," "Compatibility" and "File Transfer."

In the Terminal Settings dialog box

Speed & Format

Transmission speed ( baud ):

110  300  600  1200  2400

4800  9600  19200

Bits per character: Stop bits:

Seven  Eight  Nine  One  Two

Parity:

Even  Odd  Mark  Space  None

OK Cancel

**Smartcom II's "Terminal Settings" dialog box is important. If you are going Mac-To-Mac don't forget to choose the "Local character echo" or you will not be able to see, on your own screen, what you are typing. Also choose to "Insert line feed after each Return" or the lines on your screen will overprint and become unreadable.**

Terminal Settings

TTY (normal)  VT52  VT102

Autowrap at column 80

Insert line feed after each Return

Smooth scroll

Local character echo

Swap Backspace and %Backspace

Use Hon / Hoff flow control

OK Cancel

make certain that you have clicked the following boxes to "on" (on means they have an X in them):

- New Line
- Local Echo
- On Line
- Auto Repeat
- Auto Wraparound

In the Compatibility Settings dialog box make sure you have chosen:

- 8 bits per character
- No parity
- No handshake
- Proper baud rate (both computers set to same rate)

In the File Transfer Settings check that you are setup for:

- XModem
- Retain Line Breaks
- Word Wrap Outgoing Text
- Remote System equals MacTerminal

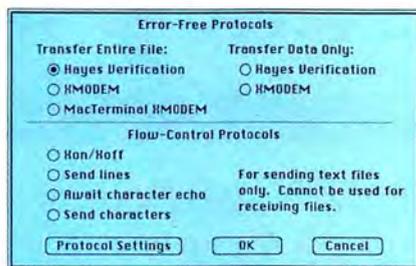
For all other choices the program defaults values are fine.

Once this is done, mouse over to the "File" menu and using the "Save As" choice, save this document as "Mac-To-Mac."

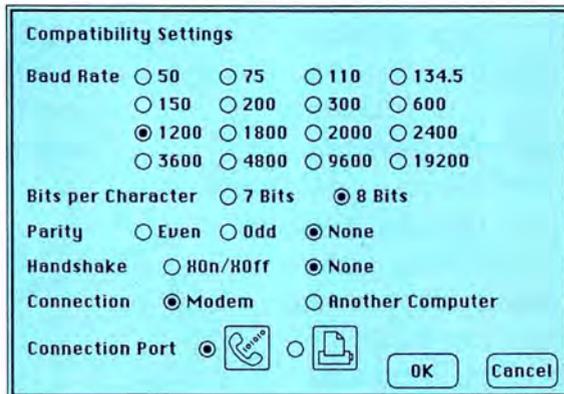
Once you have opened *MacTerminal* by double-clicking on your Mac-To-Mac document icon, or have set up *MacTerminal* or a different terminal program with the above settings, you are ready to begin. In *MacTerminal*, you now mouse up to the "Phone" menu and pick the Change Phone Settings choice — enter your friend's phone number and click on the OK button. Now pull down the "Phone" menu again and choose Dial. (You have, of course, previously told your friend you are calling and that Mac is on, running a terminal program and connected to a phone line!)

Once connected, you and your friend can type back and forth to one another. When you are ready to send a program or file, the person sending (still talking about *MacTerminal*) just has to go to the "File" menu and choose "Send File." A finder box will appear just as in any Mac application and the file to send is selected. Now the Macs take over.

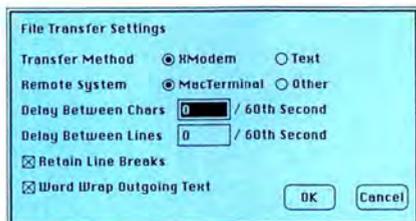
The downloader's screen clears and a ruler is drawn in a box at the center of the screen. The ruler is graduated in percentages from 0 to 100%. As the transfer takes place a diamond-shaped marker gradually moves toward 100%



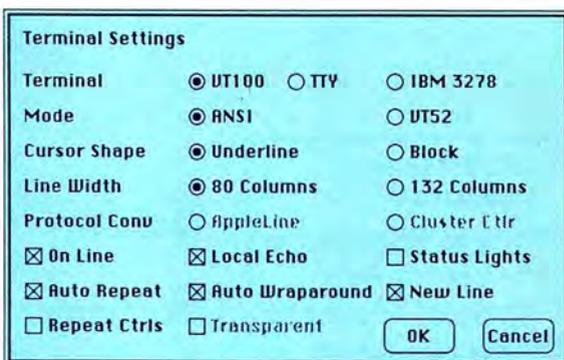
The "Compatibility Settings" in *MacTerminal* let the user do such things as set the baud rate. This is also where you tell the program which of the Mac's ports is connected to the modem.



Smartcom II offers a choice of protocols. The most important thing to remember is that both computers have to be set to the same protocol. You cannot, for example, use the Hayes Verification protocol with any other terminal program than Smartcom II running at the other end.



*MacTerminal*'s "Terminal Settings" dialog box gives the user control of how the Macintosh emulates, or copies, the action of dedicated telecommunications terminals. The "New Line" choice inserts a linefeed following a carriage return and the "Local Echo" choice makes what is typed by the user show on his or her own screen. Both should be set for Mac-To-Mac work.



The "File Transfer Settings" dialog box in *MacTerminal* allows the user to choose between three methods of sending a file. For Mac-To-Mac the XMODEM choice with the *MacTerminal* Remote System chosen is the best alternative.

along the ruler's length. When 100% of the file has been transferred control is given back to the operators. At this point just type "Thank You" to your friend and use the "Phone" menu to hang up. You have successfully sent your first telecommunicated file!

Receiving a file is even easier using *MacTerminal*. You don't do anything! The other person sends the file exactly as you just did, and the progress ruler

appears on your screen. When it disappears, you have successfully received the file.

*Smartcom* is also simple to set up for going Mac-To-Mac. First, go to the "Settings" menu, pull it down and choose the "Set Protocol" choice. Note that the resulting dialog box's top half allows you to choose from three different protocols (error-  
*(continued on page 150)*



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# MIDI TO THE MACS



***You, Mac and MIDI lead a symphony from the podium.***

MIDI—IT HAS A RING ABOUT IT, exotic and yet technical.

Whenever a new level of technology is introduced into any industry, there's an aura of mystery and misconception about its real capabilities. MIDI is a new technology that simplifies the process of making music. But many people who have heard about MIDI may not know what it means.

MIDI (Musical Instrument Digital Interface), the brainchild of a number of American and Japanese musical instrument companies, was introduced in 1983. It defines a standard way of converting the information processed in a synthesizer into binary code, so

that the information can be shared with other synthesizers and other binary devices, including computers. This allows an electronic musical instrument to be more than just a standalone device, and opens communications with the outside world. A parallel can be drawn with the increased power of a microcomputer when it is used to access and communicate with other, larger computers through a telecommunications network.

The information that MIDI devices process describes variables that control the way a synthesizer produces sound. The most basic building block is the

**B Y D A V I D B I E D N Y**

# MIDI TO THE MACS

"note on-off" code. Pressing a key on a synthesizer keyboard sends a "note on" signal to the main processor in the instrument. A "note off" signal is sent when the key is released, and the note decays into silence. But there is more to a sound than on-off codes.

Most synthesizers can store a variety of different sounds in their internal memory. In most cases these sounds, also referred to as "patches," can be modified by the user, and new sounds can be created and stored in "banks" of on board memory. While playing, the musician may decide to change a waveform or play with the "pitch bend" wheel, which gives an effect analogous to a guitar player bending the strings. The musician can vary how hard the keys are hit, thus changing the volume, or dynamics (known as "velocity"), of the passage. These actions produce data that MIDI understands and can transmit to either another instrument or to a controller computer.

A standard MIDI network contains 16 channels through which devices "talk" to each other. Synthesizers, drum machines and other devices act as peripherals, sending and receiving information on different channels. It's fairly easy to play all the synthesizers on line through one master keyboard, as long as the "slave" devices are listening to the same MIDI channel the master keyboard is sending on. Some synthesizers, such as the Casio CZ-101, can listen in on more than one channel at a time, in effect behaving as more than one instrument. Instruments of this type are referred to as "multi-timbral."

A typical MIDI setup (Figure 1) consists of a controller computer, a MIDI interface with one input and one output (some interfaces have more), a master keyboard (where music is played for input) and a few slave synthesizers linked together.

## Sequencing

One of MIDI's principal tasks is to allow a computer to record events on the various MIDI channels, and to play them back through multiple synthesizers simultaneously. Traditionally, to achieve "layered sound" in a recording, a multiple track tape recorder is used to record elements of a song (such as a bass line and drum rhythm) on separate tracks of audio tape. This allows the sound engineer to treat each track as a separate entity, which can be individually edited or enhanced with reverb, echo, and so on. There are problems with this approach. As each track is recorded, audio distortion ("hiss") is introduced, due to the magnetic properties of the audio tape. On a 16-track recording, the cumulative effect of this noise become very noticeable, and exotic noise reduction systems have to be used to control the noise factor.

MIDI solves this problem right off; no actual audio information is processed in the computer, only the codes used to trigger the devices on the MIDI network. Not only does this do away with noise problems in the recording medium, but the computer introduces a sophisticated level of editing control comparable to that of the most advanced tape machines.

An editing feature found in the higher end MIDI software is punch in/out. When editing a track, the editor may want to change a couple of bars of music to something not in the original take. Punching allows insertion of a modified passage into an existing track. Track looping is also a handy feature, for putting a particular passage into a loop, so that it will repeat itself until the music stops playing. The three high end MIDI packages reviewed here all possess these features.

## Quantizing

Quantization, or time correction, is a very desirable feature in any MIDI software. It will take anything played on the MIDI keyboard and "smooth" it out, so that imperfections in playing can be corrected to a user specified beat. For example, recording a steady bass line consisting exclusively of eighth notes becomes very easy. Even if you stray from the eighth note pattern as you play, the final product retains the intended beat. Most of the software will only correct a whole track, although some of the high end programs allow quantization of specific parts of a track, usually by selecting the part of the score to be quantized with the mouse. In this manner, whole scores can be time corrected to sound like flawless inspirations of genius.

## Patch Libraries

Synthesizers, like computers, work with files. A synthesizer is capable of generating a vast variety and number of distinct sounds. These sounds must then be stored in a file for later retrieval. Different synthesizers store these sound files in different ways. Some are internal memory, RAM cartridges, EPROM (Erasable Programmable Read Only Memory), and most recently, on computer disks. Some synthesizers actually have floppy disk drives, or even hard disk drives built right into their cases.

With this in mind, why not use a computer and its disk drives as an intelligent storage medium? This is in fact very easy to accomplish through MIDI, so that a large number of your

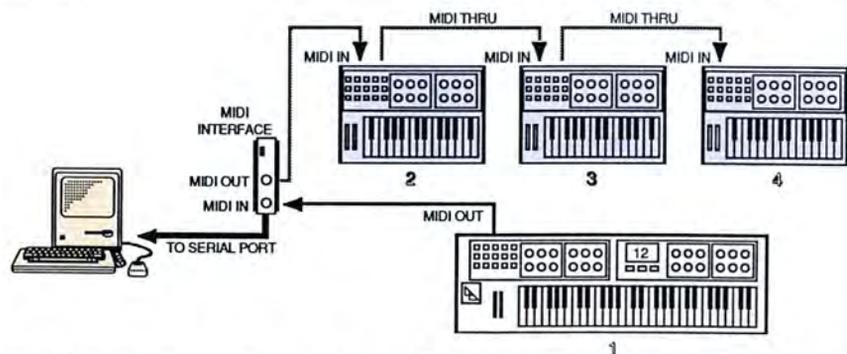


Fig. 1: A simple MIDI network. The master keyboard (1) is played, and the music is transmitted on channel 1 through the MIDI OUT port to the MIDI IN port of the interface. After recording, a separate track of music is sent on each channel, through the MIDI OUT port to the slave synthesizers (2, 3 and 4). Each slave listens to a different MIDI channel, and plays the corresponding track. The MIDI THRU output on each slave allows daisy chaining, so that one MIDI OUT from the interface can "feed" more than one slave synthesizer.

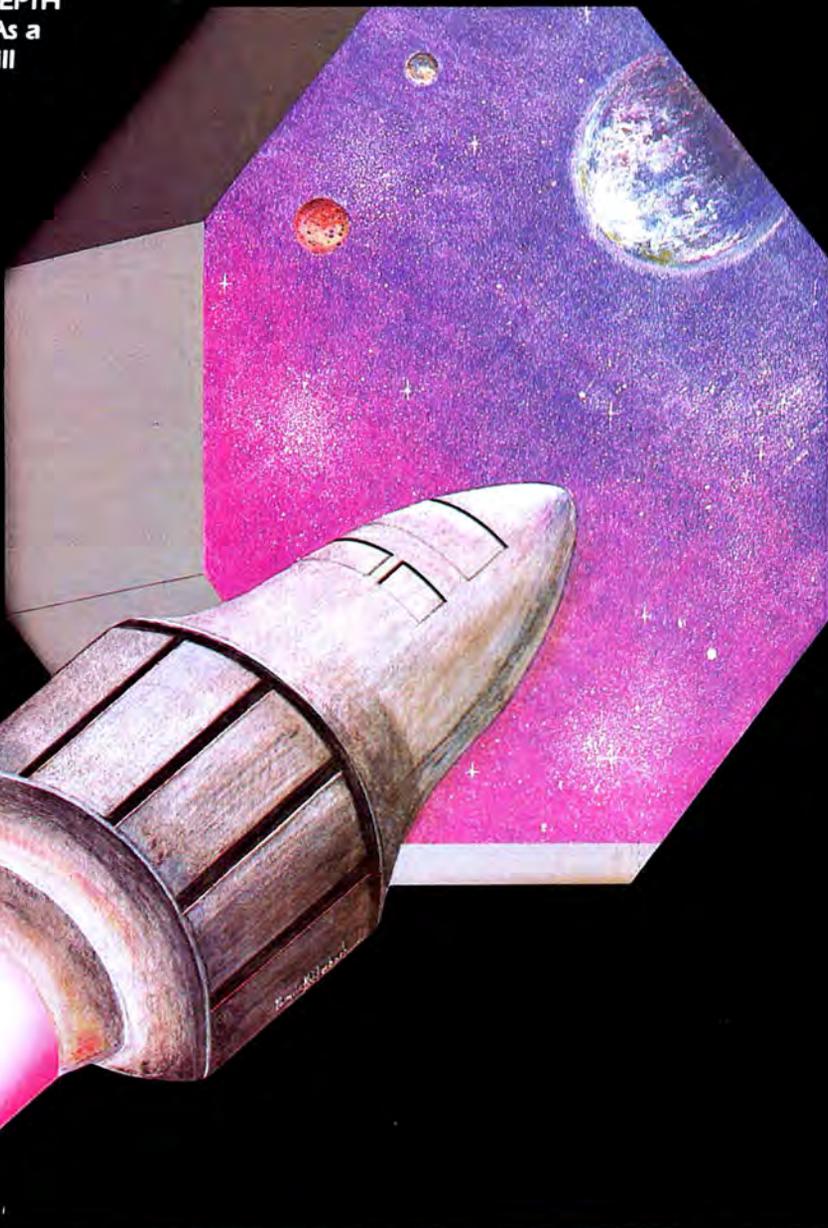
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# MIDI TO THE MACS

laboriously crafted custom patches can be saved on one Mac disk (How many people do you know who can carry a tuba in their pocket, heh?!). Because patch information is much more machine specific than MIDI data, each patch librarian program is tailored to be used with one particular model or type of synthesizer.

## Why Use MIDI?

What will all this good stuff do? Why buy a synthesizer? Well, if you're a professional musician, then you already know the benefits of working with MIDI, and for that matter, the power of the musical synthesizer. If you're not a pro, then there's even a better set of reasons.

Approximately 65% of all working musicians do not read or write music. And that figure is surely higher for nonprofessional music hobbyists. For those people who can't read or write music, MIDI offers a way to create scores without ever writing a

note. Because the more advanced MIDI packages can record music in both real-time and quantized (time-corrected) modes and use that information to generate sheet music, notational literacy becomes almost secondary to playing talent. To "the rest of us," that could mean a whole new outlook on making music for pleasure, and even for a living.

There is also the question of solitary composing. With MIDI and a couple of Casio CZ-101's, anyone with an ear for music and some keyboard knowledge can simulate the capabilities of a multi-track recording studio in their homes, without buying expensive multi-track recorders or mixing boards. Besides that, overdubbing and editing are much easier with MIDI compared to the same procedures with tape. And quantizing will clean up your playing so that no one will know that you didn't study under the masters. Finally, learning music becomes much less a chore and much more an adventure in composition.

## Ladies and Gentlemen, the Interfaces

Well, that's the theory. Now you know how MIDI works. It's all clear, right? And you're ready to run out and get started making great music. So you get to the store and Whoa...lots of interfaces.

Better do some research first.

## OPCODE SYSTEMS

Opcodes interface is the most universal of those reviewed, and will work with most of the current MIDI programs available, thanks to its switchable speed settings. This interface can be used in either the modem or printer port, and since Opcode's sequencing software will support two interfaces concurrently, up to 32 MIDI channels can be addressed at any one time. It draws its power from the Mac, so be careful about using two of these at the same time on the same Mac.

## SOUTHWORTH SYSTEMS

The Southworth interface is only sold with the *Total Music* sequencing program, so it is unlikely to be used with any other software.

The interface will work with most of the software packages reviewed, so your universe isn't limited. It provides the largest number of IN/OUT ports, and it is the only interface with its own power supply, so there should be no problems with excessive drain on the Mac power supply.

## ASSIMILATION

The Assimilation interface has the lowest list price of the units reviewed, and it performs as well as the others. It has its own MIDI IN/OUT cables molded into the casing. One unique feature of this interface is a built-in serial port, so the serial port in which the interface is connected can still be used with another peripheral. Nice touch.

## MUSICWORKS

The *MusicWorks* interface comes in a variety of configurations. The basic units allow either 16 and 32 MIDI channels. These units come with a desk accessory that is installed onto the MIDI software disk being used, allowing compatibility with virtually any Mac MIDI software package (except *Total Music*). *MusicWorks* also offers other interfaces specifically designed for interfacing with multi-track recorders, Carousel slide projectors and video tape devices.

## And Now the Software, Please

Think you had problems picking an interface? Well, there's good news and bad news. Bad news first? There's a lot more software than there are interfaces. The good news is we're going to tell you about most of them right here.

## STUDIOMAC

Creative Solution's *StudioMac* is the only program reviewed that does not accept MIDI IN, so it is impossible to record what is played on the synthesizer. This program was created to work with the Casio CZ-101, and although it will work with other synthesizers, it can't be recommended for anything but a CZ-101, since its best features only work on the CZ-101.

The program uses proportional  
(continued on page 144)

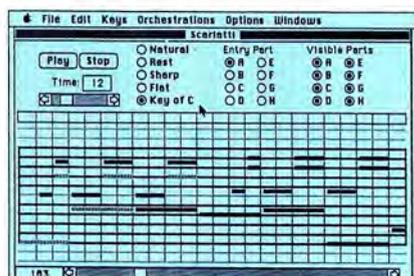


Fig. 2: Music is entered into *StudioMac* through proportional notation. The bass and cleff staves stand out from the background grid, and the user "draws" notes onto the grid. The different colors denote the discrete voices.

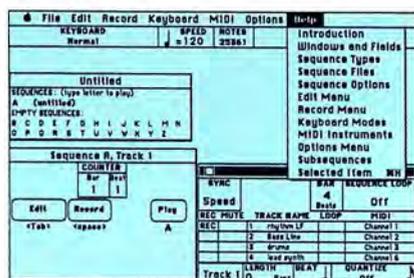


Fig. 3: Opcode's *MIDIMac* sequencer has a full on-line help menu, describing all the major functions of the package. Sequences (Untitled Window) are assigned a character title, and typing the appropriate character will play the sequence. The program's screen is a little busy, but this doesn't effect the program's functionality.

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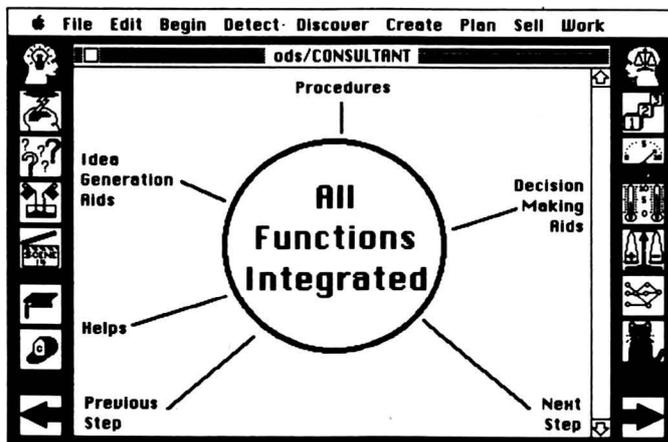
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LARRY ASHTON



# NOVELS OF THE MIND



**Sometimes the Best**

**Game Graphics Are**

**All a Figment of Your**

**Imagination**

"HITCHHIKERS' GUIDE TO THE GALAXY" author Douglas Adams recalls a story about a young boy asked to pick which version of "Hitchhikers" he preferred, the radio show or the television program. "I liked the radio one much better," said the boy. "The pictures were better."

And so it often is in text adventure games. While the Mac offers beautiful high-resolution graphics, sometimes there's just no substitute for pictures that the mind's eye creates. The abundance of excellent text adventures

(sometimes illustrated in parts with graphics, sometimes not) bears testament to the power of a computer gamer's imagination. Even those games illustrated with pictures generally give players the option of switching off the graphics mode, increasing the speed of the game considerably and letting the imagination soar.

## The Classics, Mac-Style

Everybody's heard of Infocom's *Zork*, the trilogy based on the adventure college students used to modem into on the MIT mainframe. These underground exploration games, written in an upbeat, tongue-in-cheek style, established Infocom as a leader in the text adventure field—a position the company still holds, though the competition has gotten stiffer.

In *Zork I* the challenge is to find, then explore, a mysterious underground ruin, where a lurking thief dogs your footsteps and steals anything

he can lay his hands on. He's gone from *Zork II*, replaced by the mischievous Wizard of Frobozz, a crafty character who prefers using random magic instead of actual violence. In this game, if you can find and master a set of strange, glowing orbs, you can learn the secret to controlling your nemesis. *Zork III*, the final chapter, pits the player against the Dungeonmaster himself in a battle of wits in which only one can win. This is the hardest and most closed-ended of the three, with deep psychological twists woven into the action.

Despite its advanced age (it was first played on mainframes in 1977), the *Zork* trilogy is still one of the most playable adventures available for any computer. As in other Infocom games for the Mac, it's completely unMaclike in its play, requiring that players type in full-sentence commands to interact with the program. There isn't even a movement compass, a pretty standard feature on other Mac adventures,

BY TRACIE FORMAN HINES

# NOVELS OF THE MIND

although players can choose the font style that the text is displayed in. Still, *Zork* remains the epitome of text adventures: it's easy to use, there are few bottlenecks requiring solutions before players can advance to other sections of the game, and most important, it's a lot of fun.

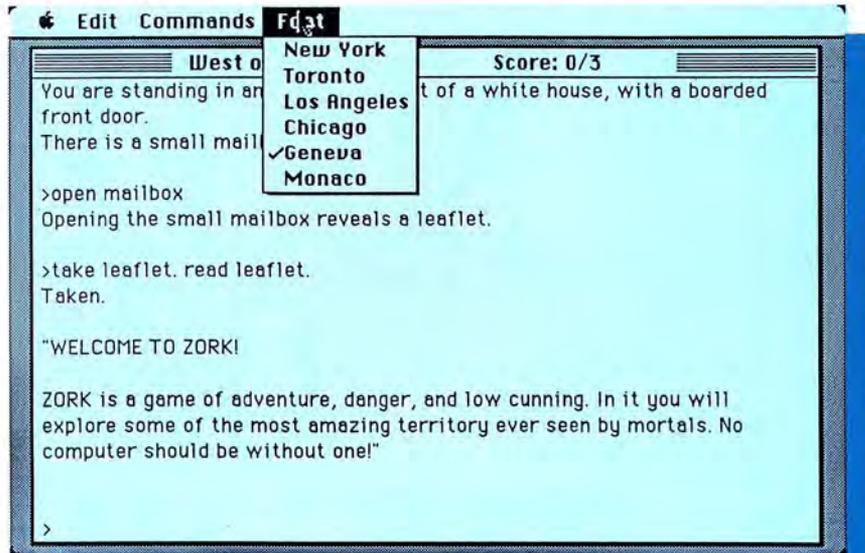
Scott Adams was one of the earliest adventure game designers, enjoying huge success in the late 70's and early 80's with his line of illustrated text adventures. While the games tended to be quirky and occasionally defy logic, forcing people to think like Scott Adams or else die of terminal frustration, they enjoyed a huge popularity until other companies did the same type of program better. They're not the best text games by far—but if you're interested in picking up a piece of gaming history, here are all twelve Scott Adams adventures in a single package, distributed by Star Systems Software.

## Murder And The Mac

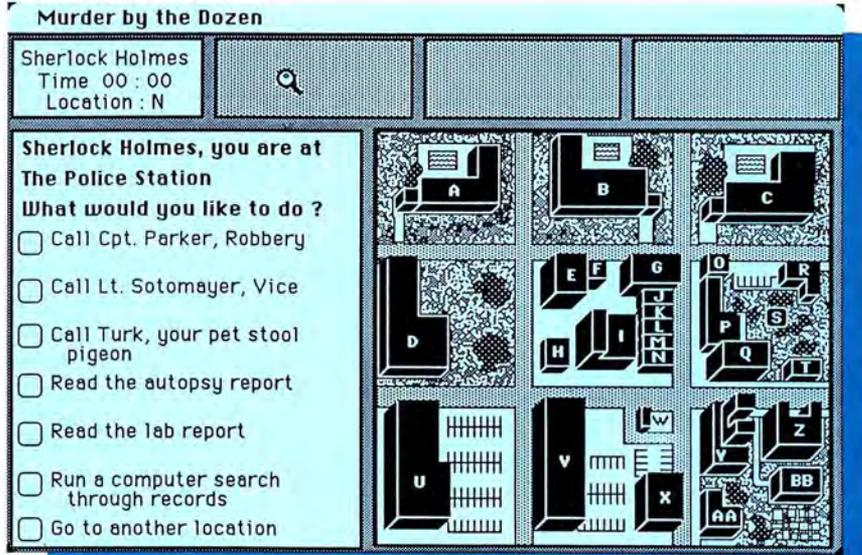
Everybody loves a mystery, and murder is a popular text adventure theme. *Murder by the Dozen* and *Felony*, both from CBS Software, bring murder to home parties. Multiple people or teams compete to visit different clue sites and talk to suspects and friends of the victim in a contest to see who can point out the murderer—and the motive—first.

Because they allow for competitive play, both of these games feature unusual play methods. Players choose one game from the dozen enclosed on disk, and the computer displays the data found on that murder victim. From there, a map of the city is shown on-screen, with each location marked by a number.

Each player or team takes turns visiting a location, where a set of numbers is displayed upon "arrival." These correspond with paragraphs in the game clue book, which might contain vital information or simply say, "No clue." While all the page-thumbing is a little tedious, it does keep your team's information secret from the others. When one player thinks he or she has the solution, the group checks its accuracy by slipping a colored sheet of plastic over the solu-



### Zork (Infocom)



### Murder By the Dozen (CBS)

tion page to see exactly what happened.

Infocom's three murder mysteries, *The Witness*, *Deadline* and *Suspect*, offer vivid, hard-edged prose from the Raymond Chandler school of fiction. As in Infocom's other Mac releases, the games are displayed in full text on the screen.

In *Deadline*, the gamer steps into a detective's gumshoes to find the killer of wealthy Marshall Robner. Was it really a simple overdose of Ebullion? Family lawyer Warren Coates doesn't think so. He's bought you twelve hours to wander around the Robner mansion and build a case against the real murderer. Faithful aide Sergeant

Duffy is usually on-hand to analyze substances or fingerprints. Duffy appears in all three Infocom murder mysteries.

*The Witness* casts the player as exactly that: a witness to the murder of one Mr. Linder, a troubled recent widower who hired you shortly after he received a death threat. While there's nothing you can do to prevent the murder, you can at least find and help convict the killer. Among the suspects: Linder's dead wife's lover, who sent the threat; his mysterious Asian housekeeper, Phong; Monica Linder, a spoiled brat who never forgave her father for her mother's suicide; and Monica's will 'o the wisp lover.

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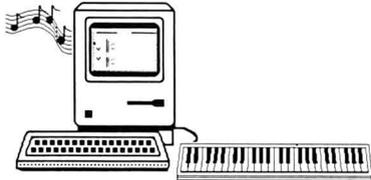
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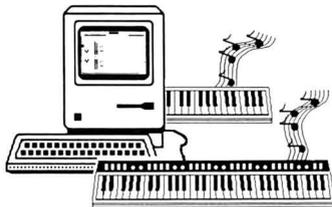
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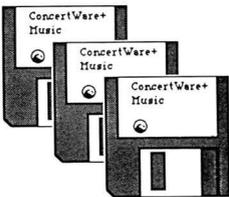
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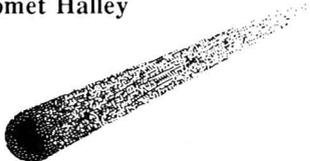
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# NOVELS OF THE MIND

*Suspect* gives players a more urgent reason to find the real killer of a wealthy socialite—it seems the murder took place during a costume ball at the estate, with the player's character having been invited just to take the fall for the guilty party. Fail to solve this one and you could end up wearing stripes—and they won't be part of a masquerade costume, either. Could Veronica's untimely death be related to the fact that she wouldn't sell her family estate to a condo-happy real estate developer?

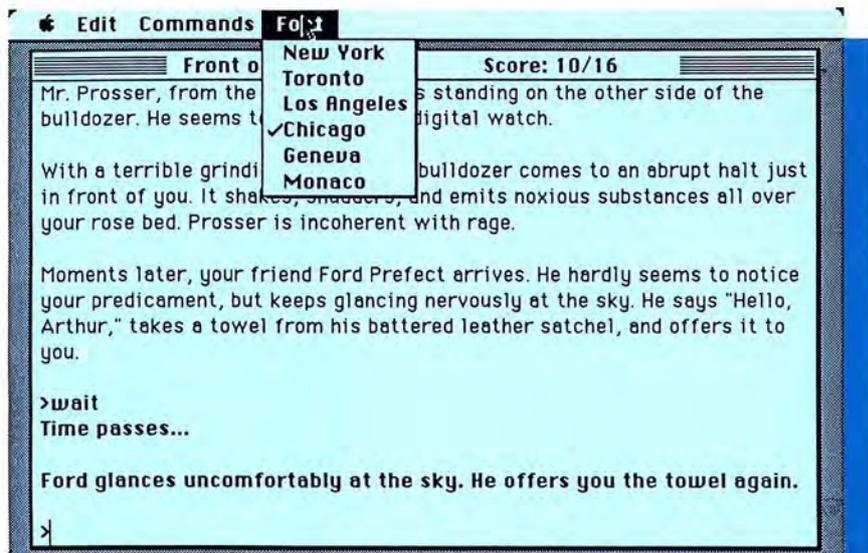
## Computerized Novels

Books are a natural source of material for text adventures: Gamers step into worlds they're already familiar with, meeting up with characters they've gotten to know in the pages of popular novels.

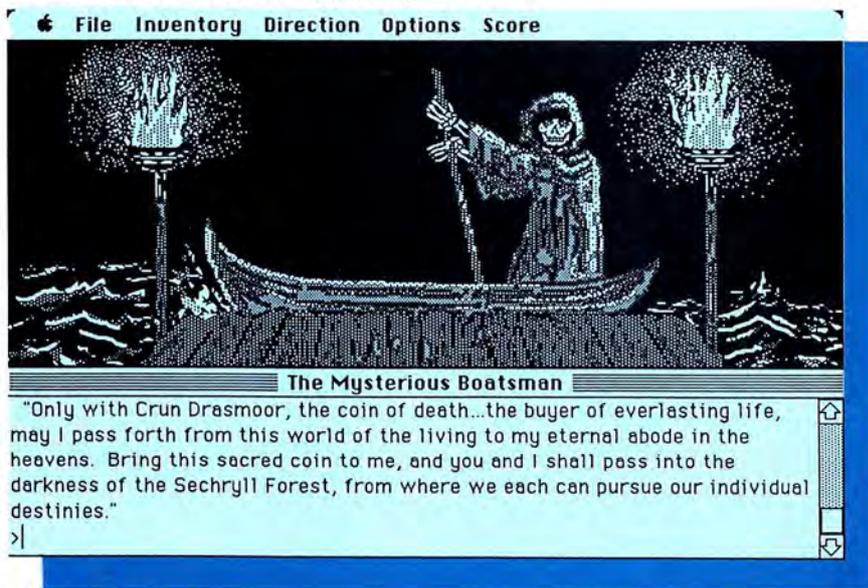
Infocom's *The Hitchhiker's Guide to the Galaxy* is probably the most successful novel that's made the transition to the Mac screen. As the long-suffering Arthur Dent, players get to hitch a ride to the stars with Ford Prefect, Zaphod Beeblebrox, Marvin the robot, and the rest of the intergalactic zanies. Douglas Adams wrote most of the text for the game, which follows the standard, non-Maclike Infocom style. The whimsical tone from the novel is reflected in the fact that the program doesn't take itself seriously at all—as a matter of fact, there are times when it outright lies to you! The package includes such essential items for cross-galactic travelling as an envelope containing a Microscopic Space Fleet, a Don't Panic! button, and of course, genuine souvenir pocket fluff.

Telarium, a subsidiary of Spinnaker Software, is going to market Mac versions of its illustrated adventures based on novels by famous authors. Among them are Ray Bradbury's *Fahrenheit 451*, Michael Crichton's *Amazon*, Arthur C. Clarke's *Rendezvous With Rama*, and *Dragonworld* by Byron Preiss and Michael Reaves. Check out upcoming issues of MacUser for more information as the games are released.

Isaac Asimov's *The Robots of Dawn* (Epyx) takes a more serious approach to adventure. As Elijah "Lije" Bailey,



### *The Hitchhiker's Guide to the Galaxy* (Infocom)



### *Legacy* (Challenger)



### *Legacy* (Challenger)

a detective famed throughout the universe, the player is brought to a planet controlled by almost human robots, where elderly Professor Fastolfe, a robotics specialist, has been

recently murdered. Your old friend Dancel, an android with touchingly human feelings, was the only witness to the crime—but someone (probably a technical expert) tampered with his memory banks. You have only one day to figure out the motive and the murderer, and your reputation's on the line.

## Pictures, Please

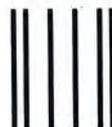
While most of the "action" in text and illustrated adventures takes place in the mind's eye, sometimes a picture is indeed worth a thousand words.

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(continued on page 148)

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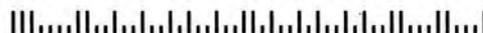
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"HELLO, WORLD"	5610	26
*using register variables	5100	N/A

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# BASIC: A DIP INTO THE ROM

*Make your screens shimmer with patterns. Our series continues with the ROM calls you'll need to know and use.*

## **PART 2**

by  
**Sharon  
Zardetto  
Aker**

SWIRLING, LOOPING LINES FLOW under the text window. The menu is pulled down, a selection is made and a graphics window appears on top of a starkly geometric background. Custom designed background patterns certainly give programs that professional look. And they are easily created using *Microsoft BASIC 2.0's* ability to access and use the QuickDraw routines in the Mac's ROM.

### **Into QuickDraw**

There are three types of ROM calls that let programmers use and create patterns of their own design: PENPAT, which makes other graphic ROM calls draw in the defined pattern instead of in black; BACKPAT, which paints the background of any window with a design; and any of the FILL calls: FILLRECT, FILLROUND-

# BASIC: A DIP INTO THE ROM, PART 2

RECT, FILLOVAL, and FILLARC. (The PAINT ROM calls also use predefined patterns, but they work through the PENPAT.) The basic steps of pattern design are:

1. Create a pattern in an 8 by 8 grid, similar to the way a paint pattern is defined in *MacPaint*.

2. Convert the pattern to numeric information.

3. Store the pattern numbers in an array.

4. Use the proper ROM call, and use VARPTR (variable pointer) to indicate in which array the pattern information is stored.

These more or less simple steps get a little complicated along the way. For instance, although there are eight rows in a pattern design, only four numbers can be used to represent them. Sometimes those numbers will be higher than 32767; however, most ROM calls need to look to integer arrays, and the highest integer that BASIC can handle is 32767. But, proceeding one step at a time . . .

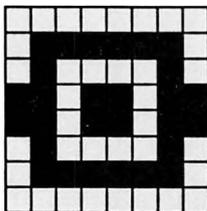


Fig. 1: Simple squares combine to form complex patterns.

## Convert the Design

First, make an 8 by 8 grid and fill in the desired pattern, as shown in Fig 1. The computer “thinks” in binary numbers—patterns of 1’s and 0’s—so each black square is a one, and each white square is a zero. Before translating the pattern into numbers, though, allow for the fact that Mac

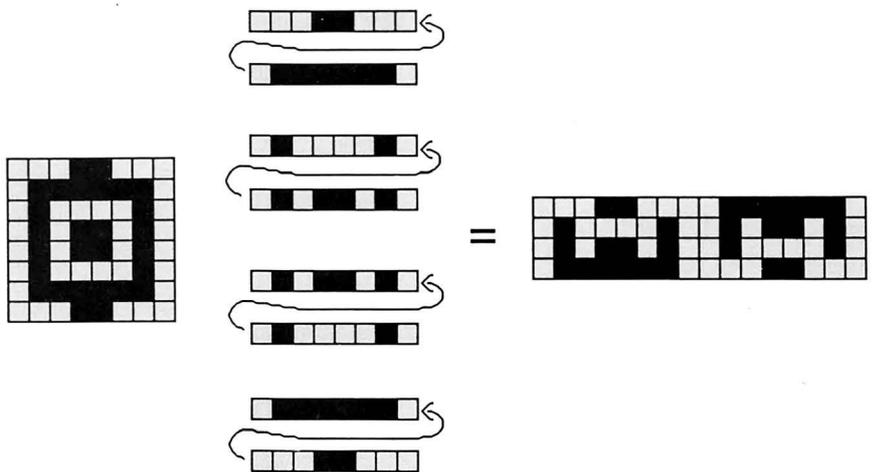


Fig. 2: The eight rows of the pattern must be rearranged into four rows of sixteen squares each.

stores its number in double bytes; this means each number is represented by 16 bits, or digits. So, the second row of the pattern must be moved up and to the right of the first row; the fourth row goes at the end of the third row, and so on, until there are four rows of 16 squares, as seen in Fig. 2. Each of these four rows represents a number; each square is a “bit” in a sixteen-digit binary number (see Fig. 3).

In the binary system, the first (righthand) digit represents 1’s, the second digit is 2’s, the third is 4’s, and so on, each digit representing a different power of 2. Translating each of the rows in the sample pattern into binary numbers, then translating those into decimal, we get:

6270,16986,23106,32280

## Using VARPTR

Now that all the required data is on hand, what must be done with it? Put it in an integer array (denoted by the % sign), and “point” to it with VARPTR when the ROM calls are made.

The VARPTR function is an argument to many ROM calls; that is, it follows them parenthetically. VARPTR itself takes an argument: the name of the array that stores the information “passed” to the ROM routine. And, the array name takes an argument: the number of the element of the array where the information begins. This is needed because one pattern can be stored in the first four

elements of an array, and another in the next four.

Because of all these arguments, some ROM calls wind up with a series of nested parentheses that can be confusing. The BACKPAT call, for instance, might look like this:

```
CALL BACKPAT(VARPTR-
(stripe$(1)))
```

This call uses the information in the array *stripe*, beginning with element number 1.

Fig. 4 shows a routine that fills the window with the defined pattern. When using BACKPAT, use the CLS command after the call is made.

Fig. 5 shows the same procedure with the pen pattern; the subsequent ROM routines that draw lines use the defined pattern; the PAINT calls also use the current pen pattern.

The program in the List window of Figure 5 shows another use of VARPTR with ROM routines: to define the parameters of a shape. A PAINT call needs the coordinates of the shape already stored in an integer array.

While PAINT calls use the PEN pattern, FILL calls use the pattern supplied with the call. Since the shape must also be defined, two VARPTRs must be used with FILLs:

```
FILLRECT(VARPTR(coordinates%(1)),VARPTR
(stripe%(1)))
```

## Large Numbers

The main problem with fitting the pattern information into an integer ar-

ray is that BASIC can't use numbers over 32768, yet some patterns need numbers as high as 65535.

Through the miracle of "sixteen-bit 2's complement binary signed numbers" (luckily, it's not necessary to understand that to benefit from it), numbers in the Mac that are over 32767 wind up being represented by negative numbers. Subtracting 65536 from any "oversize" number gives the proper negative number; 42113, for instance, is -23423.

## A Pattern Utility

Now that you know how to create patterns and calculate the data yourself, take the easy way out: use "Pattern Utility." By clicking in the on-screen grid, you can turn squares on and off; click "Look" to see what the pattern looks like, and "Done" when you want the data. Then choose to print the screen, quit the program, or do another design. (Note in the program listing that many of the ROM

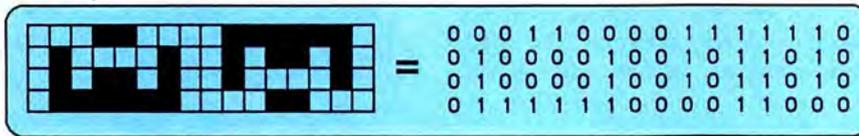


Fig. 3: Each box in each row represents a binary digit.

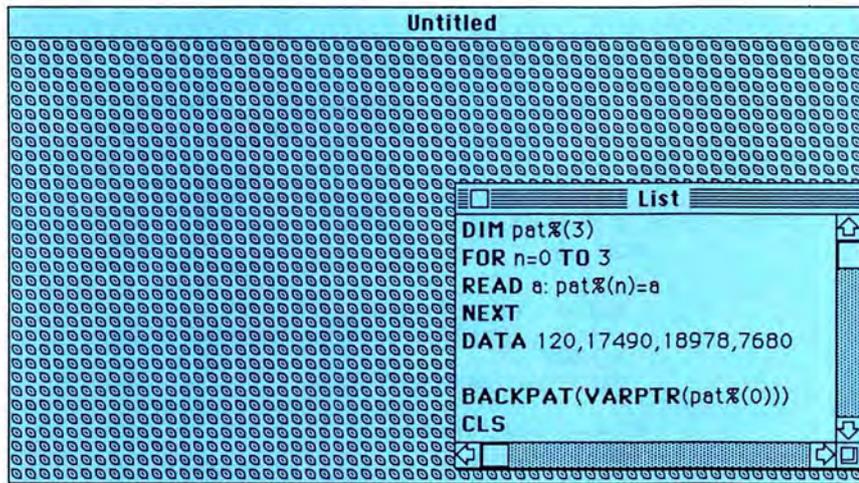


Figure 4

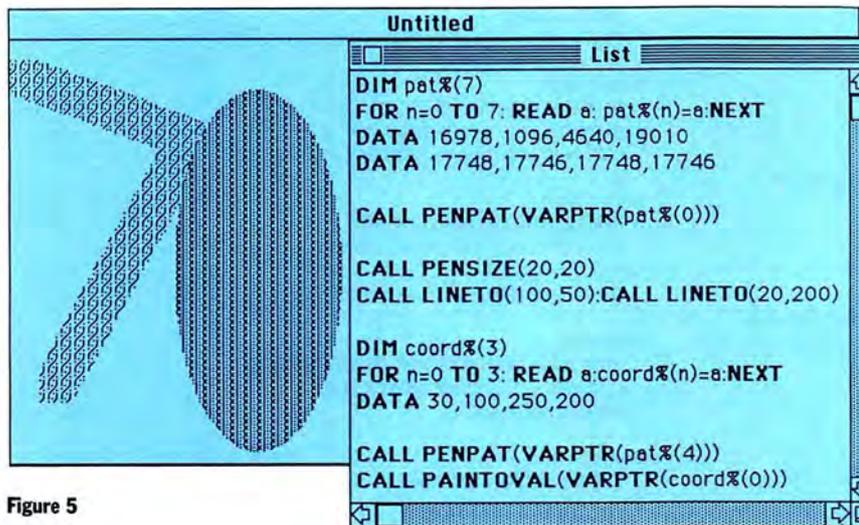


Figure 5

calls do not use the keyword "CALL"; many times it is unnecessary.)

The "Pattern Utility" window is shown in Fig. 6. Here's a brief run-down of the routines used in the program:

- begin: Sets all arrays with 1 as the lowest element, dimensions integer arrays for later ROM calls and sets up a string array for a graphic array.
- drawgrid: Draws the grid used for the pattern.
- draw.sample.box: Uses a ROM routine with VARPTR to draw a box next to the grid.
- checkmouse: The PENMODE call makes black items printed on other black items turn white. So, although each time a square is clicked it is filled with black, if the square is already black, clicking will turn it white again.

Buttonup waits until the mouse button has been released; buttoverdown waits for it to be pressed. If a screen button has been pressed, the program jumps to getpieces.

• fillboxes: Checks the coordinates of the mouse, making sure it is within the grid, and calculating the upper left corner of the box in which the cursor is positioned. The coordinates for the PAINT call are based on the coordinates of this corner. The PAINT call reverses the color of the box that was clicked in because of the pen mode.

• getpieces: This section uses the graphic GET and PUT to take the rows of the grid and place them at the right of the screen, in four rows of sixteen squares. The PSET "action verb" is used so the overlapping edges of the grid pieces do not cancel each other out and leave a white space.

• calculate data: This routine checks each box of the 4-row grid. If the box is black, it adds the appropriate power of 2 into the total for the current row. The number for each row is stored first in the double precision variable byte number. If the number is over the 32767 limit, it is adjusted before being converted to an integer (CINT). If it is under the limit, no adjustment is necessary before the conversion. The converted number is placed in the proper array element.

• sample: Using the data provided by the grid squares, a sample of the new pattern is placed in the frame.

# BASIC: A DIP INTO THE ROM, PART 2

PENMODE (8) lets the frame be reprinted around the sample area. At this point, if the button "Look" was pushed, the program returns to the checkmouse routine; if "Done" was pushed, the program continues.

- printout: This prints the pattern data on the screen.

- loop.or.quit: This puts three new buttons on the screen so the user can choose what to do next.

- button.wait: This waits for a screen button to be pushed—buttons 1 and 2 ("Look" and "Done") don't count.

- another: Closes the buttons, erases the data information, and loops back.

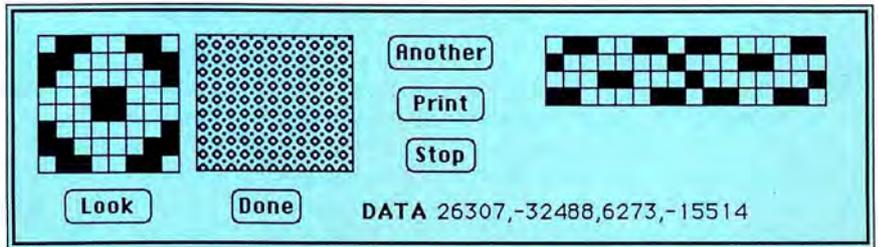


Fig. 6: The Pattern Utility program takes the drudgery out of pattern design.

- print.screen: Does a screen dump and loops back to button.wait.

- quit: Stops the program. If further program development is the goal, with windows, menus, and so on,

place the SYSTEM command here to return the user to the desktop.

That's all there really is to it. Most "professional tricks" aren't that hard at all. And the difference they make... ☒

## PATTERN UTILITY

begin:

**OPTION BASE 1**

**DIM** num%(4),coord%(4),rec%(4),slice\$(68)

**WINDOW** 1,,(20,75)-(500,225),2

drawgrid:

**CALL MOVETO**(10,10)

**FOR** n = 10 **TO** 90 **STEP** 10

**CALL LINETO**(n,90)

**CALL MOVETO**(n + 10,10)

**NEXT**

**CALL MOVETO**(10,10)

**FOR** n = 10 **TO** 90 **STEP** 10

**CALL LINETO**(90,n)

**CALL MOVETO**(10,n + 10)

**NEXT**

draw.sample.box:

coord%(1) = 10:coord%(2) = 100

coord%(3) = 90:coord%(4) = 190

**FRAMERECT** (VARPTR(coord%(1)))

**BUTTON** 1,1,"Look", (25,100)-(75,120)

**BUTTON** 2,1,"Done", (120,100)-(160,120)

checkmouse:

**PENMODE**(10)

buttonup:

**IF** MOUSE(0) < > 0 **GOTO** buttonup

buttondown:

**IF** DIALOG(0) = 1 **THEN** but = DIALOG(1):**GOTO** getpieces

m = MOUSE(0)

**IF** m = 0 **GOTO** buttondown

fillboxes:

a = MOUSE(1):d = MOUSE(2)

**IF** a < 10 **OR** a >= 90 **OR** d < 10 **OR** d >= 90 **GOTO** buttonup

rec%(1) = ((d \ 10) \* 10) + 1:rec%(2) = ((a \ 10) \* 10) + 1

rec%(3) = rec%(1) + 9:rec%(4) = rec%(2) + 9

**PAINTRECT**(VARPTR(rec%(1)))

**GOTO** checkmouse

getpieces:

**FOR** y = 10 **TO** 70 **STEP** 20

**GET** (10,y) - (90,y + 10),slice\$:**PUT** (300,y/2 + 5),slice\$,**PSET**

**GET** (10,y + 10) - (90,y + 20),slice\$:**PUT** (380,y/2 + 5),slice\$,**PSET**

**NEXT**

calculate.data:

**FOR** row = 1 **TO** 4

byte# = 0:bit = 15

**FOR** col = 305 **TO** 455 **STEP** 10

**IF** POINT(col,row \* 10 + 5) = 33 **THEN** byte# = byte# + 2^bit

bit = bit - 1

**NEXT** col

**IF** byte# > 32767 **THEN** num%(row) = CINT(byte# - 65536#) **ELSE**  
num%(row) = CINT(byte#)

**NEXT** row

sample:

**FOR** n = 1 **TO** 4:num%(n) = num%(n):**NEXT**

**CALL FILLRECT**(VARPTR(coord%(1)),VARPTR(num%(1)))

**PENMODE**(8)

**FRAMERECT** (VARPTR(coord%(1)))

**IF** but = 1 **GOTO** checkmouse

printout:

**LOCATE** 9,25

**TEXTFACE**(1)

**PRINT** "DATA ";

**TEXTFACE**(0)

**WRITE** num%(1),num%(2),num%(3),num%(4)

loop.or.quit:

**BUTTON** 3,1,"Another", (210,10)-(270,30)

**BUTTON** 4,1,"Print", (215,40)-(265,60)

**BUTTON** 5,1,"Stop", (220,70)-(260,90)

button.wait:

**WHILE** DIALOG(0) = 0:**WEND**

but = DIALOG(1):**IF** but < 3 **GOTO** button.wait

event = but - 2

**ON** event **GOTO** another,printscreen,quit

another:

**FOR** b = 3 **TO** 5:**BUTTON** **CLOSE** b: **NEXT** b

**LOCATE** 9,25:**PRINT** SPACES\$(60)

**GOTO** checkmouse

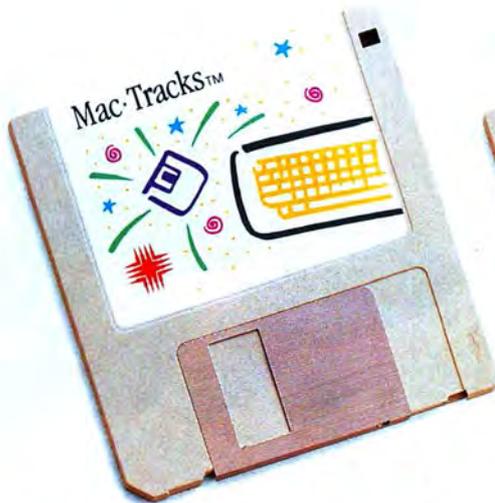
printscreen:

**LCOPY**:**GOTO** button.wait

quit:

**STOP**

# ~~Time wasting.~~



## Stop repeating yourself.

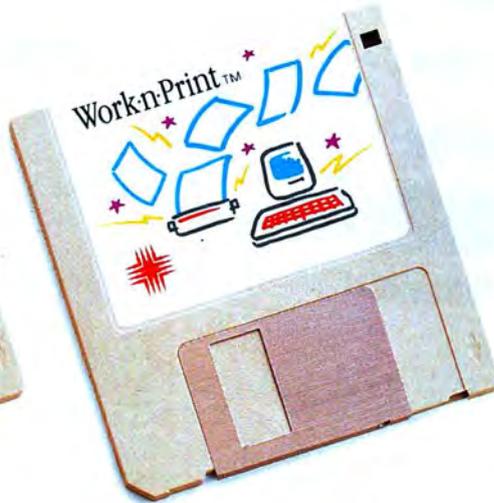
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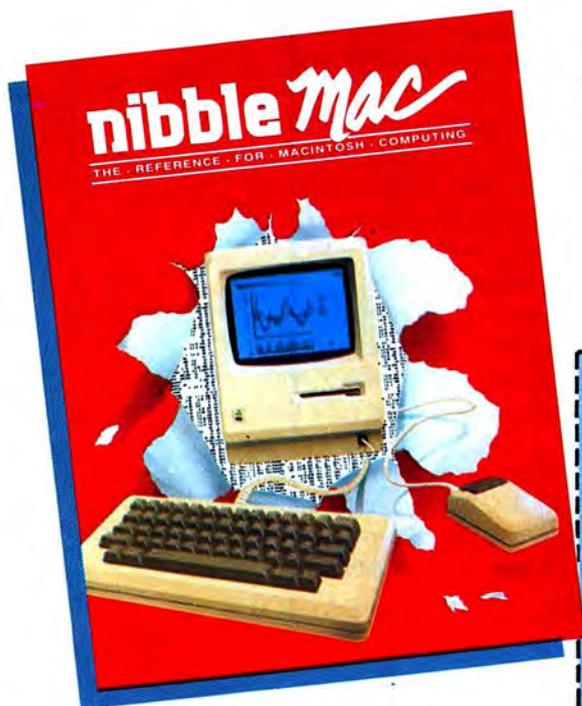
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# MACRO MAKER—NEW USES FOR EXCEL

Fig.7: Simple examples of matrix multiplication. The top example shows multiplication by an identity matrix (1's on the main diagonal, 0's elsewhere). The result is the original matrix. The middle example shows a 4-by-2 matrix. The bottom example shows what happens when an attempt is made to multiply matrices that do not meet the size constraint — that the number of columns of the first must equal the number of rows of the second matrix. *Excel* simply puts the error code "#NA" in each cell of the result.

$$\begin{bmatrix} 5 & 2 \\ 1 & -6 \end{bmatrix} \times \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix} = \begin{bmatrix} 5 & 2 \\ 1 & -6 \end{bmatrix}$$

$$\begin{bmatrix} 2 & 4 \\ 1 & 7 \\ 4 & -3 \\ 0 & 4 \end{bmatrix} \times \begin{bmatrix} 2 & 1 & 4 & 3 \\ 7 & 0 & 2 & 3 \end{bmatrix} = \begin{bmatrix} 32 & 2 & 16 & 14 \\ 51 & 1 & 18 & 17 \\ 13 & 4 & 10 & 6 \\ 28 & 0 & 8 & 8 \end{bmatrix}$$

$$\begin{bmatrix} 3 & 2 \\ 3 & 2 \\ 3 & 2 \end{bmatrix} \times \begin{bmatrix} 3 & 2 \\ 3 & 2 \\ 3 & 2 \end{bmatrix} = \begin{bmatrix} \#NA & \#NA \\ \#NA & \#NA \\ \#NA & \#NA \end{bmatrix}$$

	A
1	MatMultiply
2	=RESULT(64)
3	=ARGUMENT("Mat1",64)
4	=ARGUMENT("Mat2",64)
5	=IF(COLUMNS(Mat1)<ROWS(Mat2),RETURN(NA()))
6	=IF(ROWS(Mat1)<COLUMNS(CALLER()),RETURN(NA()))
7	=IF(COLUMNS(Mat2)<COLUMNS(CALLER()),RETURN(NA()))
8	=SET.VALUE(A21,1)
9	IterateRows
10	=SET.VALUE(A19,1)
11	IterateColumns
12	=SET.VALUE(OFFSET(A1,A21,A19,0))
13	=SET.VALUE(A17,1)
14	SumNextTerm
15	=INDEX(Mat1,A21,A17)*INDEX(Mat2,A17,A19)+VALUE(OFFSET(A1,A21,A19))
16	=SET.VALUE(OFFSET(A1,A21,A19,A15))
17	=A17+1
18	=IF(A17<COLUMNS(Mat1),GOTO(SumNextTerm))
19	=A19+1
20	=IF(A19<COLUMNS(CALLER()),GOTO(IterateColumns))
21	=A21+1
22	=IF(A21<ROWS(CALLER()),GOTO(IterateRows))
23	=RETURN(OFFSET(A1,1,1):OFFSET(A1,A21-1,A19-1))

Fig.8: This function macro computes the product of the two matrices that are its arguments. The arguments must be in the form of arrays.

(continued from page 44)

ed function was built in. Even though *Excel* has a large set of useful functions, users will discover "missing" functions. Thanks to the macro facilities just about any desired function can be implemented as a function macro and used as though it were built into *Excel*.

Built into the program are the abilities to add and subtract matrices and to multiply a matrix by a scalar (an ordinary number). But matrix multiplication is lacking.

Matrix multiplication is integral to many types of statistical and mathematical analyses. Although a general matrix multiplication function isn't built into *Excel*, one can be implemented as an *Excel* macro. And it's pretty easy to do.

## A Quick Review of Matrix Math

An *Excel* array filled with numbers (or formulas with numeric values) is a

matrix. A particular number within a matrix (called an element of the matrix) is identified by its row and column "address." For example, in the matrix

$$\begin{bmatrix} 2 & 4 & -3 \\ 1 & 9 & 2 \end{bmatrix}$$

the number -3 is element (1,3). That is, -3 is at the intersection of row 1 and column 3. In a more concise notation, the element of matrix *A* at the intersection of row *i* and column *j* is referred to as  $A_{i,j}$ .

The size and shape of a matrix are important in determining what operations can be performed on it meaningfully. If a matrix has, for example, 2 rows and 3 columns it is called a 2-by-3 matrix. In general terms, a matrix with *m* rows and *n* columns is an *m*-by-*n* matrix. To add two matrices, *A* and *B*, they must have the same number of rows and the same number of columns. The resulting matrix is computed by adding corresponding elements of *A* and *B*. Some examples are shown in Figure 7.

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## MACRO MAKER—NEW USES FOR EXCEL

Matrix multiplication has a somewhat more complicated shape requirement — to multiply matrices **A** and **B** giving result matrix **C**, the number of columns in **A** must equal the number of rows in **B**. The result, **C**, will have the same number of rows as **A** and the same number of columns as **B**. More succinctly, if **A** is an **m**-by-**k** matrix and **B** is a **k**-by-**n** matrix, then **C** = **A** × **B** will be an **m**-by-**n** matrix. The product, **C**, is computed by calculating each of its elements as follows:

$$c_{i,j} = a_{i,1} \times b_{1,j} + a_{i,2} \times b_{2,j} + a_{i,3} \times b_{3,j} + \dots + a_{i,k} \times b_{k,j}$$

Or, in slightly different notation:

$$c_{i,j} = \sum_{p=1,k} a_{i,p} \times b_{p,j} \quad (1)$$

Figure 8 shows the *Excel* function macro, called **MatMultiply**, that computes the product of the two matrices (represented as arrays) that are its arguments. The macro returns an array (the product of its arguments) as its result.

### MatMultiply, Cell by Cell

The basic idea of **MatMultiply** is to compute the result matrix array one element at a time, starting at row 1, column 1 and proceeding from left to right and from top to bottom until all the result elements have been computed. Let's follow the workings of **MatMultiply** cell by cell as *Excel* does during execution, explaining each cell in turn.

Cell A1 contains the text string "MatMultiply." When *Excel* executes the function macro, it simply passes this string by. The string is only present to provide a bit of documentation and permit simple naming of the first cell of the macro.

As soon as the user enters the name, **Define Name...** (in the Formula menu) is used to name cell A1 "MatMultiply" and define it as the starting point of a function macro. After the function name is defined (and whenever the macro sheet containing **MatMultiply** is opened) **Paste Function...** (also in the Formula menu) will include **MatMultiply** at the end of its scrolling list of *Excel* functions.

The function name is prefixed in the function list by the name of the macro sheet containing it and an exclamation point. So in this case, the macro's full name will be "MatMultiply!Mat-

Multiply."

When any function macro (such as **MatMultiply**) is executed in a worksheet, *Excel* begins interpreting cells beginning at A1 and proceeding down column A. Cell A2 tells *Excel* that the macro function will return an array data type as its result.

Cells A3 and A4 indicate that the function has two arguments, both arrays, and they will be referred to by the names "Mat1" and "Mat2," respectively. The next three cells (A5 to A7) test the arguments and the result array space to be sure that the arrays conform to the shape requirements for matrix multiplication. If the arrays are not in conformance, the function returns the value #NA which *Excel* will put in each cell of the result array. Note how the *Excel* function **CALLER()**, which returns a reference to the result array on the calling worksheet, is used here.

Cell A8 contains the **SET.VALUE** function, a very powerful macrosheet tool. **SET.VALUE** sets the value of another cell without disturbing any other function that may be present in that cell. (The importance of this will become apparent.) In this case, **SET.VALUE** is used to initialize a counter (in cell A21) that will be used as the row index during the calculation of the result array.

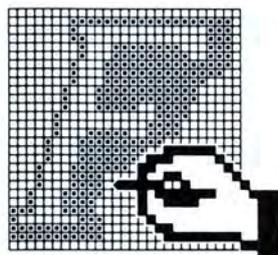
**MatMultiply** does its work by computing the elements of the result array one at a time — cell A21 contains the row index of the next cell to be calculated and cell A19 contains its column index. They correspond to *i* and *j*, respectively, in Equation (1) above.

A9 is another text cell used for documentation and naming. It is passed without effect during macro execution. "IterateRows" is established as a name for the "top" of the "loop" that calculates the successive rows of the result array.

Cell A10 initializes the column index counter similarly to the setting of the row counter by cell A8. This initialization occurs "inside" the row iteration loop—thus, as the macro moves to the next row of the result, the element in the first column of that row will be computed. A11 establishes the top of the column iteration loop, like A9's definition of the row loop top. As

(continued on page 146)

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# CORRALLING YOUR DESK ACCESSORIES

(continued from page 50)

## SideKick

First, the good news: *Sidekick's* collection of desk accessories are among the best, and potentially the most useful, accessories made for the Mac. Now, the bad news: practically speaking, unless you have a hard disk system, you won't really be able to use even a single one of them.

Each of *Sidekick's* accessories takes up only a few K on your disk, but (and it's a *big* but) there is a special system file that has to be available in order for most of the desk accessories to work. This file ("DeskStuff") is a whopping 46K. Try to fit that on a disk that has a sizeable application! I have only 36K free on my *Word* disk, for instance, and that's with only a few choice accessories and only one font besides the system fonts. *Sidekick's* documentation blithely explains that you should put the "DataPhiles" folder (containing "DeskStuff" and data files for specific accessories) on the external disk; of course, you'd only have to copy it on to every external disk you're going to use. And, if you follow those instructions, you'll be unpleasantly surprised to find that the information in each accessory changes when you change disks because it's being stored on the external disk. The manual neglects to mention that you can (and should) at least keep the data files on the start-up disk.

*Sidekick* also runs as a standalone application, so floppy-drive systems aren't completely out of the running. You may want to use the excellent phone application and *Print Manager* this way. But, as good as the accessories are, they lose much of their attraction when you can't use them concurrently with the application of your choice.

Now, on to the accessories, and try not to feel too badly about the fact that you probably won't be able to use them. . . .

*MacDialer* is a telephone's best friend. Once you have your phone book set up, you can click on a person's name and the telephone number will appear — and, with a hardware accessory available separately, the number will also be dialed. Your

phone calls can be timed, and the charges calculated; both figures appear on the screen while the *MacDialer* window is open. Based on the information you have entered in your *PhoneBook*, consultation fees also can be calculated automatically. There is a small area in which you can make notes about the call.

Phone charges, consultation fees and phone notes all become a part of the *Phone Log*, which can be reviewed and printed from the *Sidekick* main application.

The "CalendarBook" is a monthly calendar with a "notepage" available for each day and a *Week-at-a-Peek* option. A notepage scrolls vertically as you fill it, so you can fit in a lot of information. The Find function applies only to the current notepage; while this is mildly helpful if your notepage is very long, a similar function that could search all notepages is what is needed.

Any day with attached notes is circled on the calendar; the day whose notepage is active appears in outline; the current date is in boldface. The

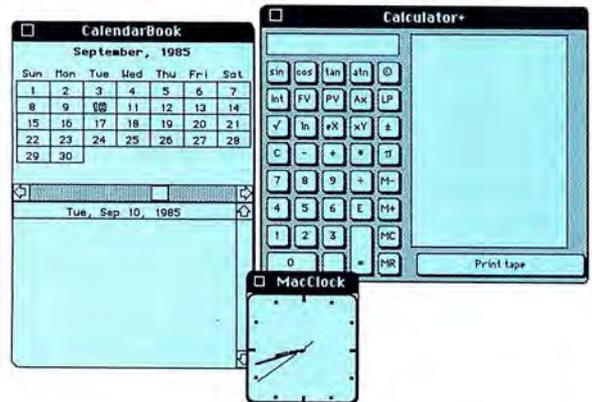
*Week-at-a-Peek*, as you might have guessed, shows the notepages for a whole week.

Moving to a different day on the calendar is a simple matter of clicking on the desired day. To change the month or year, you must use a horizontal scroll box, which is not as convenient as some kind of button arrangement that would let you go directly to the date you want.

The "Calculator" is just that: a calculator with extras. It has algebraic, trigonometric and financial functions, a memory, and a "tape." The on-screen tape printout lets you double-check your entries; it is scrollable, so longer calculations are not lost. You also have the option of sending the tape to the printer.

The "NotePad" is a mini word processor. Its window can expand to the size of the screen, and will scroll vertically if your notes exceed that area. You can name documents created with the "NotePad" and save them separately; you can also open any previously saved document. There is a Find function that will search through

*Sidekick's* CalendarBook, Calculator+, and Clock.



*Sidekick's* MacDialer can keep track of numbers, phone charges, and consultation fees — it can even dial your phone. The Area Code Lookup is a simple adjunct to the phone program.



the current document, and a Print option; you can also merge any available "NotePad" document into the current one.

The text files created by "NotePad" are compatible with *MacWrite* and *Word* and they can be transmitted by *SideKick's* "MacTerm."

*QuikSheets* is a handy little accessory; it is similar to a "Note Pad," but you can divide the pages into labelled columns and add check boxes to each of the lines. Four predesigned sheets are supplied: Things To Do (of course), Alarms (Mac will beep at specified times), Credit Cards and Expenses.

The *QuikEditor* on the *SideKick* disk lets you create your own *QuikSheets*. It is easy to use, for the most part, but you'll learn more from experimentation than from the documentation.

"MacTerm" lets you receive and transmit with Hayes-compatible modems. You can do basic configurations (port, baud, parity, stop bits, *(continued on page 142)*)

## REPORT CARDS

### THE MAC BATTERYPAK



List Price: \$49.95. Requires 128K, printer and external drive recommended. Published by Batteries Included, 30 Mural Street, Richmond Hill, Ontario L4B 1B5, Canada. (416) 881-9816.

### QUICKSET



List Price: \$49.95. Requires 128K, 512K or larger, external drive recommended. Published by EnterSet, Suite 408B, 410 Townsend, San Francisco, CA 94107. (415) 543-7644.

### SIDEKICK



List Price: \$84.95. Requires 128K, runs better on 512K with hard disk. Printer and external drive recommended. Published by Borland International, 4585 Scotts Valley Drive, Scotts Valley, CA 95066. (408) 438-8400.

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# CALLING THE MAC TO ACCOUNT

program automatically (and instantly) fills in the word equivalent. Also, if the number of an account is not remembered, the account can be found very quickly via a minifinder box.

The menus are very clear and easy to follow, but one problem occurs when printing checks. Checks can be printed as they are written or at the end of a session, but the menu is not clear. If *Print Now* is selected and no printer is on line, the system will crash.

*MacOneWrite* plans other modules. As it stands now, it is a good, simple check writer that prints simple reports. If nothing more is needed, *MacOneWrite* would be a good choice.

## Palantir

*Palantir* tries valiantly to provide a usable accounting system for a 128K single drive Macintosh. It succeeds in some ways. The manual is clear and concise; it uses icons for common operations; menus are clear and detailed, with most operations easy to find and use; it offers flexible report formatting and a customized chart of accounts, and it functions like a traditional ledger form so it is easy to transfer data from a manual system.

However, *Palantir* has a fatal flaw. To make it work in 128K, and to bring the price down, the three modules are all written in *Microsoft BASIC*. *BASIC* must be purchased and installed on each disk (a minor annoyance). As a result, however, the program is very, very, very slow. Printing a small report to the screen can literally take several minutes. The graphics used for the icons are fuzzy, and the icons are difficult to figure out, making their use a pain. The font used for on-screen reports is extremely difficult to read.

*Palantir* is basically well designed. But the speed is truly intolerable.

## Rags To Riches

*Rags to Riches* General Ledger, Accounts Payable and Accounts Receivable modules bend over backwards to be Maclike, and do some amazing things. Everything is done in clear, readable windows, many of which can be on-screen at the same time. Information entered in one window automatically transfers to related areas

of the program and immediately appears in the appropriate window.

All the program's operations are accessed through menus, but everything also has a command keystroke, that, once learned, speeds up operations dramatically. Oft-used accounts can also be assigned command keys.

*Rags to Riches* is floppy-based, although it requires 512K. It cannot handle very large numbers of transactions, nor does it provide detailed or flexible reporting. It is very easy to use however, although it can be confusing to operate with all the windows on screen at once.

The accounting principles are basically solid, but it helps to know what you are doing before going into this program.

## Strictly Business

*Strictly Business* General Ledger is a feature-packed system for a 512K Mac with two drives. It is clearly designed for the first-time user of accounting software, with clear, well-outlined set-up procedures.

*Strictly Business* is very flexible, with a custom chart of accounts; up to 98  
(continued on page 142)

## ACCOUNTING SOFTWARE REPORT CARDS

### Accountant's Choice



General Ledger. List Price: \$695.00. Requires 512K, printer, and two drives. Hard disk strongly recommended. Published by Sierra Information Systems, Inc., 10201 Torre Ave., Suite 210, Cupertino, CA, 95014. (408)725-3200.

### CheckMark General Ledger



List Price: \$295.00. Runs in 128K with single drive, but 512K, second drive or hard disk and printer recommended. Published by CheckMark Software, PO Box 860, Fort Collins, CO, 80522. (303) 484-3541.

### Gallery



Finance (GL, CD, A/R, A/P). List Price: \$795.00. Requires 512K, printer and two drives. Hard drive recommended. Published by Micromax Systems, 6868 Nancy Ridge Drive, San Diego, CA 92121. (619) 457-3131.

### Hardisk™ Series



List Price: \$695.00 per module. Requires hard disk and printer. 512K recommended. Does not use Mac interface. Published by Great Plains Software, Box 9739, Fargo, North Dakota, 58109. (701)281-0550.

### Maccountant



(Integrated GL, A/R, A/P) List Price: \$275.00. Runs in 128K with single

drive and printer. 512K and second drive recommended. Published by Digital, Etc., 1749 14th St., Santa Monica, CA, 90404. (213)452-5636.

### MacOneWrite



(Cash Disbursements) List Price: \$245.00. Requires 512K and printer. Second drive or hard drive optional. Published by Sierra On-Line, Coarsegold, CA, 93614. (209) 683-6858.

### Palantir



(GL, A/R, Inventory Control) List Price: \$145.00 per module. Requires *Microsoft BASIC*, printer. 512K, second drive or hard disk recommended. Published by Palantir Software, 12777 Jones Road, Suite 100, Houston, TX, 77070. (800) 368-3797.

### Rags to Riches



(GL, A/R, A/P) List Price: \$295.00 per module. Requires 512K and printer. Second drive optional. Published by Chang Labs, 5300 Stevens Creek Blvd., San Jose, CA, 95129. (408) 246-8020.

### Strictly Business



General Ledger. List Price: \$395.00. Requires 512K, printer and second drive. Hard disk optional. Published by Future Design Software, 13681 Williamette Drive, Westminster, CA, 92683. (714) 891-9796.

Software	Acc't's Choice	Check-Mark	Gallery Finance	Great Plains Hardisk	Mac-countant	MacOne-Write	Palantir	Rags to Riches	Strictly Business
<b>Accounting Numbering</b>	8 digit preset or open	4 digit-ranges defined	9 digit-ranges defined	4, 7, or 10 digits	4, 6, or 8 digits	up to 6 digits	Sequential from 1 to user limit	Accounts are named	3, 4, or 5 digits open
<b>Number of Accounts (128K/512K)</b>	limited only by diskpace	(250) (1000)	450	2000 GL 3000AR 500 PR	(50-100) (1000)	limited only by diskpace	limited only by diskpace	5000	limited only by diskpace
<b>Number Transactions (128K/512K)</b>	limited only by diskpace	(1500) (10000)	limited only by diskpace	limited only by diskpace	limited by memory	limited only by diskpace	limited only by diskpace	10000	limited only by diskpace
<b>Departments</b>	YES-5 digit #	Up to 9 Dep't.s or Profit Centers	NO	Up to 999 Dep't.s or Profit centers	Up to 99 Dep't.s or Profit Centers	Use decimal in acct # to set apart	NO	NO	100 per p.center
<b>Profit Centers</b>	YES-Unlimited		NO				NO	99	
<b>Largest Value</b>	999,999,999.99	999,999.99	20,000,000.00	9,999,999.99	21,000,000.00	999,999.99	99,999,999.99	999,999,999.99	999,999,999.99
<b>Chart of Accounts</b>	Preset or user defined	Preset ranges	Preset ranges	User defined	Preset ranges	Preset or User defined	User defined	User defined	User defined
<b>Reporting Capabilities</b>	Outstanding	Fair	Fair	Outstanding	Fair	Fair	Fair	Fair	Outstanding
<b>Multiple Windows</b>	YES	NO	NO	NO	YES	YES	NO	YES	YES
<b>Integration</b>	(YES) *	(YES) *	YES	YES	YES	(YES) *	YES	YES	(YES) *
<b>Save to text file</b>	YES-reports	YES-text or SYLK	YES-reports	YES	YES	NO	YES	NO	YES
<b>Print Checks</b>	(YES) *	(YES) *	(YES) *	YES	YES	YES	NO	YES	(YES) *
<b>Print Invoices</b>	(YES) *	(YES) *	(YES) *	YES	NO	(YES) *	NO	YES	(YES) *
<b>Documentation</b>	Good	Good	Excellent	Difficult	Fair	Good	Fair	Good	Excellent
<b>Support</b>	1 year@ \$300 for system	90-day free phone	90-day free phone	30-day free phone	Unlimited free phone	90 day free phone	60 day free phone	90 day free phone	Unlimited free phone
<b>On Screen Help</b>	NO	Footnotes	Planned	YES	NO	NO	YES	YES	NO
<b>Good for Beginner</b>	NO	YES	YES	NO	NO	YES	NO	NO	YES
<b>Passwords</b>	1, opt.	2 levels	2 levels	2 levels	2 levels	NO	NO	NO	2 levels
<b>Modules</b> General Ledger = GL Accts Payable = AP Accts Receivable = AR Inventory Control = IN Sales Order = SO Payroll = PR Job Cost = JC Cash Disbursements = CD	GL ----- (AP, AR, IN, SO, Purch., FA)	GL ----- (PR, AR, AP, IN)	GL, CD, AP, AR ----- (SO, PR)	GL, AR, AP, IN, PR, JC	GL, AR, AP on single disk	CD ----- AR, GL, PR	GL, IN, AR	GL, AR, AP ----- JC, PR, IN, Time and Billing	GL ----- (AR, AP, JC, IC, OE, PR)
	Mid'86	End'85	Mid'86	Now	Now	End'85	Now	Mid'86	Mid'86

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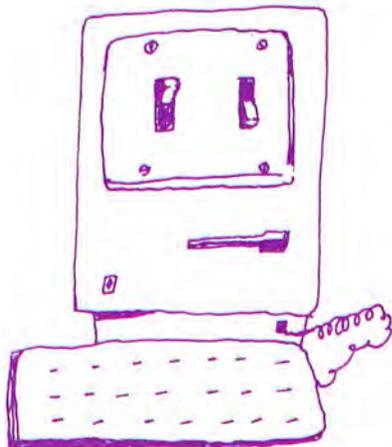
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The Mist	CALL
<b>MIRAGE CONCEPTS</b>	
Trivia	18.00
<b>McCARRON-DIAL SYSTEMS</b>	
McFlip	21.00
<b>NEWSOFT</b>	
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Pensate or The Quest	23.00
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Super Sports Trivia	18.00
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MacPoly	25.00
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Asylum	24.50
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Trivia Arcade	19.95

# APPLE TALKS ABOUT SWITCHER



On January 24, 1985, at the annual Apple Shareholder's meeting, Steve Jobs previewed to an amazed audience an even more amazing piece of code that let Macintosh users switch between different applications almost instantly. Written by Macintosh wizard Andy Hertzfeld, the Switcher program now includes many more features than that early version had, but its basic raison d'être remains the same — to provide Macintosh users with a degree of functionality and power not otherwise possible. Switcher is now an officially released Apple product. This month's column will answer some of the most commonly (and uncommonly) asked questions about this nifty product.

## What is Switcher?

Switcher is a utility program for the Macintosh 512K and XL that allows you to have more than one application in memory simultaneously. The advantages to such a scheme are many. First, you can switch and transfer data between applications without returning to the Finder... a real time saver. Second, most Macintosh applications don't require 512K of memory—in fact, most only require 128K. If you've got all that memory available you may as well use it productively. Third, Switcher can remember the sets of applications that you use most frequently so it's quite easy to construct, test and create your own integrated applications simply by saving your application information in a Switcher document.

## What is the officially released version number for Switcher?

Apple is shipping version 4.4. Switcher may have been the most widely distributed unreleased product in the history of microcomputers; there are, therefore, many early versions of the product floating around from testing stages. You can make certain that your version is 4.4 by checking the version number in the "About Switcher" dialog box, accessible under the Apple menu. Make certain that you are working with the released version!

## As a software developer, are there other ways to fully optimize my program to work with Switcher?

Switcher's open architecture allows the Macintosh developer to provide much more program functionality for any program running under Switcher. First a program can determine whether it is running under Switcher by inspecting low memory location \$282 (SwitcherGlobals). If the long word in this location has a value of either 0 or -1, your program isn't running with Switcher. If the value is not 0 or -1, it's a long word pointer to the Switcher globals area and you know your program is running under Switcher. You can also determine if your program is the active program under Switcher, determine what other applications are currently memory-resident, read and write to other applications low-memory locations and/or heapzones, switch applications under your program's control, and even allow your application to get called even though it may be suspended. This latter feature will allow you to provide multitasking capability for your application by allowing it to execute in the background, even when it's not the currently active application!

## As a developer, how can I get the technical information that will allow me to do what you've described?

All the necessary information is included in a document entitled "Inside Switcher," available on CompuServe's MAUG databases, or available through subscription to "Macintosh Technical Notes," published by Macintosh Technical Sup-

port. These notes are published 12 times a year for an annual subscription rate of \$20. You can subscribe by sending your check to Macintosh Technical Notes, Apple Computer, Inc., Mail Stop 3E, 20525 Mariani Avenue, Cupertino, CA 95014.

## As a software developer how do I go about licensing Switcher so I can include it on my program disk?

Switcher can be licensed by any software developer for a licensing fee of \$250 per year per product, regardless of how many copies you sell. For additional information call or write to Apple Software Licensing, Apple Computer, Inc., 20525 Mariani Avenue, Cupertino, CA 95014.

Developers who license Switcher are required to provide at least one pretested, preconfigured Switcher document on their program disk, and also should provide documentation which deals specifically with how best to use Switcher with their application. Documentation guidelines are provided with the licensing agreement.

## How about some hints on use.

If you can afford the memory always include the Finder in a Switcher set... when someone walks into your office and wants a copy of a file, or when you need to throw





away some documents to retrieve disk space you'll know what I mean. Also, if you use the *Finder*, be sure it is the first application that you install in your set.

Each *Switcher* application maintains its own clipboard but *Switcher* allows you to convert the clipboard contents from one application to another when you switch. You can configure *Switcher* to always convert the clipboard when you switch by checking the "Always Convert Clipboard" option in the *Switcher* Options Window. This is probably not the most desirable way to work.

Always converting the clipboard takes time and memory. Most of the time, when you switch between applications you really don't want the clipboard converted. Leave "Always Convert Clipboard" unchecked. Holding down the Option key while switching accomplishes the same thing and is a much more efficient and safe method to move data between applications.

You can create a turnkey *Switcher* system for each set of applications you use. Make *Switcher* the start-up application on your diskette and name the *Switcher* document that you want to use "Switcher.StartUp". Then you can simply insert the disk you want to work with, turn on your Macintosh, get a cup of coffee and return to find all your applications and documents ready and waiting for you.

#### How does *Switcher* actually work?

From *Inside Switcher* by Andy Hertzfeld

*Switcher* performs some of the same functions as the *Finder* and the loader, allowing users to select and launch applications and documents. Instead of using the ROM's Launch routine like the *Finder* does, *Switcher* uses a special routine that launches an application into a subset of available memory, allowing multiple applications to reside simultaneously in memory. An application's current state (all memory locations and register values that are specific to an application) is mostly concentrated in its heap and stack areas, but also includes various low memory globals and system heap objects. *Switcher* must maintain multiple copies of these shared low memory and system heap areas and save and restore them during context switching. To switch between applications, *Switcher* saves these special memory areas into a process state record associated with the current application, and then replaces them with values belonging to a new application.



### Application Switcher Options

- Switcher in Rotation
- Always Convert Clipboard
- Switching Animation
- Back After Launch
- Same One Twice
- Reverse Switch Direction
- Disable Keyboard Switching

OK
Cancel

Since the Macintosh operating system was not designed to support concurrent applications, *Switcher* must modify a number of system ROM routines using RAM-based patches. Currently, *Switcher* modifies or replaces 26 different system routines. The most important of these is the "GetNextEvent" routine, which is called periodically by most law-abiding applications. Besides performing the usual event-handling functions, *Switcher*'s "GetNextEvent" routine checks to see if the user is requesting a context switch by polling the mouse position and the keyboard bitmap. If so, it suspends the current application and switches control to a new one.

The Macintosh clipboard provides a flexible facility for transferring data between

different applications. Since there is often some overhead associated with writing to the clipboard, most applications don't put stuff into it every time a cut or paste occurs. However, they must make sure the clipboard is valid to cut and paste with desk accessories. Thus *Switcher* has a devious way to request applications to convert their clipboard to global format—it makes them think that they're cutting or pasting into a desk accessory. When the user requests a switch with clipboard conversion, *Switcher* passes a sequence of phony events to the application to make it think it's pasting into a desk accessory, starting with a mouse-down in the menu bar area to get it to think it's pulling down the desk menu. This procedure is highly heuristic and evolved by inspecting the behavior of dozens of appli-



## Switcher

by Andy Hertzfeld

Version 4.4 -- August 12, 1985  
© 1985 Apple Computer, Inc.



#### Helpful Hints:

- Use  $\text{⌘}[$  and  $\text{⌘}]$  to rotate between applications.
- Use  $\text{⌘}\backslash$  to return back to the switcher.
- Use the option key to transport the clipboard between applications (or not).
- Use  $\text{⌘-shift-option-period}$  as an "emergency exit" to exit hung applications.
- The *Finder* can be run under the *Switcher*; open *Switcher* to quit from the *Finder*.
- Click on the screen of the Mac icon to toggle saving screen bits to save 22K.

Thanks to John Markoff and Bud Tribble.



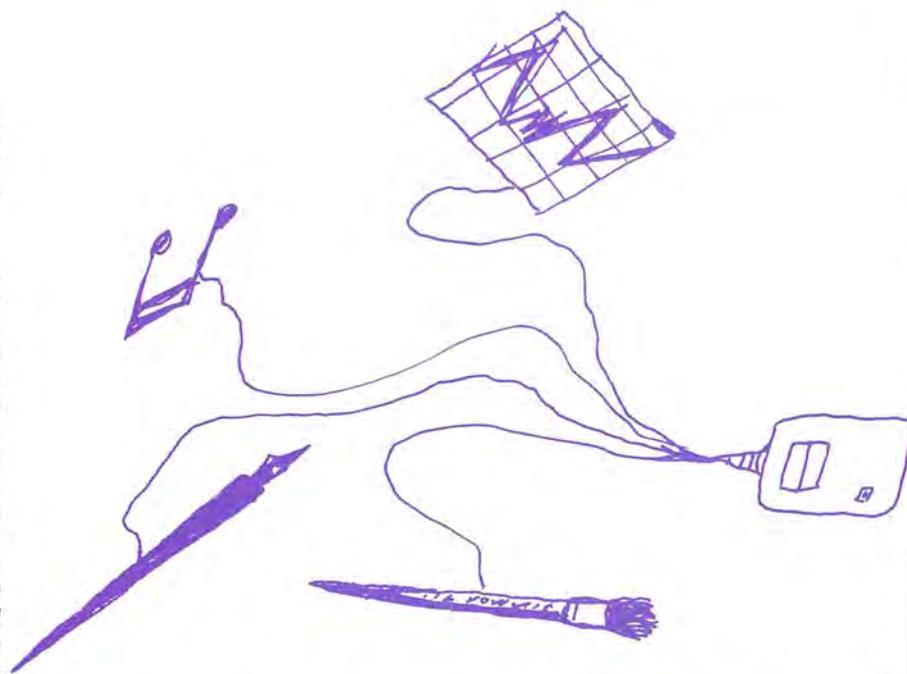
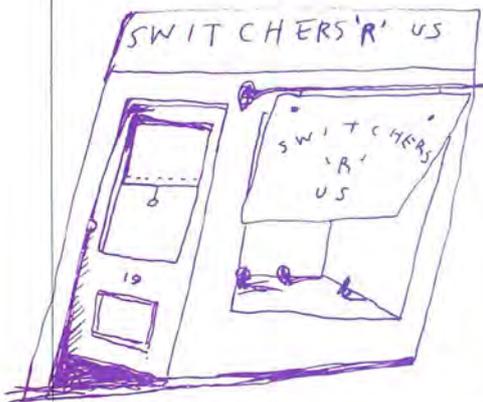
cations. The bottom line is that an application must support cutting and pasting with desk accessories to be able to cut and paste with other applications under the *Switcher*.

### Where can I get *Switcher*?

You can get *Switcher* from three sources: (1) Many Macintosh software developers will be including *Switcher* with their products, along with preconfigured, pretested *Switcher* documents. For the novice this is probably the best place to get started with *Switcher*; (2) you can get the "Switcher Construction Kit" from your authorized Apple dealer (suggested retail price is \$19.95). This kit includes the *Switcher* disk and a comprehensive manual which explains how to test and create your own *Switcher* solutions. Note: *Before beginning serious work with Switcher make sure that you've read and understood the Switcher Construction Kit manual.* It will make your *Switcher* use much more enjoyable and productive; and (3) those of you with modems and CompuServe accounts can download *Switcher* from MAUG's Macintosh User Special Interest Group Database.

### How many applications can I run simultaneously under *Switcher*?

*Switcher* works by creating several logical 128K Macintoshes out of one physical 512K Macintosh or XL. The *Switcher* user, therefore, should have some appreciation of short division. I once spoke to an irate user who was very frustrated that *Switcher* wouldn't work on his 128K Macintosh; I tried to explain that you can't subdivide a 128,000 square foot building into four 128,000 square foot partitions. With *Switcher*, you can run three 128K Macintosh applications very comfortably on a



Macintosh 512K and six applications on a Macintosh XL. *Switcher* really comes into it's own with a hard disk and a Mac or Mac XL with at least 1 megabyte of memory although it's still useful with a standard 512K Macintosh and an external drive.

### Can I run multiple copies of the same application? For instance two copies of *MacWrite*?

You can but you must be careful. Some applications (notably *MacWrite* and *MacPaint*) create temporary work files on disk. Applications that create these types of files easily become confused if two copies of the application are trying to open, create or access the same temporary files. If you are running two copies of *MacWrite* from two different volumes you are probably safe. If you really want to run the same application twice make certain that you experiment first before working with important data.

### Does *Switcher* allow multiple applications to actually run simultaneously?

*Switcher* lets multiple applications reside in memory simultaneously. It does not, by itself, allow those applications to actually be executing simultaneously; that is, you can't start a print job or a spreadsheet calculation in one application and then switch to another application and expect the previous task to complete. Only one application can be active at a time. There are, however, program hooks built into *Switcher* so that future Macintosh applications that know about *Switcher* can handle

concurrent tasks like the ones described! More about *Switcher* internals later . . .

### How do you use *Switcher*?

Most of the people in my group are *Switcher* users and some are quite fanatical, including myself. My own personal setup involves a Macintosh XL with 1 megabyte of memory. I've got two *Switcher* documents or sets that I use frequently. The first is my day-to-day set which includes *MacWrite* configured at 144K (so I can print to the LaserWriter), *MacDraw*, *MacPaint*, *Multiplan*, and *Red Ryder*, all at 128K, and the *Finder* at 128K. My second set is for creative work and I use it for preparing sales materials, manual mockups and intimidating memos. Try *MacWrite* at 144K, *MacDraw* at 128K, *MacPaint* at 128K and *PageMaker* at 256K. (Note these configurations are only for XL users or Macintosh owners with 1-megabyte upgrades). For manual production, create *MacPaint* readable screen dumps of the illustrations you want to include by typing the Command, Shift and 3 keys simultaneously. Touch up the screen dumps in *MacPaint*, copy them to the Clipboard, switch to *MacWrite* and paste them in the appropriate spot.

At home on my 512K Macintosh I use *Switcher* with the *Finder*, *Dollars & Sense*, and *Red Ryder*. When I'm doing my home accounting I can quickly access my electronic banking service and make certain that all my electronic transactions are included in my *Dollars & Sense* ledger accounts. ☐

# For all of you who thought Dennis Brothers was crazy to give away MacTEP™, here's MicroPhone.™

## The one he's selling.

When the Macintosh first came out, the most powerful personal computer ever built didn't have the brains to make a phone call.

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Which he proceeded to give away.

MacTEP was a classic. The first standard in Mac communications.

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

### Run on automatic.

When you open MicroPhone to the desktop you'll find a comprehensive collection of icons pre-programmed to access all major information services: CompuServe®, Dow Jones News/Retrieval®, The Source,™ Delphi,™ the works.

A few clicks and you're in. With automatic log-in and sign-on.

But that's just the beginning of its ability to automate the whole telecommunications process. For MicroPhone features the most powerful, yet simplest to set up macros ever seen on a program.

### Write your own script.

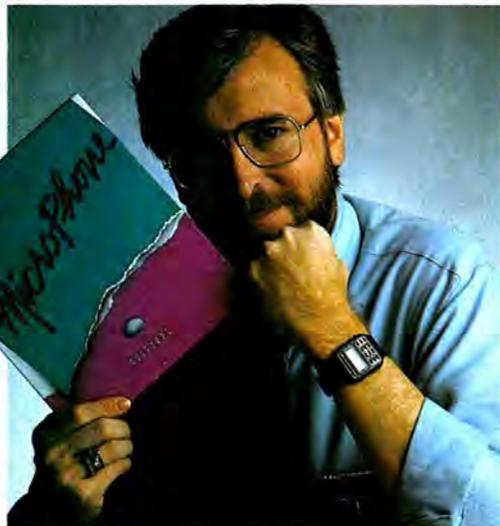
Dennis gives you two ways to create these macros. The first is to set MicroPhone in the Watch Me,™ the recording mode.

The program looks over your shoulder as you conduct a communications session following your keyboard and menu commands.

MicroPhone can remember not only an uninterrupted string of keyboard commands, but also wait-for-prompt conditions. In fact, virtually any series, no matter how long or complex.

The entire sequence is saved. To be invoked at any time with a single key command.

The second way to generate macros is through



MicroPhone's unique "Script" window. Open it and you'll discover an extensive set of functions which can be called up and linked with a series of mouse clicks. The resulting macro is extremely powerful. The method is Mac-simple.

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

### Make files fly.

Sending and receiving files is faster and easier with MicroPhone, too. Using XMODEM protocols and MacBinary, MicroPhone transmits or receives anything you

can create on a Macintosh. Including MacPaint documents, text, spreadsheets, charts, database tables, or programs.

MicroPhone allows you to scroll back and forth at high speed to review your session. Then you can select any portion of your session, print it, save it to a file, or copy it to the Clipboard for use by other Macintosh programs.

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

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

Dennis isn't giving it away this time. But at \$74.95, almost.

#### Let's get technical box.

Runs in terminal emulation mode at speeds up to 57.6K Baud. Emulates DEC™ VT52™, VT100™ and TTY type terminals. Supports TEXT (ASCII) and XMODEM (Christensen) protocols, send and receive. Supports MacBinary. Runs on 128K and 512K Macintosh. LaserWriter compatible. Includes Switcher for use with other Macintosh programs. Compatible with Hayes, Apple and other leading modems. Built-in full text editor licensed from Dreams of the Phoenix Inc. Documentation by Neil Shapiro.

MicroPhone and Watch Me are trademarks of Software Ventures Corporation. MacTEP is a trademark of Brothers Associates. Macintosh is a trademark licensed to Apple Computer, Inc. LaserWriter and Switcher are trademarks of Apple Computer, Inc. CompuServe is a registered trademark of CompuServe Corp. Dow Jones News/Retrieval is a registered trademark of Dow Jones & Company, Inc. The Source is a service mark of Source Telecomputing Corp., a subsidiary of The Readers Digest Association, Inc. Delphi is a trademark of General Videotex Corp. DEC, VT52 and VT100 are trademarks of Digital Equipment Corporation. ©1985 Software Ventures Corporation



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In USA and Canada add US \$5.00 for postage and handling per product ordered. All other countries add US \$10.00. In California add 9% (84.50) sales tax. ALL FOREIGN ORDERS: please make payment by bank draft, payable in US dollars, drawn on a US bank. No C.O.D. or Purchase Orders. If you are not 100% happy, return MicroPhone within 30 days for a full refund.

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# MINIFINDERS

Ever go into a computer store and wish you had someone you could trust tell you what the various programs and accessories do and how well they do it? These MiniFinders detail items chosen by the editors. Each one has been rated from one to five mice and there are even a few bomb icons scattered here and there. Red names indicate *this month's additions*. Next time you have to find products you can count on, count on MacUser!

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### COMMUNICATIONS/NETWORKING

**InTouch** is a full-featured telecommunications program. It has its own powerful communications command language that lets users do complete unattended sessions. Supports Xmodem, MacBinary and Kermit. Has a macro key function. Large number of communication documents and sample command language files provided. \$149. Software Masters, Suite BB, 3330 Hillcroft, Houston, TX 77057.

**MacDasher** is a communications program with one purpose: to emulate a Data General D210 terminal. It does an excellent job at that. \$49. Kaz Business Systems, Suite 1620, 10 Columbus Circle, New York, NY 10019.

**MacTerminal** provides basic telecommunications and terminal emulation for the Mac user. It emulates DEC VT100s, IBM 3278s and plain teletypewriters (TTYs). Its usefulness as a telecommunications package is somewhat limited since it does not have macros nor any sort of auto redial/auto logon capability. Superb for people needing faithful VT100 or IBM 3278 emulation. \$99. Apple Computer, Inc., 20525 Mariani Ave., Cupertino, CA 95014.

**MITE** offers basic communications capabilities along with VT100 emulation. Complete but somewhat awkward to use. \$145. Mycroft Labs, Inc., PO Box 6045, Tallahassee, FL 32314.

**Mouse Exchange BBS** turns a Mac into an electronic bulletin board system. Allows private electronic mail, public message areas and file distribution. Users can be granted different access levels and password security is supported. Supports Xmodem file transfers. External drive or hard disk recommended. \$39.95. Dreams of the Phoenix, Inc., PO Box 10273, Jacksonville, FL 32247.

**SmartCom II** balances power and ease of use. Capable of unattended operation and has a very powerful command language. Does real-time graphics when run on a 512K and connected to a 512K Mac. Supports MacBinary, Xmodem, and Hayes Verification protocols. The large screen buffer can easily be archived both to the printer and to disk. Very complete program marred only by lack of keyboard macros. \$149. Hayes Microcomputer Products, Inc., 5923 Peachtree Industrial Blvd., Norcross, GA 30092.

**Straight Talk** is a simple, straightforward communications program that includes a link to the Dow Jones News/Retrieval Service and other major on-line services. It runs at either 300 or 1200 baud only. Special features work well with DJN/R. Includes a free password to the Dow Jones network with 1 hour of unrestricted use. \$79. Dow Jones & Co., Inc., PO Box 300, Princeton, NJ 08540.

**Telescope** is the power telecommunicator's terminal program. It can be configured to emulate any terminal and has all the advanced features (except unattended operation). Features include a small electronic mail miniBBS option. Documentation does not adequately explain the features and much of the power will be unavailable to all but the pros (who can figure it out on their own). \$125. Mainstay, 28611B Canwood St., Agoura Hills, CA 91301.

**VersaTerm** is a power telecommunications program. DEC VT100 and VT52 emulation, Tektronix 4014 graphics terminal and Data General DG200 emulation. Supports Xmodem and MacTerminal Xmodem protocols. The MacBinary standard is implemented. Auto redialing and auto logon and users can create a directory of frequently called phone numbers. Easy to use and well documented. \$99. Peripherals, Supplies & Computers, Inc., 215 Mt. Penn Ave., Perkiomen, PA 19606.

**1stPort** is a superb data transfer package. It can handle many document formats, including SYLK, DIF, 1stBase and plain vanilla ASCII. The documentation is clear and precise. More than adequate as a simple terminal emulator. It supports Xmodem transfers. Built-in text editor, makes this program easy to use with remote message and electronic mail services. \$95. DeskTop Software Corp., 244 Wall St., Princeton, NJ 08540.

### DATA FORMATTING

**Microsoft Chart** is the standard to be matched in presentation graphics programs. Users can easily create area, bar, column, line, pie, scatter and combination charts. A total of 42 styles are provided. Data can be exchanged with other Microsoft products and charts can be pasted into MacDraw, MacPaint and MacWrite. Has on-screen help.

Limited to 100 data items (64 in a series) on a 128K Mac, approximately twice that on a 512K Mac. \$125. Microsoft Corporation, 10700 Northup Way, Bellevue, WA 98009.

**File/Report** provides two programs on one disk. *File* is a reliable, easy to use text database. Use it to design simple forms, maintain records, and, in concert with *Report*, generate reports in list format or as designed forms. This package was an early entry into the Mac marketplace and more powerful and versatile products are now available. \$175. Software Publishing Corporation, 1901 Landings Drive, Mountain View, CA 94043.

## EDUCATION

**ChipWits** is a combination game and teaching tool. Players create programs to maneuver robots through a set of eight mazes. The programs are written in *ChipWit's* built-in icon-based programming language (IBOL). IBOL is a nearly perfect introduction to programming for nonprogrammers. \$49.95. BrainPower, Inc., 24009 Ventura Blvd., Calabasas, CA 91302.

**MacEdge** and **MacEdge II** each contain eight reading or math drill programs for basic skills. Programs follow one of three formats, a bit contrived. Contrivances are design flaws — they require learning format as well as skill. Exception is Alphabet Train, a clever game with great graphics and sound, poor font definition. Average educational value, can be fun to play. \$49.95 each. Think Educational Software, 16 Market St., Potsdam, NY 13676.

**MacType** offers structured typing instruction. Can teach both standard and Dvorak keyboards. Features include certificates for reaching certain levels. Can be used in a multistudent environment. \$49.95. Palantir Software, Suite 100, 12777 Jones Rd., Houston, TX 77070.

**MasterType** is a proof that learning to type can be fun. In this arcade-style action game words descend from four corners towards the center ship; the user must type them correctly. Features 18 skill levels, tracks errors, recommends lessons and provides comparison scores. \$49.95. Scarborough Systems, Inc., 55 South Broadway, Tarrytown, NY 10591.

**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 psychological profile of subject in business, stress, sex and other situations. \$50. Human Edge Software Corp., 2445 Faber Place, Palo Alto, CA 94303.

**Starting a New Business** is a short tutorial structured as a text game. Players choose one of three businesses to start, then try to run it profitably. Can be mastered in one or two sessions, but worth a look just the same. \$59.95. Queue Intellectual Software, 5 Chapel Hill Dr., Fairfield, CT 06432.

**Think Fast** allows users to improve their recall and recognition abilities. Tests include compare, copy and recall exercises. Users choose the level of difficulty, speed and risk-taking. Has session and summary reports to provide feedback and permanent records. Good for users of all ages. Children will find it fun. The manual is very clear. \$39. BrainPower, Inc., 24009 Ventura Blvd., Calabasas, CA 91302.

**Turbo Turtle** is a turtle graphics program primarily designed as a learning tool for children. It uses Logo commands for graphics, but is not a full implementation of Logo. Com-

mands and common operations are displayed on pull-down menus, executed in a graphics window as they are entered. Procedures can be written and combined for complex designs and recursive operations. Simple to use, good introduction to Logo for young children. \$59.95. Hayden Software, 600 Suffolk St., Lowell, MA 01854.

## ENTERTAINMENT

**Airborne** is classic arcade-style game with "real" sound effects. The player sits at a gun position on a low rise and defends against an assault from flying troops and tanks that land and attack across the desert. Game noises digitized from actual recorded sounds. \$34.95. Silicon Beach Software, Suite 201, 11212 Dalby Pl., San Diego, CA 92126.

**Balance of Power** is the world's first computer peace game. This astonishing simulation allows players to become either the President of the United States or General Secretary of the Soviet Union. The goal is to expand your country's sphere of influence while avoiding nuclear war. Extraordinary artificial intelligence routines and general play make this game a true classic. Mindscape, Inc., 3444 Dundee Rd., Northbrook, IL 60022.

**Baron** is the world of real estate in a financial simulation. Buy and option properties in five key areas; invest in industrial, residential or land property; or put cash aside in high-interest accounts. \$59.95. Blue Chip Software, 6740 Eton Ave., Canoga Park, CA 91303.

**Cutthroats** casts players in this full-text adventure as a deep-sea diver, hired by a band of toughs to locate shipwreck treasure. The game is very closed-ended, requiring almost Pavlovian obedience. Multiple endings. \$39.95. Infocom, 125 CambridgePark Dr., Cambridge, MA 02140.

**Cyborg** is a text adventure game with an interesting twist. Robot brain is implanted in concert with yours. It scans, evaluates and reports, then carries out actions. Robot can sometimes be appealed to for extra info. A new source of energy must be found before self-destruct. Energy levels, metabolism, danger signs appear on control panel left of text area. Word and sentence understanding is very good. Absorbing game for adventurers. \$39.95. Broderbund, 17 Paul Drive, San Rafael, CA 94903.

**Deadline** is a text adventure in which the player is a detective called in to investigate what seems like a simple drug overdose. The family lawyer thinks it was really a murder. You have 12 game hours to find the killer or else someone's going to get away with murder! \$49.95. Infocom, 125 CambridgePark Dr., Cambridge, MA 02140.

**Eat New York** is a unique Mac database. It is a list of over 700 New York City restaurants. You can search for a place to go by category or location. The minireviews that appear on the screen can be edited (as users will often disagree with them) and new entries added. Indeed, all the New York entries could be deleted and a restaurant database for any locality created. \$39. Kaz Business Systems, Suite 1620, 10 Columbus Circle, New York, NY 10019.

**Entrepreneur** allows up to nine players to compete in the software industry. Make the right decisions early on and the game plays itself. Tiresome at best. \$49.95. Microsoft Corporation, 10700 Northup Way, Bellevue, WA 98004.

**Feathers and Space** is an arcade game. Heavy flapping birds assault you and your troops. Protect your camp via a single spaceship with full lateral movement but a barrier halfway up the screen. Weapons include bullets and

# MINIFINDERS

bombs. Twisting the mouse rotates turrets on the ship. Death arrives with three ships lost or three troops carried away. Very average game. \$34.95. PBI Software, 1155B-H Chess Drive, Foster City, CA 94404.

**Felony** provides twelve mystery games in a package. One or more players visit various clue sites, deciphering numbered clues with the enclosed booklet. The first one to solve the case wins. \$44.95. CBS Software, One Fawcett Place, Greenwich, CT 06836.

**Forbidden Quest** is a text adventure with pictures. Begins in a spaceship, with you in extreme danger. Indications are that if you don't do something very quickly, you will die a horrible death. Several levels of on-line help, from simple hints to actual solutions. The disk is accompanied by five graphic prints, called Artext™, of specific scenes with hidden clues. Very playable. \$44.95. Priority Software, Suite 22, 635 Sanborn Rd., Salinas, CA 93901.

**Gateway**, another Artext™ game, comes with three full-color prints. You inherit a boring old building from a supposedly rich uncle, eventually learning that the building is a "gateway" to a lost civilization. You must find the gateway and cross through. Outcome is determined by choices made along the way. Both *Forbidden Quest* and *Gateway* have pull-down menus for conditions, inventory, and game operations. \$49.95. Priority Software, Suite 22, 635 Sanborn Rd., Salinas, CA 93901.

**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." The game comes with 20 missions and you can create up to ten missions of your own. \$39.95. Spectrum Holobyte, Inc., Suite 325, 1050 Walnut St., Boulder, CO 80302.

**Gypsy** is a computerized, customizable Ouija board. More than just a software package, users get a pasteboard playing surface and a Mouse Mover with 99 ball bearings. \$39.95. Suite 337, Magnum Software, 21115 Devonshire St., Chatsworth, CA 91311.

**Legacy** is a text/graphic adventure on two disks (Parts One and Two). A magical orb in Drab Castle must be found through the use of spells and careful adventuring. Well-constructed game and fun to play. Two disks needed for ever-present graphics. \$39.95. Challenger Software, PO Box 1478, Homewood, IL 60430.

**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 Drive, San Rafael, CA 94903.

**MacAttack** puts the player in command of a super tank defending the wastes of Alaska against invaders. This 3D simulation pits you against attacking tanks and warplanes that fire heat-seeking missiles. Defeat the horde and get treated to a graphic fireworks display. \$49. Miles Computing, Inc., Suite 212, 7136 Haskell Ave., Van Nuys, CA 91406.

**MacBackgammon with Cribbage** provides graphic versions of these classic games. Variable skill levels allow the user to set game difficulty. At the expert level both games will challenge experts. The graphics are attractive but slow the games down quite a bit. \$49. Videx, Inc., 1105 Northeast Circle Blvd., Corvallis, OR 97330.

**MacChallenger** lets players land a space shuttle at either Cape Kennedy or Edwards AFB. The graphics of this flight simulator

are crude and it's a hard machine to fly, but it's also a lot of fun. Version 2.0 lets you record your landing attempt (that's what most of them are!) and then review it from any of ten camera angles, a truly unique touch! \$49.95. Aegis Development, Inc., Suite 277, 2210 Wilshire Blvd., Santa Monica, CA 90403.

**MacCheckers with Reversi** will provide a stiff challenge to experts. You can adjust the degree of difficulty to your taste. The graphics and animations are excellent, although slow. The checkers portion can be very hard to beat when the skill level is set to expert. Reversi (similar to Othello) is somewhat easier, even at the expert level. \$49. Videx, Inc., 1105 Northeast Circle Blvd., Corvallis, OR 97330.

**MacJack II** is a blackjack game pitting users against the house. Includes good graphics, insurance against dealer blackjack, splitting and doubling, and table limit that rises with your stake. The game plays very well, and can be quite addictive. \$39.95. DataPak, Suite 401, 14011 Ventura Blvd., Sherman Oaks, CA 91423.

**MacPoker** looks and plays just like *MacJack II*, one player against the house. This format is not as successful or interesting with poker as it is with blackjack. Dealing and play are slow and few playing options are provided. Game is limited to five-card draw. \$39.95. DataPak, Suite 401, 14011 Ventura Blvd., Sherman Oaks, CA 91423.

**MacVegas** contains seven complete casino-style games: baccarat, blackjack, craps, keno, poker, roulette and slots. All are fairly standard but generally well designed. House rules can be altered by selecting from a menu. The games are all fun to play, but not particularly absorbing. \$59. Videx, 1105 Northeast Circle Blvd., Corvallis, OR 97330.

**Make Millions** is a fascinating business simulation in which the player competes against the computer to take control of five companies, then run them profitably. Different strategic options and human-seeming associates make simulation more complete. Appeals to the closet capitalist in all of us. \$49.95. Scarborough Systems, Inc., 55 South Broadway, Tarrytown, NY 10591.

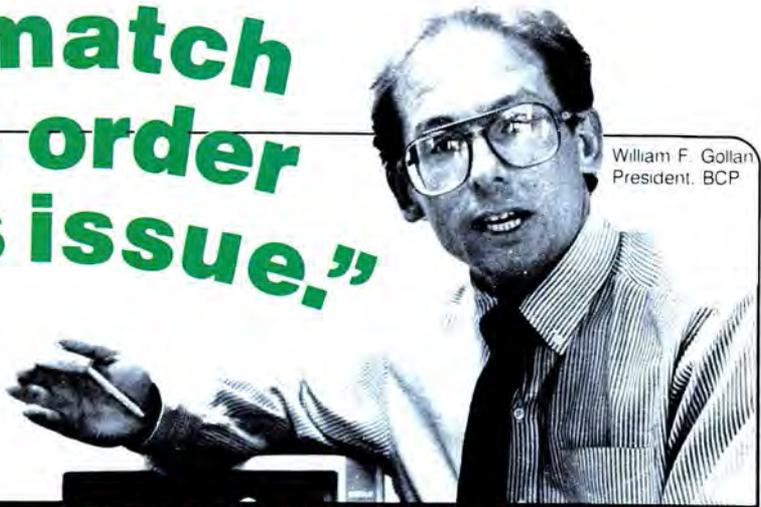
**Millionaire** is a financial simulation based on the stock market. "News" affects stock prices, so read it religiously. Turn a pittance into a fortune to win the game. \$49.95. Blue Chip Software, 6740 Eton Ave., Canoga Park, CA 91303.

**Mouse Stampede** is an infectious *Centipede*-like game with mice, bats, cheese (normal and moldy), turtles, flies, paint brushes, knives, shopping carts and sneakers on the attack. Activated cats gobble mice until full. Game is fast-paced, high scoring and fun to play. \$39.95. Mark of the Unicorn, 222 Third St., Cambridge, MA 02142.

**NewGammon** is animated backgammon that will challenge even good players. 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. The best backgammon player currently available. \$39.95. Newsoft, PO Box 4035, Newport Beach, CA 92661.

**Pensate** is a truly mind challenging strategy game. The object is to move a piece eight squares while avoiding contact with lots of other pieces that are moving in various patterns. There are multiple levels of difficulty and a play-ahead feature where users must plan moves in groups of up to four turns. The graphics are very well handled and the challenge addicting. \$39.95. Penguin Software, 830 Fourth Ave., Geneva, IL 60134.

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# MINIFINDERS

**Perplexx** is a board word game based on *Scrabble*. Players can vary the rules and board to suit their tastes and skills. Up to four can play and the game can either be an active player or a scorer and arbiter. Has a 90,000+ word dictionary, good graphics, and is very playable. \$39.95. Hayden Software, Inc., 600 Suffolk St., Lowell, MA 01854.

**Planetfall** leaves users shipwrecked on a seemingly deserted planet, with only Floyd the Droid to help figure out how to get home. Two possible endings. This full-text game is written in a tongue-in-cheek style. \$39.95. Infocom, 125 CambridgePark Dr., Cambridge, MA 02140.

**Pyramids of Peril** is an action-strategy adventure in which a single explorer must unravel the mysteries of the pyramid. Computer maps automatically; combat is engaged in with the mouse. \$39.95. Aegis Development, Suite 277, 2210 Wilshire Blvd., Santa Monica, CA 90403.

**Real Poker** is five-card draw against five other players with Old West names, distinct personalities and playing styles. Three playing speeds. Dealing and play are very fast. Betting and play options shown on buttons. Game evaluates your hand, suggests cards to keep/discard. Dynamic, exciting, addictive game. \$39.95. Henderson Associates, #1, 980 Henderson Ave., Sunnyvale, CA 94086.

**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 effectively doubles the number of levels. Pieces are moved graphically. Disk stores 107 classic games for review and replay. \$49.95. Hayden Software, 600 Suffolk St., Lowell, MA 01854.

**Squire** is a financial simulation that features a unique, real-life mode that lets you set your own financial goals, then play out your strategy using IRAs, stocks, commodities, collectibles and property. \$69.95. Blue Chip Software, 6740 Eton Ave., Canoga Park, CA 91303.

**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. Decipher their descriptions and fix what's wrong before the complex blows and the world disintegrates into chaos. \$49.95. Infocom, 125 CambridgePark Dr., Cambridge, MA 02140.

**Tycoon** is a financial simulation based on the ups and downs of commodities market. Build a fortune in pork bellies and Swiss francs, checking the "Financial Journal" for news affecting the market. \$59.95. Blue Chip Software, 6740 Eton Ave., Canoga Park, CA 91303.

**Ultima II** lets players take the part of a character who travels through land, sea, air, space, and even time itself in a quest to find and defeat the evil sorceress Minax. Good Mac interface; excellent game in spite of confusing graphics. \$59.95. Sierra On-Line, 36575 Mudge Ranch Rd., Coarsegold, CA 93614.

**Ultima III** allows up to four characters to cooperate to explore the vast wilderness of Sosaria; dungeons, oceans, and the Moon Gates help solve the adventure. Outstanding translation of the Apple II smash hit. \$59.95. Origin Systems, 340 Harvey Rd., Manchester, NH 03103.

**Webster's Revenge** is a *Boggle*-like word search game. Super graphics make it a pleasure to play. The dictionary is adequate and the user can always overrule it if necessary. Multiple skills levels. \$34.95. Shapechanger Software, Inc., 113 E. Tyler, Athens, TX 75751.

**The Witness** is a full-text adventure casts the player as a detective assigned to get to the bottom of a death threat. When the victim is killed, you have only one night to find the real guilty party. \$39.95. Infocom, 125 CambridgePark Dr., Cambridge, MA 02140.

**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 Software, 6 Main St., Ogdensburg, NY 13669.

**Word Challenge** is a *Boggle* lookalike. Features multiple (26) skill levels and an extensive dictionary. Even "pro" *Boggle* players should find a level that will challenge them. The game plays well. \$39.95. Hayden Software, 600 Suffolk St., Lowell, MA 01854.

**Xyphus** is a role-playing game pitting four characters (fighters or wizards) against multiple scenarios that grow increasingly harder. Excellent Mac interface and icon control. \$39.95. Penguin Software, 830 Fourth Ave., Geneva, IL 60134.

**Zork I** is a full-text adventure game that lets players explore a strange underground empire. Parser understands full sentences; players can take many different routes to final success. Beware of the thief, who steals random objects. The ultimate text game. \$39.95. Infocom, 125 CambridgePark Dr., Cambridge, MA 02140.

**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.

**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.

## GRAPHICS & DESIGN

**Animation Toolkit I** lets users prepare "film clips" of moving objects which play back at varying speed, like old-fashioned flip books. Drawings are built in frames, using some of the tools from *MacPaint*. They can be copied and altered easily from frame to frame. A limited animation tool, but a lot of fun. \$49.95. Ann Arbor Softworks, 308½ S. State St., Ann Arbor, MI 48104.

**Art Grabber with Body Shop** is a desk accessory that lets users browse *MacPaint* documents, selecting and copying as they choose. Selections can be larger than screen size. Also included are *MacPaint* documents and templates to allow the creation of people in your art. \$49.95. Hayden Software, 600 Suffolk St., Lowell, MA 01853.

**ClickArt Special Effects** is a *MacPaint* enhancement desk accessory. Allows the user to distort, stretch, rotate and use perspective on *MacPaint* documents. A necessity for serious *MacPaint* users. \$49.95. T/Maker Company, 2115 Landings Drive, Mountain View, CA 94043.

**DaVinci Building Blocks** features predrawn blocks of brownstone, garden and skyscraper portions that can be cut and pasted together to form landscape and architectural drawings. Fun for even non-pro's. \$79.95. Hayden Software, 600 Suffolk St., Lowell, MA 01853.

**DaVinci Commercial Interiors** is a professional-level package of layout aids for interior designers and architects. Features

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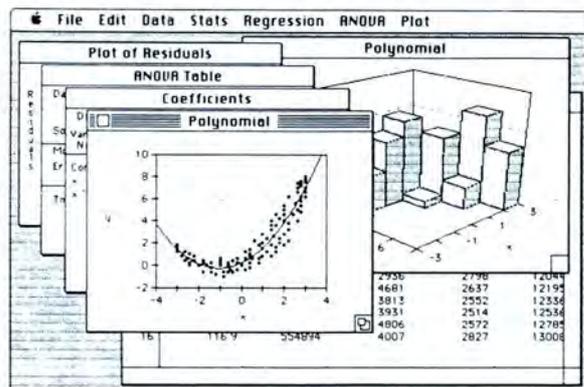


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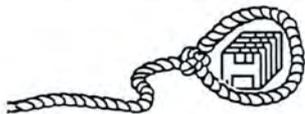
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# MINIFINDERS

predrawn office sections with furnishings included as a font that the user installs into a System file. \$199.95. Hayden Software, 600 Suffolk St., Lowell, MA 01853.

**Fontastic** is the best font editor now available for the Mac. Features **|||||** a large editing window with a grid to make positioning easy. Select letters to edit by clicking on a matrix of the font. Allows scaling of existing fonts and previewing the various styles (italic, bold, shadow, underline and outline). \$49.95. Altsys Corp., PO Box 865410, Plano, TX 75086.

**Human Forms** lets users create perfectly proportioned humans in **|||** any posture or position. Tiny X's make limb, head and detail placement perfect. Requires *MacPaint*. \$79.95. The Reference Corp., 212 Fifth Ave., New York, NY 10010.

**Icon Switcher** changes icons for applications and the documents **|||||** they generate, permitting you to customize icons for personal work. New icons can be built pixel by pixel in the program or created in *MacPaint* and pasted in. Generally easy to use. \$19.95. PBI Software, 1155B-H Chess Drive, Foster City, CA 94404.

**Mac the Knife/Vol. 1: Treasury** contains over 500 pieces of clip art **|||||** in the form of *MacPaint* documents and two new fonts. The art is well organized and mostly high quality. The rulers and the disk label templates are particularly useful. If you only plan on getting one clip art disk this would be a good choice. \$39. Miles Computing, Inc., Suite 212, 7136 Haskell Ave., Van Nuys, CA 91406.

**Mac the Knife/Vol. 2: Fonts** contains over two dozen new fonts. **|||||** Some of these (Paris and Stuttgart, for example) are real stunners. If you do a lot of word processing try Paris 9 point (it's a big 9 point) as your text face and use High quality printing. Some fonts have single key fractions (1/2, 1/4). \$49. Miles Computing, Inc., Suite 212, 7136 Haskell Ave., Van Nuys, CA 91406.

**Maccessories Professional Type Fonts** comes in two flavors: text **|||||** and headline. Both sets consist of 16 digitized fonts, very similar to commercial typefaces. These extremely clean fonts are among the best available. The Text set comes in sizes ranging from 12 point to 24 point, while the Headline fonts are from 24 point to 72 point. The large fonts have to be seen to be believed. Some of the very large (48 and 72 point) fonts will only work on a 512K Mac. \$49.95 Text (1 disk). \$69.95 Headlines (2 disks). Kensington Microware, 251 Park Ave. South, New York, NY 10010.

**MacDraft** is the step beyond *MacDraw*. This object-oriented drafting **|||||** program is packed with advanced features such as rotation, zooming, auto dimensioning and scales. A professional level product. \$239. Innovative Data Design, Inc., Suite 8, 1975 Willow Pass Rd., Concord, CA 94520.

**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. Text can be easily integrated. *MacPaint* documents can be pasted into *MacDraw* documents, but not manipulated. \$195. Apple Computer, Inc., 20525 Mariani Ave., Cupertino, CA 95014.

**MacPaint** is the graphics program that started a whole new genre. **|||||** Still the best freehand graphics tool. Version 1.5 supports 512K Macs and the LaserWriter. Multiple tools, patterns and features too numerous to describe. A work of art for artists. Comes with Macs. Apple Computer, Inc., 20525 Mariani Ave., Cupertino, CA 95014.

**MacPublisher** is a tool for creating newsletters. Allows multiple **|||** page issues. Layout is fairly easy but hard to do precisely.

Text must be entered via the keyboard, a serious drawback, and style and font changing ability is limited. Runs on a 128K Mac but is slow; a 512K should be considered a requirement. Printer support, including LaserWriter, is good. Ideal for informal newsletters, not yet a professional tool. \$99.95. Boston Software Publishers, Inc., 19 Ledge Hill Rd., Boston, MA 02132.

**PageMaker** is an advanced layout and makeup program. Can easily **|||||** create multiple page documents. Output is optimized for LaserWriter. Good documentation. \$495. Aldus Corporation, Suite 400, 616 First Ave., Seattle, WA 98104.

**QuickPaint** is a desk accessory that allows browsing through *MacPaint* **|||||** documents. Selected portions of documents can be expanded to fill the screen. Disk also includes a wealth of very high-quality clip art. \$49.95. EnterSet, Inc., Suite 408, 410 Townsend St., San Francisco, CA 94107.

**ReadySetGo** is a page makeup program for 512K Macs. Users build **|||||** up pages from blocks of text, graphics and rules. Resizing and scaling of blocks are supported. Each block can be precisely positioned. Text and art may be pasted in from another source or created within the program. Good LaserWriter support. \$125. Manhattan Graphics, 163 Varick St., New York, NY 10013.

**Slide Show Magician** lets users easily design and show their own **|||||** text and art presentations in the form of a "slide show." Accepts documents created in *MacWrite* and *MacPaint*, plus any clip-art style graphics helpers. Movie-like special effects options include wipes, barn doors, venetian blinds, and fades. An option lets users install working buttons on the screen. \$59.95. Magnum Software, Suite 337, 21115 Devonshire St., Chatsworth, CA 91311.

**Underware Ribbon** allows users to create *MacPaint* images and **|||** transfer them to cloth, typically to t-shirts. Fairly easy to do, although care is required. The transferred images can be colored using the special pens provided. Set of a ribbon and five colored pens, \$24.95. Underware Diversions, Inc., 1550 Winding Way, Belmont, CA 94002.

**VideoWorks** is a full-featured professional quality animations **|||||** package. Frame-by-frame and real-time modes. Comes with an art disk of predrawn images and *Art Grabber* (which allows the user to use any part of a *MacPaint* document in *VideoWorks*). Includes many special video and sound effects, excellent manual and many on-disk examples. \$99.95. Hayden Software, 600 Suffolk St., Lowell, MA 01854.

## ACCOUNTING

**Accountant's Choice** is a powerful system built around an open **|||||** relational database. Functions are accessed through menus. Standard reports are provided but most can be customized. Multiple journals are allowed. Number of accounts is determined by disk space. General Ledger can stand alone or integrate with other modules, not yet available. Requires 512K, printer and external drive. \$695. Sierra Information Systems, Inc., Suite 210, 10201 Torre Ave., Cupertino, CA 95014.

**Check Mark General Ledger** is a Ledger with five preset journals: **|||||** Cash Disbursements, Receipts, General, Sales, and Purchases. Provides all basic functions needed. 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. Check Mark Software, PO Box 860, Fort Collins, CO 80522.

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**Gallery Finance** is one-write system with General Ledger, Cash Disbursements, Payables and Receivables in single package. Additional modules to be added. Data entered in a journal automatically posted to appropriate record card. Excellent manual includes tutorial on basic accounting principles. Requires 512K, printer and external drive. \$795. Micromax Systems, 6868 Nancy Ridge Dr., San Diego, CA 92121.

**Hardisk** is a complex integrated hard disk system (General Ledger, Receivables, Payables, Inventory, Payroll and Job Cost modules) that does not use Mac interface. Fully menu driven. Manual detailed but complicated, with a few extra pages that make it Mac-specific. Flexible reporting, statements, and account numbering; huge numbers of accounts, transactions, and profit centers, and detailed financial analysis. Requires hard disk and printer. \$695 per module. Great Plains Software, Box 9739, Fargo, ND 58109.

**Maccountant** is a one-write system that provides only very basic ledger entries. Aging of accounts but no detailed records. Payable is basically a check writer. System setup and operation are very rigid. Errors in simple operations and disk crashes make *Maccountant* somewhat unreliable. \$275.00. Digital, Etc., 1749 14th St., Santa Monica, CA 90404.

**MacOneWrite** Cash Disbursements is simple, one-write check writing system. Limited functionality, but does allow some detailed information. Menus clear and easy to follow, but check printing can be confusing. Other modules planned. 512K and printer required. \$245. Sierra On-Line, Coarsegold, CA 93614.

**Palantir Financial Series** is simple, inexpensive accounting system for a 128K, one drive Macintosh. Manual is clear and concise. Uses icons for common operations; menus are clear and detailed, with most operations easy to find and use. Flexible report formatting and a customized chart of accounts. Very slow. Some flaws in design and the speed is intolerable. Requires *Microsoft Basic*, printer. \$145 per module. Palantir Software, 12777 Jones Road, Suite 100, Houston, TX 77070.

**Rags to Riches** integrated accounting modules (General Ledger and Accounts Receivable) use Mac interface to the hilt. Information entered in one window automatically transfers. Menu commands all have command keystrokes, as can accounts. No detailed or flexible reporting. Very easy to use, although it can be confusing to operate with several windows on screen. Requires 512K and printer. \$295 per module. Chang Labs, 5300 Stevens Creek Blvd., San Jose, CA 95129.

**Strictly Business** General Ledger is feature-packed. Clear, well-outlined set-up procedures and operations. Very flexible, with a custom chart of accounts; user-defined journals; up to 99 profit centers per company with up to 100 departments each; and customized reports. Program spools to printer and allows for printing of multiple documents. AppleTalk and hard disk compatible. Easy to use and thorough. Other modules planned. Requires 512K, printer and external drive. \$395. Future Design Software, 13681 Williamette Dr., Westminster, CA 92683.

## HOME APPLICATIONS

**Day Keeper Calendar** is the ultimate computerized appointment and note book, the *Day Runner* of computers. Holds a year's worth of information in each calendar document (you can have several). Starting from the basic display of a whole month you can easily see details of days and in-

dividual entries of many sorts. If you need a computerized appointment book this is it. \$39.95. Dreams of the Phoenix, Inc., PO Box 10273, Jacksonville, FL 32247.

**Dollars & Sense** is a bookkeeping program suitable for personal, home and small-business use. Easy to use, with a good manual and excellent on-screen help. Will handle up to 120 separate accounts or money categories. Uses standard double-entry accounting techniques. Seven reports can be viewed on-screen or printed. Simple graphing and charting facilities. \$149.95. Monogram, 8295 S. La Cienega Blvd., Inglewood, CA 90301.

**Electric Checkbook** does exactly what the name says: keeps a running account of checkbook transactions, balances checkbook to bank statements, tracks bills, and even prints out checks, if you wish. Provides detailed financial statements, calculates net worth, lists expenses by category, and tracks your personal cash flow. \$79.95. State of the Art, 3191-C Airport Loop, Costa Mesa, CA 92626.

**Financial Cookbook** provides nearly 3 dozen "recipes" to help users figure out financial formulas (e.g., mortgage costs at different percentage rates) by inputting pertinent data. Very user-friendly. \$44.95. Electronic Arts, 2755 Campus Drive, San Mateo, CA 94403.

**Financial Utilities Pack** is a set of applications that allow users to figure annuities, compound and simple interest, depreciation and amortization. Simple and well documented. \$69. Cognitive Software, PO Box 26948, Austin, TX 78755.

**Forecast** is a tax estimating and what-if program designed to work with and use *Dollars & Sense* files. Straightforward, easy to use program. \$69.95. Monogram, 8295 S. La Cienega Blvd., Inglewood, CA 90301.

**Front Desk** lets small businesses and offices easily keep track of personnel schedules, activities, and payments. Keeps track of up to 15 employees, functioning as a day-, week- and month-at-a-glance calendar. Highly recommended for doctors and dentists' offices. Less useful for offices less dependent on the human factor. \$149.95. Layered, Inc., 85 Merrimac St., Boston, MA 02114.

**The Home Accountant** is a complete and easy to use financial system. Data entry is intuitive. All kinds of reports, including charts and checks, are easily generated. Entered data will update all relevant material. \$150. Arrays, 11223 South Hindry Ave., Los Angeles, CA 90045.

**The Housekeeper** is a home inventory database. Users can keep track of assets for both tax and casualty purposes. Specialized reports are easily generated. \$99.95. Aegis Development, Inc., Suite 277, 2210 Wilshire Blvd., Santa Monica, CA 90403.

**I Know It's Here Somewhere** stores information in a simple card filing system. Ideal for hobbyists and collectors, general household or small business use. File formats are flexible and 31 samples are included. Program can cut and paste between files; display and cross reference up to five files at a time; perform simple, wild card or multiple key searches, and print selected items or whole files. \$59.95. Hayden Software, 600 Suffolk St., Lowell, MA 01854.

**MacOffix** combines of many simple but necessary office functions in one easy-to-use package. Simple word processing, forms design, form letter production, report generation and filing. Good design nearly makes the manual unnecessary. \$149. Emerging Technology Consultants, Inc., 4760 Walnut St., Boulder, CO 80301.



# MINIFINDERS

**MacMuscle** is a fitness program that lets users generate weekly **\$\$\$** workout schedules. Features include a detailed chart of the body and its 24 major muscle groups. An animated figure demonstrates the primary exercises. Calculates training pulse rate, which is shown by an animated heart and sound. Limited program that emphasizes weight training. \$89.95. Tech 2000 Software, Inc., 263 Lugonia St., Newport Beach, CA 92663.

**My Office** lets you handle your files and papers in much the same **\$\$\$\$** way that you did before you got a computer. Now folders and files are all in the computer and you can easily find anything, print anything or everything. Excellent use of graphic symbols makes this program the easiest to use of its type. \$129.95. DataPak Software, Suite 401, 14011 Ventura Blvd., Sherman Oaks, CA 91423.

**SmoothTalker** trains your Mac to say anything you want. Users can **\$\$\$** program the pitch and tone of each syllable to simulate true speech patterns. Not too useful — but a lot of fun to play with! Latest version includes a female voice. Male and female can be mixed in same document to provide entertainment. \$149.95. First Byte Software, 2845 Temple Ave., Long Beach, CA 90806.

**The Desk Organizer** is a free-form desk management system based **\$\$\$\$** on index card-style files. Has many features including alarms, report generation and calculation. The Meta feature lets the program run along with another application. \$99. Conceptual Instruments, 269 W. Walnut Lane, Philadelphia, PA 19144.

## 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. It produces line, bar and pie charts and changes in the worksheet automatically reflect in charts. Especially useful while working in a word processor. \$79.95. T/Maker Company, 2115 Landings Drive, Mountain View, CA 94043.

**Multiplan** is a very capable basic spreadsheet with simple sorting, **\$\$\$\$** 63 columns by 255 rows, many built-in functions, standard spreadsheet features. Design conforms well to Mac philosophy, with most functions menu or mouse controlled. *Multiplan's* best feature is the ability to link areas of one worksheet to portions of another, in *Multiplan* or *Chart*. \$199.95. Microsoft, 10700 Northup Way, Bellevue, WA 98004.

**StatView** is a high-powered statistical calculation package. Easily **\$\$\$\$** and efficiently handles all the common statistical techniques and tests and many uncommon ones. Has a user definable area as well. Easy to use and well documented. \$199.95. BrainPower, Inc., Suite 250, 24009 Ventura Blvd., Calabasas, CA 91302.

## WORD & OUTLINE PROCESSORS

**Express** contains word processing, mail list and mail merge **\$\$\$** applications in a single product. Also makes Mac an electronic memory typewriter! A converted PC product that looks as though it were running on a PC. Compromises made in interface to provide features, sufficient text area on 128K Macs. 512K version will be more Maclike. Quick and dirty letter processor that works. \$29.95. Mirage Concepts, 108, 4055 W. Shaw, Fresno, CA 93711.

**1stMerge** is a mail-merge program that integrates data files with **\$\$\$\$** documents after a blueprint has been designed. On-screen help, and the ability to add and search records. Re-

quires *MacWrite*. Good for mass mailings, including envelopes and labels. \$95. DeskTop Software Corp., 244 Wall St., Princeton, NJ 08540.

**Hayden: Speller** checks spelling errors in *MacWrite* and *Word* **\$\$\$\$** documents against a dictionary of 20,000 common words and user-created dictionary. Suspect words appear minifinder style, with changes made in simple dialog boxes. Corrections are typed in or selected from a list generated by the dictionary. Reasonably fast and quite simple to use. Dictionary is small and words cannot be viewed in context while correcting. \$79.95. Hayden Software, 600 Suffolk St., Lowell, MA 01854.

**Just Text** is a professional level word processor and page makeup **\$\$\$\$** program that generates PostScript output. Comes with a set of LaserWriter utilities that allow total manipulation of art and text. Requires LaserWriter or other PostScript compatible output device. \$195. Knowledge Engineering, GPO Box 2139, New York, NY 10116.

**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. Has an a very clear manual. \$125. Apple Computer, Inc., 20525 Mariani Ave., Cupertino, CA 95014.

**MacSpellRight** is a spelling checker that works with *MacWrite* 4.5 **\$\$\$** (not 2.2!). Allows the user to create create custom dictionaries. Works from within *MacWrite*. \$89. Assimilation, Inc., 485 Alberto Way, Los Gatos, CA 95030.

**MacWrite** is the basic word processor that comes with the Mac. **\$\$\$\$** While it doesn't have every bell and whistle, it is more than adequate for most users. Features of the current version (4.5) include document size limited by disk space, global search and replace, page numbers indicated in the scroll bar and excellent LaserWriter compatibility. Easy to use and well documented. Free, except for consortium students. Apple Computer, Inc., 20525 Mariani Ave., Cupertino, CA 95014.

**Microsoft Word** is THE power word processor for the Mac. It has just **\$\$\$\$** about every feature your heart could desire. Supports keyboard commands as well as the mouse. Does mail merge and multicolumn text. Easy to use. Integrates with Microsoft line. \$195. Microsoft Corporation, 10700 Northup Way, Bellevue, WA 98009.

**QuickWord** is a word processing accessory that adds sophisticated **\$\$\$\$** glossaries to *MacWrite*. Simple to install and use, yet powerful and efficient. \$49.95. EnterSet, Inc., Suite 408, 410 Townsend St., San Francisco, CA 94107.

**ThinkTank 128** is the first of a new type of program known as an **\$\$\$** outline processor. Lets the user create complex outlines and revise them using moves, cuts and pastes. The interface is not the standard Mac interface but is simple to use and efficient. The program is speedy. Printer support is limited, but files can be printed in a draft-style mode. Only for 128K owners; 512K owners should get *ThinkTank 512* which has many more features and is more useful than the price differential would indicate. \$145. Living VideoText, Inc., 2432 Charleston Rd., Mountain View, CA 94043.

**ThinkTank 512** is a word/outline processor. Very fast intuitive **\$\$\$\$** organizational tool that can handle word processing chores in the midst of structuring a plan or outline. Full keyboard control (without mouse) is possible. Can store and paste graphics into outlines. Slide show features allows high quality presentations to be created. Good report formatting and printing capability. \$245. Living

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# MINIFINDERS

VideoText, Inc., 2432 Charleston Rd., Mountain View, CA 94043.

## DATABASES

**FactFinder** is a freeform information organizer or medium-duty database. Users enter data on to factsheets in any manner desired and select keywords. Factsheets are associated in groups called stacks. Searches are by name or keyword. The speed is barely adequate and only one factsheet can be open at a time. Printing and cutting and pasting between factsheets are supported. Good manual, on-screen help and tutorial. Publisher offers free telephone support (800 number). \$149.95. Forethought, Inc., 1973 Landings Drive, Mountain View, CA 94943.

**FileMaker** is a nonrelational database that combines lots of power with ease of use. Data entry is extremely flexible and all items in all fields are indexed so that multiple criteria searches are both simple and fast. Calculation fields make the creation of invoices and similar documents a snap. Reports can include graphics and multiple data layouts are easy to construct. \$195. Forethought, Inc., 1973 Landings Drive, Mountain View, CA 94943.

**Filevision** is a simple database that can change the way you think about data and data organization. Records are based around user created graphics screens. Screens and records can be linked in complex ways. \$195. Telos Software Products, 3420 Ocean Park Boulevard, Santa Monica, CA 90405.

**1stBase** is a small, easy use to use database that allows users to join or append files. It is the simplest, most accessible

relational database available for the Mac. Supports calculated fields including statistical summaries such as averages. Integrates with *1stMerge* and *1stPort*. \$195. DeskTop Software, 244 Wall St., Princeton, NJ 08540.

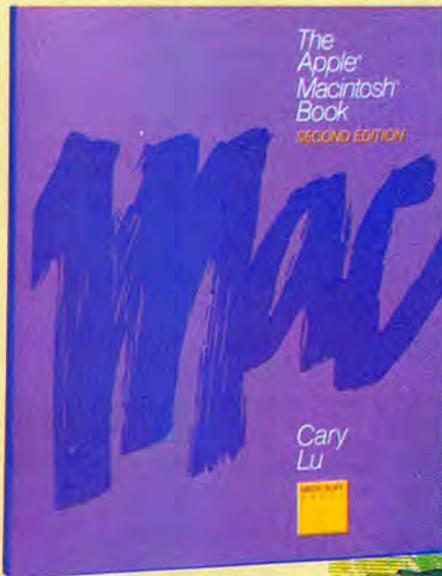
**Habadex** is a telephone directory/database with some list, label and mail merge capabilities. Extreme ease of use is cancelled by the impossibility of selectively removing old data and extremely limited file size. An accessory (\$50) allows actual telephone dialing. \$99.95. Haba Systems, Inc., 15154 Stagg St., Van Nuys, CA 91405.

**Helix** is a relational database that makes extensive use of icons. Excels in database setup and forms generation. Setup is made easy by the adherence to the Mac interface. The manual is clear, thorough and well-indexed. Too complicated for most simple applications, excellent where relational database is required. Supports multiple windows. Requires a 512K Mac and an external drive, but is slow on that configuration. The recommended hard disk is really required to use Helix effectively. \$395. Odesta, 3186 Doolittle Drive, Northbrook, IL 60062.

**LaserBase** is versatile database that allows full integration of graphics in its records. Files can have multiple levels of password security. Good use of the Mac interface. \$149.95. Kette Group, 13895 Industrial Park Blvd., Minneapolis, MN 55441.

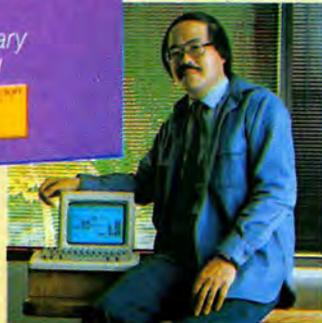
**MacLion** is a true relational database program. Can handle all databasing requirements although set up may require outside (consultant) help. Has a built-in programming language (LEO) and can be customized for any application. Reasonably flexible and easy to use once a database is set up. Can handle very large files as well as multiple

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files. \$379. Computer Software Design, Inc., 1904 Wright Circle, Anaheim, CA 92806.

**Microsoft File** is a flexible data manager. Creates files for variety of data, including simple graphics. Files created in simple row/column format, but reports, forms easily customized by moving field names around on a blank form. Sorting limited to approximately 5000 records on 128K Mac, much more on 512. Easy to use, well designed and full featured. \$195. Microsoft, Corporation, 10700 Northup Way, Bellevue, WA 98004.

**ods/Consultant** is a program that lets users organize ideas and helps in thinking through and solving problems. Easy to use thanks to extensive use of icons and on-screen help. Introduces some low-level AI (artificial intelligence) concepts. \$200. Organization Development Software, Inc., Suite 535, 1011 Touhy, Des Plaines, IL 60018.

**Omnis 3** is a power database, featuring concurrent multiple file management. Can handle 24 files, 12 at a time, and is fully relational. Allows user to create custom environments including user-defined menus, commands, and dialogs. Good report generation capability. Comes in single and multiple user versions. \$495 (single user version). Organizational Software Corporation, 2655 Campus Drive, Suite 150, San Mateo, CA 94403.

## INTEGRATED SOFTWARE

**Crunch** is an icon-driven relational spreadsheet that features versatile charting and database capabilities. Strong financial logic, date, and mathematical functions. Spreadsheets can be linked. The manual is clear and concisely written. Macros are not supported. \$195. Paladin Software Corporation, 2895 Zanker Rd., San Jose, CA 95134.

**semble** lets you create a database of words, pictures, and/or numbers; graph data; generate custom forms and link files for applications such as mail merge. Can perform calculations and math functions on data. *Ensemble* is compatible with *MacWrite* and *MacPaint* files, and any program using cut and paste operations. Capacity limited by RAM and disk size. Easy to use, light general database with graphics. \$299.95. Hayden Software Corporation, 600 Suffolk St., Lowell, MA 01854.

**Excel** is THE power spreadsheet. Of the Mac, of the world. Has 256-column by 16,384-row capability. Features include a powerful easy to use macro function (with a recorder to make creation simple) and elaborate charting facilities. Can link multiple spreadsheets. 512K Mac and external drive required. \$395. Microsoft Corporation, 10700 Northup Way, Bellevue, WA 98009.

**Jazz** provides extremely well integrated modules for word processing, graphs, worksheets, databases and communications. Each module is substantial and the worksheet is packed with powerful functions. The truly exceptional feature is HotView, where data placed in any module automatically updates all other documents that use that data. Provides adequate coverage of most data and communications needs of small businesses. Requires 512K and external Drive. \$595. Lotus Development Corp., 55 Cambridge Parkway, Cambridge, MA 02142.

**OverVUE** is a power-packed relational database that has extensive sorting, summarizing and report generation capacity. Has macros and a charting function. Good manual. The program tries to anticipate every need conceivable in manipulating data. It can exchange files with a very wide variety of other programs (including IBM software). Be

sure to get version 2.0. \$295. ProVUE Development Corp., 222 22nd St., Huntington Beach, CA 92648.

**Quartet**, an integrated program that works on a 128K Mac, is built around a powerful spreadsheet with a full range of functions. It can also be used as a database and provides good quality charts from spreadsheet data. Documentation is adequate but not too well organized. \$199. Haba Systems, Inc., 15154 Stagg St., Van Nuys, CA 91405.

## UTILITIES

**Accessory Pak 1** is a group of useful applications and utilities. *Paint Cutter* alone is worth the price. That program allows users to browse and manipulate full page *MacPaint* documents. \$39.95. Silicon Beach Software, Suite 201, 11212 Dalby Pl., San Diego, CA 92126. [NEW]

**Aztec C** is a C language program system that will appeal to users with a UNIX background. It uses many UNIX conventions and in the more expensive versions comes with standard UNIX utilities, including the VI editor. Good, solid system. \$199 basic system, can't produce standalone applications; \$299 development system, can produce standalone applications; \$499 commercial system, development system plus utilities and strong technical support by publisher. Manx Software Systems, Inc., PO Box 55, Shrewsbury, NJ 07701.

**Battery Pak** is a set of eight handy desk accessories including scientific and RPN calculators, a background text file printer, a 250-page note pad with search and phone dialing capabilities, a disk file utility, an accessory to launch another application without returning to the desktop and a calendar with notekeeping and search capabilities. Comes with an installer and the best manual we've seen in a long time. \$49.95. Batteries Included, 30 Mural St., Richmond Hill, Ontario, L4B 1B5, Canada.

**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 (4.2) can back up most Mac software. Graphic displays of copy progress. Comes with *MacTools*, a multiuse utility that can recover many damaged files. \$39.95. Central Point Software, Inc., Suite 100, 9700 S.W. Capitol Highway, Suite 100, Portland, OR 97219.

**Epstart** lets Mac users use Epson FX80/100, JX80, RX80/100, LX80, MX80/100 with Grafix Plus or LQ1500 printers. Required, but not included, is a serial printer interface. Easily installs on any System disk and is transparent to the user. Print Adjustment desk accessory allows selection of several options on each printer. Data can be sent via printer or modem port. The documentation is clear. \$45. SoftStyle, Inc., Suite 205, 7192 Kalaniano'le Hwy., Honolulu, HI.

**ExperLISP** is a very buggy, but still incredibly useful, programming language for high-level programmers. The more you use it, the more you'll figure out about it. System crashes are too common for a language this useful and expensive. \$495. Requires 512K and either an external or a hard drive. ExperTelligence, Inc., 559 San Ysidro Rd., Santa Barbara, CA 93108.

**ExperLogo** is a version of the popular teaching language, Logo. Features three-dimensional graphics using "bunnies" rather than the usual "turtles." Very speedy, smooth program. Excellent manual. \$149.95. ExperTelligence, Inc., 559 San Ysidro Rd., Santa Barbara, CA 93108.

**Hippo-C Level 1** offers a good basic learning environment for newcomers to the C programming language. The pro-

# MINIFINDERS

grams limits and restrictions are severe and standalone applications can not be created. Still this is a good place to begin the study of C. Has a useful print spooler desk accessory. \$149.95. Hippopotamus Software, Suite 12, 985 University Ave., Los Gatos, CA 95030.

**Jetstart** lets Mac users use Hewlett-Packard's tiny, quiet ThinkJet printer with their Macs. Installation is quick and simple and the program works without any hitches. Data can be sent to the printer via either the printer or the modem port. \$45. SoftStyle, Inc., Suite 205, 7192 Kalanianohe Hwy., Honolulu, HI.

**Laserstart** allows use of a Hewlett-Packard LaserJet printer with a Mac. This printer is significantly cheaper than the LaserWriter and has adequate text printing features. It can not efficiently handle Mac graphics. Easy to install and use. Data can be sent to the printer via either the printer or the modem port. Comes with a cable to connect the Mac and the LaserJet. \$95. SoftStyle, Inc., Suite 205, 7192 Kalanianohe Hwy., Honolulu, HI.

**Lock-It** allows users password control of all their documents. It works quickly and efficiently to protect confidential material. Unfortunately, it is not perfectly bug free and a failure will cause future lack of access to data. If you absolutely need to protect data and are very careful, you can use Lock-It, but the average user should stand clear. \$29. Assimilation, Inc., 485 Alberto Way, Los Gatos, CA 95030.

**MacCharlie** is one of the most unusual Mac products imaginable. Its components slip around the Mac and the keyboard and convert the Mac into an IBM PC clone. Amazingly it works well. The enlarged keyboard has a few bugs but is a joy to use. \$1,795 with 640K RAM and two floppy drives. Dayna Communications, Suite 530, 50 S. Main St., Salt Lake City, UT 84144.

**Mac Disk Catalog** is a utility that will quickly organize a moderate size disk library. It's easy to use and has powerful reporting and label making features. \$39.95. New Canaan MicroCode, 136 Beech Rd., New Canaan, CT 06840.

**Mac Memory Disk** creates a RAMdisk on 512K Macs. The RAMdisk's size is user selected up to 316K. Has auto startup and auto file transfer features. Simple to use, on-screen dialogs prompt for all actions. \$29. Assimilation, Inc., 485 Alberto Way, Los Gatos, CA 95030.

**Mac Tracks** allows users to store a series of keystroke and mouse movement operations to any command key. Various controls and index (so you can see what you already created) reside as a desk accessory. Documentation is inadequate and behavior is sometimes not what you expect. Invaluable in some places (*Smartcom II* and *Jazz*), it needs some improvement before it gets much use. \$29. Assimilation, Inc., 485 Alberto Way, Los Gatos, CA 95030.

**MacAsm** is a software development system that allows programs to be written in assembly language. Programmers can assemble, edit and test software, and an integrated resource compiler lets independent applications run from their own icons. \$125. Mainstay, 28611B Canwood St., Agoura Hills, CA 91301.

**MacBooster** is a disk-caching program that adds a great deal of operating speed to a 512K Mac. It installs easily from its master disk. This program can increase the speed of your 512K Mac by 2 to 3 times. \$50. Mainstay, 28611B Canwood St., Agoura Hills, CA 91301.

**MacForth** is an implementation of the popular FORTH programming language. Level 1 is a simple, introductory version with

limited support of the Mac ToolBox. Excellent tutorial and reference sections in the manual. Level 2 supports the Mac Toolbox fully. Level 3 extends the language so that professionals can produce standalone applications. All levels are supported by the publisher via telephone and electronic BBSs (the publisher even has a private SIG on CompuServe). \$149 (Level 1), \$249 (Level 2), \$499 (Level 3). Creative Solutions, Suite 12, 4701 Randolph Rd., Rockville, MD 20852.

**MacLabeler** lets users instantly index and print labels for all the disks in a burgeoning collection. Choose border type and orientation of your label; index by folder or document. Starter set of labels is included. \$49.95. Ideaform, Inc., PO Box 1540, Fairfield, IA 52556.

**MacLink** lets users transfer data between Macs and PCs. Simple to install and run, high-performance software. Can do special format transfers such as 1-2-3 to *Multiplan* and *WordStar* or *MultiMate* to *MacWrite*. Contains both Mac and PC disks, interface cable is optional, but a bargain at \$20. Has Mac and MS-DOS disks. \$125, \$145 with 8-ft interface cable. DataViz, Inc., 16 Winfield St., Norwalk, CT 06855.

**MacMateI** combines RAMdisk and print spooling functions in a compact package. Both parts are efficient, work well and have on-screen help. This is the best product in its category. \$49.95. SMB Development Associates, PO Box 3082, Chatsworth, CA 91311.

**Macintosh Pascal** is Apple Computer's version of this very popular programming language. Loaded as it is with innovative teaching features, this interpreter is an excellent introduction to Pascal. Superb usage of the whole Mac interface makes this the best way to learn Pascal. The documents are mostly references so be sure to get one of the tutorial textbooks in your bookstore. \$125. Apple Computer, Inc., 20525 Mariani Ave., Cupertino, CA 95014.

**Macintosh 68000 Development System** is a fairly traditional assembly language package. The two-disk set provides an excellent editor (*Edit*), an efficient assembler, a linker, an executive and a resource compiler called *RMaker*. The files included in this two-disk set have all the basic equates, process definitions, and trap calls. Good documentation includes a copy of the Motorola 68000 handbook. Also included is a copy of the "phonebook" edition of *Inside Macintosh*. \$195. Apple Computer, Inc., 20525 Mariani Ave., Cupertino, CA 95014.

**MacNosy** is a global disassembler. A very advanced user can use this program to look into the code of virtually any program. This advanced tool can take you places no other Mac program could dream of going IF you have the skill to guide it. The documentation is sparse. For pro's only. \$70. Jasik Designs, 343 Trenton Way, Menlo Park, CA 94025.

**MacZap** is a three-part disk and memory utility. It can be used to recover some damaged files and disks, compare disks, analyze disk structure and make back-up copies of most disks. Fairly intimidating due to its enormous power. Has a good manual. \$60. Micro Analyst, Inc., 5802B Gloucester, Austin, TX 78723.

**MS BASIC** was the Mac's first programming language. It has come a long way since its infamous version 1.00. The current version (2.0) of 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. Easy to use. Be sure you get version

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2.0 or higher. \$150. Microsoft Corporation, 10700 Northup Way, Bellevue, WA 98009.

**MS 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: *text* for commands; *program*, for defining procedures, and *graphics* for program execution. Turtle looks like a turtle, and its screen actions are very precise. \$124.95. Microsoft Corporation, 10700 Northup Way, Bellevue, WA 98004.

**PC to MAC and BACK** has both Mac and MS-DOS disks. This program easily and efficiently transfers text and other data between PCs and Macs. Easy to use, although not too intuitive. Fortunately, the documentation is excellent. Does special format transfers such as *WordStar* to *MacWrite*. Includes a cable for direct Mac to PC connections. \$149.95. dilithium Press, Suite 151, 8285 SW Nimbus, Beaverton, OR 97005.

**Quick & Dirty Utilities, Volume One** is a disk chock full of the handiest programs you have ever bought. Included is a super disk cataloguing program, a desk accessory mover, a font manger, a document launcher (when you boot a disk it launches a document), and more. Several desk accessories including a menu bar clock and a terminal are on the disk. "File info" and "Q&D Filer" are two file management desk accessories that you'll wonder how you got along without. \$39.95. Dreams of the Phoenix, PO Box 10273, Jacksonville, FL 32247.

**Quick Disk** is a RAMdisk utility. Users can create RAMdisks up to 350K on 512K Macs. Works well and has good documentation. \$34. Symmetry Corporation, Suite 103S, 3900 East Camelback Rd., Phoenix, AZ 85018.

**Quickset** is a set of five desk management and organizational tools that can be used as desk accessories or applications. Modular design allows users to add only selected items to System disks. Functions include note filer, card filer, calendar, financial and statistical calculators and a file encryptor. \$99.95. EnterSet, Inc., 410 Townsend St., San Francisco, CA 94107.

**Sidekick** is a set of desk organization applications and accessories. Functions include phone dialer and logger, desk accessory terminal, calculator, clock, editor and more. When required resource files are included modules take up a lot of disk space, and are best used with a hard disk. All work well. \$84.95. Borland International, 4585 Scotts Valley Dr., Scotts Valley, CA 95066.

**Switcher** is Andy Hertzfeld's contribution to Mac productivity. This program lets users run several programs at once (up to eight on a 1-megabyte or larger machine). Switching between the programs is near instantaneous. Slick and easy to use; every 512K Mac user should get it. Runs on 512K Macs and larger. \$19.95 from Apple, free from MAUG on CompuServe and included with some third-party applications (e.g., Excel). Apple Computer, Inc., 20525 Mariani Ave., Cupertino, CA 95014.

**TimeBase** keeps track of daily, weekly and monthly scheduling. Data from other Mac applications can be used within any schedule user creates. Files are limited to space available on the disk. Not easy to use unfortunately. \$149.95. Soft-Design, Inc., 14145 S.W. 142nd Ave., Miami, FL 33186.

**Toshstart** software drives any Toshiba P1340, P1351 or P3X1 family printer that has a serial interface. The software is simple to install and transparent to the user once installed. \$45. SoftStyle, Inc., Suite 205, 7192 Kalanianole Hwy., Honolulu, HI.

**TurboCharger** is a disk-caching program. It works by storing frequently used portions of a disk in a memory buffer and it can dramatically speed up operation (250 to 500% is common). Auto-startup and write buffering. Only works on a 512K Mac but is a must for one. \$95. Nevins Microsystems, 210 Fifth Ave., New York, NY 10010.

**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.

**XL/Serve** converts a Mac XL into a disk and print server. Uses the AppleTalk network and is easily hooked up. Users can partition the Mac XL's hard disk into multiple volumes (read-only for common access and read-write for private access). Runs in the background on the Mac XL, so users can work on all machines in the network. Comes with a backup and restore utility. \$195. Infosphere, Inc., 4730 SW Macadam, Portland, OR 97201.

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## MUSIC

**ConcertWare +** is an enhanced version of *ConcertWare*. Has different instruments and the ability to use any four of a set of eight at any point in a musical piece. Can read and use *ConcertWare* and *MusicWorks* files. The best program for those who want to listen to music on their Mac. \$69.95. Great Wave Software, PO Box 5847, Stanford, CA 94305.

**MusicWorks** allows the user to create and play simple musical compositions. Music entry is by either a grid or a staff and is very easy. Users can select various instruments and modify each to produce new effects. Compositions are limited to 64 measures and overall limitations make this a beginner's program. Many public domain music files available. The manual is clear and thorough. \$79.95. Hayden Software, 600 Suffolk St., Lowell, MA 01854.

**Professional Composer** is aimed at music professional. Produces performance-quality sheet music; has only limited playback facilities. \$495. Mark of the Unicorn, 222 Third St., Cambridge, MA 02142.

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## DIGITIZERS

**MacVision** is a digitizer that uses an ordinary video camera for input. Capable of extremely fine results and special effects. Easy to use and well documented. \$399.95. Koala Technologies Corporation, 3100 Patrick Henry Drive, 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, Suite 104, 10300 Greenbelt Rd., Seabrook, MD 20706.

**ThunderScan** replaces the ribbon cartridge in an ImageWriter, which is required to use it. Laser scans art that can be run through the ImageWriter, producing high-quality digitized images. The images can be manipulated as they are created or afterward. Compatible with 15-inch ImageWriters. Output has been optimized for LaserWriter. \$229. Thunderware, Inc., 21 Orinda Way, Orinda, CA 94563.

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## ACCESSORIES

**The Easel** is a compact and portable carrier for up to 20 disks. Can

|||| be converted into a standup rack for desktop use. Solidly made, attractive and useful. \$19.95. Innovative Technologies, 5731 La Jolla Blvd., La Jolla, CA 92037.

**Ergotron** is a Mac (and external drive) holder that allows a full range of swiveling and tilting. Very strong, this well made unit is also very easy to use. Simply raising the Mac 4 inches off the desk results in a more efficient viewing angle for users. \$99.95. Ergotron, Inc., PO Box 17013, Minneapolis, MN 55417.

**Mac Daisywheel Connection** is the most straightforward way to hook a Mac to a letter-quality printer. Works well with most popular printers and is easy to install and use. \$89. Assimilation, Inc., 485 Alberto Way, Los Gatos, CA 95030.

**MacNifty Joystick Converter** plugs into the mouse port and allows use of any standard nine-pin Atari-style joystick or controller. Includes a tiny Amiga-style joystick, a pint-sized powerhouse that literally operates with a single finger on the stick. Cursor movement speed is adjustable. \$44.95. Kette Group, 13895 Industrial Park Blvd., Minneapolis, MN 55441.

**MacNifty Stereo Music System** converts Mac sounds to simulated stereo by splitting highs and lows between two powerful speakers. User controls bass, treble, balance, low and high impedance output, and most importantly, volume. Hear your music compositions the way they were meant to be played. \$79.95. Kette Group, 13895 Industrial Park Blvd., Minneapolis, MN 55441.

**MacNifty Switch** allows any port on your Mac to connect to two peripherals. Turn the knob to switch between the two devices. Plugs are friction-fit, not screw-fastened like most Mac peripherals, so in some cases may loosen by themselves. \$34.95. Kette Group, 13895 Industrial Park Blvd., Minneapolis, MN 55441.

**MacStation** is a compact workstation for a Mac, ImageWriter and external drive. Made of strong plastic, it is reasonably attractive. Well vented; will not cause a Mac to overheat. Only flaw is that printer paper feed doesn't really work; users will need space behind the unit to store paper. \$95. The MicroRain Corp., PO Box 96008, Bellevue, WA 98009.

**MacTablet** is a stylus-driven graphics tablet. Users can easily sketch or trace art using this absolute-positioning device. Has a working area the size of the Mac screen. Works well with MacPaint, MacDraw, all Mac software. Allows concurrent use of the mouse. \$495. Summagraphics Corp., 777 State St. Extension, Fairfield, CT 06430.

**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, Inc., Suite 503, 1 Weatherly, Mill Valley, CA 94941.

**Mac Turbo Touch** is a mouse replacement device. Features include 2.5-inch diameter track ball with control buttons to either side. Users either love it (and refuse to use anything else) or hate it; very few so-so's on this product. Takes a few days to get used to. \$129. Assimilation, Inc., 485 Alberto Way, Los Gatos, CA 95030.

**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, Inc., 485 Alberto Way, Los Gatos, CA 95030.

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# CORRALLING YOUR DESK ACCESSORIES

(continued from page 113)

half/full duplex) and store up to seven telephone numbers.

"ReadyPrinter" is a print spooler: it lets you use your Mac while text files are being printed. You can set margins, select the Tab character length, and choose from 10, 12 or 17 characters per inch. Only draft-quality printing is available, and it won't work at all with the LaserWriter.

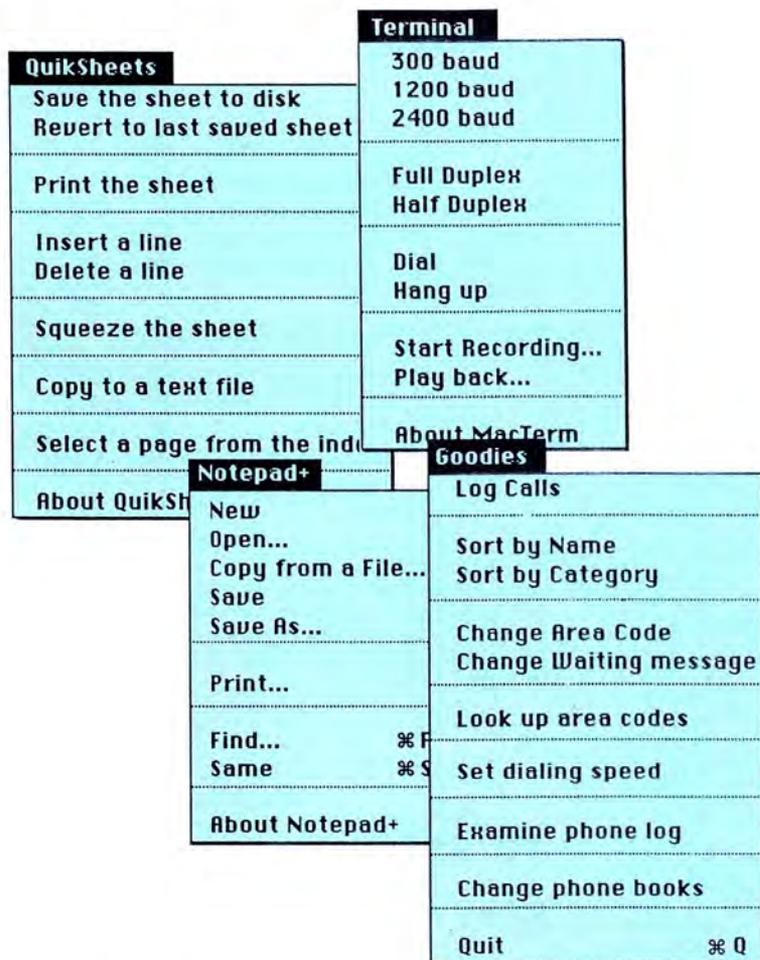
*SideKick* also has a *PrintManager* (available from the *SideKick* application) that will take the files you have created with the various accessories and print out formatted lists, reports, and even mailing labels. It lets you sort information, print a year-at-a-glance calendar, and print *QuikSheets* either with information or as blank forms. *PrintManager* does work with the LaserWriter; you can get a cautious year-at-a-glance calendar

done in perfectly legible 3-point type.

The installer that comes with *SideKick* is . . . not terrific. You can install any *SideKick* accessory with it, but you can only delete a *SideKick* accessory or one of Apple's basic accessories — even if you have other nonstandard accessories already installed. When you want to install something, you click in its checkbox; when you want something removed, you click in everything but that item.

The awkwardness of the installer is accentuated by a phrase from the *SideKick* manual: "Macintosh software that doesn't follow Apple's guidelines probably isn't worth worrying about. p.125."

Hard disk users will find *SideKick's* accessories a welcome addition to their Apple menus; the rest of us should think of *SideKick* as an application, or just not think about it at all. ☐



Looking through some of *SideKick's* menus gives you an idea of how thorough its accessories are.

# MAC TO ACCOUNT

(continued from page 114)

user-defined journals; up to 99 profit centers per company with up to 100 departments each; and customized reports. The program spools to the printer so you can continue working while it prints, and allows the printing of multiple documents. Although this last feature caused my system to crash, a revised version was quickly prepared which eliminates the problem.

One peculiar feature is the inclusion of *SmoothTalker* for error messages or entries, if desired. While interesting, the voice intrudes on one's concentration, and I suspect that most people will simply do as I did and toggle it off. Marilyn Afana, the program's designer and the president of First Design, has told me that the talking feature will eventually be replaced by graphics.

*Strictly Business* is AppleTalk and hard-disk compatible. It is also very easy to use and very thorough.

## Conclusions

There are other programs for the Macintosh available now. *BizMac* from Applied Logic Systems contains a built-in charting facility, which worked well in the demo version. However, I was unable to get a full program in time to review it. Peachtree Software publishes the *Back to Basics* series, but because of changes in the company they were unable to get MacUser review copies in time.

Until recently, the Mac had very little to offer a business as an accounting tool. Now there is a variety of software for all styles and levels of accounting.

Choosing accounting software is a painful process. Even when the decision to computerize has been carefully made, there are fears that data will vanish into electronic wonderland or be corrupted beyond recognition. The key to allaying these very real fears is to find software that provides the kind of financial record-keeping a business needs, and that is supported by the manufacturer when problems or questions arise.

Careful and intelligent accounting can mean the difference between success and failure in business. So, perhaps will carefully prepared and intelligent accounting software prove the Mac as a power business tool. ☐

# WHERE IS THE SIN IN SYNERGY?

(continued from page 62)

## A Period of Adjustment

Anyone already used to the Mac or the IBM PC might need a little time to adjust to *MacCharlie*. For PC users, the keyboard has a few interesting anomalies. *MacCharlie*'s only ESCape key is on the numeric pad, while the PC has one in the upper left corner of the main keyboard. This could be quite confusing at first. The spacing between the main keyboard and the keys to either side is not quite the same as it is on the PC, and could take a little getting used to.

Switching from the Mac to MS-DOS on *MacCharlie* requires a mental adjustment — perhaps even a lobotomy. One has to learn all about cryptic commands and error messages, for one thing. And it is difficult to work with software that makes you move around the screen with cursor keys, especially when there is a mouse right next to your hand. The mouse can select for Cut and Paste, but not for any operations in the software itself.

## It Works Without MS-DOS

*MacCharlie* has some advantages of its own even when there is no MS-DOS application running. For instance, it is difficult to work with the standard Mac keyboard in your lap because it is too small. It slides between your legs or sits at a peculiar and uncomfortable angle. The *MacCharlie* extension enlarges the keyboard just enough that it now fits comfortably across the lap. The cursor keys and numeric keypad work well with Mac

software like *Multiplan*. And, perhaps more significantly, *MacCharlie*'s RAM acts as a print buffer between Mac and the ImageWriter.

We tested this feature by printing a 12 page *MacWrite* document in standard quality on the same Mac with and without *MacCharlie*. Although the actual printing took almost exactly 10 minutes in both cases, without *MacCharlie* the Mac was tied up until the last moment. *MacCharlie* returned control of the Mac in just seven minutes — (the document had printed to the middle of page eight) — a savings of 30%. It would have been nice to have the entire document sent to RAM so other work could be done (as the manual suggests that it will do), but even so 30% is a significant savings. Any more is unrealistic because of the amount of time the Mac needs to process the material.

The update of *MacCharlie* software is designed to run with *Switcher* so you can jump from an IBM application window to Mac and back again. *MacCharlie* worked with *Switcher* intermittently in our tests, depending on what software was running with it. Although *MacCharlie* will not interface with *AppleTalk*, both can work from the same Macintosh, so an ImageWriter can be used for printing out PC documents, and a centralized LaserWriter can print Mac work.

Maybe looking like an IBM PC is a sin, and maybe not. Obviously, we feel that the Mac is a better machine and one should never have to face the rigors of MS-DOS again.

*MacCharlie* offers an intriguing solution, and a system that crosses the line between Mac and, um, that other machine, can't be all bad. ☐

## MACCHARLIE: REPORT CARD

Overall Rating \*\*\*\*

Follows Mac Interface	
Printed Documentation	**
On-Screen Help	None
Performance	***
Support	****
Consumer Value	****

Comments: IBM compatible computer that uses the Mac as a terminal.

Best Feature: Ability to transfer data and files directly.

Worst Feature: Manual is patronizing and makes claims that aren't entirely accurate.

List price: \$1795. Manufactured by Dayna Communications, 50 South Main Street, Fifth Floor, Salt Lake City, Utah, 84144. (801) 531-0600.

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# MIDI TO THE MACS

(continued from page 94)

notation for music input (Figure 2). Proportional notation should be familiar to anyone who has used Hayden's *MusicWorks* program (it's what appears as the Grid window there). Music is entered on a grid representing pitch durations (notes) over time. *StudioMac* can also convert files created with the *MusicWorks* program, so that they can be played back through a synthesizer.

*StudioMac* also has the somewhat strange ability to play back through the Mac and MIDI at the same time, and custom waveforms for the Mac voices are user defined. Casio patches can also be stored, either individually or with the music. The program works with the concept of an "orchestration," which determines whether a voice will play through the Mac or a MIDI channel, and the sound settings for that voice. These "maps" can be saved as general templates or with a particular piece of music.

## MEGATRACK AND MIDIWORKS

The *MusicWorks* system consists of the *MegaTrack* sequencer module, a patch librarian program for the Yamaha DX-7 synthesizer and a very interesting program called *MIDI-*

*Works*. This software can interconvert files created by Mark of the Unicorn's *Professional Composer*, Great Wave's *Concertware* series, Hayden's *MusicWorks*, *Deluxe Music Construction Set* by Electronic Arts, and the *MegaTrack* sequencing package. That means that a song recorded through *MegaTrack* can be moved into any of these programs, edited with the large selection of tools available in the programs, and moved back into the sequencer, which will reflect the changes made. *MIDIWorks* is useful for all musicians, regardless of what actual sequencer software is decided upon, as it will open the doors of compatibility between these diverse packages in a very easy way.

*MegaTrack* features unlimited overdubbing (no limit to the number of tracks), compatibility with the 128K Mac and a full complement of editing features (even though it is weaker than the other two high end packages in this respect). Among its few drawbacks is its use of the quantizing mode, which can only be invoked once for each track. The documentation received was deficient (although the company says that improved manuals will be available shortly), but their technical support made up for this shortcoming.

The patch librarian program performed flawlessly, and has the unique capability of merging sounds, so that the waveform parameters of one particular sound can be overlaid on another sound, to create composite instruments. This is a very creative feature, and DX-7 owners can go crazy combining flutes and volcanoes (!).

## MIDIMAC

Opcode's software consists of two sets of programs: the *MIDIMac* sequencing and recording software, and patch librarian packages for the Casio CZ-101 and the Yamaha DX-7.

The *MIDIMac* package is very flexible, with an array of standard overdubbing and editing features plus some pleasant surprises. A series of notes or chords can be recorded and played back in modified time (forwards, backwards or alternations of the two), or in random order. The relations between the rhythm patterns and note durations of these random sequences can be controlled in a multitude of ways.

The quantization power of *MIDIMac* is very useful. A track can be corrected more than once after it has been recorded, and notes can be quantized in a number of ways.

Some people may not like the program's interface—the screen is fairly busy (Figure 3), and is not as intuitive as it could have been. This isn't a problem, though, and the major commands, such as starting and starting recording, have keyboard equivalents that make a lot of sense, for example, hitting the space bar to start the recording process.

The *MIDIMac* sequencer can also call subsequences, just like *Total Music*. This capability places the Opcode and Southworth programs into a high end class by themselves, as long compositions can be recorded while economizing on memory usage.

The Opcode patch librarian programs are very straightforward and work smoothly. It's possible to bring up both Casio CZ-101 and Yamaha DX-7 patch windows on the screen simultaneously, so if both these synthesizers are connected on the MIDI network, patch maintenance can be done on both at the same time. Very nice.

		TOTAL MUSIC	MIDIWORKS/MEGATRACK	MIDI MAC	CONCERTWARE MIDI	NOTE WORTHY MIDI COMPOSER	STUDIO MAC
HARDWARE	Interface included?	YES	OPTIONAL	OPTIONAL	NO	OPTIONAL	OPTIONAL
	Serial Ports Used	B	P/C/B <sup>3</sup>	P/C		P/C	
	Speed (megahertz)	1.0	0.5	0.5/1/2		1.0	
	MIDI Inputs/Outputs	2/4	1/4 <sup>4</sup>	1/1		1/1	
	Interface Compatibility		OP, ASM	MW, ASM	OP, MW, ASM	OP, MW, ASM	OP, MW, ASM
	# Tracks Supported	99	UNLIMITED	10	8	4	8
	MIDI In/Out	YES/YES	YES/YES	YES/YES	YES/YES	YES/YES	NO/YES
	Maximum Composition Size (Notes on 512K Mac)	50,000 <sup>1</sup>	40,000 <sup>1</sup>	24,000	40,000	50,000 <sup>6</sup>	24,000 <sup>7</sup>
	Transcription Generation	●	● <sup>5</sup>		●		
	Levels of Quantization	33	14	28	3		
SOFTWARE	Patch Change	●	●	●	●	●	●
	Velocity Sensing	●	●	●	●	●	●
	Control Changes	●	●	●	●	●	●
	Pitch Bend	●	●	●	●	●	●
	Visual Editing	●					●
	Loopable Tracks	●	●	●			
	Patch Librarian Capability	● <sup>2</sup>	OPTIONAL	OPTIONAL			●
	External Synchronization	●	●	●			●
	Punch In/Out	●		●			
	File Compatibility		● <sup>5</sup>		● <sup>8</sup>		● <sup>8</sup>

<sup>1</sup>Increased capacity potential with more than 512K RAM

<sup>2</sup>Doesn't store Casio CZ-101 patches

<sup>3</sup>MacMIDI Star uses either Printer or Communications port

<sup>4</sup>MacMIDI 32 uses both ports

<sup>5</sup>MacMIDI 32 has 2 inputs/4 outputs

<sup>6</sup>MIDIWorks translates files between Professional Composer, ConcertWare, MusicWorks (Hayden), Deluxe Music Construction Set, and MegaTrack.

<sup>6</sup>10,000 notes on a 128K Mac

<sup>7</sup>1024 notes on a 128K Mac

<sup>8</sup>Will convert MusicWorks (Hayden) files

OP - Opcode  
ASM - Assimilation  
MW - MusicWorks

**Notes**

- Source code is available for StudioMac

- Most of the reviewed packages WILL work with the Total Music interface.

## CONCERTWARE + MIDI

*ConcertWare + MIDI* is very similar to the standard non-MIDI version of the program, with the addition of new features for MIDI recording. The timed entry mode has been replaced by a record mode, which will take real time entry from a synthesizer. Quantization is active during record mode, and a track can be requantized until a new track is recorded. Up to eight voices can be programmed, each assignable to its own MIDI channel.

Files from the standard *ConcertWare +* can be played through *ConcertWare + MIDI*, while the Mac instruments in the original files can be assigned MIDI patch numbers, so that a Mac instrument change will trigger a patch change in the synthesizer playing that voice.

The strongest feature of *ConcertWare + MIDI* is that it generates excellent musical notation from a recorded sequence within the *Writer* module. The package also includes an updated *Player* with which the user can select the MIDI channels to play back—the eight voices are switchable. The standard *Instrument Maker* module is also included. The original *ConcertWare +* was a good program, and with the addition of MIDI, this program rates high as a truly all-purpose music composition tool.

## MIDI COMPOSER

*MIDI Composer* is the most simplistic of the programs reviewed. It provides MIDI IN capabilities, although recording is real-time only, with no quantization or editing capabilities at all. The tempo of its metronome is adjustable, as is playback tempo which affects all recorded tracks equally. The MIDI channel output of each track is adjustable to any of the 16 channels.

## And So to Conclude

It's difficult to say which system is just right for each user. There are two levels of sophistication of both the hardware and software involved in a MIDI network.

For the person entering this world for the first time, a person who doesn't actually own a synthesizer, but is committed to the purchase of all the equip-

ment needed, the Casio CZ-101 is a logical choice as a first synthesizer. It will provide all the sound needed for making beautiful music, and has just enough programming features to grow with the system. Some of the patch librarian programs, in particular the Opcode librarian software, come with enough preprogrammed patches to satisfy all sonic curiosity for days, even weeks.

The question of which hardware interface is more difficult to answer. The Opcode unit usually wins out over the Assimilations and MusicWorks interfaces, simply because its switchable speed setting ensures compatibility with most of the existing software, as well as with future programs.

And for the sequencing program? *ConcertWare + MIDI* is the best buy of the bunch. Between its MIDI recording features and the notational capabilities provided, it should satisfy your needs for a long time.

And if you already own a synth or ten, well, it's a hard choice between *Total Music* and *MIDIMac*. The *MusicWorks* sequencing program rates a notch lower because the version that was reviewed was lacking some capabilities that the advanced synthesist needs. MusicWorks says that there's an upgrade in the works.

If you get *Total Music*, then the interface question is answered for you. It's a good device, so there should be no hesitation in getting it with its software. And the Southworth interface also works with most of the other software.

If *MusicWorks* or *MIDIMac* is in your future, then the choice is between their respective interfaces. The *MusicWorks* interface provides more outputs, reducing the need for a "thru" box, but two Opcode interfaces can be hooked up to the Mac at the same time (using the modem and printer ports). That's more expensive, so it boils down to personal preference.

As for the librarian programs, the *MusicWorks* package is great for DX-7 owners. The Opcode librarian packages are intended for use on the DX-7 and CZ-101, and both work very smoothly. So get out there, study, play, study and then make great music. ☐

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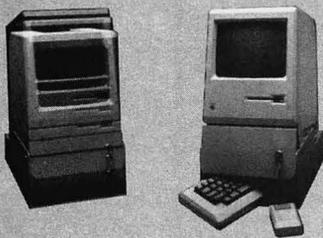


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## MACRO MAKER—NEW USES FOR EXCEL

**MatMultiply** computes an element of the result, it moves to the next column and “jumps” back to A11. Cell A12 begins the actual calculation of an individual result element. The formula for each element of a matrix product requires the accumulation of a sum of several terms. Before this summing up takes place, the result element must be set to zero.

The interesting aspect of the formula in cell A12 is the use of the **OFFSET()** function to determine where the element is to be stored. The **OFFSET()** function does not return a value, but instead supplies a reference to a cell (or a group of cells). In this case, **OFFSET()** returns a reference to a cell that is “offset” relative to cell A1. The respective row and column indexes in cells A21 and A19 are the displacements used. Thus, the first time this cell is executed, with both the indexes initialized to 1, **OFFSET(A1, A21, A19)** will generate a reference to cell B2, that is, the cell one row down and one column to the right of A1.

As *Excel* proceeds through the macro, this cell will be executed again with different values in A21 and A19. The **OFFSET()** function then will generate a different relative reference, corresponding to the result element being computed. Cell B2 is the top-left cell of the result matrix; other cells will be stored to the right of and below this cell. **MatMultiply** is building its result on its own sheet (a bit to the right of its own defining cells) in a fashion that is independent of the size and shape of the result matrix.

Cell A13 initializes the cell, A17, that will serve as the index controlling the summation that calculates the next result element. A17 corresponds to the summation index,  $p$ , in Equation (1). A14 contains the label that defines the top of this summation loop.

Cells A15 and A16 (which could be combined into one rather large cell formula) accumulate the next term into the current element result. The **OFFSET()** function refers to the cell that was initialized to zero by cell A12.

Cell A17 contains a curious-looking formula. In a normal worksheet, it would cause a “circular reference” error, since it attempts to compute the cell value as a function of itself. This is

no problem in a macrosheet. In fact, it is the fastest and easiest way to maintain a variable, in this case the summation loop counter. Recall that the **SET.VALUE()** function was used to initialize this cell’s value to 1, but didn’t disturb the formula in the cell. When A17 is executed the first time, the current value of the cell (1) will be incremented by 1. Thus A17 will take on the values 1, 2, 3, etc., as the macro’s innermost loop is iterated.

Cell A18 takes care of the vital function of terminating the inner loop when the summation is complete. Until the summation has been executed for all its constituent terms, the **GOTO()** function is executed, transferring *Excel*’s execution to the label defining the innermost loop at A14. The next time through the loop, the next product term will be taken and summed into the result element. When the summation is complete, the **IF()** condition will evaluate as false, and *Excel* will proceed to cell A19.

Cell A19 increments the row counter. In the next cell, A20, a test is made to see if all the elements in the current row have been calculated. If not, control is transferred back to the column loop top. If the row has been finished, execution proceeds to the next cell, and the next row is computed. The next two cells increment and test the column index in a similar fashion. When all columns have been processed, the macro is finished and the next cell is executed.

Finally, A23 returns the result matrix, using the terminal values of the row and column indexes (decremented by 1 to reflect the “extra” incrementation each received the last time through the loop) to determine the bounds of the result array. *Excel* then copies the local result matrix back to the cells of the calling worksheet.

## The Bottom Line

It would be dangerous to claim that a worksheet program without macros couldn’t do these example at all — but even the most dedicated worksheet fanatic must admit that it couldn’t be done as cleanly and easily. And that is the essence of power computing. ☐

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# NOVELS OF THE MIND

(continued from page 100)

full-color illustrations with its two illustrated adventures, *Gateway* and *Forbidden Quest*. These Artext™ prints prove to be more than visual embellishments, though—vital information is conveyed through a careful inspection of the images, information that's crucial to continuing progress in the game and which isn't found in text descriptions or the on-screen illustrations.

*Gateway* casts the player as an average person who's just inherited a rickety, broken-down curio shop from a recently deceased eccentric uncle. A vague, partially-destroyed note hints of a gateway to another dimension, and of great mysteries that lie beyond the void. The storyline is well thought out, and the writing is of novel caliber. *Forbidden Quest* is a bit harder to play (especially at first, where players can expect to die nasty deaths right off the bat), but it shares the same excellent plotting, text and art as *Gateway*. The story begins on a malfunctioning spacecraft and progresses to an alien planet.

*Legacy* (Challenger Software) features so many high-res screen illustrations that the game comes packaged on two disks instead of one. The gamer steps

into the pointed shoes of a young wizard challenged with retrieving a magical orb from the evil Drab Castle and placing it into the hand of the eldest of the Wizards of the Universe, the one who sent you on this quest.

The nicest touch about this game is that it actually requires the sorceror to collect the material components of a spell, then properly execute the steps necessary to casting it. In other words, merely typing "Cast Spell" won't work!

*Transylvania* is Penguin Software's tongue-in-cheek bow to classic horror movies. The gamer explores a land haunted by vampires, hungry mice, and disapproving ghosts that have a nasty tendency towards practical jokes. Each area is illustrated with an appropriate picture. Don't play this one after midnight!

## Of Magic and Monsters

Finding magical spells and using them wisely is the object of Infocom's *Enchanter* and *Sorceror*. The former casts the player as a novice wizard deemed by the Council as the only member of the Guild lowbrow enough to slip past the magical protections around an evil fortress. You'll have to

get to the bottom of what's happening in the temple without ending up as a human sacrifice to earn your stripes as a true sorceror.

Win or lose, *Sorceror* gives the player the benefit of the doubt. Your first adventure is history, and you lived to tell the tale. But you wake up one morning to find the entire Guild hall empty, the streets deserted, and your old friend and mentor gone. The journey you'll take to learn of his fate is fraught with danger and at least a few surprises.

## High Tech Fantasy

Broderbund's *Cyborg* has an unusual plot twist: a computer brain has been implanted into the player's brain, but much of its information was damaged in some sort of accident. You wake up not quite knowing where or who you are, aware of another intelligence and still unsure of how to use it. Find a way to repair—and use—your "better half" to unravel the mystery of your past.

*Suspended*, Infocom's most unusual text game, starts out with the player being awakened from a cryogenic sleep by an alert notice. Something is amiss in the underground technological complex that powers and feeds the world above, and your job is to find and fix the problems before a major disaster kills innocent people. From your state of suspended animation, you have only a handful of sensory robots at your disposal. Each has certain specialties, such as acute sight or the ability to carry and manipulate tools, and each also has a distinct personality.

Using the enclosed plastic game board and a set of Colorforms-type markers to keep track of robots' positions, the object is to find and fix the problems (and, possibly, a renegade droid) before the civilization above disintegrates into chaos.

## The List Goes On

Text adventures are among the most popular types of computer games, with so many titles available that it's impossible to list them all here.

Whether your taste runs to murder mystery, fantasy, science fiction or high adventure, there's a story waiting to unfold on your screen. □

## PROSE POWER

A text adventure is defined as a game played entirely with words: those displayed on-screen to tell the gamer what's happening, and those the player types in as a response. Illustrated text adventures use pictures, either occasionally or with each new movement by the character, to embellish the text.

In "standard" text adventures, the game would proceed as follows. The computer would say, "You're standing in the middle of an intersection that forks to the east and north. There seems to be a small path to the south, but the way is blocked by a thick growth of ivy. On the ground is a piece of paper." To move along the path, the player would type E for east, N for north, or in many cases, could instead click on the on-screen compass for the desired direction. Other options would be to GET PAPER (then, hopefully, read the paper), or

to try examining the ivy. Obviously, there's a way through to the south, but it's up to the player to figure out how to unblock the path. It might require an item hidden elsewhere.

A game's sentence parser influences how articulate the computer can be. Primitive parsers would be able to recognize a very limited number of words and require that players input simple two-word verb-noun combinations like GO DOOR or TALK MAN. And the computer would probably not recognize many actions like TAKE BOOK ("I can't do that right now," says the computer) when it would understand GET BOOK ("Taken."). Truly sophisticated parsers understand a wide variety of commands, like TAKE THE BOOK, THEN PUT THE KNIFE ON THE TABLE, and point out exactly which words don't compute ("I don't understand the word 'Rumpelstiltskin.'")

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## YOUR FIRST CONNECTION

(continued from page 87)

checking methods of transferring files and programs): XMODEM, Hayes Verification and *MacTerminal* XMODEM. If you are calling a friend who also has *Smartcom*, either the XMODEM or Hayes Verification choices are acceptable. If your friend is running *MacTerminal* and you have *Smartcom*, then the only acceptable choice for you to make is *MacTerminal* XMODEM. Once you have chosen the protocol you also (for XMODEM and Hayes Verification choices) must choose if you want to transfer a complete file, such as an application file, which has a resource fork or only a data file such as a *MacWrite* document or a *Multiplan* template.

Now take the menu choice that leads to the "Speed and Format" dialog box (also under the Settings). Choose:

- Proper baud rate (same for both the modems involved)
- 8 bits per character
- No parity
- One stop bit

Now choose the "Terminal Settings." In the resulting dialog box you click the following choices to "on":

- TTY (normal)
- Autowrap at column 80
- Insert line feed after each Return
- Local character echo

For all other choices the program's defaults should be used. Once this is done, mouse over to the "File" menu and using the "Save As" choice save this document as "Mac-To-Mac."

Now call the other computer. If you're using a fully Hayes-compatible modem simply click on the phone icon at the lower left corner of the screen. Type the phone number into the dialog that appears and click on OK. If you're using an Apple modem, the procedure is a bit different. Go to the Connection menu. Pull down that menu and select Direct Connect. Now type "ATDT" followed by the phone number and a Return. That's if you have Touch-Tone service. If you have pulse telephone dialing the proper command is "ATDP" and the phone number.

Once you've established the connection (try it out by typing back and forth), mouse down and click on the

"Send" icon at the bottom of the *Smartcom* screen. You'll be presented with a list box showing the files and applications on your disks that may be transferred using the protocol chosen. Highlight your choice and choose to send it. The file transfer process will begin and a dialog box will appear telling how the transfer is progressing.

### Basic Troubleshooting

Did you have problems? Make sure you followed the settings shown in the figures exactly. Pay particular attention to how you have set the various choices detailed above.

One of the most common problems in Mac-To-Mac communication is that one person does not see what he is typing, but only what the other person is typing. This can be easily remedied by setting the "local echo" or "local character echo" choice to "on."

If you are using a protocol transmission and it keeps failing midway through the process, suspect a noisy phone line. This can be caused by anything from faulty equipment at your end to electrical storms and other interference. If a transfer keeps failing midway, try hanging up and redialing. This may reconnect with a better line.

The two computers must work in concert in many ways. If nothing seems to be going right, make sure that each computer and modem is set to the same baud rate. A 1200-baud modem talking to a 300-baud modem is the electronic version of the Tower of Babel. Also be certain that both computers involved are using the same file transfer protocol. If one computer is trying to send Hayes Verification while the other is doing *MacTerminal* XMODEM, they might as well not even be connected.

### The (Electronic) World Is Now Open

Pretty soon you should find that talking Mac-To-Mac is as easy as talking person-to-person. Your next step will be to call one of the many electronic bulletin board systems (BBS) or one of the national computer networks. And, that will be the subject of our second article in an upcoming issue of *MacUser*. ☐

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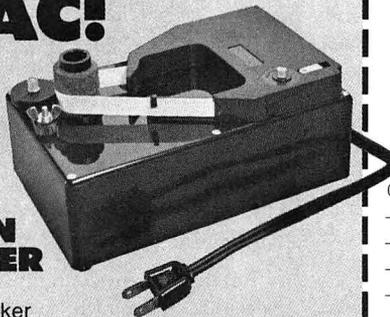


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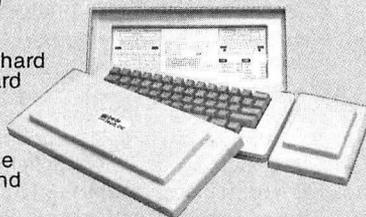
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# LOVE CAN MAKE YOU CRAZY

I'VE ALWAYS TRIED TO UNDERSTAND THE nature of the Mac owner. Not just the regular Mac owner, but the nut-case type. I could not pin him or her down until I began to study some of the products designed for the Mac which obviously appeal to the inveterate Mac nut-case.

Have you noticed that the Macintosh lends itself to peculiar and sometimes bizarre add-ons? We're talking about phones that glue on the side of the computer, coin-op devices that hook to the thing and attachments like tilt and swivel contraptions that make the computer look like a robot's head.

If I could understand why the Mac encourages kludgy products maybe I could figure out the Mac nut-case.

The first and easiest solution to the bizarre add-on mystery is that the computer was designed as ONE person's idea of the ultimate machine. It never entered anyone's mind that the user would want to do something else with it or would want to make it perform better than it does. You often hear this argument, but it soon wears thin. It seems like a flimsy excuse and perhaps answers the wrong question. The real question should be why would anyone buy a machine that was obviously a closed system and then proceed to add junk to it?

If there's a parallel in the world to this kind of activity it's in the automobile world. The guy who buys a plain Chevy and then proceeds to add dingle balls, fender skirts, chrome knick-knacks and weird wheels to it. What kind of kick does the user get?

It's possible that the Mac user is such an individualist that he wants to "wear" (metaphorically speaking) his computer on his sleeve showing all the idiosyncratic and individualist aspects of his machine, and, therefore, his personality.

Note the attitude towards the IBM PC, in contrast. The IBM PC is the machine for the corporate drones all looking and acting the same. If they want to do something to their machine, they can do it inside the machine in a slot. They keep it

hidden within. They are secretive and conformist compared to the honest guy—the Mac user.

If the Mac user wants a modem he shows it to the world, "Hey look at this modem!" If he wants a hard disk (with the exception of the expensive *Hyperdrive*) he shows it to the world, "Hey look at this—*MacBottom!*" If he wants a bigger monitor he has to buy a clunky fresnel lens, "Hey look at this clunker!"



But maybe these arguments are just as specious as the idea that Steve Jobs is at fault for insisting on a closed system. Perhaps the answer is in understanding what I call the "Sinclair Syndrome."

Remember the Sinclair?

When good old Clive Sinclair brought out his first Sinclair computer for around a hundred bucks the user got what he paid for—a cheap Z-80 doorstop that could almost pretend to be a real computer. Oh, don't get me wrong, it was a fun little computer and people could do worse than use them to develop stoplight systems in metropolitan downtowns. But that's not what they did with them. People wrote ludicrous spreadsheet programs to run on the thing, they designed full-travel keyboards to hook to the thing, they found a way to attach floppy disks and made special boxes for the thing. Talk about getting carried away!

Soon there were memory add-ons, rack-mount cabinets, robot-arms and numerous whatchamacallits hooked to the little guy. Give me a break. The key to understanding all this is to understand the mentality of the user who would find pleasure in putting together a mish-mosh. What kind of person gets a kick out of wasting time building up something that is simply inadequate into something that is profound?

Again, like the auto scene, you run into people who take a '34 Willys and rebuild it from the ground up and drop tens of thousands of dollars into the jalopy to make it into a masterpiece. Later, if when they want to sell it, they find out that if they're lucky its merely relatively worthless on the resale market.

Some will say, "Well, it's just like Dvorak to put a price tag on everything, including a labor of love."

Ah, labor of love. That's the key! Now with the IBM owner, the Morrow owner, the Wang owner, the DEC owner . . . nearly every owner of every kind of computer you never find the element of "love" for the machine, do you? People do seem to love the Macintosh. Someone may want to marry one someday. From my own experience I find a critique of the Mac draws fire from users who are "in love" with the machine. It never happens with an IBM. It always happens with cute computers like the Sinclair and the Macintosh.

I'm sure some of you will say, "Sure the Mac is cute. It's also lovable and endearing and deserves better treatment than the IBM PC." I suggest that those upright souls who adulate the Mac consider the fact that this is all materialism plain and simple! When someone like myself criticizes the machine we aren't criticizing you, the owner of the computer. We could care less. Besides that, it's an inanimate object!

I suggest that when you see enemies all around attacking your beloved computer, maybe it's time to look within. Have a whiskey or something! ☞

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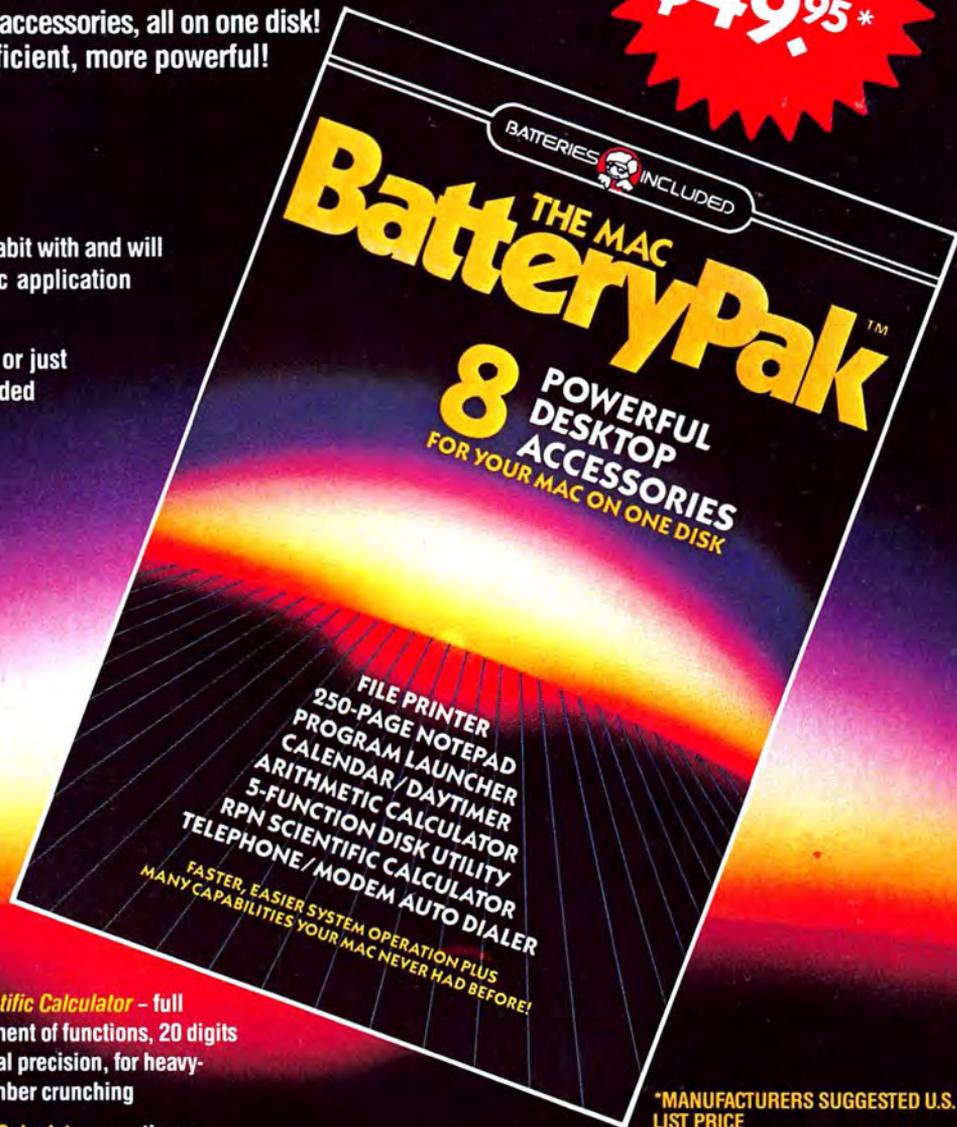
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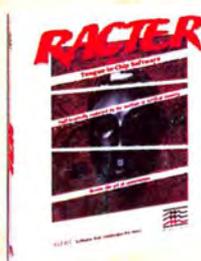
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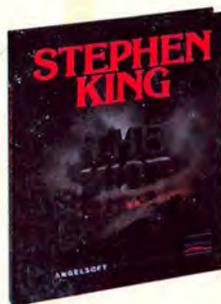
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