

MACWORLD

March 1986 \$3.95

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The Macintosh™ Magazine

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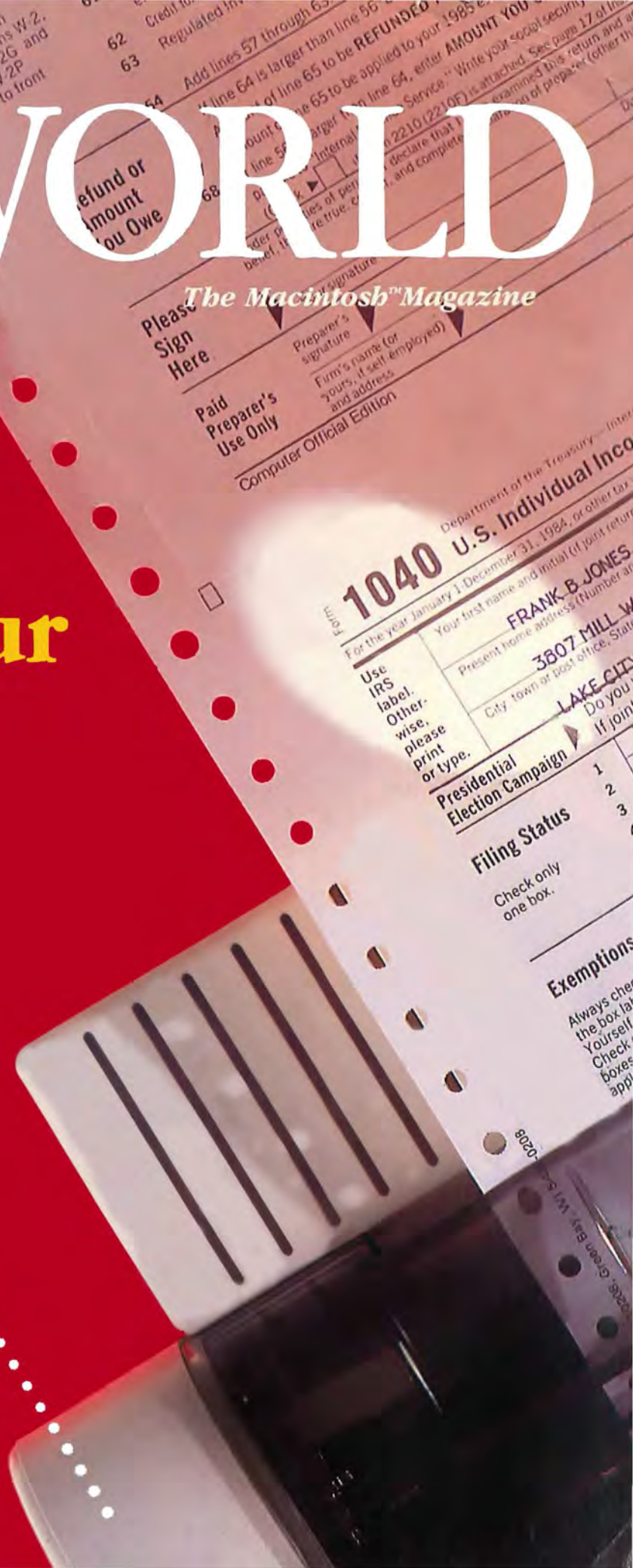
*Five packages
that prepare taxes*

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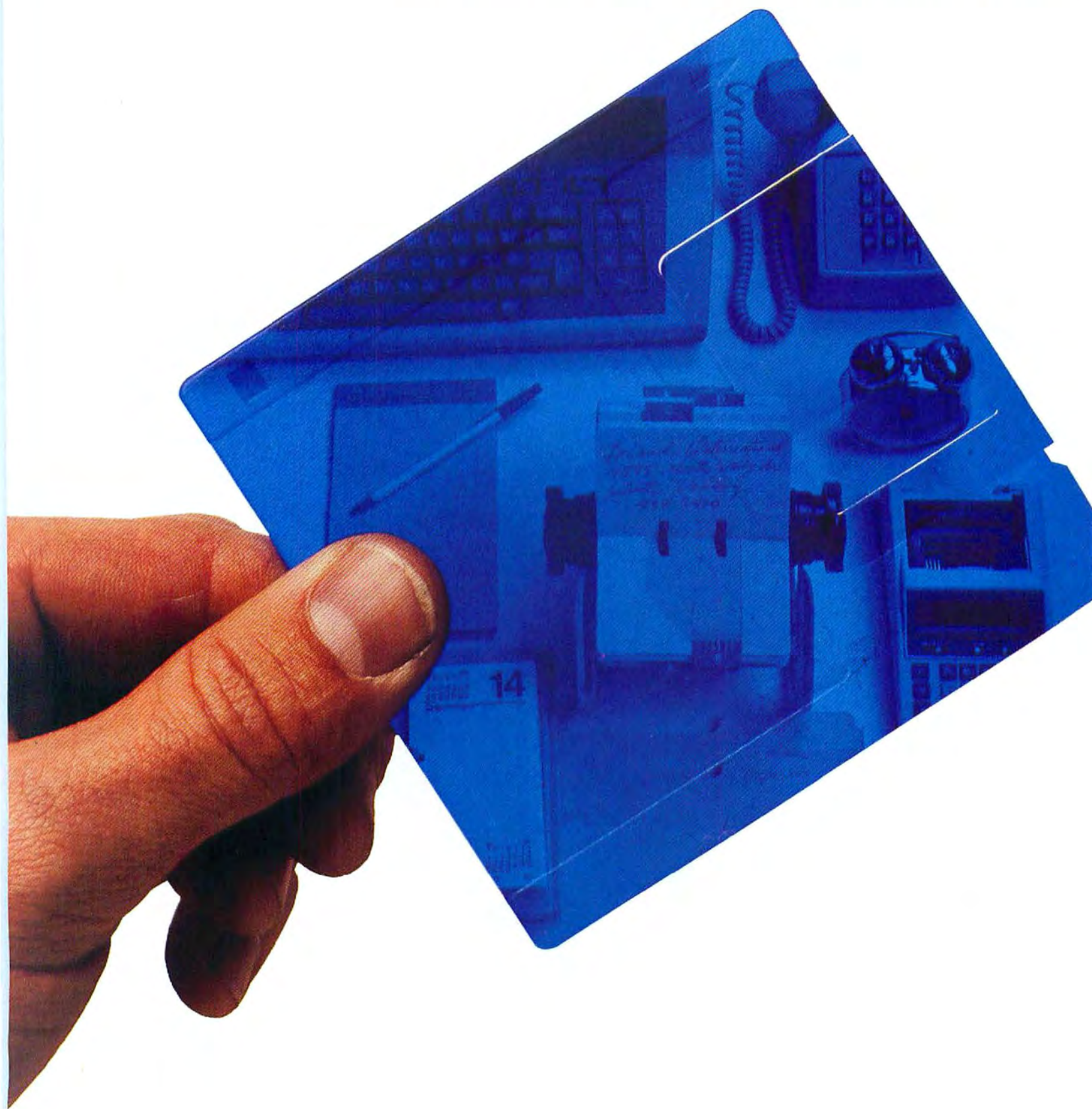
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MACWORLD

March 1986

The Macintosh™ Magazine

Getting Started

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Gordon McComb

Craft the right tool for the job by organizing your programs and utilities onto task-specific work disks. This tutorial shows you how to custom-build disks for five tasks.

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Steve Mann

This year don't have a tax attack; use the Mac. Five products free you from the frustration of federal forms: *MacInTax*, *Tax Master*, *TaxPlan*, *Tax-Prep*, and *TaxWizard*.

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Allen Munro

The program that made databases fun adds some serious business capabilities. A look at Telos Software's new *Business Filevision*.

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Richard Sprague

Two new LISP dialects from ExperTelligence—*ExperLisp* and *ExperOPS5*—bring the language of artificial intelligence to the Macintosh.

106 Accessories to the Facts

Gordon McComb

Another alternative to desktop clutter, Borland's *Sidekick* is a versatile collection of desk accessories that can work as a stand-alone desk organizer as well.

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Jay Kinney

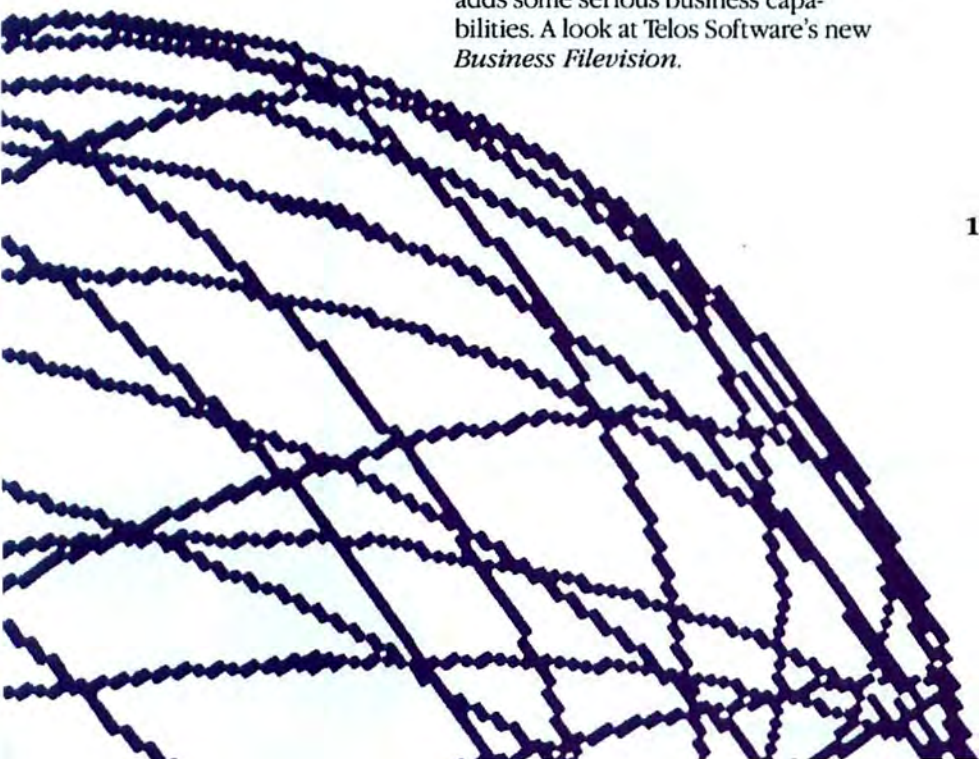
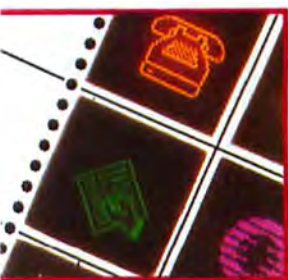
The freedom and instant gratification of desktop publishing are turning once-sober newsletter producers into printing fanatics. Experience the thrill of self-publishing vicariously as we take you through this sample job with Aldus's *PageMaker*.

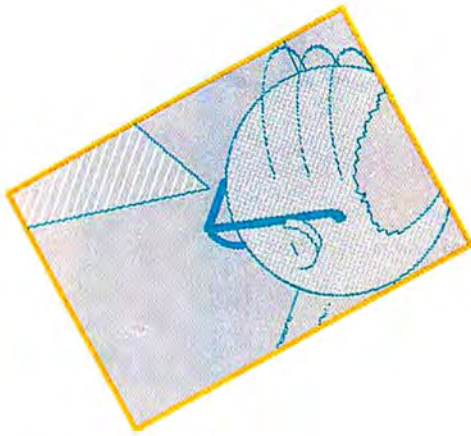
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Lon Poole

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The first module in Sierra On-Line's accounting series mimics its manual counterpart.

■ *MacSpell +* Track down spelling mistakes and typos with Creighton Development's spelling checker.

■ *Dinner at Eight* A collection of recipes that gives new meaning to the term *pull-down menu*.

■ *MegaDesk* Keep track of appointments and file text and pictures with this desk organizer.

■ *Championship Star League Baseball* Let your fingers do the balking in this animated baseball game.

■ *LaserJet and LaserJet Plus* These printers provide less expensive alternatives to the LaserWriter.

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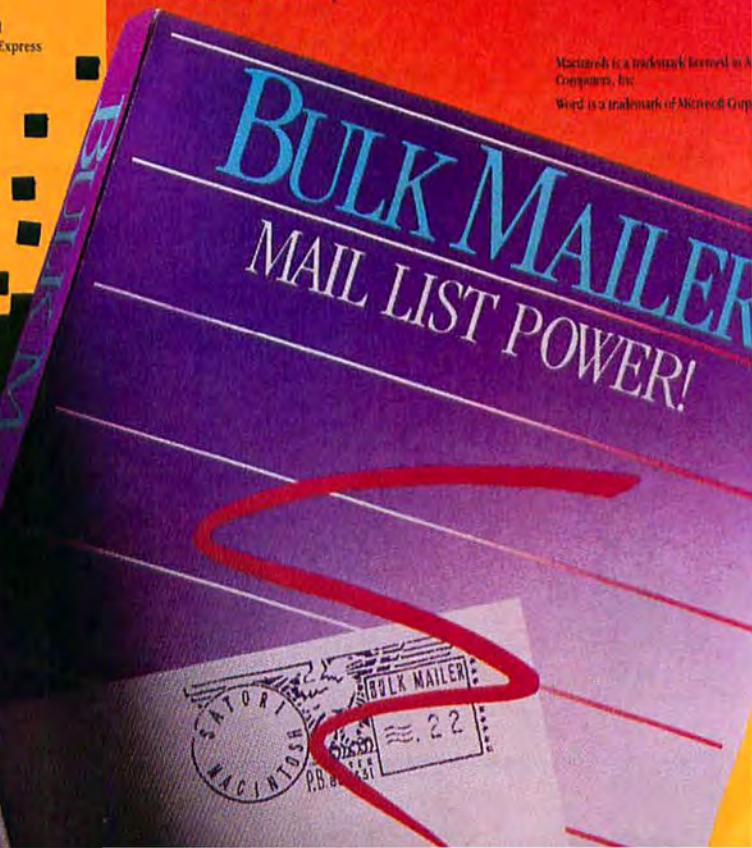
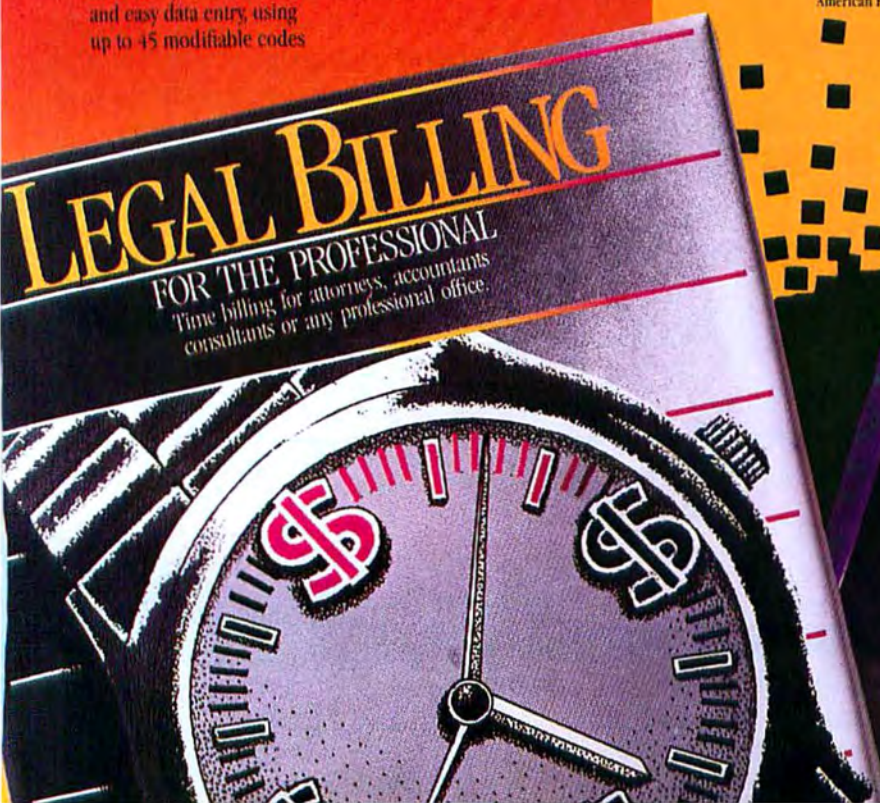
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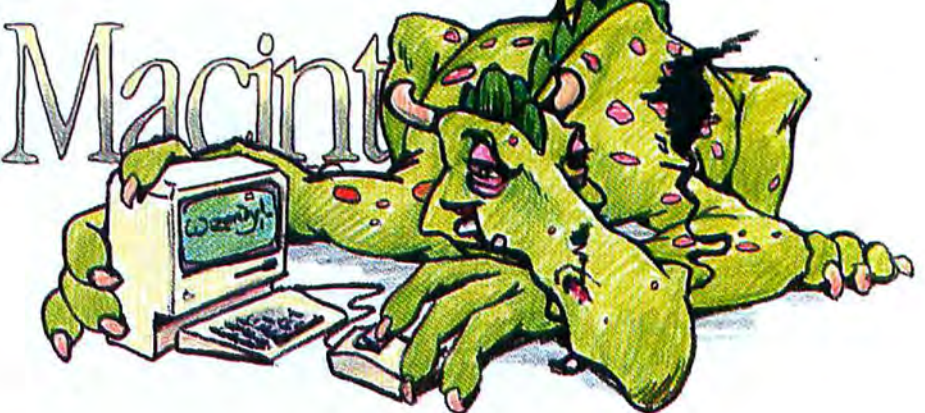
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The Myth of the MIS Manager

After the revolution: Will the aristocrats and the anarchists sit down to tea?



*The MIS
manager is dead.
Long live the MIS
manager.*

Not long ago I attended an industry outlook conference in Palo Alto sponsored by Technologic Partners, publisher of the *Computer Letter*. Various industry gurus at the seminar made forecasts, and although many pronouncements were predictable, there was one that seemed prophetic.

More accurately, it was an observation of a trend that has just now become recognizable.

Ed Esber, president of Ashton-Tate, gave a humorous account of some myths about the personal computer industry. He said it was high time they were dispelled.

The audience chuckled at his list of winners: the myth of the suggested retail price, the myth that integrated software is dead, the Philippe (Borland International) Kahn syndrome: "If you lower the price, you make it up in volume," and the myth that the customer always wants more features in software.

Ed related that he had always wanted to come up with four useless software features just to stack them up against the competition. Everyone laughed appreciatively.

But when Ed debunked the next bit of folklore—the myth that MIS managers have lost their power—a thoughtful silence prevailed in the room.

"Actually, they're reasserting themselves more and more," Ed observed about the role of management information systems directors in today's corporate environment.

While it's been true that until recently MIS managers have been complaining, like Rodney Dangerfield, that "I don't get no respect," Ed Esber's point is well taken.

The tide is turning, and the once-mighty autocrat of systems programming is again being regarded as a valuable citizen in the computing community.

This was brought into vivid focus for me when I received a copy of a new book written by a former colleague of mine, Forrest M. Mims III. Mims worked with me back in 1973 at a company called MITS in Albuquerque, New Mexico. The personal computer business was just beginning when the computer pioneer and founder of MITS, Ed Roberts, brought out the world's first personal computer, the Altair 8800.

Forrest Mims's book, *Siliconconnections. Coming of Age in the Electronic Era* (McGraw-Hill, 1986, \$16.95), is an incredible account of those days written from the perspective of someone who was, so to speak, present in the delivery room when personal computing was born.

It's full of never-before-published historical documents and rare references that I've never seen anywhere else. It's really an essential addition to anyone's reading list of computing reminiscences—sort of a *Ten Days That Shook the World* of the computer revolution.

What got to me in the book was discovering a reprint of an irate letter written by an autocratic MIS manager to *Personal Computing*, the magazine that I had founded after I left MITS in 1977. The letter appeared in the September/October 1979 issue.

Remember, those were the days before there was an Apple II, a Radio Shack TRS-80, or an IBM PC. We printed articles about computer stores, interviews with personalities, and colorful ads for computers made by now-extinct companies like MITS, Processor Technology, Southwest Technical Products, and other pioneers.

(continues on page 16)



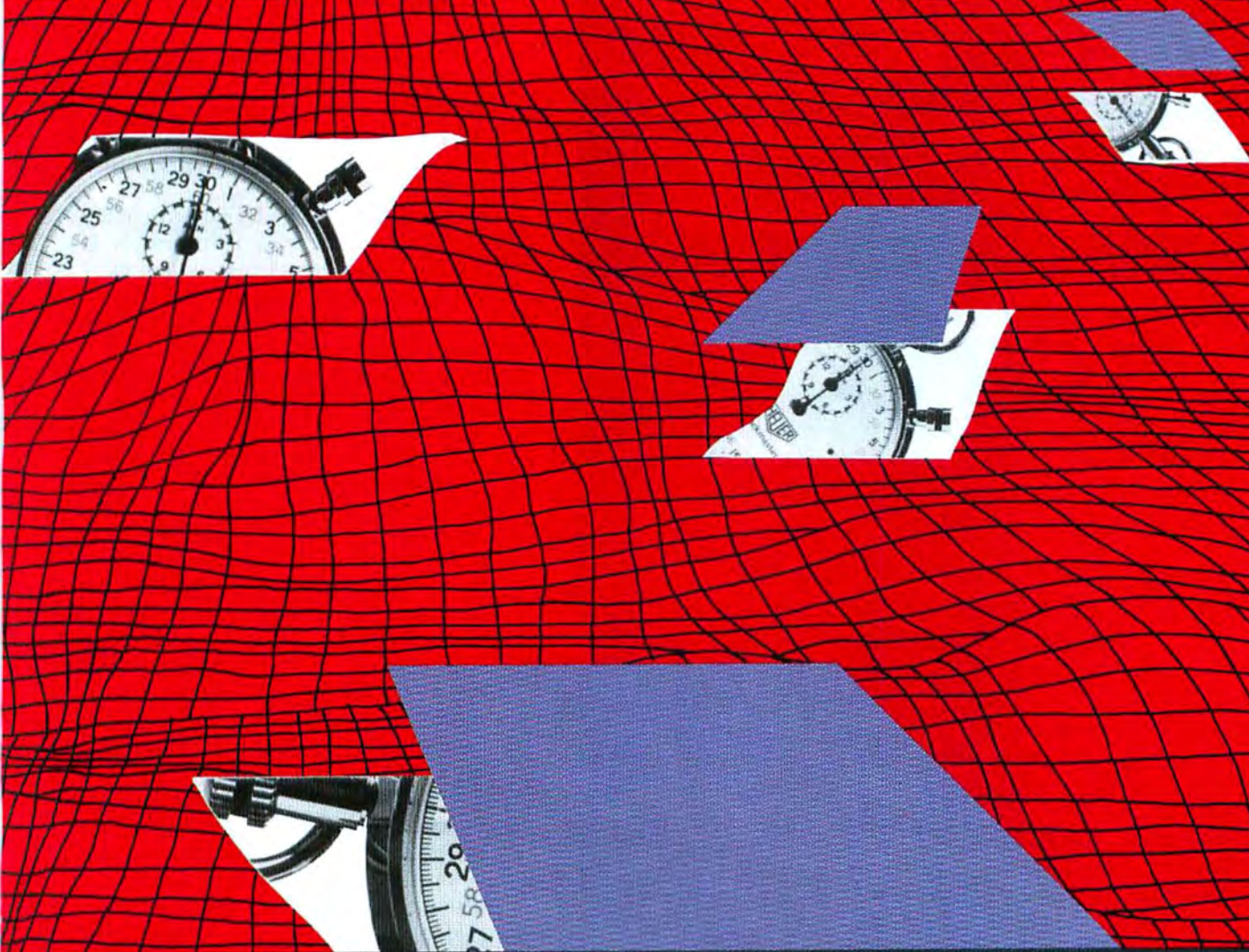
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(continued from page 13)

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And we were promoting a concept called the "Lemonade Computer Service Company." This was a regular section that offered readers helpful advice on how to start up small businesses using personal computers.

Apparently, that idea proved a little too much for our blue-blooded correspondent. You can see from his letter just how far we've come since those turbulent days:

"Many of the things you say and imply in your magazine are very upsetting to me. . . . Your lack of respect for the institutions we have established is both rude and shortsighted. You should be grateful that the industry is making personal computers available to private individuals instead of pretending that just anybody should be allowed to use computers in any way he wants to. You should know that strong movement is under way to establish legal standards for licensing computer programmers. . . . The shabby Lemonade operator will become a memory of the past unless he learns his work properly, shows authorities that he deserves professional standing, and can really contribute to society. Cancel my subscription."

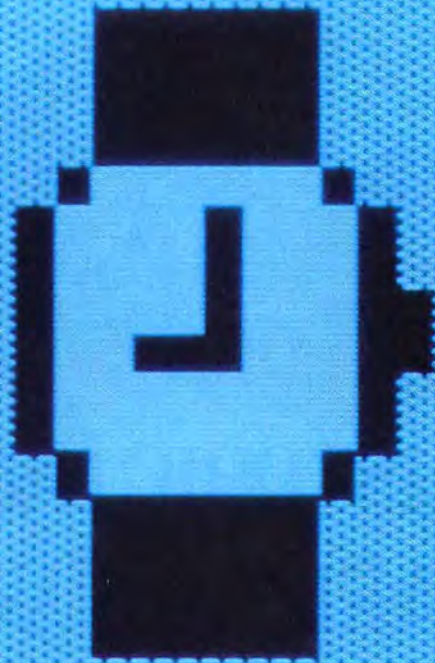
Rereading this letter reminds me how the personal computer really created a counterculture to the established computer culture of the day. That culture was dominated, of course, by the computer high priests—the MIS managers, who made all the decisions about computers in large institutions. In that sense, computers were thoroughly controlled because they were big systems, and you had to be tied into the system in order to use one.

Then the personal computer came along and liberated people from those constraints. This was instigated largely by a group of young electronic hobbyists who wanted to have their own computers and not be part of the corporate system. They didn't fancy the idea of being slaves to the MIS manager and the large computer systems.

Naturally, such rebelliousness created a negative reaction among the higher powers, as reflected in the letter to *Personal Computing*.

The question I'd like to pose is: Have we come full circle?

(continues on page 20)



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(continued from page 16)

Are the MIS managers indeed regaining control of the personal computer, or will it continue to be out of their hands? Traditionally, they controlled the small department that had power over all a company's computers and software. They could, therefore, constrain users to do certain things in a certain way.

Today, people using personal computers spill outside of the MIS department into all the departments of a corporation. All the managers have them, all the accountants, all the inventory people, all the marketing folk. That's how MIS managers lost control of their electronic flock in the first place.

Yet the problem from the corporate viewpoint is, how do you make sure that the information you're getting is consistent? You have to control what users are doing to an extent.

For example, an average user cannot possibly have the time to examine all the underlying assumptions and formulas contained in every spreadsheet. If one little cell in the formula or in the assumption is inaccurate, it can throw off all the results. As a manager, you could end up agreeing to a budget or to a new project that was based on a false assumption you weren't even aware of.

So it's vital that the MIS manager continue to influence the way the computer is used throughout the entire organization. You do need some simple standardization when users exchange data. Only then can you have reasonable assurance that the assumptions and the formulas and the way things are done are valid.

The real challenge is not one of who controls or doesn't control personal computing. Rather, it's one of creating a balance so that the people with the expertise in personal computers and mainframes can influence the organization—but not have the power to stifle it.

What we really need is an evolution of MIS managers rather than a reinstatement of them as the ultimate power brokers.

The thrust of personal computing among the freethinking young hackers in the early days was to create a state of anarchy. Their battle cry was: "Forget MIS managers! They're dinosaurs."

(continues on page 24)

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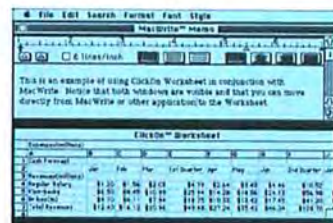


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The index is arranged by subject. The index on these data strips is in the form of a simple MAC WRITE file. The file is entitled MAC.BIN. Open the file and scroll down the page to see the article listings.

By the way, the "Banking on the Macintosh" article appeared in the September issue on page 50. In the article, author Lon Poole explains how Seafirst bank uses several thousand Macintoshes! Don't miss it.

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Softstrip

(continued from page 20)

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First, the hackers declared independence, then they had their revolution, and finally they did away with the landlords.

Now that the industry has matured and mellowed, it's time for a new era of understanding between the creative spirits and the new and more secular class of the computer priesthood.

After all, the MIS manager does have the knowledge to evaluate systems and software better than most other people in the company. The alternative, when people use a hundred different programs without rhyme or reason, is chaos. We find ourselves operating within a software Tower of Babel.

I firmly believe that now is the time for accommodation on both sides. MIS managers must give up a certain amount of control—they don't have to determine every single piece of hardware or software that's bought by a corporation. But they should know what's going to be bought ahead of time so they can advise users and work with them to determine the best strategies.

At the same time, users should regard the MIS manager as an ally.

It's like having an absolute monarchy turn into a constitutional monarchy. The king still has a lot of power and influence and a certain degree of control, but not the absolute final decision.

So, it's true all right. We have come full circle.

The MIS manager is dead. Long live the MIS manager.

Macworld Welcomes New Editor

Jerry Borrell comes to us with a wide magazine and editorial background. He has served as editor for several magazines and contributed over a hundred articles for magazines and books in the past few years. Jerry also worked on computer and communications technologies for the Congressional Research Service.

Among Jerry's reasons for joining the *Macworld* staff as editor is a belief that "the Macintosh interface represents the first step toward fifth generation technologies. That is, toward computers that access knowledge, not merely data. This is reflected in the Mac's new open architecture, and is likely to surface in voice, color, and concurrent processing."



Jerry Borrell

Jerry Borrell succeeds Kearney Rietmann, who was with *Macworld* from the earliest days of the Mac. She took over *Macworld* in its third issue and shepherded its success and growth for the intervening 19 issues.

Kearney, who lives in San Rafael, California, is establishing her own consulting firm. Her intention is to draw from her experience as editor to forward relationships between computer companies and the advertising and editorial sides of the media. She will also be working on book projects.

For the future you can expect us to continue with the most important and succinct information about the Mac. We will also be reporting on the increasing role that will be played by third party vendors with Apple, for both hardware and software.

I often hear from readers, and I want to let you know I appreciate this. I consider your questions and feedback vital to the continued growth and thrust of our magazine. *Macworld* will continue to serve as a forum for Macintosh users, providing the most strategic and lively coverage for the Mac and presenting effective solutions. □

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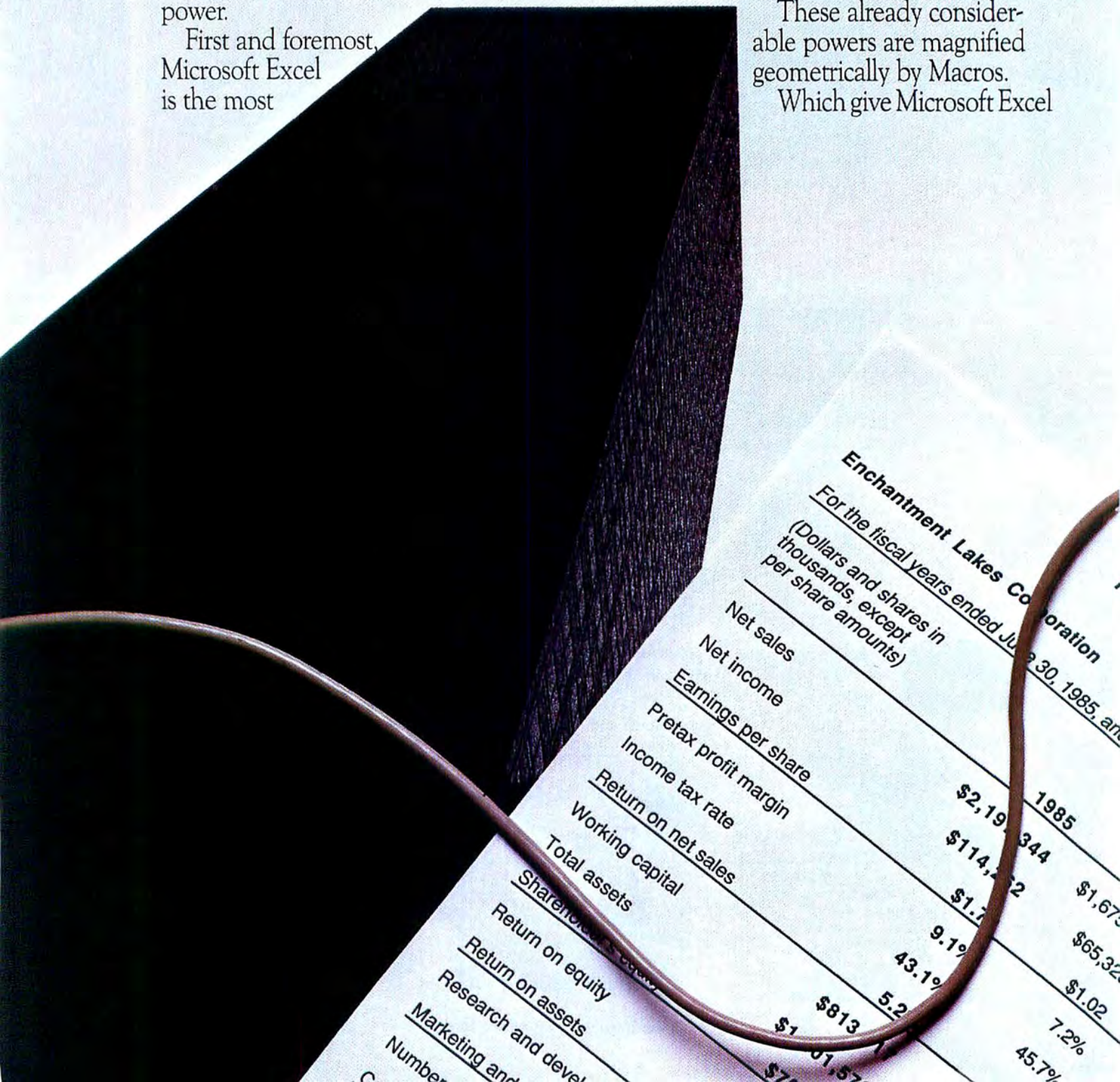
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	1985	1986
Net sales	\$2,191,344	\$1,675,321
Net income	\$114,772	\$65,321
Earnings per share	\$1.75	\$1.02
Pretax profit margin	9.1%	7.2%
Income tax rate	43.1%	45.7%
Return on net sales	5.2%	4.0%
Working capital	\$813,000	\$715,000
Total assets	\$1,000,000	\$1,000,000
Shareholders' equity	\$1,000,000	\$1,000,000
Return on equity	11.5%	6.5%
Return on assets	11.5%	6.5%
Research and development	\$1,000,000	\$1,000,000
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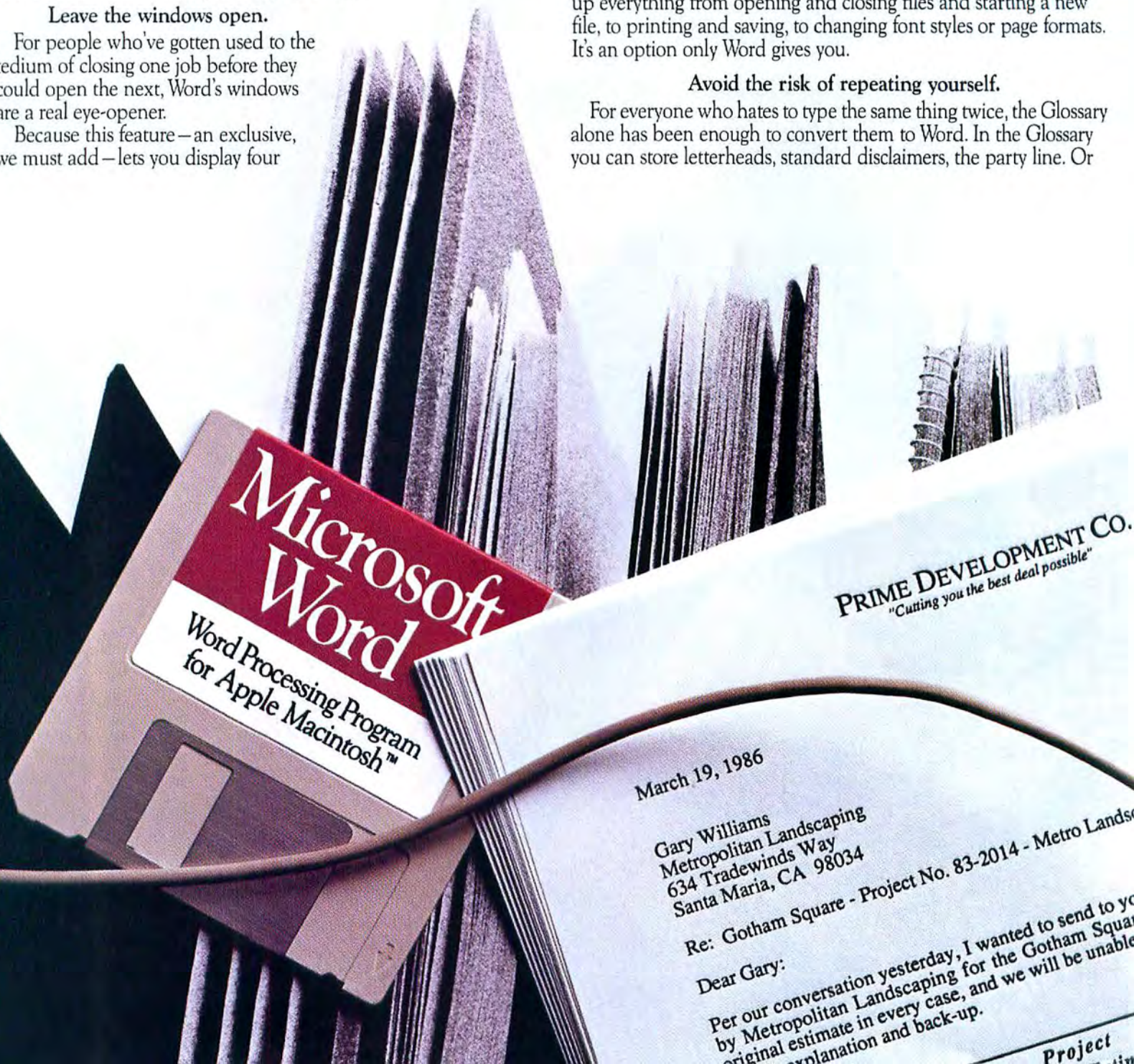
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Confessions of a Corporate User

*Even in personal computers, power
can be addictive. Here's how corporations
can kick the habit.*



*Most users never
come anywhere near
the limits of their
computer's capabilities.*

In corporate America's bigger-is-better atmosphere, the personal computer as desktop behemoth seems destined to become standard equipment. Why is so much power sought by so many corporations? I believe that the need for megamachines in the corporate environment is vastly overstated and that the desire for more powerful computers can even be harmful.

As a former "power user," I appreciate the powerful personal computers that proliferate in the marketplace. They offer more speed, memory, and convenience than the mainframe computer that I used in college. Some people productively use each bit of RAM and every byte of disk space that designers cram into a desktop computer. But for most of us, that extra memory and speed remain unused. In today's business world, where the personal computer is rapidly becoming standard equipment, the waste of corporate over-equipping reaches staggering proportions. A \$9000 investment in employee productivity is certainly reasonable, but if a \$3000 machine could provide the employee with the same opportunities to be productive, then a lot of money is being spent to no advantage—especially when 50, 100, or 1000 employees are similarly overequipped.

Standards and Status

There are several reasons for this blind application of computer power. First, in many companies the Management Information Systems (MIS) department is responsible for evaluating, recommending, and servicing personal computer equipment. In a firm in which hundreds, even thousands, of employees have personal computers, it makes sense to standardize software and hardware. This is what I call the "Detroit V-8 approach," standardizing on maximum RAM and disk storage, rea-

soning that most of the time you don't need it, but it's nice to have just in case. It's a safe approach: no one runs out of memory or storage, and the software can handle nearly any task thrown at it. The problem is that these systems are underused. Most users never come anywhere near the limits of their computer's capabilities. Employees are afraid or unwilling to learn and experiment with hardware and software that seems forbiddingly complex.

Another reason for overequipment is status. In many corporations, big personal computers are like big desks and big offices: they are a statement of the user's importance. Therefore, if you don't have as powerful a system as the person down the hall—regardless of what you do—then you aren't as important. I have seen more than one maxed-out personal computer sitting unused on a desktop for that reason. Cheaper than a company car or a big expense account, the computer-as-status-symbol has caught on in many companies as an executive perk.

Tools and Tasks

So how do we avoid the waste? It's important to understand that each type of computer is a different tool, best suited to a certain range of tasks. Using a Macintosh Plus or an IBM PC XT with a double Bernoulli drive and a high-speed printer to draft memos and do quick spreadsheets is overkill. It works, but why bother?

What are personal computers commonly used for in corporations? Certainly, some machines routinely crank out complex financial projections, handle general ledgers, and perform massive statistical analysis. But most computers are intended

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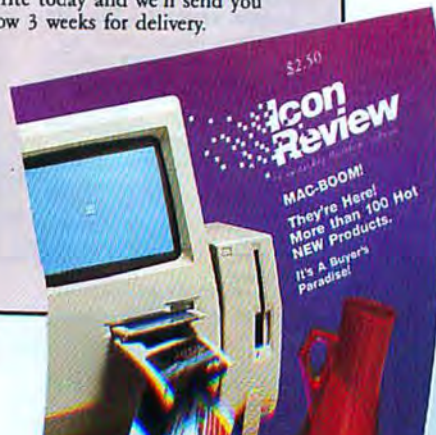
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(continued from page 31)

to take the drudgery out of small and medium-sized routine tasks: producing memos, performance summaries, and charts. A moderate-sized (128K to 512K) machine with intelligently chosen software and an appropriately sized (5 to 10 megabyte) hard disk drive can handle these tasks beautifully, without intimidating the user. Such a system takes up less space and costs much less than the typical corporate behemoth. Because the smaller machines are easier to use, they are likely to be used more often and more effectively—thus offering a superior value to the corporate purchaser.

Moderate-sized machines and the software that runs on them have limits, of course, and some users will outgrow them. Approximately 10 percent of corporate users either start at or evolve to the point at which they routinely need every ounce of power available; another 10 percent either need such power occasionally or find it lets software such as spreadsheets and word processors run more efficiently.

Personal Computer Pluralism

MIS departments do need standards to avoid building a crazy-quilt inventory of equipment that is impossible to purchase or service efficiently. Problems are easier and less expensive to solve with standard solutions. But since a single, companywide standard can give too much bang for too many bucks, multiple standards may be the answer. A set of system standards can be designed to give users only the power they need and provide room within each standard for moderate expansion. Pathways between system standards need to be developed so that data can be interchanged.

These standards might begin with a compact 128K machine or a laptop portable for applications involving small to moderate amounts of data. A busy executive, for example, could use this entry-level system to keep a schedule, organize expenses, draft short memos, and do top-level numeric analysis or forecasting.

To handle the broad middle ground that includes most "information workers," a 256K to 512K machine, preferably transportable, is a solid choice. Such a machine offers the performance and runs the software to handle everyday chores efficiently and at a reasonable cost. I have found the 512K Macintosh, among others, to perform admirably in this arena; its small size, ease of use, and data flexibility make it a real

workhorse, especially when equipped with powerful multipurpose software like *Microsoft Excel* or *Lotus's Jazz*.

For those who need to deal with huge amounts of data, there is the behemoth with high-speed processors, RAM in herds, multiple mass storage, and sophisticated peripherals. Applying a set of multiple standards leads to a balanced mix of equipment that costs less and better serves various kinds of corporate users.

Corporate Reeducation

Even with broader standards from MIS departments, the status-symbol issue remains. Executives who got a personal computer for its flash, or who are embarrassed to admit that they don't use or understand it, are unlikely to trade in that perk for a simpler system. And it can be difficult to turn down an executive request for a souped-up computer.

The only possible approach is to change corporate culture through education. Corporate reacculturation involves redefining the personal computer as a business tool that should be carefully matched to the job, emphasizing compactness and ease of use as executive virtues, and carefully explaining the rationale for multiple standards. Sooner or later, of course, computers will become old hat as newer gadgets capture the fancy of the status seekers.

I realize that changing the corporate mind is not easy. Apple Computer, despite the superb usability of the Macintosh, has been only moderately successful with corporate sales. On a personal level I can get folks to agree that most personal computers are vastly overpowered, but I've had little success in gaining a consensus for multiple standards—including any standards that would involve the Macintosh in significant numbers.

But I am confident that as more people learn that computer overkill is unproductive, preferences will shift toward simpler machines, just as Detroit finally realized that gas-guzzling engines weren't the answer to modern needs. As dedicated Macintosh users, we can take comfort in having seen the light early.

Charles H. Gajewy is a writer and MIS consultant based near Danbury, Connecticut. □



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From Mirror Technologies

Double your floppy storage and access data 50% faster by replacing your Mac's internal drive with this 800K Drive Upgrade Kit from Mirror Technologies! This kit includes full instructions for opening your Mac and swapping drives—a twenty minute job. The drive reads and writes both double-sided and single-sided disks, is compatible with all current Macintosh software, and carries a 90 day warranty. For those who want more storage and improved performance without opening their Macs, we offer the Sony Mirror Magnum 800K drive in an external case. Double your Mac's floppy storage speed and capacity with a Mirror double-sided drive today!

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From Beck-Tech

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Notepad

(continued from page 31)

to take the drudgery out of small and medium-sized routine tasks: producing memos, performance summaries, and charts. A moderate-sized (128K to 512K) machine with intelligently chosen software and an appropriately sized (5 to 10 megabyte) hard disk drive can handle these tasks beautifully, without intimidating the user. Such a system takes up less space and costs much less than the typical corporate behemoth. Because the smaller machines are easier to use, they are likely to be used more often and more effectively—thus offering a superior value to the corporate purchaser.

Moderate-sized machines and the software that runs on them have limits, of course, and some users will outgrow them. Approximately 10 percent of corporate users either start at or evolve to the point at which they routinely need every ounce of power available; another 10 percent either need such power occasionally or find it lets software such as spreadsheets and word processors run more efficiently.

Personal Computer Pluralism

MIS departments do need standards to avoid building a crazy-quilt inventory of equipment that is impossible to purchase or service efficiently. Problems are easier and less expensive to solve with standard solutions. But since a single, companywide standard can give too much bang for too many bucks, multiple standards may be the answer. A set of system standards can be designed to give users only the power they need and provide room within each standard for moderate expansion. Pathways between system standards need to be developed so that data can be interchanged.

These standards might begin with a compact 128K machine or a laptop portable for applications involving small to moderate amounts of data. A busy executive, for example, could use this entry-level system to keep a schedule, organize expenses, draft short memos, and do top-level numeric analysis or forecasting.

To handle the broad middle ground that includes most "information workers," a 256K to 512K machine, preferably transportable, is a solid choice. Such a machine offers the performance and runs the software to handle everyday chores efficiently and at a reasonable cost. I have found the 512K Macintosh, among others, to perform admirably in this arena; its small size, ease of use, and data flexibility make it a real

workhorse, especially when equipped with powerful multipurpose software like *Microsoft Excel* or Lotus's *Jazz*.

For those who need to deal with huge amounts of data, there is the behemoth with high-speed processors, RAM in herds, multiple mass storage, and sophisticated peripherals. Applying a set of multiple standards leads to a balanced mix of equipment that costs less and better serves various kinds of corporate users.

Corporate Reeducation

Even with broader standards from MIS departments, the status-symbol issue remains. Executives who got a personal computer for its flash, or who are embarrassed to admit that they don't use or understand it, are unlikely to trade in that perk for a simpler system. And it can be difficult to turn down an executive request for a souped-up computer.

The only possible approach is to change corporate culture through education. Corporate reacculturation involves redefining the personal computer as a business tool that should be carefully matched to the job, emphasizing compactness and ease of use as executive virtues, and carefully explaining the rationale for multiple standards. Sooner or later, of course, computers will become old hat as newer gadgets capture the fancy of the status seekers.

I realize that changing the corporate mind is not easy. Apple Computer, despite the superb usability of the Macintosh, has been only moderately successful with corporate sales. On a personal level I can get folks to agree that most personal computers are vastly overpowered, but I've had little success in gaining a consensus for multiple standards—including any standards that would involve the Macintosh in significant numbers.

But I am confident that as more people learn that computer overkill is unproductive, preferences will shift toward simpler machines, just as Detroit finally realized that gas-guzzling engines weren't the answer to modern needs. As dedicated Macintosh users, we can take comfort in having seen the light early.

Charles H. Gajeway is a writer and MIS consultant based near Danbury, Connecticut. □



MacServe \$199

From Infosphere

MacServe is an operating system software enhancement that adds exciting new features to any Apple-Talk network. Now any of the leading hard disks can act as a disk server, allowing all network users to share its volumes. MacServe can partition a hard disk into volumes, even an Apple HD 20! With MacServe, different volumes on the same hard disk can work under either Apple's new HFS or the old file system, thus preventing software compatibility problems. MacServe offers each network user password protection, incremental backup, and access to multiple printers. The print spooler queues up multiple jobs, saving you time. Let MacServe unleash the full potential of your AppleTalk network today!



Mac Spell Right \$69

From Assimilation

The only spelling checker that works within MacWrite has been updated to perform better than ever! Unlike other spelling checkers that work as desk accessories or separate applications, Mac Spell Right simply adds a new menu, Spell, to the MacWrite menu bar. This makes it our choice as the easiest-to-use spelling checker available on the market today. Its new features make it even more powerful—a new spelling algorithm and Auto Find Next option make the checking process much faster. A new, separate Spell Edit application makes it easy to add, delete, replace, and save from one dictionary to another. Put the power of a 40,000-word Webster's Dictionary and a 15,000-word Roger's Thesaurus into your copy of MacWrite with Mac Spell Right!

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The MagNet 20™ Hard Drive

Mirror Technologies introduces one of the most powerful Macintosh hard drives available. The MagNet 20 combines great value, expandability, speed and portability to give your Mac amazing capabilities.



This Internal Hard Drive Is Fast And Portable

Mirror Technologies has teamed up with Infosphere, to develop a special version of MacServe™ (XL-Serve, the predecessor of MacServe, is the **most** popular AppleTalk™ network software in the world!) MacServe software adds all of the capabilities and features of the best Mac hard drives available today, plus the ability to share peripherals, programs and data with multiple computers. As your needs grow the MagNet 20 already contains the power and versatility to handle your computing to go.

Packed With Features

The MagNet 20 allows you to print spool, disk cache, protect files with passwords, partition volumes and fully or incrementally backup your data. The MagNet 20 is the most powerful single or multiuser storage solution available today.

Rugged Design

The MagNet 20 uses a hard drive specially designed to withstand treatment that would "crash" the competition. The patented drive head lifter in the MagNet 20 pulls the read/write heads away from your precious data upon power off. This means you and your Mac can travel with confidence.

The Powerful Single User Solution

Purchase the MagNet 20 as a **very** powerful single user drive and simply add the inexpensive AppleTalk network cables to allow multiple Macs to access shared programs, data and peripherals!



Multiuser Capability at a Single User Price

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Drive 16 Macs 50 times harder.

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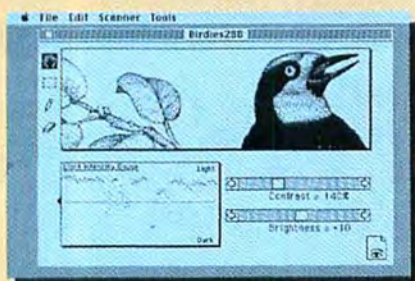


Hertzfeld on ThunderScan™

After three years on the Macintosh development team, Andy Hertzfeld began to work on the software for an easy-to-use, low-cost way to put images into Macintosh. The result: ThunderScan™. The high-resolution optical scanning device that turns the ImageWriter printer into an image reader. Recently, Andy shared some thoughts on the product he's dubbed, "MacPaint for the rest of us."

"...I was incredibly thrilled. I knew it would blow people's minds."

"I spent over three years developing Macintosh's operating system. I care a lot about Mac and wanted people to be able to use it to its full potential. But how do you get images into the machine? Most people can't draw. That's why I got involved with ThunderScan. To give people, especially non-technical users, an easy, low-cost way to get high-resolution images into Macintosh. When I first saw how beautiful ThunderScanned images were, I was incredibly thrilled! I knew it would blow people's minds."



ThunderScan's image processing tools let you enlarge, reduce, cut, paste, select, draw, scroll and erase, as well as control contrast, brightness and half-toning.

"You get to make artistic decisions. To change and improve what you see."

"Macintosh inspires creativity. ThunderScan is a vehicle for its expression. It lets you put any printed image into Mac. But you're never stuck with the image as is. You get to make artistic decisions. To change and improve what you see. You can control the contrast, brightness and half-toning. Over all or



A scanned image is just the start. Now you have micro-control over 32 shades of gray to enhance all or part of the image as you please.

just parts of the image. Even create reverse images and outlines. It's really fun. But the great thing is, when the novelty wears off, you have a useful tool.

"ThunderScan has a whole range of applications. Some people use it for inserting graphics into newsletters and reports. I know a fine artist at Stanford who makes collages with it. I use it a lot, too. The way I write a program is an expression of who I am, so in my new "Switcher" program, I included a ThunderScanned image of myself."

"...With LaserWriter you can create unbelievably exquisite images."

LaserWriter you can create unbelievably exquisite images.

"ThunderScan is a complete imaging system. You don't have to buy anything else. You just snap out ImageWriter's ribbon cartridge and snap in ThunderScan. It fits in any office or home environment, takes up no space and the lighting is always perfect.

"Developing ThunderScan was a lot like developing Macintosh. We were doing something for the first time. Making an important tool. We think we did a good job."

ThunderScan requires 128K. But to take full advantage of all its features, you'll need a 512K Mac.

Available now through computer retail stores or directly from Thunderware for just \$229. To order or for more information, call today (415) 254-6581. Thunderware, Inc., 21 Orinda Way, Orinda, CA 94563.



ThunderScan

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Letters

Readers write of dreams unfulfilled, blue sky, piracy, product reviews, and more

A Word from the Weary

I am getting sick and tired of all the hoopla for spreadsheet and database programs. How many people really want another *Jazz* or *Excel*—or have that much use for them? What most Macintosh users really need are more and better word processing programs to choose from. There are scores of word processing programs for the IBM PC—why not for the Macintosh? After all, people—even businesspeople—use computers more for writing than for anything else.

A need also exists for peripheral word processing programs such as decent spelling checkers, indexing programs, style sheets, bibliography programs, and programs that prepare tables of contents. I encourage software developers to stop duplicating each other's efforts with number crunchers and move into filling this atrocious void, where surely a big payoff awaits.

*Edwin Bernbaum
Berkeley, California*

Driven to Piracy

Software piracy is a practice I have scorned since the purchase of my first computer, a Macintosh. However, now that I have owned a number of programs long enough to experience some troubles with warranties and software manufacturers' customer service, my opinion regarding piracy is changing.

As an original purchaser of software, I am buying more than just a magnetic disk coded with bits of essential data. Implicit in any "right to use" purchase is the "right to know how to use" and the "right to continue to use." I expect backup in the form

of customer service. Unfortunately, many software companies are more interested in protecting themselves from pirates than they are in servicing those who have supplied them with profits.

Once my check is cashed, I have no recourse if the program has been misrepresented. If the customer service department is perpetually out to lunch, I'm out of luck. If the disk on which the program is installed proves defective, I've got

only a few months to discover it. (With some programs, certain utilities may not be accessed for a year or more.)

For my money, I expect better treatment. Until that is forthcoming, I'll look seriously for alternative sources of programs (read that as piracy) to discover which programs are suited to my needs.

(continues on page 42)



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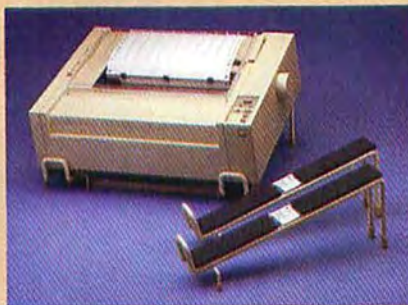
Organizes all your power needs. Styled to fit underneath your second disk drive, it provides fingertip control over your whole system. There's a master switch to power the whole system on and off, and individual switches for a printer, modem and one auxiliary device. And Control Center protects your entire Macintosh system from damaging power surges, line noise and static shocks.

2 Surge Suppressor



Portable protection for a travelling Macintosh. Surge Suppressor replaces your power cord, providing UL listed surge suppression and line noise filtering. It's light and fits easily into your carrying case.

3 Universal Printer Stand



Raises your Apple® Imagewriter® at a slight angle so you can monitor its performance more easily. It solves the problem of where to store paper—several hundred sheets are accommodated neatly underneath. (Also fits most other dot matrix printers.)

4 A-B Box



If you want to take advantage of the AppleTalk™ network, a Laserwriter™ printer or a hard disk in addition to your Imagewriter and modem, you'll have three peripherals competing for the two serial ports on your Macintosh. The A-B Box gives you the extra serial port you need. Just plug two of your peripherals into the A-B Box and plug the Box into one of your Macintosh serial ports. Then simply divert your data output to the peripheral of your choice—press A to send to one, B to the other. Fits perfectly underneath your external disk drive.

5 Tilt/Swivel



Gives you the flexibility to tilt and swivel your Macintosh to the viewing angle most convenient for you.

6 Polarizing Filter

The solution to a glaring problem. Made exclusively for Kensington by Polaroid®, it protects your eyes by reducing reflected screen glare by up to 99%. Also improves screen contrast. Easy to install.

7 Disk Case & Disk Pocket

Provides safe storage for 36 Macintosh disks. Comes with a packet of spare disk labels. Also includes a handy Disk Pocket for safe transportation of up to 5 disks.

8 Dust Covers

Protect your system from the elements. Anti-static dust covers for your Macintosh, Macintosh XL, Imagewriter, Imagewriter II and External Disk Drive.

9 Mouse Pocket

A safe, clean place to keep your Mouse when not in use. Attaches to the side of your Macintosh. Fits under the Maccessories Dust Cover.

10 Mouse Cleaning Kit

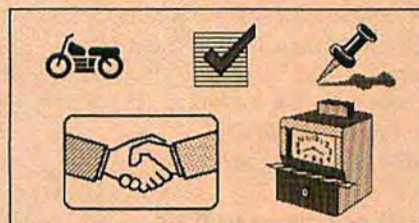
A full year's supply of the cleaning materials you'll need to keep your mouse rolling at top speed. Also includes the Mouse Pocket.

11 Mouseway

A dirt and static-resistant work surface keeps your Mouse rolling smoothly. Protects your desk, too.

12 Disk Drive Cleaning Kit

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13 Graphic Accents

A collection of over 250 professional illustrations, covering everything from business to holidays. Use them for reports, newsletters or greeting cards. Graphic Accents are stored in standard MacPaint™ files, for ease of use.

14 Professional Type Fonts

Styled after the most popular type faces in the publishing industry. Type Fonts for Text contains 16 fonts in sizes 12 to 24 point. Type Fonts For Headlines (for the 512K Mac) contains the same fonts in sizes 24 to 72 point. Including versions of Times Roman, Helvetica, Optima, Futura, and a dozen others.

Maccessories are available at Apple dealers everywhere. For more information write or call: Kensington Microware Ltd., 251 Park Avenue South, New York, NY 10010. (212) 475-5200. Tlx: 467383 KML NY.

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(continued from page 35)

The prevailing "too bad" and "maybe next week" attitude of software companies has eroded my sympathies. To them I say, "If I can pirate it, too bad," and "maybe I'll buy it next week... if it looks good."

*Daniel Breckenridge
Middlebury, Vermont*

The Early Bird Learns to Wait

As I and other pioneer Macintosh owners have come to realize, it's smarter to wait than to rush out and buy to our hearts' content. The announcement of the 512K Macintosh served as our primary education to this philosophy. As Apple announced its upgrade from a 128K Mac to a 512K Mac for a mere \$600, we pioneers lamented our gullibility. If only we had waited a few more months.

I hope that Apple will show a little bit more consideration to its 600,000-plus Macintosh owners regarding future upgrades. The "rest of us" deserve a break.

*Brannen Taylor
Dumfries, Virginia*

Parlez-vous Macintosh?

The Macintosh is justifiably known for its graphic resolution and flexibility, which are great boons to the multilingual word processing we do in the Rhodes College foreign language department. Accented characters can be generated easily and clearly. Helvetica and Times are especially useful fonts that can produce a complete range of capital letters with accents.

The Macintosh is so user-friendly that it seems to have been designed for people who hate computers and like the arts and words. However, a major drawback is the incredible lack of communication between Mac and Apple II series computers, for which most educational software is written. We hope the Apple family can soon get on speaking terms.

*Jim Vest and Nancy Vest
Memphis, Tennessee*

Higher Education

Isn't it ironic that kids use Apple IIs in elementary grades and high school and then bounce off to college into a world of the user-friendly Macintosh?

*Theresa-Marie Rhyme
Stanford, California*

Don't Give Up on the Lisa

To the present owners of Lisas: do not be discouraged. You do not have a dead-end computer. On the contrary, your Lisas reborn as Macintosh XLs have a long and productive future ahead despite bad news from Apple.

The Lisa that I use at work, now a Macintosh XL with the latest round of Macintosh XL hardware enhancements and Macintosh system software, has truly arrived as an excellent business computer.

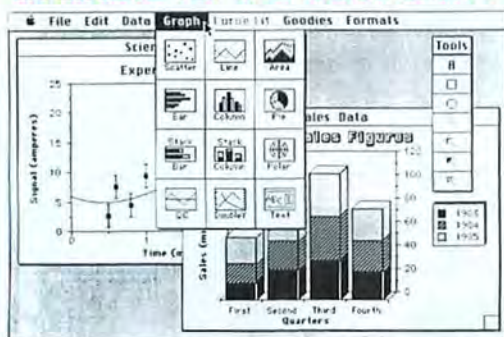
The Fortune 100 company for which I work is probably one of the few major corporations where the Lisa computer is used in large numbers. At my location we have some 200 Lisas using Lisa 7/7 software. (We also have a rapidly growing number of Macintoshes and Macintosh XLs.) Our company has found the Lisa to be a reliable and sought-after workhorse within the bounds of the seven applications that the Lisa Office System supports.

I have my own Macintosh 128K at home and have enough experience with floppy-based and HyperDrive 512K Macin-

(continues on page 46)

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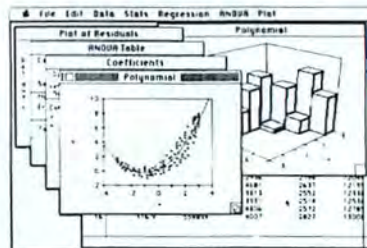
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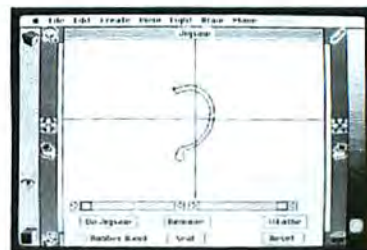
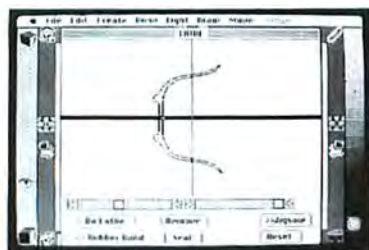
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Just draw a basic outline and use the lathe or jigsaw to transform it into a solid, shaded figure. Not a wire frame.

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toshes to appreciate the real value added by the larger Macintosh XL screen, access to large amounts of RAM (up to 2 megabytes) for use with programs like the *Switcher* and a RAM disk, and the speed and convenience of using an integrated hard disk.

The Macintosh XL still represents a very good bargain as a business computer and the most powerful high-end Macintosh until the next generation of the Macintosh workstation appears.

Clifford C. Huff
San Jose, California

Bringing Up Baby

I feel like a protective father whose only child was the epitome of state-of-the-art in microcomputer technology. Lately I've been feeling very threatened by a couple of new kids on the block. Especially Papa Commodore's new brainchild.

I need some help from Apple to hold my own in the computer parents' boasting meets. I would like to believe that Apple is busy improving the performance of the

Macintosh, soldering together second-generation Macs and bringing the Apple II line into the eighties. I hope that Apple, after introducing the new Mac, will sell the original for under \$1000 to ensure a wider user base and continued support from software companies.

If what I have mentioned is not happening, then I hope a company with greater vision buys Apple out. Otherwise, we will all find ourselves with a nice machine made by a creative company that ultimately went the way of the rest of them.

Philip M. Kane
Reston, Virginia

When Will They Ever Learn?

Shame on Apple. I'm waiting for the real *MacTerminal* documentation, which Apple promised to send upon receipt of the registration card I mailed three months ago. Likewise, I await the rebate promised for my purchase of *MacTerminal*. *MacPaint* and *MacWrite* manuals, for all their concise brevity, are on the extreme side of shoddy when it comes to detail, forcing me to purchase, search through, and save expensive periodicals to fill the gap left by Apple on how to use my \$2500 tool fully. I should be spending my money on disks and software—not documentation.

Shame on Apple for wasting all the time and money it will take to battle Steve Jobs in court while customers are feeling stranded in the marketplace. If Apple didn't want Steve Jobs's contribution within the company, why fear his competition now that he's putting his best to work outside the company?

My allegiance is slipping, and it deeply saddens me. There was a time when I'd gladly have paid extra for an Apple, proud that I wasn't just buying excellent equipment but investing in a more positive future. Where have all the flowers gone?

Tim Conner
Kingman, Kansas

We rarely hear complaints about delayed Apple rebate checks. You should expect a check to arrive six to eight weeks after you mail your request. If it takes longer, ask the dealer that sold you the product to look into it. The MacTerminal documentation should also have arrived within eight weeks. To track down the documentation you are waiting for, contact Apple Computer, Inc./Milestone

(continues on page 50)

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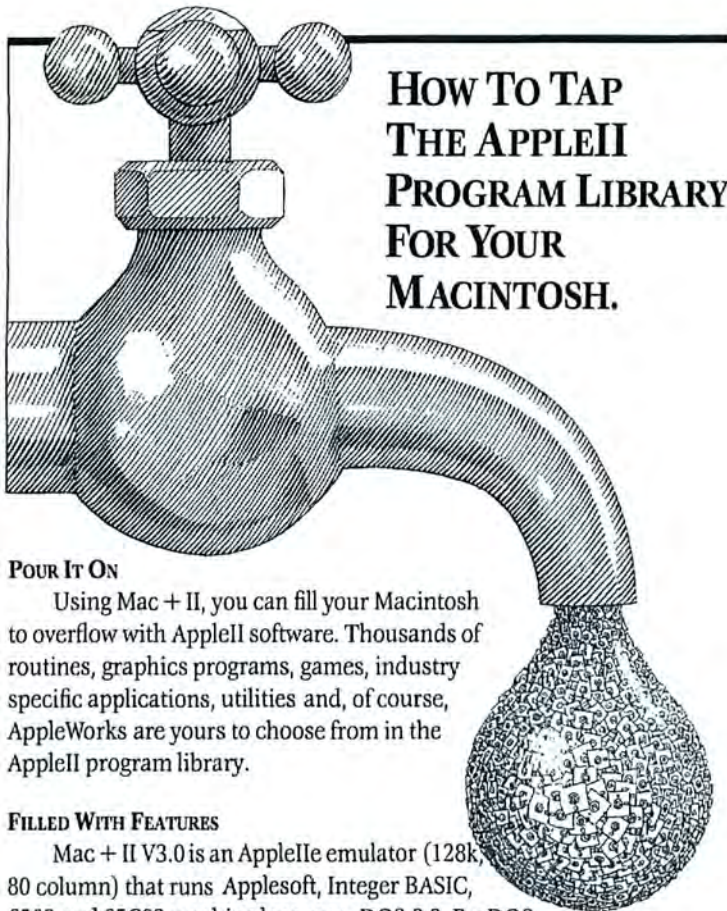
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Circle 369 on reader service card

Letters

(continued from page 50)

Group, Attn: MacTerminal Program, 467 Saratoga Ave. #621, San Jose, CA 95129, 408/988-6009.—Ed.

Ask, and You Shall Be Transferred

While attempting recently to write a Macintosh Pascal program, I ran into a situation that was not covered in the manuals. I called my local dealer to find out how to print the contents of the Drawing window and was referred to Apple. I then called Apple long distance and told the person who answered that I had a technical question. I was immediately given a recording that told me to call my local dealer for assistance.

This is not the first time I have run into this problem, but I have always managed to get around Apple's lack of technical assistance by calling the software publisher. What do you do when Apple publishes the software? Does anyone know how or where I can get help?

The Mac has the greatest capabilities of any machine around, but what good are they if you can't get at them? I don't think the Mac will seriously compete in the business world until Apple decides to answer users' questions in a more expeditious manner.

Dennis R. Blanchette

As long as you are not using GetNext-Event, you can print the contents of the Drawing window—or any active window—by pressing Shift-⌘-4. For more details on the program, see Scott Kronick's Macintosh Pascal Illustrated (Addison-Wesley, 1985) or Jonathan D. Simonoff's Introduction to Macintosh Pascal (Hayden, 1985).—Ed.

Bad Rap for Mind Prober

Nicholas Lavroff's review of *Mind Prober* ["Assess for Success," *Macware Reviews*, November 1985] is more a backlash to the program's 1984 sales hype than a fair look at the package. Lavroff complains that it does no more than "put into a coherent narrative form . . . the information you give it," but I see nothing wrong with that. No-where did it promise to be a clairvoyant package. Nor does it call itself mind reader, just *Mind Prober*. And as such, it delivers pretty much what it promises.

(continues on page 54)

For all of you who thought Dennis Brothers was crazy to give away MacTEPTM, here's MicroPhoneTM. 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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Write your own script.

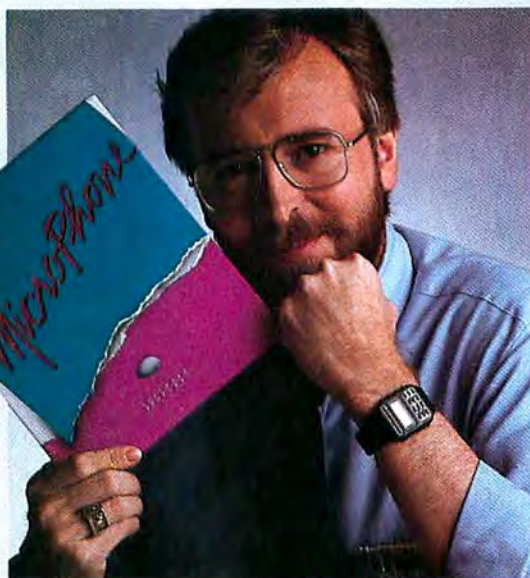
Dennis gives you two ways to create these macros. The first is to set MicroPhone in the Watch MeTM, the recording mode.

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.

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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.

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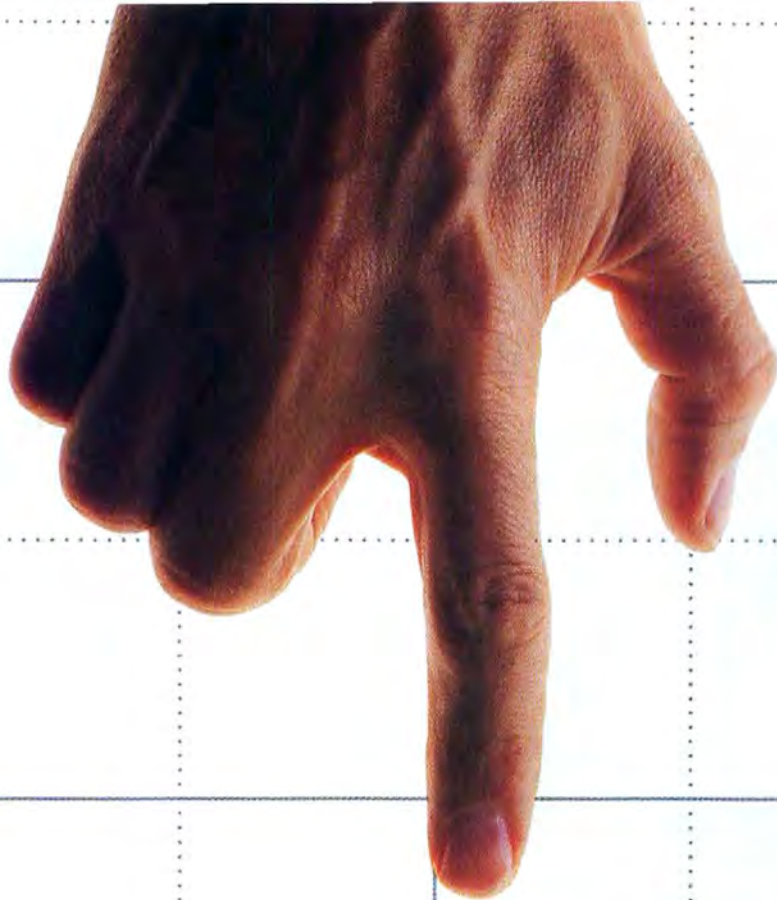
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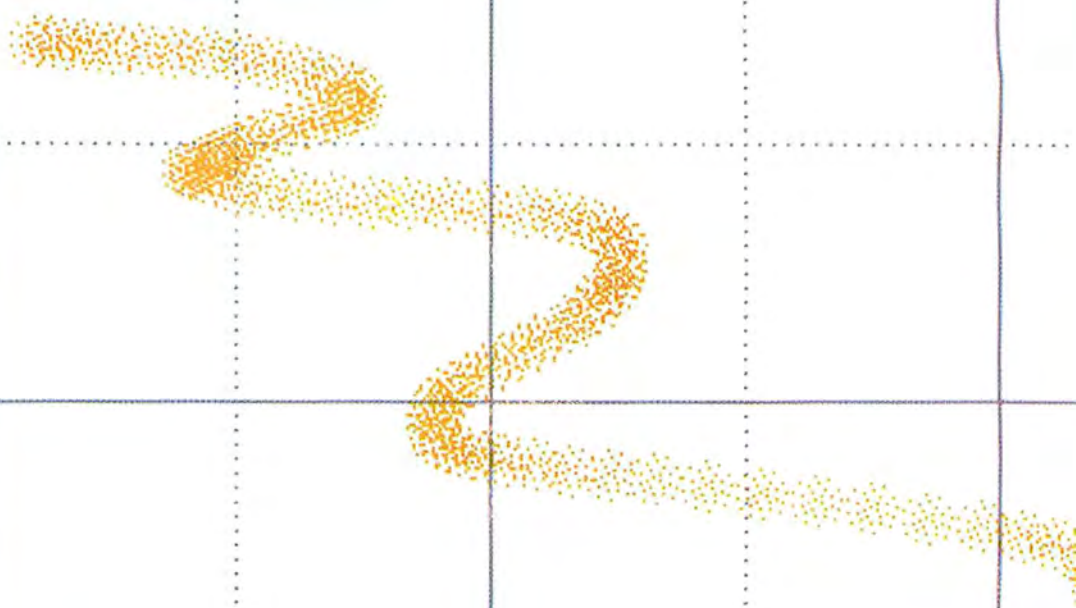
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Letters

(continued from page 50)

Lavroff even admits that the reports "seem to be remarkably perceptive." I think so, too, and the reports are a useful means of gathering one's thoughts about another individual.

In any event, *Mind Prober* has a venerable heritage in the much-used personality inventories of the forties and fifties. They are still in wide use today as systems that define personality traits on the basis of combinations of answers to a specific set of questions. Moreover, they can be described as an early kind of expert system—which is more than one can say about Lavroff's method of reviewing.

Elton Braude

Woodside, New York

With Apologies to His Majesty

We were surprised to see the Canary Islands mentioned as a country in "The Macintosh Passport" [*Macworld*, November 1985]. The Canary Islands have been part of Spain since the fifteenth century.

Otherwise we found the article interesting and its information quite useful.

Eduardo Nolla and

José A. Rodriguez-Moya
New Haven, Connecticut

T-Shirt for the Mind

In *Macworld*, October 1985, you pictured a T-shirt with the *Wheels for the Mind* logo on it. How can I obtain one?

Christopher Talvacchio

Philadelphia, Pennsylvania

The T-shirt costs \$10.50 postpaid from the Apple Collection, P.O. Box T, Gilroy, CA 95021-2249. Call 800/345-2888 8 a.m. to 5 p.m. weekdays for a copy of the Apple Collection Catalog or to order the shirt by phone using Visa, MasterCard, or American Express credit cards.—Ed.

Correction

The figures for the review of *Personal Accountant* (*Macware Reviews*, September 1985) were not generated by the author. We apologize if anyone found the material inappropriate.—Ed.

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Product Review

It's all quite interesting and sexy in a technological way, but how well does it work? I have used the VCS for a week. The first day was something of a strain, as I found myself overshooting screen targets and making exaggerated head motions. After a few days, using the system became second nature. My thumbs fell readily on the buttons below the space bar, and the cursor always seemed to be just where I was looking. After a week, you'll wonder how you managed without it. On the whole, the View Control System represents a real advantage over the mouse for many Mac tasks.

ICON—Magazine of the Assoc. of Apple 32 Users.

Customer Letters

I just received my VCS and am more than delighted with its performance. I couldn't believe that it would be able to work one pixel at a time but it does, and that with less than an hour's use. It's the best thing yet that I have seen for controlling the Macintosh.

My daughter and I are certainly enjoying our "flying mouse." Not only is it terribly ingenious, it really works very smoothly and with fine sensitivity. Congratulations on an innovative advance.

I am a university professor and I do a substantial amount of writing. I just finished a monograph of about 64 single-spaced pages. I used the VCS for the entire project and it performed beautifully. If there were a market for my mouse, I might sell it.

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A.S., Pine Brook, New Jersey

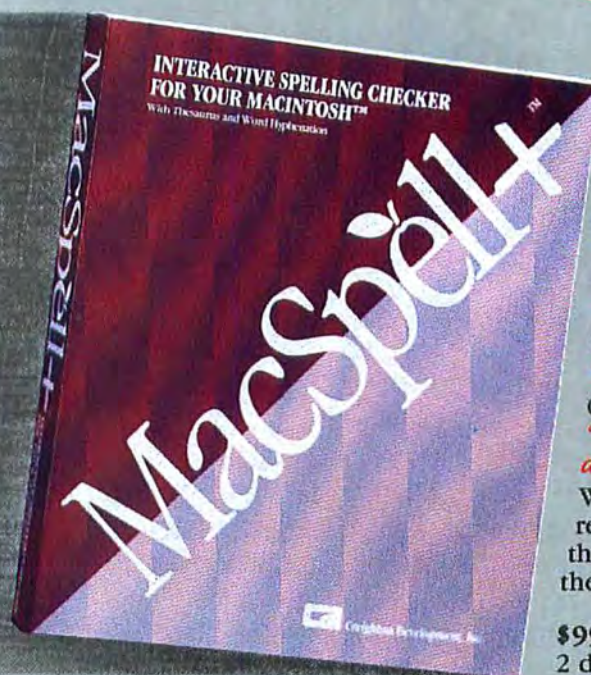
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Macworld View

*New Apple products, Shakespeare on the Mac,
French for beginners, and more*

Edited by Herschel Schmedick



Fast track Mac. The new Macintosh Plus adds an expansion port, a megabyte of RAM, a double-sided disk drive, and other improvements.

Macintosh Plus

1986 is the year of the megabyte Macintosh. Apple's entry in the megabyte market is the Macintosh Plus, with an 800K built-in floppy disk drive, twice the amount of ROM containing new system code, a high-speed expansion port, and a megabyte of memory—expandable to 4 megabytes when 1-megabit RAM chips become available. The Macintosh Plus comes with a keyboard containing a built-in numeric keypad and cursor control keys.

New on the Macintosh Plus is a Small Computer Systems Interface (SCSI), a port where you can attach up to seven high-speed devices such as hard and optical disks, digitizers, and streaming tape drives. The SCSI (pronounced "scuzzy") port transfers information at 320K per second—approximately six times faster than the external drive port. Companies developing products that attach to the Mac's SCSI port include AST Research, Iomega, and Tecmar. The addition of a SCSI port allows manufacturers to easily adapt SCSI devices that were designed for other computers to the Macintosh. To make

(continues on page 59)

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LaserWriter Plus and New Adobe Fonts (continued)

bers of the ITC Avant Garde, ITC Bookman, New Century Schoolbook, and Palatino families, as well as ITC Zapf Chancery Medium Italic, Helvetica Narrow, and ITC Zapf Dingbats. (The ITC fonts are licensed from the International Typeface Corporation, the others from Allied Corporation.) Most of the faces include light, bold, light italic, and bold italic variations. Screen fonts for the new typefaces are available to install in the Macintosh System file.

The LaserWriter Plus is priced at \$6798. An upgrade from LaserWriter to LaserWriter Plus—which requires substituting the new ROM chip—is \$799 from authorized Apple dealers.

Other laser printer news: Adobe Systems is releasing 45 new typefaces that can be downloaded from a Macintosh into the LaserWriter's memory. The typefaces include members of the ITC Garamond, Glypha, Optima, ITC Souvenir, ITC Benguiat, ITC Friz Quad-

rata, ITC American Typewriter, and ITC Lubalin Graph families, as well as ITC Machine. Adobe is also offering the LaserWriter Plus typefaces separately for people who have LaserWriters and don't want the chip upgrade. Adobe's typeface-only upgrade comes with a utility for downloading the typefaces to the LaserWriter or another PostScript printer, and with matching screen fonts for the Macintosh. Adobe Systems' typefaces are licensed from the Allied Corporation and the International Typeface Corporation. You can store two to six faces in the LaserWriter or LaserWriter Plus memory, depending on the size of the font.

Adobe's laser typefaces are also available in 5¼-inch disk formats for IBM-compatible personal computers. The cost for a family of four typefaces, such as ITC Garamond light, light italic, bold, and bold italic, is \$185. Adobe plans to release 75 new typefaces this year. For more information, check with your local Apple dealer or Adobe Systems (1870 Embarcadero Rd., Palo Alto, CA 94303, 415/852-0314).—Daniel Farber

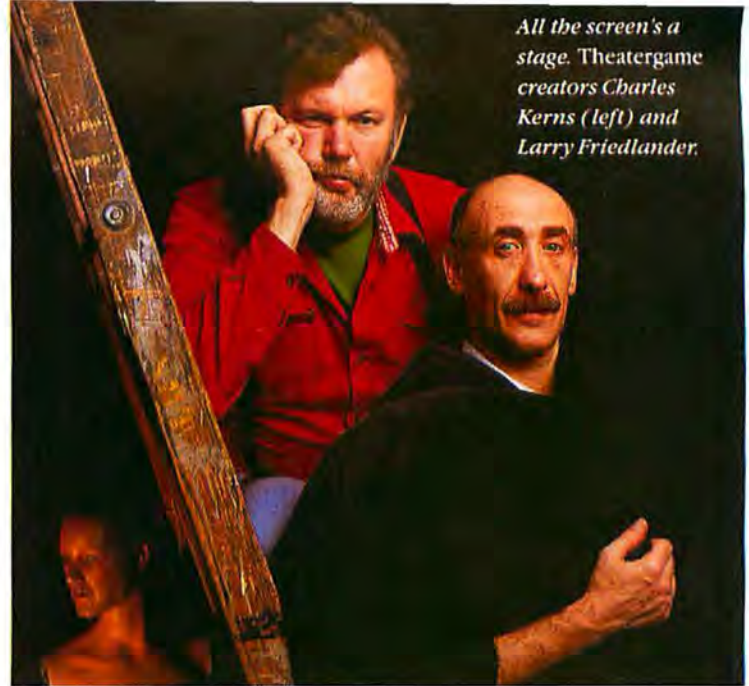
Double Helix

Odesta Corporation, creator of the innovative Macintosh database *Helix*, has developed an enhanced version of the program, called *Double Helix*. The new program lets you build custom pull-down menus within a database and allows up to three levels of security. In addition, *Double Helix* runs faster, adds a Clean Up command like the Finder's and more flexible data-transfer capabilities, and lets you create lists within lists.

The program has two modes—a designer mode for

creating a database application, and a user mode for working with the data. *Double Helix* can be purchased for \$180 by registered *Helix* owners.

With another new program from Odesta, *RunTime Helix*, developers can build products tailored for specific applications that may be used in-house or remarketed as stand-alone applications. The core of the application is created with *Double Helix*, and the run-time generator creates the stand-alone version of the application.



All the screen's a stage. Theatergame creators Charles Kerns (left) and Larry Friedlander.

The Theater Game



"To be or not to be" on a Macintosh, that is the question at Stanford University these days. Students in the university's introductory humanities and theater arts courses are using an intriguing piece of courseware called the *Theatergame* that lets them see the Prince of Denmark in a new light—on the screen of their Macintoshes.

Larry Friedlander, a Shakespearean actor and professor of theater in the university's communications department, devised the program in conjunction with programmer Charles Kerns of the school's Faculty Author Development program. "The idea was to provide a simulation of a theatrical directing experience," explains Kerns.

Friedlander and Kerns produced a quasi-animation program that allows students to learn scene blocking and stage movements without having to work with a troupe of live actors. Instead students manipulate a cast of characters, drawn by an artist with *MacPaint*, on a stage by dragging them around with the mouse. Different types of stages, such as modern and Elizabethan, and their components—curtains, balustrades, geometric shapes, and columns—can be brought on screen from the Set Up the Stage menu. Props are also available from the Set Up the Stage menu, and students can create their own props with *MacPaint* and paste them into *Theatergame* from the Scrapbook. Once the environment is

With the run-time version, the custom application automatically starts up, and the user cannot modify its design. A licensing fee of \$500 allows an application builder to create up to ten vertical applications with *Double Helix*.

Odesta plans to release a multiuser version of *Helix* as well as a version with the capability for remote access to *Helix*. A person could then call the Macintosh from a phone booth via modem, start up *Helix*, and transfer or extract data from the program.—Daniel Farber

(continues on page 63)



Introducing inTouch

Communications Task Master from Palantir® Software

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With inTouch, any time during a session, you can decide to save something. Even if it's not on the screen, you can go back and get it from the scroll buffer.

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Now you can see Compuserve's weather maps, stock price charts, or the FBI's Ten Most Wanted.

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Automated or unattended operations day or night. Set up a series of commands, and have them all done, one after the other -- all unattended. No problem.

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Onscreen programmable function keys allow you to customize your communication needs. Clicking on a key sends text, executes a CCL program, or displays another row of function keys.

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Allows Balance Forward, Open item, or a combination of the two. Generates statements and period aging. Flexible sales analysis reports.

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Control your stock with movement reports, re-order lists, purchase order tracking, and complete inventory item status reports. Full pricing lists too.

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Dvorak or QWERTY keyboards. Structured exercises to increase typing speed. Options include metronome, speed & accuracy box, student tracking, and much more.

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SOFTWARE

The Theater Game (continued)

designed, students select a cast to bring on stage. For *Hamlet*, a student can work with the prince, Ophelia, the king and queen, and Polonius, moving each character around the screen with the mouse. Each character has a limited number of drawn positions: standing, sitting, lying down, kneeling, and turning around. These positions can be combined with various head movements, all controlled by keys on the numeric keypad, to produce a kind of primitive animation. On-screen character movements made by a student as a scene is blocked out are recorded by the program and can then be played back. The blocking is done in sync with

an audio cassette tape recording of the scene.

Theatergame is already being used in advanced directing classes at Stanford, and the creators have plans for high school and grade school versions as well as more advanced systems that will incorporate videodisk libraries of plays, scenes, and drawings or photos of actual theater stages. Furthermore, the university dance department is choreographing new work and recording the choreography of existing dances with a *Theatergame* clone. But the program will hit the campus mainstream when the football team transfers its playbooks to Macintosh disks, something it is planning to do in the next year.

Shakespeare, ballet, and football. Only on the Macintosh. —Jeffrey S. Young

Locke-Ober's Cafe

Boston has a long-standing reputation as a city of culture, refinement, and tradition. Among those traditions are historic landmarks like the Bunker Hill monument, Faneuil Hall, Paul Revere's Old North Church, and Locke-Ober's Cafe. Both before and during his presidency, John Kennedy stopped in to savor Locke-Ober's famous oyster stew when he was in Boston. And in the 1980s little has changed at this bastion of Yankee cuisine—little except the introduction of a Macintosh to the restaurant's kitchen in the heart of downtown Boston.

Geoff Sullivan, Locke-Ober's general manager, welcomed the addition of the Macintosh to his staff. "Even though we have to be careful to avoid spilling chowder on the Mac, I don't know what we would do without it." The computer mainly

keeps food inventory and monitors costs and stock levels.

As part of its charm, Locke-Ober's prints a different menu each day to highlight specials. Until recently, the job of preparing those menus was done by a graphic designer and sent to a typesetting company for printing. Sullivan is now contemplating the purchase of a LaserWriter to do all the graphics

HyperDrive 2000 and HyperNet



The Atheneum House in Cambridge, Massachusetts, is a restored nineteenth century brick building named for Athena, the Greek goddess of wisdom. Inside, in the offices of General Computer Company, the fastest Macintoshes in the world were designed. To expand its product line beyond the HyperDrive, its internal hard disk, General Computer unveiled two new products that may thrust the Mac into new markets.

The HyperDrive 2000 not only adds a 20-megabyte internal hard disk to the Mac but also boosts processing power. A dealer-installed expansion

board adds 1½ megabytes of memory as well as a 68000 microprocessor running at 12 MHz—roughly twice the current Mac's speed. The new 68000 "tells the original 68000 to go to sleep," according to John Ison, General Computer's director of product planning. The new board also contains a 68881 floating-point math coprocessor, a microprocessor with a head for figures. The 68881 intercepts calls to the Mac's built-in arithmetic software and performs the calculations itself roughly four times faster. The two chips enable the Mac to breeze through the complex calculations required by animation and computer-aided design programs.

While most existing programs run on the HyperDrive 2000, General Computer is seeking developers to write software that takes direct advantage of the machine's brawn. The firm representatives believe developers will be so eager to tap the machine's power that they'll produce two versions of their products—one for conventional Macs and one for HyperDrive 2000s. Whether producing a partially incompatible Mac is a wise move is something that even Athena couldn't forecast.

General Computer also announced *HyperNet*, software that turns a HyperDrive into a file server. Macs attach to the HyperDrive-equipped Mac by AppleTalk connectors. Once connected, the Macs can share applications and documents stored on the HyperDrive. —Jim Heid

(continues on page 65)



work for the three restaurants owned by Locke-Ober's proprietors.

Customers may not notice the high-tech changes going on behind the scenes, but the Locke-Ober's management is glad to let a little of the new improve the time-tested ways of the old. —Patrick Rafter



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Circle 255 on reader service card

I Ching

For thousands of years the I Ching, the Chinese Book of Changes, has been used to understand the present and predict the future. The book dates back to the Chou dynasty—1150 to 249 B.C. In his old age Confucius studied it intensively and added a commentary to the hexagrams on which the I Ching is founded.

The Electric Dragon (Baen Software, Berserker Works Ltd., P.O. Box 14268, Albuquerque, NM 87191) is an electronic version of the ancient book. The package bears the presumptuous slogan, "At last not just data, but wisdom from a computer." Based on the author-

itative Wilhelm/Baynes translation (Princeton University Press, 1961) of the I Ching, *The Electric Dragon* dispenses with throwing yarrow stalks or coins to create the hexagrams. Instead you press any Macintosh key to build the six lines of the hexagram. You can save readings, together with comments you add, and browse through the judgments and commentaries of the 64 hexagrams. The program, which sells for \$34.95, requires a 512K Macintosh, an external drive, and Microsoft BASIC 2.0.

—Daniel Farber

Le Conjugueur



If you are uncertain whether *sommes* is the correct first-person plural present form of the verb *être*, *Le conjugueur*, from Les éditions Ad lib, in Québec (418/529-9676), is a desk accessory that conjugates French verbs. For example, if you're studying French and aren't sure of the correct form or spelling of a verb, you can select *Le conjugueur* from the Apple menu. When the *Le conjugueur* window is displayed, you type the verb's infinitive form and then click on the desired person and tense. The proper conjugation is automatically displayed. The program accepts most common irregular verbs.

The menus, help screens, and documentation are in French, so you have to keep a French dictionary handy if you've just started learning the language. For the most part, however, you can get by without much help. *Le conjugueur*

sells for \$49.95 (\$69.95 in Canada) and takes up about 59K. You need an external drive or a hard disk to avoid juggling disks. For French language students or writers who need to dust off their *Français*, *Le conjugueur* is a painless way to *améliorer* your grammar.

—Daniel Farber

Many of you have probably had strange or enlightening encounters with the Macintosh. Or perhaps you've heard of someone else's unique application of the Mac. Your contributions are welcome. Macworld pays up to \$50 for each item published. All published submissions become the property of Macworld. Send your contributions to Macworld View, Macworld, 555 De Haro St., San Francisco, CA 94107. I look forward to hearing from you. □

Macworld Best-Seller Software

This month	Business	Last month	Months on chart
1	Jazz, Lotus Development	1	4
2	Microsoft Word, Microsoft	2	8
3	Microsoft File, Microsoft	5	7
4	Microsoft Multiplan, Microsoft	3	8
5	MacDraw, Apple Computer	4	5
6	Microsoft Excel, Microsoft	—	0
7	Dollars and Sense, Monogram	10	8
8	Helix, Odesta	12	4
9	Microsoft Chart, Microsoft	13	8
10	MacProject, Apple Computer	11	7
11	Omnis III, Blyth	—	0
12	Back to Basics, Peachtree	—	0
13	ThinkTank, Living Videotext	14	3
14	pfs:file, Software Publishing	6	7
15	First Base, DeskTop Software	—	0

Source: InfoCorp survey of over 300 retail stores

Software Watch

Editors' choice: other recent software of particular interest

Business Filevision, Telos
Data Management

Decision Map, SoftStyle
Decision Making

Microphone, Software Ventures
Communications

Exclusively for the Macintosh Plus
TheMaxPlus™
Coming in March*

New TheMax 2.™

You've heard about TheMax. Now TheMax2 gives you even more – a full 2 Mb for the same low price. TheMax2 is more versatile than a RAM disk and runs circles around the fastest internal disk drive.

At the heart of the system is TheMax2, an expandable memory board that gives you 2 Mb of computing power, with software to let you configure the memory your way, plus a print spooler so you don't have to wait around while a document prints.

2Mb

The 4 Mb Future is Here

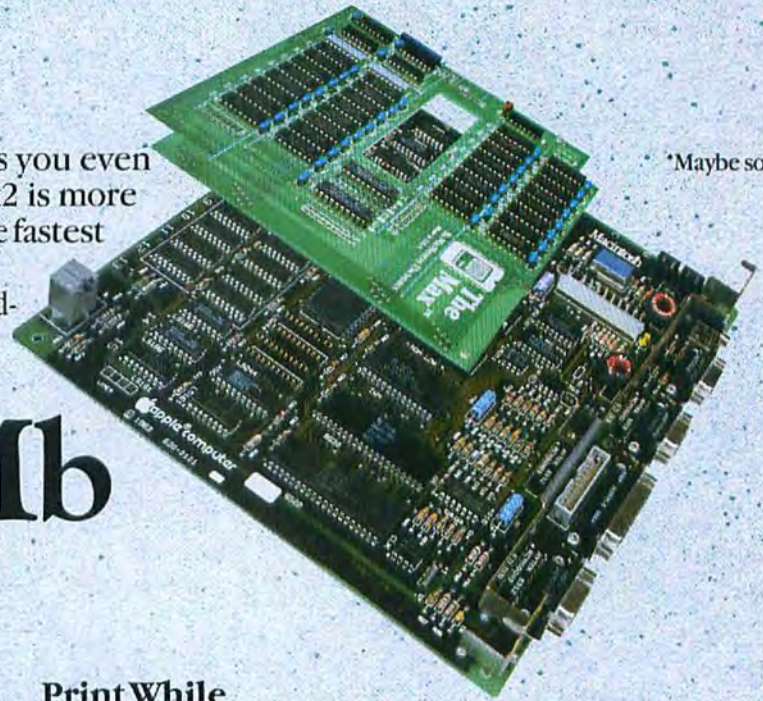
TheMax2 installs in minutes to give your Macintosh 2 Mb of memory with full Apple ROM compatibility. Even better, it's ready for expansion – just plug in 16 of the new megabit chips to realize the Macintosh's 4 Mb potential. And it adds less than 2 watts to your power consumption – so little, in fact, that it doesn't even require a fan.

A Memorable Approach

Because different users have different memory requirements, our MaxRAM software lets you have it the way you need it.

Configuration 1 gives you a 1.5 Mb of contiguous memory plus a 400K RAM disk. It's perfect for memory-intensive applications like databases, elaborate spreadsheets and integrated packages like Jazz. If you move between applications frequently, MaxRAM with Apple's Switcher lets you jump back and forth between as many as eight applications.

Configuration 2 gives you a 512K fat Mac with a 1.5 Mb RAM disk. Use the RAM disk like a floppy disk – only 10 times faster. Put your most frequently-used programs on your RAM disk in the morning and use them at RAM speed all day – without juggling disks. Unlike other RAM disks, a program crash isn't fatal. TheMax2 lets you reset and recover your 1.5 RAM disk intact.



*Maybe sooner

Print While You Work

A welcome addition to TheMax2 is MaxPrint, a print spooler that takes the waiting out of printing. MaxPrint loads your text and graphics at RAM speed and feeds it to the printer so you can keep working. MaxPrint is a desk accessory that's there when you need it.



TheMax2 is Available Now

TheMax2, complete with memory board, MaxRAM software, MaxPrint and a 90-day warranty, is available for both the 128K and 512K Macintosh. MacMemory also continues to offer 512K upgrades at better-than-Apple prices. Both TheMax2 and 512K upgrades are also available as kits.

Ask Your Dealer for More Information, or contact MacMemory Inc., 473 Macara Avenue, Suite 701, Sunnyvale, California 94086. (408) 773-9922.

MacMemory Inc.

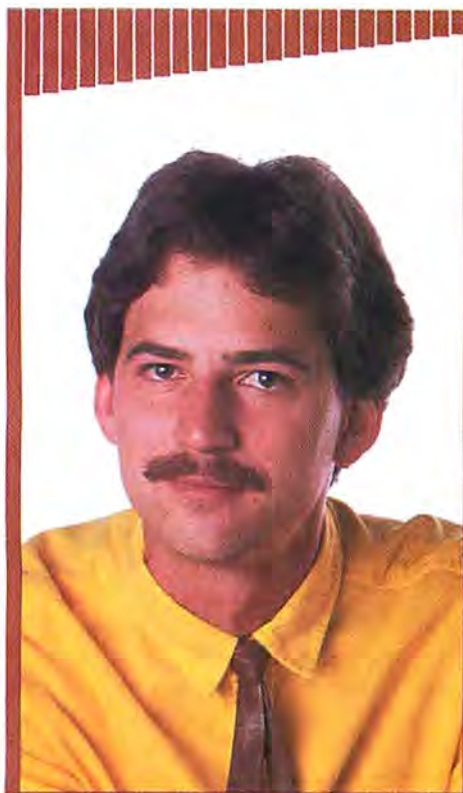
Apple is a trademark of and Macintosh is a trademark licensed to Apple Computer Inc. Jazz is a trademark of Lotus Development Corporation. TheMax, MaxRAM and MaxPrint are trademarks of MacMemory Inc.

Circle 337 on reader service card

Get Info

Macworld's tutor answers questions about Apple II emulation, file transfers, and on-line delays.

Lon Poole



An Apple II program crossing the Abaton Transform bridge becomes a Mac program.

As Apple consolidates its product line, Apple II and Macintosh compatibility becomes an issue. This month I answer letters from two readers who want to integrate the Apple II with the Mac. I also answer several MacTerminal-related questions: one from a reader who wants to know what the Answerback message is, and another from a reader whose Mac hangs up the phone too early. If you enjoy typing at a distance, you'll be interested in the search for a keyboard extension cable. And for word jugglers, I take a look at place markers, hard spaces, and text centering.

Extending Keyboard Cables

Q. I would like to use a longer keyboard cable with my Macintosh. I considered using a modular telephone cable, but the Macintosh reference manual says not to. Do you know of a source for longer keyboard cables?

*Eileen Driscoll
Ithaca, New York*

A. As you say, you can't simply replace the standard keyboard cable with a 12- or 25-foot telephone handset cable, even though the connectors are the same. The wires in the Macintosh cable connect straight through from the connector on one end to the connector on the other end, but the wires in a telephone cable cross.

You can buy a 12-foot keyboard cable for \$9.95, or a 25-foot cable for \$12.95, postpaid, from Your Affordable Software Company, 1525 N. Elston Ave., Chicago, IL 60622, 312/235-9412. I've been using the 25-footer for six months with no problems.

Staying Connected

Q. Sometimes when I use MacTerminal to call the mainframe computer at work from my Macintosh at home, the mainframe answers the phone, but then MacTerminal hangs up. This happens often enough to be annoying. What can I do to remedy the problem?

*Norris Crank
Charlotte, North Carolina*

A. If your terminal program always seems to disconnect shortly after the number you dial is answered, try adding two or three commas at the end of the number. A comma in the phone number instructs an Apple modem or any modem compatible with the Hayes Smartmodem to pause during dialing. Each comma inserted in a dialing sequence creates a 2-second pause.

Place Markers

Q. I used to use WordStar on a Digital Microsystems (CP/M) computer. Now I use MacWrite. I miss being able to type a command and quickly bring into view text that I have previously marked. Finding a particular passage of a large document using nothing but the scroll bar is a chore. Can you suggest an alternative?

*Al Rabin
Provo, Utah*

A. You can create fake place markers in MacWrite or Microsoft Word. To place a marker, type unique characters, such as \$1 or \$2, that you know won't appear else-

Get Info

(continued from page 67)

where in the document. Later locate a marker using the Find command in the Search menu. The Find command may take 3 or 4 seconds to find a marker in a long document, but that beats scrolling.

Also, don't overlook the Goto Page # command in the Search menu. Goto Page very quickly brings into view the top of any page you request, even in long documents. Of course, if you don't know on which page to look for a particular passage, you'll have to use the Find command or the scroll bar.

Hard Spaces

Q. How can I keep *MacWrite* from word wrapping long equations that contain blank spaces?

Chris Highborn
Calgary, Alberta
Canada

A. Normal blank spaces, which you type by pressing the space bar, are considered soft spaces. Lines can be broken at a soft

space to fit the margins. To type a hard space, which is not considered a legitimate place to break a line, press Option together with the space bar. Hard spaces can take the place of normal spaces anywhere, even in desk accessories and dialog boxes.

A similar technique works with hyphens in *Microsoft Word*. Unlike *MacWrite*, *Word* can break lines at hyphens. Press Option and the hyphen key to type a hard hyphen in *Microsoft Word*.

Lines Off Center

Q. Sometimes I have a line that just won't center properly. The misalignment happens in many different applications, including *MacWrite*, *Microsoft Word*, *MacDraw*, and *MacPaint*. Do you have any idea what's going on?

Harley Wilkes
Louisville, Kentucky

A. Off-center lines are usually caused by blank spaces at the beginning of the line, and sometimes by blank spaces at the end. To remove leading spaces, select them by dragging the pointer across the unwanted spaces and then press Backspace. Do the same to remove trailing spaces.

Apple II File Transfers

Q. Many years ago I worked with my brother's Apple IIe. My problem now is how to transfer my files from the Apple IIe disks to the Mac. Neither my brother nor I own a modem, but we could wire the two machines together. How do we go about it?

Nedra Foster Hecker
Annapolis, Maryland

A. Transferring text files from an Apple II to a Macintosh is no problem. In addition to the two computers, you'll need an Apple Super Serial Card or equivalent for the Apple II. Don't worry about setting the two banks of small switches on the Super Serial Card, but make sure the jumper block is pointing to Modem, not Terminal. You can connect the Apple II's serial port to the Mac's modem port with a Mac Imagewriter cable.

You will also need a terminal program for each computer. Just about any terminal program will do. For the Macintosh *FreeTerm* is cheap and easy to use for text file transfer. *MacTerminal* is a little harder to

(continues on page 70)

20 Meg Internal Mac Drive...949.00

The WARP 20

The **WARP 20** Meg internal hard drive is powerful, fast, and *very* reliable. The **WARP 20** allows you all the performance of "those other guys" for less than 1/2 the price. Now you can finally start getting great performance out of your Macintosh by simply putting our hard drive in.



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The C for the Macintosh

"Library handling is very flexible... documentation is excellent... the shell a pleasure to work in... blows away the competition for pure compile speed... an excellent effort."

COMPUTER LANGUAGES, 4/85

Why Professionals Choose Aztec C

Professionals choose Manx Aztec C development systems because they are the most powerful, portable, and professional microcomputer C development systems available. Professionals know that Manx Aztec C offers the features, dependability, and performance required for producing professional results.

Applications implemented with Aztec C development systems range from real time control of robot arms used in manufacturing, to message switching systems, to games, languages, operating systems, and business systems.

Much of the commercial software for the Apple Macintosh including top selling titles from software publishers Broderbund, Hayden Software, and Spinnaker is developed using Manx Aztec C.

Value, Performance, and Flexibility

Manx Aztec C68k for the Macintosh is available as a line of three upgradable development systems: Manx Aztec C68k-p, Manx Aztec C68k-d, and Manx Aztec C68k-c. Student, non-commercial, and small business discounts are available. Whatever your budget and requirements, there is a Manx Aztec C68k development system that offers you the best value and performance for your investment.

New Macintosh Mouse Interface

The highly acclaimed, powerful, and professional Manx Aztec SHELL development environment now includes a mouse interface. Developers unfamiliar with UNIX or MS-DOS can work entirely with the mouse interface. Those interested in learning the advanced features of the SHELL can do so at their leisure. Developer's familiar with UNIX or MS-DOS can ignore the mouse, if they so choose, and work entirely in a familiar command driven environment.

Aztec C, The Most Portable C.

Manx Aztec C Development Systems are available for the Apple Macintosh, Apple II, IBM PC, PC compatibles, CPM-80 systems, Radio Shack Systems, and the Commodore 64/128. Manx Aztec C is also compatible with UNIX and UNIX ports. Manx currently is developing systems for the Amiga and other microcomputer systems. No other C Development System for the Macintosh comes close to the portability of Manx Aztec C.

Power To Spare

In benchmark after benchmark, Manx Aztec C appears in column after column as the clear winner.

The following sieve benchmark timings are reprinted with permissions of Computer Languages, 131 Townsend St., San Francisco, CA 94107 from a Macintosh review that appeared in the April, 1985 issue:

compiler	compile/link	run	size
Manx Aztec	49	7	13,274
Megamax	114	7	13,816
Softworks	201	9	46,914
consulair	152	10	17,654
Hippo 2	102	13	30,648

The following sieve benchmark timings are reprinted with permission of Macworld, 555 De Harro St., San Francisco, CA 94107, from the May, 1985 issue from "Mac Wins By a Length" in the Open Window column.

Language	Run Time
Aztec C 1.06C	6.55
McFORTH 2.0	20.01
Modula-II	71.60
MBASIC 2.00	1170.00
Pascal	1270.00

Sieve timings for Manx Aztec C68k 1.06g:

with register variables 3.37 secs 5,007 bytes
without register variables 6.02 secs 5,140 bytes

Manx Aztec C68k - Professional Tools

Manx Aztec C68k is bundled with a rich abundance of tools to help produce superior results in reasonable time frames. The following is a list of features and facilities included in Aztec C68k-d, the Developer's System, and Aztec C68k-c, the Commercial system. Items that are marked -c are unique Aztec C68k-c.

Optimized C	Mouse Enhanced SHELL
UNIX-like SHELL	Creates desk Accessories
Macro Assembler	Creates Clickable Applications
Smart Overlay Linker	Phone Support
C-PASCAL Interface	PASCAL-C Interface
Resource Compiler	UNIX Library Functions
Debuggers	Terminal Emulator (Source)
Object Librarian	Easy Access to Mac Toolbox
Mouse Editor	unlimited code size
IEEE floating point	six register variables
Inline assembly	extensive sample programs
600 page manual	hard disk support
no license fees	PASCAL type strings
Macintosh support	AppleTalk support
code optimizer	symbolic debugger (512k)-c
MacRam Disk-c	UniTools (ul, make, grep, diff)-c
Library Source-c	One Year Of Updates-c

Summary

If you plan to program in C on the Macintosh or are currently doing so using a brand x C compiler, there is a Manx Aztec C68k system for you that offers the best value and the greatest degree of portability, power, and professional quality available.

Look around, evaluate, and compare. The more you look, the more you compare, the more you will see that Manx Software Systems has succeeded in its objective to provide you with the best C development system available at the best possible price. Then, give us a call, and join the 25,000 users who already know and enjoy the Manx Aztec C advantage.

Products and Prices

Aztec C68k-c Commercial System	\$499
Aztec C68k-d Developer's System	\$299
Aztec C68k-p Personal System	\$199
C-tree database (with source)	\$399
Lisa Kit	\$ 99
MS-DOS → Macintosh Cross	\$750

Discounts

Discounts are available for professors, students, independent developers, hobbyists, and small businesses.

How To Become an Aztec C User

To become an Aztec C user call 1-800-221-0440 or call 1-800-832-9273 (800-TEC WARE). In NJ or outside the USA call 201-530-7997. Orders can be telexed to 4995812.

Payment can be by check, COD, American Express, VISA, Master Card, or Net 30 to qualified customers.

Orders can also be mailed to Manx Software Systems, Box 55, Shrewsbury NJ, 07701.

How To Get More Information

To get more information on Manx Aztec C and related products, call 1-800-221-0440 or 201-530-7997, or write to Manx Software Systems.

30 Day Return Policy

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use for text file transfer and costs more, but it lets you transfer files four times faster. More sophisticated programs, such as *Smartcom II*, *inTouch*, *Telescope*, and *Red Ryder*, also work. I'm not very familiar with Apple II terminal programs, but I know *Apple Access II* and *ASCII Express Pro* from United Software both work.

For successful file transfer, you must set both terminal programs to the same communications settings—baud rate (speed), parity, character length, and duplex (local echo). For the fastest transmission, choose the highest baud rate available.

The Xmodem error-checking protocol, which is offered with many communications programs, improves the accuracy of transfers made over the phone. Since your computers will be connected directly, however, you don't need Xmodem.

For specific instructions on completing the transfers, I'll have to refer you to the terminal programs' manuals. There's too much variation to give you any meaningful summary here.

Answerback Message

Q. I have a question about *MacTerminal*. What is the Answerback message, and how do I use it?

Ellen Warnock
Plano, Texas

A. A few remote computers expect your terminal program to identify itself immediately after connecting. When a remote computer sends a ⌘-E character, *MacTerminal* responds automatically with the message you enter in the Answerback dialog box.

You can also use the Answerback feature to respond with a routine message, such as your account number or password. Any time you press ⌘-Enter , *MacTerminal* sends the Answerback message. Your mes-

Answerback

Each embedded ^M in the *MacTerminal* Answerback message generates a return character, as if you had pressed the Return key at that point.

sage can include return characters, even though pressing the Return key closes the dialog box. Wherever you want a return character in the Answerback message, embed the two characters ^M (see "Answerback").

Changing Default Fonts

Q. How can I make *MacWrite* default to a font other than Geneva?

T. R. LaFebr
Golden, Colorado

A. *MacWrite* and most other application programs use the Geneva font by default because the System file designates it as the default application font. It has not always been so; long-time Macintosh users will remember that New York was the usual application font for the first five months of 1984.

You could designate a different font as the application font by changing the System file with a resource editor such as

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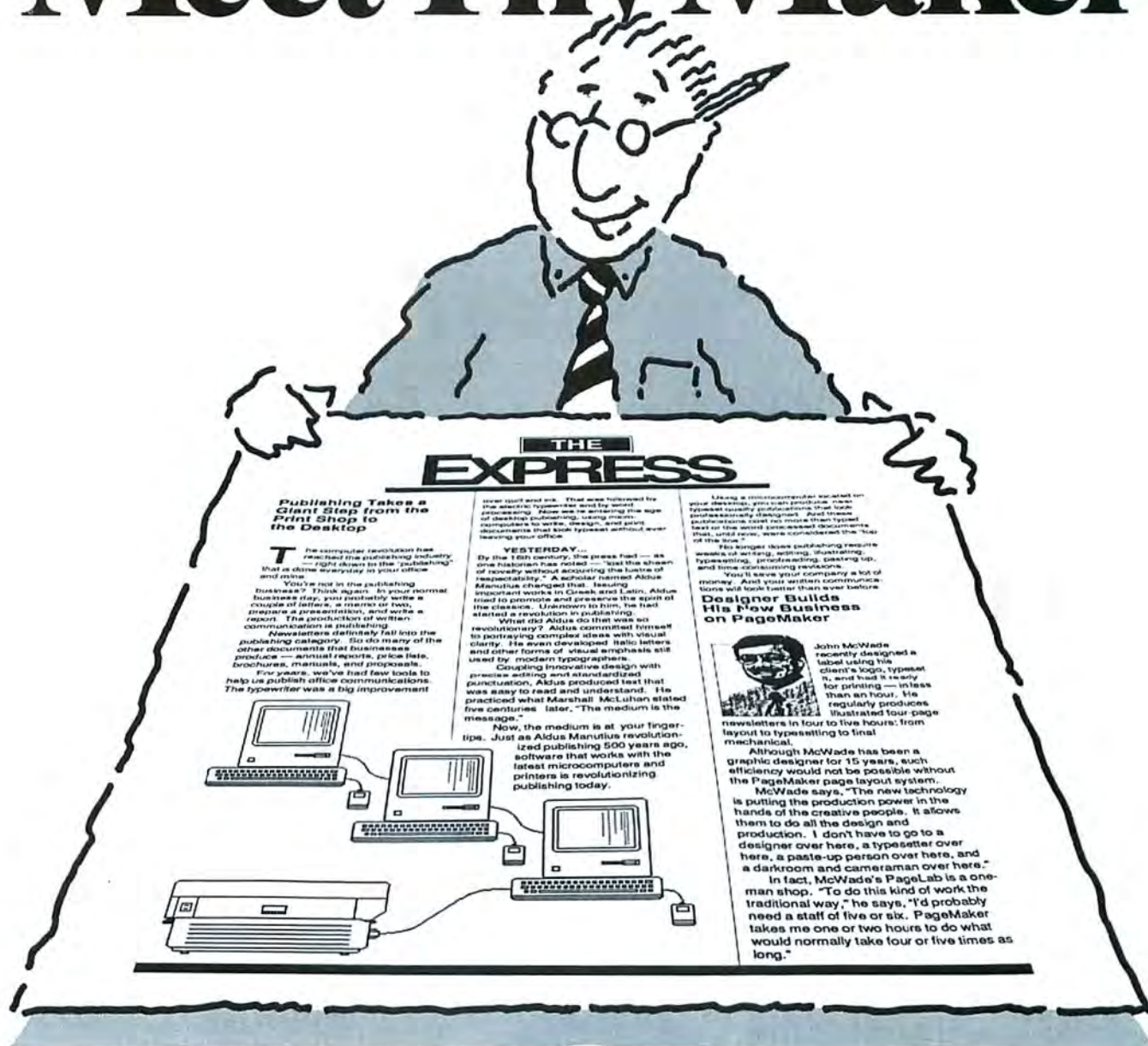
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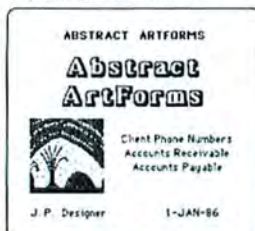
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Get Info

(continued from page 70)

ResEd or a disk editor such as *Fedit*, but there are easier alternatives. The desk accessory *Change Font D.A.*, written by Lofty Becker, lets you easily change the default application font to any available font. *Change Font* is available from user groups, including MAUG on CompuServe (file CHFONT.BIN in DL3). The desk accessory is also available in application program form (file CFONTA.BIN in MAUG's DL3).

You might like to change some of *MacWrite*'s other default settings as well—margins, indentation, tabs, headers, footers, and so on. In that case, you can make a preformatted template for each type of document you habitually create.

To make a preformatted template, start with a new document. Make selections in the Page Setup dialog box; establish the rulers, headers, and footers you'll need; and take care of any other necessary paragraph and document formatting. Choose the font, size, and type style for the document. Type any text and insert any pictures that will appear in every document of this kind. Save the document using a suitable generic name such as Letter, Envelope, or Label.

Then, instead of using the New command to create a new document, open the appropriate template document. In order to avoid accidentally saving your new document over the template on disk, you should immediately use the Save As command with the name of the new document you are about to create to make a new copy of the template.

The Print Catalog Twins

Q. The Print Catalog command used to print small images of *MacPaint* documents, but now it simply prints the *MacPaint* document icon with its title. Why?

Neil Tyra
Potomac, Maryland

A. Your confusion is caused by the fact that there are now two Print Catalog commands. The one you're accustomed to, which prints miniatures of all *MacPaint*

(continues on page 75)

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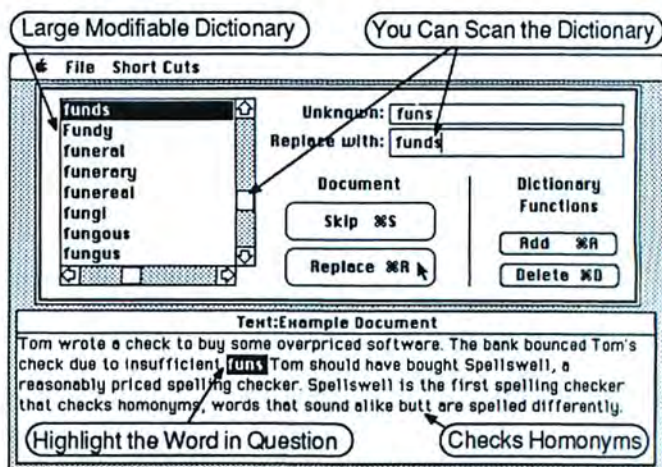
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documents on a disk, is a feature of *MacPaint*. To use it, you must first start *MacPaint*.

The other Print Catalog command is a feature that was added to the Finder in May 1985. Versions 4.1 and 5.1 of the Finder have a Print Catalog command, but earlier versions do not. The Finder's Print Catalog command prints a list of all documents, applications, and folders present in the active window. The current choice in the View menu—by icon, by name, and so on—determines the format of the printed list.

A MacAppleII?

Q. I am contemplating taking some courses for an MBA through an electronic university. However, the courses are available only in versions for the IBM PC, Apple II, and Commodore 64. Some of the material comes via modem from the university's electronic mail service, and some comes on 5¼-inch disks. I know MacCharlie would allow me to run the IBM PC version of the software and read the IBM PC disks. But I understand there is an Apple II emulator for the Mac that would allow me to run the Apple II version of the program. If I used that, how could I read the 5¼-inch Apple disks? Would the Abaton Transform work?

Jeffrey S. Snow
Fort Branch, Indiana

A. The Abaton Transform can't solve your problem. To understand why, imagine a one-way bridge across the English Channel. English people who cross the bridge become French and refuse to speak English. After crossing the bridge to France, they no longer read English books. Similarly, an Apple II program crossing the Abaton Transform bridge becomes a Mac program and no longer reads Apple II data files on disks of any size. The Abaton Transform (see *Macworld View*, December 1985) is designed chiefly for Apple II program developers and publishers, a fact its \$1995 price reflects. Perhaps you could convince the electronic university to use an Abaton Transform to create Mac versions of their courses.

The Apple II emulator you mention is probably *Mac + II* (from Meacom, P.O. Box 272591, Houston, TX 77277, 713/526-5706). It's now available in two versions: version 1.0 for 128K Macs (\$99.95) and version 2.0 for Macs with 512K or more (\$149). *Mac + II* consists of three disks, two for the Mac and one for the Apple II, and a brief manual. *Mac + II* can transfer programs and data from an Apple II through an Imagewriter cable to a Mac. Then, on a Mac, it can run the transferred Apple II programs and use the transferred Apple II data. A transferred program runs slower on the Mac than on an Apple II—about a sixth the speed with *Mac + II* version 1.0 and a fourth as fast with version 2.0.

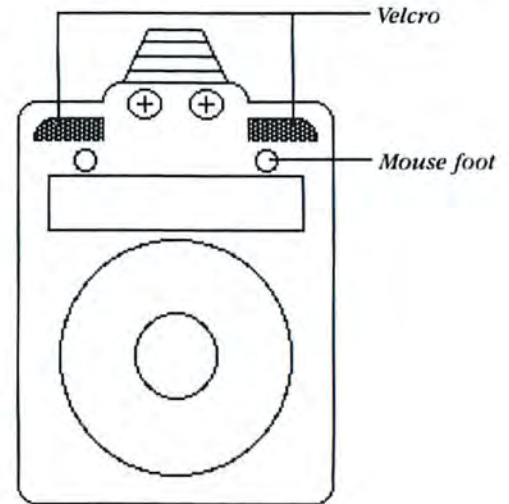
When you start a Mac with a *Mac + II* disk, the Mac behaves like an Apple II. There are no more icons, windows, or pull-down menus; the Macintosh features are replaced with Apple II features. You must type commands such as CATALOG, RUN, and SAVE. You can write programs in Applesoft BASIC, Integer BASIC, or 6502 assembly language. Apple II programs and data you create using *Mac + II* on the Mac can be transferred to an Apple II.

Both versions of *Mac + II* work with programs written for the Apple II or Apple II+ that use the DOS 3.3 operating system. Neither *Mac + II* version works with programs that use features found only on the Apple IIe or Apple IIc, such as 80-character text lines. Programs that shortcut the operating system to alter the screen directly may not look right on version 1.0 unless they are rewritten. Version 2.0 handles direct altering of the screen. It also supports the DOS 3.3, ProDOS, and Pascal 1.3 operating systems, and the more advanced version reads 3½-inch Apple II Unidisks directly. New versions of *Mac + II* that support Apple IIe and IIc features are in the works.

Reshod Mouse Feet

Q. In your September 1985 *Get Info*, Eric Bailey asked about worn mouse feet. I had the same problem, which I solved economically by applying self-adhesive Velcro strips to the bottom of the mouse, adjacent to the worn feet (see "Velcro Feet"). Use the fuzzy face of the Velcro, not the face with the plastic hooks.

Juan Sexton
Topeka, Kansas



Velcro Feet

Too many miles on your mouse feet? The fuzzy face of self-adhesive Velcro strips attached as shown keeps your mouse gliding along.

A. Thanks for the tip. Lately I've been using a variety of three-wheeled, ball bearing roller skate called Mouse Mover (Magnum Software, 818/700-0510). The Mouse Mover clips to the base of a Mac, Lisa, or Apple II mouse, completely eliminates the worn-feet syndrome, and makes moving the mouse a bit easier and more precise. The product's 99 ball bearings are a bit noisy though, especially on hard surfaces, and make your mouse sound as if it's trying out for the roller derby.

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MacChallenger (flight simulation)	23.	
Ann Arbor Softworks		
Grid Wars	28.	
Bantam Electronics		
Sherlock Holmes: Another Bow	27.	
Blue Chip		
Millionaire (stock market)	\$30.	
Tycoon (commodities)	30.	
Baron (real estate)	30.	
Squire (personal finance, reqs. 512k)	30.	
BrainPower		
Think Fast (improves recall)	23.	
Chipwits	26.	
Broderbund Software		
Lode Runner	24.	
Cyborg (sci-fi text adventure)	24.	
Ancient Art of War	27.	
CBS		
Murder by the Dozen	25.	
Creighton Development		
MacCommand	21.	
Electronic Arts		
One on One/Dr J vs Larry Bird (reqs. 512k)	27.	
Epyx		
Rogue (great graphics)	24.	
Temple of Apshai Trilogy	24.	
Winter Games	24.	
Gamestar		
Championship Star League Baseball	22.	
Hayden Software		
Masterpieces	24.	
Word Challenge II	24.	
Sargon III (9 levels of chess)	29.	
Perplexx	24.	
Infocom		
Seastalker (junior)	24.	
Cuthroats (standard)	24.	
Enchanter (standard)	24.	
Hitchhiker's Guide (standard)	24.	
Planetfall (standard)	24.	
Wishbringer (standard)	24.	
The Witness (standard)	24.	
Zork I (standard)	24.	
Zork II (advanced)	27.	
Zork III (advanced)	27.	
A Mind Forever Voyaging (advanced)	27.	
Infidel (advanced)	27.	
Sorcerer (advanced)	27.	
Suspect (advanced)	27.	
Deadline (expert)	29.	
Spellbreaker (expert)	29.	
Starcross (expert)	29.	
Suspended (expert)	29.	
Invisiclues (hint booklets)	6.	
Magnum		
Gypsy (the Computer Oracle)	23.	
Mark of the Unicorn		
Mouse Stampede (highly addictive)	23.	
Miles Computing		
Fusillade	\$21.	
MacAttack (3-D tank simulation)	27.	
Harrier Strike (3-D flight simulation)	27.	
Mindscape		
Racter (converse with your Mac!)	27.	
Balance of Power	30.	
Déjà Vu (murder mystery)	33.	
Origin Systems		
Exodus: Ultima III (fantasy adventure)	38.	
PBI Software		
Feathers & Space	21.	
Strategic Conquest	29.	
Fokker TriPlane Flight Simulator	35.	
Penguin		
Transylvania	24.	
Crimson Crown (sequel to above)	24.	
The Quest	24.	
Xyphus	24.	
Priority Software		
Forbidden Quest	24.	
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	24.	
Ultima II (role-playing adventure)	35.	
Silicon Beach Software		
Airborne!	21.	
Enchanted Scepters	24.	
Sir-Tech		
Mac Wizardry	36.	
Spectrum Holobyte		
GATO (submarine simulation)	26.	
Telarium		
Amazon	27.	
Dragon World	27.	
Fahrenheit 451	27.	
The Other Valley Software		
Monkey Business (arcade action)	21.	
Delta Patrol (arcade action)	21.	
Unicorn		
Futura (sci-fi adventure)	24.	
Utopia (science fantasy game)	24.	
Animal Kingdom (ages 6-12)	27.	
Science and language arts program		
Mac Robots (pre-school program)	27.	
Videx		
MacCheckers/Reversi	28.	
MacGammon/Cribbage	28.	
MacVegas	34.	

1-800/Mac&Lisa 560C

MacConnection™

MacConnection, 14 Mill Street, Marlow, NH 03456 800/622-5472 603/446-7711

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Circle 4 on reader service card

ng but the Mac.

HARDWARE

Assimilation

MacPort-Adaptor.....	\$69.
Mac-Epson-Connection	75.
Mac-Daisywheel-Connection	79.
Mac-Turbo-Touch.....	79.
Numeric-Turbo.....	129.

Compucable

Mac to Hayes Smartmodem cable	16.
Mac to Apple modem cable.....	16.
Mac to Hayes Transet 1000 cable	16.

Cuesta Systems

Datasaver AC Power Backup (90 watts) call	
---	--

Curtis Manufacturing

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.

Epson

AP-80 (Imagewriter compatible)	call
FX-85.....	call
FX-185.....	call
LQ-1500 (letter quality dot matrix).....	call

Ergotron

MacTilt (incl. external drive bracket).....	75.
---	-----

Hayes

Smartcom II (communications software)	86.
Smartmodem 300.....	call
Smartmodem 1200.....	call
Smartmodem 2400.....	call
Transet 1000.....	call

IOmega

Bernoulli Box (dual 10-megabyte storage)	2589.
10-Meg Cartridge.....	call
Head Cleaning Kit.....	call

Kensington

External Disk Drive Cover	8.
Mouseway.....	8.
Mouse Pocket	8.
Mac Dust Cover	9.
Mac XL Dust Cover	9.
Imagewriter Dust Cover.....	9.
Wide Imagewriter Dust cover.....	9.
Mouse Cleaning Kit w/Mouse Pocket.....	16.
Universal Printer Stand	17.
Disk Case (holds 36 Mac disks)	19.
Disk Drive Cleaning Kit	19.
Tilt/Swivel	22.
Polarizing Filter	31.
Surge Suppressor.....	32.
Starter Pack (includes Tilt/Swivel)	53.
A-B Box.....	60.
Control Center	61.

Koala Technologies

KAT Graphics Tablet	139.
MacVision (digitizer)	169.

Kraft

QuickStick.....	45.
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Microsoft

MacEnhancer.....	159.
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Mitsuba

Super 5 External Drive.....	225.
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Mouse Systems

A+ Optical Mouse.....	59.
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N² Products

Mac to Modem cable (6 feet).....	19.
Mac to Printer cable (6 feet).....	19.
Mac to Transet 1000 cable (9 ft.).....	19.

Paradise Systems

Mac 10 (10 megabyte hard disk)	\$769.
Mac 20 (20 megabyte hard disk)	1029.

PBI Software

Switch Box	36.
------------------	-----

PKI

Sydneyndr	245.
-----------------	------

Systems Control

MacGard (surge protection)	55.
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Thunderware

Thunderscan (graphics digitizer).....	175.
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Video 7

MouseStick.....	39.
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DISKS

BASF 3 1/2" Disks (box of 5)	12.
Sony 3 1/2" Disks (box of 10).....	22.
Fuji 3 1/2" Disks (box of 10)	22.
MAXELL 3 1/2" Disks (box of 10)	22.
Memorex 3 1/2" Disks (box of 10)	24.
Verbatim 3 1/2" Disks (box of 10)	24.
3M 3 1/2" Disks (box of 10).....	24.

INFORMATION SERVICES

Compuserve

Compuserve Information Service	19.
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Source Telecomputing

The Source (subscription & manual)	30.
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MISCELLANEOUS

American Tourister

Mac Carrying Case	69.
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Automation Facilities

Floppyclene Drive Care Kit	20.
Floppyclene Drive Care Refill	10.
MacPak Complete Care System	29.
For your mouse, printer, and keyboard.	

Clean Image Ribbon Co.

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

Computer Coverup

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

Diversions

Underware Ribbon	10.
ColorPack (includes Colorpens)	19.

Environmental Software Company

The Clutch (holds 8 disks)	9.
----------------------------------	----

MACATTIRE

High quality rip-stop nylon dust covers.
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External Drive Cover.....	7.
Numeric Keypad Cover (fits Turbo Touch)	7.
Imagewriter Cover.....	11.
Imagewriter 2 Cover.....	11.
Wide Imagewriter Cover	13.
Mac & Keyboard Cover.....	15.
Laserwriter Cover	17.
Mac XL & Keyboard Cover.....	20.

I/O Design

Imagewriter Color Transfer Ribbon	\$10.
Imageware	45.
Imageware wide	49.
Macinware	59.

Innovative Concepts

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

Innovative Technologies

The Pocket Pak (holds 6 disks).....	10.
The Easel (holds 20 disks)	14.

Kalmar Designs

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

Magnum

Mouse Mover.....	14.
------------------	-----

Microsoft Press

Microsoft Multiplan: Of Mice and Menus	13.
Midnight Madness	14.
The Printed Word	14.
Apple Mac Book Vol. 2	15.
Macinations (intro to Basic)	16.
Excel in Business	18.

Moustrak

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

Pacific Wave

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

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

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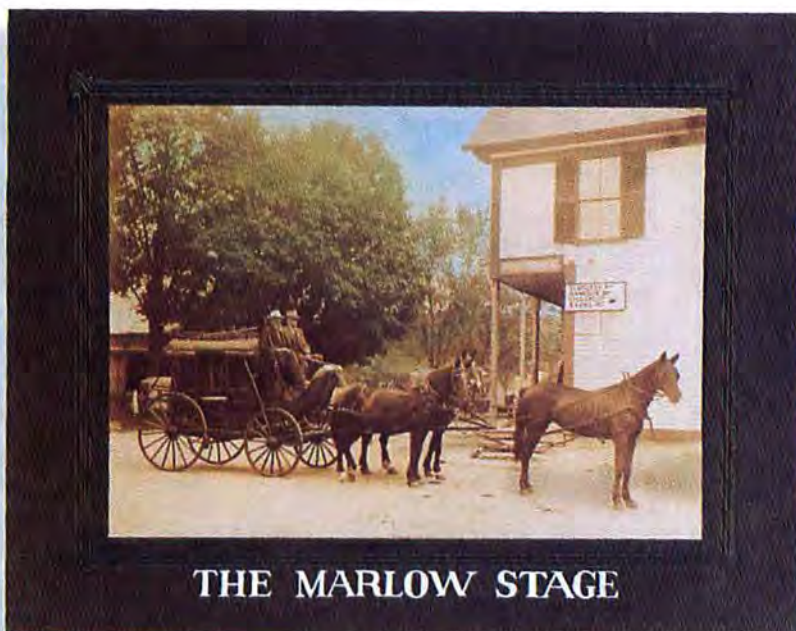
The road to the perfect Macintosh system may be paved with good intentions, but it's also fraught with the occasional pothole. Our experienced salespeople can tell which programs will work best for your business or

personal applications. And they'll be glad to help guide you through the complexities of connecting various peripherals to your Mac.

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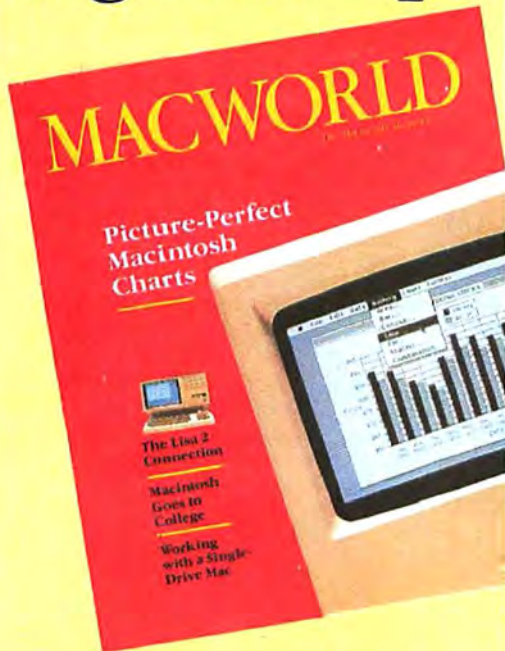
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4AZB1

Five Easy Pieces

Gordon McComb

Most people work on their computers for a few selected chores. Here's the way to configure disks dedicated to five common tasks: managing personal finances, word processing with graphics, designing graphics with text, preparing financial reports, and maintaining a database with graphics.

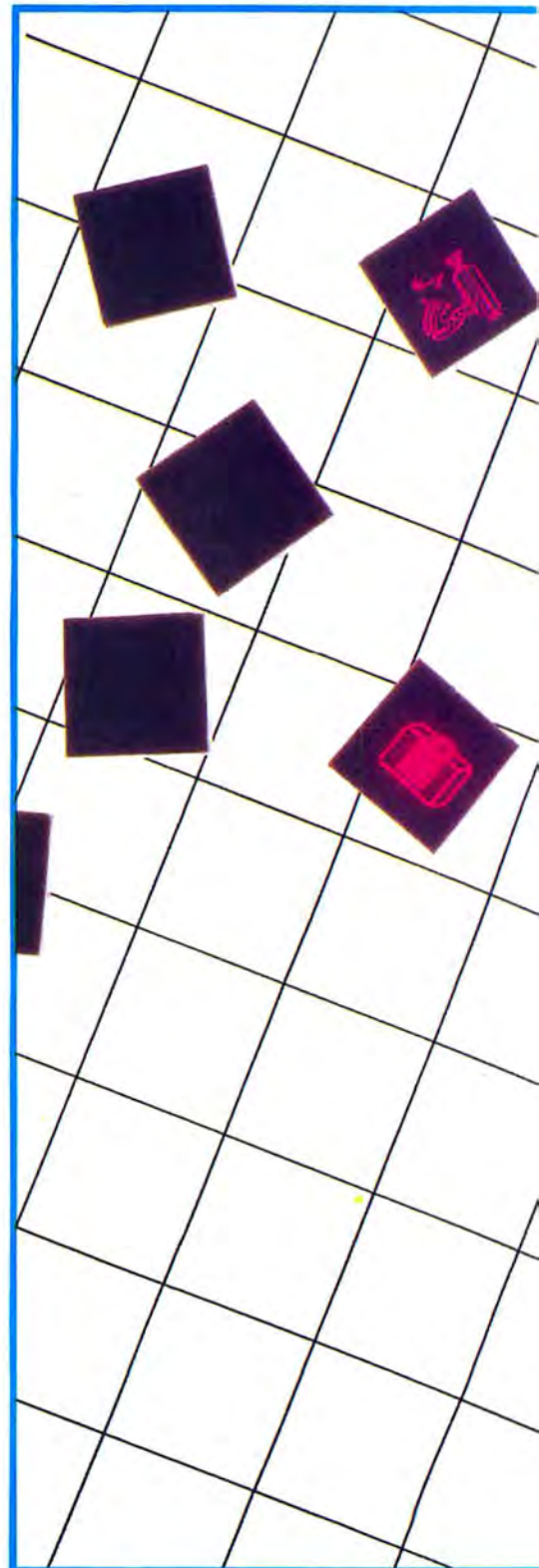
When I first got my Macintosh, I eagerly tried every software package I could get my hands on. Into the thirsty disk drive went database managers, spelling checkers, communications programs, font assortments, and other programs. Alas, those days of blissful experimentation are over. Though I still think that using the Mac is fun, I don't have the time to play anymore. I now use the Mac for—horrors!—work.

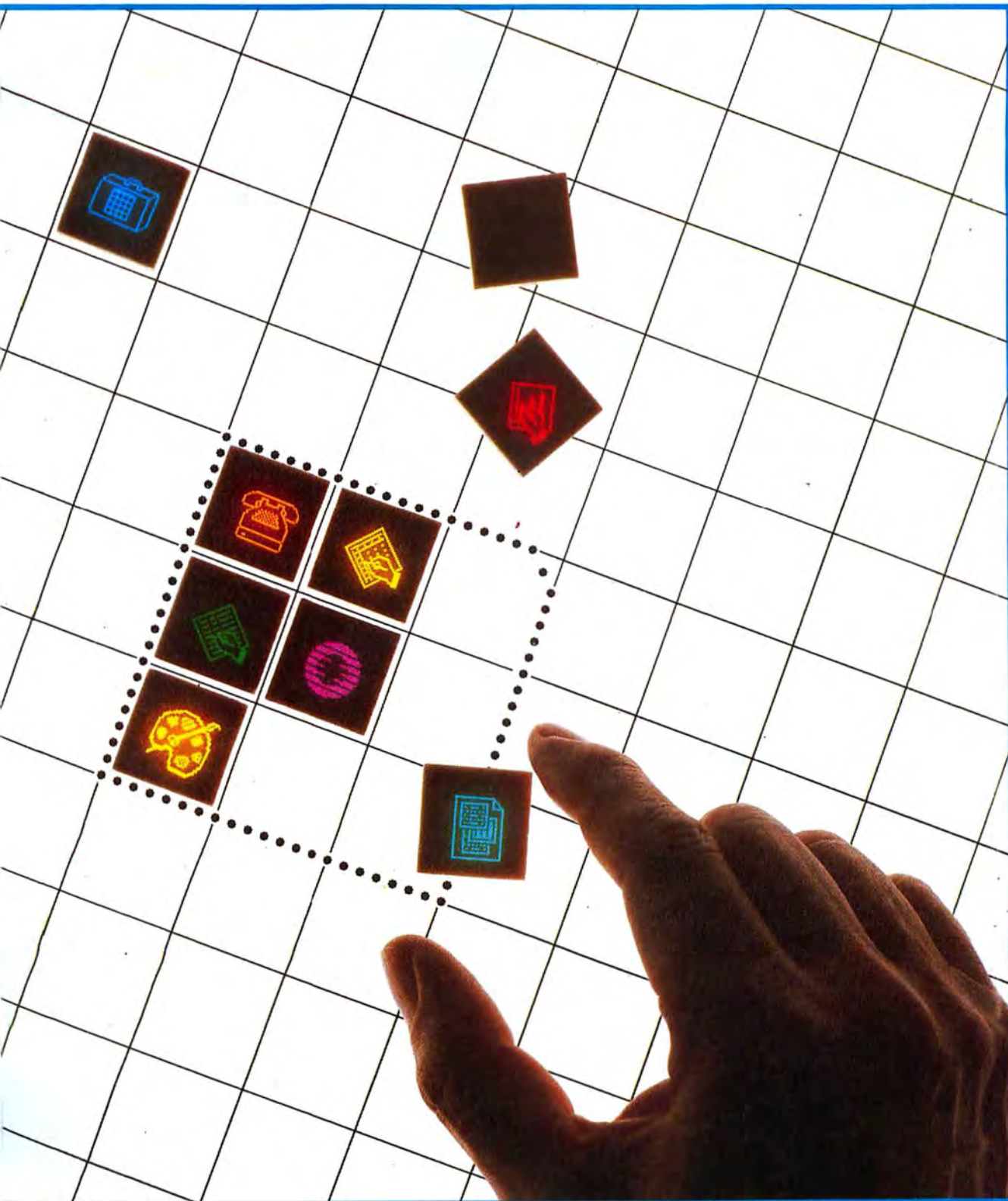
After countless hours with the Macintosh, I find that I use it for a handful of core tasks that I perform on a regular basis, using a limited set of programs. To save time, I've developed a set of disks specifically designed for my core tasks. With these custom disks, I avoid the disk swapping necessary when switching from one work disk to another, and I have all the tools I need for a specific task within easy grasp.

Some Guidelines

You'll want to consider a few tips when you design your own task-specific disks. As much as possible, keep your applications on a single disk, even if you have an external disk drive. Often you need the second drive for capturing data files or for switching to other work disks when you're through with one job and starting another. Of course, applications like *Jazz*, *PageMaker*, and *Excel* require two disks.

Because setting up a task-specific disk involves combining two or more applications on a disk, your





biggest consideration is limited disk space. Even with double-sided disk drives, fitting the applications you need for a given task within 400K is a useful discipline. The additional space available with double-sided disks can be set aside for additional applications or data files.

You can free some disk space by removing extraneous fonts and desk accessories from the System file using a utility such as Apple's *Font/DA Mover*. You can also substitute desk accessories for full-fledged applications. As a final measure, you can remove some critical system files, like the Imagewriter or Finder file. Several desk accessories mimic the main functions of the Finder and take less disk space; however, by removing the Finder, you give up the Mac desktop. If you remove the Imagewriter file, you can't print documents with that disk. When you are ready to print, you can use the original program disk, with its Imagewriter file intact.

Another problem you'll encounter in setting up your disks is copy protection. Many Macintosh applications are copy protected, which prohibits you from easily making extra work disks. Backup utilities, such as *CopyII Mac* and *MacBackup*, allow you to copy most of these programs onto your task-specific disks. Because of the way most copy-protection schemes work, though, you may not be able to fit two or more protected applications on a single disk. Remember that you can legally make a backup copy of a copy-protected program only if you own the original.

I've used a variety of programs in my sample disks, including commercial, public-domain, and user-supported products. (User-supported software is distributed free for a tryout. You pay for it on the honor system if the product suits you.) In each case my purpose was to create a disk that provided the maximum amount of flexibility and freedom at a reasonable cost. If you don't have some of the programs I specify and you don't want to invest in them, don't fret. Feel free to substitute other programs.

When you construct your own disks, be on the lookout for what I call program interaction. Like a patient under medication, the Macintosh may suffer adverse reactions to certain combinations of software. If the Mac doesn't behave like it should, experiment until you find the right combination.

The Fine-Tuned 400

I've configured five disks, each designed for a core task. You can use my sample disks as is to pattern your own, or you can modify them as you see fit. The five disks are:

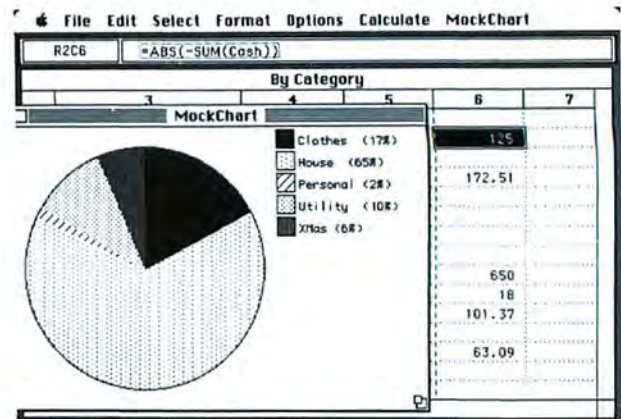
Personal Finance. For keeping tabs on a checking account and tracking a household budget.

Text with Graphics. For typing and printing letters, memos, and reports, with or without illustrations.

Graphics with Text. For preparing a flyer, an illustrated brochure, a newsletter, or other graphics-based documents.

Corporate Finance. For generating monthly financial statements, balance sheets, and other reports.

Inventory with Graphics. For keeping a picture-based parts inventory.



Personal Finance

The MockChart desk accessory graphically represents your income and expense patterns based on figures in the Multiplan worksheet. To create this pie chart, sort the worksheet by expense categories and calculate the total in each category. Then paste the category names and totals into MockChart.

Personal Finance

Application: Microsoft Multiplan. **Desk Accessories:** Control Panel, MockChart, QuickSet Financial Calculator, Scrapbook, Super Note Pad. **Fonts:** Chicago 12, Geneva 9, Monaco 9, New York 12, Seattle 10, Seattle 20. **Requirements:** 128K, Finder version 1.1. **Free Space on Disk:** 63K.

Unless you're independently wealthy and hire an accountant to juggle your money, balancing your checkbook is a regular chore.

The Personal Finance disk uses *Microsoft Multiplan* to record checks and other transactions for a single checking account. Use additional worksheets for other accounts. The worksheet provides a running balance, can be updated at any time, and can be sorted by date, check number, payee, or category. Incidentally, I used *Multiplan* because I had it around. You can substitute a dedicated personal-finance or checkbook program if you like.

To get a picture of earning and spending habits, I included the MockChart desk accessory, which creates line, column, and pie charts based on data you paste in from the *Multiplan* worksheet. As a time saver, I included the Financial Calculator from EnterSet for one-time-only calculations that are too much trouble to do in *Multiplan*.

Because checkbook transactions start to look the same after a few months, I added Super Note Pad, from Dreams of the Phoenix's *Quick and Dirty Utilities*, to the disk for notes. The Super Note Pad holds 20 pages of 800 characters each and has an index page so you can easily locate entries.

I removed the Multiplan Help file, along with extraneous fonts and accessories. Space is left on the disk for several large *Multiplan* data files, or you can use a separate data disk if you have an external disk drive.

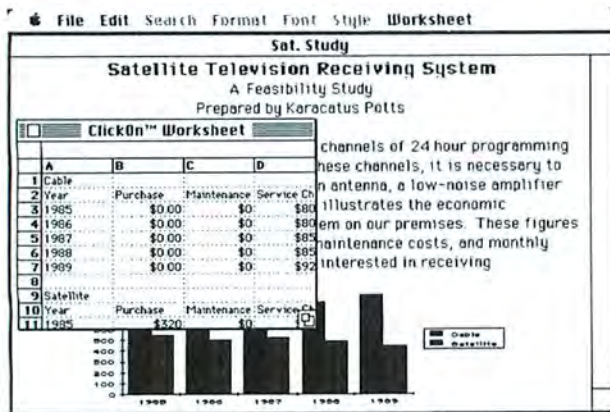
Text with Graphics

Applications: *MacWrite 4.5*, *Microsoft Chart*. **Desk Accessories:** *Art Grabber*, *ClickOn Worksheet*, *Extras*, *Scrapbook*. **Fonts:** *Chicago 12*, *Geneva 9*, *Geneva 12*, *Geneva 14*, *New Haven 24*, *New York 12*. **Requirements:** 128K, external disk drive, no *Finder*. **Free Space on Disk:** 28K.

If you write letters or reports and often find yourself combining text with illustrations and charts, you should design a combination word processing and graphics work disk.

MacWrite and *Chart* together don't fit easily on a disk, even with most fonts and accessories removed. On this disk I removed the *Finder* to gain the disk space required by both applications. Although you gain the space you need, you lose the desktop, which the *Finder* provides. If you can't do without the desktop and don't require high-powered charting capabilities, you could use *MockChart* or a similar desk accessory instead of *Chart*.

Since *MacWrite* is the primary application, I renamed it *Finder* so that whenever this disk starts the Macintosh, *MacWrite* loads automatically. *MacWrite* is renamed *Finder* for another reason: quitting an application on a disk that doesn't contain the *Finder* causes the Mac to fail. To delete the *Finder*, you need to start the Mac with another disk. Throw away the *Finder* on your work disk and then rename *MacWrite* as the *Finder*. *MacWrite* disguised as the *Finder* cannot be renamed. You have to throw it away if you no longer want it.



Text with Graphics

ClickOn Worksheet tallies figures for use in *Microsoft Chart*. Once the *Chart* graphic is pasted into *MacWrite*, it can be centered or resized. Though the graphic is not affected by resizing, text within the chart is scaled, which can look awkward.

You use the *Extras* desk accessory's *Set Quit File* command to switch to *Chart* (quitting from *MacWrite* brings you back to *MacWrite*, since the Mac thinks it's the *Finder*). I couldn't use *SkipFinder*, another desk accessory that lets you bypass the *Finder*, because it doesn't work when the *Finder* is missing.

To create a typical report, write the text in *MacWrite*, save the document on a data disk, and then switch to *Chart* to create graphics. Cut and paste the graphics into the report using the *Copy Chart* command on *Chart*'s *File* menu. *ClickOn Worksheet* is included in case you need to do calculations.

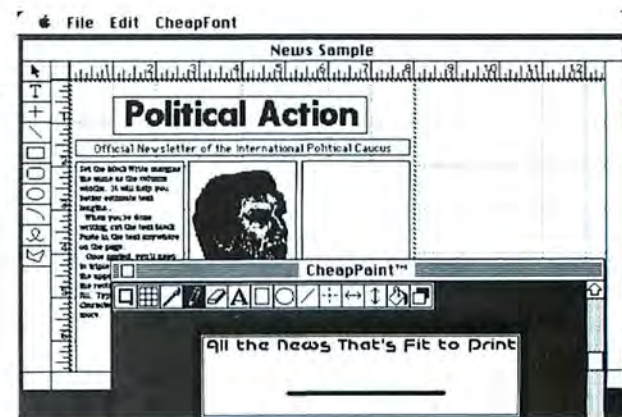
To use an existing *MacPaint* illustration, put it on the data disk and use *Art Grabber* to snatch the portion of the picture you want. If you need to create illustrations in *MacPaint*, substitute *MacPaint* for *Chart* or put a copy of *MacPaint* without *System* files on the data disk.

Graphics with Text

Applications: *MacDraw*, *EnhanceVision*. **Desk Accessories:** *Art Grabber*, *CheapPaint*, *MacVision*, *MockWrite*, *Multi-Scrap*, *SkipFinder*. **Fonts:** *Chicago 12*, *Cupertino 12*, *Geneva 9*, *Geneva 12*, *Geneva 18*, *Monaco 9*, *New York 9*, *New York 12*, *Oxford 36*. **Requirements:** 128K (512K recommended), *Finder* version 4.1, *MacVision* digitizer. **Free Space on Disk:** 52K.

If you produce flyers, brochures, or newsletters, but not often enough to make a page-makeup program a worthwhile investment, you could create a graphics-with-text work disk.

(continues on page 84)



Graphics with Text

MacDraw can position text or graphics anywhere on the page. You can view the whole page by choosing the *Reduce* or *Reduce to Fit* command. *CheapPaint*, a desk accessory that lets you edit pictures from the *Scrapbook*, complements programs like *MacDraw*, which can't create or edit bit-mapped graphics.

Pick Up the Pieces

Apple Computer

20525 Mariani Ave.
Cupertino, CA 95014
408/973-3317

MacDraw \$125, MacTerminal
\$99, the Switcher \$19.95

Batteries Included

30 Mural St.
Richmond Hill, Ontario
L4B 1B5 Canada
416/881-9941

Battery Pak (includes Calendar,
Launcher, Phone Pad, and
Scientific Calculator) \$49.95

CE Software

801 73rd St.
Des Moines, IA 50312
515/224-1995

MockChart, MockWrite, and
MockTerminal \$30, or send
\$25 to CE Software if you al-
ready have copies and
choose to keep them

Central Point Software

9700 S.W. Capitol Hwy. #100
Portland, OR 97219
503/244-5782
CopyII Mac \$39.95

Dreams of the Phoenix

P.O. Box 10273
Jacksonville, FL 32247
904/396-6952

Quick and Dirty Utilities Vol-
ume One (includes Super
Note Pad) \$39.95

EnterSet, Inc.

410 Townsend St. #408
San Francisco, CA 94107
415/543-7644
QuickSet (includes Financial
Calculator) \$99, QuickPaint
\$49.95

Hayden Software Co.

600 Suffolk St.
Lowell, MA 01854
617/937-0200
Art Grabber \$49.95, MacroMind
Utilities Disk (including
CheapPaint) \$99.95

Koala Technologies Corp.

2065 Junction Ave.
San Jose, CA 95131
800/562-2327
MacVision with EnhanceVision
\$399.95

Bob Luce

324 E. Shaw
Fresno, CA 93710
Extras free trial, \$10 if you keep
a copy

Microsoft

10700 Northup Way
Bellevue, WA 98009
206/828-8080

Chart \$125, Excel \$395, File
\$195, Multiplan \$195

Practical Computer Applications

1305 Jefferson Hwy.
Champlin, MN 55316
612/427-4789
MacBackup \$69.96

Silicon Beach Software

9580 Black Mountain Road,
Ste. E
San Diego, CA 92126
619/695-6956
Accessory Pak 1 (includes Paint
Cutter) \$39.95

T/Maker Co.

2115 Landings Dr.
Mountain View, CA 94043
415/962-0195
ClickOn Worksheet \$79.95

Thunderware

21 Orinda Way
Orinda, CA 94563
415/254-6581
ThunderScan \$229

From user groups:

Multi-Scrap (public domain)
SkipFinder (Darin Adler)

(continued from page 83)

Use *MacDraw* to construct the basic layout of your document. If you need digitized art, use the MacVision digitizer and desk accessory to capture pictures from within *MacDraw*. For more unusual effects, like outlined or zebra-striped pictures, quit *MacDraw* and use *EnhanceVision*. If you're not using a digitizer, delete MacVision and the *EnhanceVision* program and substitute an application such as Silicon Beach's Paint Cutter, which lets you cut and paste whole *MacPaint* documents.

Art Grabber opens any *MacPaint* document. You can save graphics that you use often from *MacPaint* or *MacDraw* into the *Multi-Scrap* desk accessory, which works like the original Scrapbook but lets you keep scrapbooks on several disks.

Similar to *MacPaint*, the CheapPaint desk accessory lets you draw freehand graphics and includes a multitipped brush, a pencil, and an eraser. CheapPaint also lets you alter any picture in a Scrapbook. One caveat: Scrapbooks created by *Multi-Scrap* can have any name, but CheapPaint can open only the one called Scrapbook File.

MacDraw lets you write text anywhere on its drawing surface. The MockWrite desk accessory is included to ease text entry. MockWrite lets you write long passages of text or import text saved in Text Only format from word processing documents. You can then paste the text into *MacDraw*. (*MacDraw* has an annoying bug that shows up when you paste text into objects. Be sure to read the addendum to the *MacDraw* manual.)

Corporate Finance

Applications: *Microsoft Excel, MacTerminal, the Switcher.* **Desk Accessories:** *Battery Pak Calendar, Choose Printer (from your System Folder), Extras, MockWrite, Phone Pad, Scientific Calculator.* **Fonts:** *Chicago 12, Geneva 9, Geneva 12, Monaco 9, New York 12, New York 14.* **Requirements:** 512K, external disk drive, Finder version 4.1. **Free Space on Disk:** 82K.

With the Macintosh and some planning, you can generate monthly financial statements, balance sheets, and other company reports by typing only a few keystrokes. *Microsoft Excel* keeps tabs on finances and automates most of the entry and calculation procedures.

Because *Excel* is on two disks, I left the program disk alone. From the startup and data disk, I removed unnecessary fonts and desk accessories, as well as the *Excel* Help file, which takes up 71K. In their stead I installed *MacTerminal* (for capturing financial data from a mainframe or from a co-worker's personal computer), the *Switcher*, and several desk accessories. *MockWrite* is included to help you edit text downloaded in *MacTerminal*, and *Scientific Calculator* allows you to make quick computations without using *Excel*. *Phone Pad* features an automatic dialer as well as space for notes.

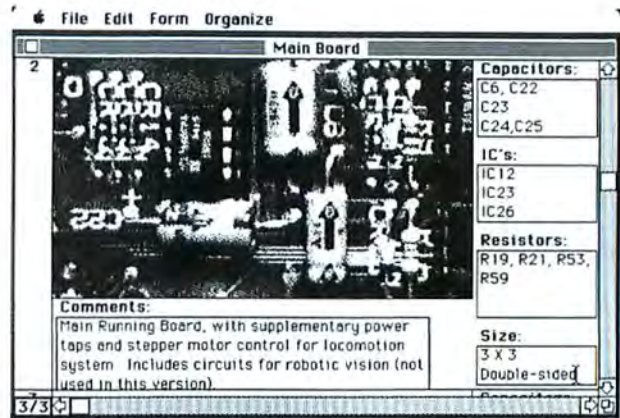
To use the disk, start the *Switcher* and load both *MacTerminal* and *Excel*. Configure *Excel* to 256K, not 304K. Save the set of programs for future use. Rotate to *Excel* and construct a template worksheet that includes the proper format, headings, cell alignments, and formulas for your report. Leave the cells that will hold the numerical data blank.

Now switch to *MacTerminal*. Make the call and collect the data. Hang up the phone, select the figures you want, and then choose the Copy Table command from the Edit menu. Finally, switch back to *Excel*, select the first cell for the data, and paste. Because you copy the data in tabular format with *MacTerminal*, each number goes into a separate cell.

Should the format of the data change each time you make a report, you may need to write an *Excel* macro to do some of the work for you (see "Take the Macro Shortcut," *Macworld*, December 1985). You could, for example, construct a macro that would draw a line or bar chart to help you analyze the information. You could also construct macros to merge the worksheet data into a database so you can find individual entries and to establish a print range and new font before generating the final report.

Inventory with Graphics

Applications: *Microsoft File, ThunderScan.* **Desk Accessories:** *Launcher, QuickPaint, Scrapbook.* **Fonts:** *Chicago 12, Geneva 9, Geneva 12, Monaco 9, New York 9, New York 12.* **Requirements:** 512K, external disk drive, Finder version 4.1, *ThunderScan* digitizer. **Free Space on Disk:** 44K.



Inventory with Graphics

Microsoft File lets you adjust the size of the picture field. Because digitized graphics take up so much disk space, you can store only about 200 records on a 400K disk.

With a database application that accepts pictures, such as *Microsoft File*, you can construct graphics-based inventories—for example, of automotive spare parts. This disk combines *File* with the *ThunderScan* digitizing program. If you use another digitizer, substitute its program for the *ThunderScan* software.

The *Launcher* desk accessory, part of the *Battery Pak* assortment, makes it easy to switch quickly between *File* and the *ThunderScan* program. I didn't use the *Switcher* because it takes up too much RAM, which is in short supply when you're working with graphics in *File*.

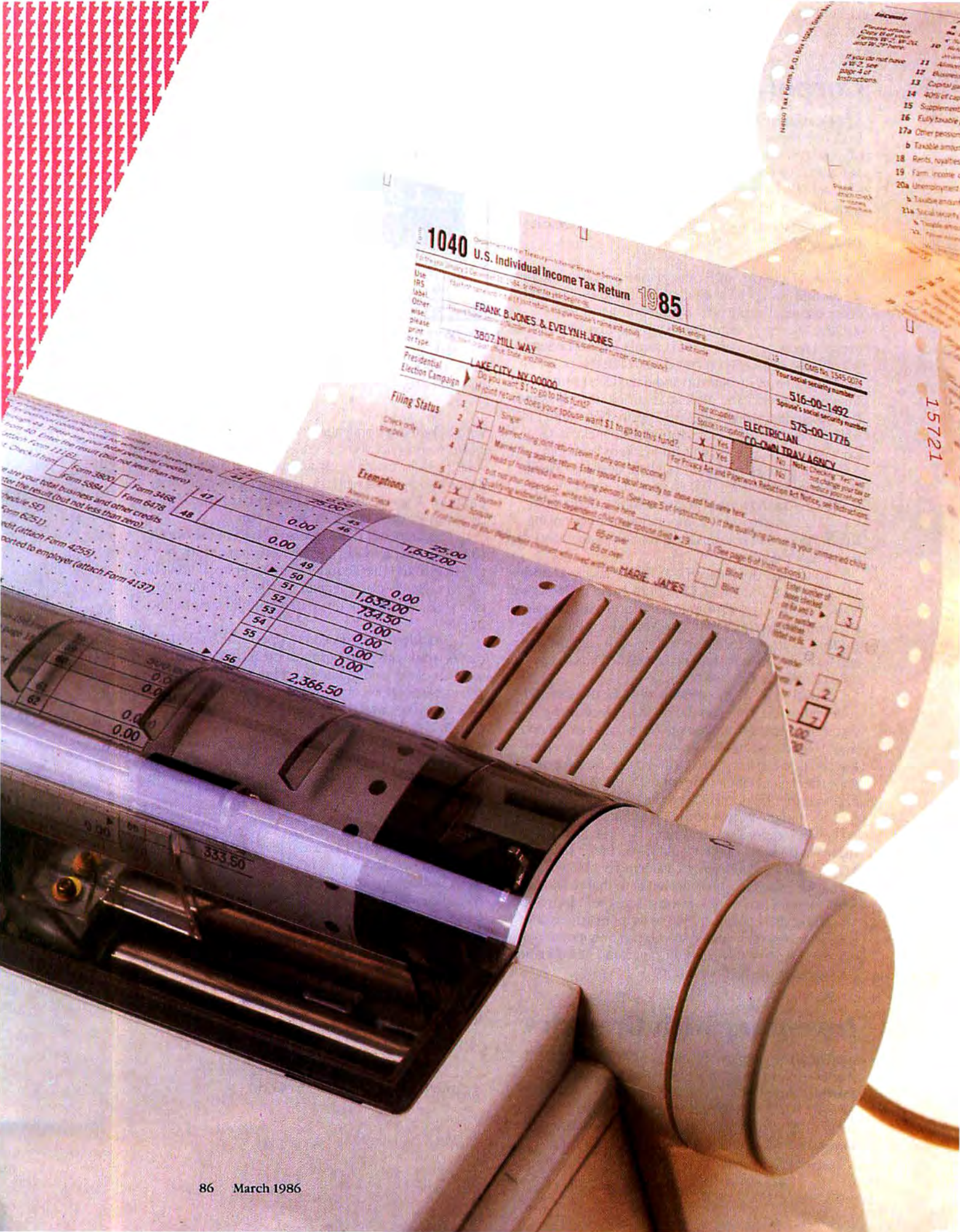
QuickPaint allows you to open *MacPaint* documents from within any application and to cut and paste any part of the document. In addition, *QuickPaint* lets you erase portions of the picture.

Paste the *MacPaint* pictures into *File* as you fill out the database form. Pull out *QuickPaint*, open the document that holds the digitized picture you want, select it, and then paste it into *File*. If you use the same picture for several entries, keep a copy of it handy in the *Scrapbook*.

Roll Your Own

These are only five examples of customized, task-specific disks. Thousands of other configurations are possible. Perhaps you've come up with a work disk of your own to fit the core tasks you perform on the Macintosh. Why not share it with others? If you have a custom disk that helps you work more efficiently, submit a description of it and an explanation of how you use it to *Macworld*, 555 De Haro St., San Francisco, CA 94107. From time to time the magazine will publish the most interesting and useful designs in the *Open Window* column. □

***** Gordon McComb is a Contributing Editor of *Macworld*.



1040 U.S. Individual Income Tax Return **1985**

Use
IRS
label.
Other
wise,
please
print
or type.

FRANK B. JONES & EVELYN H. JONES

3807 MILL WAY

LAKE CITY, NY 00000

Presidential
Election Campaign

Filing Status

Check only
one box.

1 ☐ Single

2 ☒ Married filing joint return (even if only one had income)

3 ☐ Married filing separate return. Enter spouse's social security number on line 48 and 49.

4 ☐ Head of household (with qualifying person). (See page 5 of instructions.) If the qualifying person is your unmarried child, enter child's name on line 48 and 49.

5 ☐ Qualifying widow(er) with dependent child (see instructions)

6 ☐ You are a dependent

7 ☐ Spouse

8 ☐ Other

9 ☐ Other

10 ☐ Other

11 ☐ Other

12 ☐ Other

13 ☐ Other

14 ☐ Other

15 ☐ Other

16 ☐ Other

17 ☐ Other

18 ☐ Other

19 ☐ Other

20 ☐ Other

21 ☐ Other

22 ☐ Other

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Taking Care of Taxes

Steve Mann

It was Ben Franklin who first remarked that only two things are inevitable—death and taxes. In reality, some people manage to avoid paying taxes altogether. For the rest of us, it helps to have some tools to simplify the job of tax preparation. There are several useful tax-preparation products available for the Macintosh. These products don't help you organize your finances or plan for future taxes, but they do make it easier to complete your tax return so that you can send your check or check request to Uncle Sam on time.

In this review I examine five tax-preparation products: two stand-alone programs—SoftView's *MacInTax* and Gamma Productions' *TaxWizard*—and three *Multiplan* templates—FutureVest's *TaxPlan*, EZWare's *Tax-Prep*, and Mac Products' *Tax Master*. At press time the 1985 versions were unavailable because the government had not yet released final 1985 tax requirements. I used each product in its 1984 version with a straightforward test case. The new versions are essentially the same, though updated to 1985 IRS requirements.

All the products tested help you prepare your taxes by performing the appropriate calculations on information you enter. The products prevent arithmetic errors and let you prepare your taxes without re-

ferring to tax tables. One of the programs goes so far as to print out a full set of IRS-approved documents that you can simply mail to a regional tax center. Other products require you to copy every number from printed reports onto IRS forms. These five products are appropriate for individuals, but they are not fast enough and their data-entry methods are not easy enough for professional tax preparers.

Whichever tax product you use, you must first collect all your receipts and tax-related financial records and sort them into tax categories. You must then total each category and enter the totals into one of the programs. Finally, depending on the program you use, you either print a set of tax forms or transfer the program's results to IRS-approved tax forms. You should always double-check your completed tax forms before sending them in, since you can be reasonably certain that the IRS will take a look at them. Also, consult a tax professional or CPA if you are unsure about any portion of your tax filing.

There are two kinds of Macintosh tax-preparation products: stand-alone programs and spreadsheet templates. The stand-alone programs are easier to use, but

the templates can be modified to reflect special circumstances that enter your tax picture. I'll first examine the two self-contained programs—*MacInTax* and *TaxWizard*.

MacInTax

MacInTax is a new product designed exclusively for the Macintosh. The 1984 edition had only one module, *MacInTax* Federal. It handles a variety of forms and schedules suitable for most individuals (see "Forms and Schedules").

Stand-alone programs are easier to use, but the templates can be modified to reflect your tax picture.

MacInTax takes advantage of the Mac's graphics strength to display forms on screen that are just like the ones from the IRS (see Figure 1). You can have several windows open at once, and a change in one form is automatically reflected in other forms. For instance, if you change your itemized deduction amounts, *MacInTax* automatically recalculates your tax liability and updates the 1040 form to reflect the new information.

MacInTax's use of familiar forms makes the program easy to use. Furthermore, *MacInTax*'s graphic design lets you print all completed forms in an IRS-approved format—the only product I tested that lets you avoid the nuisance of transcribing 1040 results to another form. You can also print onto an IRS form if you like, but it's not necessary.

To move between items in *MacInTax*, you use either the Tab and Return keys or the mouse. The forms scroll automatically as you enter information. *MacInTax* lets you use most of the Macintosh editing capabilities, including Cut, Paste, and Clear.

MacInTax has a thorough on-line help feature. For every line on any form, you can call up a description that almost duplicates IRS instructions word for word, so you don't need to keep the IRS booklets handy. You can call for help text by double-clicking any line of a form or by choosing Help from the Edit menu. The program usually takes a few seconds to display Help text; otherwise, *MacInTax* is reasonably fast.

One nice extra of the program is that it lets you itemize the figures behind any numeric value on a tax form. For instance, if you worked for several employers during the year, you can build a gross wages itemization list that includes a separate line for each W-2 form. *MacInTax* automatically adds the items and inserts the total into your 1040 form.

Forms and Schedules

Form/ Schedule	MacInTax	Tax- Wizard	Tax-Prep	TaxPlan	Tax Master
1040EZ	Yes	Yes			
1040A	Yes	Yes			
Schedule 1	Yes	Yes			
1040	Yes	Yes	Yes	Yes	Yes
Schedule A	Yes	Yes	Yes	Yes	Yes
Schedule B	Yes	Yes	Yes	Yes	Yes
Schedule C		Yes	Yes	Yes	Yes
Schedule D	Yes	Yes	Yes	Yes	Yes
Schedule E	Yes	Yes	Yes	Yes	Yes
Schedule F			Yes	Yes	
Schedule G	Yes	Yes	Yes	Yes	
Schedule R			Yes	Yes	
Schedule SE		Yes	Yes	Yes	Yes
Schedule W	Yes	Yes	Yes	Yes	Yes
2106		Yes	Yes	Yes	Yes
2119	Yes	Yes	Yes	Yes	
2210			Yes		
2441	Yes	Yes	Yes	Yes	
3468		Yes	Yes		
3903		Yes	Yes	Yes	
4137		Yes			
4562		Yes	Yes		
4564				Yes	
4684			Yes		
4797			Yes		
5695		Yes	Yes		
6251		Yes	Yes	Yes	
New York State					
IT-201				Yes	
IT-250				Yes	

Forms and Schedules

Each product includes a different combination of forms and schedules. Check the table to make sure products you're considering include the forms necessary for your tax preparation requirements. Also check the 1985 versions, which may offer additional forms and features.

The program's only major shortcoming is the omission of Schedule C—Profit (or Loss) from Business or Profession. This schedule, a must for anyone who is independently employed, is promised for the 1985 version. Another minor problem is that while *MacInTax* checks for missing or incorrect information, it doesn't immediately tell you what the exact problem is if it finds an error. You have to close and reopen the tax return in order to get explicit error messages.

Overall, *MacInTax* is an excellent program. When measuring the program against your requirements, investigate new features SoftView has added to the 1985 version. Planned improvements include a business supplement that contains additional forms, worksheets, and schedules, and a companion package that computes California state taxes—a nice bonus. Pre-release plans for *MacInTax* 1985 also called for batch printing and for supporting IRS-approved LaserWriter output for all forms and schedules.

TaxWizard

TaxWizard is another stand-alone tax-preparation program—the fastest of the five products I tested. The program displays each IRS form in its own window, but it displays only one open window at a time. Unlike *MacInTax*, this program mimics the IRS format in neither data entry layout nor final output. Each window shows a collection of IRS document line numbers, brief descriptions, and fields for entering data where appropriate (see Figure 2).

The program is completely devoid of graphics, extra fonts, or other visual clues that might help you find desired parts of a form quickly. You actually have to read each line number and description to find the correct data-entry fields. Having a copy of the IRS forms nearby helps. The printed results, which are almost as simple, must be manually transferred to the appropriate IRS forms. Gamma planned to include IRS-approved printouts in the 1985 version.

TaxWizard's plainness, however, contributes to the program's speed, because there aren't any detailed graphics to draw when updating the window display. Data entry, scrolling, and report printing are quick and simple.

As you enter new information, most of the appropriate forms and schedules are automatically updated. You may have to recalculate the completed tax return, depending on the order in which you enter data, but that is a simple operation.

TaxWizard has a few user-interface anomalies. The Edit menu does not conform to the Macintosh standard. Tab and Return move you down through a form, but Shift-Tab and Shift-Return do not move you up; the Backspace key does. To clear a field, you have to type over or backspace over each character. Finally, the program does not automatically scroll when you attempt to enter data past the bottom of the screen; the cursor simply disappears from sight. Gamma Productions representatives say automatic scrolling is included in the 1985 edition.

I found one very strange, but minor, problem in *TaxWizard*. There is a window called Personal Data in which you enter your name, address, and other information. This information is automatically included on all forms and schedules. Whenever I entered a character into this window, or clicked the mouse in the window, a character printed out on the Imagewriter.

SEMacInTax/Form 1040

1040 Department of the Treasury—Internal Revenue Service
U.S. Individual Income Tax Return 1984

For the year January 1–December 31, 1984, or other tax year beginning ..., 1984, ending ..., 19

Use IRS label. Otherwise, please print or type.

Your first name and initial (if joint return, also give spouse's name and initial) Last name Your social security number

Present home address (Number and street, including apartment number, or rural route) Spouse's social security no.

City, town or post office, State, and ZIP code Your occupation Consultant Spouse's occup.

Presidential Election Campaign Do you want \$1 to go to this fund? Yes No If joint return, does your spouse want \$1 to go to this fund? Yes No *Note: Changing this will not change your tax; realize your vote.*

Filing Status

1 ☒ Single *For Privacy Act and Paperwork Reduction Act Notice, see instruction*

2 ☐ Married filing joint return (even if only one had income)

3 ☐ Married filing separate return. Enter spouse's social security no. above and full name here.

Check only 4 ☐ Head of household (with qualifying person). (See page 5 of Instructions.)

Figure 1

MacInTax is the only product that can print an IRS-approved 1040 form. By taking full advantage of the Macintosh's graphics capabilities, the program displays and prints forms that bear a remarkable resemblance to official IRS forms.

FORM 1040 U.S. Individual Income Tax Return 1984

6a	Exemptions - Yourself	0
6b	Exemptions - Spouse	0
6c	Exemptions - Dependent Children	0
6d	Exemptions - Other	0
6e	Total number of exemptions claimed	0
7	Wages, salaries, tips, etc.	0
8	Interest income (attach Sch B if over \$400)	0
9a	Dividends (attach Sch B if over \$400)	0
9b	Exclusion	0
9c	Subtract line 9b from line 9a	0
10	Refunds of State and local income taxes	0
11	Alimony received	0
12	Business income or (loss) (attach Sch C)	0
13	Capital gain or (loss) (attach Sch D)	0
14	40% capital gain distributions	0
15	Supplemental gains or (losses) (attach Form 4797)	0

Figure 2

Although TaxWizard is the fastest product tested, it creates forms that have a plain appearance both on screen and when printed. This makes the program more difficult to understand, since it doesn't take advantage of your familiarity with official IRS forms. The program's speed makes it appropriate for preparing multiple returns.

You should consider *TaxWizard* if calculation and printing speed are important to you, especially if you intend to prepare multiple federal returns. *TaxWizard* includes several specialized forms and schedules that you may require. Finally, the program has good on-line help, which somewhat ameliorates the absence of visual clues that would make the program easier to use.

The Multiplan Kids

Macintosh *Multiplan* tax templates do essentially the same things, with varying degrees of success, as the stand-alone tax programs. The three templates I review—*Tax-Prep*, *TaxPlan*, and *Tax Master*—have several features in common, which is natural because they are all based on *Multiplan*. They are distinguished from stand-alone programs by their relatively easy methods for entering data and by the degree to

can deal with this problem by using a shortcut *Multiplan* provides that lets you move directly to the next unprotected cell.

Finally, *Multiplan* can't keep all the forms and schedules for a complete tax return in memory at once. Each product requires that you take steps to guarantee that all the forms and schedules are updated and consistent with each other. You have to fill out forms in a specific order and perform at least one calculation just to make sure all forms are up-to-date.

Tax-Prep

Tax-Prep provides more forms than the other *Multiplan* templates and uses the most automatic linking scheme. *Tax-Prep* links all the forms together so that you usually have to enter information only once. You load each form one at a time, fill in the appropriate fields, save the form, and then load the next one (see Figure 3). You have to be careful about the order of recalculation in order to guarantee that all your data is up-to-date, but the documentation takes pains to describe the correct procedure.

For all but form 1040, *Tax-Prep* prints IRS-approved forms. There are two ways to produce a finished 1040. You can print the results on a preprinted 1040 from the IRS, but this method is a little tricky because it is difficult to align the paper properly. If you have access to a photocopying machine, it's probably easier to print the results on a blank sheet of paper, superimpose a clear plastic 1040 overlay, and photocopy the combination. *Tax-Prep* comes with a 1040 overlay and a set of ten fanfold 1040 forms.

Tax-Prep includes a form called XCHECK that is designed to help you guarantee the production of a complete tax return. Unfortunately, the documentation explains only sketchily how the XCHECK works. Other than this omission, *Tax-Prep*'s documentation is reasonably good.

EZWare had ambitious plans for the 1985 version of *Tax-Prep*. The company planned to offer the template for both *Multiplan* and *Excel*. In addition to the basic *Tax-Prep* module, also look for state income tax templates for California, New Jersey, New York, and Pennsylvania, as well as a version for corporate income taxes and another tax-planning product that lets you project several years into the future based on past tax returns. The 1985 edition is also slated to include form 6252, for computing installment-sale income.

TaxPlan

TaxPlan has two features not found in any of the other products. First, it has a form that compares your itemized deductions to the published average deductions for your income bracket. The IRS uses a computer program that selects returns for auditing on the basis of their deviation from the "normal" deductions. This form, although providing limited analysis, can help you get a feel for your chances of being audited.

The second feature provides subschedules for the parts of certain schedules that require you to write in a description and an amount, such as the miscellaneous

Each template requires that you take steps to keep all forms and schedules consistent with one another.

which the different forms within the template can link with one another. In addition, each product has its own method for handling printing restrictions.

There are several inherent limitations to all commercial *Multiplan* templates. The most noticeable is processing speed. *Multiplan* is no racehorse, and all three tax templates are noticeably slower than the two stand-alone programs I reviewed.

Multiplan provides only limited control over screen and print formatting. A form's appearance on screen is restricted to *Multiplan*'s uninviting column-and-row grid, making data entry problematic. Typically, you cannot see a form's complete layout, forcing you to tab back and forth through the form to view its contents. When you're ready to enter data into an active cell, often you can't see the description for that cell. Furthermore, the display formats don't look much like their IRS equivalents, making it difficult to recognize items within the form.

For tax purposes, *Multiplan*'s error handling is limited compared with the self-contained tax programs. Each of the three companies has protected its templates so that you can enter data only into certain cells. Unfortunately, you can't always tell which cells are the right ones. You may find yourself tabbing back and forth in search of the next unprotected cell. You

deductions section on the federal Schedule A. The other products provide only a description field; you have to do the arithmetic yourself. *TaxPlan* includes a cell for the amount and then automatically totals the various items—a nice touch.

Using *TaxPlan* is like using *Tax-Prep*, at least for the mechanics of data entry, form sequencing, and printout preparation. As in *Tax-Prep*, *TaxPlan* forms are linked, minimizing duplicate data entry. There are, however, differences between the two products.

TaxPlan's forms are too wide for *Multiplan*'s display, so there are always a few characters trailing off the right side of the screen (see Figure 4). This is partly because the *TaxPlan* forms are often more detailed than the *Tax-Prep* equivalents. For all their additional detail, the *TaxPlan* forms are less readable; Descriptions are often truncated, limiting their usefulness. The extra-wide display exacerbates the awkwardness of entering tax data in *Multiplan* templates.

According to the *TaxPlan* manual, "All other forms [other than the Federal Form 1040 and the NYS IT-201] may be submitted to the IRS and other state agencies as-is." What's missing from this sentence is the magic phrase "IRS-approved." I called FutureVest about the forms, and a company representative said the printouts had not been submitted for IRS approval. The manufacturer claims that customers have successfully submitted printed forms to the IRS. The IRS is reasonably lenient about all but the 1040 form, but you may not want to take a chance. The company could ensure their customers' success by submitting the forms to the IRS for approval.

In my opinion, the printouts are not suitable for anything but personal record keeping. They contain extraneous information in data fields and extra columns on the right-hand side of the printed report. Text fields are often truncated. If you use this program, I recommend that you copy the printed results on official IRS forms.

FutureVest planned to offer *TaxPlan86* revised for 1985 returns in versions for *Multiplan*, *Excel*, *Jazz*, and *Crunch*, as well as state income tax templates for California and New York. You may want to consider *TaxPlan* if you plan to make frequent use of sub-schedules or if you want to analyze your chances of being selected for an audit.

Tax Master

Tax Master is the weakest of the five products covered in this review. Unlike the other *Multiplan*-based products, *Tax Master*'s forms don't link together. You have to enter some data more than once to make sure that all information is properly calculated. Fortunately, only a few items have to be duplicated.

Tax Master's forms are readable and the printouts are suitable for manually transferring information to the appropriate IRS forms. The product's most annoy-

Figure 3

Tax-Prep is a *Multiplan* template and has a complete linking feature that helps you keep your forms automatically up-to-date as you enter data. All forms except the 1040 are IRS-approved.

Figure 4

TaxPlan is another *Multiplan* template that provides more text directions in the forms than it can manage. The extra directions make the forms less legible and unnecessarily wide, obscuring information on the side of the screen.

ing characteristic is the forms' inclusion of sample data. As you step through the overly wide displays, you have to remove the sample data. This is especially aggravating considering the slow scrolling.

Of all the products reviewed, *Tax Master* is the only one that calculated an incorrect value in my tests. It computes a negative medical deduction if you have no medical expenses. Other than this small problem, *Tax Master* seems to work properly. However, the program contains a serious oversight: it doesn't compute the amount to be refunded to you at the bottom of the 1040 form—the most significant number in a tax return.

The programs are comparable in price to the templates, if not less expensive.

The *Tax Master* documentation that I reviewed was stored on disk only. It was a sparse five pages that explained the product's bare essentials and nothing more. For the price, I expect something more comprehensive. Considering *Tax Master*'s lack of value, I can't recommend it.

A Mac Products representative said an *Excel* template was planned for the new version, and state supplements for California, Illinois, and New York would be available.

Making a Choice

The template approach to tax-preparation software has a few limitations, most noticeably in speed and lack of formatting flexibility. On the other hand, *Multiplan* templates can be updated and changed to suit your individual needs. Of the three template sets, you might want to consider *TaxPlan* for its sub-schedule and audit-analysis features. *Tax-Prep*'s automatic linking and its wide variety of IRS-approved forms make it the best all-around *Multiplan* tax template.

Unless you require specific forms that only the templates provide or you want to customize the templates, I recommend the stand-alone tax preparation programs. Most people won't require all the forms the templates provide, and the tax programs are faster and easier to use. The programs are also comparable in price, if not less expensive, than the templates.

If speedy performance is a crucial concern or a C schedule is essential, *TaxWizard* may be the best choice for you. However, *MacInTax* takes the greatest

advantage of the Macintosh's capabilities and is much easier to use than the other products—a significant factor for a product you may use only once. Unless you're calculating multiple returns, *MacInTax*'s speed will probably be sufficient, and the short learning curve will more than make up the computational time you'd save with a faster program. For general tax preparation, I give *MacInTax* my highest recommendation. □

▲▲▲▲▲▲▲▲▲▲ Steve Mann is a microcomputer specialist and systems auditor working for the San Francisco office of Peat, Marwick, Mitchell & Co.

▲▲▲▲▲▲▲▲▲▲ All prices and options are for current 1985 editions of the products.

MacInTax
SoftView Co.
315 Arneill Rd. #215
Camarillo, CA 93010
800/622-6829, 800/622-8439 in
California, 805/388-2626
List price: \$75, Business Supplement \$30,
California Supplement \$30

Tax Master '85
Mac Products
20231 San Gabriel Valley Dr.
Walnut, CA 91789
714/595-4838
List price: \$99

TaxPlan86
FutureVest
P.O. Box 20223
New York, NY 10025
212/222-1607
List price: \$59

Tax-Prep '86
EZWare Corp.
29 Bala Ave.
Bala Cynwyd, PA 19004
800/543-1040, 215/667-4064 in
Pennsylvania
List price: \$99.95, upgrade from last
year's edition \$60

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Gamma Productions, Inc.
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List price: \$64.95

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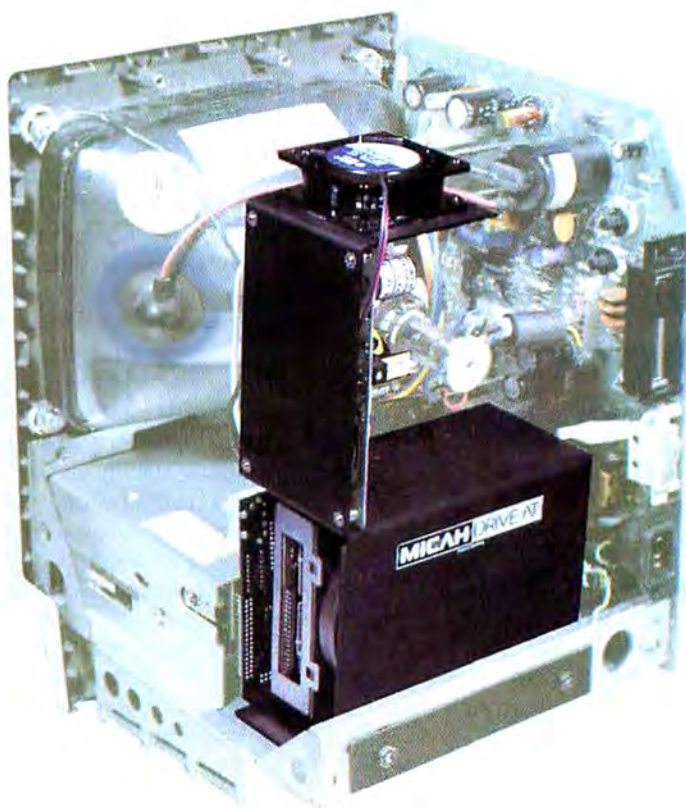
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Filevision Gets Down to Business

Allen Munro

Business Filevision takes up where Filevision leaves off, providing you with substantial improvements to the original program

The new 512K version of Filevision—Business Filevision—integrates the drawing and filing features of the original program with more advanced capabilities, including computed fields, sorting on three levels, statistical functions, and previewing reports on screen. In addition, Business Filevision has a new "pop-up" feature that lets you add another layer of graphic interest to your files.

The original *Filevision* was one of the first Macintosh programs to use the special characteristics of the Mac to define a new kind of database program. It combines the attributes of a drawing program like *MacDraw* with those of a database filing system. You can create drawings and link the graphic objects to data records, forming a visually oriented database. *Filevision* is a much more radical departure from conventional database programs than *Microsoft File*, which lets you enter graphic fields in data records (see "Filevision: A Database in Pictures," *Macworld*, January 1985).

Many Macintosh pioneers were entranced by *Filevision*'s unique capabilities. However, the original *Filevision* lacks the data capacity and report-generation capabilities that can be found in most other Macintosh database programs. Consequently, the program has never gained a foothold in the business world. Instead, the application is used for personal filing projects and educational presentations.

Business Filevision clearly shows its lineage. At first glance the only visible difference from the original *Filevision* is that the Tinker menu has been renamed Access. On closer inspection, however, you'll see that the new version provides the database management capabilities that bring the program to an equal footing with other database systems, such as *DB Master* and *Microsoft File*. In addition, *Business Filevision* offers impressive enhancements to *Filevision*'s graphic display features as well as to its capabilities for linking graphics and data.

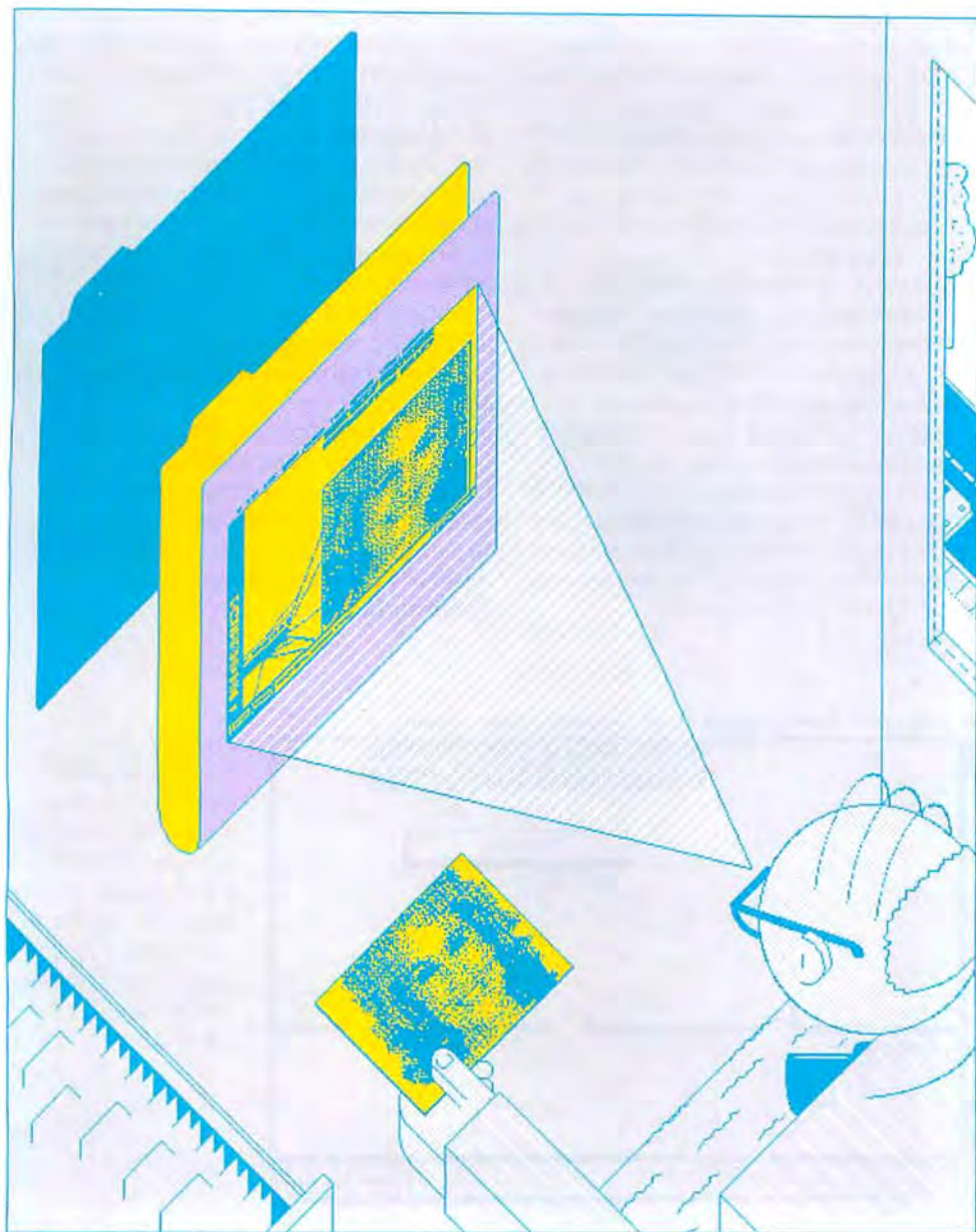
Business Filevision, which requires a 512K Mac, comes with two disks. One disk contains the program, which takes up about 300K, and a customized System file. Because there isn't space on the disk for

the Finder, the program disk automatically starts up the application. The second disk has a complete System Folder, sample files for the tutorial exercises, and two utilities. One utility converts original *Filevision* drawing/data documents to *Business Filevision* documents. The other utility is a hard disk installation program, which makes it possible to put *Business Filevision* on a hard disk and use it without having to insert the master when you start up from the copy.

As with the original *Filevision*, *Business Filevision*'s strength is the blending of drawing and database functions in a way that gives you an impression of direct manipulation. One example of direct manipulation in *Business Filevision* is the new pop-up feature. This feature makes it possible to associate specific graphic subdisplays with particular objects in a drawing, hiding them until their associated objects are selected. Figure 1 shows a company organization chart that was created with the program. When the name of the vice president for research and development is selected, her portrait appears on the screen, as in Figure 2. As soon as the name is deselected—by clicking elsewhere in the drawing—the pop-up graphic disappears.

The Tool Palette

Like the original *Filevision*, the new program provides *MacDraw*-like tools for the construction of the graphic portion of documents. Selected graphic objects are highlighted with handles, like those used in *MacDraw*, or with inverse video or a black border. Graphic objects can be



text, straight lines, polygons, rectangles, rounded-corner rectangles, ovals, arcs, freehand lines, or symbols—special 16- by 16-pixel icons. You can change the symbols with the program's built-in symbol editor.

Each *Business Filevision* document can have its own set of 20 symbols, which are chosen from a special menu called the symbol palette. Lines can be black, white, or gray, and 1 to 4 dots wide. Filled graphic objects such as rectangles, circles, and polygons can contain any of 18 patterns, which you can edit. You can reshape graphic objects created with the straight

line, polygon, and freehand tools by adding new vertices to existing objects. You can easily convert a triangle into a pentagon, for example.

You handle text in the graphic display with the usual text manipulation methods, and you can display the text in underline, italic, bold, or shadow styles. Five font sizes and up to eight fonts can be selected. As with other Macintosh programs, you can use a utility program to add or remove fonts from the System file.

The graphic abilities of *Business Filevision* surpass those of its predecessor. A drawing can extend over an 8- by 10-inch area—more than three times the area of the

original. An unusual scrolling method dispenses with conventional scroll bars and thereby saves screen space for the drawing. A dark rectangle below the drawing tools palette represents the 8- by 10-inch drawing area, and a white rectangle within it the 6- by 4-inch drawing window. To view a different part of a drawing, you drag the little white window to a new location in the dark rectangle. To help you find the right spot for the window, all currently selected objects show up in the rectangle as tiny inverse squares. In addition, you can view a reduced image of the 8- by 10-inch drawing area. All of the drawing and editing tools except the text tool work within the reduced display.

Data Management

As with the original *Filevision*, you must define the abstract types, or categories, that objects belong to in a *Business Filevision* file. You can include up to 16 types per file. Whenever you define a new type, you must define its record structure by building an information-entry form for objects of the type. Figure 3 shows the information form for the Hotel type defined for a travel agent's drawing file, shown in Figure 4.

You can construct queries based on field values. For example, you can ask that the travel agent's map highlight all the lakes with altitudes of more than 800 meters. Or you can ask for all the hotels in a particular area with overnight peak-season room rates of less than \$100 per night (see Figure 5). All the objects not selected by the query are dimmed, highlighting the selected objects. *Business Filevision* gives you more flexibility in queries than did

Filevision, allowing comparisons between fields, rank comparisons, and nested query constraints.

One of *Filevision*'s major drawbacks is that it does not calculate numeric data. In *Business Filevision*, fields can be computed, displaying values based on the values of other fields. In reports, the program can calculate statistics, including total, average, and standard deviation. Calculated field values can range from plus to minus 9,999,999,999.9999—enough to compute the national debt, at least for a few more years.

You can set up a field so that it displays default text during data entry, using the value of the field from the previous record or a constant default for the field. For example, to avoid repeatedly typing the same part number for a series of inventory records, you click the Copy from Previous Record option in the Field Setup dialog box for the selected field. Subsequent records contain the assigned part number.

You can also cut, copy, and paste data-entry forms for use in a variety of *Business Filevision* applications.

Like *Filevision*, *Business Filevision* lets you link files. At the bottom of Figure 4 are three buttons—Prev, Next, and Info—that you can double-click to leave the current map and move to a different map. This link feature makes it possible to build large, coherent information systems with many drawings and vast amounts of data.

Data storage in *Filevision* is limited by the constraints of the 128K Mac; you are limited to 132K and 999 objects per file. In *Business Filevision*, a single file can fill up to 4 megabytes with as many as 32,000 objects. Naturally, it would be difficult to fit so many graphic objects in a single drawing, but *Business Filevision* permits non-graphic objects—types that have only data records but no graphic objects associated with them. A single record may have up to 4000 characters, and a field can be as large as 2000 characters. You can put up to 99 fields in a record, and you can fill a 30-by-30-inch display area with fields for a given record. Vertical and horizontal scroll bars are used to move around the record form.

Report Generation

Business Filevision lets you print customized reports, labels, forms, and mail-merged form letters. Up to 20 customized report formats can be stored for each file.

You can select up to three fields for sorting in a report form, customize headers and footers, format fields, position or remove individual data fields, print graphic fields, adjust headers and footers, and print the date, time, and page numbers. You can save the report as a text file to download later to another filing or word processing program or even to another computer. In addition, *Business Filevision* lets you preview reports on screen before printing—a feature lacking in *Filevision*.

You can print reports on both the Imagewriter and the LaserWriter using any of the fonts available to the program. Like *MacDraw*, *Business Filevision*'s graphics can take advantage of the LaserWriter's 300-dots-per-inch resolution, clearly rendering lines, rectangles, ovals, LaserWriter fonts, and all other objects created with the graphic tools. Only bit-mapped objects imported from *MacPaint* or via digitizing applications are limited to the Macintosh's original 72 dots per inch on the LaserWriter.

The Limiting Factors

Business Filevision is not without some of the limitations that plague the original *Filevision*. Although graphics highlight in response to queries, they don't automatically change in response to changes in their data attributes. For example, changing the data record in a catalog of a rare book collection to show that a particular book was moved to a new location does not cause the image of the book to move to the new location in the graphic representation of the library. Another drawback is that you can only search for data in one type at a time.

Some of the handy drawing features of *MacDraw* are absent, such as Rotate and Flip. Multipage drawings like *MacDraw*'s would be useful. It would also help if the graphic objects created by *Business Filevision* were built on the same underlying structure as *MacDraw*. As it stands, a *Business Filevision* graphic pasted into *MacDraw* for further enhancement is treated

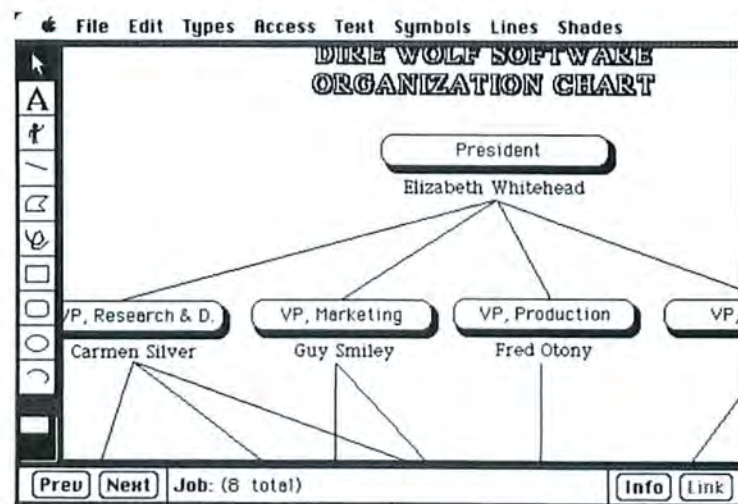


Figure 1

The organizational chart shown here has associated records of two types, job titles and employees. Clicking on an object in the chart can trigger a graphic display for the selected object, as in Figure 2.

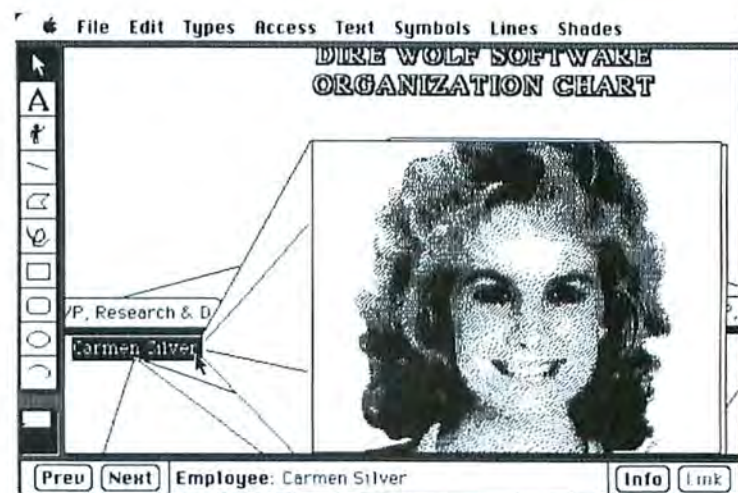


Figure 2

Selecting an employee brings up an associated graphic, in this case a digitized image of the employee. A pop-up graphic for a real estate database could contain a floor plan of each house.

as a MacPaint-like bit-mapped object rather than as a typical MacDraw object. When you copy the MacDraw-manipulated object back into *Business Filevision*, it can no longer be ungrouped, and it may look skewed on a LaserWriter printout.

One other limitation is that *Business Filevision* cannot exchange data with other programs. Ideally, you'd want to be able to copy *Business Filevision* data to a spreadsheet like *Multiplan* or *Lotus 1-2-3* for serious number crunching or bring in data from another data management program such as *Helix*, *OverVUE*, or *Omnis III*. However, Telos plans to provide a modestly priced import/export utility in the near future.

Overview

Although you can become productive relatively quickly with *Business Filevision*, the documentation is indispensable for making full use of the program. Certain techniques, such as creating a pop-up, can be performed only through keyboard combinations and have no corresponding menu option. Most menu selections have keyboard equivalents so that experienced users can work more quickly.

For most *Business Filevision* applications, you need a hard disk to gain the storage space needed to maintain large files containing significant amounts of graphic information. If any aspects of your business data can be made more comprehensible by portraying the relationships among your data records graphically, and you don't require an elaborate relational database system, *Business Filevision* offers the only way to build a single file that can combine the visual information of a drawing program with the alphanumeric relationships of a conventional database system. □

***** Allen Munro conducts research on intelligent computer-based simulation training at the University of Southern California. He is the author of *Mac Power: Using Macintosh Software*.

Business Filevision
 Telos Software Products
 3420 Ocean Park Blvd. #3050
 Santa Monica, CA 90405
 213/450-2424

List price: \$395, upgrade from *Filevision* \$200; requires 512K and external disk drive

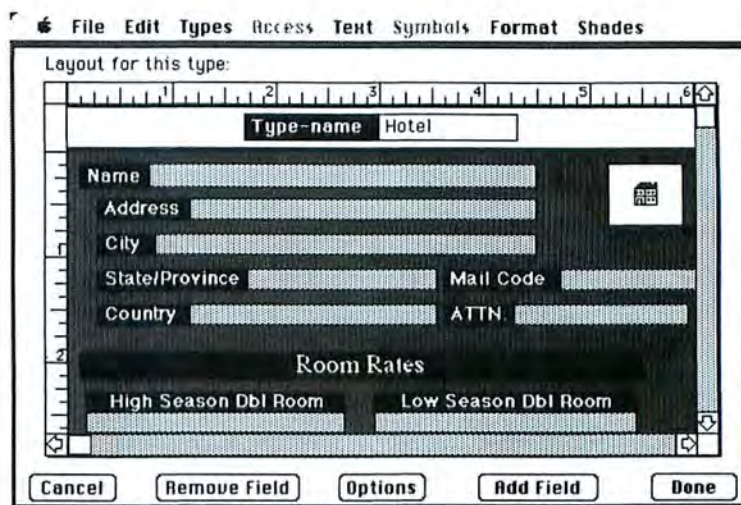


Figure 3
 Fields within a record can be of two types: data or annotation. Annotation fields provide headings for the form. In this figure the small picture of a hotel in the upper-right corner and the black box labeled Room Rates are annotation fields.

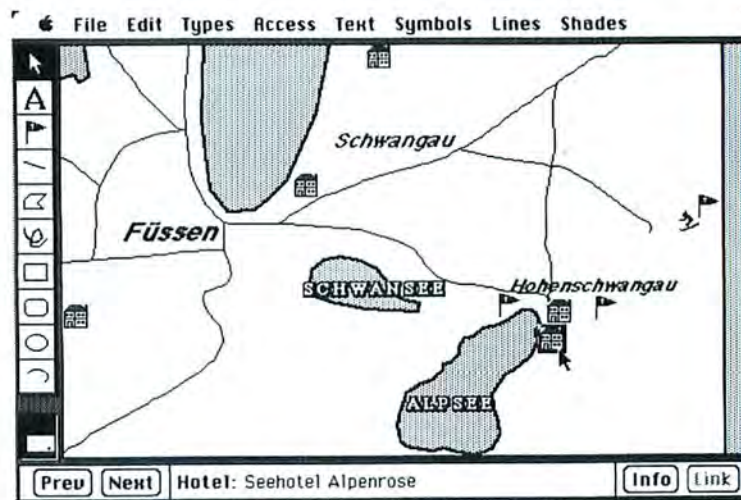


Figure 4
 A travel agency's drawing file for a portion of Bavaria displays objects that represent the file types: Lake, Town, Road, Tourist Attraction, and Hotel. Travel agents could use the database to select hotels and attractions meeting their clients' needs.

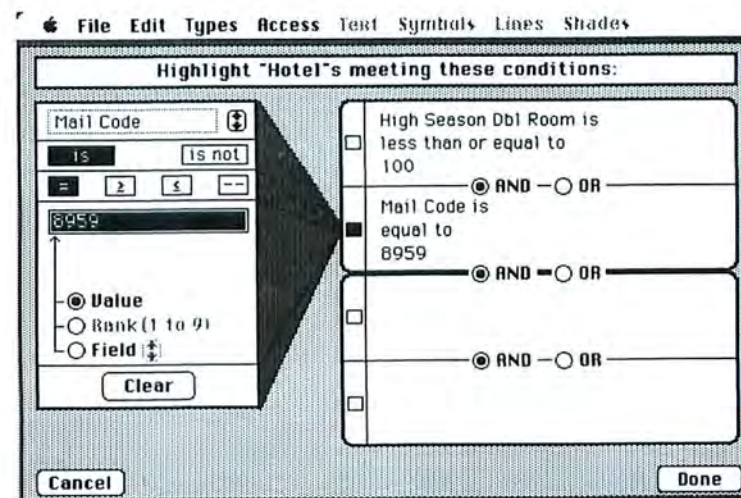
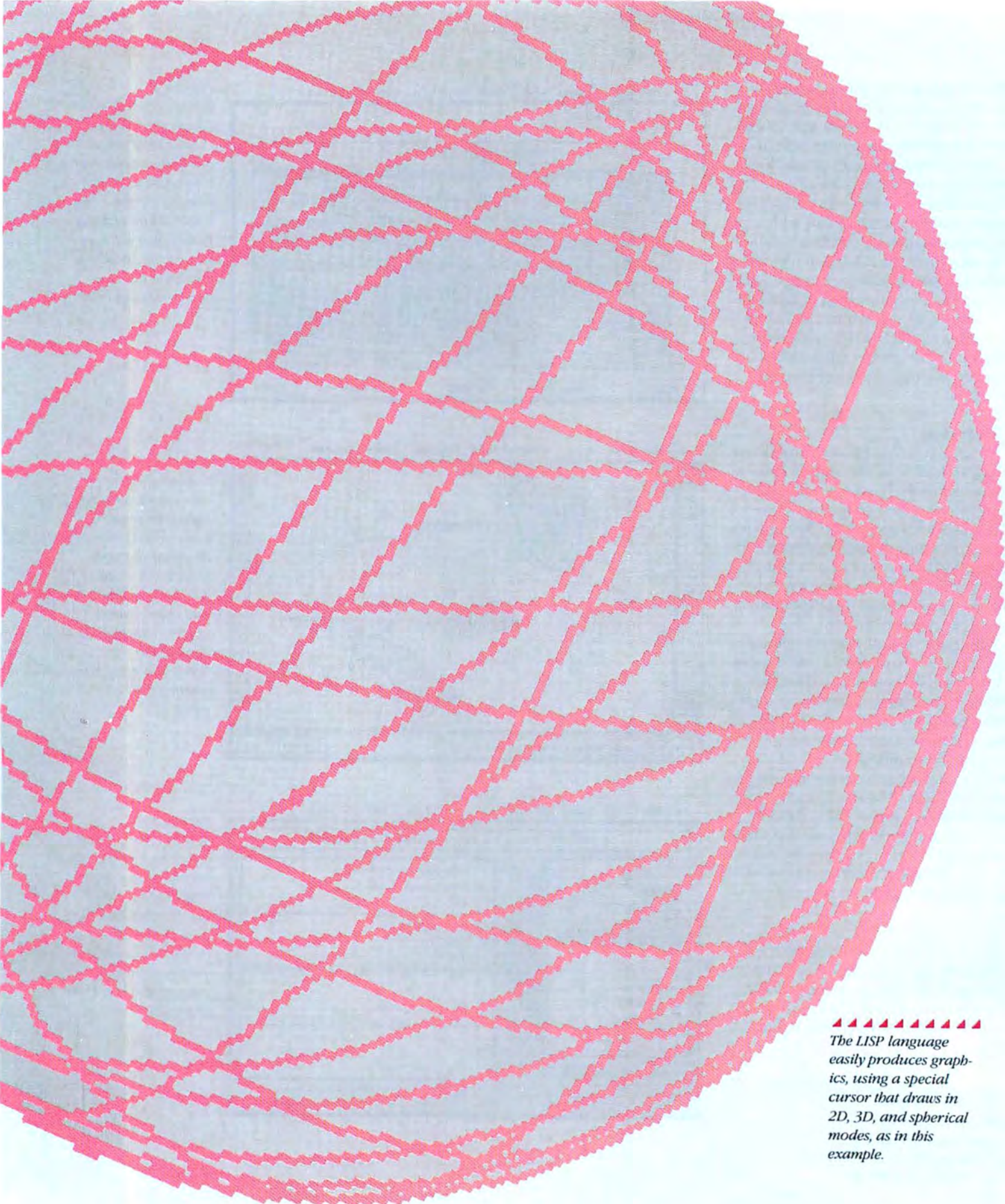


Figure 5
 You can search within a category, or type, for records meeting specific criteria. This query asks for all hotels in the 8959 mail-code vicinity with peak-season room rates of less than \$100 per night.



▲▲▲▲▲▲▲▲▲▲
*The LISP language
easily produces graph-
ics, using a special
cursor that draws in
2D, 3D, and spherical
modes, as in this
example.*

The Macintosh LISP Machine

Richard Sprague

ExperLisp brings artificial intelligence programming to the Macintosh

The programming techniques used to create a spreadsheet or a database are inappropriate for getting a computer to compose music or write novels—activities that require intelligence. Most people don't think in terms of numbers, arrays, and other programming concepts. Instead, human thought involves symbols, properties, and the relationships between symbols.

The field of artificial intelligence (AI), the branch of computer science that seeks to make computers act intelligently, began around 30 years ago. LISP, a programming language first developed by John McCarthy in the late fifties, let AI researchers develop programs that were based on the manipulation of symbols instead of numbers.

In the late seventies, researchers at MIT developed a computer, called the LISP Machine, designed to efficiently process LISP. Shortly thereafter, several commercially produced LISP machines, such as the Symbolics 3600, the Xerox Dorado, and the Texas Instruments Explorer, appeared on the market. The idea behind these machines was to produce a personal LISP machine that could be used by a single programmer, rather than having several programmers share one large mainframe. However, dedicated LISP machines often cost well over \$100,000. Since LISP machines and the Macintosh already share many similar concepts, such as the use of mice and windows, the development of a Macintosh LISP was inevitable. ExperLisp, a version of LISP from Expertelligence, finally makes it possible to develop artificial intelligence programs on the Macintosh.

ExperLisp's Programming Environment

Because LISP programs often involve abstract manipulation of symbols, programming in LISP is much less formal than programming in a language like Pascal, which gives you a clearly defined method for solving a problem. To write a program for which there is no clear-cut solution, you might start by creating a few key routines and then build upon those routines, there-

by gaining a better feel for the problem as you go. This trial-and-error technique, often called exploratory programming, necessitates an interactive environment that lets you switch easily between writing, compiling, and modifying the LISP code. ExperLisp's use of the Macintosh's windows lets you easily write and modify your programs.

When you start ExperLisp, you see two windows, ExperLisp Listener and an empty Edit buffer. The Listener window lets you run ExperLisp interactively, as if you were working with a BASIC interpreter. Everything you type is immediately evaluated when you press Return, and any results are displayed immediately. I found the Listener window valuable for keeping a record of my work sessions. By saving the current Listener window in a disk file, I could load it later and review what I had done previously.

While the Listener window is fine for evaluating short expressions or testing pieces of code, you wouldn't use it to write entire routines or programs. To create a new program or routine, you need to type it into the Edit window and then compile it using the Compile All command in the Compile menu. You can have several Edit windows open simultaneously and cut and paste between them. If you wanted to compile only a portion of the routine, you could select several lines of code with the mouse and choose Compile Selection. I found the ability to incrementally compile

portions of code invaluable during the endless cycle of changes that characterize my program development scenario.

To run a compiled routine, you type its name in the Listener window. Results are returned to the Listener window, and if the routine produces any graphics, they are drawn in a separate graphics window. The ease of switching between the interactive environment of the Listener window and the noninteractive editing window encouraged an exploratory style of programming.

I found two features lacking in an otherwise responsive program environment. The first shortcoming is that you cannot save compiled code to disk, meaning that you can't create stand-alone applications. The designers at Expertelligence report that version 2.0 will allow you to create stand-alone code, but for now you must load and recompile your programs each time you start a programming session. The second shortcoming, which I will cover shortly, is the lack of a program debugger.

Bunny Graphics

One of the best ways to make developing AI programs easier is to provide a graphic programming environment. ExperLisp has remarkable built-in graphics commands that make it easy to draw sophisticated images using a *bunny*, a special cursor that moves around the screen according to the commands you give it. This drawing tool is similar to the turtles in

Logo. The relationship is no coincidence, since Logo was first designed as a dialect of LISP to be taught to young children. However, ExperLisp's bunnies are much more sophisticated than Logo's turtles. Bunnies can draw in two or three dimensions.

Many features of the Macintosh user interface are very easy to re-create in ExperLisp.

Three dimensions let you easily create perspective and simulate objects moving through space. Another special bunny can draw in a spherical dimension, moving as if it were on a globe (see Figure 1).

Controlling the Macintosh Interface

Many features of the Macintosh user interface are very easy to re-create in ExperLisp. Menus, for example, are easy to make using ExperLisp's built-in functions `NEWMENU` and `APPENDMENU` (see Listing 1). In this example the variable `my-menu` is bound, or assigned, to a new menu titled Graphics. The `appendmenu` primitive uses the string argument to de-

fine the various menu options. When the menu item is selected, ExperLisp passes two arguments to a function stored in the system variable `menubook`. The two arguments correspond to the menu and a number representing the menu item selected.

Expertelligence plans to make the next version of ExperLisp a fully object-oriented programming language. ExperLisp 1.04 currently treats windows and other graphics as objects internally, but you can't access the existing classes and methods, nor can you define your own (see "Illuminating Objects," *Macworld*, August 1985, for a discussion of object-oriented programming).

Windows are just as easy to create and manipulate as menus. You create windows by passing the argument `NEW` to a system class called `GwinClass`, which behaves like a function call. Because of the syntax, the use of `GwinClass` resembles the message-passing scheme common in Smalltalk and Neon. You use other arguments or methods to move windows to the front, reshape them, or move them to a new location. Most QuickDraw primitives are provided as well, making it possible to create the usual Macintosh graphics and text operations.

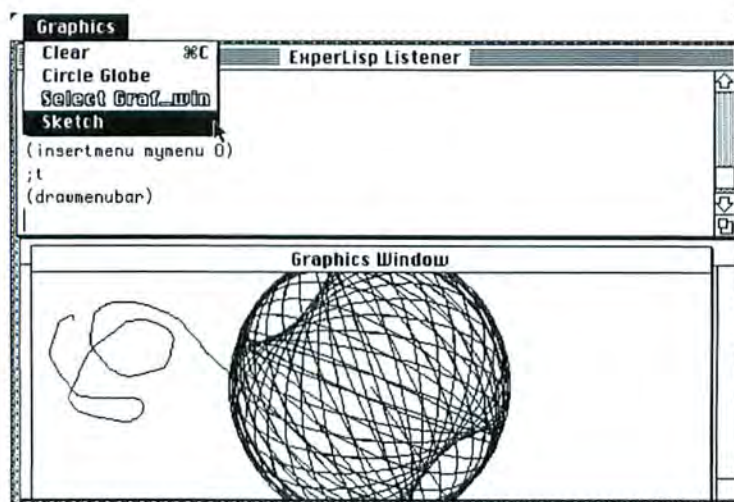
Speed and Memory

LISP programs originally had a reputation for running very slowly, but most complaints about the execution speed were leveled at interpreted versions of the language. LISP systems on mainframe computers have proven to rival the most efficient FORTRAN compilers—even at heavy number crunching. However, ExperLisp is not a convincing example of the potential speed of a good LISP system. Statements are compiled and executed as native 68000 code, which should mean speedy execution, but I was disappointed to find that a Macintosh Pascal version of a simple graphics program executed in less time than its ExperLisp counterpart.

The program I used (see Listing 2) moves the pen near the center of the graphics window and draws a series of lines in a radiating pattern. A 512K Macintosh with an external drive can draw 1000 of these lines in about 90 seconds. Listing 3 shows the Macintosh Pascal version of the same program, which executed faster—in about 75 seconds—even though Macintosh Pascal is not a native code compiler.

Figure 1

An example of ExperLisp's spherical graphics (see Listing 1). When you select *Circle Globe* from the Graphics menu, the sphere is drawn. Sketch allows you to draw with the mouse.



LISPs in Common

A consortium of industrial and university LISP programmers established the Common LISP standard in 1984. ExperLisp has been designed to conform to this standard as much as possible, but for performance reasons the ExperTelligence version deviates slightly. For example, to speed programs up, ExperLisp offers many nonstandard alternatives for doing integer arithmetic. Most of the functions like file and terminal I/O, strings, and other often-used commands are unique to the ExperLisp dialect and aren't fully compatible with other LISPs. ExperTelligence representatives say we can expect version 2.0 to adhere more closely to the Common LISP standard.

However, ExperLisp 1.04 has enough compatibility with Common LISP that many large programs have already been converted to run on the Macintosh. One program that has been successfully transferred to the Mac under ExperLisp is a version of the *OPS5* expert system development tool, a fairly large and intricate program used for developing commercial AI programs. *ExperOPS5* can be purchased separately from ExperTelligence.

Problems with ExperLisp

With LISP's devout following, any new LISP version is bound to be criticized by programmers who are used to the amenities of a dedicated LISP machine. Some of ExperLisp's shortcomings are really criticism of the Macintosh. For example, while ExperLisp allows any number of windows to be open at one time, a feature crucial in LISP because of the high level of interactivity, the size of the Macintosh screen is a serious impediment. The small screen makes it difficult to work on lengthy programs. Version 1.04 allows you to use different font sizes in each window, which lets you see as much information as possible, but developing a large program can still be frustrating.

Ironically, one of the most serious problems is caused by the method ExperTelligence uses to speed up the development process. Because programs are incrementally compiled into native 68000 code

(continues on page 104)

```
(setq ball (newsbun))
(setq radius 100)
(setq curbun ball)
(setradius radius) ; this sets radius of the bunny's sphere.
(setq turn 120)

(setq circumference (* radius 2 pi)) ; Notice EL's PI character.

(defun circumscribe nil
  (std_graf 'selectwindow) ; Make graphics window show.
  (setq curbun ball) ; This becomes the new bunny.
  (while (not (button))

    (forward circumference) ; Bunnies walk in a straight
    (rt turn))) ; line on the sphere

(defun sketch (&optional (bunny (new2dbun)))
  (setq curbun (new2dbun))
  (while (not (button)) ; Until you click the button,
    (setpos (getmouse)) ; keep getting the mouse coordinates
    (line 0 0))) ; and draw a single dot there.

;;; here's how to set up menus in ExperLisp:

(setq safety (getmenubar)) ; save the old menubar just in case.
(setq mymenu (newmenu 7 "Graphics")) ; creates a new menu

(appendmenu mymenu
  "Clear/C;Circle Globe;Select Graf_win<0;Sketch")
(insertmenu mymenu 0)
(drawmenubar) ; it doesn't show in the bar until now.

;; EL will pass these parameters when mymenu is selected.
(defun dosphere (themenue theitem)
  (cond ((= theitem 1) (home) (cs))
        ((= theitem 2) (circumscribe))
        ((and (= theitem 3) std_graf)
         (std_graf 'selectwindow))
        ((= theitem 4) (sketch))
        ))

;; finally, make it execute dosphere every time
;; this menu is selected.
(setq gmenuhook dosphere)
```

Listing 1

This program creates a spherical image.

```
;;; draws an angelic pattern of n lines
;;; emanating from point (50,50)
(defun angel (n)
  (home)
  (let ((x 0) (y 0)) ; declare these as local variables
    (dotimes (i n) ; FOR i:=0 TO n
      (setq x (* 100 (sin i))) ; this is the body...
      (setq y (* x (sin x))) ; ...
      (moveto 50 50) ; ...
      (lineto x y))) ; ...

  ;; (angel 1000) in about 90 seconds.
```

Listing 2

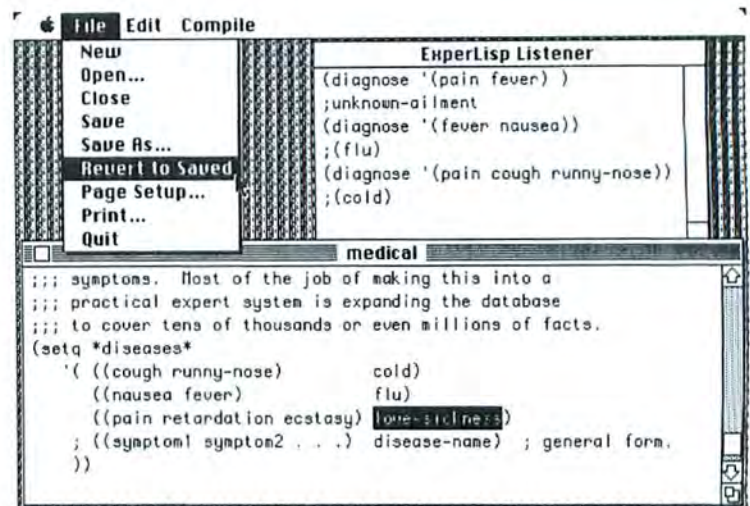
The program used to create the radial pattern shown in Figure 2. The SIN function causes the lines to emanate in different directions. The program was written to allow comparison with the Pascal version shown in Listing 3.

Programming in LISP

LISP programs are similar to FORTH in that you start with a small nucleus of primitive operators, and you build larger operators by combining primitives. The most important data type in LISP is called a list, and most programming in LISP involves manipulating lists. In fact, the name LISP is an acronym for *list processing*. In this object-oriented language, all objects are either atoms or lists. An atom is any sequence of one or more ASCII characters. Any sequence of objects enclosed in parentheses is a list. According to this definition, lists may also contain other lists, since a list is a legal object.

Programs consist of lists. The first element of a list corresponds to a function, and the remaining elements are arguments that are evaluated by the function. For example, in the list (PLUS 5 8), the function PLUS takes the arguments 5 and 8 and returns the value 13.

LISP provides five primitive list operations. The first, CAR, takes a list and returns the first element. CDR returns the rest of the list minus the first element. CONS takes any two objects and constructs a new list whose CAR is the first object and whose CDR is the second object. The last two primitive LISP operations return the values T (for true) or NIL: ATOM takes an object and returns the special atom T if it's an atom or NIL otherwise; EQ returns the value T if two LISP objects are the same or NIL if they are not. You can combine primitives to form your own functions with the DEFUN statement. The IF statement, which evaluates the second argument if the first ar-



Medical Adviser

You invoke the DIAGNOSE function by typing a list containing the function name and a list of symptoms in the Listener window. You can modify the program in the Edit window at any time to add new symptoms and diseases to the list.

gument is true or the third argument if the first argument is false, can be used to control the execution of a program.

QUOTE is the only function that doesn't evaluate its arguments. These eight predefined operations are enough to write any LISP program, no matter how complicated. Other statements only add convenience or improve performance.

To write an AI program in LISP, you must represent the symbolic information in list form. Then you can write a program to manipulate the list. As an example of a program that manipulates symbols, the listing "Diagnose" performs a simple analysis of a patient's symptoms and provides a diagnosis of possible diseases. To do this, the function DIAGNOSE takes a single argument, SYMPTOMS, which holds the value of the list of symptoms typed in by the user. When DIAGNOSE is called, it executes all the statements in its body; in this case, there is only one statement.

The function DIAGNOSE-WITH-KNOWLEDGE, which is defined later in the listing, evaluates the two arguments SYMPTOMS and *DISEASES*. *DISEASES* is an example of a global variable that holds the list of diseases and symptoms. The SETQ statement at the end of the listing assigns values, in this case the disease-symptom list, to the variable *DISEASES*. If the list of possible diseases is empty, DIAGNOSE-WITH-KNOWLEDGE returns the result UNKNOWN-AILMENT, since no SYMPTOMS match. If all the symptoms match the symptoms of the first disease on the list, the function returns the name of the disease (see "Medical Adviser"). Otherwise, the function calls itself after shortening the list of possible diseases by using CDR on the second argument.


```

;;; a very simple medical expert system.
;;; give it a list of symptoms, and it will return the
;;; first disease it knows about that has all of
;;; those symptoms.

(defun diagnose (symptoms)
  (diagnose-with-knowledge symptoms *diseases*))

;;; the following two abstraction operators will improve
;;; the speed, and are shown here to illustrate ExperLisp's
;;; macro and backquote ability.
(defmacro known-disease (pair)
  `(cdar ,pair))

(defmacro known-symptoms (pair)
  `(caar ,pair))

;;; this is the most important function: it checks to
;;; see if the current symptoms match any of the
;;; known symptoms of the possible diseases.
(defun diagnose-with-knowledge (symptoms possible-diseases)
  (if (null possible-diseases)
      'unknown-ailment
      (if (subsetp (known-symptoms possible-diseases) symptoms)
          (known-disease possible-diseases)
          (diagnose-with-knowledge
            symptoms
            (cdr possible-diseases))))))

;;; this becomes the database of known diseases and their
;;; symptoms. Most of the job of making this into a
;;; practical expert system is expanding the database
;;; to cover tens of thousands or even millions of facts.
(setq *diseases*
  '( ((cough runny-nose)      cold)
      ((nausea fever)         flu)
      ((pain retardation ecstasy) love-sickness)
      ; ((symptom1 symptom2 . . .) disease-name) ; general form.
  ))

```

DIAGNOSE

*An example of a simple medical diagnosis program. The function DIAGNOSE takes the list of symptoms you give it, searches the list stored in the global variable *diseases*, and returns the name of the disease if a match is found.*

For Further Reading

Structure and Interpretation of Computer Programs, by Harold Abelson and Gerald Jay Sussman with Julie Sussman, MIT Press, 1985. This book is probably the best available on LISP and computer programming. Designed for an introductory course at MIT, it takes you through a wide range of LISP topics, from object-oriented programming to logic programming and LISP implementation. Beginners might find the book too technical, but anyone serious about programming in LISP should study it.

LISP second edition, by Patrick H. Winston and Bertold K. P. Horn, Addison-Wesley, 1984. This is an excellent introduction to Common LISP, especially for people interested in artificial intelligence applications. The book contains lots of interesting and practical examples.

A Gentle Introduction to Symbolic Programming, by David S. Touretzky, Harper and Row, 1982. *ExperTelligence* includes this book with each copy of *ExperLisp*, although the dialect used in the book is fairly different from Common LISP. The book is good for complete beginners, especially

those who are less technically oriented. More experienced programmers may find it a little shallow and not very useful for learning intermediate and advanced topics.

Common LISP, by Guy L. Steele, Jr., Digital Press, 1984. One of the most highly praised language manuals ever written. The book is the definitive reference for all Common LISP constructs. *ExperLisp* 1.04 doesn't conform well to many of these specifications, but you may find it useful for reference.

(continued from page 101)

before execution—that is, *ExperLisp* treats each procedure individually instead of compiling the entire program all at once—almost no debugging is available. Missing is the ability to freeze a program and look at the state of all the variables and functions. In *ExperLisp* all functions are simply black

boxes that either return correct answers or don't. A crude tracing facility exists, but it offers little help in an intricate debugging situation. For people who develop programs of any size, the lack of a debugger is one of *ExperLisp*'s most serious shortcomings.

Documentation is another area in which *ExperLisp* falls short of the mark. The only reference guide is a 189-page manual generated from an Imagewriter printout. No index is included, few complete examples are given, and I noticed numerous omissions. The product package includes a copy of Touretzky's *Gentle Introduction to Symbolic Programming* (see "For Further Reading"), but I found the book inadequate for progressing beyond the most elementary concepts.

One of *ExperLisp*'s problems could be solved with more memory on the Macintosh. The minimum configuration is a 512K Mac, but it would be hard to run a very large program in that space.

In spite of its problems, *ExperLisp* is worthwhile for programmers who want to program in LISP and are experienced enough or patient enough to put up with the shortcomings. And as an added incentive, *ExperTelligence* is distributing free updates to registered owners of the program.

So far, *ExperLisp* won't let you turn your Macintosh into an artificial intelligence workstation. However, the language offers a hint of much better AI development systems to come. But even with the most powerful LISP machine, there's one thing you still can't overlook: the most impressive computer you own is the one inside your head. □

▲▲▲▲▲▲▲▲▲▲ Richard Sprague is a free-lance writer and programmer who studies formal linguistics at Stanford University.

▲▲▲▲▲▲▲▲▲▲
ExperLisp, *ExperOPS5*
ExperTelligence, Inc.
 559 San Ysidro Rd.
 Santa Barbara, CA 93108
 805/969-7871
 List price: *ExperLisp* \$495,
ExperOPS5 \$325

```
program angelPascal;

procedure angel (n : integer);
var
  x, y : real;
  i : integer;
begin
  for i := 1 to n do
    begin
      x := 100 * sin(i);
      y := x * sin(x);
      moveto(50, 50);
      lineto(trunc(x), trunc(y));
    end;
  end;

begin
  angel(1000);
end.
```

Listing 3

The Pascal version of the angel program executes in about 75 seconds.

Maxell Corp. of America, 60 Oxford Drive, Moonachie, NJ 07074



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FLOPPY DISKS
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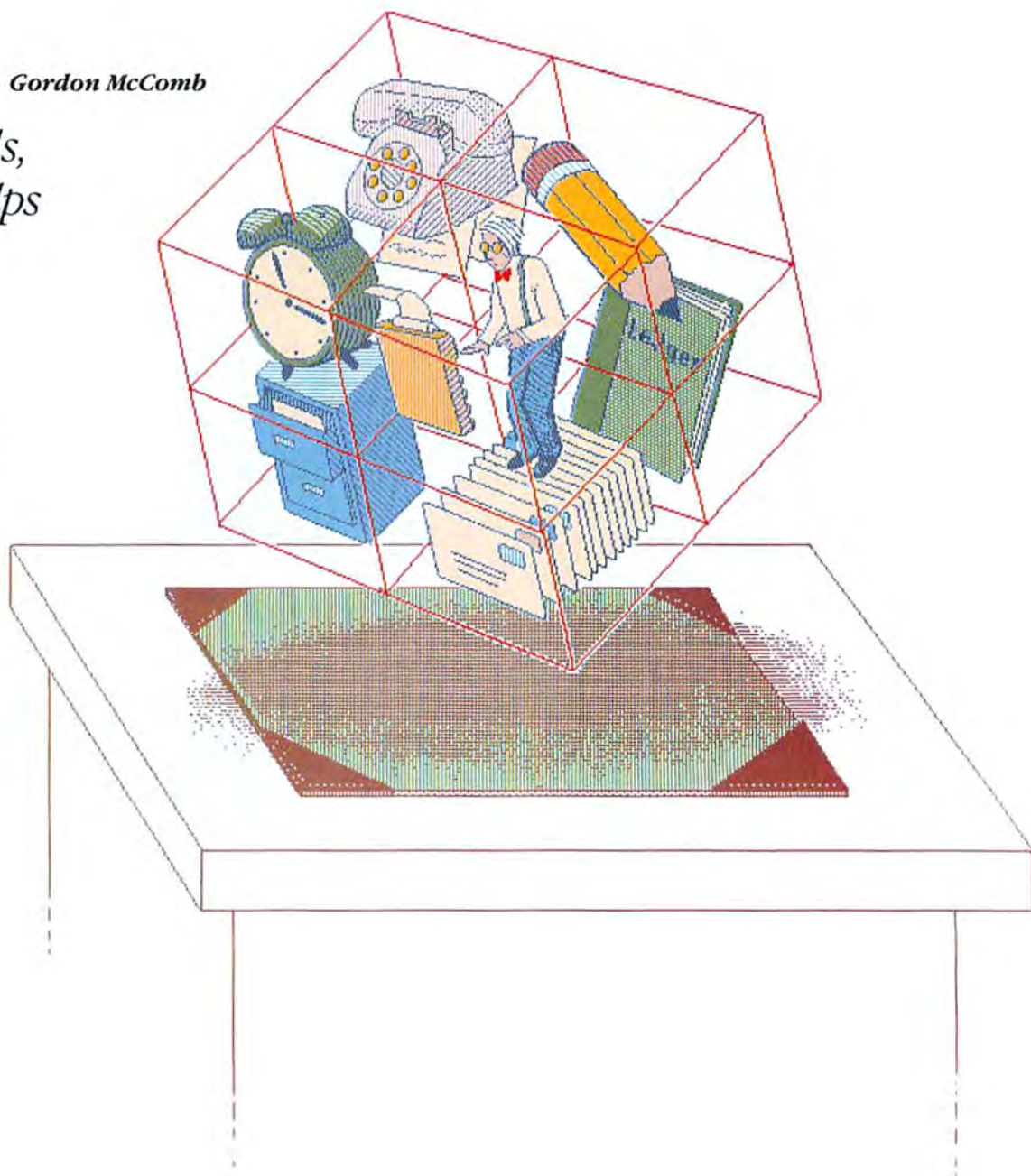
Circle 267 on reader service card

Accessories to the Facts

Gordon McComb

Sidekick files, dials, and otherwise helps out with office chores

A desk organizer—electronic or manual—is something that helps keep your everyday affairs in order. A good desk organizer should be available at a moment's notice and should include, at the very least, an appointment book or a calendar; a list of commonly used phone numbers, and a place to write and edit notes. Borland's Sidekick for the Macintosh conforms to the minimum requirements of a desk organizer and adds some extras as well.




Sidekick includes an appointment book, a phone log, a mini-word processor, an area code directory, a telecommunications utility, a print spooler, a calculator, an alarm clock, a things-to-do list, files for expense and credit card accounts, and a report generator for printing phone directories, mailing lists, and expense files.

Sidekick works on either a 128K or a 512K Macintosh and requires one disk drive. Like most Mac programs, however, *Sidekick* works best with a 512K or larger Mac and with two disk drives or a hard disk. In fact, a hard disk is the only practical environment for *Sidekick*'s desk accessories, since a 46K system file called Deskstuff must be present on a disk for many of the accessories to function. For example, if you install a number of accessories and the Deskstuff file on a disk that contains a System Folder and a word processor, you are left with little room for documents or *Sidekick* data files.

Inside Sidekick

Sidekick consists of a main application, several utilities, and a collection of desk accessories. You can add individual accessories to a program's Apple menu or use the *Sidekick* application on its own. The main application serves as a phone directory, appointment book, phone log, and phone dialer (see Figure 1). In addition, you can access all of *Sidekick*'s desk accessories from within the main application. (Again, the Deskstuff file must be present for many of the accessories to work.)

Sidekick works better as a stand-alone program than as a series of desk accessories. But this method negates the most important function of a desk organizer: the ability to immediately scan upcoming appointments, look up a phone number, or take notes during a phone call without quitting an application. Fortunately, you



You can use *Sidekick* on its own or add its accessories to any program's Apple menu.

can use *Sidekick* with Apple's *Switcher*, allowing you to move quickly from one application to another. Each of *Sidekick*'s features is briefly described below.

PhoneBook

To construct a database of names and phone numbers, you enter information into PhoneBook entry cards (see Figure 2). You can include notes about the person or company listed, as well as phone rates and consulting charges, if appropriate. If you have looked up and entered figures for phone charges, *Sidekick* times calls and totals the charges for you. *Sidekick* accommodates up to five discount long-distance services such as Sprint or MCI.

The PhoneBook menu lists up to 80 names in alphabetical order. If 80 names aren't enough, *Sidekick* lets you keep as many phone books as disk space allows

and alternate between them. Once a name goes on the menu, *Sidekick* can automatically dial the phone number if you've installed Borland's PhoneLink interface. Unfortunately, *Sidekick* can't dial the phone through a modem, as can some other Mac desk organizing programs.

While on the phone you can type in the Phone Notes area. When the conversation ends, click the Write Notes button to record the message in the PhoneLog, which keeps track of whom you call, when the calls are made, and how much the calls cost, including long-distance charges and consulting charges. You can examine, edit, or print the PhoneLog at any time.

MacDialer

You needn't use *Sidekick*'s main application to look up numbers in the PhoneBook. Most of the features of the main application are available in the MacDialer accessory, which you can add to any program that supports desk accessories. The greatest difference between the two is that MacDialer limits you to ten entries. In addition, MacDialer doesn't let you examine or edit the phone log, nor does it offer pull-down menus.

Area Code Lookup

The Area Code Lookup accessory provides a minidatabase of area codes for the United States, Canada, and Mexico. If you come across an area code that doesn't ring a bell, open Area Code Lookup and type in the area code. In a few seconds the state or country, region, and time zone of the area code appear.

CalendarBook

Apart from the phone book and dialer, *Sidekick*'s greatest claim to fame is CalendarBook, an appointment book desk accessory. When you open CalendarBook, a calendar showing the current month appears, with the current date highlighted. You can switch to another day by clicking on it in the calendar or to another month or year by clicking in the scroll bar below the calendar. CalendarBook includes a scrollable note pad for entering appointments for a selected day. CalendarBook can search for text in the note pad, but only for the current day.

Normally, CalendarBook displays notes for just the current day. However, you can select Week at a Peek for an overview (see Figure 3). You can easily view notes from previous or forthcoming weeks, too. You can print Week at a Peek with *Sidekick*'s PrintManager utility.

CalendarBook automatically looks for entries that are more than two weeks old. If any are found, you're asked if you want to delete them—a good idea, since the CalendarBook accessory runs sluggishly when it contains numerous entries. If you answer yes, the old appointments go to a text file called Past Memos, which you can open with *Sidekick*'s Notepad+ accessory or with any word processor.

CalendarBook does not include an alarm function. If you need to be reminded of an appointment, you must use the Alarms QuikSheet, which is discussed later.

ReadiPrinter

Sidekick's ReadiPrinter, a print spooler desk accessory, lets you use the Macintosh while a document is being printed. ReadPrinter prints text-only files created with *Sidekick*'s Notepad+ accessory or saved in Text Only format using *MacWrite* or *Microsoft Word*. Text files contain only alphanumeric characters; they don't include ruler, formatting, or font instructions. ReadPrinter saves time, but since the accessory prints only text files, it has limited uses. You can't, for example, use it to print a *Multiplan* worksheet or a *Microsoft File* database.

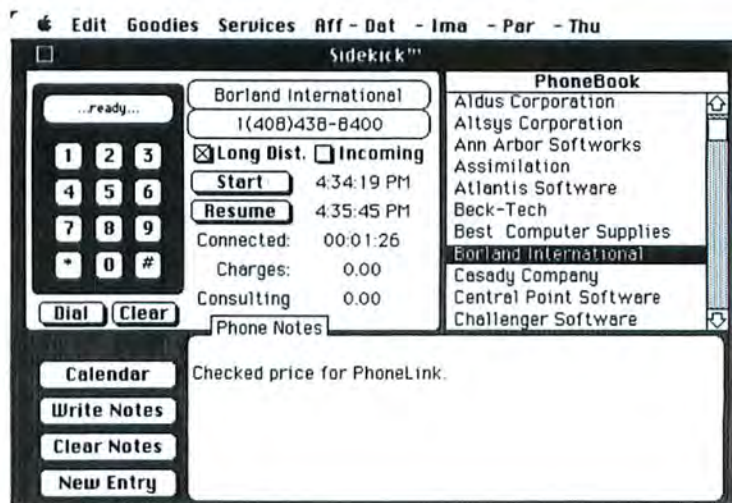


Figure 1

With PhoneLink installed, *Sidekick*'s main application automatically dials a phone number when you select a name. The program times calls, totals charges, and provides a space for taking notes during a call.

Notepad+

A number of *Sidekick*'s desk accessories enhance the Mac's original fare. Notepad+ offers a large, screen-sized page for notes.

Notepad+ also works exclusively with text-only files. Notepad+ includes a search feature for quickly locating a text string. On the minus side, this accessory lacks rulers, won't search and replace text, and forces you to write in 9-point Geneva.

Calculator+

Another enhanced accessory is Calculator+, a multifunction business calculator with built-in "paper tape" and memory. In addition to the arithmetic functions found on the Mac's original calculator, Calculator+ offers several financial and math functions, including present and future values of an annuity, interest rates, sines, cosines, tangents, arctangents, and natural logs. The results of a Calculator+ session are displayed on screen on a scrolling paper tape. You can wind the tape backward to check a previous calculation, and you can print the contents of the tape.

MacTerm

Sidekick's communications desk accessory offers the basic features you need to connect your Macintosh to other computers with a modem. MacTerm operates at 300, 1200, and 2400 bps, and lets you connect the modem to either the modem or printer port.

MacTerm both sends and receives files. Although you can download or upload text files of any length, the accessory does not support Xmodem or binary file transfers. MacTerm stores up to ten com-

monly used phone numbers. If the connected modem is Hayes compatible, MacTerm also dials automatically.

QuikSheets

One of my favorite *Sidekick* features is the QuikSheets desk accessory, which maintains records of appointments, expenses, credit card accounts, and other categories that you create. You can choose among up to 21 QuikSheets once the accessory is open.

Sidekick comes with four ready-made QuikSheets: Alarms, Expenses, Credit Cards, and Things to Do. All the QuikSheets look like large Note Pads: you turn the pages by clicking a dog-ear in the lower-left corner of the sheet. The text entered into a QuikSheet can be printed or converted to a text-only file that you can edit with Notepad+ or a word processor.

You'll probably find the Alarms QuikSheet the most useful. This sheet reminds you of appointments, meetings, and other occasions. When the alarm goes off, the Mac beeps once and the Apple logo in the title bar blinks until you respond.

The Things to Do QuikSheet lists tasks to accomplish, each with a deadline. Like its paper counterpart, the Things to Do list provides a box by each entry for checking off the tasks you complete.

The Credit Card QuikSheet tracks credit card purchases; the Expenses QuikSheet records business and travel expenses. Unfortunately, neither of these

QuikSheets totals the numbers you enter. You can, however, copy the contents of a QuikSheet to a spreadsheet and perform calculations there.

Utilities

If the existing QuikSheets don't suit your needs, you can use QuikEditor to make your own. QuikEditor lets you design a QuikSheet layout, with or without check boxes beside each entry.

QuikEditor is just one of *Sidekick's* utilities. Others print QuikSheets, calendar notes, and phone listings; install and remove desk accessories; and convert phone book files to *Sidekick's* format.

PrintManager makes paper copies of the notes you create with *Sidekick*. PrintManager's best feature is that you can print QuikSheets and other notes in a miniature, "pocket" format. You can print a Things to Do QuikSheet, for example, and carry it with you throughout the day.

The other utilities aren't as universally helpful. The Desk Accessory Installer is similar to Apple's *Font/DA Mover*. You might as well use Apple's installer. The *Sidekick Converter* utility lets you copy phone directories created by *MacPhone* or *Habadex* into a *Sidekick* PhoneBook file.

Getting to Know Sidekick

Sidekick's 171-page manual is well illustrated and has plenty of examples, but it is poorly organized. To find out about a particular accessory, for example, you may look in two or three places before you find all the information you want. The documentation makes *Sidekick* look more complex than it is. Borland says a revision is in the works.

I tried *Sidekick* with several applications, including *Jazz*, *Excel*, *MacWrite*, *Word*, and *MacDraw*. All worked perfectly, and *Sidekick* didn't affect the programs' operation, a problem with some other desk accessory-based programs. All the *Sidekick* accessories worked with most applications in a *Switcher* rotation.

Although *Sidekick* takes up a lot of memory, it may be the most useful and feature-laden desk organizing program currently available for the Macintosh. Because the bulk of the program is divided into individual desk accessories, you can pick only those features you want to exploit,

Name: Jackson, Wanda
 Company: Atypical Innovations
 Address: 4429 Della St.
 City: San Francisco State: CA Zip: 94707
 Phone • Area code: 415 Number: 555-7853
 Miscellaneous Notes • Category: Software
 Atypical's "MacSlack" automatically saves your files and shuts down your Mac every 2 hours, forcing you to take a coffee break.
 List price: \$49.95
☒ Include in menu
☒ Include in phone books
☐ Use Long Dist. Service
☐ Round consulting fees
 Phone charges • 0.00 / minute for 0 minutes then 0.00 / minute
 Consulting charges • 0.00 / hour
 OK Copy and Save OK and Next Delete Cancel

Figure 2

PhoneBook entry cards add listings to *Sidekick's* PhoneBook menu, alphabetized by name or company. When you choose a name from the menu, *Sidekick* applies any phone charges or consulting charges that were entered on the card.

⌘ Edit Goodies Services Rtf - Dat - lma - Par Week at a Peek
 Week at a Peek
 Mon, Mar 10 Thu, Mar 13
 11:00 AM - Give report to Jan.
 12:30 PM - Lunch with salesman from Atypical Innovations.
 4:00 PM - Seminar: "Coping with Office Politics"
 Tue, Mar 11 Fri, Mar 14
 9:00 AM - Turn in revisions to Henderson Account.
 10:00 AM - Meeting with Sales Department. Bring suggestions for new ad campaign.
 Wed, Mar 12 Sat, Mar 15 Sun, Mar 16
 9:00 AM - Meeting with Production Department.
 12:30 PM - Lunch with Richard.
 3:00 PM - Seminar: "Coping with Stress"
 10:30 AM - Staff meeting. Bring report.
 1:45 PM - Pick up artwork.
 3:30 PM - Seminar: "Coping with Seminars"
 10:00 AM - Meet with Albert to discuss the influence of the Japanese print on the early French Impressionists.
 12:30 PM - Lunch with Gwen.
 Beware!
 7:00 PM - Dinner with André.
 OK
 ems
 ks
 applies
 nel
 ware

Figure 3

The Week at a Peek window summarizes activities for the current week. Each day shows only the first few lines of notes. The scroll bar on the right lets you see an entire day's appointments.

conserving disk space by choosing the accessories that suit your various work disks.

If you want a no-frills version of *Sidekick*, try CE Software's *MockPackage*. The collection of *MockWrite*, *MockPrinter*, and *MockTerminal* desk accessories performs much the same functions as *Sidekick's* Notepad+, *ReadiPrinter*, and *MacTerm*. In fact, the *Sidekick* accessories are based on CE Software's. *MockPackage* is available as "shareware" for \$20 and can also be found on many public-domain disks (CE Software, 515/224-1995). If you're on a tight budget, the *Mock* accessories should suit your needs. But if you want extras such as the phone dialer, calendar, calculator, and QuikSheets, consider spending the extra money on *Sidekick*.

Whether or not *Sidekick* can actually clear your desk or improve productivity "by 50 percent," as advertised, is debatable. Obviously, no program compensates for a lack of organizational skills. To be on the

safe side, I'd say that *Sidekick* can help clear your desk and, when used religiously, help increase productivity. The percentage of improvement is up to you. □

★★★★★★★★★★★★★★★★★★★★ Gordon McComb is a Contributing Editor of Macworld.

★★★★★★★★★★★★★★★★★★★★
Sidekick, *PhoneLink*
 Borland International
 4585 Scotts Valley Dr.
 Scotts Valley, CA 95066
 408/438-8400
 List price: *Sidekick* \$84.95, *PhoneLink* \$19.95

Roll Over Gutenberg

Jay Kinney

Unlike drugstore cowboys and armchair quarterbacks, desktop publishers must immerse themselves in their work. Putting together a publication using a page-makeup program involves careful planning and a knowledge of the program's capabilities. In this article you'll learn how to put some of PageMaker's design features to work as you follow the production of a two-page newsletter.

One of the most common buzzwords Macintosh users hear these days is *desktop publishing*. That's the capability of one person, with only a Macintosh and a printer, to write, design, illustrate, paste up, and print entire publications. Two events spurred this revolution in publishing: Apple's introduction of the LaserWriter, with its ability to deliver crisp, near-typeset-quality text and graphics, and the debut of several page-makeup programs (see "Publishing Turns an Electronic Leaf," *Macworld*, July 1985, for a description of three such programs).

In the following scenario you'll be taken through the creation of a newsletter using Aldus's *PageMaker*, the most sophisticated page-makeup program available for the Macintosh. Of course, the format and content of your *PageMaker* projects won't match the newsletter described here. But you'll be able to apply many of the tips in this article to your own publications.

PageMaker at a Glance

Before you begin, you should be aware of exactly what *PageMaker* can do. If you're a novice at graphic design, *PageMaker* can't replace good on-the-job experience. Although the program provides a flexible environment in which to lay out various publications, it doesn't help you make aesthetic decisions.

What *PageMaker* does well is provide you with the components of a small design shop—drawing board, ruling pens, T-square, typesetter, and paste-up

sheets—in the form of menus, icons, and mouse maneuvers. The program enables you to take text from *MacWrite* or *Microsoft Word* as well as artwork from *MacPaint* or *MacDraw* and move these elements around on pages displayed on the screen. If you don't like your first design or if you want to experiment with a different typeface or font size, *PageMaker* lets you make changes without having to peel up glued-down type or send for expensive revisions from the typesetter.

*PageMaker
provides the tools of a
small design shop—
drawing board, pens,
T-square, and all.*

Do Your Homework

The key to getting the most out of *PageMaker* is to have your publication's design details worked out and its components ready to go before you insert the *PageMaker* disks. In the task before you here—the production of a two-page newsletter—that means preparing all the articles, news items, and other text as *MacWrite* documents and choosing the typeface and font styles and sizes you want to print on the LaserWriter. It's a good idea to create text documents on a *Mac-*



Write disk that has its System file customized to include LaserWriter fonts such as Times or Helvetica. That way you won't have to laboriously convert text column by column into the font and point size you want in *PageMaker*.

You can also save yourself time and effort in the long run by creating each article or news item as a separate *MacWrite* file. If you string all the articles together in one long file, rearranging just one article in *PageMaker* causes all the following text to shift

Save trouble by creating each news item in a separate *MacWrite* file.

around, possibly spoiling the layout of several pages. Smaller blocks of text, on the other hand, can be moved around with a minimum of inconvenience.

After readying the text, prepare your illustrations as separate files—one illustration per file—in the size you want them on the printed page. *PageMaker* has a tool for "cropping" and scaling down graphics, but the job is far simpler if you use such tools sparingly for tightening things up rather than for massive, last-minute design changes.

Finally, it is advisable to have a good rough idea—perhaps in the form of hand-drawn "thumbnail" sketches—as to how you want the pieces of your publication to fit together in the final printed form. This means thinking ahead to details such as, Should I set two or three columns? or Should this picture appear next to this text? *PageMaker* allows you to experiment

with such decisions on screen, but be forewarned: too much indecision can lead you to time-consuming backtracking and even an occasional system crash. (*PageMaker* 1.1, which should be available by the time you read this, reportedly eliminates most of the problems that plague version 1.0.)

Making a Template

For this job—a newsletter for the Goethe League, an offbeat literary society in the Silicon Valley—I designed the logo with *MacPaint* using a 36-point version of the London font, which is available on some public-domain disks. With ThunderScan I digitized a photocopy of a portrait of Goethe for the front page, and with *MacPaint* I drew a decorative illustration for the second page. I typed the newsletter text as several separate files in *MacWrite*, using the 12-point Times font. To minimize disk swapping, I saved all these components on a single disk.

Once you create your text and graphics files, you should start up *PageMaker* and create the basic layout grid, or template, for your newsletter. First choose a unit of measurement (inches, picas, or millimeters) from the Edit menu. Then select New from the File menu and specify the number of pages you want and the size of their margins in the Page Setup dialog box (see Figure 1). Finally choose Column Guides from the Tools menu and specify the number of columns and the space between columns. *PageMaker* calculates column widths from your specifications for margin size and number of columns. If, like most graphic designers, you are used to deciding on column widths yourself, you may find this indirect method irritating.

When you've set column guides for both the left and right master page icons (marked L and R at the bottom of the screen), the template automatically formats all pages in the *PageMaker* document. If you want to vary the format from page to page, don't click on the L or R icon; just proceed to page 1 and make your design decisions there. You then need to set a new format for each succeeding page.

Once you determine how many pages long your publication will be (two in this case) and specify the basic layout grid for those pages (two columns of text with $\frac{1}{8}$ -inch margins), save the document on the Program disk. For a longer document—*PageMaker* sets a limit of 16 pages—you may need to save the document on a data disk instead of the Program disk to have sufficient memory. As you work on the newsletter, you should save the document frequently and even back it up from time to time as a safeguard against unexpected disaster.

Putting Things in Their Place

Now you can start to lay out the first page. Choose Place from the File menu, eject the System disk, and replace it with the disk containing the components of

Paper: ☒ US letter ☐ A4 letter
☐ US legal ☐ B5 letter

Orientation: ☒ Tall ☐ Wide

Double sided: ☒ **Start page #:** **# of pages:**

Margin in inches:

Inside	<input type="text" value=".625"/>	Outside	<input type="text" value=".625"/>
Top	<input type="text" value=".625"/>	Bottom	<input type="text" value=".625"/>

OK Cancel

Figure 1
When you open a new file, you are presented with this dialog box. *PageMaker*'s request that you set margin size instead of column width runs counter to graphic design conventions.

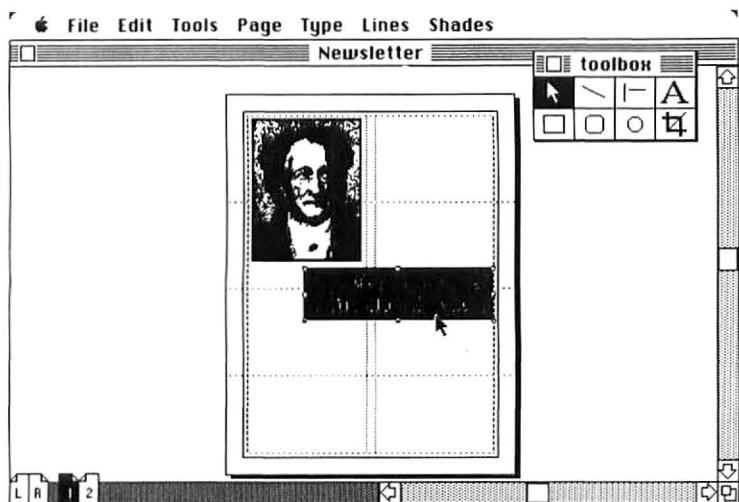


Figure 2
Inserting graphic elements first and then placing text around them is the most efficient method. Elements can be easily moved around with the selection arrow.

your publication. It's usually a good idea to place illustrations on the page first and then position text in relation to them. Open the first component to be laid out, in this case the portrait of Goethe. When *PageMaker* returns you to the layout grid, the pointer is replaced with the *MacPaint* document icon, a small paintbrush. Position the icon where you want the upper-left corner of the drawing to be and click the mouse button. The drawing appears on the screen.

The same procedure is used to place the logo near the portrait of Goethe (see Figure 2). To make the logo overlap the portrait without the underlying portrait showing through, I used the rectangle tool from the toolbox to create a white rectangle the same size as the logo, and I placed the rectangle between the portrait and the logo. When you overlap several elements like this, use the Send to Back and Bring to Front commands in the Edit menu to establish which elements are in the foreground.

Inserting text is similar to placing graphic elements. Select the Place command and choose the block of text you wish to insert from the list of documents that appears. Next, position the text icon, a page corner, where you want the text to begin flowing into the column.

The lines of copy cascade down the column until a graphic element is encountered, the bottom of the page is reached, or the block of text ends. A tab at the end of the column of text displays a plus sign if more text follows or a number sign if you've reached the end of the file. If you see a plus sign, you have two options:

you can click on the tab and place the text icon where you want the text to continue flowing, or you can hold down the mouse button and move the tab back up the column to a more suitable stopping place. Since the news in the Goethe League newsletter consists of separate, paragraph-long items, I moved the tab back up to the end of the first item and placed the next item far enough down the page to allow space for inserting a headline later. I repeated this procedure in the space beneath the logo until I reached the end of the second column (see Figure 3). To continue the text on the second page, I clicked on the tab and selected the page 2 icon at the lower left of the screen.

Making Headlines

Headlines are easy to create. In this newsletter I set off the headlines from the rest of the text with a small, 20 percent shaded rectangle. To place a headline in a box, first select the rectangle from the toolbox, then choose the shade and outline width you want from the Shades and Lines menus. Once you create a rectangle, you can copy it with ⌘-C and paste duplicates above all the news items. To type the headlines themselves, select the A icon in the toolbox, choose Type specs from the Type menu, and decide on the type font, size, style, and alignment for the headline. If you want white headlines reversed out of black rectangles, for instance, you could choose white type from the Type menu at this point as well.

After filling in the type specs dialog box, click OK to return to the page at hand. Click the text insertion pointer, a flashing vertical line, where you want the headline to go, and type it in. If you want to reposition

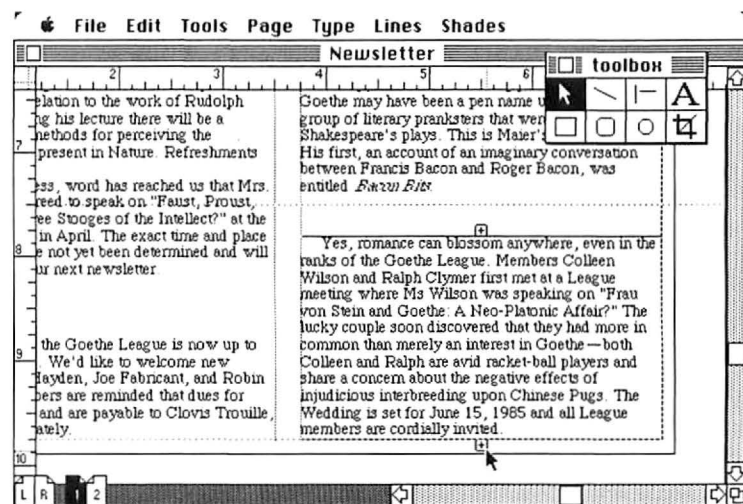


Figure 3
Tabs that contain a plus sign indicate that more text remains in the file. Clicking on the tab allows you to place succeeding text on the next page.

a headline once it's typed, click the selection arrow in the toolbox, select the headline, and, with the mouse button held down, move the headline around. Because *PageMaker* allows you to move elements in minute increments, you may want to select Actual size or even 200 percent from the Page menu before positioning the headline. You may also want to deselect the Snap to Guides option from the Tools menu. This handy option keeps your copy aligned to the column guides, but you'll want to override the guides for small placement changes.

Special Operations

You may want to further embellish your newsletter with design elements such as a large capital letter, or "drop cap." In the Goethe League newsletter, text wraps around the large *T* in the "Quote of the Month" at the top right-hand corner of page 1. First, type the feature's headline in the same font, size, and style as your other headlines. You can easily add a double rule using the rule tool from the toolbox.

Next, select Type Specs from the Type menu and enter a point size of 100 in the dialog box that appears. Select Bold for the type style and click OK to return to the page. Using the text tool, place the 100-point bold letter *T* at the upper left below the rule.

Wrapping text around a drop cap is a two-step process. First, using the selection arrow from the toolbox, click on the column guide to the left of the letter and drag it over to the letter's right edge. Then choose Place from the File menu and position the text icon on the column guide near the letter. Click, and the quotation text flows down the column (see Figure 4).

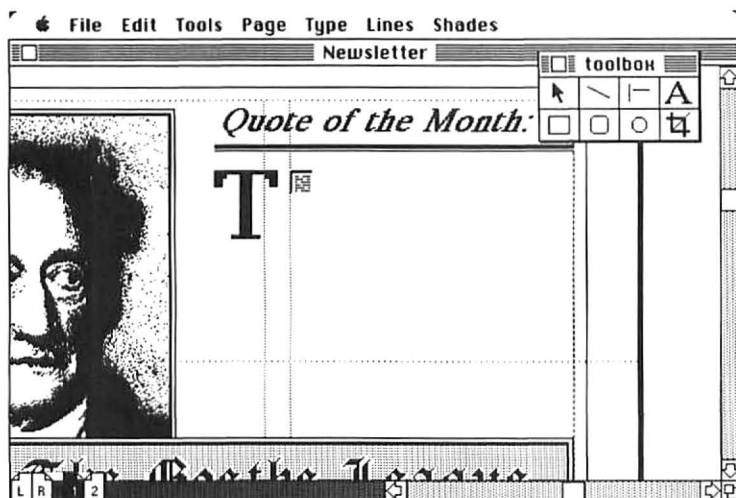


Figure 4

To wrap text around elements such as a drop cap, the column guides can be dragged to the right to channel the flow of text into a narrower column. Then the column guides can be repositioned and the rest of the text inserted in a wider column.

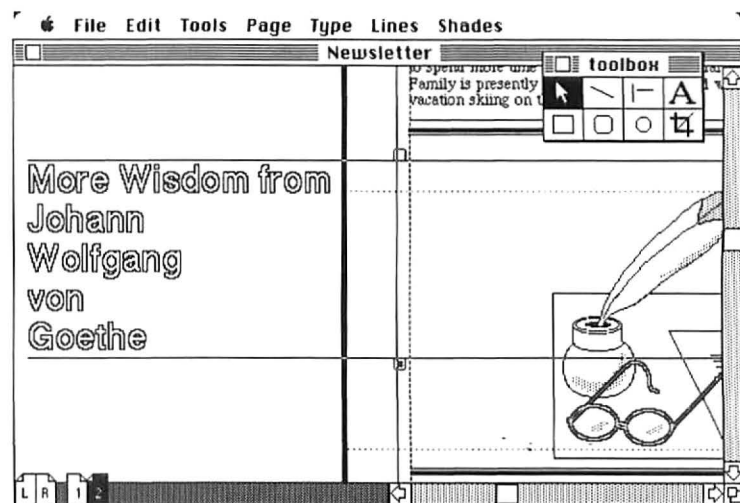


Figure 5

Typing headlines on the pasteboard beyond the boundaries of the page frees you from automatic column width limits. When the headlines are finished, they can be moved onto the page.

Second, to wrap the copy under the letter, select the text and pull the tab up to the line near the bottom of the drop cap. Then use the selection arrow to drag the column guide back to its original position at the left. Again select the text, click on the plus sign tab, and flow the remaining copy into the column under the letter. If the final result doesn't fill all the space available, you could change the text to a larger type size. Finally, for a polished result you might add another double line beneath the quote and put a shaded rectangle behind the drop cap. Be sure to save regularly as you make changes and additions.

The Second Page

The procedure for filling out the second page of the newsletter builds upon the preceding techniques. You'll find that it makes good design sense to run the two news items left over from page 1 side by side across the top of page 2. After placing the news items, I added a decorative illustration and two excerpts from Goethe. I moved the excerpts around until I was satisfied with their placement on the page.

Once all the text elements are in place, you can add headlines as before. To simplify working on the column title, you might want to type it on the "pasteboard" to the left of the page; there you can experiment with different fonts and type sizes before dragging the title onto the page. Working on the pasteboard lets you concentrate on a component without worrying about column guides, snap to guides, or accidental selection of an adjacent element (see Figure 5).

Finishing Up

When all the elements are finally in place, look over the pages and add embellishments if you wish: hairlines or thin lines running between columns, the newsletter number and date, possibly a few decorative elements. At this point you can hyphenate a few words if your ragged right margin looks too ragged.

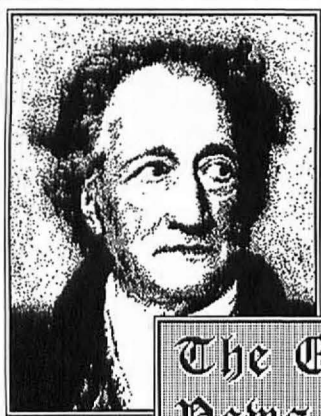
When you're satisfied with your design, select Choose Printer from the Apple menu and choose the LaserWriter in the dialog box that appears. Since a small discrepancy exists between the Mac's screen display and the LaserWriter's resolution, you may sometimes find it necessary to reposition elements that

looked fine on the screen but that printed with slightly different spacing. It's also a good idea to proofread the printed newsletter for typos you may have missed on screen.

With final corrections made and the completed newsletter in your hands, you experience the feeling of satisfaction and accomplishment that comes from doing it all yourself. This is the allure of desktop publishing and of *PageMaker*. □

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Vol. 4, No. 2
February 1986

The Goethe League News-Intelligencer

Next Meeting Announced

The next meeting of the Goethe League will be held on Wednesday, March 26th, 1986, at 8 p.m. in the Meeting Room at the Oddfellows Hall, 1492 E. Seville Blvd., in Los Altos. Mr. E. R. Burroughs will speak on the topic of "Goethe's Theory of the *Ur-Plant*, and its relation to the work of Rudolph Steiner." Following his lecture there will be a demonstration of methods for perceiving the Archetypal Forms present in Nature. Refreshments will be served.

As we go to press, word has reached us that Mrs. Ellie Howe has agreed to speak on "Faust, Proust, and Hegel: The Three Stooges of the Intellect?" at the following meeting in April. The exact time and place of the meeting have not yet been determined and will be announced in our next newsletter.

Reminder: '86 Dues

Membership of the Goethe League is now up to 45 active members. We'd like to welcome new members Patrick Hayden, Joe Fabricant, and Robin Clausen. All members are reminded that dues for 1986 are now \$20 and are payable to Clovis Trouille, Treasurer, immediately.

Quote of the Month:

THERE ARE GREAT advantages in mystery. For when you always tell a man straightway what is at issue he fails to be impressed. Certain mysteries, even though they be manifest, must be accorded respect by veiled reference and silence in the interest of modesty and good morals.

from *Wilhelm Meister's Journeys* (1829)

New Maier Book

Congratulations to Michael Maier upon the publication of his new book of Goethe scholarship, *Atlanta Fugens* (\$24.95, Miskatonic University Press, 1985). The work of over ten years of research and study, the book convincingly demonstrates that Goethe may have been a pen name used by the same group of literary pranksters that were responsible for Shakespeare's plays. This is Maier's second book. His first, an account of an imaginary conversation between Francis Bacon and Roger Bacon, was entitled *Bacon Bits*.

Wedding Bells Ring

Yes, romance can blossom anywhere, even in the ranks of the Goethe League. Members Colleen Wilson and Ralph Clymer first met at a League meeting where Ms Wilson was speaking on "Frau von Stein and Goethe: A Neoplatonic Affair?" The lucky couple soon discovered that they had more in common than merely an interest in Goethe—both Colleen and Ralph are avid racquetball players and share a concern about the negative effects of injudicious interbreeding upon Chinese Pugs. The Wedding is set for June 15, 1986, and all League members are cordially invited.

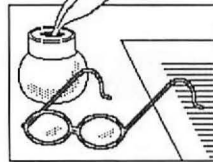
False Rumor Denied

There is absolutely no truth to the rumor going round that League president Anthony Marcus was forced to resign after embezzling League funds to the tune of \$20,000. Anthony resigned "because I want to spend more time with my family." The Marcus family is presently enjoying a well-deserved winter vacation skiing on the Swiss Alps. Enjoy!

Iphigenia Tickets

Only a few tickets remain for the presentation of Goethe's verse drama *Iphigenia* at the Community Center, Mountain View, on March 15th. League member Jack Boehme is directing this exciting drama which stars the Greek Club from Mountain View High School. Tickets are \$5.00 from Clovis.

More Wisdom from
Johann
Wolfgang
von
Goethe



The Quiet Momentum of Single-mindedness

There are only two ways, I often heard Goethe maintain, to achieve great and significant ends—tyrannical power and single-mindedness. Tyrannical power is apt to be resented and to provoke opposition; it is the prerogative, moreover, of few favored individuals. Single-mindedness, however, an unflinching, systematic attitude of follow-through, is in the power of even the most modest individual to employ, and it will rarely fail of its aim since its quiet momentum irresistibly mounts with the passing of time. Where I cannot apply myself with this attitude of follow-through, where I cannot exert my influence without interruption, I find it more advisable to withdraw altogether. Fitful, capricious action, besides affording no guarantee of progress in the right direction, has a way, moreover, of interfering with the natural course of things and disturbing those healing agencies that would automatically come into play.

from a conversation with Goethe reported by von Muller, 1832.

Superstition as virtue, Skepticism as ailment.

The only trouble with superstition is that it resorts to false means to satisfy a real need. It neither deserves the abuse that is heaped upon it, nor is it as uncommon as one would think in enlightened ages and among enlightened people.

For who can claim that his way of satisfying his indispensable needs is always pure, true, blameless, and complete? Where do we find so high a seriousness of purpose, backed by faith and hope, as to be without its admixture of superstition and delusion, frivolity and prejudice? . . .

It has often been said that skepticism is superstition in reverse, and this would seem to be pre-eminently an ailment of our own age: A noble deed must have its mainspring in selfishness, a heroic action in vanity; a great poem is reduced to terms of feverish excitement; and what is even stranger, the most significant phenomena are refused credence as long as there is a shred of a possibility of maintaining a negative attitude.

This insanity of our own age is certainly worse than that which prevailed when men performed acknowledged extraordinary phenomena as existent and then attributed them to the devil. Superstition is a heritage of energetic, progressive personalities who are active on a large scale; skepticism is the mark of weak, petty-minded, regressive, and egocentric men. The former love to marvel, because this stirs the sense of the sublime of which their souls are capable; and since this is always accompanied by a certain shudder of apprehension, the suggestion of an evil principle is close at hand. An impotent generation, on the other hand, feels the sublime as a menace to its existence; and since no one can be expected to submit willingly to his destruction, these people are perfectly right in refusing to acknowledge what is great and colossal when they meet it as part of the contemporary scene. They wait to modify their views until it has passed into history and presents a more tolerable aspect, its brilliance subdued by a sufficient distance from the observer.

from *On Theory of Color* (1810), pp. 40, 165-9.

The finished newsletter (above and right), printed on the LaserWriter, shows that PageMaker can produce professional-looking publications. The program lets you change the layout of a page without peeling up glued-down pieces of text or artwork.

Hypermedia

Jeffrey S. Young

It's the twenty-first century. After a hard day putting out fires all over the galaxy, you've finally beaten your way through the spaceship-locked airways and found your way home. You pop a cold one and settle into a favorite chair to enjoy an evening's light entertainment on the gogglebox.

In front of a Macintosh-like computer, you casually scroll through the text of a space romance. The story's two main characters have landed on a sandy beach, located somewhere in the Tortugas. The description of the beach sounds particularly appealing, so you decide to look at this section of text in closer detail, perhaps find a new place to take your monthly vacation. With a deft turn of the mouse, you slide the blinking cursor over to the word Tortugas and triple-click on it. Instead of the word becoming highlighted, new text spills onto the screen at the point where you triple-clicked, telling you everything you could possibly want to know about the Tortugas. Simultaneously, another window pops onto the screen and displays a travelogue video that corresponds to the text unfolding on screen.

Science fiction? Not quite. This scenario depicts a new kind of electronic information medium, hypermedia, which promises to change the way ideas, documents, and even works of art will be generated in the near future. Briefly, a hypermedia system allows authors to link together, in an orderly but nonsequential way, information created with a variety of media. Like an encyclopedia, this system connects ideas and references by directing readers to other documents. But unlike an encyclopedia, it gives readers electronic bridges for reaching the referenced information quickly and easily.

Readers can browse or create pathways through linked, cross-referenced, annotated documents consisting of text, pictures, numerical data, computer graphics, music, or video with the click of a mouse button. For instance, on a single computer screen, a chemist could manipulate molecular models, write a research paper, and read relevant reference material. Today, hypermedia is a growing area of research at universities such as Brown, MIT, Stanford, and Carnegie-Mellon, as well as in the high-tech labs of companies like Apple, IBM, Xerox, and AT&T.

The impetus for hypermedia developed from pioneering research done in the early 1960s by a pair of noted blue-sky thinkers: Douglas Engelbart and Ted Nelson. Engelbart is credited with the original design of the mouse and much of the seminal work the Macintosh was based upon (see "The Macintosh Family Tree," *Macworld*, November 1984). Nelson, who is best known for his underground classic *Computer Lib*, coined the words *hypermedia* and *hypertext*.

Augmentation

While in graduate school at the University of California at Berkeley, Engelbart was inspired by the ideas of Franklin D. Roosevelt's science advisor, Vannevar Bush. In an article that appeared in the *Atlantic* in 1945, Bush proposed a machine, called Memex, that would improve the quality of human thinking by providing quick access to immense databases of information. In 1962 Engelbart wrote a scholarly report outlining his ideas for adapting Bush's concept to the computer. Engelbart didn't use the term *hypermedia* but called his idea *augmentation*, as in "augmenting human intellect." What Engelbart had in mind, based on the potential he saw in the early computing devices, was a set of tools that would provide an entirely original way of organizing and retrieving information.

The original work for the project was done under contract for the United States government at SRI Inter-



This hypermedia system sets up links among reference texts about Titian's Venus and Adonis and composition diagrams. Materials can also be cross-referenced to a video display.

national and funded by Advanced Research Projects Agency (ARPA). Today the United States government, especially the Air Force, is still the prime user of Engelbart's creation.

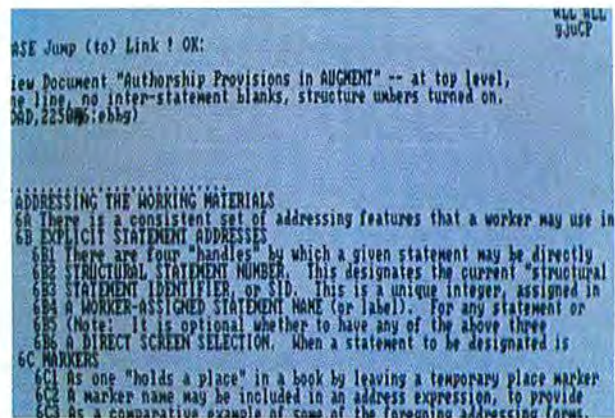
The Hypermedia Link

By 1968 Engelbart had a core system, named NLS (oN Line System), that included a mouse, multiple windows, electronic mail, and teleconferencing capabilities. In 1978 SRI brought NLS out of the research institute and sold commercial rights to Tymshare, of Cupertino, California. Tymshare renamed the system Augment and marketed it as an office automation product. McDonnell-Douglas, which subsequently purchased Tymshare, now markets Augment as a commercial network system. An Augment system such as the one the Air Force uses requires several mainframes and is well suited to such jobs as writing documentation for complex technical systems. Augment has sophisticated facilities for editing text and graphics, as well as for managing complex databases. The feature that makes Augment an extraordinary tool for scholarly and scientific research is the capability to create links between documents. For example, if you wanted feedback on a research paper you were writing, you could send your document by electronic mail to other scholars for review. Those scholars could in turn link their comments to the original document and set up links within their documents directing you to other reference material. Somewhat like *ThinkTank* on the Macintosh, documents can expand or contract to reveal additional levels of information. You can annotate an entire collection of relevant literature for a particular topic in a single document showing all of the links.

With so much information available, you could easily become overwhelmed trying to extract one particular piece. To circumvent this potential problem,

Augment has viewing filters that let you selectively control the scope, content, and format of information displayed on the screen. For example, in a complex system's documentation, such as an operating manual for the space shuttle's guidance systems, you can tell the system to show only specific information—for example, diagrams and footnotes to technical specifications. In addition, you can combine viewing filters with passwords to restrict access to sensitive materials.

You can access the Augment network with your Macintosh, but the average cost—about \$18 per hour—is a little high for the casual user.



Augment

The Augment system provides viewing filters so you can control the information displayed. After choosing the Jump (to) Link command and clicking on a specially formatted citation embedded in the text, the linked document appears on the screen.

Xanadu

While Engelbart was developing Augment, Ted Nelson was simultaneously dreaming up an information processing system with many similarities to Engelbart's, including links and viewing filters. Nelson describes his system as *hypertext*—an immense reservoir of the world's literature through which people can browse randomly and create new documents by combining fragments of existing ones. Hypertext is not restricted to text; like hypermedia, hypertext can include sound, pictures, and other types of information.

Whereas Engelbart's vision is demonstrably practical, Nelson's is decidedly literary. He calls his hypertext system Xanadu, after the "magic place of literary memory" in Samuel Taylor Coleridge's poem "Kubla Khan."

The fundamental building block of this new-age Xanadu is the unified data pool, an electronic repository of all the documents that reside in the system. No main version of a document exists, just the evolving accumulation of changes made to the original document.

To retrieve a particular document from the system, the bits and pieces making up the text must be re-assembled from the original source documents.



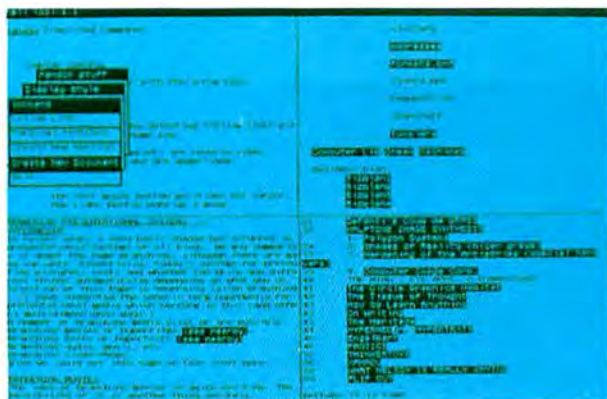
Author of the Augment information processing system, Douglas Engelbart is also credited with the invention of the mouse, in 1964.



Computer pioneer Ted Nelson originated the word hypermedia.

Nelson claims to have developed a programming algorithm for organizing the layers of text and indexing the enormous number of links necessary to piece together text in this manner.

The great advantage of Nelson's system is the reduction of space required to store information in a Xanadu file server or on a hard disk. In most systems, copies of new versions of a document duplicate much of the material in the old versions. In Xanadu, only the original document and the changes made to the original are retained. The Xanadu storage system also makes it easy to reconstruct previous versions of documents. If a lawyer wants to compare two versions of a legal document, for example, the system can show word for word what parts of two versions are the same. Another key factor in Nelson's scheme is copyright control. A Xanadu system can easily track the use of original material and provide evidence of unauthorized uses of information.



Xanadu

The Xanadu hypertext system, running on a Sun Microsystems computer, can split the screen into numerous windows. Highlighting or underlining shows a link to another document. Text from a document that has been incorporated in another changes if the original is rewritten.

Nelson's crusty-individualist attitude has made it difficult for him to sell his work, although he's still a provocative lecturer on computers and the future. Xanadu requires a fundamental reorientation to the very nature of words and knowledge. In his book *Literary Machines*, Nelson views Xanadu as the only storage and retrieval system that can adapt to the new paradigms and information demands of the future. Currently, Nelson's Xanadu Corporation markets the system, and the company is trying to find financing for a personal computer-based system. One version now runs on a Sun Microcomputer workstation in San Jose, California. Nevertheless, making the world's existing body of documents compatible with Xanadu is probably as much a pipe dream as Coleridge's "stately pleasure dome."

The University Connection

The research labs of several universities are working to make hypermedia a reality. At Brown University in Providence, Rhode Island, for instance, an early collaborator and follower of Nelson and Engelbart, Andy van Dam, has been fine-tuning the country's most advanced educational hypermedia project. With Nelson, van Dam created one of the first working hypertext systems in 1967 and 1968. Although IBM research grants funded it, and the NASA Manned Space Center eventually used it on the Apollo Project, the Hypertext Editing System never caught on commercially. Philips, the electronics giant of the Netherlands, marketed a version of the system for a time, but by the early 1970s van Dam and Nelson had parted paths.

Van Dam helped develop a poetry course at Brown University in 1975 that utilized FRESS (File Retrieval and Editing System), a successor to the Hypertext Editing System. One of the experiments van Dam



Andy van Dam developed one of the world's first working hypertext systems with Ted Nelson in 1968.

and his associates tried was to reveal progressively more of the linked information about a poem as the week transpired. They started with the poem alone, then added a simple level of analysis, and by the end of the week revealed all the critical references. This idea was similar to the viewing filters that Engelbart used in Augment. "If you were looking from five miles up in an airplane, all you would see is major arteries, and that's

Clicking on the text of *Romeo and Juliet* reveals either commentary or a scene from the Zeffereilli film.

probably all you need to see. But if you're driving, then you want to know about more than major arteries—you also want to know about byways," explains van Dam.

The courseware developed with FRESS wasn't limited to multiple reference windows for annotations and footnotes. The system included an active student-teacher bulletin board as well. "The hypertext system was also a vehicle for a tremendous amount of electronic graffiti, marginalia, and dialog among people," says van Dam.

For the most part, the experiment was a great success with the students. The procedure for establishing links was complex, however, and the system provided few spatial cues, so students sometimes got lost in the maze of interconnected documents. In addition, at that time the expense of computers powerful enough to make the multiple window system feasible and to maintain a complex knowledge base was prohibitive. The projects were shelved until the Macintosh/Lisa generation of computers came along.

Intermedia

With desktop computers, like the Lisa and the Macintosh, the potential for widespread enhancement of the scholarly process with hypertext/hypermedia was one step closer. In the spring of 1983, Brown University established the Institute for Research in Information and Scholarship (IRIS) to oversee the development of an integrated network of advanced personal computers called scholar's workstations. Brown aims to have several workstation classrooms in operation by 1988. A classroom might set up as many as 50 individual workstations in a lecture hall.

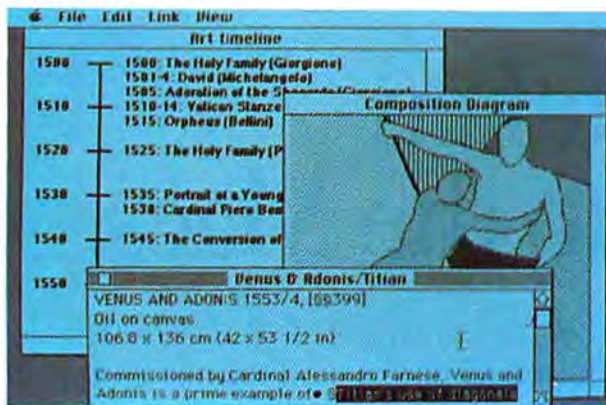
More than 15 years of research with hypermedia systems at Brown led to the creation of an author's tool akin to Engelbart's Augment and Nelson's Xanadu—Intermedia. Leading the current project is Norman Meyrowitz, IRIS scholar's workstation group manager. He describes Intermedia as a collection of tools that authors use to set up links between documents created with different applications. IRIS is currently developing Intermedia course-ware that combines pictures, voice, animated computer graphics, video, and text. For example, a music instructor giving a seminar on Beethoven might create a set of course materials that would include a biography of the composer's life with links to the score of each work mentioned, a videodisk of Beethoven's life, and other texts related to his work. In addition, each score could be linked to digital recordings of the piece or videotapes of performances of the work. Using Intermedia on a computer network, students could electronically receive and hand in assignments.

With funding from the Annenberg/Corporation for Public Broadcasting Foundation, IBM, and others, Meyrowitz and programmer Steve Drucker created an Intermedia demonstration system for one of Shakespeare's plays. Running on a Macintosh, the demo sets out the text of *Romeo and Juliet* with links, denoted by special symbols, placed within the text. Clicking on these links opens new windows that display annotations and commentaries on the play. But the source of real excitement is that Shakespeare's text cross-references to a film database on a laser disk player connected by cable to the computer. Clicking the mouse on any line from the drama on screen shows the line performed in the Zeffereilli film version of the play on a TV monitor. Meyrowitz and Drucker plan eventually to catalog all of Shakespeare's plays—perhaps using the BBC versions on laser disks—and make the system available to schools and libraries.

Throughout the buildings and dormitories of the school, Brown has installed a network that not only transmits computer signals but video and FM broadcasts as well. Soon, in addition to a campuswide com-



Norman Meyrowitz heads the IRIS workstation project, which provides a hypermedia path for scholarly research.



Intermedia

In a corpus of art history materials, for example, links can be created between historical timelines, diagrams, reference texts, and even video or laser disk images. The program places bullet markers at both the source and the destination points to indicate the existence of a link.

puter bulletin board and message system, the university expects to have libraries of films and campus educational shows, all running on the same cables. It's a short leap from that to a full-fledged hypermedia system that is available in any room on campus.

The Hyperfuture

No matter what this new electronic information medium is called—augmentation, hypertext, intertext, or hypermedia—it is an idea whose time has come. Augment and its predecessor NLS have been in operation for more than 20 years, but few institutions other than the United States government have used the system commercially. Navigating Augment's complex network requires the mindset and computer fluency of an engineer or a scientist. Nelson's Xanadu promises a much simpler method of interaction, but it has yet to be tried in a large-scale installation. Nevertheless, Nelson and Engelbart have inspired an entire generation of programmers and thinkers, and elements from both men's work are being incorporated in the hypermedia systems now developing in the academic community.

At present, low-cost desktop computers like the Macintosh are underpowered and lack the multiuser, multitasking, and storage capabilities necessary for a hypermedia workstation. But Apple, IBM, and other computer manufacturers are now building the next wave of personal computer workstations—workstations that may make hypermedia a reality. As it happens, these are exactly the kinds of systems that Macintosh alumnus Steve Jobs's new firm, Next, proposes to develop.

Another fundamental but unresolved issue is the development of skills for writing with such an all-encompassing medium. In addition to the arts of using words and creating pictures, the new art of linking—making coherent networks of relations among differ-

ent kinds of documents—will be born. Fields such as law or medicine will require new databases of specialized information. For example, a lawyer browsing through a brief with citations to related cases should be able to instantaneously open a window on screen to see the text of any referenced citation. For a field like medical diagnostics, the body of material available for review by a doctor could be continuously updated.

Certainly, creative artists will use this new medium for multimedia entertainment, and that will require a new kind of thinking from the participants in a hypermedia production. Authors of interactive fiction, for example, will have to find ways to let readers determine the direction of stories. "Hypermedia is a totally new medium—it's a superset of all the media we've had so far. The trick is to combine these media in a compelling but manageable way," says van Dam.

Projects like the Intermedia installation at Brown demonstrate the kind of hypermedia systems that will exist at colleges in a few years and in offices thereafter. By the early 1990s these powerful systems will probably be on the desk top of any person involved in knowledge-intensive tasks. □

●●●●●●●●●● Jeffrey S. Young is a Contributing Editor of Macworld.

●●●●●●●●●●

Augment

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Literary Machines: The Report on, and of, Project Xanadu Concerning Word Processing, Electronic Publishing, Hypertext, Thinkertoys, Tomorrow's Intellectual Revolution, and Certain Other Topics Including Knowledge, Education and Freedom.

Ted Nelson, 1981

Available from the author, \$15

8480 Fredricksburg #138

San Antonio, TX 78229

Computer Lib

Ted Nelson, 1974

Out of print

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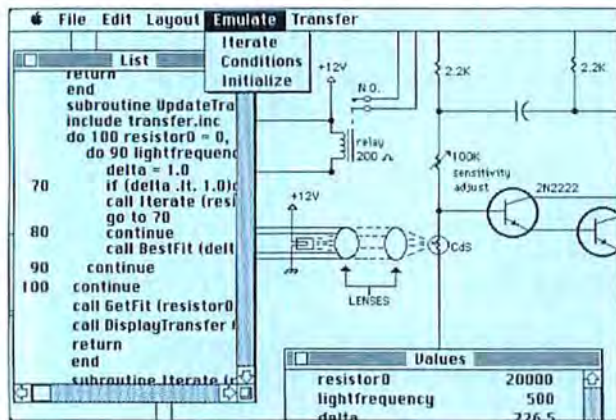
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- One disk drive.

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Macware Reviews

MacOneWrite Cash Disbursements, MacSpell +, Dinner at Eight, MegaDesk, Championship Star League Baseball, and the Hewlett-Packard LaserJet

Edited by Erfert Nielson

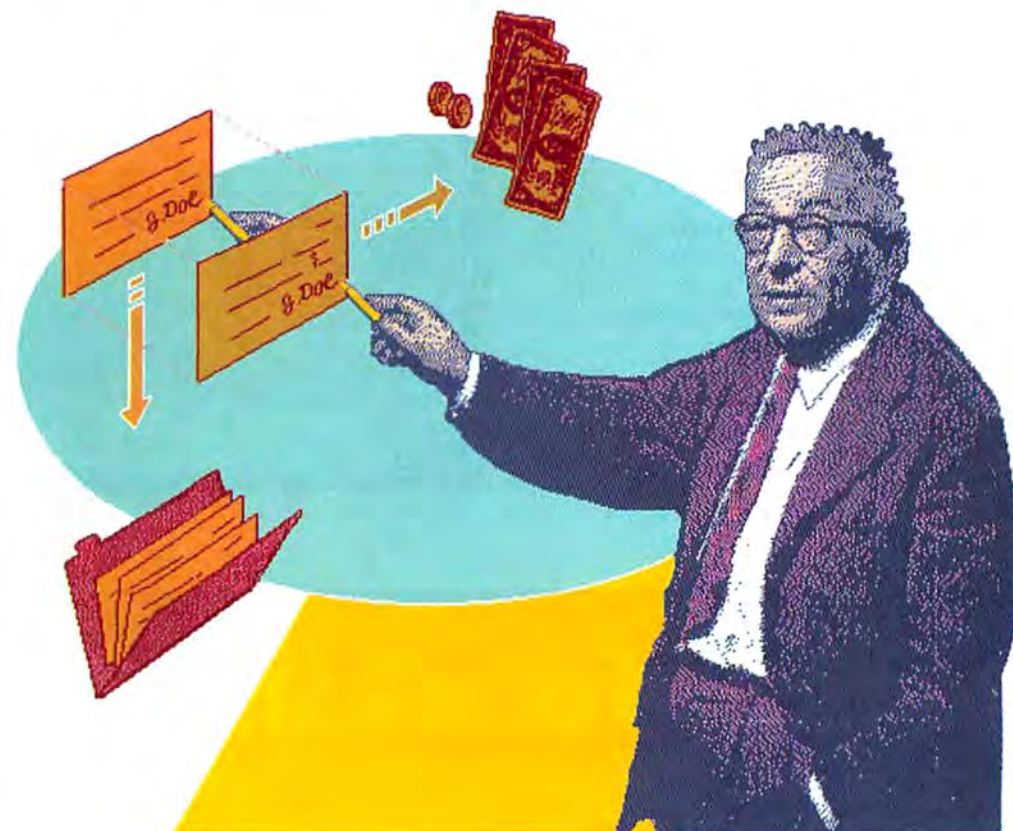
For Simplicity's Sake

The best solution to a problem is often a simple one. Over six million small businesses rely on the time-tested, one-write (or "pegboard") accounting system. In a one-write system, each accounting event is recorded with some sort of paper transaction, which in turn is used to update accounting records. A cash disbursements system, for example, uses carbon-backed checks: each time you write a check, relevant transaction details are instantly transferred to an underlying cash disbursements journal. It's a simple and efficient system.

Imitation as Flattery

To woo these small businesses to **MacOneWrite Cash Disbursements**, Sierra On-Line uses a simple tactic: *MacOneWrite* looks and works just like a manual pegboard system. The program takes virtually no time to learn and use if you're familiar with a manual one-write system, has some features unavailable in a manual system, and gives you the option of tying your cash disbursement records into Sierra On-Line's *General Ledger*, *Payroll*, and *Accounts Receivable* modules. The program's simplicity doesn't get you a break in price: at \$245 *MacOneWrite Cash Disbursements* itself represents a considerable disbursement.

MacOneWrite is more than adequate for tracking the cash disbursements of a small business. It prints checks and automatically records them along with bank



deposits, bank charges, interest income, and handwritten checks in a cash disbursements journal (see "Carbon Copy"). Journal data generates a year-to-date income statement that charts income against expenses by account number, a balance sheet that lists total assets and liabilities, a disbursements journal for reconciling bank activity, a chart of accounts, a vendor year-to-date report, and a vendor address list. You can print and display all reports.

Follow the Bouncing Ball

The pegboard system coupled with the Macintosh interface makes *MacOneWrite Cash Disbursements* extremely easy to use. The program relies heavily on pull-down menus, adding Checks, Doing, Reports, Options, and Year to the menu bar. The Apple menu lets you take advantage of

the Mac's Note Pad, Clipboard, Scrapbook, and Calculator while using *MacOneWrite*.

Once you've started the program, you perform each accounting transaction by clicking the appropriate transaction under the Doing menu and entering data in a large window that's tied to the program's core, the disbursements journal. The window changes format to match the transaction you're working on. For example, you enter the data for a check in a window that resembles a large check. You simply fill in the appropriate fields, and the data is automatically posted to the disbursements jour-

nal and reflected in accounts linked to the check. The check can be printed immediately or saved for batch printing.

To minimize data entry, *MacOneWrite* automatically enters appropriate data from its files, such as a vendor's address or an account number's printed description. You can look up, add, or delete vendors or account numbers at any time, or change or cancel a transaction in the middle of the process.

The program requires a single-drive, 512K Macintosh. Because most of the 110K program is RAM-resident, it is best to keep data on a separate disk and use a second disk drive. The number of accounts and vendors you will be able to handle is limited only by disk space.

Building for the Future

At first glance, it seems strange that a cash disbursements program would include an income statement, a balance sheet, and a complete chart of accounts.

Any accountant will tell you that it's impossible to generate complete versions of these documents based solely on cash disbursement records. Items such as depreciation on the income statement and accounts receivable on the balance sheet cannot be gleaned from a cash disbursements journal. Unless you tie into Sierra On-Line's other accounting modules, these items will register zero, which can be misleading. If

you anticipate moving from a cash disbursements-based system to a more sophisticated system, you get the best of both worlds: the cash disbursements module stands on its own and ties into a more elaborate system without missing a beat. For the person who does not intend to move on to the rest of the series, however, these tie-ins create potentially confusing gaps.

File Edit Checks Doing Reports Options Year

Disbursements Journal

Month: May Bank Balance: 1,085.06

	DATE	TO THE ORDER OF	DESCRIPTION	CHECK #	AMOUNT
2	5/22/86	Rick's Roofing	roof repair	2	732.87
3	5/22/86	Eclectic Electric Co.	solar panels	3	435.45
4	5/28/86	Bernie the Attorney	legal fees	4	1254.00
5	5/29/86	Furniture Emporium	executive desk	5	847.62
	5/29/86	Elitist Volvo, Inc.	windshield washer rebuild	6	342.00
		760 Over Drive			
		Fairlawn, NJ 10433			
Pay Three Hundred Forty-Two and 00/100 dollars					
Bank of the Rockies 111-2222-3333-444					
Sierra					
Account		Amount		Account	
700 Repairs & Maintenance		342.00		0.00	
		0.00		0.00	

Carbon Copy

MacOneWrite mimics a manual one-write cash disbursement system right down to the pegs. As checks are written, pertinent data instantly transfers to the underlying disbursement journal.

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Dare to Err

Although no computer has ever figured out how to stop humans from exercising their inalienable right to enter incorrect data, computers can be programmed to flag data that does not follow established form. Unfortunately, *MacOneWrite* doesn't provide error checking. There are several ways to foul up your *MacOneWrite* data and render your reports inaccurate. You can delete an account number even if there has been activity in that account during the current period, you can overwrite a vendor or account number's year-to-date balance, or you can write a check and post it against a nonexistent account number. *MacOneWrite* doesn't detect any of these errors. It's up to you to check and double-check all your entries.

Another limitation is *MacOneWrite*'s inability to track more than one checking account. Small businesses with more than one account simply can't be accommodated by the program.

MacOneWrite's documentation is a brief 63 pages but is reasonably complete. It includes a short tutorial, a reference guide to program functions, an index, and

a glossary of accounting terms. It is clearly written and well illustrated. The text assumes you are familiar with one-write systems and their underlying accounting principles.

The Bottom Line

MacOneWrite Cash Disbursements is a natural choice for people who use manual one-write systems and who want to automate their books without having to learn a new system. The program is easy to use, and the transition from manual to automated system has never been so painless. If you anticipate continuing your climb up the ladder of automation, *MacOneWrite Cash Disbursements*' tie-ins to its *General Ledger*, *Accounts Receivable*, and *Payroll* modules will make that transition easy. Take a look at those modules, though, before you begin an investment in the whole series.

MacOneWrite's major drawback is its lack of adequate accounting controls. There are too many ways to enter erroneous information. If you or your bookkeeper are meticulous, you won't have a problem. If you are prone to sloppy bookkeeping, however, do your accountant a favor and look into programs with more extensive controls. —Steve Mann

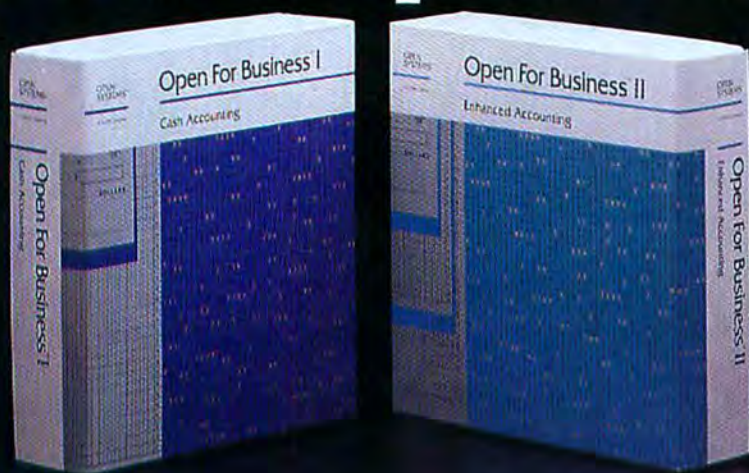
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(continues on page 129)

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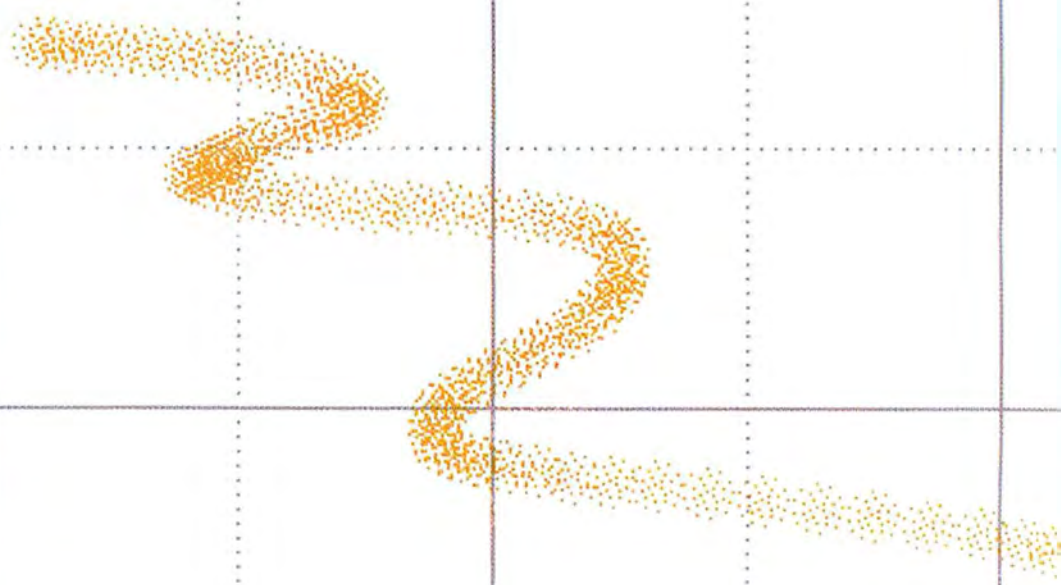
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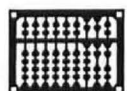
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(continued from page 125)

MacSpell+, from Creighton Development, is one of several Macintosh spelling checkers designed to relieve writers of such burdens. **MacSpell+** combines a 75,000-word dictionary, a thesaurus, and a word-hyphenation feature to create a spelling checker desk accessory that works with either *MacWrite* or *Microsoft Word*. Because the dictionary takes up a good deal of memory, you need a 512K Mac and an external drive to use **MacSpell+**.

Seek and Destroy

Installing **MacSpell+** is straightforward, requiring only a few minutes for even the most inexperienced Macintosh user. Once the desk accessory is installed and you are ready to check a document, select **MacSpell+** from the Apple menu, click the dictionary, and begin the search for words gone astray. To correct misspelled words, you choose Spell Check Document from the **MacSpell+** dialog box. The program reviews your document word by word, stopping when a word doesn't match any of those in its dictionary. When a mismatch is found, the renegade word is displayed both singly and in context. A list of possible spellings, if any can be identified, is also displayed in the dialog box.

If you see the word you want in the list of suggestions, you click on the correct version, and **MacSpell+** inserts it into the text. If the program doesn't display the correct spelling, you can correct the misspelling by retyping the word and clicking Accept. If the suspect word is not misspelled, you can add the word to a 2500-word custom dictionary or ignore the word and continue with the spell-checking process. If you enter a corrected spelling, **MacSpell+** backtracks several words so the word you entered can again be checked. This feature prevents you from misspelling a would-be correction.

Putting It Another Way

In addition to a dictionary, **MacSpell+** offers a thesaurus and a word-hyphenation feature. When you highlight a word in a document, the program displays a hyphenated version of the word. In addition, a list of synonyms appears if the program includes any. To hyphenate a word, click the spot where you want to break the

word, and the hyphenated word is inserted into the text. If **MacSpell+** provides synonyms, you can replace the selected word by clicking the alternative you prefer.

While **MacSpell+** is easy to use, a couple of tips recommended by the program's concise and informative documentation will spare you frustration. First, the program's dictionary is massive, occupying 365K—almost an entire Macintosh disk. If you store your document on a separate disk from the word processor, the spelling check will be accompanied by a mad flurry of disk exchanges. Instead, place the document on your word processor or dictionary disk for the spelling check and transfer it later to another disk for storage.

The second tip concerns the way **MacSpell+** reads a document. **MacSpell+** can only read what it "sees" on the screen. So when reviewing a document with margins wider than the screen display, **MacSpell+** may identify misspellings based only on the text that appears on the screen. For example, *external drive* may be identified as the misspelled word *extedrive* (see "Strange New Words"). When first encountered, this characteristic is somewhat confounding. However, since the correct text is displayed in context at the top of the **MacSpell+** window, you can overcome the problem easily by clicking Ignore.

A Sight for Sore Eyes

All in all, **MacSpell+** does as good a job as most spelling checkers, offering the correct spelling often enough to make it helpful. At the very least, it identifies errors that might otherwise go unnoticed, so you can correct them before someone else *does* notice. The 75,000-word dictionary catches most common spelling errors, and the 2500-word custom dictionary is large

enough to handle most needs. If you desire more words or more than one custom dictionary, you can make copies of the dictionary disk.

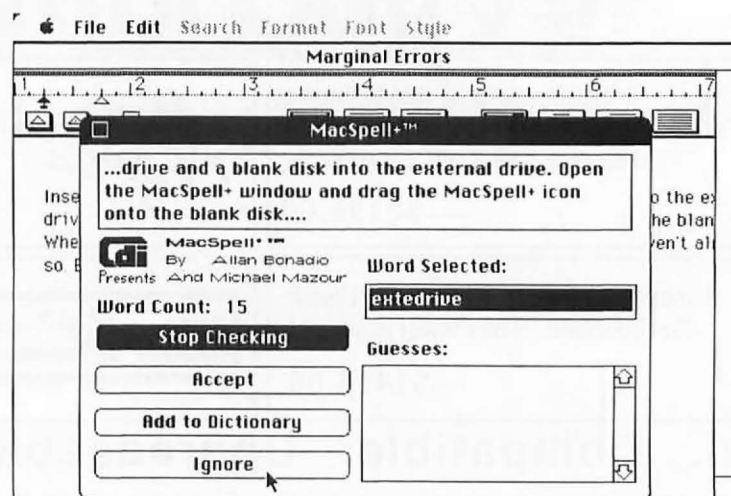
The thesaurus is handy but somewhat limited, since synonyms are defined for only a select group of words. The thesaurus's cross-definition of words is also a bit mystifying. For example, given *unhappy*, **MacSpell+** offers *dolorous* and *sad*. However, in response to the word *sad* it offers *sorrowful* and *gloomy* as acceptable synonyms.

In addition, I encountered a few glitches in the spelling-checker portion of the program. For example, **MacSpell+** recognizes fairly esoteric words like *picklock* and *tapir* but flagged the word *won't*. Also, it suggested I replace *preparation* with *prepartion*. (I declined.) These are small complaints, however, about a generally well constructed program.


My only real complaint about **MacSpell+** is that you must sit patiently by, making individual corrections while the program reviews a document. I much prefer a system that reviews an entire document and allows errors to be cleaned up all at once. But if you don't mind watching while the program checks every word, **MacSpell+** is a welcome sight for eyes made sore by endless hours of proofreading. —Walter C. Burns

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Irvine, CA 92718
714/472-0488
List price: \$99

(continues on page 132)



Strange New Words
One of **MacSpell+**'s quirks is the tendency to contract words when margins are too wide for the screen display. However, you can easily verify correct spellings because the words appear in context at the top of the **MacSpell+** window.



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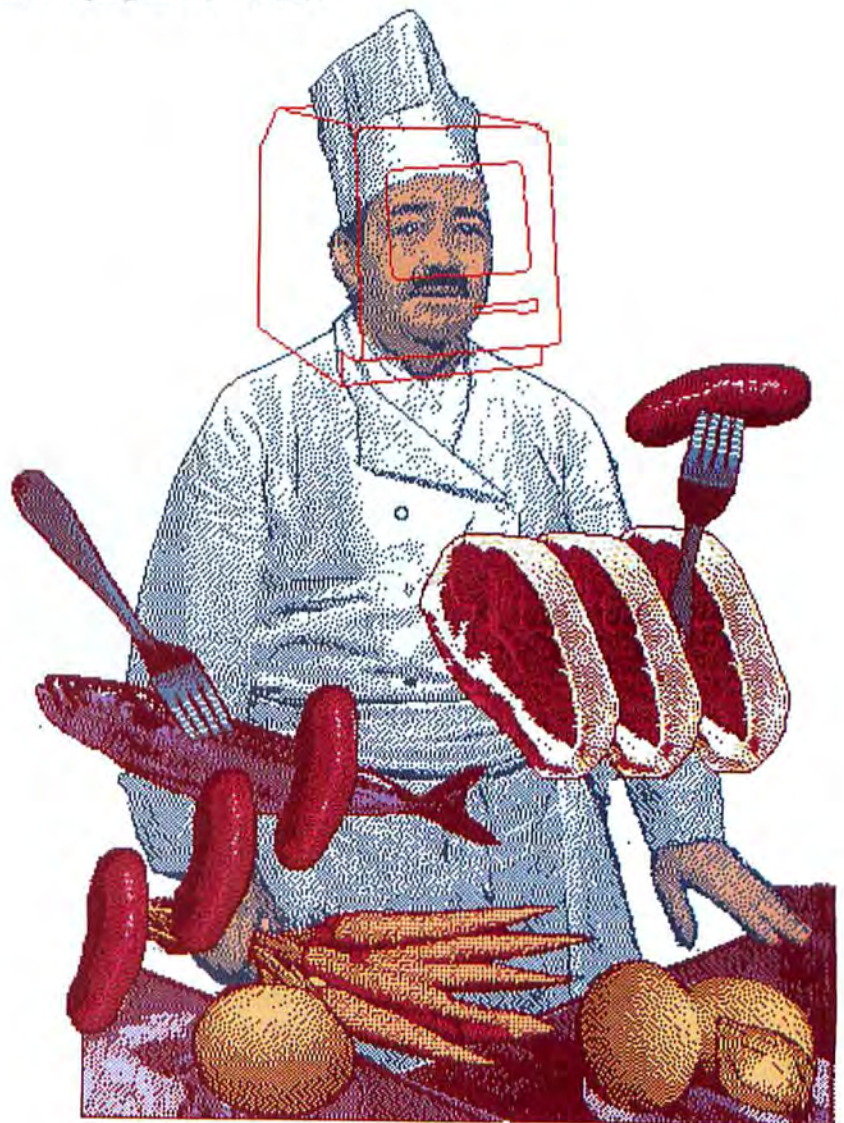
(continued from page 130)

database, you can select recipes by category; adjust quantities for the number of servings; print recipes, menus, and shopping lists; and add your own recipes.

From Brie Soup to Crispy Walnuts

The program is aimed at a Yupscale audience. You won't find a single recipe featuring leftover chicken or canned tuna. But you will find Noisettes of Red Deer (you may substitute antelope), Halibut and Salmon Galantine with Spicy Peanut Sauce, and four recipes for oysters. A menu of Steamed Chicken Breasts Stuffed with Mushrooms (rolled, sliced, and served on a puree of broccoli), wild rice, and Poached Oranges with Anise looked as good as it tasted. Pumpkin Cheesecake received raves from all who tried it, and Honey Pecan Fried Chicken is so delicious it is now a staple in my kitchen.

(continues on page 134)



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(continued from page 132)

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With 152 recipes in the 1986 edition, *Dinner at Eight* has more than enough entrées, desserts, salads, soups, and appetizers to serve you well for months. But 152 recipes, good as they are, fall quite a bit short of the advertised "hundreds of dishes." In fact, *Dinner at Eight* falls short of its claims in many respects.

No Thanks, I'm Just Looking

The program gives you three pictorial Browse screens that you can use to look for a recipe (see "Clicking for Cuisine"). The first screen presents a number of general categories such as soups, salads, desserts, poultry, and hors d'oeuvres. The second Browse screen lets you pick the type of meal you're planning, from dinner parties to gourmet fast food, and the third screen is divided into regional specialties: Far Eastern, Italian, Mexican, and so on. You can open up to three categories at the same time, one from each of the Browse screens. For example, you can request all the recipes that satisfy the restrictive niche Beef/Intimate Dinners/French. Your request won't be granted in this case, though. Even natural two-item sorts such as Intimate Dinners/French and Italian/Dinner Parties come up empty.

When you do hit on a winning combination, such as Poultry/Far Eastern, a list of appropriate recipes is displayed. Click on the recipe you want to examine and the

recipe Summary screen appears. The Summary screen displays the 27 recipe categories from the Browse windows. You can re-categorize a recipe by clicking on a button, instantly putting the recipe into as many categories as you want. The Summary screen also shows the name of the dish, the preparation time, the original serving size, the name of the originating restaurant, and, in some cases, the name of the chef who created the dish.

At the bottom of the screen are title bars for the Ingredients, Directions, and Serving Suggestions windows. The windows look like file cards, and your selection pops to the front of the stack when you click it.

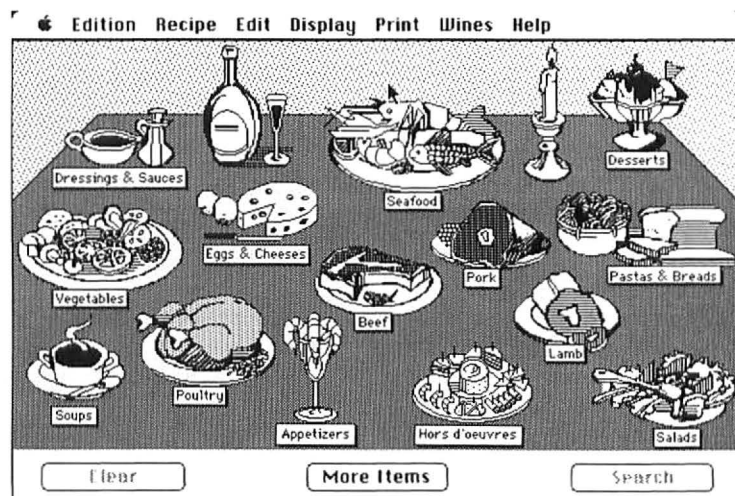
Molehills out of Mountains

You can scale a recipe for any number of servings from 1 to 99. Regardless of the serving size for the chef's original recipe, the default serving size is 4, and scaling is strictly a mathematical process. Some of the ingredients for Cream of Artichoke Soup, which served 10 in the original recipe, look silly when scaled for four: $\frac{1}{16}$ cup onions, $4\frac{1}{16}$ ounces hazelnuts, and an impossible $\frac{1}{16}$ bay leaf. The scaling algorithm frustrates any attempts at reasonable scaling. A recipe that calls for 1 cup of an ingredient for 6 servings calls for $\frac{2}{3}$ cup for 4 servings but $2\frac{2}{3}$ ounces for 2 servings.

(continues on page 136)

Clicking for Cuisine

Three pictorial Browse screens allow you to search selectively by category. You can search for up to three categories at one time.



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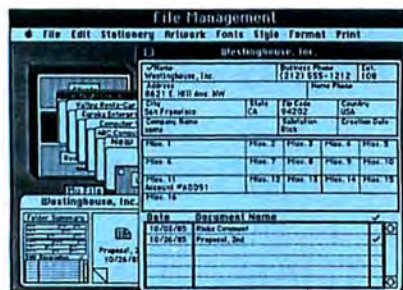
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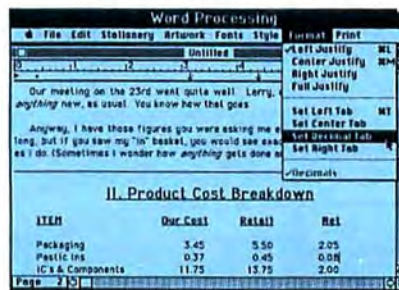
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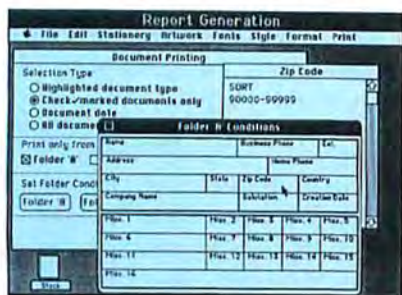
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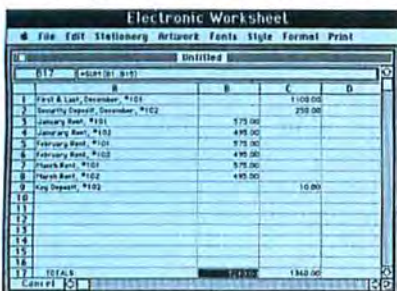
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Report Generation



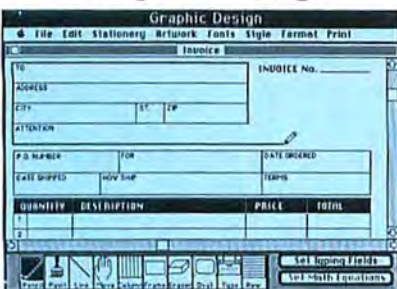
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"Toss Cook to Brown"

The program's ingredient lists and cooking directions are beset with omissions, confusion, bad grammar, and an occasional howler. A recipe for Lamb Kabuli never tells you when to put in the lamb. The directions for Pumpkin Cheesecake ask you to add flour, but no flour is mentioned in the list of ingredients, and sugar is called for twice. The recipe for Chicken Kiev with Smitane Sauce advises, "The secret of this is making sure the breasts of chicken do not ooze of seasoning within," and, "pat the chicken very harsh." Several recipes refer you to other recipes on the disk, such as fish stock and brown veal stock, that are just not there. In the instructions for Kan's Lamb you are directed to "Toss cook to brown. . . ." Not recommended if the cook is Paul Prudhomme.

The Serving Suggestions are, in most cases, simply 50 to 60 words about the restaurant of origin and a wine recommendation. Once in a while there is an actual serving suggestion, usually a recommended vegetable or starch. Editing errors crop up here as well. The wine suggested to accompany Warm Chicken Salad is "Chateau Blanc." Chenin Blanc? Château (something deleted) Blanc?

Other touted program features work less well than I expected. You can make up a menu and print it, but you can't edit it. So if you are serving wild rice (as suggested with the Steamed Chicken Breasts), the menu won't list it unless you go to the trouble of entering a recipe for it.

The shopping list is another good idea, but it also has flaws. The list automatically totals the amounts for the same ingredient from different recipes, saving you the trouble of adding up ingredient amounts for a given menu. But if a recipe calls for an unspecified quantity of something, such as "sufficient oil for deep fat frying" or "a small amount of julienned carrots," the ingredient won't be listed on the shopping list. The shopping list, like the menu, can't be edited.

A Modest Proposal

A representative of Rubicon Publishing said that *Dinner at Eight* is being revised to fix many of the grammatical flaws and omissions of ingredients I've mentioned. But based on the version I saw, I would like to make a modest (although heretical) proposal: invest the \$49.95 in a gourmet cook-

book, a file box, and a supply of index cards. With the money left over you can buy a case of Chateau Blanc. Bon Appétit!—Carol Johnson

Dinner at Eight
Rubicon Publishing
6300 La Calma Dr. #100
Austin, TX 78752
512/454-5004
List price: \$49.95

Desk on a Disk

Getting organized isn't as easy as it used to be. These days you must choose among at least a dozen Macintosh desk organizers—programs that include calendars, appointment books, address lists, and the like.

MegaDesk, from Megahaus, doesn't have a flock of desk accessories as do some other desk organizers, but what it lacks in variety it makes up for in functionality.

MegaDesk is composed of two accessories, Appointment Book and Card File, and Transfer, a utility that lets you move from one application to another without returning to the Finder. The Appointment Book and Card File accessories are copy protected in a way that allows you to copy them onto no more than six work disks.

Pick Six

MegaDesk's installer program is unique in that it lets you remove an installed **MegaDesk** accessory from a disk and then place it on another disk. The installer keeps an accounting of the outstanding accessories, so you can never have more than six copies of the **MegaDesk** accessories on your disks at one time. If you copy an entire disk, the **MegaDesk** accessories will no longer function properly; instead, you'll have a demonstration version to play with. The same thing happens when you try to copy the accessories using Apple's **Font/DA Mover**.

While I don't blame Megahaus for protecting its software against piracy, I feel that restricting the copying of desk accessories negates their purpose: to be available any time you need help, from within any program. To get the most use

(continues on page 138)



(continued from page 136)

out of desk accessories, you should be able to copy them to any of your work disks. *MegaDesk's* design is best suited to hard disk owners, who won't need to worry about which disks contain the *MegaDesk* accessories.

No Disappointment

MegaDesk's main accessory, the Appointment Book, has the look and feel of a real desk calendar/diary. It's the best Macintosh scheduler I've seen. The Appointment Book opens on the current day. To switch to another day, click one of the dog-ears; the left dog-ear moves you back a day, the right moves you forward. You can also go to a specific day of the month by clicking its number on the calendar. When you need to, you can easily go back and forth a month or year at a time by clicking in the date box below the calendar.

The schedule on the left side of the display lists appointments for each hour of the day, from 7 a.m. to 5 p.m., with an extra

slot for things to do at night. You can write a short note directly on the schedule line or type a more verbose one in the Note Pad, which provides an unlimited number of pages for each hour on the schedule. A dotted box in the Note Pad window represents the text that goes on the schedule for that hour. If you want to see the schedule for the whole week, click the Week button.

The Appointment Book has its own multiple-alarm feature. You can turn on an alarm for each of up to eight notes you write in the Note Pad. The alarm chimes, no matter what program you're in, as long as the Macintosh is turned on and the Appointment Book accessory is installed on the disk.

The Appointment Book also lets you search for text and purge old appointments. Purged appointments are saved in a file, which you can keep for your records or throw away. The Appointment Book doesn't have a print feature of its own, but *MegaDesk* does have a print utility. The utility prints all the appointment notes in the file, or it lets you print selected portions, such as appointments that fall in a certain week or contain a specific text string like "Lunch with Boss."

File and Remember

MegaDesk's Card File resembles the Macintosh's Scrapbook in that it lets you keep clippings of text and pictures. But unlike the Scrapbook, the Card File enables you to categorize clippings and choose among them from a main index. After you choose a topic, you can flip through the entries you've filed. When you open the Card File, a dialog box lists all the card files you've created. Choose one and an index box appears that lists all the cards in the file. You then choose a card to view, create a new card, or delete an old one.

If the card holds text, scroll bars appear so you can scroll the document to read it. You can edit the text in the card and copy text or pictures to the Clipboard for use in another application. You can also copy text or graphics from an application to a card via the Clipboard.

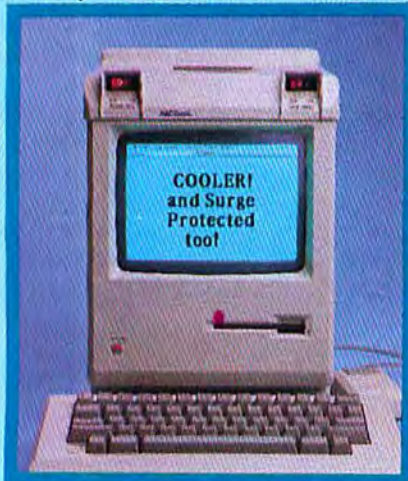
The files the Card File creates can be large, especially if they hold graphics. One file of *MacPaint* images, for instance, can easily take up 200K. Fortunately, the Card

(continues on page 140)

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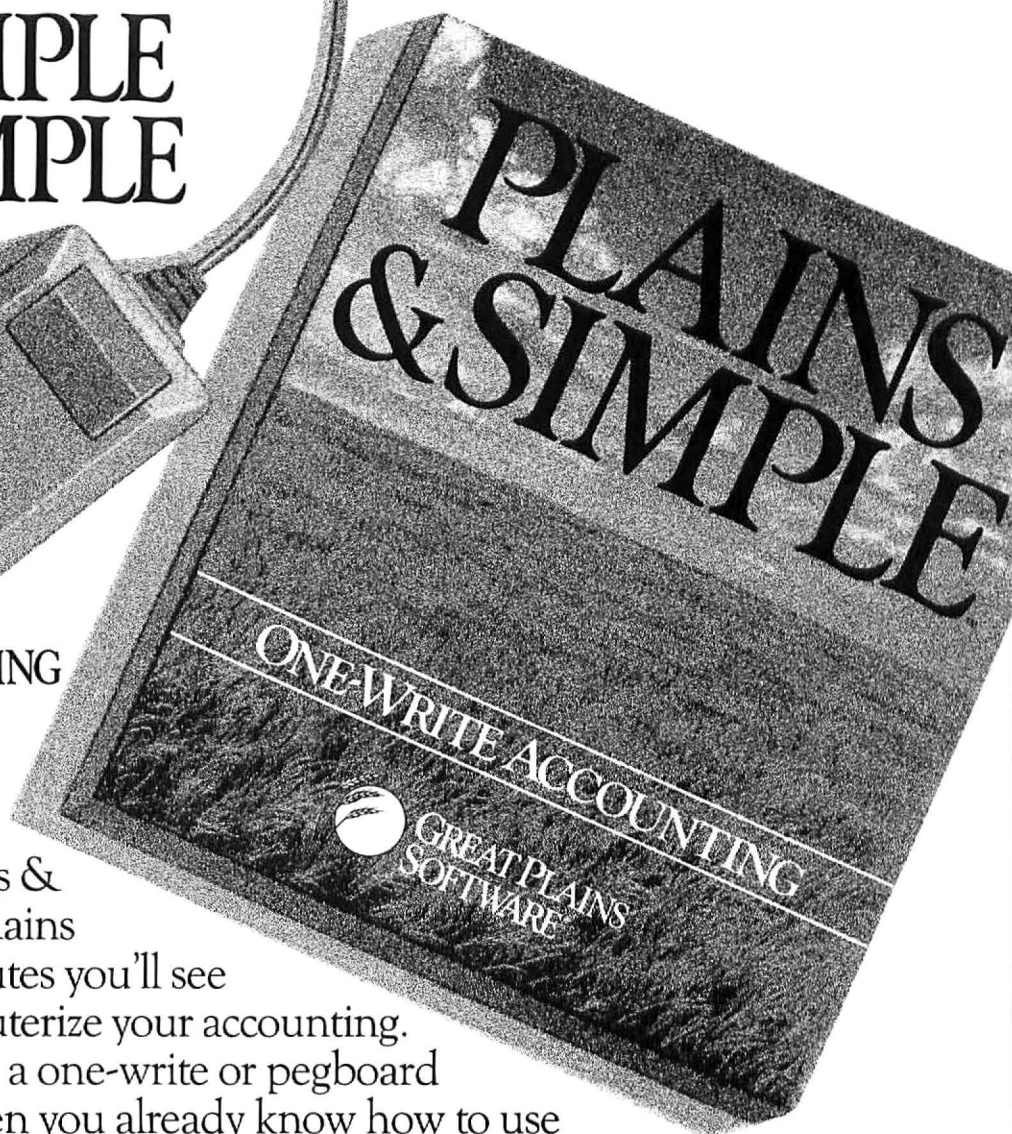
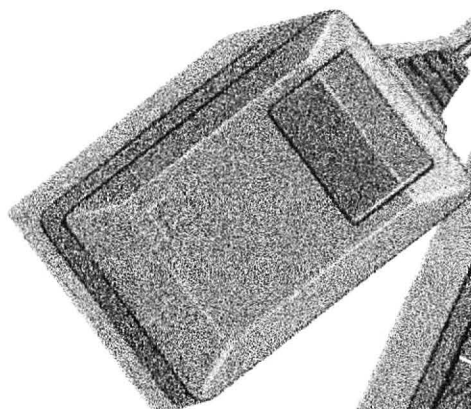
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Macware Reviews

(continued from page 138)

File lets you keep files on other disks. You can dedicate a work disk to Card File documents.

As with the Appointment Book, you can print any card in the Card File using the *MegaDesk* print utility. You can't select individual cards to print, but you can select a range of titles to print. You can also specify that you want to print all the cards, those that contain just text, or those that contain just pictures.

MegaDesk is perhaps the most elegant desk organizer available, although it is certainly not the cheapest at \$125. Since the *MegaDesk* accessories are large, they need a 512K Mac for proper and carefree operation. But each accessory is packed with features and takes the place of three or four lesser accessories. To my mind, *MegaDesk*'s only serious limitation is its copy-protection scheme. —Gordon McComb

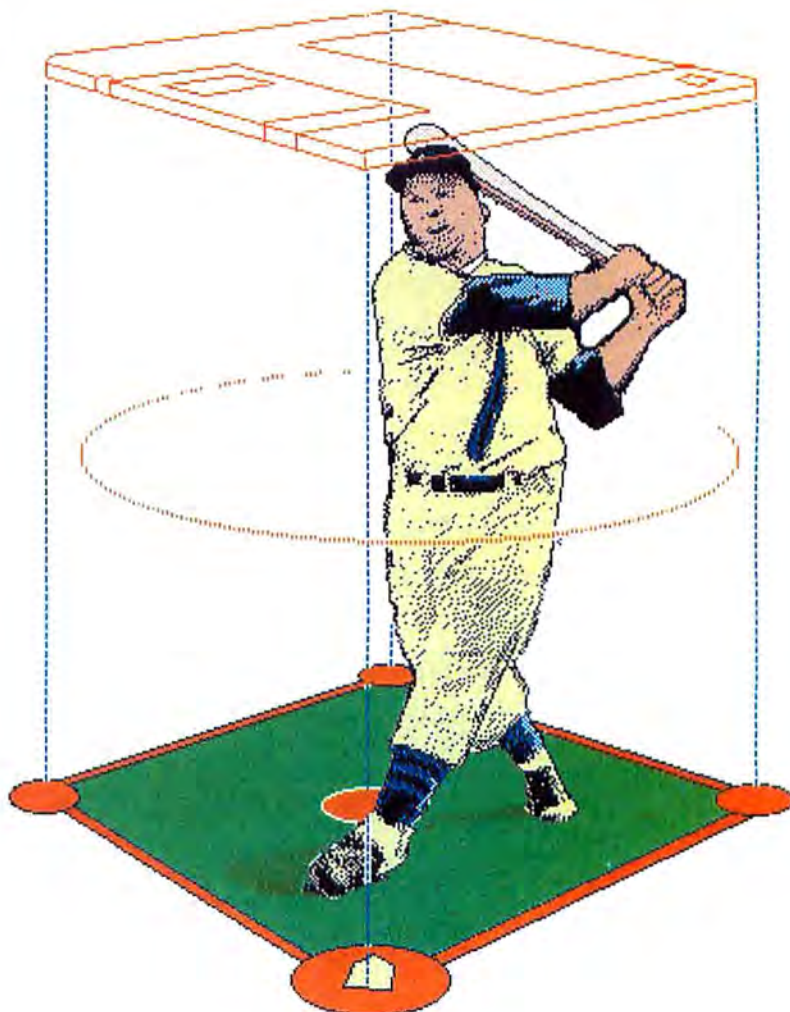
MegaDesk
Megabaus Corporation
5703 Oberlin Dr.
San Diego, CA 92121
619/450-1230
List price: \$125

Take Me out to the Ball Game

Baseball season is almost here. While you're waiting for opening day, you might want to fill the void in your sports life with Gamestar's *Championship Star League Baseball*, the closest thing to real baseball the Macintosh can offer.

Star League is a realistic baseball simulation game that allows players to swing the bat, throw a variety of pitches, and field the ball (see "A New Ball Game"). Runners can lead off, steal a base, or stretch a base hit into a double. On defense, players must field ground balls and flies and choose which base to throw to. There will be some frustrating slugfests while you're learning how to control the mouse for pitching and fielding the electronic baseball. But as you become more adept at scooping up a grounder or fooling an opposing batter with a slow curve, you'll begin to feel like an all-star.

(continues on page 142)

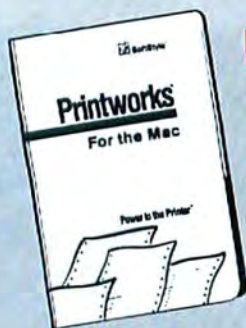


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(continued from page 140)

Play Ball!

Before stepping up to bat, you'll have to suffer through some obnoxious music while the game loads and pregame selections are made. You must first choose between batting practice and a real game and then decide whether to play against the computer or another player. You then select one of two pitchers: Curves Cassidy, master of the curve and sinker, or Heat Muldoon, whose fast ball and slider are legendary. At the same time as the pitching choices appear on the screen, you must decide on a lineup, selecting sluggers or line-drive hitters for each position. After you make the selections, a lineup card appears on the screen.

Pitching and Batting

In real baseball a good pitcher has a wide repertoire of pitches and a good batter anticipates what might come next. *Star League* works the same way. The com-

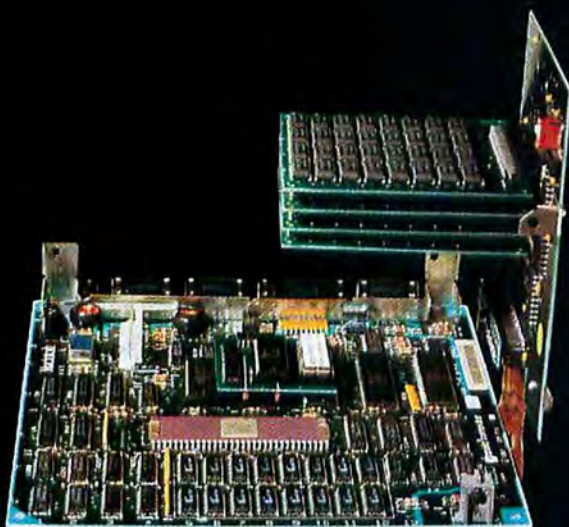
puter, for instance, bats worse when you mix up pitches; the old fast ball-change up combination often causes the confused batter to swat haplessly. You select a pitch—fast ball, knuckler, curve, sinker, and so on—by moving the mouse in a particular direction.

The bat swings when you press the space bar. A late swing directs the ball to the right side of the field, so the runners

can advance easily on a hit-and-run situation. Swing early, and you'll pull the ball toward left field. Of course, not every missed pitch is a strike—on occasion you or your adversary will issue walks. The duel between pitcher and batter can become interesting as you try to guess your opponent's strategy.



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Runners move forward or backward in response to keystrokes. You control the lead runner, and other runners advance if forced. It's easy with a little practice to control the runner and the batter at the same time.

Fielding

In the field there is no relaxing. You have to keep your eye on the runners as well as the ball. Although the computer is less likely to take an extra base than is a human opponent, it's not above such aggressive tactics. You use the mouse to control the fielders as they pursue the ball or a base runner. If a player moves into the ball's path, the ball is fielded or caught. Similarly, if the fielder connects with a base runner, the runner is tagged out. To throw the ball, you click and move the mouse in the direction you want to throw. A good rule of thumb when playing against the computer is to throw to the base where the lead runner is headed, even if he appears to have it made.

When a ball is hit you must first determine whether it's a fly or a grounder (fly balls produce a shadow on the screen, ground balls don't). When the batter connects, the game quickly shows you where the play is; only the fielder nearest to the ball's path can be moved. This can be annoying. For example, sometimes it might seem like a ground ball could be fielded by the shortstop, but only the center fielder can be moved. Ruling: base hit.

I found that the computer makes few errors, so to win you must play aggressively. Lead off, steal bases, even hit-and-run, but be careful—the computer has a good pick-off move. It took me about ten games to beat the computer. You might have more luck against a human opponent.

The Scorecard

Star League has a few drawbacks in addition to the annoying music. For example, it's possible to be thrown out at first base on a hit to left field. In addition, all the batters are right-handed, you can't name your teams, and the scoreboard that flashes on the screen between half-innings only tallies runs, not hits. Although the

game provides a relief pitcher, Knuckles Flanagan, you can only bring him in during the seventh inning. Therefore, if your pitcher tires during the eighth or ninth inning, Knuckles won't be available to bail him out. Finally, I would like to be able to give each batter special characteristics—such as fast-ball hitter, singles hitter, or base stealer—rather than simply designating batters as sluggers or line-drive hitters.

Despite these complaints, the game is compelling enough to keep you coming back. At first, just winning a game against the computer is challenge enough. Then try and shut it out—a goal that should probably get you through to opening day.

—Robert Buderl

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(continues on page 148)

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(continued from page 143)

Alternative Laser Printers

The attractions of laser printers are many. They're fast, quiet, durable machines that can handle cut-sheet paper, letterhead stationery, envelopes, and even transparent acetate. The results, at 300 dots per inch, are invariably crisp and attractive. And the ability to print both graphics and type in a myriad of styles makes these versatile machines ideal for business documents, technical manuals, flyers, and many other publishing applications.

If you are interested in taking advantage of laser printing but aren't willing or able to shell out \$6995 for Apple's LaserWriter, Hewlett-Packard's **LaserJet** and **LaserJet Plus** are enticing alternatives. Priced at \$2995 and \$3995 respectively, these printers are based on the same Canon LBP-CX laser printer engine used in

the LaserWriter. The difference is in the controller board, the circuitry that orchestrates the placement of the tiny spots of toner on a page.

While the LaserWriter incorporates the powerful PostScript page description language, the LaserJet uses a less sophisticated system of escape codes called Printer Control Language, or PCL. In contrast to PostScript, PCL has limited powers: its graphics commands are rudimentary, and

it has no ability to easily scale type or print it at orientations other than upright and standard.

Font Cartridges

On the other hand, the LaserJet's features were carefully chosen by Hewlett-Packard to be the ones most important for

(continues on page 150)



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typical business needs. This practicality can be seen in the way the LaserJet handles fonts. The printer can use plug-in ROM cartridges, each holding about seven fonts. For example, the most popular cartridge has versions of the Helvetica and Times Roman fonts: Helv 14-point bold; Tms Rmn 10-point standard, bold, and italic; and Tms Rmn 8-point standard. The cartridge also includes Line Printer 8-point in landscape (sideways) orientation. In addition, a 12-point Courier font is built into the printer. This set of fonts is suitable for many printing jobs. For example, if you were printing a manual, the Helv could be used for headlines, the Tms Rmn for body type, and the small Tms Rmn for footnotes.

The advantage of the plug-in font cartridge approach is its simplicity. In an office environment, where several people probably share the printer, there's no need for anyone to worry about downloading fonts into the printer and no possibility for confusion about which fonts are available. The

drawback of plug-in cartridges is that you are constrained to using only the fonts on a given cartridge. In addition, at \$225 or more each, the cartridges are expensive. The LaserJet Plus, however, has the capability to store fonts downloaded from a Macintosh.

The Twin Jets

The LaserJet features 64K of RAM, of which 59K is available to you for creating graphic images. Like the LaserWriter, the LaserJet prints a maximum of eight pages per minute. At 300-dots-per-inch resolution, the LaserJet can print a graphic image of only about 5½ square inches. Larger images can be printed at lower resolutions.

The LaserJet Plus offers more flexibility than the LaserJet. The printer has 512K of RAM, of which 395K is available for printing larger graphic images (up to 32 square inches) and for storing up to 32 fonts, overlay forms such as tax sheets, or macros—strings of commands that you create in order to perform given tasks more easily. The LaserJet Plus also has rules, patterns, and eight shades of gray available, which are useful for creating printed forms.

The Software Connection

How well do the raw capabilities of the two machines translate into actual usefulness for the Macintosh? The answer lies in the degree of software support for the LaserJet. Unfortunately, even though the LaserJet is connected to the Macintosh with a standard Imagewriter cable, you can't simply plug it in and produce printed output from an application like *MacWrite*. The reason is that most Macintosh applications don't have drivers to support the LaserJet's configuration parameters and PCL.

Thus, software is the bottleneck in the Macintosh/LaserJet connection, but some solutions are available. One is a package called *Laserstart*, which makes it possible for any Macintosh application to print to the LaserJet. *Laserstart* does a good job of producing *MacPaint* images, letting you choose between high or standard resolution.

Laserstart gives you two options for text. One option lets you print Macintosh screen fonts in either high or standard res-

(continues on page 152)

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(continued from page 150)

olution, just as with the Imagewriter (see "Printing Options"). The standard output is printed at 75 dots per inch (each dot is actually a tiny 4- by 4-dot cluster of the LaserJet's 300-dots-per-inch dots), which closely matches the 72-dots-per-inch resolution of the Macintosh screen. High-resolution output is printed at 150 dots per inch.

The other text option is to use the LaserJet's fonts rather than the Macintosh's. Here the problem is word spacing, which tends to be somewhat uneven for proportionally spaced type due to the difficulty of translating the spacing on the Macintosh screen to that of the LaserJet's printed output. For the best results, choose the LaserJet font that most closely matches the Macintosh font you are using, such as Tms Rmn for New York. At present *Laserstart* can't utilize the advanced features of the LaserJet Plus, such as patterns and shaded rules.

Another utility program, *ProPrint*, can't print graphics at all but does a better job of producing consistent word spacing

(continues on page 154)

Chapter 1 - Loomings

Call me Ishmael. Some years ago--never mind how long precisely--having little or no money in my purse, and nothing in particular to interest me on shore, I thought I would sail about a little and see the watery part of the world. It is a way I have of driving off the spleen, and regulating the circulation. Whenever I find myself growing grim about the mouth; whenever it is a damp, drizzly November in my soul; whenever I find myself involuntarily pausing before coffin warehouses...

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Printing Options

The text on the top shows Laserstart's ability to print Macintosh fonts in high resolution. The chapter title is New York bold, while the body of the text is Geneva. The LaserJet's own fonts provide high-quality printed output, as shown in the bottom sample. Word spacing, however, is irregular.

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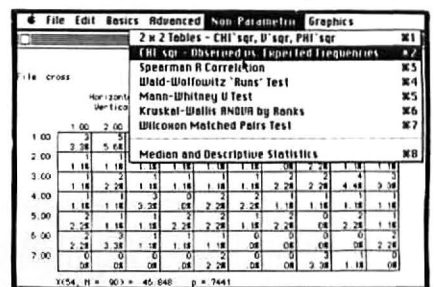
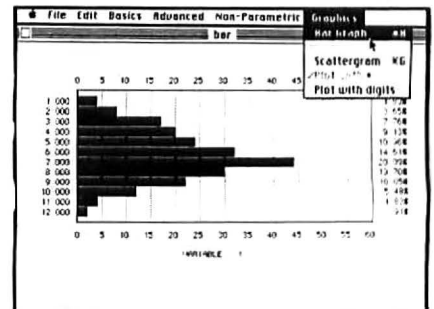
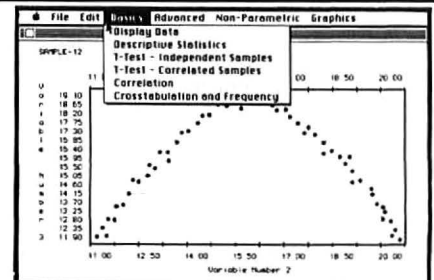
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(continued from page 152)

with the LaserJet's proportionally spaced fonts. Unlike *Laserstart*, *ProPrint* produces full-justified text. On the other hand, *ProPrint* limits you to the default font of whatever font cartridge is plugged into the printer, which defeats the purpose of having multiple fonts.

The Bottom Line

Taken as a whole, the availability of LaserJet printing utilities is a promising start, but it's not yet a complete answer for those who want to really put the LaserJet to work with the Macintosh. The real answer will be for software developers to add LaserJet drivers to their programs.

The bottom line on the LaserJet is that while it lacks the superior graphics and type-manipulating capabilities of the LaserWriter, it's a machine well suited for most typical office document and publishing applications. As of this writing, the lack of printer drivers makes the LaserJet unable to perform up to its potential with the Macintosh. But this hurdle will probably be cleared during the coming months as software developers add LaserJet drivers to their programs. — Ted Nace

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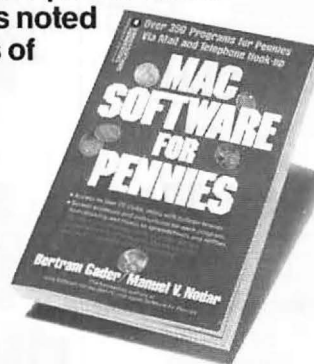
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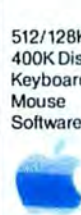
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Note: In the January and February issues, Macworld inadvertently published incorrect rate information for Directory advertising. The correct rate information, per Macworld Rate Card #3, appears above. We regret any inconvenience the error may have caused.

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Open Window

Better digitized images, laser printouts for blueprinting, narrowing down MacWrite, and other Macintosh discoveries

Edited by Jim Heid

This month's column includes some advice on obtaining better results with Thunderware's ThunderScan digitizer. We uncover two undocumented features of Apple's Finder version 4.1, as well as a hidden ability of MacPaint's lasso. Also, a reader reports on an interface that lets Epson printers work with the Mac, and another reader shares a technique for creating narrow MacWrite documents. Finally, we pass along advice on using LaserWriter drawings to produce blueprints.

ThunderScan Enlightening

In my continuing quest for perfection from a ThunderScan digitizer, I've found some techniques for improving the quality of a digitized image, thereby reducing FatBits retouching.

First, you get better results if your original is perfectly straight when you put it in the Imagewriter. If the original contains a long, horizontal line, align it with the printer's roller shaft (the spring-loaded chrome bar that sandwiches the paper against the rubber platen).

You may want to do a test scan of the horizontal line to check its alignment. If the original isn't perfectly straight, the line will appear skewed or slightly "stair stepped" instead of straight. Roll the platen back, adjust the original slightly, and scan again.

If the image you're scanning contains many vertical lines, place it in the Imagewriter sideways—that is, with the vertical lines running horizontally. You'll get better results, since the scanner moves horizontally (see "Straight Scans"). To reorient the

image, save it as a MacPaint document, then open it with MacPaint and use the Rotate command in the Edit menu.

*Fred Hatfield
New Orleans, Louisiana*

Bypassing the MiniFinder

The MiniFinder available with version 4.1 of the Finder decreases the time required to move between applications. When you need the Finder to copy files or otherwise work with disks, however, the MiniFinder adds a step, since you have to click the Finder button or hit Enter to start the Finder.

I discovered that you can bypass the MiniFinder and go straight to the Finder by holding the Option key while you choose a program's Quit command. Hold the key for a few seconds, especially if you're using floppy disks, just to make sure the Macintosh notices.

*Jim Moy
Moscow, Idaho*

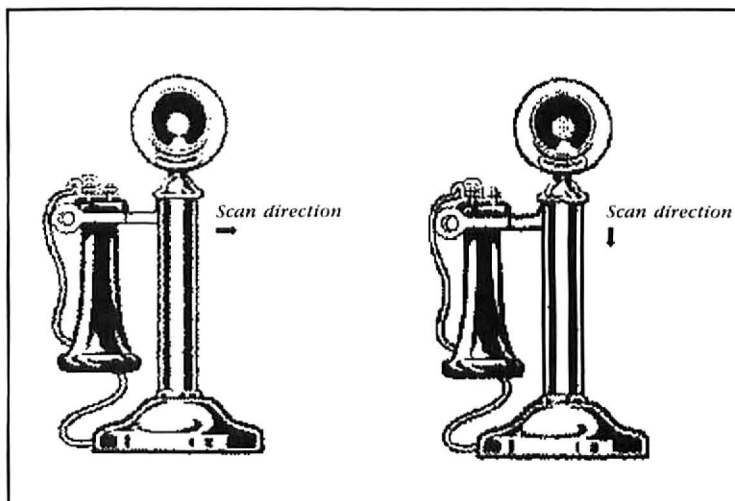
Trashing Locked Files

Tired of seeing the message, "That item is locked or in use, and can't be removed" when you try to throw away a locked document or application? Instead of opening the item's Get Info box to unlock it, simply hold down the Option key when you select the locked item to drag it to the Trash. The Trash can will accept it willingly.

*Steve Kubby
Truckee, California*

Remote Control Lasso

MacPaint's lasso is a great tool for manipulating drawings, but the arrow pointer often obscures your view when you work with tiny details, making it hard to align small elements. I've discovered that after you lasso an item, you can move it by clicking a narrow area located along the drawing window's left and bottom edges as if you were clicking directly on the item (see



Straight Scans

When you use ThunderScan to digitize an image with strong vertical lines, you get better results if you place the original in the Imagewriter sideways, with the vertical lines running horizontally. To reorient the image, save it as a MacPaint document, open it with MacPaint, and use the Rotate command on the Edit menu.

(continued from page 167)

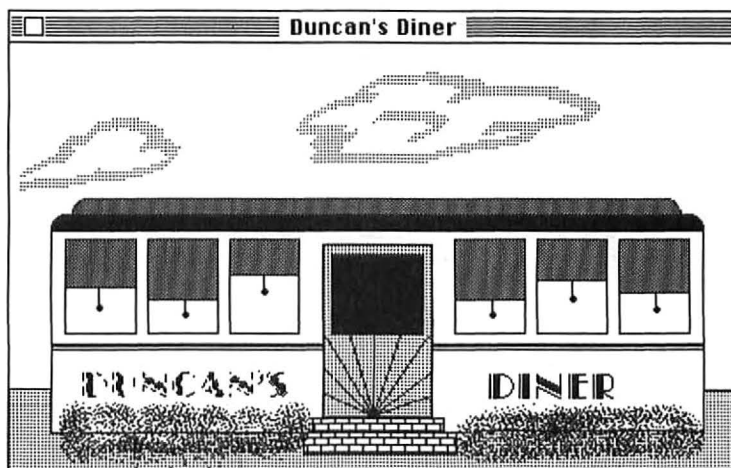
"The Lasso Zone"). Since these invisible "lasso bars" are only a couple of pixels wide, you may have trouble locating them at first. After lassoing your selection, move the pointer slowly toward the window's left or bottom edge. When the pointer turns from the lasso tool into the arrow—before moving out of the drawing window—you've found the lasso bar.

Brad Cannon
West Palm Beach, Florida

Another Epson Connection

As a fellow Epson printer owner, I read with interest C. C. Lee's "The Epson Connection" in the October 1985 *Open Window*. I know of an alternative to the serial interface board Lee purchased, and it doesn't require any chip changing.

The Universal Card (Hanson Data, 18732 142nd Ave. NE, Woodinville, WA 98072; the board's part number is 12319) costs about \$100. It plugs into the Epson printer and requires no modifications. It allows you to switch between Imagewriter



The Lasso Zone

After you lasso an item in MacPaint, you can move it by clicking on a small area located along the drawing window's left and bottom edges and then dragging. This tip is useful when you manipulate small selections that the arrow pointer might obscure if you clicked directly on the selection.

emulation and standard Epson operation. The printer's original parallel interface can still be used with other computers.

The board works with either FX or RX series printers, though the Imagewriter emulation mode doesn't work perfectly with RX printers. The RX series cannot reverse line feed, causing page length problems with programs like *MacWrite*, which "jiggles" the paper up and down at the beginning of each page.

E. M. Greenawalt
Sunnyvale, California

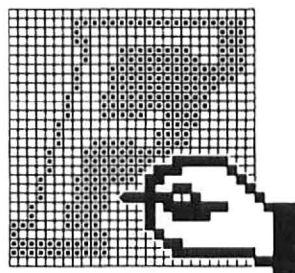
My Little Margins

MacWrite limits a document's minimum line width to 2 inches. When the left margin is at its preset 1½ inch, you can't drag the right margin marker to the left of the 3½-inch mark.

You may not be able to drag it, but you can bend it. I've found that if you click on the left corner of the right margin marker,

(continues on page 170)

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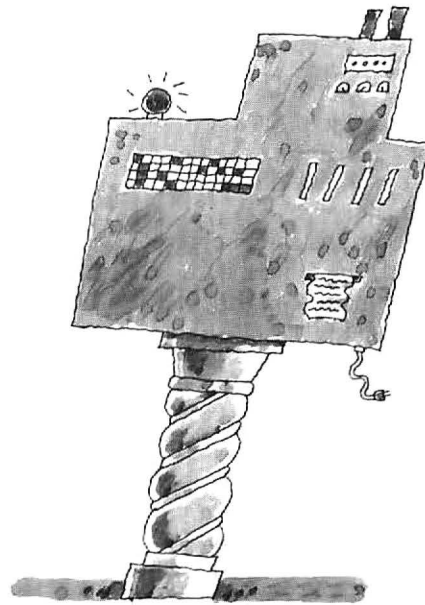
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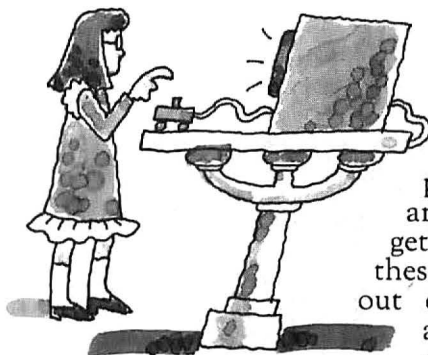
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WANTED: OLD THINKER TOYS.

CW Communications, ComputerLand and The Computer Museum invite you to send in your early personal computers, software, and memorabilia — you could win a free trip to The Computer Museum in Boston



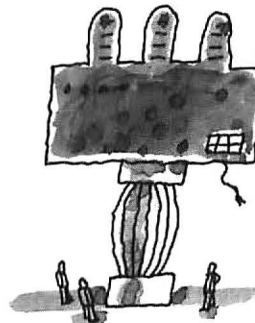
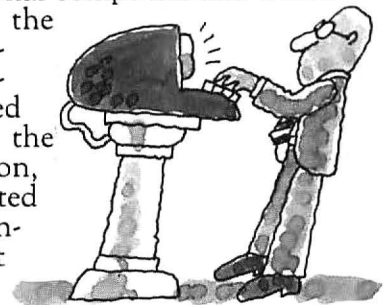
Your old, dusty "thinker toy" may now be ready to become a treasured museum piece. The Computer Museum in downtown Boston — an international museum dedicated entirely to computing — is searching for the very best and most unique relics of the personal computer revolution.



ComputerLand, CW Communications, and The Computer Museum are working together to bring these early relics out of your attic and into the collection of

The Computer Museum. The museum is especially looking for kit machines, prototypes, programs, output, newsletters and memorabilia of early computing from around the world. A selection of the finest items will be used to create an exhibit on the

evolution of personal computers and a catalog highlighting the Museum's collections. If your submission is accepted for addition to the Museum collection, you will be invited to the grand opening of the exhibit and will receive a bound edition of the catalog. If your item is selected as one of the five best "finds", you will also receive an all-expense-paid trip to Boston for the grand opening party.

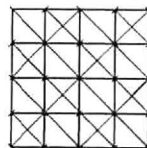


So, get up to the attic, down to the cellar and into your closets, and tell us what you find! Call or write the Museum for an official entry form, or send a photo and description of your items by March 1, 1986

to: The Computer Museum, Personal Computer Competition, 300 Congress St., Museum Wharf, Boston, Massachusetts USA 02110, (617) 426-2800, Telex: 62792318.

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(continued from page 168)

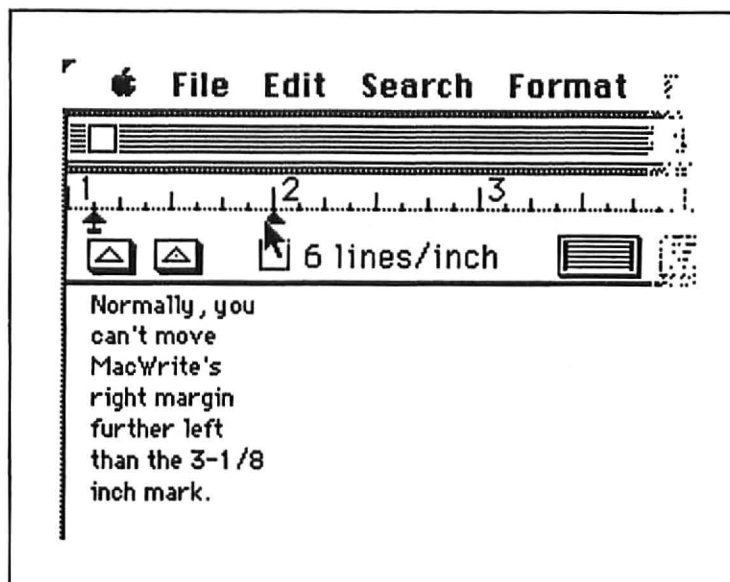
it jumps $\frac{1}{16}$ inch to the left (see "Narrow Text"). This technique lets you create wider margins by repeatedly clicking until the marker is where you want it.

My discovery has some catches, however. If you don't position the pointer accurately when clicking the margin marker, or if you move the mouse while clicking, the marker jumps back to its $3\frac{1}{8}$ -inch position, forcing you to start over. Second, *MacWrite* does not save the wide margins. If you try to open an extra-narrow document, you get an error message saying, "An I/O error occurred, caused by disk full or bad media. Some data may be lost." In my experience, no data is lost, but because the margins aren't saved, you have to reset them.

Robert Loos

Medford, New Jersey

Don't try to copy a wide-margined ruler, either, or you'll get the same error message. Interestingly, some prerelease versions of the disk-based *MacWrite* save and load narrow documents. I conducted some tests with version 3.17, dated Sep-



Narrow Text

If you click on the left corner of *MacWrite*'s right margin marker, it jumps $\frac{1}{16}$ inch to the left. You can use this technique to create narrow documents by repeatedly clicking until the marker is where you want it.

tember 25, 1984 (according to the About *MacWrite* box), and had no problems.

If you have a prerelease version of the disk-based *MacWrite*, start it and decrease the right margin using Mr. Loos's technique. Try saving the document, then closing it and opening it again. If you receive an error message or cause a system error, you have to locate a different version or reset your margins.

If the narrow document does open properly, however, you're in luck. Select the wide-margined ruler and copy it, then open the Scrapbook and paste. Now copy that Scrapbook file to the disk containing version 4.5 of *MacWrite*, making

(continues on page 172)

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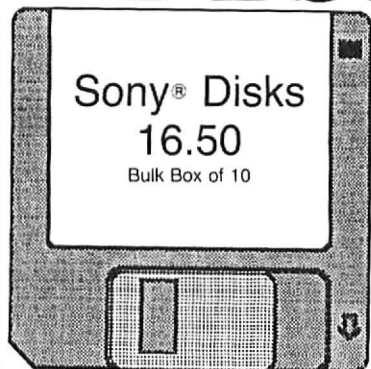
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(continued from page 170)

sure the Scrapbook file you're replacing doesn't contain something you want to save. Now you can use the release version and retrieve and paste rulers for narrow documents as needed.—Ed.

Laser Blueprints

Now that professional drafting programs are available for the Macintosh, many architects and draftspersons need to attach LaserWriter-printed artwork to existing drawings.

Because regular paper isn't translucent, laser printouts on it don't work in the diazo process used for producing blueprints. One way to overcome this problem is to print on the clear Mylar used for overhead transparencies, but it's a problem attaching the Mylar neatly to the original drawing.

Ideally, you could print the artwork on what draftspersons call "sticky back"—peel-back, self-adhesive paper. Most such material comes in irregular sizes, however, and isn't heat resistant—a vital feature if it's to be run through the LaserWriter. After some research, I located a product that meets both the size and heat requirements. It's called Drafting Appliqué Film (DAF) and is made by Chartpak (1 River Rd., Leeds, MA 01053).

DAF is an adhesive-coated, 1.5-mil thick, matte-finish Mylar polyester. The matte finish accepts sharp, dense images well and can be fed into the LaserWriter manually or through the cassette tray. A second product, DAFR, is similar to DAF but has a repositionable adhesive. It's strong enough to withstand repeated passes through diazo equipment, yet the drawing fragments can be removed and repositioned without damaging the adhesive.

Steve Griffis
Berkeley, California

Submitted by readers, industry experts, and the Macworld staff, items in Open Window address all facets of Mac work, from applications to programming routines to capabilities of the Mac and software that are not covered in the documentation.

Perhaps you have come up with a nifty routine, gained some insight into how the Mac or a program works, or even written a short program that performs a useful function or creates an interesting diversion. Tell us about it, and we'll pass your discovery along. We'll also pay \$25 to \$100 for each Open Window item published. Please send your Macintosh discoveries on disk (which we will return) along with a brief hard copy description to Open Window, Macworld, 555 De Haro St., San Francisco, CA 94107, or electronically to CompuServe 70370,702 or The Source BCW440. Submissions may be edited for length, clarity, or content. All published submissions become the property of Macworld magazine. □

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