

JUNE 1997

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# MacUser

# DTP SUPER GRAPHICS·LAYOUT·IMAGING GUIDE

TIPS & TOOLS THE EXPERTS USE



**PLUS**

**The Latest Macs:** 9 New CPUs  
Tested and Rated

**Newton Now:** Can This Palmtop  
Replace Your Laptop?

# Here's Why Power Computing Is The Best Mac OS

Geeks like Jean Bélanger of Metrowerks are very demanding customers.

Geeks provide the answers, fix problems, and recommend which systems to buy. Geeks understand things like bus speeds and code. They're people like



Jean (shown on previous page) and his team of alpha geeks at Metrowerks (the guys that write the code for other geeks to write their code).

Power Computing has become the dominant Mac OS compatible systems manufacturer thanks to the over-

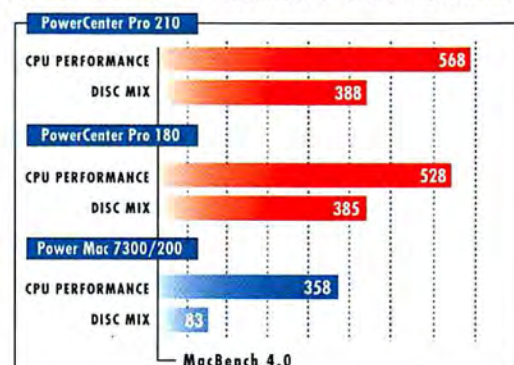


whelming endorsements from the serious propeller-heads of the world.

**Geeks buy a system because of its features.**

Power Computing has been the technology leader since we began shipping systems. We were first to design our systems with upgradeable daughtercards and we are the only Mac OS manufacturer to offer 1 MB level 2 cache. Our direct business model, exclusive to the Mac OS industry, allows us to also offer custom configuration of RAM, hard drives, internal Iomega Zip™ and Jaz™ drives, VRAM, and video card options.

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Fast 2GB Hard Drive • 3D Video A

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-MACUSER MAGAZINE

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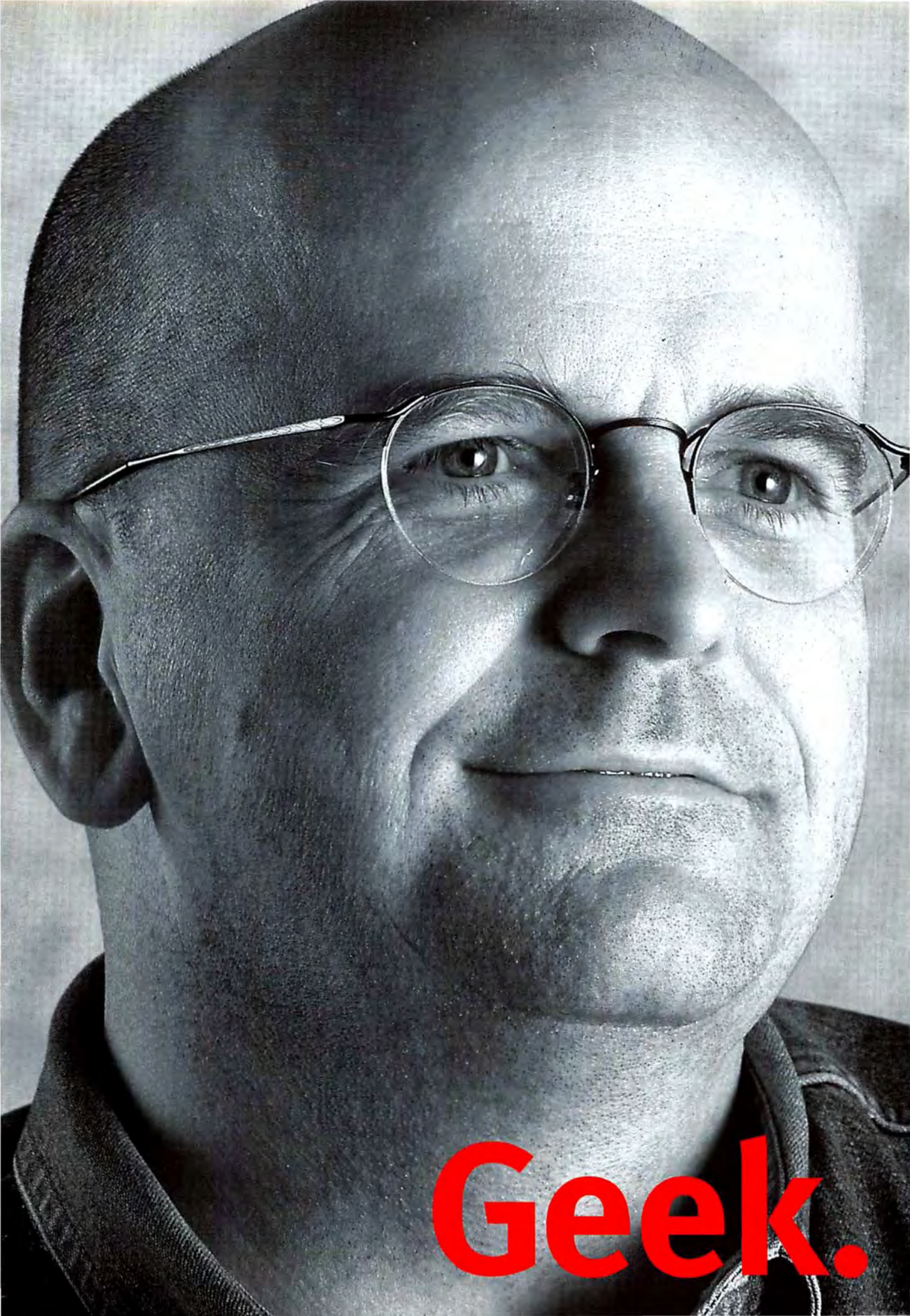


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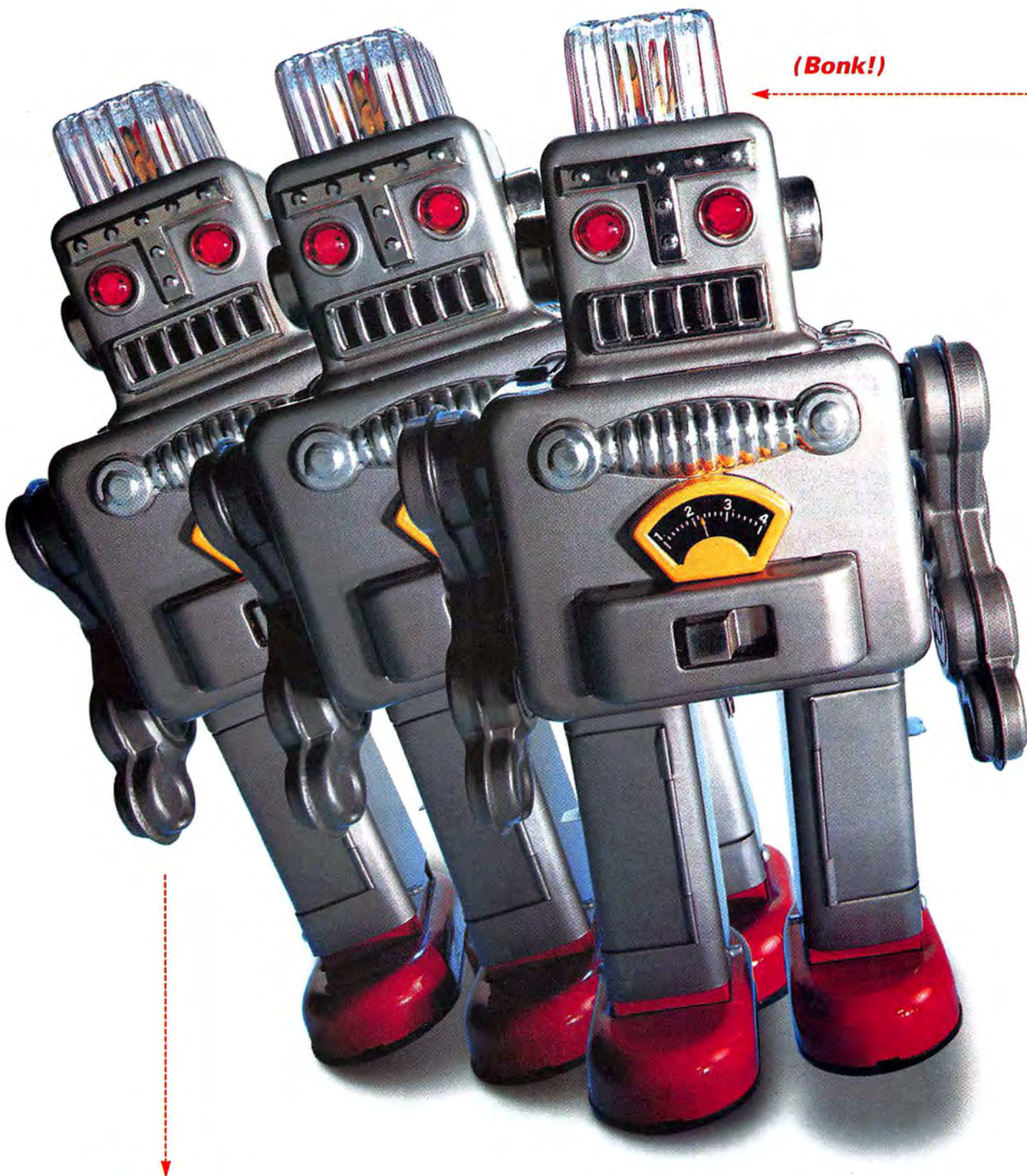
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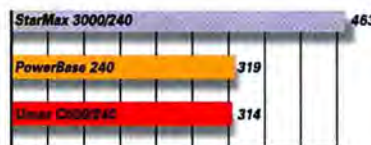


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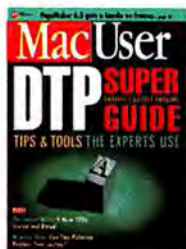
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# DTP SUPERGUIDE

## MACUSER EXPERT ADVISOR

### POWER PLUG-INS

Four Photoshop masters impart their wisdom.

Our plugged-in Photoshop experts consult with their peers and pick the absolute-best plug-ins for artistic effects, prepress, and Internet design. Be forewarned: These power plug-ins are not for the faint of heart. No guts, no glory. By Sherry London, Bruce Fraser, Lynda Weinman, and Joe Maller / 54



### PLUS

### THE DESKTOP PUBLISHERS TOOLKIT


Twenty-four must-have tools for DTP pros.

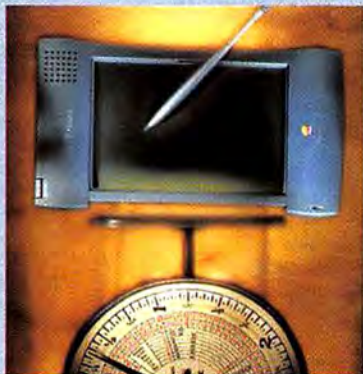


*MacUser* hits the streets and surveys today's Mac DTP professionals on the software they use and value most in the field. The result? This ultimate list of the top two dozen font, text, graphics-file, color-management, page-layout, and output-tweaking tools. By Kathleen Tinkel / 62


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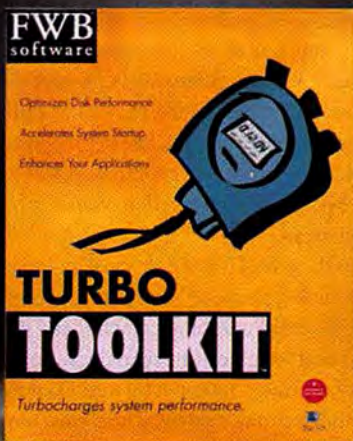
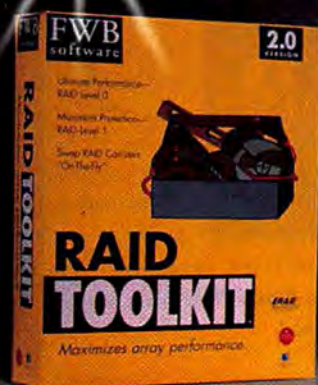
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and **Derek Van Alstyne** 1967 - 1989

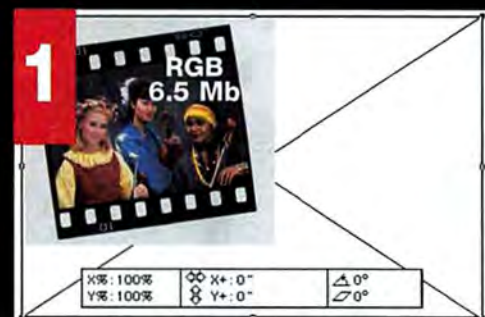


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# Unbelievable Simplicity

Don't be concerned about the resolution, size, horizontality and color correction and mode. Just import images in the Quark image box from a Photo CD disk or from a raw scan. Position them however you want using QuarkXPress's tools. For each, send orders with the processing options to the IPM.

I import my pictures in my  
QuarkXPress document's image boxes



TIFF, EPS, JPEG or Photo CD ImagePac; RGB, YCC, grayscale or CMYK. This image was scanned from a 35 mm original in RGB raw mode at 100% size on a PowerLook 2000 flatbed scanner at its optical resolution of 1000 dpi.

I position them using the XPress tools and I select  
processing options using the binuscan Xtension



The client Xtension writes the "order list" then sends it to the IPM for processing. It includes the values entered in the QuarkXPress "measurement bar" plus the processing and output options set in the Xtension's user interface.

# Phenomenal Productivity

A catalog with hundreds of images that may require several people a week's worth of work can be processed and ready to output in just a few hours. Processing can take place overnight, even on a low-end desktop computer, with little RAM.

After processing, the new recalculated images are re-imported in the  
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# Astonishing Quality

Each processing algorithm uses state-of-the-art technology. Even when the IPM is used only to resize images previously color corrected and separated, the screen preview is recalculated with colors and a sharpness that are truly impressive. No more surprises on the color proof!

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## THE CLIENT APPLICATION

Many client applications can be used to generate "order list" text files and save them into the IPM's "TO DO" folder for processing. binuscan's open architecture allows third party developers to write custom client applications. The binuscan ColorPro<sup>®</sup> package includes the binuscan IPM<sup>®</sup> plus client applications to acquire images from scanners or Photo CDs and binuscan JobManager<sup>®</sup> (a Quark Xtension) which works as described to the left.

## THE PERSONAL TOUCH

binuscan ColorCorrect is a utility included with the IPM which allows you to create ghost effects or "sepia effects" and harmonize the images on your page. This utility will perform color adjustments to processed images by writing PostScript functions to the image file. Modifications are written then updated in your page layout in seconds, no matter how large the files are. Every modification can be reverted with the same ease and in the same manner.

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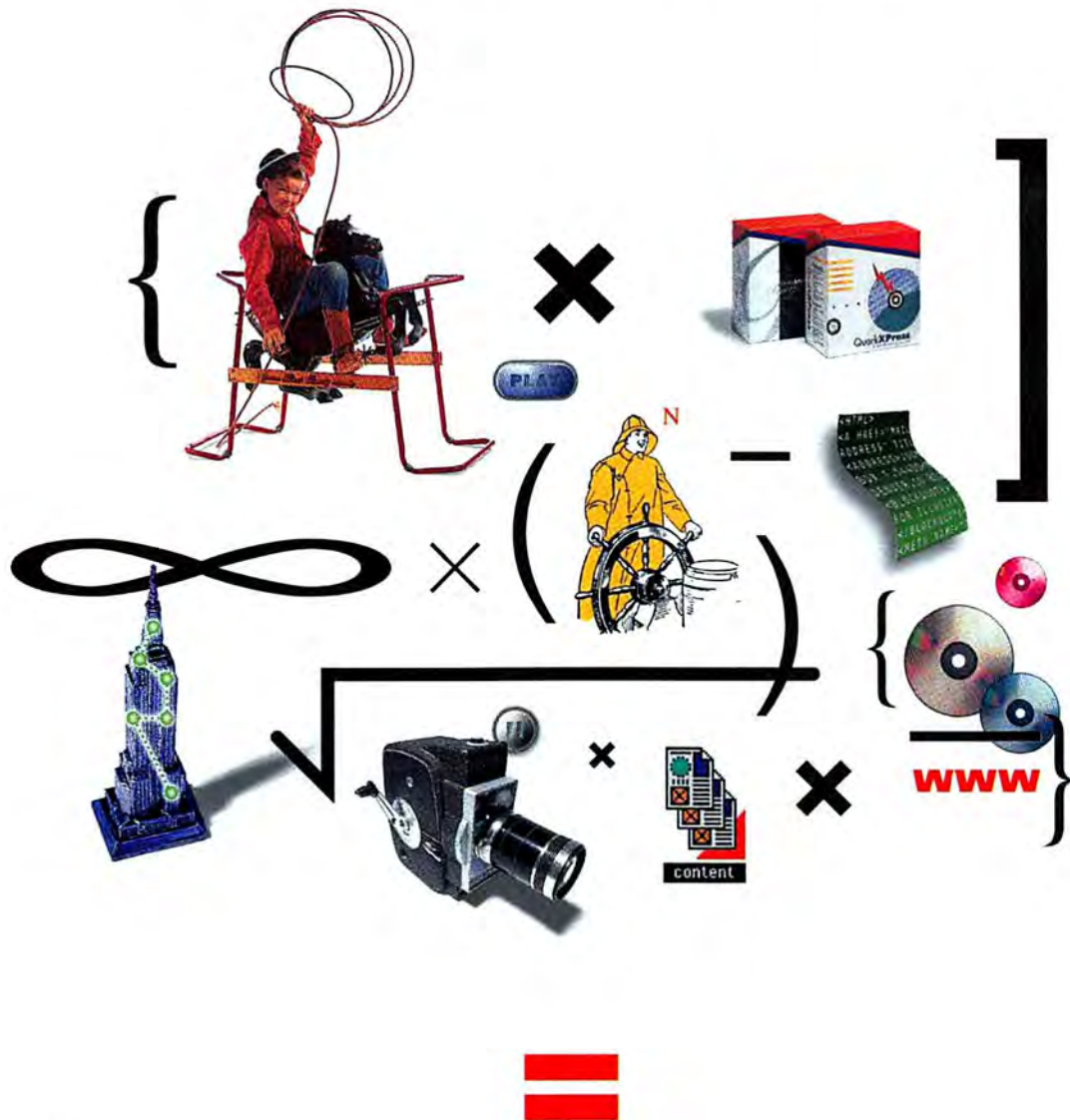


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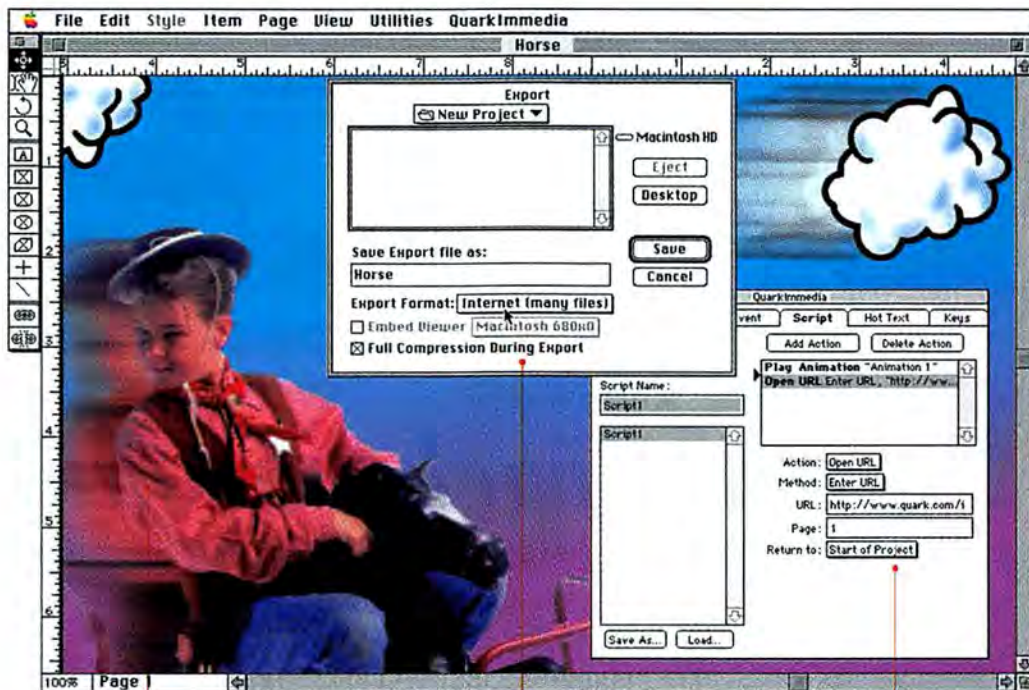
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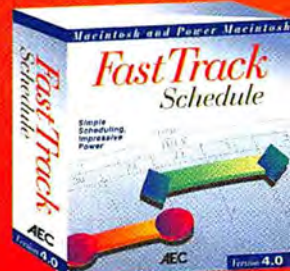
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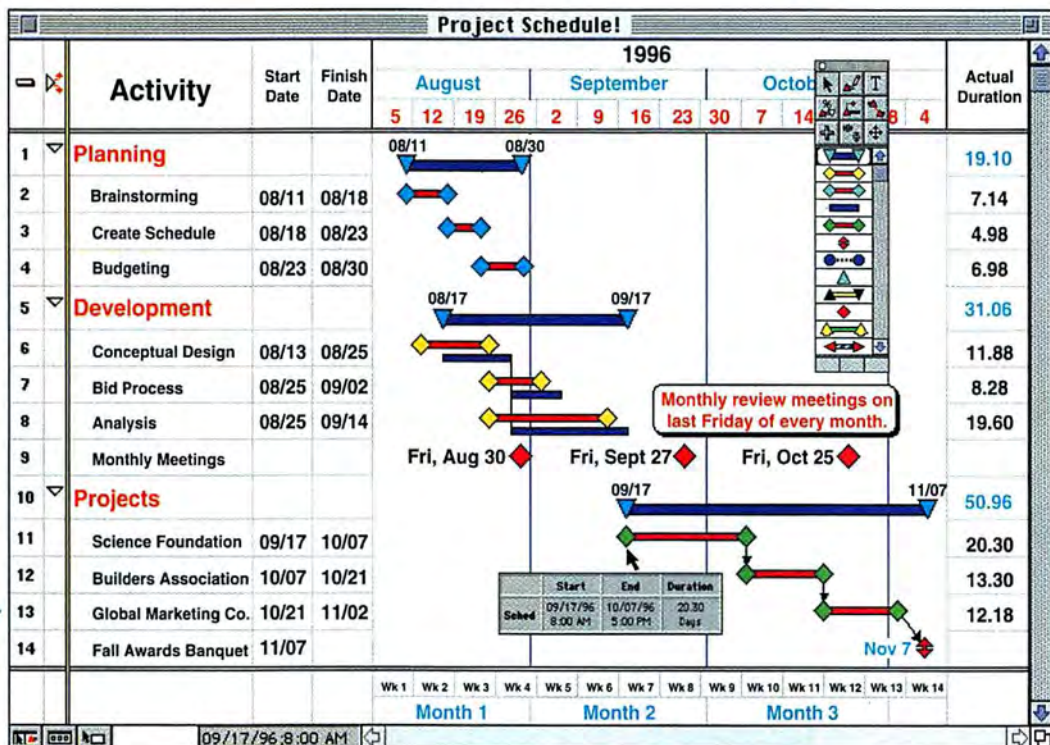


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# LETTERS

## Horn of Pentium

IF APPLE WANTS TO *gain* ground, it must port the new Mac OS to Pentium processors ("Intel Inside," April '97, page 19). Let's face it — Windows is here to stay. Sure, the PowerPC is a better, faster chip, but serious corporate users must have the ability to run Windows.

The only way the Mac OS can ever hope to unseat Windows is to compete on the same machine.

Aaron Benson  
AB256083@wcupa.edu

I WAS A MAC OWNER for years but eventually had to switch to a PC to be compatible with the rest of my research team. If Apple started selling Rhapsody for Pentium-based machines, I'd be the first in line to buy it.

Patrick Jones  
via the Internet

## Apple's REM Sleep

AS THE PERSON who developed the concept for the Power Computing Macworld effort, I read your comments on Apple's marketing ("In Your Dreams," April '97, page 17) with considerable interest. I agree completely that Apple's marketing is directionless. The Mac OS is in a fight for survival, and (metaphorically) Apple is sitting up on a hill reading poetry while we're looking around for a board with a nail in it. If I had Apple's ad budget, I could put Power Computing machines on half the desktops in America.

David Bernert  
via the Internet

I AGREE WHOLEHEARTEDLY that "Give your dreams a chance" is an amazingly wimpy

slogan, and I'm glad Apple ditched it. The new ads are good, but I think the following is the most obvious response to Micro\$oft's "Where do you want to go today?":

"Where do you want to be tomorrow? Macintosh."

Jeff Raden  
jraden@WOCNET.COM

I THINK WHAT APPLE meant was, "Give our dreams a chance."

Adam Masri  
masri@nolex.com

## Muddy Adobe Future

ADOBE IS PLAYING ITS CARDS close to the vest about its involvement in the new Mac OS, but the company should realize that those of us in the real professional-graphics market are going to stay here in Macville for as long as we can. Here's why:

We already have a lot of money invested in Mac software and are loath to spend thousands more on new software and fonts. We enjoy the interface consistency from application to application that is part of the Mac experience. Our current printers may not be compatible with Wintel boxes. And most important, the Mac is plug-and-play.

As for Adobe, don't you think it's time you figured out who your friends are? Do you realize that if you make any serious money in the Wintel market, you'll one day be forced to reverse-engineer a Microsoft version of Photoshop?

John Lasruk  
via the Internet

## Bandwidth Blues

YOUR "HOST-IT-YOURSELF WEB SERVERS" article (April '97, page 68) ignored the staggering difference in bandwidth and costs that separate your tests on a simple intranet from the reality of actually delivering live Web pages over the Internet. Your WebBench results have



## Open Folder

In 1632, Galileo wrote *Dialogo Sopra i Due Massimi Sistemi del Mondo*. For our April issue, Henry Bortman wrote "Intel Inside." Because he supported the Copernican notion that the sun, rather than the earth, is the center of the universe, Galileo was brought before the Inquisition on charges of heresy and forced to recant lest he be burned at the stake. Henry can thank his lucky stars that we live in an age of reason, an age when it's no longer heretical to suggest that Apple's new OS should run on Pentium processors. Although his column left a few readers fumbling angrily for their Zippos, most of you echoed the sentiments of Douglas Lee, who felt that Apple, much like the Catholic church of old, would have to abandon a measure of faith in light of scientific fact: Ptolemy out; Pentium in.

Would-be heretic Steve Tyson may be taking this Enlightenment thing a bit far. First there was the separation of church and state, but now Steve is proposing a separation of church and time. As the millennium approaches, some worry that existing databases won't be able to calculate the transition to the year 2000. Steve's solution: "Use 1969, the year of the moon landing, as the base year. The year 2000 then becomes the year 31." Regardless, when the time comes, we hope you don't party like it's 30.

Several other bits of space junk landed in our mailbox this month. We got a letter from the Sputnik Region of the Republic of Kyrgyzstan and one comparing Apple to NASA. The West to Mars Collaborative alerted us to its Web site (<http://www.marswest.org/>) for those who view Mars as "part opportunity, part politics, part science, part adventure, and part destiny." And Strange Voices (<http://www.strangevoices.com/>), a magazine for aliens living on earth, told us of its "assault on the earth-induced boredom that countless extraterrestrials must suffer every day." The editors boast that they'll "tell you exactly what we think they think we should think. We think." Therefore you are . . . Morkin' strange indeed.

## WRITE TO LETTERS

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no bearing on real-world Internet setups, which use a fixed-speed Internet connection and which generate a real-world bill each month.

If you want to report on real-world Web servers and Internet publishing, you should tell your readers about serving with actual 56K, ISDN, and T1 lines. Tell us what it costs to run a Web site, not just the price of the software. Tell us how to get started with a Mac server and then how to enhance and manage it as traffic grows. Tell your readers this one fact over and over: In these days of the Pentium Pro and the PowerPC, real-world Web-site performance is constrained by bandwidth (and bandwidth costs), not by CPU power or software speed.

Because of networking simplicity, a wide range of easy-to-use add-on products, low cost, and — yes — high performance, Mac OS Web servers are frequently the best choice for Web designers, growing businesses, and thousands of others. The article told only a small part of the story.

**Mark Kriegsmann, President**  
ClearWay Technologies

*/ The bandwidth of a Web server's connection to the Internet is a topic that deserves full exploration — that's why we left it for future discussion rather than trying to fit it into this story. Had the story covered bandwidth, we would certainly have mentioned ClearWay's FireSite Web-server plug-in, designed to provide near-T1 speeds over 28.8-kbps modems. / KO*

## The Rocketbook: Scud or Dud?

AFTER READING YOUR REVIEW of the new PowerBook 3400 ("Rocketbook," April '97, page 54), I have to disagree with a couple of cons you mentioned.

As for price, the PowerBook 3400 is only \$500 more than the IBM ThinkPad 760ED. The 3400 has a 3-GB hard drive, a 12x CD-ROM drive, and a 240-MHz processor. The ThinkPad has only a 2.1-GB drive, a 6x CD-ROM drive, and a 133-MHz processor.

And as far as looks go, nothing is better-looking than the PowerBooks.

**Greg Gagnon**  
ggagnon@mindspring.com

THE POWERBOOK 3400's lack of support for 24-bit color is a major omission by Apple. The purpose of the modern laptop is to show slick business presentations. Ever seen those PowerPoint gradients in 8-bit (or even 16-bit) color? Can you say dither? Apple should have

put more effort into color output. I'm afraid this round will go to Wintel (processor speed aside). So close.

**Rich Hall**  
richhall@vysis.com

I JUST READ A REPORT stating that the PowerBook 3400 supports external monitors only in mirror mode. What value is there in having external-monitor support if you simply see the same thing? I can understand that this might be useful for presentations, but what about all of us who rely on dual monitors for development or graphics work?

**Terry Worley**  
terrywo@earthlink.net

*/ I guess that's what Apple would call a "third-party opportunity." / AG*

## Waxing Rhapsodic

YOU TALK ABOUT the dilemma for current Mac developers and make good arguments ("Apple's OS Double Feature," April '97, page 63). But what about the possible advantages Rhapsody will bring? It will allow faster and in some cases much faster application development. It will be easily ported to other platforms. And it will provide new functionality through Objective C. The OpenStep environment offers much to programmers.

**Leonardo Burci**  
via the Internet

APPLE NEEDS TO CONTINUE support for existing OpenStep installations by offering maintenance releases and should also give OpenStep users a clear migration path to Rhapsody that will not require any new hardware investment. Apple should not only make certain that Rhapsody works on all the current platforms but should also go so far as to port it to even more platforms, all the while taking the Macintosh Application Environment and the new Rhapsody API with them.

Apple touts OpenStep as its major entrée into the financial and enterprise markets, but even Rhapsody (as I've seen it articulated so far) isn't going to do as much for these people as the current OpenStep does. Apple must not abandon these people. The company needs to have the best OS/environment around, whether it's running on PowerPC hardware, Pentium hardware, Sun SPARC hardware, or whatever.

**Brad Knowles**  
brad@his.com

## Mood Indigo

KUDOS TO MACUSER and Brian P. Lawler for "Pressing Issues" (April '97, page 77). However, two errors appeared in the article. Lawler's sources recommended an incorrect value of 212 percent for the Indigo E-Print total ink coverage (TIC). In production situations, Indigo E-Print presses have given an exceptionally strong performance in this area, achieving 360-percent coverage with no hint of problems.

Also, Lawler is only half correct when he says to avoid solids across a fold. Indigo E-Print shops have produced beautiful finished pieces with heavy-coverage rich blacks across a 180-degree fold. The key to success is a commonly available process called "heat scoring." Normally, Indigo E-Print shops have this done by an outside company, and the process is not prohibitively expensive.

**Bryce W. Drennan**  
adamsharmon@webstorm.com

*/ My TIC number was based on the suggestions of several Indigo-press owners. Drennan's successes are quite impressive, but it's always wise to ask your press operator for advice on such matters. As for printing across a fold, the suggestion in the article was for toner-based printing; the Indigo E-Print uses "ElectroInk." / BI*

## Required Reading

I THINK IT SHOULD BE mandatory that all your articles be read by every Apple executive and department head. Yes, your articles are that good.

**Scott Davis**  
via the Internet

## Corrections

In "Host-It-Yourself Web Servers" (April '97, page 68), we gave list prices for all the products mentioned except for WebSTAR 2.0, for which we gave an estimated street price of \$499. The list price for WebSTAR 2.0 is \$795.

UMAX S900 systems don't contain two proprietary processor slots, as indicated in "Caveat Emptor" (May '97, page 21). They contain one standard processor slot and one proprietary slot. You can buy non-UMAX upgrade cards for the standard slot.

The Argon Ethernet/modem card ("Rocketbook," April '97, page 54) is made by Asanté.

The MacBench 4.0 Floating Point score for the PowerTools Infinity 3240 Power (Reviews, May '97, page 33) should have been 305.

In "Dual-Processor Systems" (May '97, page 34), the UMAX SuperMac S900DP/200 should have received 4 mice and the UMAX SuperMac S900DP/250 RAID should have received 4.5 mice.

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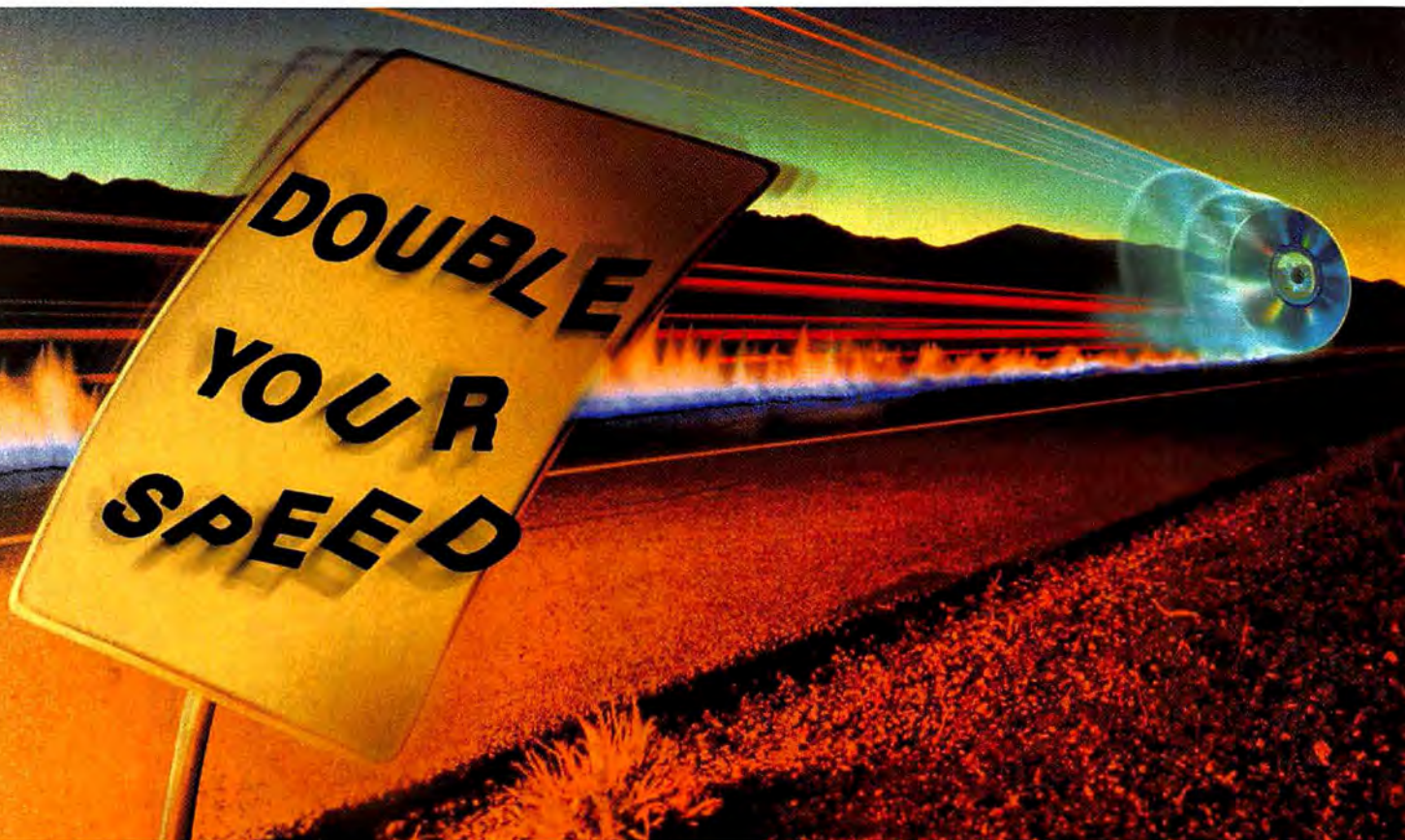


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ANDREW GORE

# The Gateway to Heaven

## THERE'S AN OLD RIDDLE that goes like this:

You come to two identical doors with two identical guards in front of them. One is the Gateway to Heaven, the other the Portal to Hell, but you don't know which is which. As you approach, a disembodied voice says, "If you wish to ascend to heaven, you must choose the correct door. To help you determine which door to choose, you can ask one guard one question. However, remember that one guard always lies and the other always tells the truth."

That riddle was in my mind as I listened to Apple executives talk about the company's largest-ever restructuring. I envisioned rank-and-file Mac users lining up before the computer industry's own twin doors of fate — one labeled *Macintosh* and the other *Windows* — trying to figure out which door to choose. Was the Apple restructuring a first step toward recovery? Or was it yet another stop in a sad, slow downward spiral into irrelevance?

To help us decide which door to choose, Mac users also have two guards, or perhaps honor guards would be more apt: In front of the Macintosh door stand the Mac-clone makers; the Mac publications; the ranks of loyal Mac enthusiasts; and, of course, Apple. In front of the Windows door stand Intel; Microsoft; millions of PC users; and, unfortunately, most of the mainstream media.

The question is, what question do you ask to figure out which door to choose?

Let's see what we could ask the PC guards first. An awful lot of hay, and even more sales, is made of the fact that buying a Windows-based computer is safe because that's what most everyone uses. When asked why this is so important, those guarding the Windows door will tell you that it's because there's a lot more software available for Windows.

So perhaps the question you should ask is, How many word processors do you need to write a document? The fact is, there's a lot of software out there for the Macintosh, with

dozens of new software packages and upgrades coming every month. There's hardly a major software product running on Windows that isn't also available for the Mac. Sure, there may be a few vertical-market applications and some games that you won't be able to find, but



if those packages are important enough to you, then you know which door to choose.

Another point the PC community often makes is that the Macintosh can't compete in terms of price/performance. So perhaps the question you should ask is, how many 240-MHz portables run Windows?

The PowerPC-based Mac enjoys an ever increasing speed advantage over its PC brethren. Want the fastest desktop machine or portable? You must buy a Macintosh. As for price, thanks to Mac licensees, a good-quality Mac can be had that's every bit as inexpensive as an equivalently equipped Wintel box.

Then there's the Wintel propaganda machine's most recent bit of doublethink — that Windows is now superior to the Mac OS. So maybe you should ask, Which Windows?

Although many experts talk about Windows 95 and NT as if they were the same thing, they're not. Windows 95 is a mass-market OS with lots of software running on it. However, it hardly qualifies as a "modern" OS, considering that lots of concessions are still being made to accommodate its MS-DOS foundations. NT is a modern OS, but not even Microsoft would claim that it's a mainstream operating system appropriate for casual users.

Meanwhile, Apple has the Mac OS, which with version 8's face-lift, will be, once again, visibly superior to Windows 95. As for NT, it works great as long as you don't touch it. But if you want a server that you can reconfigure on a moment's notice, nothing compares to a Mac OS system. And then, of course, there's Rhapsody and what it will offer in terms of modern OS functionality and object-based development tools.

## True Believer

Maybe you'd be better off posing your query to the Mac front. I can think of lots of questions to ask there. Is Apple going out of business? Will the Mac continue to compete in price/performance? Will Rhapsody really arrive on sched-

ule? Will clone vendors continue to support the platform? The only problem is, you can't be sure whether the Mac guard will give you a straight answer. If you get a positive answer, how do you know that it's also a truthful one?

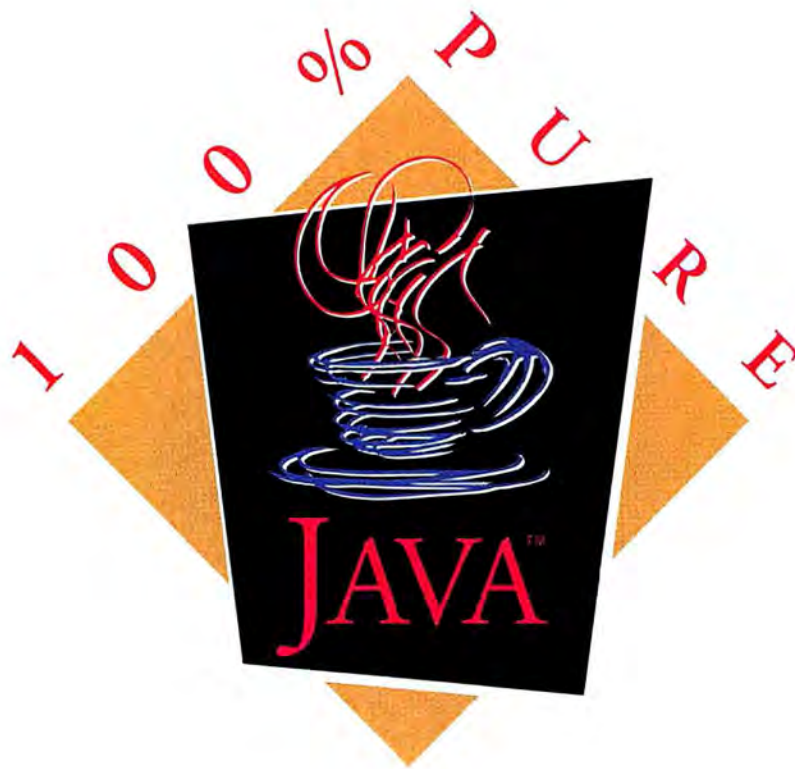
In the original riddle, only one question was guaranteed to get you the answer you needed: "Which door would the other guard say is the Gateway to Heaven?" No matter which door the guard indicated, you'd know that Heaven was actually behind the other door.

If I were standing before the Mac and Windows doors, the question I'd ask is: "Is it safe to buy a Macintosh?"

No matter whom you asked, the only true answer would be No. Why? Because it's never been safe to buy a Mac. Buying a Mac has *always* meant going against the status quo. It's meant taking a risk on something you felt was better in the only way that really counted — for you.

So when you again face the decision of which platform to choose, be sure to ask yourself that question. And follow the answer; otherwise, you know where you could end up.

*Andrew Gore, MacUser's editor, is pinch-hitting this month for Pamela Pfiffner, who is on vacation. Pam will return in our July issue.*



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*or*

**<http://www.sun.com/>**

**Also available by calling 1-800-JAVASOFT**



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**CIRCLE 145 ON READER SERVICE CARD**

# Introducing the MessagePad 2000, the only handheld computer you can actually use.

Of all the handheld computers, only the MessagePad 2000 offers sharp, crisp backlighting and a 16-level, high-resolution gray-scale screen that rotates on command. Which means you can always see your work in the best orientation—horizontal or vertical, even upside down. And in the best light. Bright. Or dim.

The MessagePad 2000 gives you more flexibility, thanks to its two PC slots (other handhelds have only one slot). So, for example, you can dedicate one to a wired or wireless modem, and use the other for additional memory.

How much can you do in three to six weeks? That's how long a set of AA batteries lasts under normal usage. Note: normal usage here means a lot. Like having backlighting on, using the modem, crunching numbers, writing e-mail, drawing, doodling, whatever.

Built-in software lets you connect directly to a variety of serial, IrDA and LocalTalk printers—unlike most Windows CE devices, which have to be hooked up to a PC in order to print.

There's fast. And then there's fast. The MessagePad 2000 comes with a screaming 160 MHz RISC processor, which offers up to five times the performance of the 20-40 MHz processors you get with other handheld devices.

The usable area of the MessagePad 2000 screen is up to 56% larger than what you'll find on most Windows CE products. So, instead of having to decipher small sections at a time, you can read the entire width of a fax or Web page.

A built-in microphone and speaker let you record and play back voice dictation. And the MessagePad 2000 is the only handheld computer that lets you record and take notes simultaneously.

The MessagePad 2000 works easily with desktop computers. So you can create documents on the MessagePad 2000, then transfer them to and from Microsoft Excel or Word on any Windows or Mac OS-based system. Or you can keep your calendar and address book current by synchronizing them with desktop programs like Microsoft Schedule+ 7.0 or Claris Organizer 2.0. And it's easy: with Auto Dock, the MessagePad 2000 makes these transfers automatically.

Unlike Windows CE-based devices, MessagePad 2000 is the only handheld computer that lets you exchange data with both Windows and Mac OS-based computers.

The MessagePad 2000 handheld computer offers a real detachable keyboard (not a tiny, finger-cramping version). So you can quickly and easily type e-mail, business letters, project reports. Only your superb writing style—not your aching fingers—will determine the length of your documents.

Of all the handheld computers out there, only one makes it truly easy to be productive on the road. Introducing the MessagePad® 2000. Rather than just letting you view data, the MessagePad 2000 lets you carry out sophisticated tasks with the greatest of ease. For example: you can now write a full-length proposal, insert information downloaded from the Web—even include pricing from your company's Intranet—and then fax or e-mail it to a client. Try that with an ordinary handheld computer. The MessagePad 2000 has more power, more storage, more flexibility. All contained within the most innovative design, optimized for usefulness. Of course, there's only one real way to understand how incredible the new MessagePad 2000 is: try it yourself. For the name of a dealer near you, or to get more information, call 800-909-0260. Or visit us at [www.newton.apple.com/useit](http://www.newton.apple.com/useit).





HENRY BORTMAN

# PPPlease Release Me

**"INSTALL OPEN TRANSPORT PPP,"** my friend Jake told me. "It's really stable. And it's PowerPC-native, so it's fast too."

"OK," I replied. Jake's usually right about these things. "I'll try it."

Although everything he said was true, what he *didn't* say ruined my day.

First, some background. I often work at home. Round about last Thanksgiving, I decided to make the leap to ISDN. Suffice it to say I felt the need for speed. On good days, my ISDN connection lets me dial into my personal ISP at 56 kbps. This makes browsing the Web bearable and downloading my personal e-mail snappy.

Unfortunately, MacUser's communications infrastructure is based on Lotus Notes and I can't access my Notes mail by dialing into my personal ISP; for that I have to dial into MacUser's POP. MacUser, however, doesn't support ISDN dial-in. So in addition to the ISDN terminal adapter I have at home, I also have a 28.8-kbps modem. The ISDN terminal adapter is plugged into my Mac's modem port, the 28.8 modem into the printer port.

To toggle between accessing personal e-mail via ISDN and getting Notes mail by using FreePPP, I have to tell my Mac I'm making five changes: I'm (1) switching ports, (2) switching modems, (3) switching dial-in phone numbers, (4) switching e-mail account names, and (5) switching TCP/IP addresses.

The way I figure it, a good user interface would provide a Connect menu on the menu bar (or perhaps a module on the control strip) that — with a single click — would let me make all five of these changes and would let me dial with one additional click.

I could handle having to do a bunch of nasty setup. Once. Maybe I'd get Jake to do it. Maybe even IS, if Jake were on vacation. But with all the proper IP gobbledygook safely stashed away in some preference file, switching and dialing would be a snap.

Wanna know what it takes to make the switch with Open Transport? Fifteen mouse

clicks, spread across six dialog boxes. And three of those dialog boxes are so well hidden that many users will grow long, white beards before finding them.

I should have heeded the warning signs. Back before I had an ISDN line, I dialed into MacUser with my 28.8-kbps modem. I used MacTCP and FreePPP to accomplish this. But



when Open Transport TCP/IP came out, I decided to try it. Jake recommended it.

He set it up for me too. But I kept mysteriously losing my setup information. Something would screw up, I'd call Jake over to take a look, he'd set it back the way it was supposed to be, and then a few days later — blammo! — it was messed up again.

Eventually I figured it out. (Or maybe Jake did.) You see, the Open Transport TCP/IP control panel, apparently, is *designed* to lure users into screwing up. When you open it up, right there at the top of the dialog box is the inviting label "Connect via:" next to a pop-up menu that contains a list of the various connections you can make. In my case, Ethernet (for my office LAN) and FreePPP (for dial-in) were the two choices available. I figured, OK, if I want to switch from office to home, I pick the appropriate item from the pop-up menu. How simple! How intuitive!

And how wrong! Because when you close the dialog box, you get a message asking you

if you want to save your changes. And if you say yes — which seems like the obvious choice, given that you just *did* change something — you'll destroy your TCP/IP settings. Then you'll have to call somebody smarter than you (like Jake) to come fix it while you stand around trying to maintain your dignity.

I did this several times before Jake discovered the secret: the *hidden* dialog box. The dialog box you're *supposed* to use to switch configurations. The dialog box that lacks any clue whatsoever that it even exists. The dialog box that you can get to only by discovering the Configurations item on the File menu. As if picking Configurations from the File menu were somehow the natural, reasonable course of action whereas making a selection from an alluring pop-up menu staring you right in the face were an obvious path to disaster.

So I should have been prepared when Open Transport PPP, with its PPP and Modem control panels, hit the street.

I wasn't, of course. I naively assumed that Apple would have realized the error of its ways and not only done a better job on the interfaces for these new control panels but fixed the TCP/IP control panel as well.

Wrong again! The PPP and Modem control panels employ the exact *same* idiotic approach as the TCP/IP control panel. The same seductive, treacherous pop-up menus. And the same undiscoverable Configuration dialog boxes. I suppose there's something to be said for consistency. I'm just not sure what it is in this case.

And so it is that to make a simple switch between two different dial-in connections, several times a day I get the pleasure of visiting six dialog boxes and making 15 mouse clicks — where one or two would suffice. This, mind you, from the company that promotes itself as the purveyor of the world's most Internet-savvy platform.

Ah, well. With new versions of the Mac OS rolling out of Cupertino every six months, we can always hope for a brighter future. Take a hint, Apple? ☹

# NEWS

## Reorg '97: Surgery, Not Butchery

Many jobs lost, but cuts focus on the superfluous: OpenDoc, Cyberdog, Open Transport, and more.

IT'S SPRING; it must be time for another Apple reorganization.

Apple's mid-March restructuring was more hotly anticipated than most, because it was predicted to be one of the most severe in Apple's history. However, although the layoffs were substantial, the number of initiatives destined for the chopping block is modest.

After a string of executive departures, it was widely thought that a devastating cut of products and resources was in Apple's future. However, reality failed to live up to the rabid predictions of the mainstream media: Only 2,700 full-time employees are to be laid off, instead of the predicted 5,000; some 1,400 temporary and contract workers are to be given pink slips as well. According to CFO Fred Anderson, these cuts will bring Apple's overhead in line with anticipated annual revenues of \$8 billion and will ultimately allow the company to return to profitability. Cross your fingers.

Apple CEO Gil Amelio said the company must focus its remaining resources on its core businesses: Mac desktop, server, and portable systems and the Mac OS and Rhapsody. In addition, Apple is admitting that some of its initiatives — such as component-software standards, video-conferencing efforts, and development tools — are better met by other industry initiatives.

Following this reasoning, Apple will no longer invest development resources in OpenDoc, Cyberdog, Open Transport, Game Sprockets, AIX



servers, the Apple Video Conferencing Solution, QuickDraw GX, speech technologies, or Mac OS development tools. Although these technologies will no longer be upgraded and won't be ported to Rhapsody, they will continue to be part of the Mac OS and many will be part of Rhapsody's Mac OS compatibility layer (known as Blue Box).

Apple will also scale back on its previous commitment to deliver two retail versions of the Mac OS every year; it now plans only one release in

1998. However, there will still be two Mac OS maintenance releases each year. According to Apple, Rhapsody is still on schedule for a premier release in early 1998, with a unified release in mid-1998.

More surprising is what products Apple won't cut. The Newton Group wasn't touched — although company spokespersons declined to say whether it intended to sell the division. The Imaging Group was also left intact, as was Claris. Apple said that it will continue to support Pippin licensees and will make sure all QuickTime technologies continue to work on both the Mac OS and Windows. And, although it will no longer develop AIX, the AIX-based Apple Network Servers will continue as part of the company's product lineup.

Countering rumors that Apple would back out of the consumer market, spokespersons said Apple remains committed to first-time buyers, although it has decided to drop the Performa name.

Apple Executive VP of Marketing Guerrino De Luca said the company remains fully committed to Mac OS licensing and would make both Mac OS 8 and Rhapsody available for licensing. However, he admitted that with the arrival of the royalty-free PowerPC hardware platform, which will allow clone makers to build Mac OS systems without paying Apple for the designs, the company will "adjust" what it charges for Mac OS licenses. Let's hope De Luca's adjustments don't hobble a licensing effort that helped erode Wintel market share by three percentage points in the last quarter. / ANDREW GORE

### FUTURE TECH

## A Big Future for High-Capacity Storage

THE LATEST AND GREATEST disk drive from Seagate, the Cheetah 9, crams 9.1 GB of data onto eight 3.5-inch platters spinning at over 10,000 rpm. Drive technology has come a long way since September 13, 1956, when IBM rolled out the first disk drive, the 305 RAMAC (Random Access Method of Accounting and Control), which stored a grand total of 5 MB on fifty 24-inch platters. The *areal density* — how many bits of information are squeezed into a square inch of disk space — of

the RAMAC and the Cheetah differs by a factor of nearly half a million, with the RAMAC storing 2 kilobits per square inch and the Cheetah packing an astonishing 930 megabits.

The Cheetah uses *magnetoresistive* (MR) heads, based on a technology introduced by IBM in 1991, to achieve its extraordinary areal density and high throughput. MR heads have a rosy future, with densities of 3 to 5 gigabits almost certain to be achieved and a density of 10 gigabits a possibility.

However impressive MR technology is, though, it's about to be eclipsed by two new, even higher-density technologies. IBM has demonstrated *giant-magnetoresistive* (GMR), or *spin-valve*, heads that should be capable of boosting areal densities to around 20-gigabits. And TeraStor (<http://www.terastor.com/>), a Silicon Valley startup that boasts some of the best minds in the storage business, recently announced *near-field* recording, a magneto-optical technology that, according to TeraStor representatives, will allow for an areal density of 100 gigabits or more — well over 50 million times that of the 305 RAMAC you've been saving for your next garage sale. / RIK MYSLAWSKI

# New Entry-Level Power Macs:

Four new lines feature software from Adobe, MetaTools, and Microsoft and hardware from ATI, Avid, and Iomega.



CHRISTMAS DIDN'T COME for Apple last year; the Performa line's expected contribution to the troubled company's coffers failed to materialize. Sales were sluggish — except in Europe, where Apple had taken a radically different approach to selling its consumer-level Macs. Instead of identifying Performas by name and number, as it did here in the U.S. (the Apple Macintosh Performa 6400/180, for example), Apple identified European Performas by the tasks they were designed to perform, not as mere agglomerations of megahertz and megabytes. In '90s corporate-speak, Europeans were offered solutions.

Apple learned. This spring, it is jettisoning the name *Performa* and clustering its consumer-level Macs into four solution-oriented classes: the Home Macintosh, Small Business Macintosh, Apple Creative Studio, and PC Compatible Macintosh. The Home, Small Business, and Apple Creative Studio lines introduce the Power Mac 6500, a greatly improved version of the lackluster Performa 6400. The Small Business and PC Compatible lines also include bundles based on the Power Mac 4400/200 (see review in this issue).

MacUser Labs tested a prerelease version of the hardware platform that underlies most of the new solution-based offerings, the Power Mac 6500, and found it to be a hearty competitor to low-cost clones. The Power Mac 6500 is based on a PowerPC 603e and is available in 225-, 250-, and 275-MHz versions, with a 300-MHz version to appear later this year.

Each Power Mac 6500 comes with a minimum

of 32 MB of EDO RAM (the Small Business configuration sports 48 MB), a 3.0-GB-or-larger hard drive, a 256K or 512K L2 cache, a 12x CD-ROM drive, a 33.6-kbps modem, 16-bit Surround Sound with a subwoofer, and 2 MB of graphics RAM. When we fired up our test unit, a Power Mac 6500/275, we were most impressed with its graphics performance — a result of its having an ATI RAGE II + DVD chip, which accelerates QuickDraw, QuickDraw 3D, QuickTime, and QuickTime MPEG.

**THE HOME MACINTOSH.** The new Power Mac 6500 appears in at least two guises designed for home users; more may be added later. The 6500/250 with a 4-GB hard drive and a Zip drive is \$2,299; the 6500/225 with just a 3-GB drive is \$1,999. (The Performa 6400/180 and 6400/200 will continue to be offered through the summer.) The Home Macintosh software bundle is substantial, featuring everything from ClarisWorks 4.0 to Edmark's Thinking Things 3.0, with a versatile Internet bundle and a gaggle of accelerated-3-D games thrown in for good measure.

**THE SMALL BUSINESS MACINTOSH.** Two bundles are tagged as small-business solutions: The Power Mac 6500/250 with 48 MB of RAM, a 4-GB hard drive, and a Zip drive costs \$2,599, and the Power Mac 4400/200 with 32 MB of RAM and a 2-GB drive is \$1,999. What distinguishes the Small Business line is its software, capped by Microsoft Office and including Now Up-to-Date & Contact, Norton Utilities, and much more.

**THE APPLE CREATIVE STUDIO.** There's only one Apple Creative Studio bundle, but it's a good one: a Power Mac 6500/275 with a 4-GB hard drive



The new Apple Power Macintosh 6500 is a vast improvement over the lackluster Performa 6400.

(no Zip drive), an Apple TV Tuner card, and an Avid Cinema PCI card for \$2,999. It also comes with a creative bundle that features Avid Cinema software; Adobe PageMill; Cubasis AV, from Steinberg; Fractal Design Dabbler; 3D World, from Microspot; and more.

**THE PC COMPATIBLE MACINTOSH.** The fourth new solution is a bit of a yawner: a Power Mac 4400/200 for \$2,399 that has a 2-GB drive and 40 MB of RAM — 24 MB on the motherboard and 16 MB on an Apple-manufactured Compatibility Card that's equipped with a 166-MHz Cyrix 586 Intel-compatible microprocessor. As a final admission that the world is changing, the PC Compatible Macintosh comes with Windows 95 already installed on the hard disk, ready for you to start humming "Start Me Up." / RIK MYSLEWSKI



## THE SPEED SOLUTION / new Power Mac 6500/275 leapfrogs the competition

IT'S A SEESAW BATTLE for the title of top-performing consumer Mac. For the first time in ages, Apple systems have the advantage over other low-cost Mac OS systems — at least until the next round of upgrades appears. Except for its abysmal drive speed (which should improve dramatically before final units hit the shelves), the new Power Mac 6500/275 more than holds its own.

### MACBENCH 4.0 SCORES

	POWERPC/ CLOCK SPEED	RAM	SIZE OF L2 CACHE	PROCESSOR	FLOATING POINT	DISK	PUBLISHING DISK	GRAPHICS	LO-RES PUBLISHING GRAPHICS	CD-ROM
Apple Power Mac 6500/275	603e/275 MHz	32 MB	512K	384	354	101	107	318	314	458
<b>REFERENCE SYSTEMS</b>										
PowerTools Infiniti 3240 Power	603e/240 MHz	32 MB	512K	374	315	240	234	306	314	340
Power Computing PowerBase 240	603e/240 MHz	16 MB	256K	309	319	213	175	288	279	286
APS M-Power 603e200	603e/200 MHz	16 MB	256K	282	273	131	155	258	248	281
Apple Performa 6400/200	603e/200 MHz	16 MB	256K	258	262	163	167	242	218	304
				SCORE	BETTER	SCORE	BETTER	SCORE	BETTER	SCORE

Best performer(s) in each test.

MacBench 4.0 scores are relative to those of an Apple Power Mac 6100/60 with a 30-MHz memory bus, a 250-MB hard drive, 2 MB of built-in graphics RAM, and no L2 cache. This baseline system is assigned a score of 100 for all MacBench tests. All systems are tested as configured by vendors but with AppleTalk turned off and virtual memory turned on. We set the screen resolution to 640 x 480 pixels with a bit depth of 8 bits (256 colors).

## NEW & NOTABLE

**Fractal Design Painter 5.** More than 100 new natural-media brushes, new dynamic plug-in floater layers, and a more intuitive interface mark this upgrade of Fractal's popular painting software. Also new are multiple-alpha-channel capability and Web-savvy tools. \$449; upgrade, \$99. Fractal Design: 800-846-0111 or 408-430-4000; <http://www.fractal.com/>.

▼ **mTropolis 2.0.** The latest version of this powerful multimedia-authoring tool supports Web



playback, using mFactory's mPire browser plug-in. Create your own authoring wizards and tools for such tasks as debugging and optimizing multimedia titles. Included are new mPacks, libraries of premade elements and behaviors. \$995; upgrade, \$199. mFactory: 888-622-8669 or 415-548-0600; <http://www.mfactory.com/>.

**Vision 3.5 and Studio Vision Pro 3.5.** Opcode's MIDI-sequencing and digital-audio-playback tools are now PowerPC-native, handle QuickTime files with no conversion needed, and support Adobe Premiere plug-ins. The Pro version also supports Digidesign's Pro Tools III PCI cards. Vision 3.5, \$399; upgrade, \$99. Studio Vision Pro 3.5, \$995; upgrade, \$129.95. Opcode Systems: 800-876-1376 or 415-856-3333; <http://www.opcode.com/>.

**Natural Scene Designer.** Create 360-degree QuickTime VR panoramas with this software's tree generator, fractal-landscape generator, and ray-tracing renderer. Includes U.S. Geological Survey and NASA data converted into 120 3-D models. \$299. Natural Graphics: 916-624-1436; <http://www.naturalgfx.com/>.

**CameraMan 3.0.** This screen-capture utility is now PowerPC-native and boasts advanced captioning capabilities, timeline editing, multiple-monitor support, and an improved interface. \$69.95; upgrade, \$25. Motion Works Group: 800-565-5582 or 604-685-9975; <http://www.mwg.com/>.

**MicroNet ADVCE16E.** The first 16x CD-ROM drive, this half-height external drive has an average access time of 150 milliseconds and data-transfer rates of up to 2.4 MB per second. \$275. MicroNet Technology: 800-800-3475 or 714-453-6100; <http://www.micronet.com/>. / BROOKE C. WHEELER

## FIRST LOOKS

# Netscape Communicator

IT'S NOT FAR-FETCHED to say that the Internet is what it is today largely because of Netscape Navigator, the pioneering browser that brought the excitement of the World Wide Web into people's homes — and, by getting the attention of Microsoft, made the Web a battleground in a high-stakes, high-profile business war.

Ironically, that same Navigator was the first victim of the Microsoft/Netscape war. Late this spring, it will be absorbed into Netscape Communicator 4.0, a suite of components that Netscape is hoping will best not only Microsoft's Internet Explorer but the likes of Lotus Notes as well. We took a look at the latest beta version of Communicator 4.0, dubbed Preview Release 2, to see what chance Netscape may have.

The following five elements are the core of what Netscape is calling Netscape Communicator Standard Edition:

**NETSCAPE NAVIGATOR.** Among Navigator's new HTML features are support for multiple layers on an HTML page (letting Web authors create complex, dynamic CD-ROM-style interfaces, just with HTML code), absolute positioning of objects on a Web page, support for Web style sheets for sprucing up even the dullest HTML page, and the ability to embed custom typefaces in Web pages. Hard-core Web-heads will also be pleased to know that Navigator uses Symantec's Just-In-Time Java Compiler — Navigator now runs Java applets up to ten times as fast as before. (Symantec's compiler is still not as fast as the Metrowerks Java compiler used in Internet Explorer 3.0, however.) Navigator can also automatically download and install plug-ins when it encounters a page requiring a plug-in you don't already have.

**NETSCAPE MESSENGER AND COLLABRA.** The e-mail slice of the Communicator pie is Netscape Messenger, mail client software that supports both POP and the emerging IMAP mail protocol. Messenger's interface is a vast improvement over that of Navigator's old e-mail client software. You can now display mailboxes and messages in separate windows instead of in one multipaned one. You can sort mail into mailboxes based on various rules and look up addresses you don't know via the LDAP protocol. Collabra, Netscape's news client software, sports a similar interface.

**NETSCAPE COMPOSER.** Formerly Navigator Gold, Netscape's HTML editor is now called Netscape Composer. Netscape emphasizes that Composer is not meant to compete with high-end HTML tools such as Adobe PageMill but rather is meant for the day-to-day creation of HTML-based e-mail and newsgroup messages and for the creation and editing of simple Web pages.



Netscape Messenger offers a much improved e-mail interface and HTML-based mail messages.

## BETWEEN THE LINES / BY ANDREW GORE

# Power CEO Says It's Time to Evolve

JOEL KOCHER, who recently took over as CEO of Power Computing, may be a newbie to the Mac market, but with some 17 years in the PC market, he brings a unique perspective to the Macintosh-clone business. I sat down with him a few days before Apple's Great Layoff of '97 to get his take on the state of the Mac, Mac cloning, and the future of Power Computing.

**AG.** What do you feel are the strengths and weaknesses of Power Computing?

**JK.** I don't think there's any question what the strengths are — award-winning products and technology are clearly the reasons that Power has

succeeded to the degree it has.

However, Power Computing has growing pains — and that probably comes as no surprise to some of our customers out there. Our less-than-consistent execution is unacceptable to me, primarily because it's unacceptable to our customers.

**AG.** Given your PC background, what do you think of the current state of the Mac market?

**JK.** I view the computer business as having been through Darwin's theory. If you look at the Wintel space, 15 years of extreme head butting and competition have created organisms that have extremely tight and streamlined economic models,



# 4.0: It's big, it's powerful, it's big, it's full-featured, it's big.

Composer supports HTML tables and a few other HTML features, but its feature set doesn't come close to that of any stand-alone HTML editor.

**NETSCAPE CONFERENCE.** The final piece of the Communicator puzzle is Conference, a voice-conferencing and shared-white-board app. Unlike the rest of Communicator, Conference is a separate application and wasn't yet available at press time.

Netscape Communicator Standard Edition will be available in a similar way to Navigator 3.0: It's free for anyone to download, but if you're not part of a nonprofit or educational institution, you're expected to pay for it after a 90-day evaluation period.

The challenger to workgroup programs such as Lotus Notes will be Netscape Communicator Professional Edition, which will add an Internet-based group calendar, automatic administration features for IS managers, and a Java applet that links Navigator to IBM-3270 mainframes. Expect to see it — and the Standard Edition — this summer.

Although we found the preview release of Communicator extremely unstable, we've come to expect such instability from Netscape's alpha and early beta software. Of greater concern is the size



Among improvements to Netscape Navigator is support for precision HTML layout and layered documents.

of Communicator — it weighs in at 6.5 MB. If you just want to use Navigator for Web browsing, you're out of luck — you can't selectively remove the parts of Communicator you don't want. What's even worse is that Communicator requests a minimum of 10 MB of RAM (14 MB is recommended) — although Netscape expects the final RAM requirements to be somewhat less. In contrast, Internet Explorer 3.0 occupies 1.8 MB and 4 MB of RAM is recommended. (Microsoft's Internet Mail and News client software, which is a separate, optional application, needs an additional 1.1 MB of disk space and 2 MB of RAM.)

It's somewhat disappointing that Netscape has chosen this — dare we say Microsoft-ian? — philosophy of creating monolithic, do-everything applications. But if you want to use only one application for browsing the Web, reading e-mail, trolling through newsgroups, and creating simple Web pages, Netscape Communicator can deliver it all.

/ JASON SNELL

**PROS:** Makes all Internet features available in one interface. Dramatically improved news and mail interface. Powerful new extensions to HTML.

**CONS:** Large. RAM-hungry. Slow. No way to deinstall components you don't want.

**INFO:** Netscape Communications: 415-937-3777; <http://home.netscape.com/>.

much tighter management of inventory and other assets, and rapid time to market. The Mac market has not evolved through that same 15 years of extreme competition.

**AG.** So the Mac market is the Galápagos Islands of computerdom?

**JK.** Exactly. But whereas the Galápagos Islands are isolated and yet perfectly content, that's not acceptable for us. The good news is that Apple is beginning to do the right things. Certainly licensing was one of the right things. And I've seen Apple improve its time to market over the last year, which I know is a direct result of the fact that there have been other players within the Mac space.

**AG.** What do you think is going on at Apple vis-à-vis clones?

**JK.** We believe Apple is committed to licensing

over the long term, and the primary reason it is committed is because Mac customers have clearly stated that it's important to them.

Now, having said that, CHRP puts everyone onto a more equal footing. As we all move to CHRP, the way that Apple extracts its licensing fees and executes its licensing program naturally has to change. That's not a negative thing.

**AG.** What's in the future for Power Computing?

**JK.** As you know today, our product line, though broad within the context of the desktop computer, has not broadened into the mobile market and the server market. And as we both know, the mobile market is exciting and a place Power needs to be.

[For the unabridged version of this interview, go to <http://www.macuser.com/onlinecol/kocher.html>. — Ed.]

## IN BRIEF

### Tantalizing QuickTime 3.0

THE MORE DETAILS that trickle out about the soon-to-be-released QuickTime 3.0, the better it looks. The latest version of Apple's cross-platform media technology is slated to include real-time effects rendering, Java integration, the ability to stream VR content over the Web, direct support for Windows .AVI files, and a lean-and-mean sprite-handling capability that will be ideal for Web-based animations. / RIK MYSLAWSKI

### Mac OS 8: It's Baaaack . . .

APPLE MUST HAVE a pile of "Mac OS 8" T-shirts left over from when the name was reserved for the never released Copland OS — why else would it revive the name for its next OS upgrade, previously code-named Tempo, scheduled to ship in July? To be fair, Mac OS 8 is impressive, with integrated Internet services, interface improvements, and a multitasking PowerPC-native Finder, but we still have to wait for Rhapsody for the truly revolutionary overhaul. / RIK MYSLAWSKI

### Intel Inside? Not!

**Q.** APPLE'S AVIE TEVANIYAN has said that Rhapsody, Apple's new OS, will run on Intel as well as PowerPC chips. How likely is it that once Rhapsody ships, you'll buy a PC or compatible based on an Intel chip on which to run Rhapsody?



Andy Grove, Intel's CEO, won't find comfort in our latest online poll. Mac aficionados are enamored not only of the Mac OS but also of the PowerPC processor on which it runs. / RIK MYSLAWSKI

### A Font for Sore Eyes



FINALLY — a font designed for your Web browser. Peter Fraterdeus created Browser Font, ZDNet Mac's June exclusive utility, to make browsing easier on the eyes. Browser Font looks great on-screen, even in bold or italics. Browser Font is available free, beginning March 31, exclusively from ZDNet Mac Download on the Web (<http://www.macdownload.com/>) and on CompuServe (GO ZMC:MACUSER). / PHILIP DYER

# The Mac OS. It does. It will. *you can.*

At Apple, we started with one simple goal: to make it easier to do the things you want to do. Over the years, the Macintosh® operating system has helped millions of people do just that, by providing a simple, intuitive approach that makes all aspects of computing easier. But even more impressive than what a Macintosh can help you do today is what it will help you do tomorrow.

*It does more than ever.*

So what does the future of the Mac OS look like? For a glimpse, check out our newly released Mac OS 7.6. It's faster than ever before—so you can start your Mac, launch applications, save files and print up to 40% faster.



*The Mac you buy today won't be obsolete tomorrow. Because Rhapsody will be compatible with all currently shipping Mac OS systems.*

Connecting to the Internet is easier too. With the latest version of the Apple® Internet Connection Kit (it includes Netscape Navigator™ 3.0 and other Internet tools), you're one step away from accessing the Net. Or, if you prefer, you can use AOL or our own Apple Cyberdog™—they're included with Mac OS 7.6 along with TCP/IP and PPP.

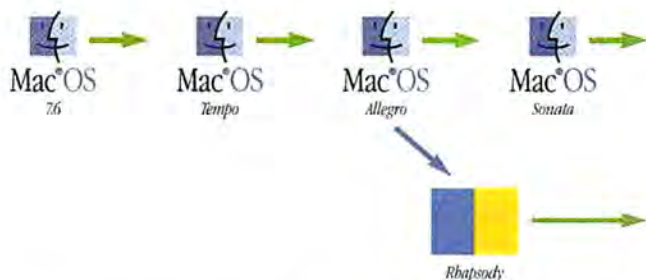
Mac OS also has the latest version of Apple QuickTime®, the industry standard for multimedia creation and delivery. And it makes upgrading easier: with one CD-ROM and a streamlined installation process.

Intrigued? Then you'll love what comes next. Because we're hard at work on the next version of the Mac OS, code-named Tempo. Right from the start you'll notice a new look, with beveled buttons, icon drop shadows and other 3-D enhancements to the desktop. Tempo will dramatically improve system responsiveness by incorporating multitasking, multi-threaded functionality and native PowerPC™ capabilities directly in the OS. So you can run multiple applications more smoothly, and launch new applications while files are copying in the background. Tempo extends our Internet capabilities with easy

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**The Mac OS Report. One in a Series.**

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*Apple's complementary operating systems—Mac OS and Rhapsody—allow you to choose the system that best meets your needs. They also allow you to decide when it's time to make the transition.*

setup, personal web sharing and built-in Java™. And it will help you be more organized, by reducing on-screen clutter with spring-loaded folders and pop-up windows for frequently used items.

Of course, Tempo also paves the way for further updates to the Mac OS. Because there's much more to come.

*It will be the NeXT thing.*

When we began defining a new software architecture that would take us into the future, we had two clear objectives: to enhance our traditional strengths, and to create an operating system that would leapfrog the competition, setting standards into the next century.

Enter NeXT™. By acquiring NeXT Software and adopting their kernel-based architecture, Apple can offer advanced system services such as true multitasking, protected memory and symmetrical multiprocessing. We have also strengthened our position in client-server and Internet/Intranet markets. And NeXT's object-oriented development environment and powerful tools such as WebObjects™ and Enterprise Objects Framework™ give us clear advantages in the creation of new solutions.

Merging NeXT and the Mac OS will create a next-generation OS that will give our competitors something new to catch up to. It will be an OS that helps developers create breakthrough applications by allowing greater experimentation and efficient reuse of code. It will include the best of our graphics technologies, such as ColorSync® and QuickDraw® GX. And we plan to adopt the Adobe® PostScript® imaging model as well. It will fully support the QuickTime Media Layer. It will provide industrial-strength reliability, performance and ease of use. And it will be an ideal platform for publishing, multimedia and Internet applications yet to come.

What is the name of this new OS? Its code name is Rhapsody.

*It will be an Apple thing.*

Rhapsody will leave other operating systems in the dust. But not Apple customers. To start with, Rhapsody will enhance the general look and feel of today's Mac OS interface. It will support all currently shipping Mac OS-based systems. It will run the vast majority of existing Mac OS applications by hosting the complete Mac OS on the Rhapsody kernel.

In short, Rhapsody will run your existing applications and utilities, read your files, recognize your current fonts and extensions and play your movies and sounds. Rhapsody will deliver the kind of technology you expect from Apple. The kind of technology that appeals to anyone who requires the highest performance for publishing, Internet and multimedia authoring, and scientific and technical work. The kind of technology that appeals to people who like to, well, get things done.

*You can.*

What does all this mean? It means you can do everything you're used to doing now, plus a few things you might not yet imagine. It means you can buy a Mac today and not worry about its compatibility with Rhapsody tomorrow. It means Rhapsody won't just be a new way to use a *Macintosh*—it will define an entirely new way to use *computers*. You can learn more by visiting us at [www.macos.apple.com](http://www.macos.apple.com) or by calling 800-538-9696 for information by fax.



*The world's most intuitive and easy-to-use operating system will remain just that. With regular system updates and enhancements, the Mac OS will take you well into the future.*



*The acquisition of NeXT provides Apple with additional strengths in performance, reliability, network management and rapid application development.*



*Mac OS 7.6 extends Apple's leadership in graphics and multimedia by bringing together the latest versions of Apple QuickTime technologies, collectively known as the QuickTime Media Layer.*



**Adobe PostScript**

*Apple intends to adopt the Adobe® PostScript® imaging model for Rhapsody and transfer the best of our existing graphic technologies, including ColorSync and QuickDraw GX.*



## NEW & NOTABLE

Canon PowerShot 350. ▼ A compact addition to Canon's digital-camera line, the PowerShot 350 sports a .8-inch color LCD screen, automatic flash with red-eye reduction, and a macro mode. Adjustable



JPEG-compression levels allow you to store 11 to 47 images at 640-x-480-pixel resolution on a 2-MB CompactFlash card. \$699. Canon Computer Systems: 800-848-4123 or 714-438-3000; <http://www.powershot.com/> or <http://www.ccsi.canon.com/>.

**Texture Creator 2.0.** This renamed upgrade to Adobe TextureMaker generates natural-looking, tileable textures. You can modify 200 preset textures — using lighting controls, color, and transfer modes — or create originals with the Texture Wizard feature. \$129.99; upgrade from Adobe TextureMaker, \$79.95. Three D Graphics: 800-913-0008 or 310-553-3313; <http://www.threedgraphics.com/>.

**Number Nine Imagine 128 Series 2.** Boost 2-D/3-D graphics and full-screen-, full-motion-video performance with this 128-bit accelerator card. Equipped with 8 MB of VRAM and a 250-MHz DAC (digital-to-analog converter), it also supports wide-screen-monitor resolutions of up to 1,920 x 1,200 pixels. \$799. Number Nine: 800-438-6463 or 617-674-0009; <http://www.nine.com/>.

**SmartMove.** This plug-in for Adobe Photoshop simplifies moving and storing image files across a network, with up to 10:1 compression. It automatically compresses and relocates images (or QuarkXPress documents that contain images), according to your specifications, in its task-handling interface. \$695. M.E. Aslett Corp. (MEAC): 908-225-1922; [meac25@aol.com](mailto:meac25@aol.com).

**Portrait PageMaster LCD.** Sleek and lightweight at 10.2 pounds, this 15-inch backlit LCD monitor (which includes the required PCI graphics card) swivels between portrait and landscape views and delivers an optimized resolution of 1,024 x 768 pixels. \$1,799. Portrait Displays: 800-858-7744 or 510-227-2700; <http://www.portrait.com/>.

**Newer Technology CardCam.** This petite Type II PC Card captures 16-bit QuickTime video in resolutions from 160 x 120 to 320 x 240 pixels and supports PAL as well as NTSC video sources. In addition, its software has settings for time-lapse still-image captures saved as PICT files and for motion-sensitive video captures. \$399. Newer Technology: 800-678-3726 or 316-943-0222; <http://www.newertech.com/>. / BROOKE C. WHEELER

# Wall-Socket Laptop

Potent portable hamstrung by power-hungry processor.

YOUR MOTHER WARNED YOU that if something sounded too good to be true, it probably was. So it is with the imediaEngine, from Canada's Vertegri Research. At first blush, the imediaEngine — the first Mac OS laptop clone — is an impressive product; a closer look, however, reveals an Achilles' heel that may limit its popularity to a well-heeled few.

The imediaEngine's specs are spectacular: The machine's Motorola-developed motherboard is powered by either a 200-MHz or a 240-MHz 604e PowerPC microprocessor, providing it with significantly more oomph than the 240-MHz 603e Apple offers in its top-of-the-line PowerBook 3400. What's more, the imediaEngine comes with either a 12.1-inch or 14-inch LCD screen, powered by an ATI chip set fed by 2 MB or 4 MB of graphics RAM — a setup that provides up to 24-bit color at 640 x 480, 800 x 600, or 1,024 x 768 pixels — a clear winner over the PowerBook 3400's 1 MB of graphics RAM, which limits Apple's offering to 16-bit color on its 800-x-600-pixel 12.1-inch LCD screen.

The graphics and processing superiority of the imediaEngine are clues to its target market: traveling professionals who need the ultimate in portable presentation power. However, those presenters had better not need to make any

changes to their Astound, Persuasion, or PowerPoint slides en route to their million-dollar meetings, because the imediaEngine doesn't run on batteries — you need to plug it into an AC outlet for it to do its high-powered magic.

A PowerPC 604e can consume about four times the power of a 603e with equal clock speed. Add the power demands of the imediaEngine's large backlit LCD as well as of its display circuitry, graphics RAM, 3.5-inch hard drive, 10x CD-ROM drive, and four-speaker sound system, and you can understand why an internal battery would be sucked dry in minutes rather than hours.

Even without an internal battery, the metal-cased imediaEngine (with titanium and leather highlights) weighs in at a hefty 10.5 to 12.3 pounds — and at an equally hefty \$4,983 to \$7,894. Still, if you're lugging around a desktop Mac for your high-

powered presentations, the imediaEngine may be the answer to your dreams — and your aching back.

Vertegri has also announced the Quicktower E2 desktop series, which features hot-swappable, removable-drive bays and — like the imediaEngine — is based on the Tanzania logic board. Vertegri Research: 800-622-9611 or 604-688-6792; <http://www.paulgossen.com/>. / RIK MYSLAWSKI



## THE OFF BEAT

### It's Supposed to Suck



LORD ONLY KNOWS what sort of aging flotsam resides beneath your keyboard keys. Dust, saltine crumbs, nail clippings? You can either simply rearrange that nameless crud with a can of compressed air or suck it up for good with the little vacuum cleaner with the big name: the Metro Data-Vac MicroSweep Model MS-4. Its anteateresque nose is also handy for dedusting printers, fax machines, phones, and other vulnerable equipment and can be fitted with either of two brushes or a crevice tool. It's got reusable filters, so \$24.95 will be all you'll ever spend for perpetual keyboard hygiene. Metropolitan Vacuum Cleaner: 800-822-1602 or 914-357-1600.

/ BROOKE C. WHEELER

## FIRST LOOKS

# Astound 3.0:

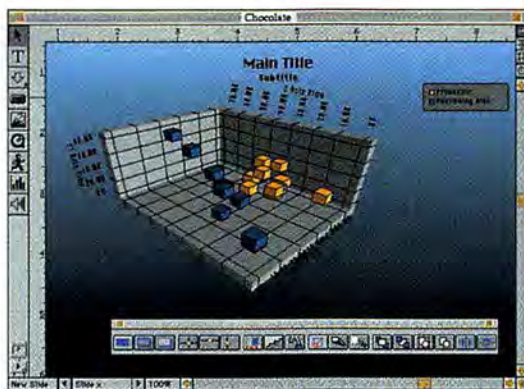
## Agile presentation maker.

THIS MULTIMEDIA WORLD may be getting ever more complex, but Astound's animated presentation software remains refreshingly simple and powerful. Our first look at a beta version of Astound 3.0 uncovered a quiet integration of timely new features and rich cross-platform playback options.

The most notable new feature in version 3.0 is its ability to export presentations to HTML. Layout integrity is fully retained, without the mysterious reshuffling of text and objects that HTML export often causes. The conversion process does remove some effects, such as text drop shadows and automatic animation and sound playback. In the HTML presentation, QuickTime movies and sounds are converted into images that hyperlink to original movie and sound files — you need to click on them for playback. Version 3.0 also ships with a player that supports Windows 3.1, 95, and NT 4.0 playback.

One fun new feature is animatable 3-D charts. You can import data from Excel or enter it in Astound's Datasheet and then translate it into one of a selection of 3-D charts. You can then edit the chart, rotate it as a wire frame, or animate it with a selection of automated presets.

When Astound 3.0 ships this spring, it will include 100 new preanimated templates and Web templates. Unfortunately, our beta version came sans templates, so we can't comment on the new designs.



Astound 3.0's new 3-D-charting module lets you animate a selection of pie, bar, column, and line charts.

Despite the improvements in version 3.0, some version 2.0 drawbacks still haven't been addressed, such as the inability to import formatted outlines or text files directly from a word processor. Also, you can't extrude text, clip art, or objects that weren't created by Astound's object tool, and you can't flip or rotate imported clip art. Improving existing features seems to have been overshadowed by adding new ones. / BROOKE C. WHEELER

**PROS:** HTML export retains layout integrity. Fun 3-D animation. Cross-platform playback.  
**CONS:** Can't extrude text. Can't flip or rotate clip art. Can't import outline-formatted word-processor files.  
**INFO:** \$249; upgrade, \$99. Astound: 888-427-8686 or 415-845-6200; <http://www.astoundinc.com/>.

## Strata's Upgrade Too Little, Too Early

IF YOU'RE THINKING of upgrading to Strata StudioPro 2.0, think again — and then wait for version 2.1 to arrive this spring.

Before Strata shipped the long-awaited upgrade to its full-featured modeling, rendering, and animation program, it promised major new features such as a scanline renderer, particle systems, inverse kinematics, and a completely redesigned timeline animation interface (see "Strata StudioPro 2.0," April '97, page 24). Unfortunately, what it delivered fell far short of the mark. Not only are many of the major new features (including the new rendering and particle systems) not even included in version 2.0 but the sheer number and variety of

bugs also make version 2.0 almost useless for serious production work.

Although Strata has posted a 17.9-MB updater on its Web site (<http://www.strata3d.com/>), the version available to us at press time (2.0.1) solved none of the bugs we'd discovered. What's more, the included Read Me file informed us of a gaggle of problems we hadn't even run into yet. To its credit, Strata has announced that it will ship a debugged version that includes the promised — but missing — functionality in May. We recommend waiting until then to upgrade to StudioPro 2.0 — just as we're holding off on our review of it until Strata gets its act together. / DAVID BIEDNY

## MACINTOSH PRICE INDEX

THE UNITED COMPUTER EXCHANGE index reflects average sales prices of new and used Macs as of March 3, 1997. Prices (other than those for compact models, Performas, and LCs) do not include a monitor or a keyboard. The United Computer Exchange is a national clearinghouse of used microcomputer equipment.

MAC MODEL	NEW	USED
LC III (4/80)	•	\$175
IIx (5/80)	•	\$175
IIci (4/80)	•	\$200
IIx (4/80)	•	\$225
Quadra 610 (8/160)	•	\$450
Quadra 650 (8/230)	•	\$500
Quadra 800 (8/230)	•	\$675
Quadra 840av (8/230/CD)	•	\$825
Quadra 950 (8/230)	•	\$800
Power Mac 6100/66 (8/350/CD)	•	\$625
Power Mac 7100/80 (8/700/CD)	•	\$800
Power Mac 7500/100 (16/1GB/CD)	•	\$1,150
Power Mac 8100/100 (16/1GB/CD)	•	\$1,175
Power Mac 8500/120 (16/2GB/CD)	•	\$1,500
Power Mac 9500/132 (16/2GB)	•	\$1,750
PowerBook 180 (4/120)	•	\$675
PowerBook 540c (4/320)	•	\$1,100
PowerBook 5300cs 100 (8/500)	•	\$1,500
Duo 280c (4/320)	•	\$750
Duo 2300c/100 (8/750)	\$1,499	\$1,100
Power Computing Power 100 (16/1GB/CD)	•	\$650
Power Computing PowerWave 604/150 (8/1GB/CD)	•	\$1,400

• = discontinued model

For more pricing information on these and other models, call 800-755-3033 or 770-955-0569 or visit <http://www.uce.com/>. And find it on ZDNet, in Library 1 (Special Reports) of the MacUser Forum (GO ZMC :MACUSER).

## The Geek Beat

**RHAPSODY.** Under an agreement with Apple, Metrowerks will provide tools for developers making the transition from Mac OS to the NeXTstep-based Rhapsody OS. A new tool, CodeWarrior Latitude (due later this year), will ease porting to Rhapsody, and a new version of the CodeWarrior development environment scheduled to coincide with Apple's Rhapsody release will run on Rhapsody-based systems.

**FILEMAKER PRO.** Claris' FileMaker Pro Server is now available for Windows NT. \$999. Claris: 800-544-8554 or 408-727-8227; <http://www.claris.com/>. Web Broadcasting has released Web FM 3.0 (\$245), a rewrite of the Web-server plug-in. Web FM serves FileMaker Pro databases via a Mac Web server. A new Web Broadcasting product, PICT FM (\$125), converts PICTs stored in FileMaker container fields into JPEG images, which can be viewed from a Web page. Web Broadcasting: 415-329-9676; <http://macweb.com/>.

**WEB-SERVER PLUG-INS.** WebX (\$495), from MacXperts, is a Web server plug-in that links a Mac-based Web site to an Oracle7 database. According to MacXperts, WebX is the only Web-server plug-in that supports heuristic processing. 800-356-8040 or 804-353-7122; <http://www.macxperts.com/webx/>. / SHELLY BRISBIN

# REVIEWS

## Mac OS systems pop up everywhere

New Power Macs debut in the midst of many new clones.



**AMID ANOTHER FLURRY** of low-cost offerings from Mac OS licensees, Apple has overhauled its Power Mac lineup and introduced the first in a line of consumer Power Macs — the 4400/200. To sort out the new equipment, we used MacBench 4.0, the industry-standard benchmark for measuring the speed of Mac OS systems. We looked at three Apple models — the Power Mac 4400/200, 7300/180, and 9600/200. (The remaining newcomers in Apple's line, the Power Mac 7300/200, 8600/200, and 9600/233, were not available for testing at press time.)

We also tested the APS M•Power 603e180 (desktop) and 603e240 (minitower), the Motorola StarMax 3000/180 DT (desktop) and MT (minitower) and StarMax 3000/240 MT (minitower), and the UMAX SuperMac C500/180 (desktop). Read on for our findings.

### Apple Revamps Its Line

Apple's new heavyweight Mac is the Power Mac 9600/200. It has a larger footprint than either the Power Mac 9500 or 8500 and is distinguished by a hump atop its case.

The 9600's new case design, the same as that of the 8600, at long last gives users easy access to the interior of Apple's top-end systems. Inside, Apple has upgraded some basic components: The 9600 has a speedy (12x) CD-ROM drive; a fast, 4-GB hard drive; and an IMS

TwinTurbo graphics card with 4 MB of graphics RAM. The effect of these upgrades shows in the 9600's MacBench 4.0 Publishing Disk and Lo-Res Publishing Graphics scores. But because the 9600's processor, a 200-MHz PowerPC 604e, is identical to that in the



From left: UMAX SuperMac C500/180, Apple Power Mac 9600/200, and Apple Power Mac 4400/200.

9500, the 9600's Processor score is no better than that of its predecessor.

What's more, the 9600 still costs disproportionately more (\$3,700) than the comparable Power Computing PowerTower Pro 200 (\$2,895) and UMAX SuperMac S900/200 (\$3,399).

Inside and out, the Power Mac 7300/180 looks just like the Power Macintosh 7600/132, which it supersedes. The only visible difference is the absence of a video-input port. The Power Mac 7300's familiar hinged housing lifts to reveal a 2-GB hard drive and a 12x CD-ROM drive. The 7300 comes standard with 2 MB of graphics RAM, expandable to 4 MB. Although the 180-MHz 7300 we tested looks like a speed demon compared to the mothballed 7600, it's no faster than Power Computing's similar 180-MHz PowerCenter 180, which is \$100 cheaper and comes with a better software bundle.

a 512K L2 cache, a speedy 2.7-GB drive, and 4 MB of VRAM, the StarMax 3000/240 MT costs \$300 more than Power's PowerBase 240 but significantly outperforms that system in nearly every MacBench 4.0 test. Particularly noteworthy is the high Floating Point score, a result of a new floating-point library developed by Motorola. This should have a positive effect for 3-D imaging. Finally, the StarMax 3000/240 MT, like other 3000 models, includes a 28.8-kbps modem; APS' M•Power and Power's PowerBase systems lack modems.

It's worth noting that some of the StarMax 3000/240 MT's speed is due to Mac OS 7.6, which comes preinstalled, and to Motorola's inclusion of Connectix's Speed Doubler 2.0. Mac OS 7.6 and Speed Doubler will boost speed on other systems too.

APS' M•Power 603e240 turned in a good Processor score. Its drive, however, is slower than those in Motorola's and Power's comparable models. APS also provides only 1 MB of VRAM, which accounts for the low Hi-Res Publishing Graphics score. At \$1,799, with a relatively weak software bundle and no modem, this system is no bargain.

### Apple's Non-Performa

The Power Macintosh 4400/200 is a basic small-business/home machine. It has the

#### REVIEWS RATING KEY

★★★★★	OUTSTANDING
★★★★	VERY GOOD
★★★	ACCEPTABLE
★★	POOR
★	SERIOUSLY FLAWED
●	DANGEROUS

### Low-Cost Machines Multiply

Motorola's StarMax 3000/240 MT will easily satisfy cost-conscious graphics pros and Web and multimedia authors. Tricked out with 32 MB of RAM,

same Tanzania logic-board design as the APS M•Power and Motorola StarMax product lines and contains a PowerPC 603e running at 200 MHz. The Power Mac 4400 comes with 16 MB of RAM, an IDE hard drive, an 8x CD-ROM drive, and a 256K Level 2 cache. Overall, its speed is on a par with that of the 180-MHz clones from Motorola and UMAX. The Power Mac 4400 includes a 2-GB drive, compared to the low-capacity 1.2-GB models in most competitors' systems. It also has a 10BASE-T Ethernet port but no modem. The 4400's software contains only Internet-connection software and the Mac OS. It's a solid machine, but its \$1,799 price is simply too high.

The Motorola StarMax 3000/180 MT, at \$1,395, was the most expensive 180-MHz PowerPC 603e system we tested for this review, but it's the only such system that comes with 32 MB of RAM and a 2.7-GB hard drive. Other 180-MHz models, including Motorola's own desktop StarMax 3000/180, have 16 MB of RAM and a 1.2- or 1.4-GB hard drive. The StarMax 3000/180 MT outperformed its competition in all but the graphics tests. In the Hi-Res Publishing Graphics test, both StarMax 3000/180s suffered from their lack of a second megabyte of graphics RAM; they ship with only 1 MB each. The StarMax 3000/180s lack Speed Doubler, but like the StarMax 3000/240, each ships with System 7.6, a 28.8-kbps modem, and an excellent software bundle.

The UMAX SuperMac C500/180 has a low

profile, being only 4 inches high and 2 to 3 inches narrower than typical desktop systems. But its price, \$1,349, is toward the high end of the range for similar systems and, other than support for SRS Surround Sound, this has little justification. Its software bundle is solid, but the C500 doesn't come with a modem.

The lowest-priced 180-MHz system, the APS M•Power 603e180, was also the slowest, largely because its base configuration doesn't include an L2 cache. Given that APS doesn't bundle a modem with this system and that its software bundle is adequate but not outstanding, consider other systems carefully before being seduced by its rock-bottom price. If you do opt for this system, buy it with an L2 cache.

### The Bottom Line

Apple has caught up to its rivals in terms of system speed. And the new easy-access design of the Power Mac 9600 is a welcome relief. Apple's hardware configurations and software bundles, however, still don't justify the relatively high system prices. Motorola, on the other hand, has learned a few things since it introduced the StarMax line. It is delivering fast, well-configured consumer and small-business systems with an outstanding software bundle. UMAX's SuperMac C500/180 is a solid addition to the consumer market. APS, however, is cutting a few too many corners in its attempt to be the bargain-price leader.

/ Henry Bortman and Shelly Brisbin

## MAC OS SYSTEMS

Apple Power Mac 4400/200	★★★
Apple Power Mac 7300/180	★★★★
Apple Power Mac 9600/200	★★★★
APS M•Power 603e180	★★★
APS M•Power 603e240	★★★
Motorola StarMax 3000/180 DT	★★★★
Motorola StarMax 3000/180 MT	★★★★
Motorola StarMax 3000/240 MT	★★★★
UMAX SuperMac C500/180	★★★★

Apple Power Mac 4400/200, \$1,799; Apple Power Mac 7300/180, \$2,300; Apple Power Mac 9600/200, \$3,700 (estimated street). Company: Apple Computer, Cupertino, CA; 800-538-9696 or 408-996-1010; <http://www.apple.com/>. Reader Service: Circle #401.

APS M•Power 603e180, \$1,199; APS M•Power 603e240, \$1,799 (direct). Company: APS Technologies, Kansas City, MO; 800-374-5681 or 816-483-1600; <http://www.apstech.com/>. Reader Service: Circle #402.

Motorola StarMax 3000/180 DT, \$1,249; Motorola StarMax 3000/180 MT, \$1,395; Motorola StarMax 3000/240 MT, \$2,195 (list). Company: Motorola Computer Group, Tempe, AZ; 800-759-1107 or 512-434-1526; <http://www.mot.com/GSS/MCG/>. Reader Service: Circle #406.

UMAX SuperMac C500/180, \$1,349 (list). Company: UMAX Computer, Fremont, CA; 800-232-8629 or 510-226-6886; <http://www.supermac.com/>. Reader Service: Circle #419.

## SWIFT NEW SYSTEMS? / measuring newcomers' speed

We used MacBench 4.0 to measure the speed of nine new Mac OS systems in their base configurations as shipped to us by the vendors. Motorola shipped its systems with Mac OS 7.6, Apple and UMAX systems came with System 7.5.5, and APS systems came with System 7.5.3. We tested with virtual memory on and AppleTalk off; due to a bug in the Mac OS, we had to turn virtual memory off for the disk tests on the Motorola StarMax 3000/240 MT and UMAX SuperMac C500/180.

The Graphics and Lo-Res Publishing Graphics tests were performed at a screen

resolution of 640 x 480 pixels and a bit depth of 8 bits per pixel and the Hi-Res Publishing Graphics test at a resolution of 1,152 x 870 pixels and a bit depth of 8 bits per pixel. The SuperMac C500/180 did not support the resolution required to run the Hi-Res Publishing Graphics test.

MacBench 4.0 scores are relative to those of an Apple Power Mac 6100/60 running System 7.5.5, with 16 MB of RAM, a 250-MB hard drive, 2 MB of graphics RAM, and no L2 cache. This system is assigned a score of 100 for all tests.

### MACBENCH 4.0 SCORES

	PROCESSOR	FLOATING POINT	DISK	PUBLISHING DISK	GRAPHICS	LO-RES PUBLISHING GRAPHICS	HI-RES PUBLISHING GRAPHICS	CD-ROM
Apple Power Mac 9600/200	409	403	363	342	508	478	529	485
UMAX SuperMac S900/200	408	404	323	249	531	522	599	352
Apple Power Mac 7300/180	330	361	168	177	383	374	402	460
UMAX SuperMac J700/180	376	363	181	187	468	429	489	340
Motorola StarMax 3000/240 MT	376	468	342	241	324	326	359	373
APS M•Power 603e240	338	299	137	157	293	277	201	272
Power Computing PowerBase 240	309	319	213	175	288	279	333	286
Motorola StarMax 3000/180 MT	298	373	240	227	248	251	174	330
Motorola StarMax 3000/180 DT	287	373	200	188	253	249	181	335
Apple Power Mac 4400/200	284	272	195	185	280	278	319	315
UMAX SuperMac C500/180	258	251	200	191	277	246	*	281
APS M•Power 603e180	207	227	109	138	175	173	157	215
Power Computing PowerBase 180	271	254	204	174	252	254	294	280
	SCORE BETTER	SCORE BETTER	SCORE BETTER	SCORE BETTER	SCORE BETTER	SCORE BETTER	SCORE BETTER	SCORE BETTER

\*Test not run.

# Adobe PageMaker 6.5



Web tools, support for layers highlight significant upgrade.

**LET'S GET THIS OUT OF THE WAY:** Forget the whole "Quark killer" thing. The addition of frames in Adobe PageMaker 6.5 begs for comparisons to frames-based rival QuarkXPress, but PageMaker 6.5 is its own program. New features such as built-in layer management and Web-savvy HTML export put the venerable page-layout program in a class of its own. Throw in interface refinements that unquestionably stamp this version as part of the Adobe software family, and PageMaker 6.5 shapes up as a significant — if not sweeping — upgrade.

## The Face Is Familiar . . .

The first thing you notice when exploring PageMaker 6.5 is the program's new look. Adobe's stated goal was to make PageMaker more consistent with stablemates Photoshop and Illustrator. Reorganized menus, new tools, tabbed palettes, and remapped keyboard

shortcuts aim at creating interface consistency with Adobe's graphics applications.

This standardization effort yields mixed results. PageMaker veterans will doubtless experience short-term frustration at having to relearn often-used keyboard command equivalents, such as those for paging through documents and showing and hiding guide rules. (Our fingers started to learn the new commands within a few days, after many referrals to the supplied cheat sheet.)

Conversely, Photoshop and Illustrator users who are new to PageMaker will appreciate familiar keyboard shortcuts and will also be right at home when using the program's new palettes, which adopt the convenient tabbed design introduced in Illustrator and Photoshop. This design allows you to consolidate multiple palettes into one and "roll them up" by double-clicking on their title bars.

Although we generally like the new palettes in PageMaker 6.5, we wish they used less desktop real estate. When active (that is, "rolled down"), they're considerably bigger than their predecessors in Page-

Maker 6.0. This may cause headaches for users of smaller monitors or older Macs.

Finally, you'll notice some changes to PageMaker's menus. The Arrange menu is now a subentry in the Element menu. And the View menu, formerly a submenu under Layout, has been promoted to the menu bar. View embraces such options as page views, zoom levels, master-page items, and guide displays.

The View menu is largely self-explanatory, and you'll probably get used to it quickly. However, we have a couple of gripes about the way it is set up: The oft-used commands for Actual Size, Fit in Window, and so on are buried several items down on the menu. Far more



The main function of PageMaker's Colors palette is unchanged, but thoughtful design enhancements make it much more useful: CMYK and RGB colors (which can now coexist within a document) are denoted by the icons to the right of their names, and when you select a color, the percentages of its component colors are reflected at the bottom of the palette.

troublesome, the Display Master Items command violates the menu's logic: It is the only command on the menu that affects a page's content, rather than simply the way it appears on-screen. Hiding master items actually removes them from the page in question. This command would be better off elsewhere — or nowhere, since multiple master pages could be used to the same end.

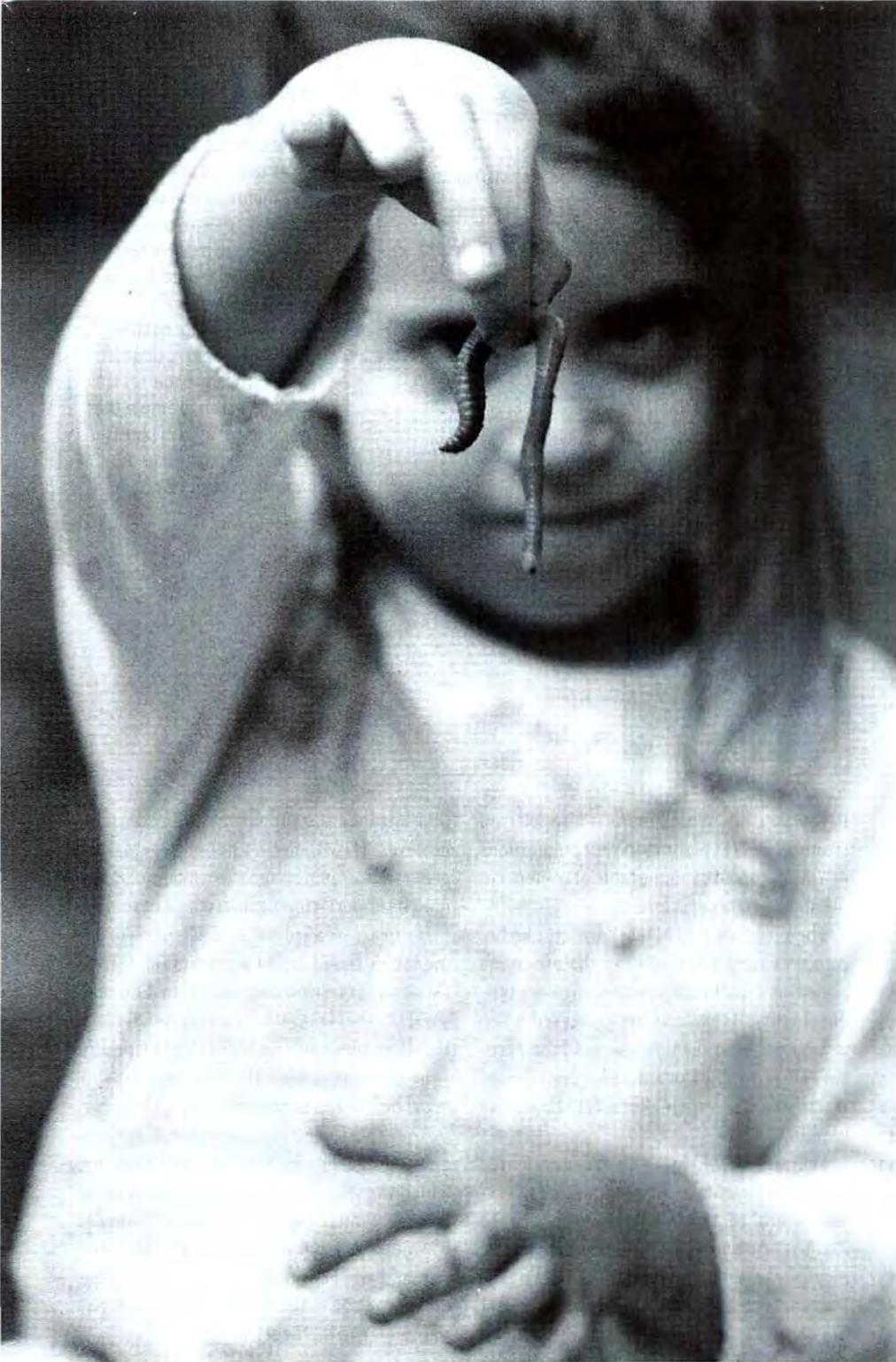
## You've Been Framed

The new feature that will attract the most attention in PageMaker 6.5 is the addition of QuarkXPress-like frames. PageMaker's Tools palette now contains two columns of tools for creating geometric objects: The column on the left contains the rectangle, ellipse, and polygon icons familiar to PageMaker 6 users; these are still used to create graphic elements. The tools in the right column look (and behave) just like those in the left, except each bears an X in the center of its icon. You use these tools to create frames that can contain either text or graphics.

You use the Frame Options dialog box to control the appearance of frame contents (alignment and inset of text and graphics and scaling and clipping of graphics). In an awkward twist, you must set the stroke and fill



Layers, frames, and revamped palettes are among the highlights of PageMaker 6.5. Frames, which can be used to create irregularly shaped graphics and text blocks like those on the sample page, are created with the toolbox items marked with X in their icons; the Layers palette makes it easy to experiment with placement of elements on your pages.



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attributes of the frame itself separately, via the Element menu. Another annoyance: Once applied, you can't undo Frame Options settings. And although you can use keystrokes to invoke Frame Options, we'd like to be able to access it by double-clicking on a filled frame as well. Ultimately, we'd like to see a Frame palette.

The main purpose of PageMaker frames (aside from making the program more accessible to QuarkXPress users) is for creating structured documents with repetitive text and graphics: You can easily template pages by placing empty frames on them and then simply pouring text into them later.

Frames can also be used to create circular or polygonal text without resorting to inside-out text wraps and other time-honored PageMaker tricks. The kinks aren't worked out of this yet, however. Trying to align headline text precisely within a circular frame — something that's easy to do in QuarkXPress — took more steps and kludgy workarounds than should be necessary.

## The Layered Look

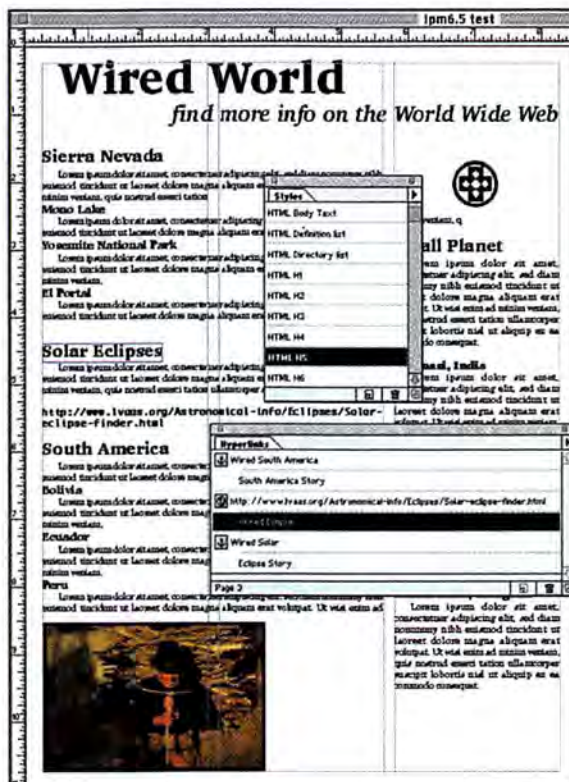
Two palettes new in PageMaker 6.5 embody the most-significant changes found in this upgrade: layers and hyperlinks.

PageMaker 6.5's frames may not be quite on a par with those of QuarkXPress, but PageMaker's layers support really shines — and, yes, bests that of QuarkXPress. The Layers palette lets you assign text and graphics to different layers. You can view or hide layers independently, merge them, and lock their contents to protect them. Reordering layers and moving objects among layers — even to and from multiple layers at the same time — is a simple drag-and-drop affair.

PageMaker's layers controls are fast and flexible, and for all their power, they're remarkably simple — although we *would* like to see keyboard shortcuts for moving between layers, à la Photoshop. QuarkXPress offers no comparable layers support (although you can approximate it with the QX-Tools XTension, from Extensis).

## Links

The program's new Hyperlinks palette extends the online capabilities introduced in version 6.0, and it significantly strengthens PageMaker's usefulness for authoring electronic documents. The Hyperlinks palette allows you to attach a URL, e-mail address, or FTP link to a text or graphic element within your



PageMaker file. What's more, it also lets you create *internal* hyperlinks in your publications — linking an entry in the table of contents to the appropriate page, for example.

The power of PageMaker's hyperlinks becomes evident when you tap the program's beefed-up capabilities for exporting electronic documents: Hyperlinks are preserved when you output your documents as Adobe Acrobat PDF (Portable Document Format) files or when you use PageMaker's HTML export function.

PDF and HTML export are features carried over from PageMaker 6.0, but version 6.5 offers several improvements. In keeping with Acrobat's new support for in-line QuickTime movies, you can now paste a QuickTime movie into your PageMaker document and know that it will appear in exported PDF files. (If you print your PageMaker file, the movie's poster frame appears in the appropriate spot.)

Exporting PageMaker files is relatively easy: PageMaker automatically converts graphics to GIF or JPEG format and maps document styles to HTML styles. You can also elect to have your PageMaker multicolumn layout preserved — within limits — via the use of HTML frames. We were able to transform a multipage PageMaker publication into a Web page, complete with links to related Web sites, in about 30 minutes.

The inherent limitations of HTML mean

**Web-page authors will** appreciate additions in PageMaker 6.5 that make it easier to adapt print documents for online use: The Styles palette comes preequipped to allow you to assign HTML tags to text on your pages, and the Hyperlinks palette enables you to attach a URL or other Web link to any page element. In this example, the headline outlined in blue is being linked to a related page on a remote Web site.

that advance file preparation is necessary, however: HTML doesn't honor PageMaker-generated graphics such as tint boxes, nor does it support irregular text wraps or images that run across a spread. And when you're using tables-based layout preservation, HTML frames don't resize automatically to different-sized browser windows. For truly satisfactory HTML results, you'll probably need to modify your document with these restrictions in mind before you export it.

These slick electronic-document features give PageMaker a leg up on QuarkXPress, for which the QuarkImmedia XTension aims to provide similar capabilities. QuarkImmedia has more bells and whistles, but it's an expensive add-on. For straightforward Web-page creation, PageMaker 6.5 — and a little patience — can do the trick.

## The Bottom Line

PageMaker purists may be dismayed by the number of changes made to the program's interface, but the new functionality, including improved electronic-document support, frames-based layouts, and — especially — the Layers controls, more than compensate. If you haven't tried PageMaker lately, take a look at version 6.5. / Pamela Pfiffner

**Adobe PageMaker 6.5**, \$895 (list). **Company:** Adobe Systems, San Jose, CA; 800-422-3623 or 408-536-6000; <http://www.adobe.com/>. **Reader Service:** #403.

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## Epson Stylus Color 600



## Epson Stylus Color 800



1,440 dots per inch add up to outstanding print quality.



**THE NOTION OF** photo-realistic output from a sub-\$500 inkjet printer would have seemed a joke as little as a year ago. But Epson has achieved this ambitious goal — twice. The Stylus Color 600 and Stylus Color 800 combine a new print-head technology, reformulated inks, and record-setting 1,440-x-720-dpi resolution to deliver output that will suit casual home users, small graphics and design shops, and business users looking for high-quality output. What's more, the new printers overcome the sluggishness that has plagued high-resolution inkjet printers up to now.

Setting up either printer requires snapping in a black-ink tank and a color-ink tank (with separate cyan-, magenta-, and yellow-ink compartments). Install the tanks carefully. You can't reinstall them if you need to remove them — to ship your printer somewhere, for example. We prefer removable, reinsertable ink cartridges such as those used in Apple, Canon, and Hewlett-Packard printers.

Among the chief differences between the Stylus Color 600 and 800 are options for connecting the printer to your computer. Both can connect directly via a serial cable (not included), but only the 800 supports LocalTalk (\$149) and Ethernet (\$499) networking options. The 800 also has a higher-capacity black-ink tank and faster serial-port speed than the 600. A greater number of print-head nozzles enables the 800 to print faster too. Optional PostScript software (\$99) should be available for the 800 by the time you read this.

### Features

The Stylus Color 600 and 800 debut a new Epson piezoelectric print-head technology that uses electrostatic attraction to make ink adhere to the page. This technology differs

from the thermal-print technology used by competing printers (and earlier Epson models), in which ink is heated to force droplets to spray out of nozzles and onto the page. The new print-head design effectively eliminates splatter associated with thermal heads and allows for smaller, more consistently shaped dots. The new fast-drying, smudge-resistant ink formula also provides vibrant color.

Both printers are capable of 360-x-360-, 720-x-720-, and 1,440-x-720-dpi output. Plain copier paper can be used for most jobs, but 1,440 x 720 dpi can be achieved only on Epson Photo Quality Ink Jet media and Photo Quality Glossy media/film.

Along with improvements in hardware design, the Stylus Color 600 and 800 ship with a revamped printer driver. Once you specify an

within the driver, but its automatic setting will probably suffice for 90 percent of your jobs.

Our testing yielded impressive speed results for the two printers, as the accompanying charts attest. The Stylus Color 600 consistently played catch-up to the 800 in each of our tests and took as much as 75 percent longer to print a given file than the 800.

### Output Quality

For text, the printers provide sharp, crisp type with a truly dense black ink. Solid colors used for graphics looked vibrant and didn't mottle our paper, even when coverage was heavy.

But the printers' impressive text and graphics output couldn't prepare us for the Stylus Colors' outstanding photographic output. Images printed at 1,440 x 720 dpi on Epson coated paper easily topped output from the current crop of rival inkjet printers. And when we printed on Epson's glossy media, the output looked remarkably like a photograph.

### The Bottom Line

The race for inkjet-printer quality and speed has a pair of new front-runners. The Epson Color Stylus 600 and 800 provide the best under-\$500 inkjet performance and quality we've seen. We were impressed by the 800's speed over the 600's and by the 800's available options. The 600 is great for home/small-business use, but we recommend spending the extra \$150 for the superior speed and flexibility

of the 800. / Tony Bojorquez



Epson's new Stylus Color 800 (top) and 600 offer remarkably good output quality.

output resolution and paper type, the driver intelligently chooses the best halftone algorithm for each element on a page, similar to the way Hewlett-Packard's ColorSmart does. Experienced users will find much to explore

**Epson Stylus Color 600**, \$299; **Epson Stylus Color 800**, \$449 (estimated street). **Company:** Epson America, Torrance, CA; 800-463-7766 or 310-782-0770; <http://www.epson.com/>. **Reader Service:** Circle #404.



### HIGH RES AND HIGH SPEED? / timing Epson's new color printers

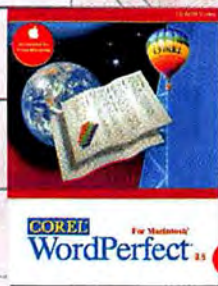
To gauge the speed of Epson's new color inkjet printers, the Stylus Color 600 and 800, we connected each to the serial port of a Power Mac 7600/132 and timed how long it took to print a variety of documents. We used the printers at all their supported output resolutions on a variety of media. Our Text test, which was conducted at 360 dpi on plain inkjet paper, entailed printing a 20-page, text-only Microsoft Word document. The Business Graphics test (720 dpi, coated paper) involved outputting a 3-page Word file containing text and graphics. For the Handout test (720 dpi, coated paper), we printed a 4-page Microsoft PowerPoint presentation with heavy color coverage. The QuarkXPress test (1,440 dpi, glossy paper) involved printing a complex page containing photographic images and multiple fonts. The Transparency test called for output of the first two pages of our PowerPoint file at 360 dpi on Epson transparency media.

	TEXT	BUSINESS GRAPHICS	HANDOUT	QUARKXPRESS	TRANSPARENCY
Epson Stylus Color 800	7:52	3:42	9:13	6:48	4:31
Epson Stylus Color 600	13:44	6:23	15:52	7:41	7:36
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# SyQuest SyJet



As fast as a Jaz — with higher cartridge capacity.



**THE SYJET HAS LANDED** at last, more than a year after it was announced as SyQuest Technology's response to Iomega's Jaz removable-cartridge drive. The SyJet and the Jaz (and their respective cartridges) are comparably priced, and the rival drives' speed characteristics are remarkably similar. The 1.4-GB SyJet cartridges come out on top in terms of raw capacity compared with the 1-GB Jaz ones. Still, the SyJet has a few rough edges, and it is unlikely to displace the Jaz at service bureaus and in multimedia studios. Whether the SyJet is right for you may depend mostly on how much you plan on sharing data with others.

## Casing the Situation

Like the Jaz, the SyJet uses 3.5-inch cartridges based on Winchester-style hard-disk technology. (SyJet and Jaz cartridges are not interchangeable, however.) We liked the external-SCSI SyJet's sleek, attractive case, which is slightly smaller and lighter than the Jaz enclosure. The front door on the SyJet case is something of a mixed blessing, however: It's a bit of a nuisance when you're swapping cartridges in and out of the drive, but when there's no cartridge in place, it clearly offers better protection of the internal drive hardware than the flimsy door on the Jaz drive.

We had a similarly mixed impression of other SyJet design features. On the upside, the SyJet's left-side on/off switch is handy and much easier to locate than the Jaz's back-panel switch. (It becomes an equally handy top switch if you use the SyJet in its vertical orientation.) We also liked the SyJet's power and activity LEDs and the auto-eject button, all located on the front panel. We were somewhat disconcerted, however, at needing to press down on each SyJet cartridge in order to seat it properly after inserting it in the drive; we know this wasn't a defect, because the manual explains the procedure, but it felt wrong to us to have to poke our fingers inside the drive.

## Speed Trials

The SyJet's data-transfer speed, as measured with our industry-standard MacBench 4.0

benchmarking software, proved extremely close to that of the Jaz. As reflected in the accompanying charts, the SyJet was almost 6 percent slower than the Jaz on the Disk test, which mimics the data-transfer characteristics of general business applications such as Microsoft Word and Excel. On the Publishing Disk test, which emulates large-file data transfers such as those used by Adobe Photoshop and QuarkXPress, the SyJet beat the Jaz by 3 percent.

We were surprised to see the SyJet's Publishing Disk score so close to the Jaz's score,

written to disk, but in doing so, it exacts a significant speed penalty. If you'd like to disable the SyJet's write verification to maximize speed, good luck. The undocumented MacUtil application that purports to control that setting proved extremely slow and flaky: Clicking the radio button to turn write verification off changed a status indicator to "on," for instance. SyQuest says that it plans to integrate MacUtil's functions into a future free upgrade of the Silverlining Lite formatter that ships with the SyJet.

SyQuest also made another switch as the



**SyQuest's new SyJet 3.5-inch-cartridge drive offers a formatted capacity of 1.4 GB per cartridge; it can be used in either a horizontal or vertical orientation, and in its default configuration, its speed closely matches that of the Iomega Jaz drive.**

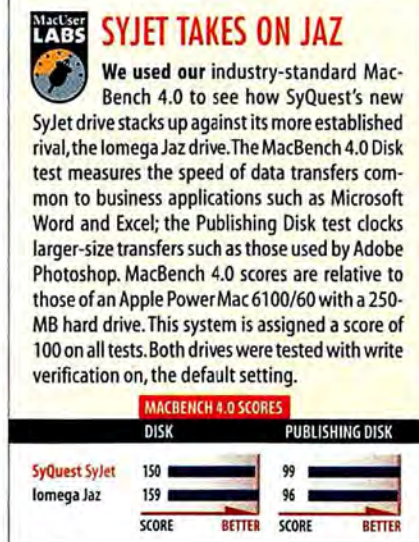
because in our First Look at the SyJet (March '97, page 36), the SyJet scored about 50 percent higher than the Jaz on the Publishing Disk test. The reason: The preshipping SyJet we tested for the First Look was supplied with write verification off, but shipping SyJets default to write verification on, as do shipping Jaz drives. Write verification is a security measure that double-checks data that has been

SyJet went into production: The company told us to expect even higher speed than we saw in our First Look, because the 256K hardware cache in our preshipping SyJet would be replaced with a 512K cache in the shipping models. The shipping version we received still had a 256K cache.

## The Bottom Line

The SyQuest SyJet and its similarly priced rival, the Iomega Jaz, offer comparable speed, adequate for audio and video playback and for storing multimedia or application software. If you're looking for a removable-storage system that's common currency at service bureaus, recording studios, and the like, the Jaz's one-year head start gives it the advantage. But if your main concern is storing heaps of data and you're willing to wait for SyQuest to fix its flaky software, the SyJet's 40-percent cartridge-capacity advantage over the similarly priced Jaz gives the SyJet a decided edge.

/ Jim Shtatz-Akin



**SyQuest SyJet, \$499; cartridge, \$99 (list). Company:** SyQuest Technology, Fremont, CA; 800-245-2278 or 510-226-4000; <http://www.syquest.com/>. **Reader Service:** Circle #405.



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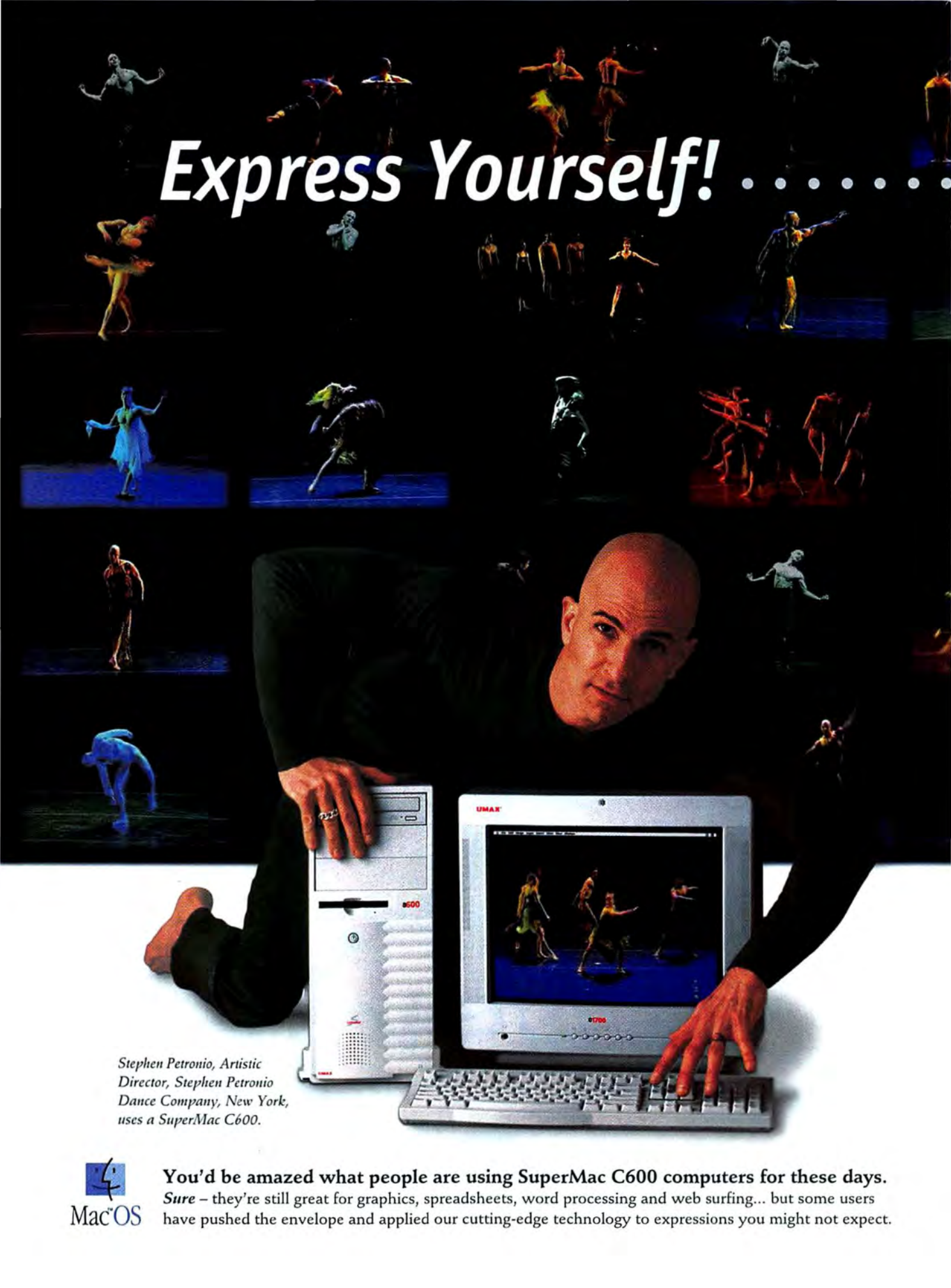


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# Whistle InterJet 100



Turnkey server makes Web access, e-mail simple for small offices.

**INTERNET SERVICE PROVIDERS** already know the value of integration: Distributing a single CD-ROM full of the software you need for connecting to and using the Internet is the most efficient way of serving new ISP customers. Whistle Communications has taken a page from the ISP business plan with the InterJet 100, which offers a one-stop option for small businesses that need Internet access and prefer to maintain their own servers.

The toaster-sized InterJet contains everything necessary for connecting a small office to the Internet: The InterJet is actually a BSD-UNIX computer and an IP/AppleTalk router. The built-in server software manages e-mail and an intranet Web site, a four-port Ethernet hub connects the InterJet to your office network, and an included 33.6-kbps modem (ISDN and frame-relay options are also available) provides a dial-up connection to your ISP. You manage the whole setup from a Web browser via the friendly interface of the built-in management software, which lets you create user accounts, maintain mailing lists, and monitor the InterJet's status. Unlike LAN-router vendors that supply Internet connectivity for small businesses but provide no easy way to manage that access and no server for holding data, Whistle offers customers local control of e-mail and Web publishing.

Getting the InterJet up and running is easy: Plug it in, enter an ID and phone number on the InterJet keypad, and connect to the Internet via a Web browser. Whistle provides TCP/IP client software for the Mac OS, Windows

3.1, and Windows 95 as well as a copy of Netscape Navigator and Eudora Lite for each of the operating systems. Mac users in your office can connect to the InterJet via AppleTalk in order to download client software or add HTML pages to your company's public or private Web site.

The InterJet's built-in DHCP (Dynamic Host Configuration Protocol) server software allocates an IP address to each computer on your network, allowing everyone to surf the Web, read e-mail, and use other Internet services. The administrator can set the InterJet to contact your ISP when a user requests a connection, to connect at specified intervals, or to remain connected continuously. Since the InterJet contains POP/SMTP (e-mail) and HTTP (Web) server software of its own, it need not be connected to the ISP's network in order to deliver mail or Web pages to users on your network. That's a considerable advantage for ISDN users, who often pay by the minute.

Another advantage of the InterJet is its



**The compact InterJet**, from Whistle Communications, provides painless Internet access for everyone in your office.

HTML-based software interface. Designed for administrators who don't take care of a network full-time, the software uses fill-in boxes, radio buttons, and hyperlinks to walk you through the process of setting up mail, Web publishing, and security for users. Some people may find the six InterJet characters, or agents, a bit too cute, but the interface is very accessible.

Unlike accessing the Internet through an ISP, using the InterJet allows businesses to retain control of their own user accounts. When

you buy an InterJet and a master account with an ISP, you receive a range of IP addresses for your network, rather than a set of pre-configured user accounts. You can create your own accounts via the InterJet, and change them at will, without having to rely on an ISP's support staff.

Although the InterJet is ideal for some small businesses, it has limitations for those that need maximum flexibility: You can purchase it only from selected ISPs (Netcom and PSINet are early Whistle partners), and you can't run CGI applications with the built-in Web server software. For that, you'll need access to an ISP's server as well as to the InterJet. You'll also need access to your ISP's Web server if you exceed the 1.2-GB capacity of the InterJet's hard drive. We'd like to see support for an external SCSI drive or an option for a secondary internal one.

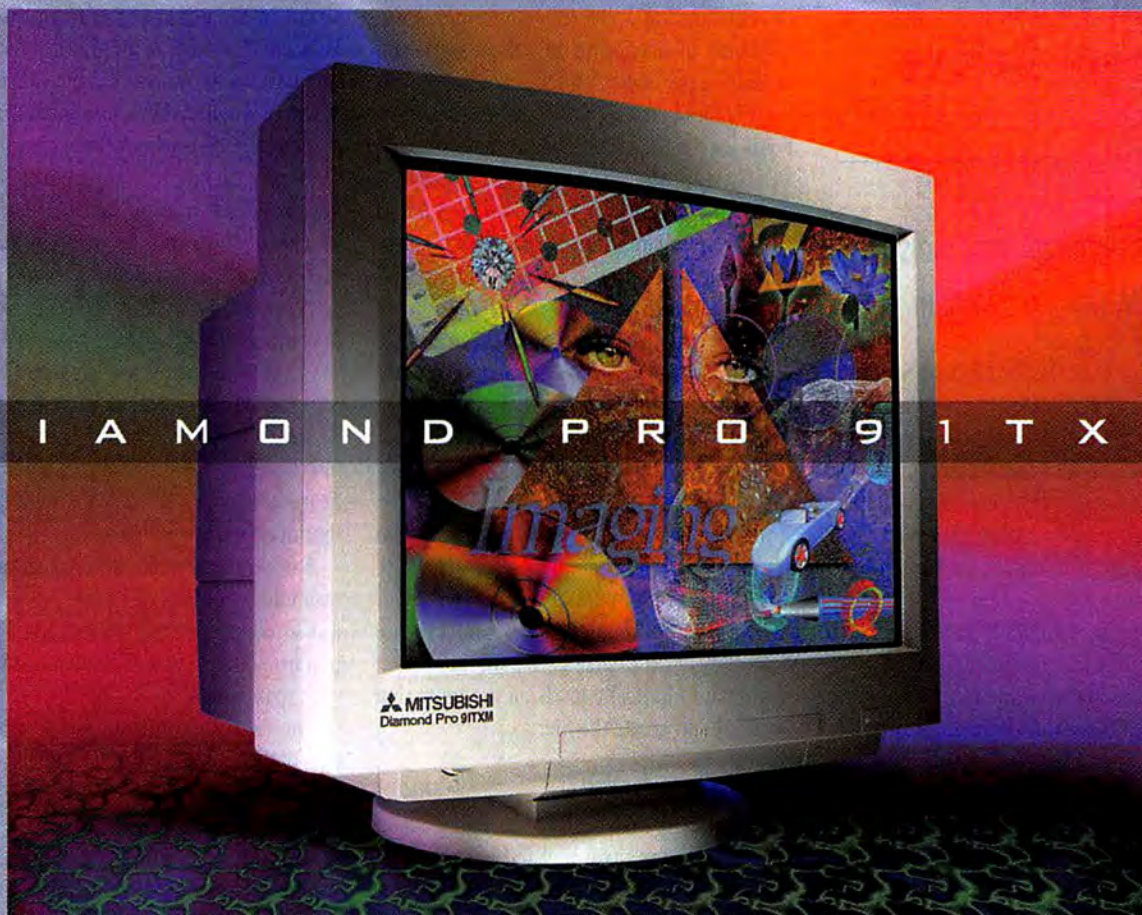
We also found a few minor irritants within the InterJet's Mac-client-software installer: If you use the installer to configure Open Transport TCP/IP for use with the InterJet, the software, unlike comparable programs from other vendors, will erase all previous TCP/IP configurations on your system. Second, we were disappointed to find that the installer modified existing Netscape Navigator preferences (background color, window appearance, and so on) with no warning. The installer also lacks a Custom option, which would be useful for those who prefer to configure software manually.

## The Bottom Line

If you'd like a Web server and access to Internet mail for your small business but don't want to change your job description to server administrator, getting an InterJet 100 is an essentially painless way to go — even if your office uses Windows machines as well as Macs. As you might expect from a one-size-fits-all product, the InterJet has a few limitations — notably the inability to support CGI applications without special collaboration with your ISP and slightly annoying handling of Mac TCP/IP configurations. Furthermore, the InterJet is currently available from only a handful of ISPs, which limits your range of choices more than we'd like. But if the InterJet wins the popularity it deserves, that situation will probably improve rapidly. / Shelly Brisbin

**Whistle InterJet 100**, \$1,995 (list). **Company:** Whistle Communications, Foster City, CA; 888-494-4785 or 415-577-7000; <http://www.whistle.com/>. **Reader Service:** Circle #407.

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CIRCLE 86 ON READER SERVICE CARD

# Adobe Type Manager Deluxe 4.0



New font-management tools make ATM Deluxe a winner.

**TAKING ATM FOR GRANTED** has been fairly easy in recent years: Despite continual improvements in its ability to render Type 1 fonts on-screen and on non-PostScript printers and even with the major advance of support for multiple-master fonts, Adobe Type Manager has remained an unassuming background player. You tend to notice it only if it's disabled and your typefaces suddenly turn hideous. No more. Despite a few rough edges, new type-management features in ATM Deluxe 4.0 mark the utility as a tool publishing pros will use — and appreciate — every day.

Enhancing font appearance on-screen and in non-PostScript output is still a major part of ATM's job description. In fact, ATM Deluxe extends this capability to include TrueType as well as Adobe-standard Type 1 fonts. But the combination of these functions with font-management features like those of Symantec's Suitcase and Alsoft's MasterJuggler make ATM a powerful all-in-one font tool.

ATM lets you remove your fonts (Type 1, TrueType, or bitmaps) from the System Folder's Fonts folder and store them on any hard disk. You can then use ATM to activate suitcases or sets (groups of fonts to be used together) as needed. Fonts load into system memory only when they're activated, so if

you've got a large font collection, you can reduce an application's RAM requirements significantly by activating only those fonts you need for a particular project.

ATM font management centers on a Known Fonts list that ATM compiles automatically as you install the program, searching all mounted volumes for fonts. You create and edit font sets from within a two-pane window: You create and name sets in the left pane and then drag fonts or suitcases into them from the right pane, which contains the scrollable Known Fonts list. Although you can include the same suitcase in more than one set, you must add it to each set individually — ATM cannot copy from one set to another, as Suitcase does.

You can activate or deactivate custom font sets at any time and can also set them to launch with individual documents or applications. In addition, whenever you launch a document, ATM Deluxe's nifty autoactivation feature automatically loads all the fonts that were used to create the file.

## Overzealous Testing

Less successful than the font-set management are ATM Deluxe's two methods of checking font integrity: The first is an automatic examination of fonts during construction of the Known Fonts list; the second is a manual check you can perform on individual fonts you suspect are damaged. ATM banishes fonts that fail either test — and we found that the program sometimes rejected fully functional, intact fonts along with damaged ones.

Unjustly rejected fonts included some non-Adobe multiple-master fonts, some faces from the FontFonts collection that transform characters as they are set, and some otherwise trouble-free Monotype fonts. To work around

the problem, we installed fonts that were rejected in the automatic scan in the System suitcase. For fonts wrongly rejected during manual checks, we trashed the spurned suitcases, reinstalled them, and made a note not to let ATM Deluxe check them again.

More welcome in ATM Deluxe is a well-designed, customizable font-preview feature. Previews, which you can print for handy reference, are preset to show the base character set, a paragraph of text, and one-line examples of characters at sizes from 12 to 48 points.

Other improvements include font anti-aliasing, which works only on Type 1 fonts. This further relieves the jaggedness inherent at low monitor resolutions, but by softening characters' edges, it creates a slight fuzziness that may bother some users.

A new precision character-positioning option nudges on-screen characters in order to reduce collisions and/or ugly gaps. The effect is subtle but yields noticeable improvements with many fonts.

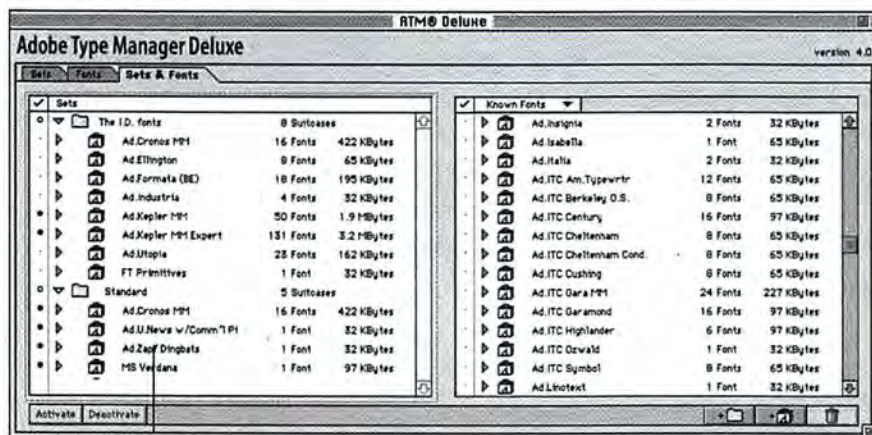
The font-substitution option, previously part of the now discontinued SuperATM, uses special multiple-master fonts to simulate fonts that are missing from a given document. It works only for fonts listed in the ATM Font database (which ATM Deluxe places in your System Folder) and can't help with dingbats, scripts, or other display type, but it generally offers greater legibility than you'd get by substituting Times, Helvetica, or Courier.

ATM Deluxe includes 30 Adobe fonts and requires roughly 3 MB of disk space. Its RAM requirements vary, depending on whether you turn on font substitution or have a lot of fonts active (Adobe recommends 50K per open font in ATM's RAM cache). All told, the program is likely to need 3 megs of RAM on a Power Mac.

## The Bottom Line

ATM Deluxe's indispensable font-rendering features are better than ever, and the program's new type-management features are very good, especially when you consider that they're really version 1.0, not version 4.0. Despite our problems with ATM Deluxe's over-eager font-verification functions, the utility's full features and graceful interface present a formidable challenge to stalwarts Suitcase and MasterJuggler. / Kathleen Tinkel

**Adobe Type Manager Deluxe 4.0**, \$99.95; intro pricing: \$49.95; bundled with Adobe Type Reunion Deluxe 2.0, \$69.95 (list). **Company:** Adobe Systems, San Jose, CA; 800-445-8787 or 408-536-6000; <http://www.adobe.com/>. **Reader Service:** Circle #408.



Creating custom font sets with Adobe Type Manager Deluxe 4.0 is as simple as dragging fonts from the Known Fonts list (right) into set folders.

# Adobe Type Reunion Deluxe 2.0



An indispensable type tool adds welcome new features

**GRAPHICS AND PUBLISHING PROS** have a love/hate relationship with Adobe Type Reunion. The utility is revered for its ability to reduce clutter by generating hierarchical font-family lists on the Font menu and cursed for its penchant for clashing with other system extensions.

Adobe Type Reunion 2.0, the first real upgrade to the program since its initial release, in 1990, brings welcome stability and offers several meaningful improvements.

For starters, you can elect to have ATR display fonts in their own typeface (and disable this function for dingbats and other symbol fonts). Another broadly useful feature is ATR's new ability to move most-used fonts to the top of its hierarchical menu. (You can specify the maximum number to include.)

ATR's most interesting new function is that it lets you rename fonts — a great boon for working with multiple-master fonts and their unwieldy numerical designations.

The ability to turn off ATR for specified applications, either because they may conflict or because you don't need ATR with them (in the case of telecommunications software, for example), is also very useful. On a less useful note, ATR now lets you view fonts in custom groupings, rather than by family, which gives you more control over your Font menus. (Although handy, this function is somewhat redundant if you are also running ATM Deluxe 4.0, which allows you to load only desired font groups within a given document.)

## The Bottom Line

ATR Deluxe 2.0 represents a solid improvement over its predecessor. Many of the incompatibilities that once marked the utility seem to be gone, and its new functions make it generally more useful to those who work with many fonts. / Kathleen Tinkel

**Adobe Type Reunion Deluxe 2.0**, \$60; introductory pricing, \$29.95; bundled with ATM Deluxe 4.0, \$69.95 (list). **Company:** Adobe Systems, San Jose, CA; 800-445-8787 or 408-536-6000; <http://www.adobe.com/>. **Reader Service:** Circle #409.

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# MacUser

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## MACUSER'S 101 TOP TIPS

In the August issue of *MacUser*, editor Rik Myslewski offers 101 productivity tips (application and OS-based) that will benefit Mac newcomers and power users alike. Organized according to task, these tips are sure to save you time and money. Turn to *MacUser* when you want complete coverage.

## RAID 0 SYSTEMS

If you do desktop video, graphics or photo imaging, and are interested in affordable, high-capacity storage, you'll want to read the August issue of *MacUser*. Using MacBench 4.0, Kristina DeNike, the storage queen at MacUser Labs, tests and mouse-rates RAID 0 systems evaluating their speed and usability.

## LABS REPORT: 21-INCH COLOR MONITORS

To a desktop publisher or graphics professional, size and image quality are two important factors in a monitor. In the August issue, *MacUser Labs* tests twelve higher-end 21-inch monitors and recommends the best in terms of image quality.

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## Nikon CoolPix 100



PC Card digital camera minimizes hassle — and image quality.

**IF YOU HAVE A POWERBOOK** with PC Card slots and you've been looking for a consumer-quality digital camera, you can consider the Nikon CoolPix 100. It's a digital camera mated to a PC Card that plugs right into your PowerBook's PC Card slot for quick downloading of JPEG images without cables or extra software. Its captured images aren't spectacular — especially for a \$500 camera — but they're fine for use on the World Wide Web or just for fun.

### Card-Carrying Camera

The CoolPix 100 camera is attached to one end of a PC Card. When you're using the camera to take pictures, the card plugs into a battery compartment, about the size of a cell phone, that holds four AA alkaline batteries for powering the camera and its built-in automatic flash.

When it's time to download images from

the camera, you plug the PC Card into your PowerBook. The CoolPix's PC Card acts as if it were any DOS-formatted 1-MB flash-RAM card. Provided you have PC Exchange installed, the volume containing your pictures mounts on the Mac desktop and you can simply drag stored JPEG images onto your hard disk, where you can use the bundled Storm EasyPhoto application to do basic image re-touching or archiving.

Camera features include timer, flash, red-eye reduction, time- and date-stamping, and a macro setting for close-up shots. An LCD



**The Nikon CoolPix 100** digital camera connects to a PowerBook's PC Card slot, enabling a volume that contains your pictures to mount on the desktop.

tracks battery life and the number of images stored in the camera. You use this display to select flash mode, to set the auto timer, and to select either 10:1 or 20:1 JPEG compression. Images at either compression setting are 512 x 480 pixels. The CoolPix can store 21 images at 10:1 compression or 42 at 20:1.

Pictures we took with the CoolPix often lacked detail and exhibited artifacts — stray marks generated by the compression process.

The PC Card part of the CoolPix is a Type II card, and in theory it should be able to fit alongside another Type II PC Card. In practice, however, the camera's position may make attaching cables to a second PC Card tricky.

### The Bottom Line

The CoolPix is aimed at a narrow audience — owners of PC Card-supporting PowerBooks. The camera is very small; extremely easy to use; and because of its lack of cables and downloading software, convenient. However, it produces only mediocre image quality and is as expensive as superior cameras from other vendors. / Jeff Pittelkau

**Nikon CoolPix 100**, \$500 (list). **Company:** Nikon, Melville, NY; 800-526-4566 or 516-547-4200; <http://www.nikonusa.com/>. **Reader Service:** Circle #411.

## OmniForm 2.0



Make paper forms interactive — but then what?

**OMNIFORM, FROM CAERE**, is designed to help you and your company replace paper with pixels: It can be used to design printed business forms, but its main focus is on replacing them with interactive digital forms — and it does a good job of it. Unfortunately, however, the program doesn't allow you to do much with those forms — or the data they contain once they're filled out.

The \$199 application lets you create digital forms from scratch, using standard drawing and text-formatting tools. Its real forte, however, is digitizing existing paper forms you've scanned or received via fax modem. Using the scanned document as a template, OmniForm automatically converts empty spaces into fillable fields. You can then employ OmniForm to customize the fields' appearance and behavior: add pop-up lists, tables, and check boxes; set minimum and maximum values for

acceptable entries; and make some fields mandatory for completing the form. The graphical Calculation Builder lets you define formulas that automatically fill some fields based on data entered in others.

OmniForm saves data to a built-in database, which you can flip through or search; if you want to create reports, you'll have to export the data to another program. Unfortunately, there is no way to export the forms themselves for use in other programs, such as database applications, or to convert an OmniForm table to HTML for use on the Web.

When your design is complete, you can print it or — more logically — distribute it electronically within your company. A fill-only version called OmniForm Filler (\$99, or less in multiuser packs) is due soon.

Caere labels the new program Version 2.0, to match its Windows sibling, but this is actually the first release for the Mac. We found several rough edges: Online help would not launch on our system; fillable fields were highlighted in a garish yellow, which there was no way to change; text entered in table cells touched the cell borders, unless we typed in offset values. And in general, the program made us deal with far too many dialog boxes.

OmniForm is the first challenger in years to the leading Macintosh-based (but also cross-platform) forms software, Shana's Informed Designer and Informed Filler. Informed Designer costs more than OmniForm — \$295 — and it has no built-in scanning support, so the Caere package is a better bet for working with existing paper forms. But the Shana products are more mature, and they offer a variety of options that OmniForm does not, including automatic database lookups; built-in Internet support; and workflow features such as routing lists, tracking, and digital signatures.

### The Bottom Line

OmniForm does what it advertises — enables you to scan paper forms and quickly convert them to electronic ones — but it could use more polish, including HTML support and integration with database applications. If your organization is serious about digitizing not just forms but also information flow, more-mature (if more-expensive) programs from Shana might be a better bet. / Henry Norr

**OmniForm 2.0**, \$199 (estimated street). **Company:** Caere, Los Gatos, CA; 800-535-7226 or 408-395-7000; <http://www.caere.com/>. **Reader Service:** Circle #412.

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## Extreme 3D 2



Low-cost 3-D package gets high-end features in upgrade.

**WE ADMIT TO HAVING BEEN** skeptical about whether Extreme 3D 2 warranted a full-version-number upgrade. The upgrade's arrival just ten months after the product's debut made us wonder if the increment was just marketing hype. But the latest version of Macromedia's PowerPC-only 3-D-modeling, -rendering, and -animation package lives up to its billing, with an enhanced interface; Web-graphics support; faster rendering; and powerful new tools, including a particle-systems generator and metaballs. Together, these enhancements make Extreme 3D the strongest of all the low- to midrange Mac 3-D-design products.

### New Tools

For the most part, Extreme 3D 2 looks the same as its predecessor. Users of version 1 will feel right at home with version 2 but will find small — but welcome — interface improvements throughout the program. The materials palette, for example, now provides larger previews and displays transparency controls.

Despite these interface improvements, we wish Macromedia had gone a little further in simplifying Extreme 3D's tool set. Although the context-sensitive prompts help guide you through the multistep modeling processes, many tools still feel somewhat nonintuitive; we often found ourselves tunneling through dialog boxes and menus, looking for tool settings. We also wish the Score window, which provides powerful keyframe-animation controls, had been given a face-lift. Essentially unchanged from version 1, it seems clunky and nonintuitive.

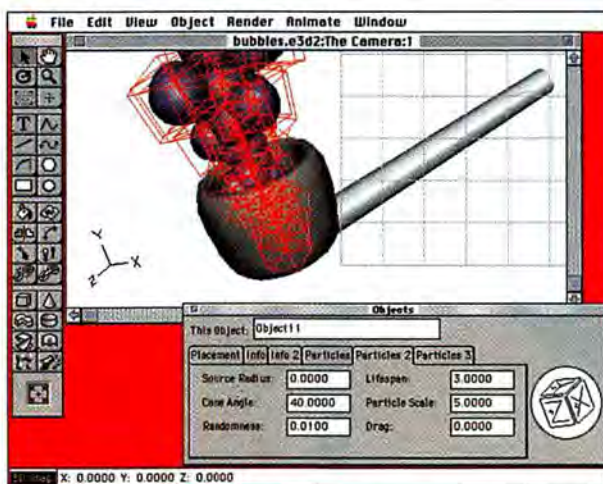
### Cool Tools

Grousing aside, Extreme 3D 2's best new features — the Particle and Metaform tools — are fantastic enhancements. Similar to the metaballs feature of more-expensive 3-D programs, such as Strata StudioPro, Metaform allows you to create organic-looking, blobby objects that flow together like globs of liquid mercury. It can create blobs from any 2-D profile, so your metaballs don't have to be spherical, as they must in Strata StudioPro. After a

little trial and error, you'll find that the "blobbiness" and radius adjustments offer good control of metaball appearance and behavior.

The Particle tool lets you create jets and fountains of streaming particles, including smoke and fire. Separate adjustments for velocity, drag, gravity, and life span give you a good degree of control over particle behavior. Even better, any object can be designated a particle, so you can create, for example, spouts of stars or bubbles — or kittens.

The Particle tool is powerful, but its fire and smoke effects are not quite believable and take a long time to render. You can improve your results by building custom texture maps, but for serious pyrotechnic endeavors, you're bet-



**New in Extreme 3D 2**, the Particle tool includes a well-rounded assortment of options for controlling particle behavior.

ter off using a postprocessing filter such as MetaTools' Final Effects.

### Web Tools

Macromedia has taken some pains to make Extreme 3D a first-rate tool for creating 3-D graphics for the World Wide Web. The program now renders animations in the GIF89a (animated GIF) and Progressive JPEG formats, and it offers direct support for VRML 1 and 2. Extreme 3D 2 allows you to attach three types of URLs to an object: Anchor (which links to a Web page), Inline (which links to other pieces of 3-D geometry), and Texture Map (which links to texture-map images).

In addition to rendering directly to VRML format, Extreme 3D provides powerful controls for setting an object's resolution. Particularly useful is the new Adaptive Smoothing control, which lets you lower a model's polygon count, to minimize the size and download times of VRML scenes.

### Shading and Rendering

Extreme 3D uses procedural shaders for rendering, and like all other procedural-shading mechanisms, they frequently make things look a little *too* perfect. The included Mondo Map shader provides some relief, allowing you to adjust such properties as bump, specular, and environment, and — for the first time — transparency and luminosity. By tweaking these controls, you can make shaders such as Chrome and Marble much more realistic.

Although Extreme 3D lacks a ray tracer (the program provides only Phong shading for rendering), support for shadow transparency in version 2 lets you create soft-edged shadows that look very much like the results of a good ray tracer. Furthermore, the renderer

is now fully optimized for the PowerPC, which means shorter rendering times.

Besides these highlights, Extreme 3D 2 offers two useful, if less splashy, improvements: Xtras plug-in support allows third parties to develop new lighting and texture modules à la Photoshop plug-ins. Version 2 additionally provides full support for hardware QuickDraw 3D acceleration.

Like all other 3-D products, Extreme 3D is resource-hungry: The PowerPC-only version occupies about 40 MB of disk space. Although the program can run with as little as 24 MB of RAM, you'll want at least 32 MB for any serious projects.

### The Bottom Line

Extreme 3D 2's assortment of powerful 3-D tools is designed for and well suited to Web and multimedia designers, and the program comes at a very reasonable price. (It's not a tool for film or video professionals, and it doesn't aspire to be.) Although we'd like to see Macromedia further simplify some of the tools, and print professionals might lament the lack of a ray tracer, Extreme 3D 2 is a most impressive upgrade. / Ben Long

**Extreme 3D 2**, \$399; bundled with FreeHand 7 Graphics Studio, \$469; bundled with Director Multimedia Studio, \$999 (list). **Company:** Macromedia, San Francisco, CA; 800-470-7211 or 415-252-2000; <http://www.macromedia.com/>. **Reader Service:** Circle #413.

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CIRCLE 90 ON READER SERVICE CARD



1996

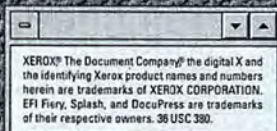
It's the 10th revision and it's a rush.

It's got to be perfect, but color output costs too much.

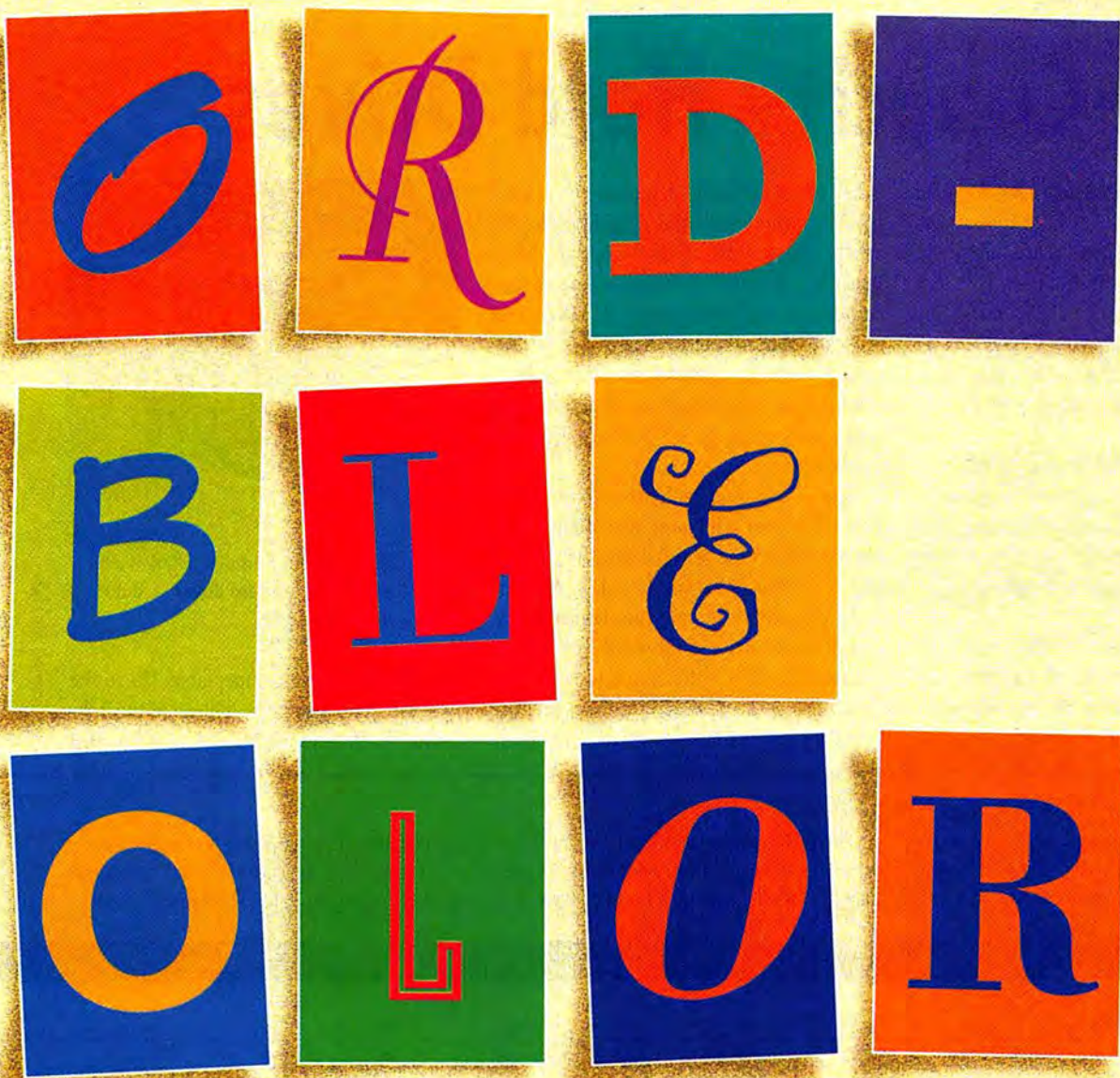
What you say about color printing can't be printed here.

1997

Introducing the Xerox DocuColor 5750. It adds new words to your vocabulary.



Your business depends on sharp, consistent color. But you depend on others to deliver it on-time and on-budget. Now there's a better way. The Xerox DocuColor 5750 Digital Color Copier/Printer. It delivers high-quality continuous-tone color at a productive 6 ppm for a very affordable price. In fact, you can get the DocuColor 5750 as a connected unit for what you would pay for a stand-alone color copier/printer. The



Xerox DocuColor 5750 handles transparencies, duplexing, 11x17 full bleed, and heavy (up to 110 lb) stock. There's also an ADF/Sorter and up to 4 trays to keep work flowing. It prints Pantone-licensed color and produces black text sharper. And no one offers you more certified front ends (EFI Fiery, DocuPress, Splash) to meet your needs. What's more, the affordable



DocuColor 5750

DocuColor 5750 is only the newest in the Xerox family of color solutions. The Xerox Regal 5790 is a proven workhorse and the DocuColor 40 offers consistent, quality color at breathtaking speed (40 ppm). They all come with Xerox service, quality and our Total Satisfaction Guarantee. To see how we can help, visit our Web site at [www.xerox.com](http://www.xerox.com). Or call 1-800-ASK-XEROX, ext.671.

THE  
DOCUMENT  
COMPANY  
**XEROX**

# High-Capacity Hard Drives



**SOONER OR LATER**, it will happen:

You'll run out of hard-disk space. With all that great shareware you've located on the Internet, all those applications that seem as capacious as the CD-ROMs on which they were shipped, all the huge files you created with those huge applications — your current hard disk is bursting at the seams.

If you're in the market for a new hard drive, read on. There's a great variety of external hard drives available in all manner of shapes, capacities, speeds, and prices. This month, MacUser Labs evaluated 21 high-capacity hard drives.

Each drive was tested with MacBench 4.0, the Mac industry's benchmark standard. Because basic productivity applications such as Intuit's Quicken and Microsoft Word and

Excel make different demands on a hard drive than do applications used by graphic artists and publishing professionals, MacBench was designed to test drives in two fundamentally different ways: Its Disk test replicates the disk-access activity of 11 top-selling business applications, and its Publishing Disk test is based on the actual disk-access calls made by Adobe Photoshop and QuarkXPress.

When we hooked each drive up to the external SCSI port of a Power Mac 7600/132, we discovered that the fastest drives overall, as a group, are those that are based on 4-GB or 9-GB Ultra SCSI Seagate mechanisms. The overall fastest drive is the 4-GB Direct Connections ST34501, with a top score of 286 in the Disk test (a score of 100 represents the speed of a 250-MB Quantum drive in a Power



Sure, the StreamLogic Hammer 23000 is a bit larger than most other hard drives — but it holds a whopping 23 GB.

Mac 6100/60) and a respectable 215 in the Publishing Disk test. The highest of the Publishing Disk scores was turned in by the 4-GB

PHOTOGRAPHY / LON CLARK

## BIG STUFF / ratings, specs, and speed charts



THE RIGHT HARD DRIVE to choose depends on your needs. If you're simply looking for inexpensive storage, you

can find plenty of "fast enough" drives at attractive prices. However, if you want speed for general office applications, focus on the MacBench

4.0 Disk test. If you're a graphics or publishing pro, speed is an absolute necessity: Check out the top performers in the Publishing Disk test.

RATING	DRIVE	ESTIMATED STREET PRICE	CAPACITY	MECHANISM	ACTIVE TERMINATION	CASE	SOFTWARE/MANUAL	SUPPORT	WARRANTY
<b>2 TO 3 GB</b>									
★★★★	✓ La Cie D2 2160MB	\$349	2 GB	IBM	yes	●	●	+	5 years
★★★★	APS Q2100	\$379*	2 GB	Quantum	yes	+	●	+	5 years
★★★★	ProDirect PDI2171N	\$699	2 GB	Seagate		●	●	+	5 years
★★★★	Liberty 30 Series 2.1-GB	\$799*	2 GB	Seagate	yes	●	●	-	1 year
★★★★	MicroNet Advantage 3000	\$660†	3 GB	Quantum		●	●	-	1 year
<b>4 GB</b>									
★★★★	✓ Direct Connections ST34501	\$1,599*	4 GB	Seagate		●	●	+	5 years
★★★★	La Cie D2 4300MB	\$849	4 GB	Quantum	yes	●	●	+	5 years
★★★★	ProDirect PDI4371N	\$1,099	4 GB	Seagate		●	●	+	5 years
★★★★	StreamLogic Hammer 4100	\$1,295	4 GB	Seagate		●	+	●	5 years
★★★★	Apple 4230MB	\$699	4 GB	IBM		●	●	+	3 years
★★★★	Liberty 30 Series 4.3-GB	\$1,599*	4 GB	Seagate	yes	●	●	-	1 year
★★★★	APS WD4300	\$959*	4 GB	Western Digital	yes	+	●	+	5 years
★★★★	Direct Connections E4360W	\$1,099*	4 GB	Seagate		●	●	+	5 years
★★★★	Dynatek HDA4.1M	\$829	4 GB	Micropolis		+	●	+	5 years
<b>9 GB AND UP</b>									
★★★★	Direct Connections ST19171	\$2,099*	9 GB	Seagate		●	●	+	5 years
★★★★	✓ ProDirect PDI9171N	\$1,899	9 GB	Seagate		●	●	+	5 years
★★★★	StreamLogic Hammer 8700	\$2,095	9 GB	Seagate		●	+	●	5 years
★★★★	APS MS9000	\$1,849*	9 GB	Micropolis	yes	+	●	+	5 years
★★★★	Liberty Model 70 9.1-GB	\$2,499*	9 GB	Seagate	yes	●	●	-	1 year
★★★★	StreamLogic Hammer 23000	\$4,454	23 GB	Seagate		●	+	●	5 years
★★★★	Dynatek HDA9.1M	\$1,299	9 GB	Micropolis		+	●	+	5 years

✓ MacUser BEST BUY \*Direct price. †List price. ■ Best performer in test.

LISTING IS ALPHABETICAL WITHIN GROUPS OF EQUAL MOUSE RATINGS.

+/ OUTSTANDING ● / GOOD - / FAIR

StreamLogic Hammer 4100: a snappy 230.

We were disappointed by the speed of the APS Q2100 and the MicroNet Advantage 3000. They're based on the Quantum Fireball mechanism and posted the lowest Disk and Publishing Disk scores. But although they're not speed demons, both the APS Q2100 (\$379 direct) and the MicroNet Advantage 3000 (\$660 list) are priced attractively for home or small-office users. A newer Quantum mechanism, the Quantum Fireball TM, is used by the La Cie D2 4300MB, which posted respectable speeds.

We at MacUser Labs were frankly astonished when StreamLogic sent us a 23-GB Hammer 23000. Its \$4,454 price tag may seem steep, but the price works out to a mere \$.19 per megabyte. It may not be a speed burner (if you need that much capacity and speed, invest in a RAID system), but if you're the type of shopper who buys those 15-gallon tubs of pork 'n' beans at Price Costco, the Hammer 23000 is for you.

## Case Study

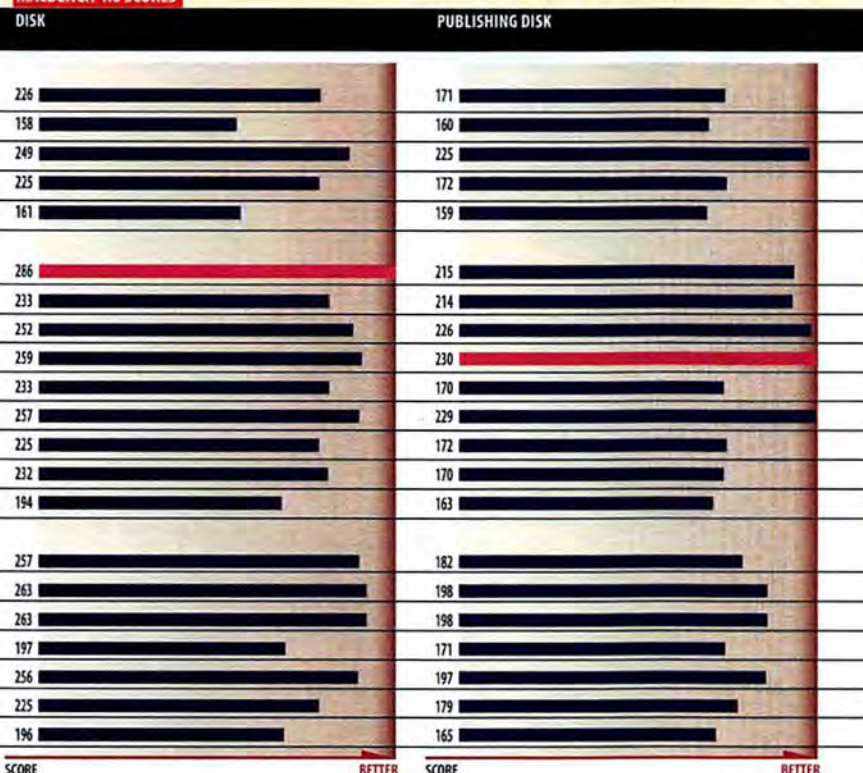
Hard-drive cases have drastically changed from the simple, no-nonsense designs of five years ago. Today, most vendors ship drives with industrial-strength cases; elegant (and sometimes flashy) lines; and a few extras, such as active termination, extra AC outlets, or rubber feet for side mounting.

Although all the cases we looked at were sturdy, they varied in style and function. The Dynatek drives come in the gaudiest cases — two-tone taupe and beige. The most-straightforward-looking drives are from Direct Connections, in a simple gray metal case. If you want a superslim drive, look at the MicroNet and La Cie drives. The Liberty drives aren't quite as slim, but they're small enough for transport and come with a carrying case. APS' excellent SR2000 case features exclusive IC<sup>2</sup>E (integrated climate control electronics) circuitry, which turns on the case's fan only when needed, reducing overall noise while protecting your investment.

The drives we tested are listed by capacity and then by rating within each size category. MacBench 4.0 scores are relative to those of an

Apple Power Mac 6100/60 with a 250-MB internal Quantum hard drive, which is given a baseline score of 100. Longer bars are better.

### MACBENCH 4.0 SCORES



## smart shopper

### 5 questions to ask when you're buying a high-capacity drive:

1. What is the drive's price per megabyte? (To figure this out, divide the price of the drive by the capacity of the drive, in megabytes.)
2. Does the case's construction meet your needs? Is it a low-profile case? Transportable? Side-mountable?
3. Is the drive's termination switchable?
4. What type of SCSI connector is on the drive, and does the drive come with the appropriate cables?
5. Do you need to buy an interface card to enable your Mac to take advantage of Ultra or Wide SCSI?

## The Bottom Line

If you're a desktop-video or graphics professional, you need not only a lot of capacity but also a lot of speed: The 4-GB Direct Connections ST34501 and the 9-GB ProDirect PD19171N are excellent choices. If you simply want extra storage space for your desktop Mac at home or in the office, a La Cie D2 2160MB will meet your needs and save you money. / ROMAN LOYOLA

MacUser Associate Editor Roman Loyola wants a StreamLogic Hammer 23000 so that he'll no longer have to save image files in JPEG format. MacUser Labs Associate Project Leader Martin Wong managed the testing for this report.

## DIRECTORY

**Apple Computer (La Cie)**  
Beaverton, OR  
800-999-1179  
503-520-9000  
<http://www.lacie.com/>

**APS Technologies**  
Kansas City, MO  
800-235-8935  
816-920-4109  
<http://www.apstech.com/>

**Direct Connections**  
Chanhassen, MN  
800-572-4305  
612-937-9604  
<http://www.directdc.com/>

**Dynatek**  
Bedford, NS, Canada  
800-461-0052  
902-832-3000  
<http://raider.dynatek.ca/index.htm>

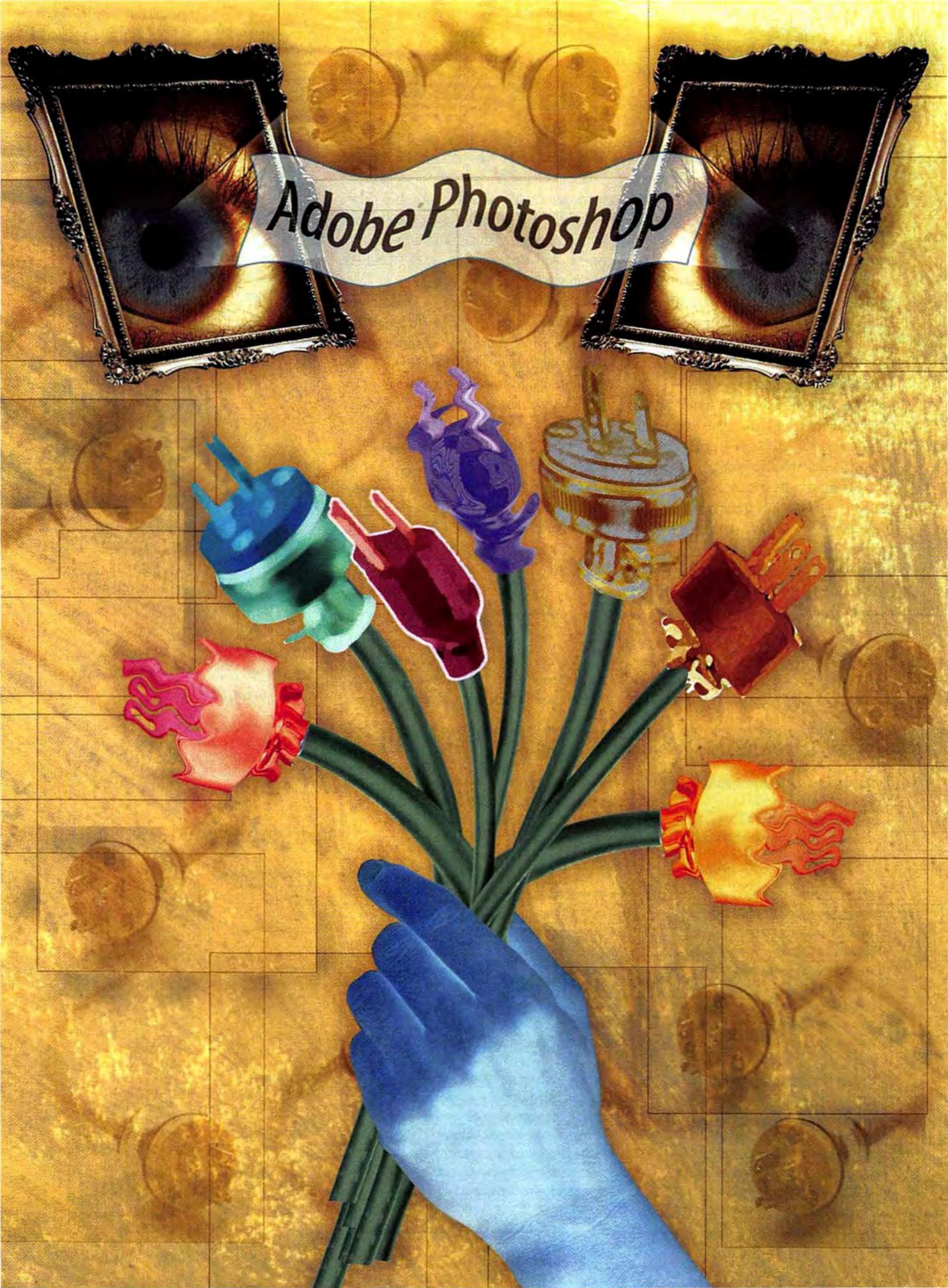
**La Cie**  
Beaverton, OR  
800-999-1179  
503-520-9000  
<http://www.lacie.com/>

**Liberty Systems**  
Santa Clara, CA  
408-983-1127  
<http://www.libertyinc.com/>

**MicroNet**  
Irvine, CA  
714-453-6100  
<http://www.micronet.com/>

**ProDirect**  
Bloomington, MN  
800-524-9952  
612-941-1805  
<http://www.pdisales.com/>

**StreamLogic**  
Menlo Park, CA  
415-833-4610  
<http://www.sledgehammer.com/>



Adobe Photoshop

# POWER PLUG-INS

**ASK ANY PRO** why the Mac remains the hands-down choice for graphics, and you'll probably find out that it's because Windows doesn't cut the mustard in two important respects: color management and third-party plug-ins. Hmm . . . you must be a Mac-head — you *are* reading this magazine — but have you been taking full advantage of these sources of jealousy?

We wanted to know how the experts make the Mac advantage work for them, so we asked four of them to look closely at the program in the

**MacUser's experts pick  
the top 24 plug-ins for  
effects, prepress, and  
Web design.**

center of the computer-graphics universe — Adobe Photoshop — and the plug-ins that make it shine. They searched through piles of software, consulted with peers, and examined their work habits to pick the 24 best plug-ins available for artistic effects, prepress, and Internet design. It's third-party plug-ins such as these that let us harness the power of Photoshop for our specific needs, no matter what our specialty. And it's these

plug-ins, many of which are Mac-only, that can give you a competitive edge. From Apple's free color-management ColorSync plug-ins to the Web-color wonder PhotoGIF, you won't find more of a variety of plug-ins anywhere else.

Be aware that these are no lightweight tools and many require PowerPC computers and make serious RAM demands. If graphics are your business, however, take note — these potent plug-ins can make your Mac a graphics powerhouse.

# Special Effects

**I'm a filter junkie,** but I must confess that I prefer ones that leave me room to be creative. To my mind, you're cheating if you generate a preset texture and use it as is. You need to apply it multiple times, in many different ways, or in combination with other filters to make it work your own.

What follows are my ten favorite Photoshop plug-ins for artistic effects. They range from practical filters I find essential for the graphic artist to a few so quirky and different that they're great to have just in case. Some of these plug-ins have a wonderful interface and provide great results. Others make me curse when I use them, but use them I do. The common denominator is that they all let us achieve artistic effects in Photoshop that we couldn't create easily any other way.

## Fabulous Filter Sets

Filter sets offer something for everyone and usually sell at a bargain price. I can't start anywhere but with **Kai's Power Tools 3**, from MetaTools, which set the standard against which all other special-effects filters are judged. From its limitless options for creating colors, textures, and patterns to its indescribably . . . *unique* interface, Kai's Power Tools embodies two of the best qualities of artistic-effects plug-ins — it's both useful and inspiring.

The major filters, Gradient Designer and Texture Explorer, are potent starting points for creating distinct textures and colors. The two most interesting additions in this version of the product are the Interform filter, which lets you blend two textures (and create a QuickTime movie from the results), and Spheroid Designer, which creates 3-D balls useful as Web buttons or bump-mapped textures.

I enjoy most of Kai's fun interfaces, but I don't like the cluttered Lens f/x UI. I also long for some of version 2.1's filters that worked better than those in this version, especially the pixel and noise filters. You'll find some of these on the Power Tools CD-ROM in the Cool Stuff folder.

Another essential filter set with a slightly different spin is **Eye Candy 3.0** (formerly called The Black Box), from Alien Skin. This set made its mark by being the first to automatically create drop-shadow and embossing effects that once required a Photoshop Master's degree to create. This release has faster, better, more powerful, and easier-to-use versions of those practical filters but also has flashy new features.

The additions most likely to catch your eye are the Fire and Weave filters. One look at their presets will illuminate some of the unusual effects you can achieve with just a little fiddling. Eye Candy's 21 filters are powerful and wide-ranging, but sometimes their differing names and results can be confusing — you'll find that the Fur filter's effects, for instance, are quite unfurry. Taken as a whole, however, this is a solid set.

A newer addition to the field is **WildRiver SSK 1.0**, from DataStream. Especially notable for creating eye-catching text effects that resemble

By Sherry London

shiny metal, smoke, and wood, this filter set also offers a variety of shadow, glow, bevel, and mosaic effects.

WildRiver has many standouts. Adding to the appeal of the MagicMask filters' 24 text effects is the fact that they can be layered to create entirely different results. Also, some of

the best atmospheric-lighting effects I've seen were created with the grayscale gradients in the MagicCurtain and MagicFrame filters. Web designers will appreciate DekoBoko, which creates bevels and is handy for making navigation buttons.

Unfortunately, a truly dense interface combined with vaguely named controls (what's a "melt-level," anyway?) make using this set difficult. Even after you've carefully reviewed the manual, WildRiver works best if you have time to explore its potential.

When you need something that offers more functionality than flash, look no further than **Extensis PhotoTools 1.0**, from Extensis, an eminently practical set of filters for setting text and creating shadows, glows, and bevels. The interface is clean and easy — it just works!

The PhotoText filter alone is worth the price of the entire package. PhotoText helps you work around Photoshop's limited text abilities by allowing you to see and position your text precisely on a layer; kern letters; and change fonts, sizes, and colors character by character. Even if your final images demand text that has the precision and rasterizing quality you can get only with Adobe Illustrator, this product can still be an indispensable comping tool. The winner of *MacUser's* 1996 Editors' Choice Award for Best New Design Tool, this polished set of filters will quickly pay for itself in saved time.

## Texture Tools

Globs of paint, rough woven cloth, the warped and brilliant patterns of stained glass — texture filters aim to re-create such effects.

## EXPERTS in the Field

### KAI'S POWER TOOLS: Sensational and Sensible Tool

Eric Reinfeld loves to push Kai's Power Tools to the limit. The head of New York City's Digital Design, he created this piece by using Kai's Fractal Explorer, KPT Twirl, and KPT Gradient Designer. But Reinfeld, whose clients include *Sports Illustrated* and *Time*, admits that unless you're lucky enough to do rock-'n'-roll posters or multimedia work, you may have trouble selling "filterery" Photoshop art, even if you love the look yourself. "I do a lot of trippy stuff for multimedia projects," he explains,

"but in terms of print, I find that most people are looking for no-frills art." For him, that's where the flexibility of Kai's Power Tools pays off. He says that filters such as KPT Gradient Designer and Texture Explorer can be indispensable daily aids simply because they are powerful and quick.

Reinfeld also uses Adobe Illustrator, Adobe After Effects, GIFBuilder, and Adobe Premiere. He runs them on a 225-MHz UMAX SuperMac S900L/604e with 300 MB of RAM.

**Paint Alchemy 2**, from Xaos Tools, lets you make an image look like anything from an oil painting to an etching by harnessing the power of the plug-in's "brushing engine." Although you can get similar results by using the Gallery Effects filters, now folded into Photoshop 4.0, Paint Alchemy's effects are richer and more controllable.

To use the plug-in, you decide on a brush shape, the number of brush strokes, and how to mix the brush's effects with your image. You vary the color, opacity, or size of the stroke and even stroke text onto the image.

Its inexhaustible possibilities make this filter a staple in my toolbox even though it can be slow and its previews are small and hard to use. When I demonstrated Paint Alchemy to an artist who hadn't used a computer before, she recoiled. "That's disgusting," she said. "A computer shouldn't be able to do that good a job."

For generating interesting textures, I turn to Andromeda Software's **Andromeda Series 4: Techtures 1.0**, which is a unique cross between a texture generator and a library. The product ships with a large selection of textures in categories such as Foliage and Bold Embroideries, but unlike with libraries, you don't simply apply the patterns to your image with this plug-in, you *blend* them with your original.

Techtures has a beautiful interface and is a powerful tool for creating truly special textures by blending, weaving, or mapping texture to your images. My only complaints are that you can't add textures to the library and that the CD-ROM must be active.

Artists, especially those who design backgrounds for the Web, may also need textures that repeat seamlessly. For this job, Xaos Tools' **Terrazzo 2**, which makes kaleidoscopic patterns, is particularly well suited. If you're frustrated with Photoshop's limited Define Pattern command, you'll find using this plug-in to be the easiest way to create striking seamless patterns.

Terrazzo creates patterns based on the 17 mathematically possible ways to repeat a pattern across a plane. The filter lets you move a pattern-shaped outline over your image (unfortunately, you can use only a PICT file or the current image as a pattern source), previewing what will be created as you go. You can then apply the pattern to the current image or save a single repeat as a PICT file.

## One-Trick Wonders

Sometimes we need tools for specialized tasks. Even if I use these filters only from time to time, they're great to have around.



**Photo/Graphic Edges 3.0, Volumes I, II, and III**, from Auto F/X, is wholly focused on one task: applying decorative edge effects to images. Picture a close-up snapshot of a child in a fancy dress — all four edges of the photo are straight. Very boring. Photo/Graphic Edges aims to free you from this rectangular world by offering ways to roughen, distort, or otherwise misshape the boundaries of images.

Applying the filter and previewing its results are time-consuming, and to use it, you'll need the CD-ROM in the drive and the catalog in your lap. However, among its three volumes (Traditional Edge Effects, Geometric Edge Effects, and Artistic Edge Effects), the plug-in offers almost 1,000 preset edge effects. By varying colors and combining two edges at a time to form inner and outer borders, you can create an unlimited variety.

Even more nichey — all right, downright unusual — is **SISNIKK Pro 2.0**, from M.M.M. Software. You've all seen, or at least passed in the mall, those "Magic Eye" images that reveal a hidden 3-D image if you stare at them just right. This Photoshop plug-in lets you create them yourself. You'll need only two things: a grayscale image and a seamless pattern tile. The grayscale image, placed in a channel, becomes the height map for the hidden image. For those who want to create stereograms to sell as packaging, book covers, or calendars or simply to perplex their friends, this tool performs its one task exceedingly well.

My final favorite is Andromeda Software's **Velociraptor 1.0**, a quirky filter that creates motion trails. There's a similar filter in the Eye Candy set, but this one is more exciting, because it's not limited to creating trails on a straight path. Despite its difficult interface, Velociraptor can create wiggly paths that bounce, circle back, and practically stand up and cheer. You may not often need to create motion trails, but when you do, Velociraptor is the best tool for the job.

## The Final Effect

There you have it! Special-effects filters for the Mac range from the practical to the wacky. The plug-ins I've shared with you are some that shine the brightest in a galaxy of great variety. Whether they're multifilter sets that offer something for everyone or single-purpose filters that appeal to just a few, all these products are great fun, and by jogging your creativity and speeding your work, they can even help pay the bills.

Sherry London is a graphic artist, the author of *Photoshop Special Effects How-To*, and a contributing editor for *Computer Artist* magazine. Her e-mail address is 76004.1536@compuserve.com.

## Effective Effects

**Andromeda Series 4: Techtures 1.0** (Andromeda Software) ★★★★★  
PRICE: \$119.95 (list), bundled with Velociraptor 1.0.

**Extensis PhotoTools 1.0** (Extensis) ★★★★★  
PRICE: \$99.95 (list).

**Eye Candy 3.0** (Alien Skin Software) ★★★★★  
PRICE: \$199 (list).

**Kai's Power Tools 3** (MetaTools) ★★★★★  
PRICE: \$199 (list).

**Paint Alchemy 2** (Xaos Tools) ★★★★★  
PRICE: \$99 (estimated street).

**Photo/Graphic Edges 3.0, Volumes I, II, and III** (Auto F/X) ★★★★★  
PRICE: \$179 each (list).

**SISNIKK Pro 2.0** (M.M.M. Software) ★★★★★  
PRICE: \$199 (list).

**Terrazzo 2** (Xaos Tools) ★★★★★  
PRICE: \$199 (list).

**Velociraptor 1.0** (Andromeda Software) ★★★★★  
PRICE: \$119.95 (list), bundled with Techtures 1.0.

**WildRiver 55K 1.0** (DataStream Imaging Systems) ★★★★★  
PRICE: \$99.95 (list).

# Prepress and Production

By Bruce Fraser

**When people think** Photoshop plug-ins, they usually think filters. I have nothing against filters — in the right hands, they can even create art — but my focus has always been on reproducing images accurately in a variety of output media, including the computer screen, color desktop printers, printing presses, and photographic film.

As a result, my collection of indispensable plug-ins does tasks such as color conversions rather than turning photographs into faux Matisse paintings. Some help me do production tasks more quickly than I could in Photoshop, some do them better than I could in Photoshop, and a few help me do things that I otherwise couldn't do.

## Photoshop Autopilot

Don't confuse **ScanPrepPro 3.4**, from ImageXpress, with the various automatic "make it pretty" plug-ins. ScanPrepPro is essentially an autopilot for Photoshop that creates excellent color separations for a variety of output processes.

Winner of *MacUser's* 1996 Editors' Choice Award for Best Production Tool, ScanPrepPro can operate on existing images or drive a scanner or a digital camera. Once you've acquired an image and decided what kind of output you want, you click on OK and watch. Photoshop dialog boxes flash before your eyes, with ghostly fingers making the correct entries. ScanPrepPro sizes the image, sets black and white points, optimizes contrast and color, and does much more — all at the maximum speed Photoshop can achieve on your machine.

ScanPrepPro lets you compensate for minor exposure problems in the original and has a very effective descreening routine for previously halftoned material, but it isn't designed to fix major problems of contrast or color balance. Instead, it translates the original image very faithfully into high-quality color separations and is particularly effective at dealing with difficult output conditions. Novices can achieve great results with ScanPrepPro, but it allows enough customization to make it equally invaluable to hurried pros.

## Capable Color Controllers

One of the Mac's major strategic advantages over Wintel systems is ColorSync, the built-in color-management system based on Linotype-Hell's LinoColor, the same color engine used in \$250,000 drum scanners. Basically, ColorSync does a much better job of maintaining your images' overall appearance than does Photoshop's separation engine. Photoshop converts colors the output device can't reproduce (out-of-gamut colors) to the nearest printable equivalent, but ColorSync scales the gamut of the original image into the gamut of the output device.

Photoshop supports ColorSync natively only in limited ways, but Apple's **ColorSync 2.1.1 Plug-ins** make ColorSync truly useful. Best of all, they're free, from <http://colorsync.apple.com/>. The three plug-ins

in the ColorSync set — ColorSync Acquire, ColorSync Filter, and ColorSync Export — work together to interpret ColorSync profiles embedded in images. They let you embed ColorSync profiles yourself so that apps can interpret images' color correctly, and they let you convert images from one ColorSync profile's color space to another and set source and target profiles when you open an image. ColorSync Export also lets you simulate quite

accurately your final press output on a composite color printer, saving a lot of money you'd otherwise have to spend on Matchprints.

The ColorSync plug-ins' only shortcoming is that all the intelligence is built into the device profiles. If you need to tweak an image's tonal value with a slightly different ink limit or black generation, you have to edit the profile, which isn't a minor undertaking. As a result, I've recently started using Magic Software's **Magic Separator** to handle situations in which I need extra control over the black plate. The plug-in is limited to printing processes that conform fairly closely to the SWOP (Specifications for Web Offset Publications) standard, but it enhances your control over the creation of the black plate and also does a good job of handling highly saturated out-of-gamut colors. It's a little slow in calculating previews when you change parameters, but once it's set up for a particular situation, you can process images very quickly.

Man doesn't live by CMYK alone, but Photoshop doesn't seem to know that — it handles spot color very poorly. I've found Second Glance's PhotoSpot very useful for producing spot-color separations out of Photoshop. The new version, **PhotoSpot CT 1.0**, goes beyond its predecessor in also offering the ability to create extra color plates — variously known in the printing trade as bump, touch, or kiss plates

## EXPERTS in the Field

### SCANPREPPRO: Fast, Flexible Photo Fixer

David Rocha found a solution in ScanPrepPro that its developer, ImageXpress, hadn't necessarily planned. As a senior phototechnology product specialist for the Associated Press, Rocha helped put Shooter — a slim version of ScanPrepPro tailored for the AP — on his photojournalists' PowerBooks. Shooter helps them quickly make basic image adjustments and compensate for their digital cameras' quirks in a predictable way. "You put Photoshop in the hands of 200 people, and no matter how much training you give them, you'll inevitably end up with a variety of

results," says Rocha. "We wanted to minimize the differences. That's something we were never able to accomplish until we got ScanPrep."

Shooter has proven its mettle at both the Olympics and the Super Bowl, as you can see in the photograph. The Associated Press — which sells photographs to newspapers worldwide — now sends photojournalists into the field with AP NC2000 digital cameras in hand and PowerBooks loaded with Photoshop on their backs. AP photography work is done completely on Macs, and ScanPrepPro is one of the reasons.

— to add intensity to colors CMYK can't easily reproduce. It also lets you create separations that have two or three spot colors, with results that are quite different from those of Photoshop's duotones and tritones. With the right images, you can get results that even look like conventional, and expensive, four-color separations.

But PhotoSpot CT offers little control over which *areas* of the image get bumped up by the bump plate. You can control the intensity of the inks but not the areas to which they apply. For such industrial-strength bump-plate generation, I turn to **MC-P/CoCo 2.2**, from Visu Technologies, now distributed in the U.S. by Pantone. This little gem lets you assign spot inks to Photoshop channels and apply them to images, using a very smart color-range selector. You can manipulate sliders to control the size of the color-range selection and the intensity of the spot ink. An interactive preview shows you the effect of the extra plate, and you can read the ink densities by moving the cursor over the image. MC-P/CoCo is probably the best tool I've seen so far for creating HiFi color separations by hand, but it's also extremely useful for dealing with bump plates and spot varnishes.

Another of my Photoshop tasks is editing the color balance of images, but color can be tricky to eyeball out of context. It can be difficult to distinguish a green cast from a yellow one, for example, until you try to fix it and see the results. Photoshop's Variations command tries to remedy this by showing you a range of color adjustments on-screen, but it lacks precision. Where Variations fails, **Test Strip 1.0**, from Vivid Details, succeeds. Test Strip takes the basic idea behind Variations and makes it useful for professionals. In addition to letting you see variations of color, tone, and saturation values on-screen, it lets you use *much* smaller increments of adjustment; allows you to adjust a single color; arranges the results like a photographer's test strip (hence the name); and best of all, lets you print the strip itself.

## Production Problem Solvers

Photoshop can make multichannel documents, but it is not able to export them in a way page-layout programs can understand. At the moment, the only really useful format for print jobs that have more than four colors is EPS DCS 2.0, which QuarkXPress handles perfectly. Because Photoshop can't export DCS 2.0 on its own, I use two

plug-ins: **PlateMaker 1.0.2**, from alap, and **Channel/24 1.0**, which is from Visu Technologies and distributed by Pantone. PlateMaker is a Photoshop Export plug-in that writes DCS 2.0 files from multichannel documents. It's particularly useful for knocking a silhouetted image or filled type out of a Pantone background, and it's very easy to use. Its main limitation is that it's strictly an Export plug-in. Sometimes I need to open DCS 2.0 files in Photoshop, and for that I need Channel/24, which is a File Format plug-in. It worked a little more smoothly under Photoshop 3.0 than it does under Photoshop 4.0, but using it is by far the quickest way of loading all the channels in a DCS 2.0 image into Photoshop. Both plug-ins offer full control over screening and support clipping paths, but Channel/24 works best in tandem with MC-P/CoCo. As a result, I generally use Channel/24 for HiFi separations and complex multichannel documents that have bump plates and keep PlateMaker around for simpler jobs involving spot varnishes and basic knockouts from Pantone backgrounds.

Photoshop 4.0 does a much better job of rasterizing generic EPS files than did version 3.0, which was limited to Illustrator format, but I still find Total Integration's **Epilogue 2.1** invaluable. Epilogue is a full-blown PostScript Level 2 RIP in the form of a Photoshop plug-in. It can rasterize any EPS file into Photoshop at any size, in either RGB or CMYK mode. I use it to create screen previews from PC-generated EPS files and to check trapping in QuarkXPress and PageMaker files.

I said I'm not a big filter fan, but I do keep coming back to MetaTools' **KPT Convolver 1.0**, a veritable Swiss-army knife of a filter. You may love or loathe the interface, but you'll appreciate effects ranging from sharpening, color-balance, and contrast enhancement to wild embossing and hallucinogenic color. The Tweak mode provides a fast and flexible way to remove color casts, fix contrast problems, and sharpen images, all in one pass. The Color Contrast button also does amazing things to flat, muddy images — it's like wiping soap film off a window pane.

## Closing Impressions

That's my top ten. If you thought third-party Photoshop plug-ins were strictly for designers and creative types, think again: The right plug-ins can solve a whole host of production problems. Photoshop is a great creative tool, but it's also fast becoming the standard platform for reproducing color images in print. These plug-ins help artists and photographers realize their vision without their having to become rocket scientists in the process. I find that profoundly satisfying.

MacUser Contributing Editor Bruce Fraser is a photographer and coauthor of *Real World Photoshop 4.0* (Peachpit Press, 1997).

## Prepress Prerequisites

### Channel/24 1.0

(Pantone) ★★★★★  
PRICE: \$299 (list).

### ColorSync 2.1.1 Plug-ins

(Apple Computer) ★★★★★  
PRICE: Free.

### Epilogue 2.1

(Total Integration) ★★★★★  
PRICE: \$895 (list).

### KPT Convolver 1.0

(MetaTools) ★★★★★  
PRICE: \$199 (list).

### Magic Separator

(Magic Software) ★★★★★  
PRICE: \$198 (estimated street).

### MC-P/CoCo 2.2

(Pantone) ★★★★★  
PRICE: \$899 (list).

### PhotoSpot CT 1.0

(Second Glance Software) ★★★★★  
PRICE: \$595 (list).

### PlateMaker 1.0.2

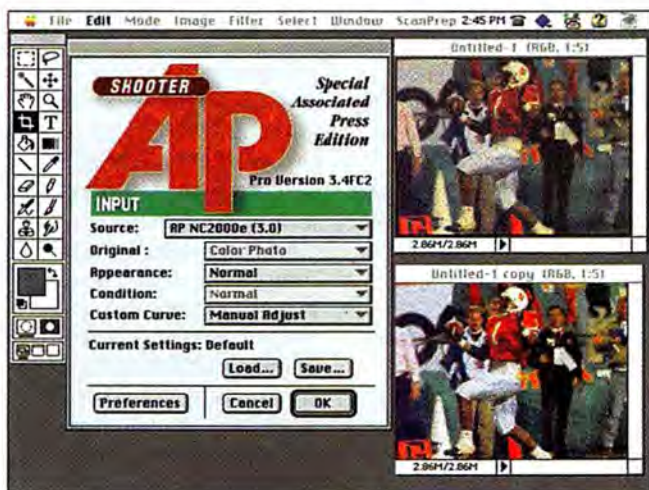
(alap) ★★★★★  
PRICE: \$295 (list).

### ScanPrepPro 3.4

(ImageXpress) ★★★★★  
PRICE: \$695 (list).

### Test Strip 1.0

(Vivid Details) ★★★★★  
PRICE: \$149 (list).



# Web Production

By Lynda Weinman and Joe Maller

**The next frontier** for Photoshop is the Web. Plug-ins stand to make as big a difference to efficient Web production as they have for prepress. Today, however, most Web designers use a Frankenstein-like collection of freeware and commercial products to make their graphics Web-ready instead of using Photoshop alone. For good reason — most of the plug-ins they need aren't there. Yet.

When we investigated the selection of Web production plug-ins, we realized there were still too few choices for us to pick favorites. As a result, what you'll see here is an introduction to what exists today. Keep your eye on these companies and the tools they make. We expect to see these products mature into essential Photoshop add-ons in the months to come.

## Ideal Internet Images

On the Web, slow-loading graphics can be the death of even the best-looking pages. The designer's top priority is to create images that look good and yet have the smallest file size possible.

*MacUser's* 1996 Editors' Choice Awards Finalist for Best New Production Tool, **PhotoGIF 2.1**, from BoxTop Software, helps this process by converting images into Web-ready GIF files that are smaller and better-looking than similar images saved with Photoshop's built-in GIF filters. This alone makes the plug-in worth its price.

GIF images are limited to 256 colors, but 256 is still a lot where file size is concerned — using fewer colors makes for a leaner file. This plug-in gives you control over the color-reduction process by letting you choose a palette preference, dithering intensity, and bit-depth setting. Unfortunately, even though these options dramatically affect your image quality, you can't readjust them after you see a preview unless you cancel the entire plug-in and start over. Still, PhotoGIF does allow you to preset its options — a big time-saver for repeat conversions. Despite its quirky interface, once you've used PhotoGIF, there's no going back.

But Web designers don't depend on GIF files alone. GIF files are great for artwork, but we also use JPEG files, which support millions of colors and are best suited for photographic images. **ProJPEG 2.1**, also from BoxTop Software, produces JPEG files that are clearer and smaller than anything we've seen before.

This plug-in lets you tweak your JPEG files precisely, thanks to real-time previews of image quality and file size. You can quickly fine-tune the compression by using a 0-to-100 slider. Be aware, though, that Photoshop appends the wrong file extension (.JPE instead of .JPG) to non-Photoshop JPEG files, which causes serious problems with file uploading. You'll need a shareware batch renamer, such as

Drop•Rename (<http://www.best.com/~bns/ChaoticSoftware/index.html>).

You can also get a set of plug-ins that are almost identical to PhotoGIF and ProJPEG by buying the **HVS WebFocus 1.0** plug-in set, from Digital Frontiers (that company once worked with BoxTop Software, thus the current similarity of their offerings). WebFocus has two components, HVS PhotoGIF and HVS ProJPEG. As with BoxTop's PhotoGIF, images saved with HVS PhotoGIF look better than Photoshop GIFs, but the plug-in

does not offer BoxTop's extensive options and has several additional quirks. HVS ProJPEG is also similar to BoxTop's plug-in but adds some very advanced compression options for JPEG files, such as Q-Table presets and prefiltering optimization. These features don't seem to offer much — the plug-in's presets can't beat custom-generated Q-Tables, and prefiltering doesn't seem to improve image quality, instead swelling file size.

This spring, Digital Frontiers will substantially upgrade WebFocus and offer the GIF and JPEG plug-ins separately with the names HVS ColorGIF 2.0 and HVS JPEG 2.0. Our look at a beta version of HVS ColorGIF showed that a new interface and a rich set of options, including visual effects (many adopted from Digital Frontiers' specialized color tool HVS Color), may turn this plug-in into the brightest star of the category. A beta version of the new HVS JPEG 2.0 was not yet available at press time.

Our last plug-in addresses a different concern of Web designers. **PhotoCell 1.0**, from Second Glance Software, tries to streamline what's until now been a laborious and repetitive task — turning Photoshop

## EXPERTS in the Field

### BOXTOP'S PHOTOGIF: Web-Color Wonder

Efficiency. Efficiency. That's T. Jay Fowler's mantra, and well it should be. Fowler is the production manager of suck.com, a quirky e-zine for Web insiders that is updated every weekday by Fowler alone. Before he discovered BoxTop's PhotoGIF, he rasterized artist Terry Colon's illustrations in Adobe Photoshop and then used Equilibrium's DeBabelizer to reduce the number of colors and save the images as GIF files. Now Fowler doesn't have to waste time switching among applications, and PhotoGIF's color-reduction and palette-

management features let him make smaller (no larger than 20K), better-looking GIF files. "It lets me do what I do faster and more accurately," Fowler says. "I like the fact that I have a lot of power options. It gives me every piece of information I need." The image shown here is one of suck's images in progress. Among the other apps the suck.com staff depends on are BBEdit, DeBabelizer, Adobe Streamline, Adobe Illustrator, and even QuarkXPress (for roughing out designs). All of suck's graphics are produced on a Power Macintosh 7200.

## Promising Web Plug-ins

### HVS WebFocus 1.0

(Digital Frontiers) **★★★**  
PRICE: \$129 (list).

### PhotoCell 1.0 (Second

Glance Software) **★★★**  
PRICE: \$59 (direct).

### PhotoGIF 2.1

(BoxTop Software) **★★★★**  
PRICE: \$45 (direct).


### ProJPEG 2.1

(BoxTop Software) **★★★★**  
PRICE: \$35 (direct).

image layers into animation cells. With this plug-in, you can save Photoshop layers as GIF animations or QuickTime movies. Unfortunately, PhotoCell lacks basic animation features, such as individual interframe delay. It also fails to address fundamental issues of making files Web-ready — namely adaptive and browser-safe palette support and color-reduction options. Without these options, the plug-in creates bandwidth-hungry monster animations that aren't suitable for Web delivery. PhotoCell has a lot of potential, but as of now, we can't recommend it.

## The Plug-in Promise

Although Web-related Photoshop plug-ins are in their infancy, they stand to make a big difference for efficient Web production once

the kinks are ironed out. We hope for interface improvements and more-robust feature sets that are sensitive to important Web design needs, such as palette management and file-size reduction. In other words, we look forward to the day when all these plug-ins truly fulfill their potential. 

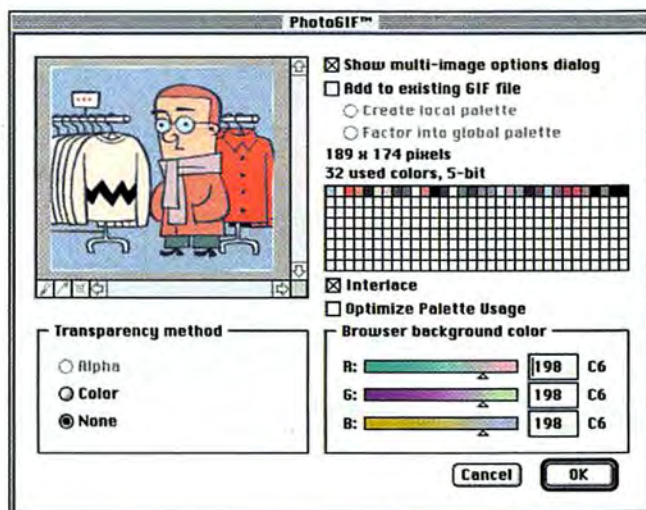
Lynda Weinman is the author of several books on Web design, including *<designing web graphics 2>*. Her Web site is at <http://www.lynda.com/>. Joe Maller is a freelance computer-graphics specialist in New York City. Find out more at his Web site, at <http://www.joemaller.com/>.

BOOKMARK

**RELATED INTERNET SITES**

- **The Plug Page**  
A vast collection of freeware and shareware plug-ins.
- **Ultimate Photoshop**  
Summaries of, and links to, plug-ins commercial and free.
- **PhotoBooks**  
Reviews of almost every existing Photoshop book.

**GO TO** <http://www.zdnet.com/macuser/0697.html#plug>



## GET PLUGGED IN: Vendor Directory

### Plug-in Distributors

Adobe Plug-In Source Catalog  
Milwaukee, WI  
800-685-3547  
403-261-7013 (fax)  
[www.pluginsource.com/](http://www.pluginsource.com/)

The World-Wide Power Co.  
Arvada, CO  
800-940-8737  
303-940-0600  
303-940-0601 (fax)  
[www.thepowerco.com/](http://www.thepowerco.com/)

### Featured Plug-in Vendors

alap (a lowly apprentice production)  
Carlsbad, CA  
(products available through the World-Wide Power Co.)

Alien Skin Software  
Raleigh, NC  
919-832-4124  
919-832-4065 (fax)  
[www.alienskin.com/](http://www.alienskin.com/)

Andromeda Software  
Thousand Oaks, CA  
800-547-0055  
805-379-4109  
805-379-5253 (fax)  
[andromeda.com/](http://andromeda.com/)

Apple Computer  
Cupertino, CA  
[colorsync.apple.com/](http://colorsync.apple.com/)

Auto F/X  
Alton Bay, NH  
603-569-8800  
[www.autofx.com/](http://www.autofx.com/)

BoxTop Software  
Starkville, MS  
601-323-6436  
601-324-7352 (fax)  
[www.boxtopsoft.com/](http://www.boxtopsoft.com/)

DataStream Imaging Systems  
Lexington, KY  
606-264-0302  
606-263-0183 (fax)  
[www.datastream.com/](http://www.datastream.com/)

Digital Frontiers  
Evanston, IL  
800-328-7789  
847-328-0880  
847-869-2053 (fax)  
[www.digfrontiers.com/](http://www.digfrontiers.com/)

Extensis  
Portland, OR  
800-796-9798  
503-274-2020  
503-274-0530 (fax)  
[www.extensis.com/](http://www.extensis.com/)

ImageXpress  
Lawrenceville, GA  
770-564-9924  
770-564-1632 (fax)  
[www.scanprep.com/](http://www.scanprep.com/)

M.M.M. Software  
(products available through the World-Wide Power Co.)  
[www.mmmsoft.com/](http://www.mmmsoft.com/)

Magic Software  
Buffalo, NY  
800-615-4787  
716-855-0295  
716-855-0299 (fax)  
[www.magicsoftware.com/](http://www.magicsoftware.com/)

MetaTools  
Carpinteria, CA  
800-472-9025  
805-566-6200  
805-566-6367 (fax)  
[www.metatools.com/](http://www.metatools.com/)

Pantone  
Carlstadt, NJ  
888-726-8663  
201-935-5500  
[www.pantone.com/](http://www.pantone.com/)

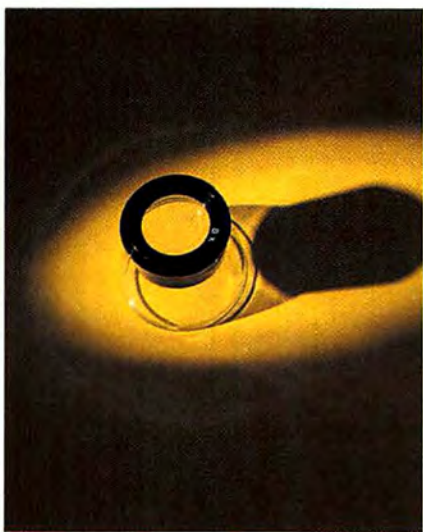
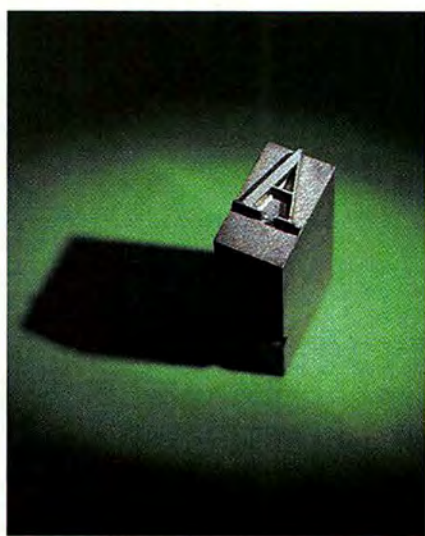
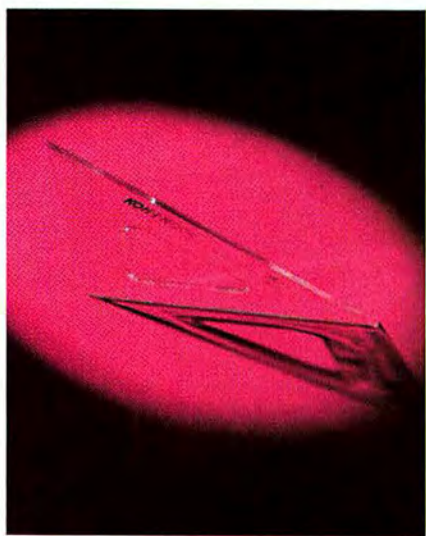
Second Glance Software  
Bremerton, WA  
800-682-3110  
360-692-3694  
[www.secondglance.com/](http://www.secondglance.com/)

Total Integration  
Palatine, IL  
847-776-2377  
847-776-2378 (fax)  
[www.totalint.com/](http://www.totalint.com/)

Vivid Details  
Ojai, CA  
800-588-0274  
805-646-0217  
415-364-4592 (fax)  
[www.vividdetails.com:80/](http://www.vividdetails.com:80/)

Xaos Tools  
San Francisco, CA  
800-289-9267  
415-487-7000  
415-558-9886 (fax)  
[www.xaostools.com/](http://www.xaostools.com/)

# THE DESKTOP PUBLISHERS TOOLKIT



PHOTOGRAPHY / LON CLARK

# TWO DOZEN ESSENTIAL utilities for SIMPLIFYING the lives of desktop- publishing professionals



BY KATHLEEN TINKEL

**W**E'VE COME A LONG WAY from the days when graphic designers and production artists labored over drawing boards and light tables to produce pasteups, but one thing hasn't changed: the debate over which tools to use. We no longer argue the merits of single-edged razor blades versus X-acto knives or T squares versus parallel rules, but our passions still run hot when we start discussing Adobe Illustrator versus Macromedia FreeHand, Zip versus SyQuest, or — in some circles, although not much here at *MacUser* — the Mac OS versus Windows.

Still, there's a surprising amount of agreement out there when you delve into the details of which productivity utilities — the digital equivalents of triangles, pica rulers, French curves, tape dispensers, and other such gadgets — today's Mac desktop-publishing professionals rely on. Starting with the members of the Desktop Publishing Forum on CompuServe, we conducted an informal telephone and online survey of designers, book-production specialists, digital illustrators and retouchers, output operators, and others. The result, after passing the critical scrutiny of *MacUser's* DTP experts, is a widely agreed-upon list of essential, field-tested utilities for Mac desktop publishers.

The only software packages we excluded from consideration were major programs — the page-layout, illustration, and image-editing giants we all know, love, and could argue about forever — and Photoshop plug-ins, which you'll find covered in "Power Plug-ins," elsewhere in this issue. Our list — which includes commercial as well as shareware programs — covers six key types of software products: font tools, text tools, graphics-file tools, color-management tools, layout tools (plug-ins for PageMaker and XTensions for QuarkXPress), and output-tweaking tools.

## FONT FIDDLERS

For a desktop publisher, a good library of Type 1 PostScript fonts is invaluable — but as your collection grows, you need to manage it somehow. Storing more than a handful of fonts (say 50 or so) in the System Folder's Fonts folder is unwieldy. They're always open, slowing down such common tasks as opening and saving files, launching applications, and scrolling through font menus. Plus, it's confusing to have so many fonts, often irrelevant

ones, around all the time — you can work more efficiently if the fonts you see on menus are only those being used in the project at hand.

Until recently, we've relied on either Alsoft's MasterJuggler or Symantec's Suitcase for organizing fonts. If you're cramped for RAM, either of these is still worth using, but two new offerings make better sense for most desktop publishers today: Adobe's **Adobe Type Manager Deluxe 4.0**, which adds font management to the original ATM's font-rasterizing function, and DiamondSoft's **Font Reserve**, still in beta at press time.

The best productivity enhancement in ATM Deluxe is autoactivation — you can set the software to automatically activate fonts used in any document as you open that document. ATM Deluxe also does a routine check of all known fonts (a list the software creates from your font files) every time it is launched. In addition, the program produces an elegant, printable specimen page anytime you double-click on a font in a set or in the Known Fonts list.

Although we can't rate the still-in-beta Font Reserve in this story, we think it's worth mentioning, because it does something no other font manager does: It builds a database of your fonts that has keyword-search capabilities (some keywords are supplied automatically, and you can add your own). And it actually organizes your font files — dealing with duplicates, orphaned screen or printer fonts, and other housekeeping issues — as it creates its database. Although Font Reserve does not include autoactivation, as ATM Deluxe does, DiamondSoft has promised to release a free XTension that will provide autoactivation for QuarkXPress files.

Opting for ATM Deluxe or possibly Font Reserve would be a no-brainer, except that these programs take a lot of disk space and RAM (exact requirements vary by Mac model and by the number of fonts being managed). ATM Deluxe weighs in at roughly 4 MB of disk space (not counting the free fonts and other optional files) and asks for a megabyte or more of RAM (plus a font cache of 50K of RAM per open font). And Font Reserve, at press time, was looking like it would need about 4 MB of disk space and probably 2 or 3 MB of RAM. In contrast, the slender MasterJuggler requires only 750K or so of disk space and about 650K of RAM. (All these figures reflect requirements on a Power Mac 7600.)

If you decide not to use ATM Deluxe, you'll still need **Adobe Type Manager Rasterizer 4.0**, a utility so fundamentally useful that most desktop publishers think of it as part of the Mac OS. An updated version of this utility — providing the basic benefit of ATM (clear, readable type on the screen and from non-PostScript printers) plus two new features for enhancing on-screen type (anti-aliasing and precision character placement) — is bundled with

most Adobe products, including the free, downloadable Acrobat 3 Reader.

Adobe has also released a new version of its font-menu-organizing utility, redubbed **Adobe Type Reunion Deluxe 2.0**. ATR Deluxe still organizes menu fonts into families, but the new version allows you to change menu names of fonts (especially useful when you're working with multiple-master fonts) and group fonts by project.

Another pesky font-related problem is how to figure out which keystroke will produce a particular character in symbol, dingbat, and ornament fonts. The ideal utility should surpass Apple's limited Key Caps function, by being easy to access, by showing the characters in a large enough size for easy identification, and by letting you

## Task-Taming Tools / two dozen

PRODUCT	RATING	PRICE
<b>FONT-RELATED PRODUCTS</b>		
Adobe Type Reunion Deluxe 2.0	★★★★	\$60
ATM Deluxe 4.0	★★★★	\$100
ATM Rasterizer 4.0	★★★★	\$19
Character Chooser 1.4	★★★★	free*
Font Reserve 1.0	beta	\$120
FontView 1.57	★★★★	\$9*
Macromedia Fontographer 4.1.5 <sup>†</sup>	★★★★	\$370
<b>TEXT-RELATED PRODUCTS</b>		
Add/Strip 3.3*	★★★★	\$25
BBEdit 4.0.3 <sup>†</sup>	★★★★	\$100
CopyPaste 3.2.2*	★★★★	\$20
Spell Catcher	★★★★	\$80
<b>GRAPHICS-FILE PRODUCTS</b>		
Adobe Streamline 3.1 <sup>†</sup>	★★★★	\$199
Extensis Fetch 1.5 <sup>†</sup>	★★★★	\$100
GraphicConverter 2.7	★★★★	\$35*
Image Alchemy <sup>†</sup>	★★★★	\$295
Tracer 2.0 <sup>†</sup>	★★★★	\$495
<b>COLOR-MANAGEMENT PRODUCTS</b>		
ColorSynergy 2.0 <sup>†</sup>	★★★★	\$695
Trumatch ColorPrinter 4.1	★★★★	\$98
<b>PAGE-LAYOUT PLUG-INS</b>		
Extensis PageTools 2.0	★★★★	\$100
Extensis QX-Tools 2.0 <sup>†</sup>	★★★★	\$100
Gluon AgencyPack	★★★★	\$99
ShadowCaster 2.0	★★★★	\$100
<b>OUTPUT-PREPARATION PRODUCTS</b>		
Adobe Acrobat Pro 3.0	★★★★	\$295
FlightCheck 3.08	★★★★	\$400

\*Shareware, freeware, or free download.

<sup>†</sup>The program, or a closely related version of it, has been previously reviewed in MacUser. You can look up the review online at <http://www.zdnet.com/macuser/mouse.html>.



print out a crib sheet for future reference. Simon Brown's shareware **FontView**, a stand-alone application, comes the closest to these requirements: You can set it to use virtually any type size, and you can enlarge its window to fill your screen if you want. But since it's a stand-alone application, you do have to run it. In contrast, Letraset's freely downloadable **Character Chooser** sits on the Apple menu for convenient access and allows you to choose between 18- and 36-point characters — but it has a fixed window size.

The most efficient way to ensure good typographic control is often to modify fonts — putting regular capital letters into a small-caps font or creating sets of fractions, for example. **Macromedia Fontographer** is the Swiss-

army knife of font tools — and now that it comes as part of the FreeHand 7 Graphics Studio Package, it's quite a bargain.

## TEXT TWIDDLERS

Even those of us who love words grow weary of dealing with text in a layout. Although today's page-layout process no longer requires that we cast off the type (estimate the amount of space needed to set copy from a typed manuscript in a particular typeface, type size, and column measure), most client-supplied text still requires some cleanup. Layout programs have filters for deleting extraneous spaces and converting to typographic (curly) quotation marks and em dashes, but these few adjustments are usually only a minor part of text preparation.

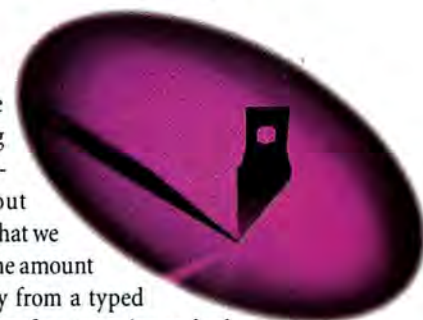
You can use an ordinary word-processing program (or the text-editing functions in your layout program) for preparing text, but a plain-text editor such as Bare Bones Software's **BEdit**, now scriptable in version 4, tends to be more efficient. Even better: Do as the book paginators do, and use a dedicated find-and-replace utility, such as Jon Wind's shareware **Add/Strip**, that lets you define collections of searches to be run sequentially and stored for reuse.

For massaging smaller amounts of text, even within your page-layout program, Script Software's shareware **CopyPaste** can be a big help. It's a slick utility that supplements the original Mac Clipboard with nine additional ones. We find it useful both for cleaning text and building Web pages — you can stockpile the most-used style tags, for example, and insert them with a quick triple-key combination.

Casady & Greene's **Spell Catcher**, the former Thunder 7, is another helpful text massager. It works interactively or after the fact to help you catch spelling and other word and sentence errors, and you can set it to replace double hyphens with an em dash and two spaces with one.

## GRAPHICS-FILE GRAPPLERS

In the digital age, file incompatibilities have emerged as a problem our predecessors probably never imagined — unless perhaps they dealt with translation between languages. There always seems to be a good reason for converting a file from one format to another, and graphics files are especially tricky. Photoshop is a decent file-conversion utility for bitmapped images, but it doesn't read (or write) every format. If Photoshop can't help you, get a copy of Lemke Software's shareware **GraphicConverter**, which has become an industry standard. It's available from most online services, and the author updates it frequently.



## DTP essentials

### COMPANY/CREATOR DESCRIPTION

Adobe Systems	Font-menu-organizing utility.
Adobe Systems	Font-rasterizing and -management tool.
Adobe Systems	Font-rasterizing tool.
Letraset U.S.A.	Apple-menu font-character keystroke-display utility.
DiamondSoft	Font-management tool with database.
Simon Brown	Font-character keystroke-display utility.
Macromedia	Font-modification tool.

Jon Wind	Find-and-replace utility.
Bare Bones Software	Scriptable text editor.
Script Software	Utility that provides nine extra Clipboards.
Casady & Greene	Spell checker with some find-and-replace features.

Adobe Systems	Bitmap-to-vector-graphic conversion tool.
Extensis	Image-cataloging program/database.
Lemke Software	File-conversion utility.
Handmade Software	File-conversion and image-editing utility.
ScanVec	High-end bitmap-to-vector-graphic conversion tool.

Candela	Color-profiling software for use with a colorimeter.
Trumatch	Printer-calibration software for TruMatch color system.

Extensis	Tool bars, palettes, and other extras for PageMaker.
Extensis	Tool bars, palettes, and other extras for QuarkXPress.
Hologramophone Research	Scaling utility for QuarkXPress.
a lowly apprentice productions	Shadow-creation tool for QuarkXPress.

Adobe Systems	Software for converting files to PDF format.
Markzware Software	Preflight tool for checking files before final output.



If GraphicConverter won't do the trick — and it's likely that no single tool can convert every file — you may want to look into Handmade Software's **Image Alchemy**. Although still new and not widely tested at press time, Image Alchemy has some features of special interest to desktop publishers; besides converting some 65 formats, it offers several scriptable image-editing features, so you can combine format and image changes in a batch process.

Creating a scalable vector graphic from a bitmap goes beyond conversion — you must trace the image, either manually or automatically. If you need more control than you get from the autotracing tools in Illustrator or Free-Hand, try **Adobe Streamline**, which lets you set sensitivity thresholds and specify whether to use centerline, outline, or line-recognition tracing. For still-more-sophisticated tracing, the all-time champ is ScanVec's **Tracer**. It uses a dongle (a hardware copy-protection device) and costs more than twice as much as Streamline, but it may prove to be the most efficient choice if you do a lot of this sort of work.

As soon as you begin to create or acquire many pictures, you should consider getting a searchable image-database program to keep track of graphics files, preferably before your collection gets out of hand. **Extensis Fetch**, from Extensis, is a good choice for an individual or a small group. Dragging a folder over the Fetch icon begins the process — the utility automatically catalogs the images (and some other files) it finds, produces a thumbnail preview, and does its best to compile a keyword list. You can edit keywords and make other adjustments to the database, which can include even files on removable media such as clip-art or stock-photo CD-ROMs. You can use Fetch over a network by buying a copy of the program for each user, but access will be somewhat limited. If you work in a larger organization and need complete multiuser access, consider the pricier but network-oriented products available from companies such as Canto Software (415-905-0300), Luminous (800-685-6736 or 206-689-6700), and MediaWay (800-632-7401 or 408-748-7400).

### COLOR COORDINATORS

One thing pre-desktop-era designers rarely had to think about was color space. We either had a color photo — in which case we handed the transparency or slide to the printer — or we worked with spot colors. If a spot-color job was destined for process — or four-color (CMYK) — printing, the printer looked up the PMS (Pantone Matching System) colors in a table and mixed the inks.

Today we have all kinds of systems for color management, but their benefits remain somewhat elusive as far as desktop publishers are concerned. For color-critical projects, it often still makes more sense to leave scanning,

color correction, and other aspects of color management to your output service and/or printer. If you have to color-manage your own projects, you'll need to invest serious money — over \$1,000 on a colorimeter, such as Light Source's Colortron or X-Rite's Digital Swatchbook, and at least half again that much on profiling software, such as Candela's highly regarded **ColorSynergy**. Plus, you'll have to invest a major chunk of time and effort in changing your working habits and environment — calibrating your scanner, monitor, and other devices and controlling ambient lighting while working.

The color tool still most relied on by desktop publishers is a holdover from the predigital era: printed color-specifier books. If you use PMS colors and actually print in those inks, get the classical Pantone Color Formula Guide and make color choices from the books, not from the small swatches shown in software color pickers. If you sometimes use PMS colors in your layouts but print with process (CMYK) inks, which cannot reproduce the full range of Pantone colors, get the Pantone Process Color Imaging Guide for the same reason — and select the matching Pantone designations in your software. If you often find yourself in this situation, you may instead want to consider the Trumatch system, which provides for a logical array of color choices that are all derived from CMYK inks in the first place. Get the Trumatch Colorfinders and, if you're printing your final documents or proofs on a desktop color printer, Trumatch's companion **Trumatch ColorPrinter 4.1** software for calibrating the printer.

### PAGE-LAYOUT PROPS

Drawing boards always used to accumulate a lot of tools and other clutter, generally managed with the aid of rotating tool bins and taborets (rolling carts with drawers and cubbyholes). Today's software equivalent of these aids would have to be the sets of plug-ins and XTensions that Extensis offers for the major DTP applications and that provide tool bars and palettes to make the applications more manageable. Although **Extensis PageTools** (for PageMaker) and **Extensis QX-Tools** (for QuarkXPress) both place too many icons, palettes, and other items on your screen (no matter how large a monitor you have), these useful plug-ins are easy to tame. Turn off the menu bars, learn to call for palettes from the keyboard as needed, and take time to find the helpful gems among the dross. Deciding which functions, exactly, will be gems for you may take a little thought, but here are some of the most useful we've discovered.

In PageTools, we particularly like PageType (for circumventing PageMaker's lack of character-based styles by applying settings to text), PageGlossary (for storing fully formatted phrases), PageScaler (for resizing by a specified percentage), PageTabs (for storing tab settings



independently of the Styles menu and placing a right tab precisely at the right-hand margin), and PageAlign (for aligning page elements easily).

In QX-Tools, our favorites are QX-CopyStyle (for applying attributes from one object to another, even across documents), QX-Print (for selecting discontinuous pages and page ranges for printing and for setting spot colors to print as CMYK), and QX-Filters (which gives QuarkXPress the ability to use Photoshop plug-ins).

A couple of the tools in QX-Tools are best supplanted by more-specialized tools for performing the same functions in QuarkXPress. Although QX-Tools includes a shadow tool, **ShadowCaster**, from a lowly apprentice production, is more popular with QuarkXPress power users. It lets you create soft, realistic shadows. QX-Tools also includes a scaling utility, but the one in **Gluon AgencyPack**, from Hologramphone Research, is extraordinary.

For more on plug-ins, contact XChange (800-788-7557 or 303-225-2484), the primary retail clearinghouse for XTensions, and World-Wide Power (800-940-8737), which sells XTs as well as plug-ins for Photoshop and other DTP products.


## OUTPUT ORGANIZERS

When it comes to scanning for problems before you submit a job to a service bureau, digital layouts just aren't as simple to deal with as pasteups were. Output operators contend that the problem with most jobs they receive is missing components — fonts and graphics files, most typically. One method of ensuring that you get all needed elements to the service bureau is to print your files to disk with fonts and graphics included, but PostScript print files are uneditable. A more flexible solution is to gather up all the elements, including fonts embedded in enclosed EPS files. You can do this manually — PageMaker's Save for Remote Printing and QuarkXPress' Collect for Output options catch the file and linked graphics, for example; then you need only copy the fonts. On the other hand, Markzware's **FlightCheck**, a stand-alone preflight tool used by desktop publishers as well as output services, does the whole thing, even including fonts within EPS files.

Alternatively, find out if your output service will accept Acrobat PDF files. If so, you can use Adobe's Acrobat Distiller, part of the **Adobe Acrobat Pro** package, to create a PDF that includes everything — all graphics and fonts. In addition, distilling a file seems to streamline the

PostScript, making it more likely to output reliably, and the process acts as a useful check — if a file cannot be converted to PDF by Distiller, it probably isn't going to output correctly either.

## TOOLS AT THE READY

Today's desktop publisher is often responsible for handling tasks that were covered by half a dozen graphic-arts specialists a decade ago. And being a jack-of-all-trades — expected to master them *all* — isn't easy, especially when the tasks have changed so much in such a short time. But the handy little tools suggested here go a long way toward taming those tasks — and can actually give you some time to argue the burning questions of the day with your fellow desktop publishers. Now, about the QuarkXPress versus PageMaker conundrum . . . 

Kathleen Tinkel writes regularly on graphic-design and prepress topics for *Step-by-Step Electronic Design Newsletter* and other publications.

## Directory

**a lowly apprentice production**  
(products available through the  
World-Wide Power Company)  
Arvada, CO  
800-940-8737  
303-940-0600  
303-940-0601 (fax)  
<http://www.thepowerco.com/>

**Adobe Systems**  
San Jose, CA  
800-833-6687  
408-536-6000  
408-537-6000 (fax)  
<http://www.adobe.com/>

**Bare Bones Software**  
Bedford, MA  
617-778-3100  
617-778-3111 (fax)  
<http://www.barebones.com/>

**Simon Brown**  
San Francisco, CA  
sibr@aimnet.com

**Candela**  
Burnsville, MN  
800-944-1355  
612-894-8890  
<http://www.candelacolor.com/>

**Casady & Greene**  
Salinas, CA  
800-359-4920  
408-484-9228  
<http://www.casadyg.com/>

**DiamondSoft**  
Mill Valley, CA  
415-381-3303  
415-381-3503 (fax)  
<http://www.fontreserve.com/>

**Extensis**  
Portland, OR  
800-796-9798  
503-274-2020  
503-274-0530 (fax)  
<http://www.extensis.com/>

**Handmade Software**  
Fremont, CA  
800-252-0101  
510-252-0101  
510-252-0909 (fax)  
<http://www.handmadesw.com/>

**Hologramphone Research**  
New York, NY  
212-529-8845  
212-529-2565 (fax)  
<http://www.hologramphone.com/>

**Lemke Software**  
Peine, Germany  
+49-5171-72200  
+49-5171-72201 (fax)  
<http://www.goldinc.com/Lemke/>

**Letraset USA**  
Paramus, NJ  
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201-845-6100  
201-845-5047 (fax)  
<http://www.letrasetusa.com/>

**Macromedia**  
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415-252-2000  
415-626-0554 (fax)  
<http://www.macromedia.com/>

**Markzware Software**  
Santa Ana, CA  
800-300-3532  
714-756-5100  
714-756-5108 (fax)  
<http://www.markzware.com/>

**ScanVec**  
Wilmington, MA  
800-866-6227  
508-694-9488  
508-694-9482 (fax)  
<http://www.scanvec.com/>

**Script Software**  
Crystal Bay, NV  
916-546-9005  
<http://members.aol.com/copypaste1/index.html>

**Trumatch**  
New York, NY  
800-878-9100  
212-302-9100  
212-302-0890 (fax)  
<http://www.trumatch.com/>

**Jon Wind**  
Maplewood, MN  
<http://www.macuser.com/software/>

### RELATED INTERNET SITES

• **desktopPublishing.com**  
Links to DTP-related news, reviews, message boards, and more.

• **PageLab**  
Online supplement to *Before&After* magazine features animation-enhanced discussions of design-related technical issues.

**GO TO** <http://www.zdnet.com/macuser/0697.html#dtp>

# The Newton **WEIGHS** in



*Surf the Web, deal with e-mail, crunch spreadsheets, write real documents, and keep your life together with this 1.4-pound wonder.*

**YOU'D BE SURPRISED** how much a PowerBook, its AC adapter, a few spare batteries, and a charger can weigh. If you're a business traveler, you already know — have you measured your arms lately? So, what if we told you that for under \$1,000 and under 2 pounds, you could possess a self-contained personal-information manager — complete with e-mail client software, a phone-call and fax manager, a Web browser, a word processor, and an Excel-compatible spreadsheet program — that ran on alkaline batteries for days or weeks at a time?

The recently released Apple Newton MessagePad 2000 is a traveling companion that may displace the PowerBook for many road warriors. We put this 1.4-pound wonder to the test in our labs, in the field, and at home, trusting our daily lives to its scheduler, sending and receiving faxes and e-mail, surfing the Web, writing stories with its word processor, creating spreadsheets — and, of course, transferring information to and from our desktop Macs. In fact, this is the first Newton that really delivers and leaves little for even the most dedicated naysayers to criticize.

## **A Truly Mobile Computer**

With a U.S. Robotics Pilot costing around \$200 and Microsoft Windows CE-based palmtops available for roughly \$600, Apple is aiming

**By Jeff Pittelkau**

high with its superfast, fully loaded MessagePad 2000, priced at \$949 without the PelicanWare QuickFigure Pro spreadsheet program, \$999 with all bundled applications, or \$1,099 with applications plus a keyboard and Newton/keyboard carrying case. Unfortunately, none of these configurations includes a modem.

A thousand bucks is steep for a PDA (personal digital assistant), until you consider what you get when you pay less: A Pilot has limited functionality, a small screen, no keyboard, and no productivity or Internet applications. A Windows CE-based palmtop has only a chiclet keyboard for input and the look and feel of a shrunken Windows 95 interface (see the "Competition" sidebar for more on these MessagePad alternatives).

The Newton integrates PIM, productivity, and Internet applications in a simple user environment that doesn't — and shouldn't — feel like that of a desktop computer. Its user environment is further enhanced by Intelligent Assistance, which understands commands in English, such as "lunch with Andy next Thursday," and remembers things you do often, such as calling friends and business associates. The Newton user environment along with the MessagePad 2000's tremendous expansion capability, processing power, large backlit screen, and huge library of third-party software (thousands of Newton applications already work on the 2000) make it the only truly *mobile* computer in the palmtop class. In fact, there is very little productive work you can't do on the 2000 that you can on a PC or Mac notebook.



## Newton on Steroids

Forget everything you've heard about the Newton. With the MessagePad 2000, Apple has literally reinvented the whole Newton experience.

If you've tried to use a MessagePad in the past, you probably had three complaints: The processor was too slow; the screen was too small; and, with only one PC Card slot and limited RAM, you had to play shell games with RAM cards and your modem.

With the MessagePad 2000, all these problems go away. The 162-MHz Digital StrongARM RISC processor makes switching among applications, searching for data, or even using handwriting recognition nearly instantaneous, while still delivering excellent battery life. The large 480-x-320-pixel LCD screen, able to display 16 shades of gray, is great for reading e-mail, doing word processing, working with spreadsheets, and browsing the Web. Screen backlighting is bright, without being a burden on the batteries. The 2000's 1 MB of system DRAM and 4 MB of flash RAM leave plenty of room for lots of data and additional applications. Plus, the dual Type II PC Card slots allow

users to install both a modem and a flash-RAM card at the same time.

The high-quality built-in speaker is handy not only for playing the nifty new alarm sounds loud and clear but also for playing back digitized recordings you can make in the Notepad application. You'll have no problem waking up to the loud but pleasant daily alarm when it plays from this new speaker.

With the 2000, Apple has made great strides in advancing the MessagePad's communications capabilities. The infrared communications transceiver now supports IrDA for cable-free printing to IrDA-capable printers. There's also a new I/O port, called the Newton Interconnect, that supports high-speed RS-422 serial communication, LocalTalk, keyboard, power-in and -out, as

well as line-level audio-in and -out. Regrettably, to use the supplied serial cable or keyboard, you must use a bundled adapter — one more thing to lose when traveling. Hopefully, Apple will ship keyboards and serial cables with the new connector built in, in the very near future. The 2000 even has an internal connector for a modem or wireless-communications card. Thus far, however, no one has announced plans to take advantage of this slot.

The one missing port whose absence will keep some Newton wannabes on PowerBooks? Video-out, for presentations (hint, hint).

At first glance, the MessagePad 2000 seems a bit larger than the MessagePad 130 and 120, which came before it — it's 4.7 x 8.3 inches. But at 1.1 inches thick, it's actually a tad thinner than its older cousins. Weighing 1.4 pounds with batteries, it's a tad heavier too. The new form factor is great for a backpack or briefcase, but it's too big for a pocket.

The full-sized, brushed-metal pen that hides inside the MessagePad 2000 is the most elegant we've seen with any palmtop. There's also a pop-out pen holder, which, coupled with the 2000's ability to rotate

the screen to any of four orientations, allows you to place the pen near your right or left hand or keep it handy but out of the way of the keyboard, serial, and modem cables. Finally, the new design features a sturdy lid that opens and tucks away behind the 2000 or that can be removed entirely. The new Newton has mounting holes for other lid designs as well as a place for a connection for a rumored-to-be-possible lid that doubles as a keyboard. We're eagerly awaiting this option from Apple or third parties.

## All the Software You Need — Well, Almost

No more nearly worthless implementation of Pocket Quicken. This time out, Apple got the bundled Newton applications right.

Preinstalled on the 2000 are the usual Newton applications for managing calendar events, to-do items, names, and phone calls and taking notes. Apple adds to this its own word processor, called Newton Works, which includes PelicanWare's QuickFigure Pro spreadsheet program; Netstrategy Software's EnRoute i-net e-mail client software; and AllPen's NetHopper Web browser. And most important, Apple includes the Newton Connection Kit 2.0, albeit in a beta form; the final release will come sometime later this year and will be free to MessagePad 2000 owners.

Little has changed in the calendar, phone-call-manager, names, or Notepad applications that come with the MessagePad. Dates support all the event types you'd expect: repeating and special events, to-do items, and meetings. The Notepad supports recognized and nonrecognized ("ink") text, sketches, and shapes in your choice of notes, outlines, or checklists. You can purchase hundreds of third-party Notepad stationery plug-ins that add everything from graph paper to boilerplate business memos.

The word processor is pretty basic — supporting justification, page



### Apple Newton MessagePad 2000 ★★★★★

**Pros:** Fast. Accurate handwriting recognition. Digital-voice-recording capability. Good bundle of Internet and productivity apps. Large, backlit screen. Dual Type II PC Card slots.

**Cons:** Large form factor; won't fit in pocket. Expensive. Modem not included. Optional keyboard is awkwardly big but not full-sized.

breaks, multiple fonts, and choices of type sizes and styles. It features a find-and-replace utility as well as a spelling checker and QuickSketch, which lets you embed sketches by using the Newton's Shapes or Sketches tool, but it does not support handwriting recognition, so you'll need to peck away at the on-screen keyboard or attach the optional Newton keyboard.

The QuickFigure Pro spreadsheet module in Newton Works is a capable enough program, featuring rudimentary built-in functions; a simple bar-charting utility; and QF Exchange, which allows direct uploading and downloading of Excel 5 spreadsheets. But although it's Excel 5-compatible, it is not Excel 5 and does not support many of that application's advanced capabilities.

Apple's Internet Connection Kit is preinstalled on the MessagePad 2000, which makes setup for Internet communications a snap. The EnRoute i-net e-mail client software is integrated into the Newton's in/out box. Customizable features include the ability to receive only a limited number of messages at a time (to save memory and battery life), to download only messages under a certain size, and to schedule communication sessions.

Scheduling e-mail can automatically activate the Newton at, say, 5 A.M., so all your mail is ready for you to read with your morning coffee. The bundled Web browser, NetHopper 3.0, supports image downloading and automatic image resizing to the 2000's smaller-than-a-desktop screen.

## Torture Test

We used the 2000 for nearly a month. During that time, we were completely sans PowerBooks and instead tried to manage exclusively with the MessagePad.

At conferences and meetings, we scrawled notes into the Notepad, where handwriting recognition worked quite well. This is one area in which the 162-MHz StrongARM really shines — handwriting recognition is quick and accurate.

Digital sound recording also worked well for these meetings; even

## The Competition / Pilot and Windows CE-based palmtops

ALTHOUGH THE MESSAGEPAD 2000 will no doubt supplant portable computers in many situations, the products this new Newton must beat to be successful are not PowerBooks but the U.S. Robotics Pilot and Microsoft Windows CE-based palmtops.

**U.S. Robotics Pilot.** What's so great about the Pilot? It's tiny — 4.7 x 3.2 x .7 inches and under 6 ounces — and it runs for months on two AAA batteries. It has no keyboard or handwriting recognition, instead relying on a small on-screen keyboard or its proprietary glyph alphabet, called Graffiti, for input. Learning Graffiti takes practice and patience. Once you've learned the special character strokes, it offers an accurate way to input characters with a pen.

The Pilot's basic PIM applications are fast and simple. And the Pilot includes a desktop docking station that has a single button for starting file synchronization with your Mac or PC. Although this is nice, the new auto-docking capability in the 2000 works just as well, if not better. The latter allows you to back up your Newton and/or perform calendar, to-do-item, and contact-information synchronization automatically.

As to how the 2000 stacks up

against the Pilot, it's not really a fair comparison: The Pilot is a basic PIM you can carry in your pocket that has no communications or document-creation capabilities. The 2000, on the other hand, can do most things a portable computer can do. If all you need is what a Pilot does, then a 2000 would be overkill.

### Windows CE-Based Palmtops.

Think of Windows CE as Windows 95 Lite — it looks like Windows and acts like Windows. And, whether you're a fan of the Windows 95 interface or not, the look and feel does not scale well to a palmtop's tiny screen.

Although its interface may be as

wooden as some United States vice presidents we know of, Windows CE does deliver when it comes to productivity applications. Pocket Word and Pocket Excel, although limited in their abilities, let you view files from their desktop PC counterparts. And thanks to the momentum created by Microsoft's ability to promote licensing, Windows CE-based hardware will be available in many shapes, sizes, and price ranges from such vendors as Casio, Hewlett-Packard, NEC, and Philips. Windows CE-based palmtops each typically include a chiclet-style keyboard and a pen that functions like a mouse, but they are missing

at a compression of 2K per second, the lowest quality setting, recordings were intelligible. And because the Newton's operating system supports multitasking, we were able to work with other Newton apps while recording churned away in the background.

We used the spreadsheet program for personal cash-flow management, migrating what used to be an Excel 5 spreadsheet on a desktop computer to QuickFigure Pro. In its horizontal orientation, the 2000's screen displayed only 7 columns by 13 rows, which made it difficult to work with large spreadsheets. The addition of a split-screen view would be helpful.

For text-based e-mail — or sharing of information among MessagePads — EnRoute i-net worked extremely well. Web access was also surprisingly good, as long as we could do without multimedia, color, or frames and didn't mind poky redownloads of images when we navigated graphics-heavy sites. (The Newton's limited memory necessitates very small page caches.) Luckily, NetHopper lets you turn off image downloading, which makes Web browsing downright snappy. Also, the browser can selectively lock pages in cache memory — particularly useful with forms-based Web sites — allowing you to download the forms you need, complete them off-line, and then upload them when you next connect.

The multitasking Newton OS really pays off when you're accessing the Internet, as we found out when a previously scheduled e-mail communication session started up during the middle of a browsing session. Very cool.

The 2000 uses four AA alkaline batteries or a rechargeable nickel-metal-hydride battery pack that can be charged inside the unit in under an hour. Battery life varied greatly, depending on how we used the MessagePad. We found that heavy use of a PC Card modem drained the batteries very quickly, within hours. We recommend connecting the optional AC adapter when using the modem for prolonged surfing. The backlighting, however, is quite power-thrifty. Even when scribbling notes with backlighting on during a multiday conference, we got several days' use before we had to replace the batteries.

With everyday use — checking e-mail a few times a day and syncing files with a desktop machine twice a day, plus periodically checking the calendar and doing some note taking and word processing — battery life was anywhere from one to two weeks, certainly less than Apple's claim of three to six weeks but more than acceptable.

handwriting recognition of any kind.

Of course, none of this does you any good if you have a Mac. Currently, no Windows CE connection software is available for the Mac.

A Windows CE-based device is functionally more comparable to the MessagePad 2000 than to the Pilot. However, as is often true of Microsoft's first attempts, Windows CE leaves a lot to be desired. We can't say enough about how elegant and easy to use the Newton is, especially when compared with Windows CE devices. You just can't beat Intelligent Assistance for making personal-information management simple. Setting a lunch

date or remembering to call someone is as easy as writing "lunch with Bob" or "remember to call Sue" and tapping the Assist button. And the Newton interface fits beautifully on the small screen, something Windows CE is never going to do as long as Microsoft stays dogmatically devoted to the Windows 95 interface.

And then there's reliability. As it turns out, the MessagePad 2000 is the most reliable product in the entire palmtop category. And ironically enough, it's Windows CE-based devices that are currently plagued by bugs, including a data-loss problem on the Casio version of the PDA.

## The Newton and the Internet

IF YOU'RE EXPECTING a Newton's Internet capabilities to be every bit as good as a PowerBook's, forget it. If, however, you want to keep in touch via e-mail or surf the Web for news, stock quotes, and the like, you'll be pleased with the MessagePad 2000's bundled Internet applications.

AllPen's NetHopper, the 2000's Web browser, supports GIF-image downloading, displaying images in 16 shades of gray and optionally scaling them to fit on the MessagePad's screen. There's no support for multimedia, nor is there support for Java — yet. At press time, Apple claimed to be "definitely looking at Java" for the Newton. Because NetHopper supports HTML up to version 2.0, frames and client-side image maps aren't supported. However, NetHopper does let you selectively lock Web pages and forms in cache memory and access them after you've disconnected.

Netstrategy Software's EnRoute i-net e-mail client software supports Internet enclosures but only those the Newton can use. So, if you want to receive a spreadsheet from a coworker, the coworker will first have to download that spreadsheet to another MessagePad with QF Exchange and mail it to you from his or her Newton.

	MessagePad 2000	PowerBook*
E-mail enclosures	●	●
E-mail links within Web pages	●	●
Web graphics	GIF images only, displayed in grayscale; no backgrounds	color GIF, JPEG images; backgrounds; color text
Frames		●
Multimedia		●
Java		●
Forms	●	●
Pop-up menus	●	●
Image maps	●†	●

\*With e-mail and Web browser installed.


†Server-side only.

One major advantage the MessagePad 2000 has over any portable we've used is ruggedness. We dropped our 2000 several times on hard cement with nary a scratch. Try that with a PowerBook.

## The Bottom Line

Although pricey and a bit big for a PDA, the Newton MessagePad 2000 delivers first-rate performance with a full set of applications. The PIM functionality is excellent, and the synchronization software works well. The 2000 is a lightweight, less expensive alternative to a PowerBook for handling e-mail, taking notes, recording meetings, faxing, working with spreadsheets, and doing basic word processing. But some work needs to be done to improve the robustness of Web access.

As the first of a new generation of fast, capable Newtons, the MessagePad 2000 is also the first Newton we can, with a clear conscience, recommend to our friends. It proved good enough to replace a PowerBook in many instances. Basically, if you don't need to make a presentation, don't have to run a Mac application such as Photoshop, and don't mind playing games in 16 shades of gray, the 2000 is more than sufficient to fill your mobile-computing needs.

A word to the wise: If you're a current MessagePad owner, don't try out a MessagePad 2000 unless you're ready to shell out 1,000 clams on the spot. Once you've tried this thing, you won't want to go back to your old Newton. 

Jeff Pittelkau is director of MacUser Labs.

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Video in/out ports let you plug a video camera or a VCR directly into the Power Mac 8600—so you can edit and create QuickTime movies and send it all to tape. Technology like that will surely impress the kids. Not to mention your boss.

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(No pun intended.) A built-in Iomega Zip<sup>®</sup> drive (it's standard on the Power Macintosh 8600, a snap to add to any other Mac) lets you take your ideas with you or send them far, far away. That brilliant idea will be long gone by the time you connect a drive to a PC.

**Create a new world.**

In less than seven days, of course. A 200 MHz PowerPC<sup>®</sup> 604e microprocessor, high-speed bus and accelerated video card give you the blistering speed to render, rotate, edit and manipulate images in seconds. With speed like that, no wonder BYTE said that "a high-end Mac still beats an MMX Pentium."<sup>™</sup>

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# DESKTOPmedia

Experimenting with digital cameras? These three Photoshop tricks will help you make the most out of your images.



By Bruce Fraser

## Photo Fixes

**T**HEY'RE FUN, CONVENIENT, and becoming too affordable to resist — but digital cameras aren't exactly like their analog cousins when it comes to the images they produce. Even if you're an old hand at touching up scanned-in photos or Kodak Photo CD images, you'll find that images produced by digital cameras have their own peculiar quirks, problems you'll rarely encounter in images from other sources.

### TRICK #1:

#### NEUTRALIZING COLOR ARTIFACTS

THE IMAGE IN FIGURE 1 was captured with a Kodak Digital Science Professional DCS 410 digital camera, and it shows a problem we encounter fairly often in images from all the Kodak DCS cameras: yellow and blue artifacts that crop up in areas of fine detail. You can often eliminate them by moving the camera or changing the focus slightly, but unless you're viewing your images on a PowerBook in the field, you won't know the artifacts are there. Fortunately, you can tame them quite effectively by using the following technique.

The trick consists of separating the color information from the luminance information by converting the image to Lab color mode. Lab uses a single channel, Lightness, to store all the luminance information and keeps all the color information in the two remaining channels, *a* and *b*. By blurring the

Three common flaws in digital-camera images are color artifacts, high-contrast blurriness, and stubborn jaggies. The techniques that follow (which we performed in Photoshop 4.0; most or all of the steps should work in version 3.x as well) will not only help you rescue images from these flaws but will also give you practice using some lesser-known Photoshop features that can be invaluable additions to your arsenal of image-enhancing tricks.



FIGURE 1 / BEFORE, DETAIL

This image shows unnatural yellow and blue artifacts in some areas, such as the second-story railing on the right.



FIGURE 1 / AFTER, DETAIL

By using Trick #1 to isolate and blur the color information, we can greatly reduce the artifacts in the final image.

color channels and sharpening the Lightness channel, we can make the artifacts nearly invisible.

#### STEP 1a:

##### Convert to Lab color.

When you're new to this technique, it's a good idea to create a copy of the image (Image: Duplicate) and work on the copy. Once you convert it to Lab color (Image: Mode: Lab Color) and examine the separate channels (clicking in the eye column next to each channel in the Channels palette to show or hide that channel), you'll find that the artifacts are very obvious in the *b* channel, somewhat less so in the *a* channel, and almost invisible in the Lightness channel.

#### STEP 1b:

##### Blur the *a* and *b* channels.

The next step is to blur the *a* and *b* channels to reduce the visibility of the artifacts. We use the Dust & Scratches filter, because it offers maximum control over the blurring.

Start with the worst channel, the *b* channel. Select the *b* channel in the Channels palette (highlight it by clicking on its name) to make it the target channel, and then click in the eye column next to the Lab channel to make the composite (Lab) channel visible. That way, you'll filter only the *b* channel but you'll see the effect on the overall color image. Experiment by selecting a small area of the image, so that you can see the results of different settings quickly.

Next, apply the Dust & Scratches filter (Filter: Noise: Dust & Scratches) to the *b* channel. The settings for the filter depend partly on the content of the image and partly on your own taste. In general, you need to apply heavier settings to the *b* channel than to the *a* channel. For this image, a radius of 16 and a threshold of 10 work well; these are also good starting points for most images. Once you've found

the right settings, click on OK to apply the filter to the small area you selected and then immediately undo the action (Edit: Undo), deselect the small area, and launch the filter again to apply it to the entire channel.

Filtering the *b* channel has a huge impact on the saturation of the artifacts, but we can reduce their visibility further by repeating the filtering process on the *a* channel. Select the *a* channel in the Channels palette while keeping the Lab channel visible. For this image, we wound up using a radius of 6 and a threshold of 12 for the *a* channel.

#### STEP 1c:

##### Sharpen the Lightness channel.

The last step is to sharpen the Lightness channel, using the Unsharp Mask filter (Filter: Sharpen: Unsharp Mask), to counteract the added blurriness in the other channels and to provide the extra sharpening that would be needed in any case. Select the Lightness channel in the Channels palette, keeping the Lab channel visible as before, and then apply the filter. We generally set the amount at around 200 percent and the radius at between 0.3 and 0.7 pixels, and then we bring up the Threshold setting as needed to control the noise. For this image, we used an amount of 200, a radius of 0.3, and a threshold of 7 to achieve a pleasing final result. You can then convert the fixed image back to RGB or go straight to CMYK for printing.

#### TRICK #2:

### SHARPENING SOFT, HIGH-CONTRAST IMAGES

SOME DIGITAL-CAMERA VENDORS have designed their cameras so that optical filtering takes place to prevent color artifacts from appearing. This filtering creates a trade-off: Images typically appear quite

soft overall, but all the high-contrast edges are sharp, as in our example image taken with a Nikon E2s. If we simply run the Unsharp Mask filter on the whole image, the high-contrast edges become *too* sharp (see figure 2 / Before, Sharpened Detail). We need to build a mask that will protect the high-contrast edges while allowing us to sharpen the rest of the image.

We can do this by creating a channel that exaggerates the contrast of the edges, running the Find Edges filter on the channel, and then using the channel as a mask through which we sharpen the image. This way, we can introduce enough sharpness to bring out the textures in the image without exaggerating the edges.

#### STEP 2a:

##### Create a high-contrast channel.

In some images, you may be able to simply duplicate one of the existing channels to create the high-contrast channel you need, but in cases such as the one shown here, you'll have to work a little harder, using the Calculations command (Image: Calculations) to blend and emphasize the information from one or more channels. We always use the Multiply blending mode in our calculation to increase contrast, but the channels we multiply vary from image to image. Often, when working in RGB color mode, we multiply the red and green channels together, but in this case, we multiplied the green channel by itself to emphasize the information in that channel. That is, we set both the Source 1 and the Source 2 channels to green (with Multiply as the Blending option and the Preview option checked) and put the result into a new channel, #4.

#### STEP 2b:

##### Isolate the edges.

Next, we ran the Find Edges filter (Filter: Stylize: Find



FIGURE 2 / BEFORE

This soft-looking image needs sharpening — but its high-contrast edges *shouldn't* be made sharper.



FIGURE 2 / BEFORE, SHARPENED DETAIL

If we sharpen the image immediately, the high-contrast edges become *too* sharp, as this detail shows.



FIGURE 2 / AFTER, DETAIL

By employing Trick #2 to protect the edges during sharpening, we create a final image without exaggerated edges.

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FIGURE 3 / BEFORE

This image needs sharpening, but it also has jaggies — which we *don't* want any sharper.

Edges) to isolate the edges. We could have simply used the result of this filtering as our mask, but the result tends to be too heavy, protecting too much of the image. Instead, we used the Calculations command (Image: Calculations) again to reduce the intensity of the mask. We used channel #4 for both our sources, set the blending to Screen (the opposite of Multiply — this makes the result *lighter*), and put the result into channel #4. On some images, we lessened the intensity of the mask still further by repeating the calculation.

## STEP 2c:

Use the found edges as a mask to sharpen the image.

Once the mask is created, switch back to the composite channel (RGB, in this case), by selecting it (clicking on the channel name to highlight it) in the Channels palette. Then load the newly created channel #4 to act as a mask in the upcoming filtering operation (Select: Load Selection); be sure to check the Invert option in the dialog box so that the edges are masked. Next, run the Unsharp Mask filter (Filter: Sharpen: Unsharp Mask), experimenting with the settings on a selected area if needed. On this image, we used fairly extreme settings: amount, 350; radius, 0.7; threshold, 0. Once you've done this, you can discard channel #4 (by selecting it in the Channels palette and dragging it to the palette's Trash), since you'll no longer need it.

When we compared the result with the raw image in our example, looking at a close-up of a small area, we saw that we'd brought out the textures without creating any unnatural-looking extra sharpness.

## TRICK #3:

## SUPPRESSING JAGGIES WITHOUT LOSING SHARPNESS

DIGITAL-CAMERA IMAGES are particularly prone to the problem of aliasing, or *jaggies* — jagged edges in which pixelation is clearly visible. Our example (see



FIGURE 3 / BEFORE, SHARPENED DETAIL

If we sharpen the image immediately, the jaggies stand out strongly.

figure 3), taken with a Polaroid PDC-2000, isn't too bad: The aliasing becomes really prominent only after we've sharpened the image. But since the image *did* need sharpening, we had to develop a trick to help us obtain a decent degree of sharpness while suppressing most of the jaggies.

As in Trick #1, we convert the image to Lab color to separate the luminance information from the color information. But here we blur the *Lightness* channel (since that's where the jaggies lie) — enlarging the image beforehand and downsampling it afterward — instead of the color channels.

## STEP 3a:

Convert to Lab color.

First, convert the image to Lab color (Image: Mode: Lab Color). You'll find that the jaggies stand out strongly in the Lightness channel.

## STEP 3b:

Enlarge, blur, and downsample the image.

How you perform this next step depends partly on how much RAM you have. If you have *plenty* of RAM, you can work with the entire image; more likely, though, you'll want to duplicate the Lightness channel into a new document before proceeding. To do so, click on the Lightness channel in the Channels palette to select it and then choose Duplicate Channel from the Channels palette's pop-up menu. Set the Destination Document to New — you can leave the other settings in the dialog box blank.

Working on the new document (or on the original image with the Lightness channel selected), enlarge the image (Image: Image Size), using the following specifications: Set the width to 400 percent, and make sure that the Constrain Proportions and Resample Image boxes are both checked (you don't need to set the pixel height if Constrain Proportions is on) and that bicubic resampling is selected. Because this will increase the file size dramatically, the next few steps may go slowly.

Next, blur the image as follows: Choose the Median filter (Filter: Noise: Median), set the radius to 5



FIGURE 3 / AFTER, DETAIL

By employing Trick #3 to blur the luminance info before doing the sharpening, we can reduce the jaggies in the final image.

pixels, and click on OK. Once the filter has run, go back to Image Size (Image: Image Size), set the width to 25 percent (leaving all the other settings as they were), and click on OK.

## STEP 3c:

Sharpen the image.

Next, sharpen the image (Filter: Sharpen: Unsharp Mask). The ideal settings to use here vary, but as a general rule, a fairly high amount and a low radius work well. In this case, we set the amount to 250, the radius to 0.6, and the threshold to 0.

If you chose the RAM-efficient method of performing this trick, you have one more step to do: replacing the Lightness channel in the original document with the one you've processed. Select the entire document (Select: All), and copy it (Edit: Copy). Then go to the original document, select the Lightness channel in the Channels palette, and paste in the copied channel (Edit: Paste).

The resulting image will be adequately sharp but will have far fewer jaggies than one sharpened without the intervening steps.

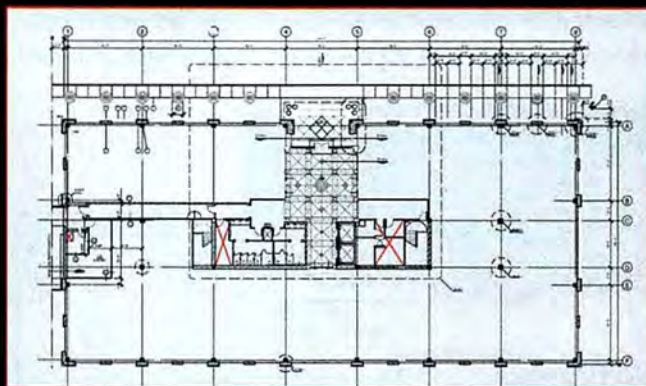
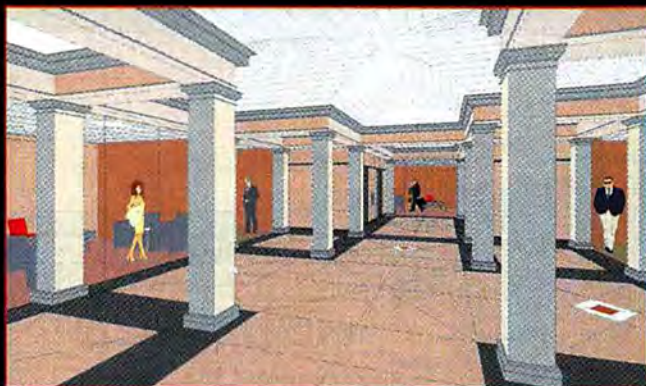
## End of Roll

The images we fixed here were all produced by midrange digital cameras (between \$3,000 and \$7,000 in price). However, the techniques (which we've automated to a large degree in a set of Photoshop actions available at <http://www.macuser.com/0697.html#photo>) apply to lower-end digital cameras as well.

With images from such cameras, you may find that you have to use higher values in some of the settings and that the results won't be as dazzling as those you can achieve with images from midrange cameras — but if you experiment, you'll be surprised at how much you can do with images that seemed irretrievably flawed. ☐

Bruce Fraser is a MacUser contributing editor and the coauthor of *Real World Photoshop 4.0* (Peachpit Press).

# The Easiest, Most Cost-Effective



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## MiniCad 6 —The only thing small is the price.

# Multiple Undos in Photoshop

Impossible? Not quite. Here's how to fix almost all of your graphics goofs.

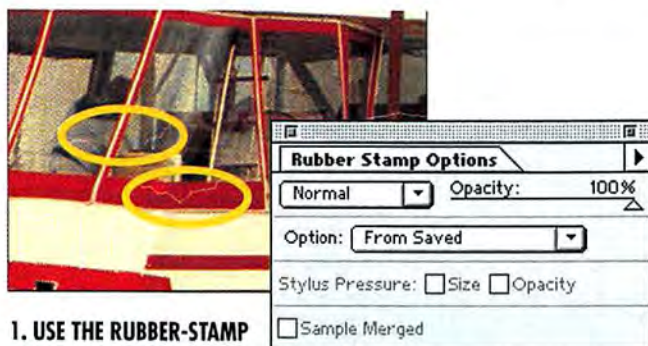
**YOU CAN ALMOST HEAR THE WORDS** echoing from frustrated Photoshop users worldwide: "Why is there only one level of undo?!" Until Adobe rewrites Photoshop to let us fix mistakes by pressing Command-Z several times, as we can in other programs, a few slips of the mouse will continue to endanger hours of work. However, there are ways around this limitation. By using some of Photoshop's features with a little creativity, you *can* backtrack through more than one of your editing steps and save time.

The beauty of such an approach is that it gives you more control than a regular Command-Z undo would. In programs such as Adobe Illustrator, you can undo steps only in the reverse of the order in which they were performed, erasing everything you did in between. With the following techniques, you can undo a *part* of your editing. And have

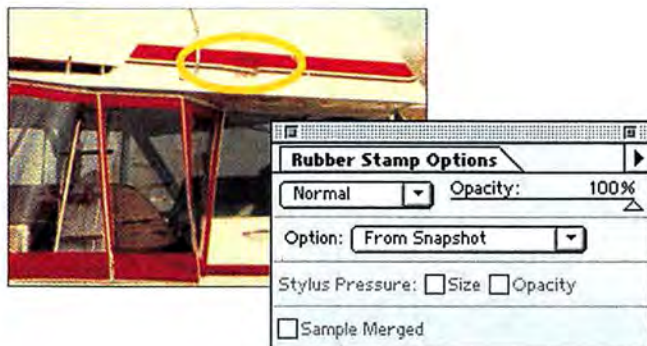
you ever heard of undoing something after you've saved the file? With some of these methods, you can do just that. Be forewarned, however, that you'll need to increase Photoshop's RAM allocation in order to utilize most of these techniques.

Follow along as we demonstrate ways to squeeze more flexibility out of Photoshop. If you haven't upgraded to Photoshop 4.0 yet, don't be discouraged. All these tips, with the exception of number 5, will work for you, although some of the menu commands may be slightly different. Even if you use only one or two of these techniques, you will have won a victory in the battle for multiple undos.

*Chris Lehan is an electronic-prepress manager for a printing company and also teaches classes on Adobe Photoshop and the Internet for a technical college in Minneapolis, Minnesota.*



**1. USE THE RUBBER-STAMP TOOL OR THE ERASER TO REVERT A PIECE OF YOUR IMAGE.**



**2. SAVE A SNAPSHOT TO SAFEGUARD YOUR EDITS.**

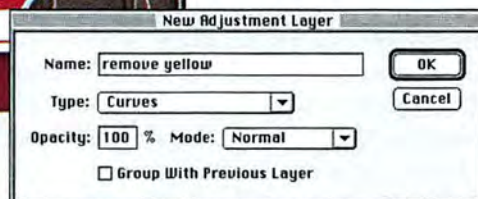
## STEP BY STEP

**1. USE THE RUBBER-STAMP TOOL OR THE ERASER TO REVERT A PIECE OF YOUR IMAGE.** If you make a mistake as you begin editing, choose the From Saved option from the Rubber Stamp Options or Eraser Options palette (Window: Show Options) and restore the place you messed up to its original state with the tool. We didn't like all our results after we removed scratches from the boat's windows, but instead of reverting to the saved version of the whole image (File: Revert) and starting over, we used the rubber stamp's From Saved option to undo a *part* of our editing.

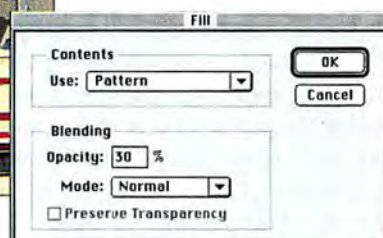
**2. SAVE A SNAPSHOT TO SAFEGUARD YOUR EDITS.** As you complete complicated tasks, you may want to take a snapshot (Edit: Take Snapshot) to save what you've done to a buffer in RAM. The snapshot remains safe until you save or close the image, take another snapshot, or purge it (Edit: Purge: Snapshot). We took a snapshot before beginning to remove the pole. This allowed us to restore the top of the boat when we messed up,

by using the From Snapshot option on the Rubber Stamp Options palette and painting over the mistake with the rubber-stamp tool. If we'd reverted to the original image, we would have lost *all* our editing, and if we'd used the From Saved option, we would have restored the scratches that intersected the pole. You can also use a snapshot to restore an entire image, or a selection, by using the Fill command (Edit: Fill) and choosing Snapshot from the contents pop-up menu.

**3. PROTECT YOUR EDITS TEMPORARILY ON THE CLIPBOARD.** Another way to protect your editing is to select the image (Select: Select All) and copy it to the Clipboard (Edit: Copy). If you make a mistake, you can paste any part of this version into a selection area (Edit: Paste Into) and the selection will drop by default into a new layer. However, be careful not to erase the older version by copying anything else! The version will remain if you save or close the image but not if you copy something or purge the



### 5. TAKE ADVANTAGE OF PHOTOSHOP 4.0'S ADJUSTMENT LAYERS.



### 3. PROTECT YOUR EDITS TEMPORARILY ON THE CLIPBOARD.

### 4. USE PATTERN FEATURES TO RESTORE AN OLDER IMAGE VERSION.

Clipboard (Edit: Purge: Clipboard). After we removed the pole, we copied the image to the Clipboard. Later, when the boat's windows looked overlightened, we selected the windows with the marquee tool and pasted into the selection area from the Clipboard. The old windows appeared on a new layer, so we could adjust their opacity precisely.

### 4. USE PATTERN FEATURES TO RESTORE AN OLDER IMAGE VERSION.

Ordinarily, you'd use Photoshop's Define Pattern command (Edit: Define Pattern) to turn a piece of an image into a repeating pattern, but you can also define an *entire image* as a pattern. A pattern remains safe even after the image is saved and closed, although not after you quit Photoshop, define a new pattern, or purge the pattern. Before we applied Unsharp Mask, we selected the image (Select: Select All) and defined it as a pattern (Edit: Define Pattern). As a result, we didn't panic a few steps later when we realized we'd oversharpened. We were able to select the

oversharpened image (Select: Select All) and fill (Edit: Fill) with the old version by choosing Pattern from the Contents menu. We then softened the sharpening precisely by choosing a blending opacity of 30 percent.

**5. TAKE ADVANTAGE OF PHOTOSHOP 4.0'S ADJUSTMENT LAYERS.** You may have read about adjustment layers, but you may not have realized that they're an undo bonanza. Now you can experiment with tonal and color corrections — all the adjustments, from curves to color balance, that once lived on the Image: Adjust menu — without directly altering a single pixel. None of your changes are permanent until you flatten your image; if you don't like what you've done, you can delete the adjustment layer. Our final editing step called for removing a yellow cast from our photograph. We created an adjustment layer (Layer: New: Adjustment Layer), chose Color Balance from the Type pop-up menu, and adjusted the sliders fearlessly until we liked what we saw.

# Changing Gracefully

Can we introduce change into our DTP environment without falling on our keisters every time?

**WE'RE CHANGING** so awkwardly these days. Every time a technology changes, the way we use it also has to change. But in the process, our old workflow often becomes our new situational "failure," which we must then address. The danger of meddling with workflow, however, is that to remove any element in our DTP house of cards is to risk collapsing the entire structure. Wouldn't it be nice to confine damage to the upper stories?

Now that the dust is settling from the "Which OS will it be?" frenzy, there are still basic issues we must grapple with, regardless of which OS sits at the root level of our hard disks. Namely, how do we put all this technology together to be productive? What kind of workflow can we cobble together to make money with whatever system we wire up?

The Internet, print, CD-ROM, WebTV — today there are a host of pipelines delivering content. Production for each of these media will have you wiring different pieces of equipment together, but the hardest connections aren't the ones you make with wires or SCSI cables. To manage production, you also need to be able to make connections among the different parts of your process. Each medium requires its own MO (*modus operandi*, not *magneto-optical*), and if you don't know how the parts of the process connect, then you're going to have a difficult time keeping production alive when you implement change.

## Missing the Big Picture

For example, if we're printing a book, we might ask ourselves the question, What details need to be revealed in digital page proofs? To find the answer, we've tweaked new tools and tried to understand color gamut, RGB-to-CMYK conversion, black-ink generation, and so on. What's wrong with this approach? Nothing, except that it isolates the proof from other important parts of the workflow. We talk a lot about color management, but we talk very little about ink management. Even if the colors look great, if ink is printed in the wrong

part of the gutter of a book (the part of the spine where the binding is done), then the binding glue won't adhere properly. We have preflight software that tells us if there are Pantone colors where there should be CMYK, but we don't have a preflight strategy that also takes into account the binding machines. If we isolate digital-proofing particulars from the rest of the manufacturing process, we're



merely pushing our problems down the assembly line.


Here's another example from the design world. Remember typography — the long-lost art of making text not only look right but also *feel* right? When we finally get into the business of serving clients who want to repurpose their content, we're going to have to put typography back into the workflow. Case in point: In the print world, it's currently the vogue to space letters tightly, but text on a television screen is easier to read when there's *extra* space between characters. How are service providers faced with repurposing content from the page to the screen going to make that content look good if they haven't considered these differences? How are they going to enhance the repurposed content when they're dealing with part of the workflow that has never been their traditional bailiwick?

Workflow changes have probably been

occurring even more rapidly than technological evolution itself. How to deal with it all? To begin with, we need to keep up not only with new technology but also with how it's affecting the problem areas we must address. We must understand all parts of the workflow continuum, not just the part we're directly involved in. Managers who don't get involved in the details leave themselves vulnerable. You

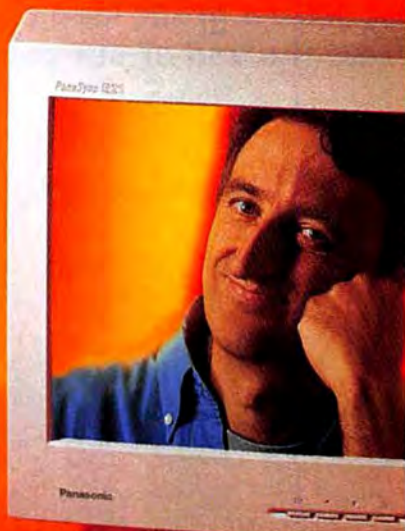
can't connect the dots properly if you don't even know where the dots are.

Workers also need to receive training that helps them see their connection to parts of the workflow that may be far upstream or downstream from their workstations. These days, we tend to give them only what they need in order to get their job done. "Provide training!" is a time-honored battle cry, but it's mostly ignored, because some employers don't completely buy into the notion that more and more training always increases efficiency.

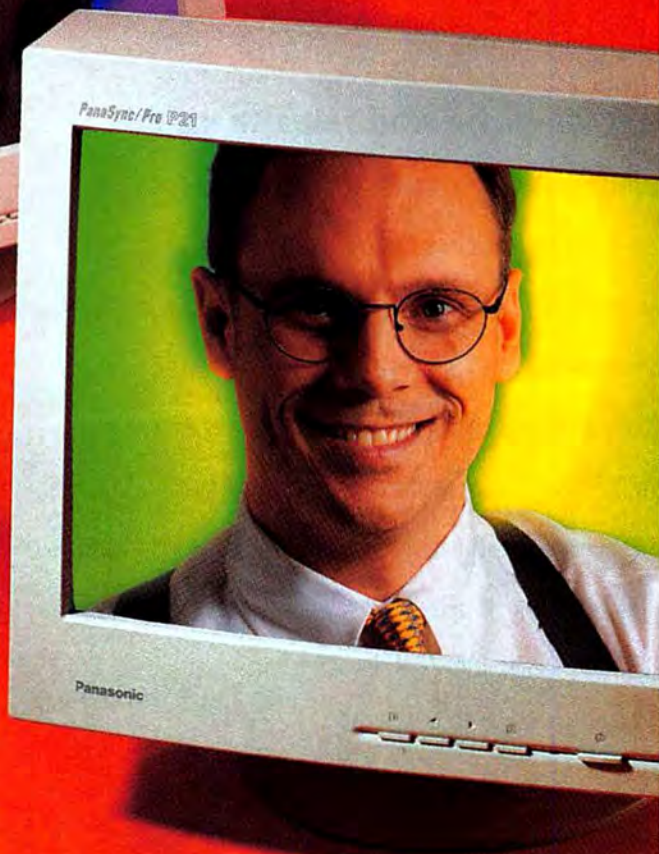
Finally, we need to reintroduce the concept of accountability into the process. After years of using self-contained systems, we've forgotten that we can ask people to remember that their tasks should connect through the entire process. Establishing connections requires managers who have the vision and strength to look beyond the immediate bottom line and who take time to integrate strategic planning, technology implementation, and day-to-day operations. By planning for a future in which the workflow — the process itself — is flexible, we give ourselves a chance to change a lot more gracefully than we do now. Who knows, maybe we can keep the house of cards from collapsing at all. 

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# NETWORKING

If your Macs  
are under attack,  
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fend off their critics.



By Shelly Brisbin

## Macs? Not on My Network!

**T**HE OFFICE CAN BE A BATTLE ZONE. The issue is the state of the Mac, and the weapon is myth. "Macs are expensive. They're hard to manage. They can't be integrated into a NetWare- or NT-based network." If you're a Mac manager in a PC-dominated company, chances are you've heard all these complaints. You may face IS (information systems) professionals who don't understand the Mac. Sometimes the feelings are even hostile.

We asked a few Mac veterans to tell us what myths they've confronted and what information they've used to fight and win — or at least battle to a stalemate — in a Mac-hostile environment. Here are three of the most common myths our Mac informants mentioned:

### **Myth 1: Macs Are Expensive**

Have you priced Mac OS systems lately? Prices for 200-MHz Macintosh clones from Power Computing and Motorola, for instance, start at around \$1,700. Comparable PC clones cost around \$1,850. Macs may not always be cheaper than their PC equivalents, but their prices are competitive.

Mac competitiveness has gotten a boost recently from falling RAM and hard-drive prices. Apple's decision to use PC industry-

standard IDE drives in some of its machines also helps, since those drives tend to be less expensive than SCSI drives.

In some cases, buying a Mac is worthwhile even if it's more expensive. That's what many people in industries where having computers with fast processors is a must seem to have deduced. Macs continue to dominate in such industries as multimedia and publishing, because they're fast and offer the features necessary for doing the most-intensive work.

### **Myth 2: Macs Are Difficult to Configure and Manage**

The network managers we interviewed who have experience with Macs as well as PCs noted that configuring a new Mac takes a matter of hours whereas configuring a PC can stretch over a day or two. Configuring a PC takes longer because it involves more steps and is more complicated. With a PC, for instance, you have to configure DLL (dynamically linked libraries) files. Also, if you need to add memory or disk drives, include the time you'll spend hunting for the tools you need for opening the machine. Then you need to set up each drive, using arcane codes and DOS commands. Installing several PCs is

likely to require the services of an experienced (and probably expensive) technician for performing the tedious installation and configuration tasks for each system.

Preparing Macs is much easier. You can usually open a Mac by undoing a single screw. Once you've got the case open, you can install memory or drives, close it up, and reboot. No driver configuration is necessary.

Working with the Mac OS is also straightforward and doesn't require specific knowledge of several configurations. All Mac OS systems arrive with the same basic system software — everything you need in order to get a new Mac onto the network is preinstalled.

Although most PC vendors ship their machines with Windows 95 installed, each company's system has its own complement of files and driver software peculiar to the machine and its peripherals. You can't just pop in a Windows 95 system disk and expect everything to work. Idiosyncratic system software might be OK if all your PCs come from the same vendor, but that's pretty unlikely in large companies.

With system software installed and hardware configured, adding your company's standard suite of software — a word processor,

spreadsheet program, and e-mail package, say — is a simple matter, right? Mac users are spoiled. Attaching an external SCSI hard drive to a new Mac and starting a Finder copy to install software on the disk is a painless process. If your installation requires adding files to the System Folder, you can use AppleScript or a software-distribution application.

Many PCs have an external SCSI port (many don't), making it easy to plug in a device, but there's no guarantee the PC will recognize your

drive without some tinkering in Windows Setup (configuration software for peripherals). All in all, deploying a Mac is quicker and — since time is money — cheaper than putting a new PC on a network.

## Myth 3: AppleTalk Is Chatty

Folks accuse AppleTalk of being a "chatty" protocol (one that sends too much data over a network). Because every AppleTalk device (such as a computer or a printer) constantly


polls all the other AppleTalk devices on the network, the protocol generates a lot of packets. Theoretically, this causes traffic jams on a multiprotocol network.

AppleTalk is much less chatty than it used to be. Chances are that naysayers are basing their opinion on old software because they're not up on the latest Mac networking protocol. Several years ago, Apple introduced AARP (AppleTalk Address Resolution Protocol), software that cuts down on AppleTalk's chattiness and the packet storms that can result.

Many people who would smother AppleTalk are comparing it with the wrong protocol — NetWare's IPX. It makes more sense to compare it with TCP/IP. Many organizations that once relied exclusively on IPX for server-based communication with PCs are adding TCP/IP or moving entirely to it. The move to TCP/IP also includes lots of Macs, which no longer depend just on AppleTalk for access to e-mail and other network applications. With so many people using TCP/IP, comparing AppleTalk with IPX is silly. When you compare AppleTalk with the right protocol, this myth is turned on its head — TCP/IP is much chattier than AppleTalk and uses larger data packets too.

## Debunking and Diplomacy

Fortunately, Apple and several groups of Macintosh devotees offer lots of information for Mac fans under siege. Check out Apple's Why Macintosh? Page (<http://www2.apple.com/whymac/>) for the view from Cupertino. Network managers will find company and good ideas at The AppleTalk Network Managers' Association (<http://oak.forest.net/anma/anma.html>). MacFacts (<http://www.halcyon.com/kegill/mac/welcome.html>) points out the many instances in which Macs have won in comparisons against PC systems. AppleJedi (<http://www.saracen.com/applejedi.html>) is probably the coolest "Macs are better" site. AppleJedi is a Web-based magazine, with articles for serious evangelists.

Your best bet for peaceful coexistence is patience, good information, and a little diplomacy. You can win points by carefully documenting support costs for the Macs in your office and tracking the productivity of the people lucky enough to have them on their desks. The advantages of the Mac may seem obvious to you, but nothing may speak louder to management than the bottom line. 

MacUser Associate Editor Shelly Brisbin once configured 20 Macs in a single day.



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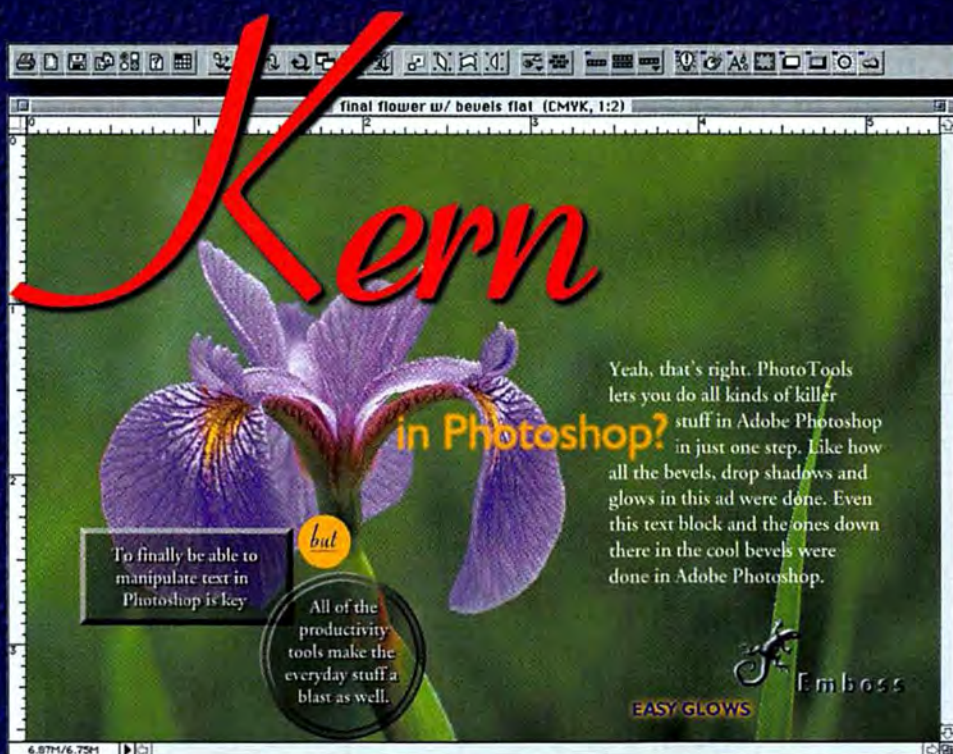
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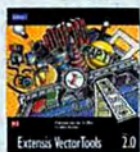
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# Site Unseen

Today's tools can help you make a great Web site, but where are the tools to manage it?

**CREATED MY FIRST WEB PAGE** in the fall of 1993, using an e-mail program's built-in text editor as my authoring tool and my brain as my site-management system. In the intervening three and a half years, the Web has changed a lot.

These days, I use both Adobe PageMill and Bare Bones Software's BBEdit to design and maintain complex Web pages for five separate sites. And for my site-management system? I'm still working with the ol' gray matter.

This is the world we Mac Web-site administrators live in: Our authoring tools have been transformed from stone knives into laser scalpels, but when it comes to making sure all our Web pages are in the right places, all our links are correct, and that you can get from one page on your site to every other, we're still beating rocks together.

## The Five-Mouse Solution

Fortunately, I have seen the grail of site management. It's a five-mouse product that will change the way we manage Web sites forever. The only catch is that this product lives where all my other site-management tools live: in my head and nowhere else.

This is not to say that there aren't some promising tools on the horizon, and it's not to say that the tools available now don't have some powerful features. It's just that right now, there's no single tool that can effectively manage a Web site with hundreds of pages and hyperlinks.

But I can dream, can't I?

## Making Do

Meanwhile, I rely on a variety of tools and parts of tools to do my job as a Webmaster. In the features of these tools, I see bits and pieces of my dream site-management program:

Bare Bones Software's BBEdit 4.0.2, a text editor and great HTML tool, offers one killer tool for site administrators. BBEdit's Find

command can be used to perform quick, powerful search-and-replace operations on folders full of HTML files. If you need to quickly update some boilerplate text, a hyperlink that's been changed, or any other text in your Web site, BBEdit can be a huge help. But the program is less intuitive than a site-management tool should be and doesn't help much with managing changed or outdated hyperlinks.


Adobe SiteMill — as the name implies —

and feel of a page-layout program rather than a word processor. But Fusion is most impressive when put to the task of site management. Once you've designed your whole site in Fusion, including page hierarchies, the program can automatically generate navigation bars in the headers or footers of your pages. Unfortunately, Fusion can't import existing Web content, so these cool features won't do you much good unless you're creating a new site from scratch in Fusion.

## What's Left?

Even if using several tools to manage your Web site doesn't faze your budget, the truth is that the sum of the parts of BBEdit, SiteMill, and Fusion do not add up to a complete site-management application. That tool, the one I can only dream about, will keep track of all my internal and external hyperlinks (and regularly check to see that they are valid), like SiteMill. It will know the hierarchy of my site's pages and will

be able to automatically generate navigational elements, like Fusion. It will offer powerful search-and-replace features, like BBEdit. It will watch the local copy of my Web site for changes and automatically upload modified pages to the Web server via FTP. It will be able to manage sites that include several thousand HTML pages. And it will be compatible with most popular HTML editors, so that I can modify my Web pages in the program of my choosing.

In the meantime, we'll all have to make do. After all, I made do for several years using an e-mail program's text editor. In the end, I got relief. Macintosh Webmasters will have to hope that some developer takes a break from creating the next great WYSIWYG HTML editor and turns his attention instead to solving the problem of managing a mountain of Web pages. 

Jason Snell is MacUser's senior editor, online. He can be reached at [net.cetera@macuser.com](mailto:net.cetera@macuser.com).



understands the structure of Web sites and links. SiteMill 2.0 (a public beta was available at press time) displays every page of your Web site and lets you see every page that links to it and every page it links to. More important, if you move a file around in your site's hierarchy, SiteMill will automatically update all the other links within your site. In terms of link maintenance, SiteMill's a gem. However, if you manage a large Web site, you may find that SiteMill's not up to the challenge. Searching for and making global changes to a large number of pages or hyperlinks requires plenty of RAM and a sturdy application. Unfortunately, when I tried to manage a site of more than a thousand pages (being careful to give SiteMill lots of RAM), Adobe's tool cracked under the strain.

If it's industrial-strength site management you need, there's NetObjects Fusion. It has received a lot of attention recently as a Web authoring tool, mostly because it has the look

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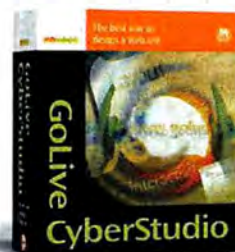
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# HANDS ON

Are you getting the  
most out of the  
most customizable  
PowerBook?



By Carolyn Bickford

## Soup Up Your PowerBook 1400

**A**DDING HARDWARE to a PowerBook used to seem like performing surgery that was best left to the few who wielded a hard-to-find Torx screwdriver. Just opening the case induced fear in even the most experienced. Then along came the PowerBook 1400 to put the power of customization back into the hands of Mac users. Adding such extras as more RAM or an internal drive is practically as easy as building with Legos.

Not only is this PowerBook easy to customize but it's also built to take add-ons. Many new products have come out since this model shipped, making it the versatile machine it should be. Here's a list of the latest products that can help you create your ideal PowerBook.

### Versatile Hardware

**RAM Up.** In the past, increasing RAM in a PowerBook usually meant wasting the RAM it shipped with. You had to throw out the original memory and replace it with new memory. The PowerBook 1400 was built to put a stop to that — there's enough room to keep the original memory and add more. For this model, you should have no trouble finding memory, since it's widely available. It's also inexpensive (about \$139 for a 16-MB DIMM).

**Expansive Storage.** Apple made it easy as pie to add internal storage to the 1400. You don't even have to open the case; instead, you simply slip a device into the expansion bay on the front of the PowerBook.

There's an increasing array of products that fit in this bay, starting with CD-ROM drives. Since more and more software ships on CD-ROM, you should seriously consider getting Apple's CD-ROM expansion-bay drive (about \$350) if you didn't opt to have it bundled with your 1400.

If you prefer to have both a floppy drive and a CD-ROM drive available at one time, you can get Sony's CD-ROM Discman PRD-650 (see photo), an external 6x drive that connects to the 1400 through the PC Card slot. It costs the same as Apple's CD-ROM expansion-bay drive, but it weighs only ten ounces, as opposed to a pound, and runs on its own batteries.

The expansion bay isn't limited to holding floppy and CD-ROM drives. VST Technologies has a range of expansion-bay options, including a 230-MB magneto-optical drive and an auxiliary 1.2-GB hard drive (either costs about \$450). VST also has plans to ship a Zip drive (\$330) for the expansion bay; it should be available now or within the next month.

**Modems.** To help you get to your e-mail while you're traveling, you can choose from numerous 33.6-kbps and faster PC Card modems. They're offered by the usual suspects, including Dayna and Global Village, and range in price from about \$190 to \$280 each.

If it's the Internet you need to access while you're mobile, you'll encounter a few different options. One way to go is to use a cellular connection kit from Global Village. With one of these kits, you can connect your modem to many cellular-phone models, such as those from Motorola.

There's a cheaper and more reliable way to connect to the Internet than by using cell-phone technology, but it's available only to those who live in the San Francisco Bay Area; Seattle; or Washington, D.C. You can use a Metricom Ricochet wireless modem (about \$300; see photo), which connects you to the Net via radio signals. You have to pay about \$30 per month in connection fees, and the modem rarely — if ever — achieves its maximum speed, 28.8 kbps. But you don't have to pay the expensive per-minute charges you have to pay for cellular calls, and the chance of being disconnected is much lower.

**Ethernet and the Internet.** The PowerBook 1400



This PowerBook 1400 is all dressed up with places to go. The outfit includes a Metricom Ricochet wireless modem (left), a Sony CD-ROM Discman PRD-650 (right), and a BookWares wood finish BookCover (center).

doesn't have built-in Ethernet, but you can buy an Ethernet PC Card or combination Ethernet/modem PC Card from Dayna, Farallon, or Newer Technology. An Ethernet PC Card will set you back about \$100 to \$200, depending on its capabilities (such as how fast it is) and what type of software comes with it. The combination PC Cards cost a bit more — between \$350 and \$400 each. That's pretty pricey if you get a card that has a 28.8-kbps modem. Look for one with a 33.6 kbps-modem, to make sure you're getting the best buy.

An internal Ethernet card from Farallon, Focus Enhancements, or Newer Technology is only about \$100, and it snaps into an internal expansion slot as easily as memory fits into the RAM slots.

**Video.** The only way to attach a monitor, since the 1400 doesn't come with video-out capability, is to leave the expansion slot open for a video card. Either Apple's 8-bit video-out upgrade kit (about \$160) or Newer Technology's 16-bit VIEWpower 1400/16 video card (the price was not set at press time but should fall between \$300 and \$375) will do the trick.

**The Hookup.** If your PowerBook is your only computer at the office as well as on the road, Pilot Technologies' BookEndz docking station, which lets you connect your PowerBook 1400 to your network and peripherals quickly, might be worthy of consideration. This device holds in place connectors for your monitor, printer, keyboard or mouse, audio in, audio out, one SCSI device, and the power supply.

**The Ultimate Splurge.** The most radical boost to your PowerBook — and the priciest — is to swap the motherboard with one that will make your 1400 one of the fastest PowerBooks around. The device that can give you that kind of speed is the NUpower 1400/200 (\$675), from

Newer Technology. This card is a 200-MHz CPU, complete with a Level 2 cache, that will make your original 117-MHz processor feel pretty tortoiselike.

### Looking Good

To truly make your PowerBook your own, you'll probably want to modify how it looks. The 1400 was designed to let you show your own personality by providing room for a custom BookCover, which goes on the outside of the case. There are purely aesthetic as well as practical ways to fill the BookCover slot.

If you want a unique look, the surest way to get it is to create your own BookCover. There's help for do-it-yourselfers from a company — BookWares — that specializes in BookCovers. It sells blank BookCover inserts (12 for \$10) made of card stock onto which you can print your designs. And it can print your design for you on its high-end printers (\$30 for the initial insert, \$8 for each copy) if you send it a design in an Illustrator or PageMaker file.


Also in this company's BookCover collection are leather (starting at \$20); lacquered wood finish (\$125); and inserts (from around \$10 to \$20) created by artists and celebrities, including Guy Kawasaki. If you buy any of the small external devices we've mentioned to go with your 1400, you might also want to get a BookWares leather BookCover that comes with a pocket to hold a device.

How about a more practical way to fill the BookCover? How about a power source that will let you stay mobile? How about Keep It Simple Systems' PowerCover (\$199), a solar panel that slips neatly into the BookCover slot? The PowerCover can't actually recharge your batteries, because of a quirk in the current version of the Power Manager, but it can aug-

ment power. It may increase your battery life by over 25 percent.

The company with so many aesthetic options for the BookCover slot also has plans to offer practical items for that slot. BookWares was making noises about offering both a whiteboard and speakers as BookCovers, but plans were only tentative at press time.

### A Lasting Impression

The PowerBook 1400 gives you your chance to create the kind of portable computer you want. Whether you customize only the exterior — by designing your own BookCover insert, for instance — or power-pack it with memory, storage, and a new processor, it's one laptop that lets you make a personal statement about style and power. 

*Carolyn Bickford, a former MacUser associate editor, dreams of doing her work poolside, using a PowerBook 1400 equipped with a PowerCover solar panel, a Ricochet modem, and a custom cup holder that clips to the display.*

### Directory

#### Apple Computer

Cupertino, CA  
800-538-9696  
408-996-1010  
<http://www.apple.com/>

#### BookWares

Sausalito, CA  
800-851-1551  
415-339-8900  
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Source Code: 28

By Bob LeVitus and Christopher Breen

# Help Folder

Mailing faxes, icon overlap, and a partition drive.

## All Faxed Up and Nowhere to Go

**Q.** I received a fax via modem, and I would like to paste it into an e-mail message. Is there a way to do this or to attach the fax to e-mail?

**Graham Sheppard**  
via the Internet

**CHRIS:** We should start by clearing up a common misconception. Even though the electronic documents you receive with your fax modem look like editable text, they're not. They're pictures.

**BOB:** That is correct. Whether your fax comes to you by way of a modem or a standard fax machine, the message you receive is actually an image of the original document, not the text itself. But just because it's an image doesn't mean you can't send it along to someone else. Just treat the file as you would any other e-mail attachment. Open the fax with your fax software, save it as a PICT file (most fax software offers this option), and attach it to an e-mail message. The person receiving it will be able to open it with any graphics program or even the lowly SimpleText.

**CHRIS:** As the admittedly more biplatformed member of the Help Folder squadron, I should mention that if the receiver of your e-mail is using a non-Mac OS system, your job becomes a little trickier. In such a case, you're better off saving the fax as a PC-friendly PCX file with a utility such as the shareware program GraphicConverter or

Handmade Software's commercial graphics-conversion utility, Image Alchemy. To make certain that the Wintel-using person you're lobbing this fax to will be able to open the file, use Tommy Brown's shareware program Ziplt to compress the file and be sure the file is not smushed in MacBinary format (select the Never Use MacBinary option in Ziplt's Compression Preferences dialog box).

**BOB:** Of course, Graham, you can avoid this whole attachment problem by using an OCR (optical character recognition) program to make the fax editable. Once your fax has been optically recognized, you just cut the text and paste it into the e-mail message.

**CHRIS:** If the fax you've received is fairly clean — and I'm talking appearance, not content — OCR software works pretty darned well. If you have a Global Village modem (Platinum or earlier), you've already got GlobalFax OCR. Just open the fax, select Save

As from the File menu, and choose the format you'd like to use (see figure 1). Soon, your fax magically turns into editable text — albeit with your em and en dashes turned to hyphens and a few extra spaces shoehorned in between words.

**BOB:** I assume from your tone that the good old days of bundled OCR are over for Global Village.

**CHRIS:** I'm afraid so. To be fair, none of the major fax-modem vendors bundle OCR software with their products any longer. Global Village used to include it with the TelePort Platinum but is now charging \$49 for it. If you have a Global Village modem and don't need



the advanced capabilities of full-featured (and expensive) OCR programs from Caere and Xerox, that \$49 will buy you a perfectly capable fax-to-text program.

## Icons Overlapping at Startup

**Q.** Is there any profound meaning to the fact that a couple of my Macintosh's icons overlap one another at startup? Does this indicate a conflict?

**HerbaMac**  
via AOL

**BOB:** Nope. It's not a conflict at all, though it looks odd. Aside from being ugly, it won't cause a problem.

**CHRIS:** If you don't like it, you can use a commercial startup manager such as our fave, Conflict Catcher, or the other one, Now Startup Manager, which contain special code that prevents this visual anomaly.

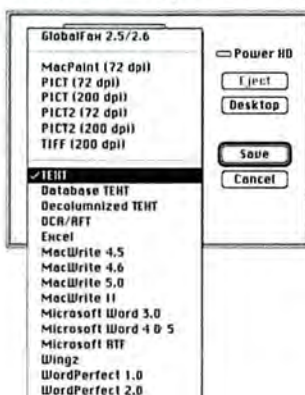
## Where'd My App-Switching Shortcut Go?

**Q.** For some odd reason, the Finder shortcut Command-Tab has stopped working. Pressing Command-Tab used to allow me to switch among open applications without pulling down the Finder menu. Is there any way to reenact this shortcut?

**Ed Napoliello**  
via the Internet

**BOB:** My diagnosis (and as you know, I'm a doctor, or at least I play one on TV) is that you used to have an extension or control panel that gave you this functionality. And now you don't.

**CHRIS:** My best guess — and that's the one they pay me for, folks — is that you have Microsoft Office 4.2.1 installed and have since then lost or disabled the Microsoft Office Manager



**figure 1** / Once you have received a fax via a Global Village fax modem, you can save it in one of several word-processing or graphics formats.

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## Tips / Hidden Things Revealed

### URL Retrieval

If you've saved a Web page as text in Netscape Navigator or any Web browser but forgotten where you originally found it, the Finder can help. In the Finder, select the text file and press Command-I. The URL's in the Comments box.

**John Teti Jr.**  
via the Internet

### Bring Out Your Text

When you disable Auto Load Images in Netscape Navigator's Options menu, in order to surf more rapidly, Navigator usually places picture icons atop text — obscuring the words below. To bring the text forward, click within the browser window and type Command-A to select everything in the window. Click again to deselect all, and the full text will be revealed.

**Gabriel Dorado**  
Cordoba, Spain

control panel. Command-Tab is not — and never has been — the Apple-approved shortcut for switching among open applications. A variation of it is available on Wintel machines, however. Over on the dark side, Alt-Tab switches among applications. Microsoft's introduction of this shortcut on the Mac was just its way of making the PC and Mac work the same way — the Microsoft Way.

The funny thing is that Microsoft actually duplicates the Command-Tab shortcut for two very different functions in MS Office — although both make the Mac work more like Windows, of course. If you have the Microsoft Office Manager control panel installed and have checked Enable QuickSwitch, Command-Tab will pull this application-switching trick. If you've turned off QuickSwitch (or disabled its parent control panel), Command-Tab will enable DOS-like menus in Microsoft Word 6 — you know, funny little underlines appearing in menus that can be navigated with the keyboard's arrow keys.

**BOB:** Fortunately, you don't need to buy Microsoft Office just to switch applications. We know of at least half a dozen utilities — shareware as well as commercialware — that provide keyboard application switching and (usually) much more.

I use a commercial program, CE Software's QuickKeys, for this time-saving task, using its Mac OS Specials: Next/Previous Application shortcuts to assign the Next and Previous Application functions to Command-Tab and Command-Shift-Tab, respectively.

**CHRIS:** You could, of course, do the same thing

just as handily with Binary's KeyQuencer 2.0 or WestCode's OneClick. Or, as long as we're talking about commercial programs, the two best-known commercial file launchers — Binary Software's Square One and Natural Intelligence's DragStrip — both offer keyboard application switching as well as other time-saving features.

**BOB:** We also found at least three shareware programs — AppTab 1.3, eXpress 3.0.1, and Program Switcher 4.2.0 — that seem to work as advertised.

AppTab, an \$8 shareware control panel from Dragonsoft, pops up a little windoid that has keyboard-selectable icons for all currently running apps.

**CHRIS:** eXpress, a \$10 shareware application from Laser Point, gives you all the functionality of the Application menu (Hide Others, Show All, and the like), as well as a pop-up menu and more, from the keyboard.

**BOB:** Last but definitely not least is Program Switcher, a mighty little \$10 shareware control panel from Michael F. Kamprath that would be my personal fave if I didn't already use QuickKeys. It does everything the other three do and is even more customizable (see figure 2).

**CHRIS:** All three are completely cool in their own way; download 'em all (a grand total of less than 400K, thanks to modern compression technology), try each for a few days, and pay the shareware fee for the one you like best.

**BOB:** Ain't shareware grand?

### Playing in a Black-and-White World

**Q.** My husband and I just bought our children an old 8-MB Mac that cannot be upgraded. We were told there are still old games

for systems such as ours, but we haven't been able to locate any. Do you know of a source for such games?

**Mother in Need**  
via the Internet

**CHRIS:** Jeepers, Mom, I told you never to contact me here. You're gonna embarrass me in front of the guys.

**BOB:** Is that your mother?

**CHRIS:** No, not really. The only computer-related question my mother ever asks is, "Why can't I log onto AOL?"

**BOB:** Your mom, my dad and sister, and everyone else in the world . . .

**CHRIS:** In addition to gaming help, this particular mother is in need of a more understanding boss. She sneaked onto the office Mac to send us personal e-mail, and she didn't want her corporate overlord to know about it — thus the alias.

**BOB:** Thanks for the background information. Do you have an answer for her?

**CHRIS:** But of course.

Mom, although most modern Mac games require a PowerPC processor and a trough-full of RAM, you can still find games that run on a modest Mac such as yours. If you'd like to go the commercial route, Varcon has just what you're looking for. It's called the Black and White Arcade Pak; contains 12 classic arcade games such as MacMan, Diamonds, and Bricklayer (a Tetris-like game); costs \$29.95 (list); runs on black-and-white Macs with System 6.0.7 or later; ships on four low-density floppies; and can be purchased directly from Varcon (800-266-6700 or 619-563-6700).

**BOB:** I love those Varcon folks, although they've cost me countless hours over the years. They also sell several sets of classic color games, including Mac Arcade Pak (\$25). The set contains versions of Pac-Man, Tetris, Asteroids, Missile Command, and others. You'll need 4 MB of RAM and support for 256 colors.

Anyway, here's another idea: When your boss goes out to lunch, use the office Mac to download classic games from such online services as CompuServe and — provided you can log on, of course — AOL. On CompuServe, type GO MACFUN and check out Library 9, the Classic Games forum. If you're a ZiffNet member on CompuServe, type GO ZMC:ZMACAR and take a peek at the software libraries for loads of classic fun. On America Online, use keyword MGM; double-click on Download Games, Hints, and Demos; double-click on Software Libraries; select Software Search; and type Black and White into the



figure 2 / You can use Program Switcher's control panel to create a keyboard shortcut that cycles through your open applications.

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## Tips / E-mail

### Spam Prevention

In the January '97 issue, Chris, Bob, and Andy discuss the difficulties of preventing junk e-mail. As they mentioned, spammers often obtain addresses by autoskimming them from publicly accessible posts, such as from Usenet groups. Here's a way to prevent this skimming:

Insert "fake" characters in your Usenet, browser, or e-mail reader's address preferences. The fake characters are recognizable by people reading your posts but not by robots.

For example, if your e-mail address is bubba@myemail.com, you can set NewsWatcher so that it shows your e-mail address as \*\*bubba@myemail.com\*\*. In your sig file, simply tell people to delete the \* characters.

**S. M. King**  
via the Internet

### Reroute Navigator 3.0 E-mail

Navigator 3.0 may be a great browser, but I prefer Eudora 3.0.1 for e-mail, particularly because Eudora allows me to log and save all the messages I send. Occasionally I use Navigator to send messages — for instance, when I contact

someone whose e-mail address appears as a link on a Web page. Problem is, I want to track all the e-mail I send in a single location.

Fortunately, by using Eudora's filters, I can keep all my outgoing mail — even messages sent from Navigator — in one place. Here's how:

In Navigator, Select Mail and News Preferences from the Options menu; click on the Composition tab; and under the "By default, email a copy of outgoing message to" heading, click on the Self check box after Mail Messages — a copy of each message you send with Navigator will be sent to your e-mail address. In Eudora, set a filter to direct any mail coming from yourself to the Out mailbox. To do this, select Filters from the Special menu, click on the New button, enter your e-mail address in the header, select Transfer To under the Actions heading, and choose Out from the Transfer menu.

All mail sent from Navigator — and in my case, it's not a lot — will now appear in Eudora's out box. If you have the commercial version of Eudora, you can even change the status of the message to Read, so that it doesn't appear as new mail.

**Kurt Ramsauer**  
via the Internet

search field. You'll see a long list of classic games to choose from.

**CHRIS:** If you've eschewed the pleasures of online services for the heady thrills of a dedicated ISP, rummage around the major FTP and Web sites — Stanford University's [ftp://sumex-aim.stanford.edu/info-mac/\\_Game/](http://sumex-aim.stanford.edu/info-mac/_Game/) and the University of Michigan's <http://www.umich.edu/~archive/mac/game/>.

Please note: These college-based FTP sites are set up largely for the benefit of academics who use them to further their studies and research. If you hog these servers during work hours, you may prevent a hard-working, underpaid university researcher from finally formulating the perfect pimple cream. So check the time zone of the location you're connecting to, and if possible, stay out until well after quittin' time.

**BOB:** Or try out <http://www.shareware.com/>, a Macintosh-friendly repository for thousands of shareware and freeware files with a better-than-average search engine to boot (pun intended).

### Circulating Partitions

**Q.** In your February '97 column, you wrote about the benefits of partitioning hard disks. I have a 1.2-GB hard disk, and I'd like to make three or four partitions. What size partitions should I use?

**dicknor320**  
via AOL

**CHRIS:** Partitioning — like the frequency with which one changes socks, or how one names one's cat — is a very personal matter. Before we discuss partitioning strategies, perhaps Bob would like to fill us in on the act itself.

**BOB:** Be glad to.

As you probably know, you can, with the proper software, break a hard disk up into smaller volumes or *partitions*. To partition a disk, you must first erase it — yup, you lose your data, so back up first. Once the disk is initialized, you then use your formatting software to create the partitions.

Most disk formatters allow you to decide whether you want a partition to mount on startup or stay hidden until you use a utility to manually mount it.

**CHRIS:** Manual mounting may sound like a pain in the patoot — and it can be — but it has its advantages. To begin with, if your Mac is in an environment where any Tom, Dick, or Mary can mouse around with it while you're away, it's nice to have a "hidden" partition that isn't right out there on the desktop.

**BOB:** In such situations, you'll be happy that quality formatters let you password-protect and encrypt your partitions.

**CHRIS:** Also, when all your partitions aren't mounted, your hard drive's read/write head has to scan a smaller area and therefore scans more quickly.

**BOB:** And as we mentioned last February, partitioning your disk means that you create

smaller allocation blocks on your disk, which leads to less wasted space.

**CHRIS:** How you decide to partition your disk will depend on the kind of things you do with your Mac. Because I occasionally work with digital-audio files that consume hundreds of megabytes, it doesn't make sense for me to chop my 2-GB disk into tiny pieces. I've also been known to copy entire CD-ROM games onto my hard disk and, again, small partitions would do me no good. I do, however, maintain a 300-MB partition for my System Folder and a few select applications.

**BOB:** If you don't tackle Chris' kinds of disk-hungry tasks, a good general rule of thumb is to create partitions no smaller than 200 MB. A partition of this size keeps allocation-block sizes down (around 3K per block) but still gives you enough elbowroom to work with larger applications if you need to.

I myself have a 2-GB disk partitioned into an 800-MB partition for my data and System Folder (I call it BootMan) and a 1,200-MB partition (The Rest of It) for my applications, games, utilities, telecom software, and the like. Anything that needs to be backed up on a daily basis lives on BootMan; it gets backed up every night to DAT tape. Since I have master disks or CD-ROMs for almost all the stuff on The Rest of It, I back that partition up only a few times a year.

### The Addendum Department

**CHRIS:** Several readers wrote in to say that even an arbitrarily timed Command-period works as well as or better than our well-timed-Shift-key solution for stopping Startup Items at launch.

**BOB:** Also in February, we rendered the opinion that browsers, as a whole, weren't particularly stable. That still holds true, but several readers swear that trashing Netscape's Global History file makes versions 2.1 and later more "robust" or "reliable."

If you want to give it a try yourself, look for the dastardly file in the Netscape *f* folder inside your Preferences folder inside your System Folder. ☞

*Bob LeVitus is the author of many computer books and the Mac columnist for the Houston Chronicle. Christopher Breen is the author of The Macintosh Bible Guide to Games, published by Peachpit Press.*



You can find the shareware and freeware programs referenced in this article at MacUser's Software Central (<http://www.zdnet.com/macuser/software/>). You can also find them in the MacUser area on CompuServe (GO ZMC:MACUSER).



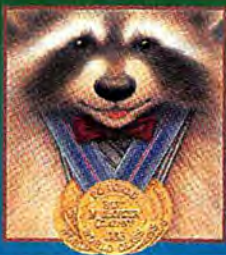
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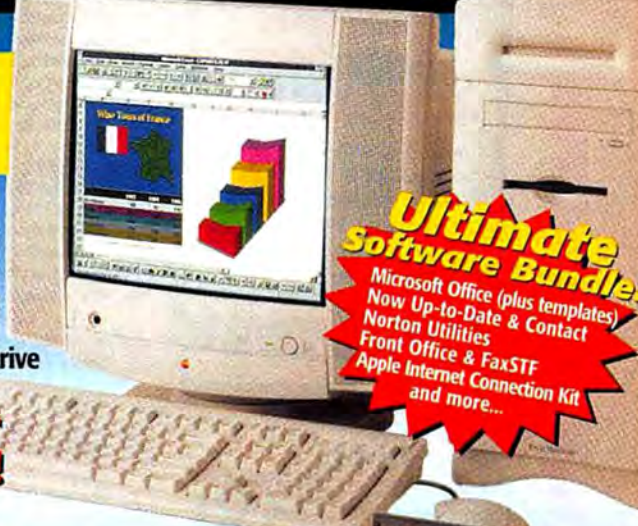
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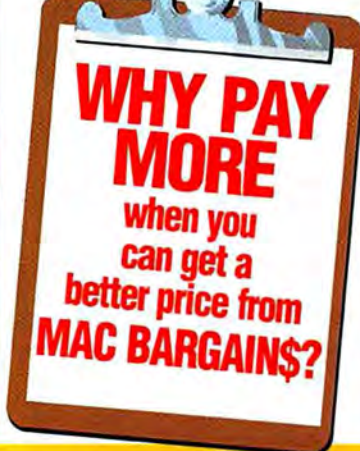
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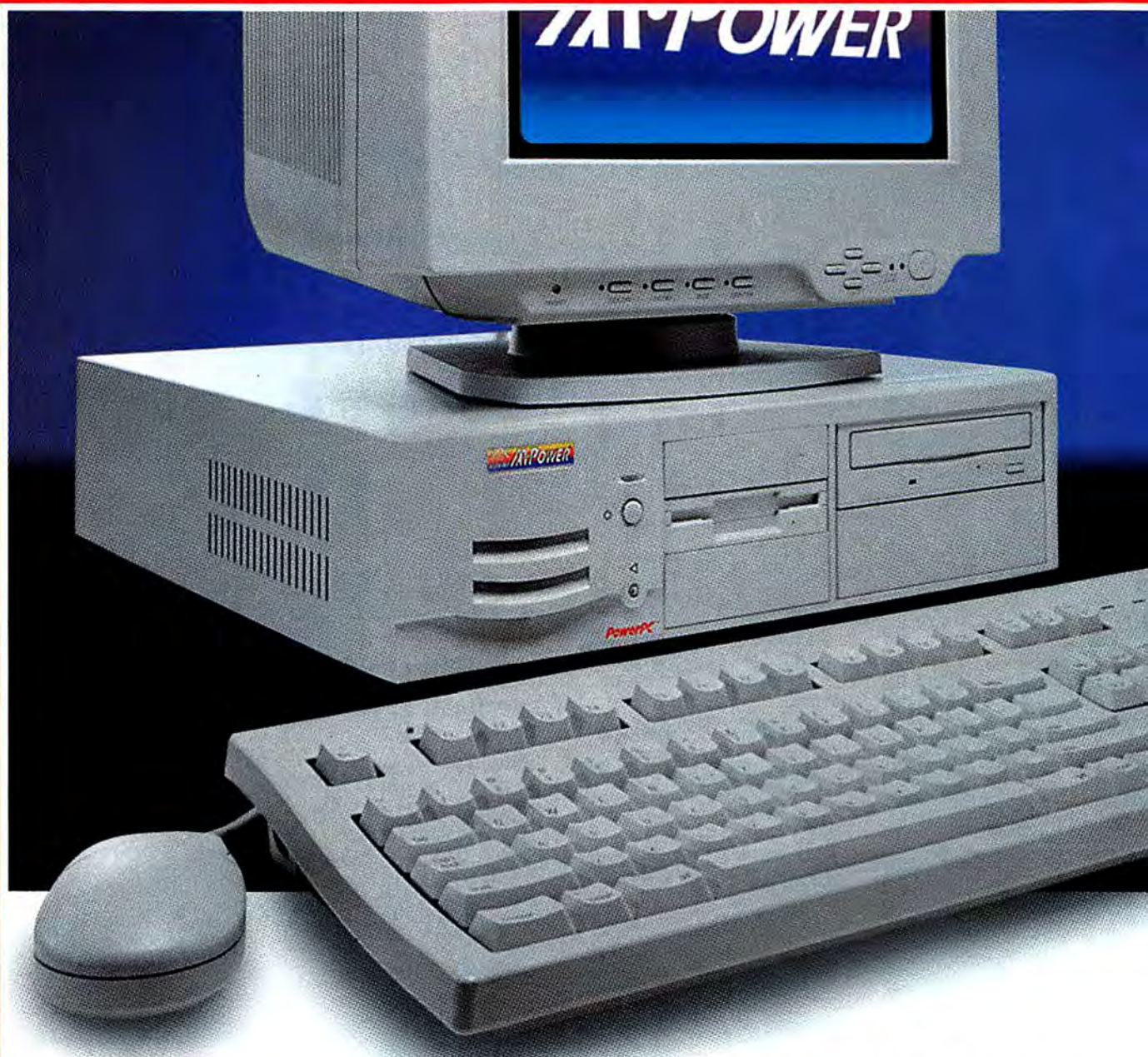
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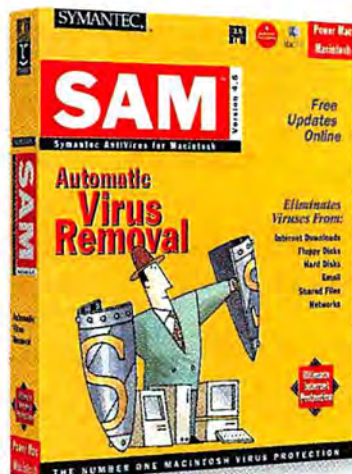


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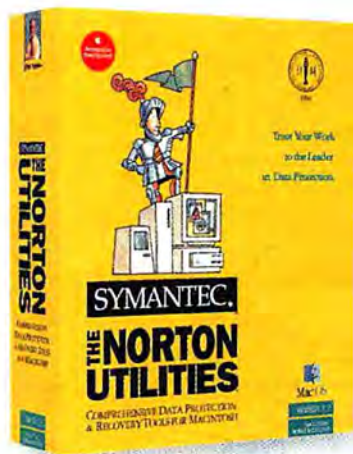
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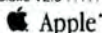
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4-8	Hewlett Packard C153 DAT DDS-2	DAT 120M	60MB	-	895
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1080MB	Atlas 7200 RPM	8ms	8.6MB/Sec.	F&W SCSI 2	269	329
2.0GB	Saturn	8.5ms	-	Fast SCSI 2	425	485
2.0GB	Atlas 7200 RPM	8ms	-	Fast SCSI 2	495	565
2.0GB	Atlas 7200 RPM	8ms	11.0 MB/Sec.	F&W SCSI 2	555	630
4.5GB	Atlas II 7200 RPM	7.9ms	-	Ultra SCSI 3	845	895
4.5GB	Atlas II 7200 RPM	7.9ms	12.5 MB/Sec.	F&W Ultra SCSI 3	885	960
9.1GB	Atlas II 7200 RPM	7.9ms	-	Ultra SCSI 3	1395	1455
9.1GB	Atlas II 7200 RPM	7.9ms	12.7 MB/Sec.	F&W Ultra SCSI 3	1495	1570

## VALUE DRIVES from Quantum

SIZE	DRIVE	SEEK TIME	RATE	INTERFACE	INT.	EXT.
365MB	Quantum	10ms	-	Fast SCSI 2	155	215
535MB	Quantum	9ms	(5400RPM, 512K Buffer)	Fast SCSI 2	N/A	229
128MB	Fireball TM	10.5ms	-	Ultra SCSI 3	245	315
2.1GB	Fireball TM	10.5ms	-	Ultra SCSI 3	275	335
3.2GB	Fireball TM	10.5ms	-	Ultra SCSI 3	375	435

All Value Drives are 4500 RPM, 128K Buffer with a 3 year manufacturers warranty.

## IBM UltraStar Drives IBM

SIZE	DRIVE	SEEK TIME	RATE	INTERFACE	INT.	EXT.
2.2GB	UltraStar ES (5400 RPM)	8.5ms	-	Ultra SCSI 3	425	485
4.3GB	UltraStar 2 ES 34300 (5400 RPM)	8.5ms	-	Ultra SCSI 3	595	655
4.3GB	UltraStar 2 ES 34300W	8.5ms	16.2 MB/Sec.	F&W Ultra SCSI 3	695	765
4.5GB	UltraStar 2 XP 34550 (7200 RPM)	8.5ms	-	Ultra SCSI 3	885	945
4.5GB	UltraStar 2 XP 34550W	8.5ms	16.2 MB/Sec.	F&W Ultra SCSI 3	935	995
9.1GB	UltraStar 2 XP 39100W	7.9ms	-	Ultra SCSI 3	1745	1805
9.1GB	UltraStar 2 XP Wide 39100W	7.9ms	15 MB/Sec.	F&W Ultra SCSI 3	1795	1880

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## Micropolis Drives MICROPOLIS

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4.3GB	Microp. Tomahawk 4345	7.9ms	-	Ultra SCSI 3	885	945
4.5GB	Microp. Tomahawk 4345AV 7.9ms 2MB CACHE	-	-	F&W Ultra SCSI 3	970	1030
4.5GB	Microp. Tomahawk 4345W 7.9ms	-	-	F&W Ultra SCSI 3	935	995
4.5GB	Microp. Tomahawk 4345WAV 7.9ms 2MB CACHE	-	-	F&W Ultra SCSI 3	995	1055
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## Barracuda 2 Series Seagate

SIZE	DRIVE	SEEK TIME	RATE	INTERFACE	INT.	EXT.
2.5GB	Barracuda ST32171N	8ms	-	Ultra SCSI 3	715	775
2.5GB	Barracuda ST32171W	8ms	17.8 MB/Sec.	F&W Ultra SCSI 3	775	845
4.5GB	Barracuda LP ST34371N	7.9ms	-	Ultra SCSI 3	1110	1180
4.5GB	Barracuda LP ST34371W	7.9ms	17.8 MB/Sec.	F&W Ultra SCSI 3	1175	1245
9.1GB	Barracuda 19171N	7.9ms	-	Ultra SCSI 3	1995	2069
9.1GB	Barracuda 19171W	7.9ms	18 MB/Sec.	F&W Ultra SCSI 3	2075	2175
4.5GB	Cheetah ST34501W	7.9ms	(10,000 RPM)	F&W Ultra SCSI 3	1545	1645
9.0GB	Elite ST410800W (5400 RPM)	11ms	16MB/Sec.	F&W SCSI 2	1875	1975

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## Fujitsu Drives FUJITSU

SIZE	DRIVE	SEEK TIME	RATE	INTERFACE	INT.	EXT.
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4.5GB	Speed-Tuned for AV 512K Buffer	-	-	F&W Ultra SCSI 3	845	920
9 GB	F2959 Speed-Tuned for AV 8ms 512K Buffer	-	-	Ultra SCSI 3	1465	1525
9 GB	F2959W Speed-Tuned for AV 8ms 512K Buffer	-	-	F&W Ultra SCSI 3	1475	1550

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2.1GB Tempest	QM32150TMS	10.5ms	Ultra SCSI-3	4500	'299	'359
3.2GB Tempest	QM33200TMA	11ms	Fast ATA-2 (IDE)	4500	'289	----
3.2GB Tempest	QM33255TMS	10.5ms	Ultra SCSI-3	4500	'369	'429
3.8GB Tempest	QM33840TMA	11ms	Fast ATA-2 (IDE)	4500	'329	----
4.5GB Atlas II	QM34550ALS	8ms	Ultra SCSI-3	7200	'839	'899
4.5GB Atlas II	QM34550ALW	8ms	UltraWide SCSI-3	7200	'999	'1099
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4.3GB Enterprise	WDE4360W	8ms	UltraWide SCSI-3	7200	'929	'1029

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2.1GB Barracuda 4LP	ST32171W	8.5ms	UltraWide SCSI-3	7200	'789	'889
4.3GB Barracuda 4LP	ST34371N	8.5ms	Ultra SCSI-3	7200	'1039	'1099
4.3GB Barracuda 4LP	ST34371W	8.5ms	UltraWide SCSI-3	7200	'1099	'1199
4.3GB Cheetah	ST34501N	8ms	Ultra SCSI-3	10000	'1499	'1559
4.3GB Cheetah	ST34501W	8ms	UltraWide SCSI-3	10000	'1599	'1699
9.1GB Barracuda 9	ST19171N	8ms	Ultra SCSI-3	7200	'1959	'2019
9.1GB Barracuda 9	ST19171W	8ms	UltraWide SCSI-3	7200	'1999	'2099
9.1GB Elite 9	ST410800N	11ms	Fast SCSI-2	5400	'1999	'2099
9.1GB Elite 9	ST410800W	11ms	Fast&Wide SCSI-2	5400	'2099	'2219
23GB Elite 23	ST423451N	8ms	Fast SCSI-2	5400	'4299	'4399
23GB Elite 23	ST423451W	8ms	Fast&Wide SCSI-2	5400	'4329	'4449

**TOSHIBA**

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Description	Model	Access	Interface	RPM	Int	Ext
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270MB	\$57ea	\$56ea	\$55ea
EZ135MB	\$24.95ea	\$23.95ea	\$23ea
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Model: S106 1024

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**RADIUS**

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A143 1009	Xclaim G4 4MB PCI graphics card	\$339.95
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**\$289**

Model: W010 1028

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W010 1026	Art II 4x5	\$139
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W010 1029	Art II 12x12	\$419
W010 1031	Art II 6x8 w/Photoshop 4.0	\$749

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**\$165**

Model: U020 1021

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B020 1010	33.6FLXMAC Fax/Modem	\$74.95
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**MEGAHERTZ**

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**U.S. ROBOTICS**

U020 1025	33.6 Sportster Voice for Mac 33.6 data	\$195
U020 1021	33.6 Sportster for Mac 33.6 data	\$165
U020 1056	56 K Sportster Modem	\$219

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**\$249**

Model: V029 1008

**AGFA**

A055 1022	Agfa SnapScan for MAC 600DPI 24-Bit	\$299
A055 1011	Agfa StudioScan II	\$499
A055 1015	Agfa StudioStar LE w/PhotoShop LE	\$750
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E045 1028	Epson Expression 636 Actual Model	\$1289
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**\$449**

Model: E047 1035

**EPSON**

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G037 1011	XL800 8 ppm PS	\$2299
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**\$159**

Model: B070 1040

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B070 1061	2 Slot Rapid Charger for 1400	\$119.95
B070 1060	9V Battery for 1400	\$139.95
B070 1046	STD Battery 5300/190	\$79.00
B070 1022	Hi-Cap Battery 5300/190	\$178.95
B070 1033	Mini AC Adapter 5300/190	\$69.00
B070 1040	STD Battery/Charger Bundle for 5300/190	\$159.00

**VST**

V054 1009	1400 Battery	\$109.95
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**CLARIS**

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C089 1025	ClarisWorks 4.0 w/AICX	\$116.95
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C309 1017	COREL DRAW 6.0 Suite for users of previous versions	\$369.95
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**EXTENSIO**

E070 1003	QX-Tools v2.0	\$99.95
E070 1005	PhotoTools v1.0	\$89.95
E070 1003	PhotoTools v1.0 & QX-Tools v2.0 Bundle	\$149.95

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F039 1003	Painter 4.0 upgrade	\$119.00
F039 1017	Painter (upgrade)	\$144.00
F039 1055	Painter (upgrade)	\$144.00
F039 1059	Painter 2	\$119.95
F039 1044	Ray Dream Studio 4.1	\$265.95

**Price after \$100 mail-in rebate from Fractal**

**SoftWindows 95 4.0**

**\$149**

Model: I029 1025

**INSIGNIA**

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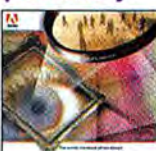
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125-132

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Bar Coding		133
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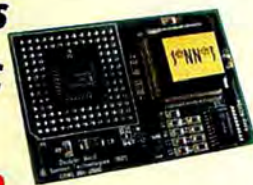
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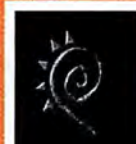
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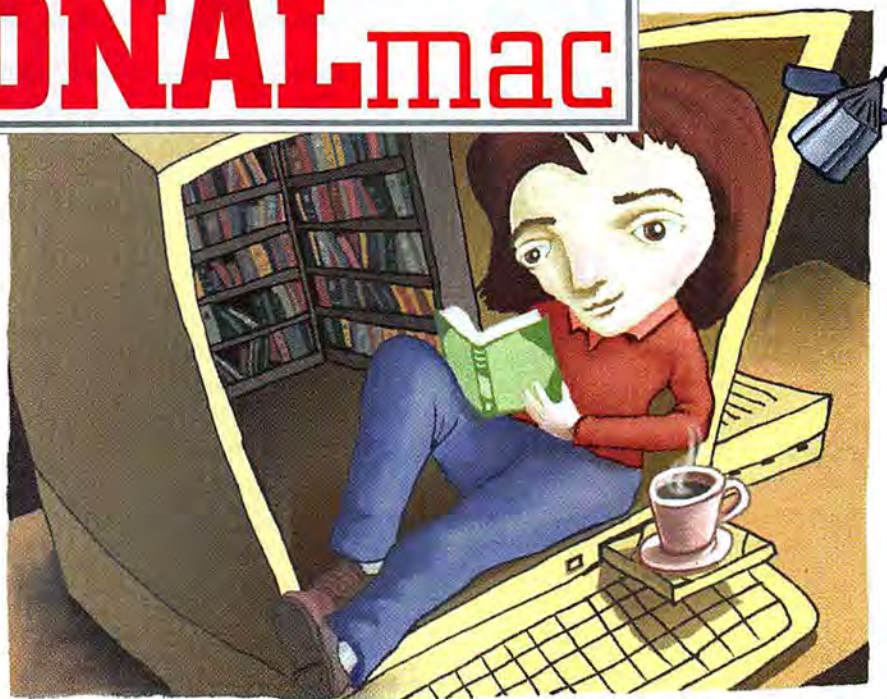
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# PERSONALmac

The most convenient reference library is the one in your Mac, if you have the right software.



By Tina Velgos

## The Reference Desk

**MY HOME REFERENCE LIBRARY** doesn't consist of shelves and shelves of books. It consists of a handful of CD-ROMs, my Mac, and a connection to the Web. Even though my local library is often closed when I do research, I'm never at a loss for material. In the wee hours, I can do research for an upcoming article on LCD projectors and I can trace the history of projected images all the way back to cave dwellers.

I'll never stop using the vast number of books I can reach for on my

local library's shelves, but frankly, I've found that using Mac software and the Internet saves me time and gives me most of the information I need. Not all reference software does what I need or does it well, however. Much of what's available for the Mac is choice, but there are some serious drawbacks to some of what's out there. Here's a guide to help you decide which software deserves a spot in your own software reference library. Besides helping you with your work, my last tool can even help you find the perfect way to end a hard day of research.

### A Word on Dictionaries

If you reference a dictionary often, you'll benefit from an electronic one. It will not only save you from having to lug heavy books (assuming you carry a PowerBook anyway) but will also search for words for you. Here are two of my favorite dictionaries:

**The American Heritage Talking Dictionary** ▼ (ⓂⓂⓂ; \$39.95 list), from SoftKey (800-227-5609 or 617-

494-1200), is particularly handy when you're not sure how to pronounce a word. That's because it can read aloud 72,000 of the whopping 200,000 words it contains. It also includes 1,500 photos and illustrations and 50 minimovies, such as a clip of a flower blooming. You also get a thesaurus of 1.5 million synonyms. Overall, this dictionary is affordable and fairly comprehensive.

If you're a true word nerd and the definitions you get from an average dictionary just aren't satisfying, then what you need is the **Oxford English Dictionary (OED)**, second edition (ⓂⓂⓂ; \$395 list), from Oxford University Press (800-451-7556 or 212-726-6246). This dictionary gives you the historical context for thousands of words and phrases. A search for the word *etymology*, for instance, brings up quotes that go back hundreds of years, such as this one from 1725: "This tracing of a word to its original... is sometimes a very precarious thing." The program's features include a Date Filter, for finding language used in a certain time period, and an impressively fast search engine that lets you find all occurrences of a word or a phrase much faster than you could look them up yourself.

This software isn't without problems, though. It may be fun for uncovering the history of a word, but the interface is no fun to look at. It's a tad on the ancient side — just black text on a white background with cryptic buttons. Rather than having one integrated window, it gives you three separate windows you must switch among in order to do searches and read text. Despite the awkward look, if you need to truly understand a word and you can afford \$400, this is a must-have for your software library.

If you don't want to buy the software, you can look up words free at [dictionary.com](http://www.dictionnaire.com/) (<http://www.dictionnaire.com/>), which has definitions from several dictionaries. You can find even more definitions in OneLook Dictionaries' 74 dictionaries, although you'll have to



# You Gotta Love A Guy Who Thinks The Bureau of Alcohol, Tobacco & Firearms is a Convenience Store

"Absolutely the best first-person game of the year,  
bar none...Duke Nukem is the undisputed king."

*Boot Magazine*

"A perfect 10!"

*Computer Player*

"★★★★★" (5 out of 5 stars)

*Computer Life*

"★★★★★" (5 out of 5 stars)

*PC Games*

"...it makes pretty much every PC game  
we've seen - DOOM included -  
look slightly dull."

*PC Gamer*

"Duke is king."

*Computer Gaming World*

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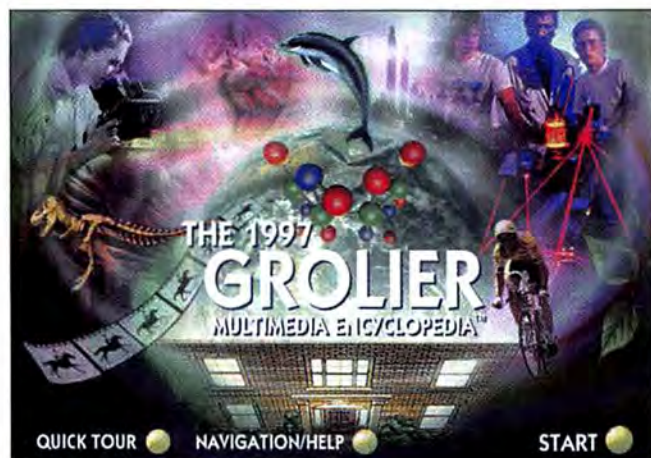
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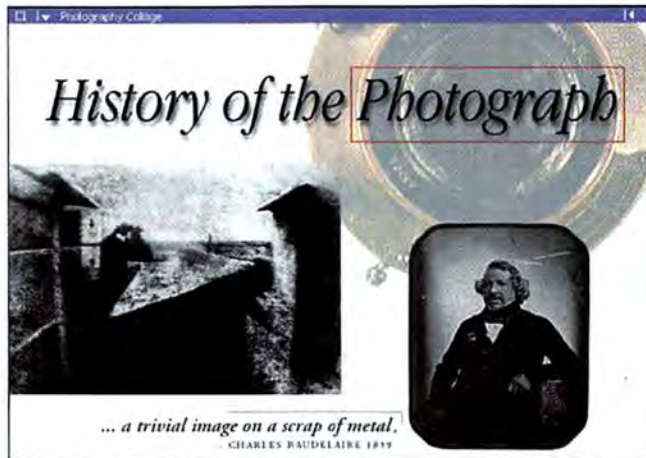


put up with the site's ads. If it's not definitions you need but rather synonyms, check out Roget's Internet Thesaurus (<http://www.thesaurus.com/>).

### Volumes on Encyclopedias

I love the concept of accessing an entire encyclopedia on CD-ROM. It's not only an efficient use of space but also makes creating projects simple, since you can cut and paste information and photos and print what you want. Mac users can choose between two excellent encyclopedias.

It's safe to say that ▲ **The 1997 Grolier Multimedia Encyclopedia** (★★★★; \$49.95 list), from Grolier Interactive (800-336-3686 or 203-797-3530), is the most Mac-friendly encyclopedia available. The interface makes it easy to access articles, movies, pictures, sounds, and an atlas that has over 1,200 detailed maps without having to wade through pages of unnecessary information. This comprehensive software contains 50,000 articles, links to thousands of prescreened Web sites, up to 60 hours of free Internet



access with free Netscape Navigator software, and 15 hours of music and sounds. You're also bound to enjoy its 16 informative tours on various topics, such as my personal favorite — human anatomy, where the software lets you rotate, take apart, and assemble a human skull.

You'll either love or hate your other choice: ▲ **Encarta 97 Encyclopedia Deluxe Edition** (★★★★; \$79.95 list), from Microsoft (800-426-9400 or 206-882-8080). There's plenty to love — this two-disc set is loaded with detailed articles, pictures, videos, animations,

guided tours, timelines, and an atlas. You can also access the Internet to obtain free monthly updates to the encyclopedia and check out links to magazines, newspapers, reference books, and other resources.

Hmm, does having two CD-ROMs mean twice the fun? Not exactly. When you want to play with the toys — you know, watch a video or listen to music or audio — you have to insert the second disc. Switching back and forth becomes annoying fast. To make matters worse, the interface seems designed for Windows 95, which means that

# There's a faster, cleaner



Houston, we have liftoff. Presenting the Apple® Internet Connection Kit. Everything you need to blast onto the Internet, browse the web, and send e-mail in one simple to install, no hassle package. So what do you get? Well, the kit comes complete with Netscape Navigator™ 3.0 and Claris Em@iler™ Lite software, plus QuickTime® VR Player, RealAudio™ Player, Macromedia Shockwave, Adobe™ Acrobat™ Reader, Farallon's Look@Me, and a host of other software that installs easily in just minutes. As if that weren't enough, Apple Internet Dialer will even help you select an Internet Service Provider, and set up an account with just a few clicks of your mouse. And if you have any problems, Apple Guide online help can answer any Internet related questions you may have —



navigating is at times far from obvious for Mac users. Thanks, Bill!

If you're willing to shell out \$14.95 per month, check out Britannica Online (<http://www.britannica.com/>).

### Reels of News

Dictionaries and encyclopedias give you good general information on a topic, but if you want to hear the kind of reports you can get only from a news source, you need **ABC NewsLinks** (★★★★; \$29.99 list), from Creative Wonders (800-543-9778 or 415-482-2400). *ABC News*

anchor Forrest Sawyer gives you the news angle on worldwide events. Besides watching TV news footage, you can also look up statistics, maps, country profiles, and time lines. The *Names and Faces* section adds extra flavor to this software — it lets you get short biographies and quotes from such famous personalities as Einstein and Madonna.

News is ever changing, and so is this software's content. You can download daily news updates from America Online or from the ABC News/Creative Wonders Web site to add to the ABC NewsLinks software.

### References to References

Although we've mentioned several Internet reference sites, you can find even more at the Internet Public Library (<http://ipl.sils.umich.edu/>). This is one of the best places to begin research on the Web, because it's well organized and filled with links. Also, Tara Calishain's book *The Official Netscape Guide to Internet Research* (★★★★; Ventana Communications Group, 1997; \$29.99) is loaded with URLs for all kinds of reference sites. It also describes the best ways to access, organize, cite, and post information on the Net. If you're an experienced Web surfer, you can skip the first three chapters, but the rest of the book has many useful insights. The writing is candid and entertaining.

### Research for the Fun of It

There's one more reference guide that every thorough researcher needs — **▲ Cinemania 97** (★★★★; \$34.95 list), from Microsoft. It may not contribute directly to writing a profound paper or to an expert understanding of a topic, but it will help with your postproject research — finding good entertainment.

Unlike the other Microsoft

product I review here, *Cinemania 97* has an interface any Mac user could love. It makes it easy to get at the information you're looking for. The movies the software describes are fairly current, and the critiques are helpful. Learn fun-filled facts on over 10,000 movie personalities, read more than 4,500 profiles of directors, and view over 1,000 movie stills that capture memorable performances. Although *Cinemania 97* contains only 30 video clips, it includes 150 movie-dialogue sound clips — an impressive number. New this year in *Cinemania* are *Celebrity Tours* — behind-the-scenes looks at movie greats.

### Endnotes

What more could I want from a reference library? It's compact and yet full of as much information as I could get from volumes of books. It's enhanced with sound and video, and I don't have to wait for the local library to open. Now if only it would pop my popcorn as well as help me select a good video. ☺

*Tina Velgos is a technology journalist who reviews edutainment software, hardware, and computer books for her own Web site, The Review Zone (<http://www.TheReviewZone.com/>).*

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# The Game Room

BY ROMAN LOYOLA

**SERIOUS GAMERS DON'T JUST** play games; they experience them. It's not enough to have cool software — you need hardware too.

## ThrustMaster Steering Wheel

What if you had to drive your car with your keyboard? Until recently, that's all you had for playing driving games on your Mac. Finally, we have a steering wheel, the ThrustMaster Formula T2 (see photo), that you can use without buying a converter. It also comes with a set of pedals. The steering wheel mounts on your desk, and you can easily move it by unscrewing the mounting clips. This comfortable wheel is padded with rubber and firmly mounted on a console that includes two buttons and a miniature stick shift. Unfortunately, the stick shift seems unsturdy and the brake and accelerator pedals, although rugged, are small and close to each other. From time to time, I accidentally pushed down both with one foot.

The Formula T2 comes with a utility for calibrating the wheel specifically for the games on your Mac. The utility is easy to use, but sometimes it doesn't feel like your settings have actually been set. In one instance, the stick shift was somehow set to act as my accelerator.

## Sierra On-Line Racing Games

I used the Formula T2 with IndyCar Racing and NASCAR Racing (shown in background). If you're hungry for a racing game, you'll probably enjoy

either of these Sierra On-Line games. They feature numerous tracks, good action, a paint tool for creating custom cars and uniforms, and excellent graphics. The graphics do come at a price, though — if you try running either game on a Power Mac 6100 or 7100, you'll find it unplayable, even when you turn a lot of the shapes and textures off. This game is for PowerPC systems only and should be played on one with a fast (100-MHz or faster) processor.

## CH Products' Pedals and Joystick

Ace digital pilots who want to get as close as possible to the experience of flying a plane should invest in one of CH Products' sets of pedals, CH Pedals or CH Pro Pedals. You can configure them to control the rudder of a plane or a helicopter, or you can use them as the brake and accelerator for driving. The CH Pro Pedals also slide back and forth to give you even better control. Each set has a 7-foot-long ADB cable with a pass-through connector. The pedals themselves are sturdy and large enough for big-footed fellows like me (I wear a size-13 shoe). The pedals might be a bit large for kids with a shoe size smaller than a children's 5.

Don't count on being able to use the pedals with every game. Although you're free to configure them for use in games other than flight sims, the pedals aren't always well suited. I tried them with

Marathon Infinity and found the experience confusing.

The perfect complement for either of the CH pedal sets is the FlightStick Pro. It's sturdy and has a trigger, three button controls, and an eight-way switch. Southpaws will be glad to know it's designed to be used with either hand. It's a pretty big joystick, though — if you have small hands, this might not be for you.

## Altec Lansing Speakers

The built-in Mac speaker is such a wimp. For the ultimate gaming experience, you need to get a pair of external speakers. The Altec Lansing ACS55 Power Gaming Speaker System is great for gamers who want to feel their sound, not just hear it.

These speakers come with a pair of midrange satellites with tweeters and a subwoofer. The subwoofer is a 40-watt, 6.5-inch-long throw woofer that sits underneath your desk and adds some serious kick to your sound. The bass is deep, effective, and at times thunderous. It's a tiny bit fuzzy, but adjusting the output of the subwoofer should help alleviate the fuzziness.

The 12-watt satellites each have a 3-inch midrange driver and a .5-inch tweeter driver. The Altec Lansing speakers are also capable of adjustable Surround Sound, which makes you feel as if sound is engulfing you, not just coming directly at you. One strange effect of the Surround Sound is that at higher levels, there doesn't seem to be a difference between foreground and background sound — everything sounds as if it's on the same plane.

The satellites are uniquely shaped to project the Surround Sound — they don't look like typical computer speakers. In fact, they're downright ugly. But inside the ugly exterior is some sweet-sounding hardware that's great for games.

## Cambridge SoundWorks Sound System

If you want a top-flight sound system for your Mac for everything from games to music and you have the money to spend (around \$350), check out the Cambridge SoundWorks MicroWorks sound system. It has the cleanest sound we've heard from any computer speaker system.

The 42-watt subwoofer produces clean bass, and the 12-watt satellites

produce excellent highs and warm midrange sound. The overall sound is very clean and clear, and it doesn't produce the typical muddiness (even with poorly recorded sound files) you get from other speakers. You can actually hear a bass player or guitarist pluck strings. The satellites are small, measuring 4 x 4 x 3.63 inches, but the subwoofer is a huge 17.5 x 9 x 8 inches — you'd better have plenty of foot space under your desk. The speakers come in black or white. 

*Roman Loyola is a MacUser associate editor. Assistant editor LaMont Ridgell also contributed to this report.*

### GAME POINT

#### Altec Lansing ACS55: Power Gaming Speaker System ★★★★★

Price: \$200 (estimated street).  
Company: Altec Lansing Technologies, Milford, PA; 800-258-3288 or 717-296-2818; <http://www.altecmm.com/>.  
Reader Service: Circle #414.

#### Cambridge SoundWorks MicroWorks ★★★★★

Price: \$350 (estimated street).  
Company: Cambridge SoundWorks, Newton, MA; 800-367-4434 or 617-332-5936; <http://www.hifi.com/>.  
Reader Service: Circle #415.

#### CH Pedals ★★★★★

Price: \$80 (estimated street).  
Company: CH Products.

#### CH Pro Pedals ★★★★★

Price: \$149.95 (list).  
Company: CH Products.

#### FlightStick Pro ★★★★★

Price: \$80 (estimated street).  
Company: CH Products, Vista, CA; 800-624-5804 or 619-598-2518; <http://www.chproducts.com/>.  
Reader Service: Circle #416.

#### IndyCar Racing ★★★★★

Price: \$60 (estimated street).  
Company: Sierra On-Line.

#### NASCAR Racing ★★★★★

Price: \$55 (estimated street).  
Company: Sierra On-Line, Bellevue, WA; 800-757-7707 or 206-649-9800; <http://www.sierra.com/>.  
Reader Service: Circle #417.

#### ThrustMaster Formula T2 ★★★★★

Price: \$155 (estimated street).  
Company: ThrustMaster, Hillsboro, OR; 503-615-3200; <http://www.thrustmaster.com/>.  
Reader Service: Circle #418.



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CIRCLE 95 ON READER SERVICE CARD



(New Version 5)



ANDY IHNATKO

# Control Freak

**I'VE REALLY GOT TO** try to stop praising the ADB I/O at every opportunity. Not only have I managed to annoy my friends and family to the point of excommunication — and keep in mind that my relationship with this group of people has survived even my annual Academy Awards rants — but I'm afraid that if I prove myself any *more* adept at product plugs, I'll get a phone call from *The Rosie O'Donnell Show* inviting me to guest-host.

But hey, my enthusiasm for this little device is well founded. For those of you who didn't read my most recent Mac Expo coverage on ZDNet Mac or haven't casually asked me what I was up to merely as a way to get a conversation going, the ADB I/O, from BeeHive Technologies (<http://www.bzzzzzz.com/>), is a relatively cheap little box about the size of a pack of cigarettes (100s) that plugs into your ADB port and lets you interface your Mac to Real-World stuff. Describing the full capabilities of this utterly frabjous accessory would really require an extensive and personally very lucrative feature article; what if I were to just describe the implications of its ability to open and close a bank of electrical switches or sense whether or not a switch is open or closed?

Think about all the cool stuff in your office that operates at the touch of a switch. Oh, wait, some of you have to work in the sort of office where you can get fired for wearing a tie with too much yellow in it. Well, think about the cool stuff in *my* office, then, such as my Darth Vader Electronic Bank. Drop in a coin (or press the button on its base), and the lights on Darth's chestpiece flash and he pivots left and right, delivers a line amid his theme music, and then draws and torches his lightsaber. On its own, it teaches the kids solid American values such as the relationship between the acquisition of wealth and the subsumption of the soul by a universal force of evil. But run two wires from that button into your ADB I/O, and Darth instantly becomes a Macintosh

peripheral! And because the ADB I/O can interface to eight switches, you can add the Artoo Detoo Electronic Bank *and* the See-Threepio Talking Action-Figure Storage Case, while leaving plenty of room to run sensor switches. Run two wires from the ADB I/O, to a magnetic reed switch (five bucks from Radio Shack), to your office fridge, and keep a log of accesses to your Dr. Pepper stash!

It's an absolute must-have Geek Box. If you're part of that segment of the populace



that can hook up a VCR without consulting a manual, you can build cool stuff with this ten minutes after opening the box. Not a week goes by in which I don't think of something else I'd like to build with the ADB I/O. It's absolutely, positively the worst blow to my personal productivity since that fateful day I first installed a Web browser.

But the basic concept is nothing new. For years, if you subscribed to geeky magazines, you could buy devices that plugged into any computer's serial port and accomplished much the same things (although you'd have to buy \$400 worth to get the ADB I/O's flexibility). No, what's special about the ADB I/O is that it's plugged into a Mac. And *that* means that you can control the ADB I/O, and the devices plugged therein, via AppleScript. (Musical cue: "Ode to Joy" swells.)

It means I can use Darth as a mantle clock, scripting the Finder to activate him every hour on the hour. It means that when it's late at night and I've lost about 70 percent of my capacity for rational thought and thus might as well read Usenet postings, I can sit back in my chair and lazily navigate with a little four-button joystick in my hand that sends different commands to NewsWatcher, depending on which direction I twitch the stick. It means, if I may be allowed to shift into Misunderstood Visionary mode for a moment, that when I'm away and the door to my office is opened, the ADB I/O can activate a script that takes a picture and e-mails it to me. And when I pick it up and see that a house pet is sleeping on my laser printer, I can send back a reply that, when picked up and processed by my mail program, will shoo the beast off by activating Darth.

In two words or less: Bad Craziness.

## Opportunity Box

In addition to giving me a cool tool to play with, BeeHive gives me another good way to explain what's so great about the Mac OS. Its focus has always been and — Tarim willing — always shall be about providing users with a box of Opportunities. Did AppleScript's engineers know they were providing me with the infrastructure for having my Mac set off my pager whenever the water in my aquarium gets too hot? Nope. Apple was, as usual, just creating the tools with which users can find their own solutions. And was I ever particularly interested in building robots? Not really. But as it has in so many other areas, my Mac made the mysteries accessible for me and thus Das Love Boot is now almost operational.

Is that, when all is said and done, the main difference between Apple and its chief competitor? The quiet, dignified wisdom of a Howard Johnson's place mat says it all: Microsoft wants to sell us fish. Apple wants to sell us fishing poles. 🐟

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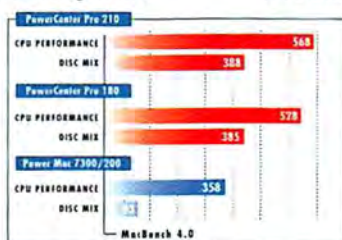


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