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Desktop Invaders

New PowerBook G3: Sleek, Fast, and Priced to Dominate

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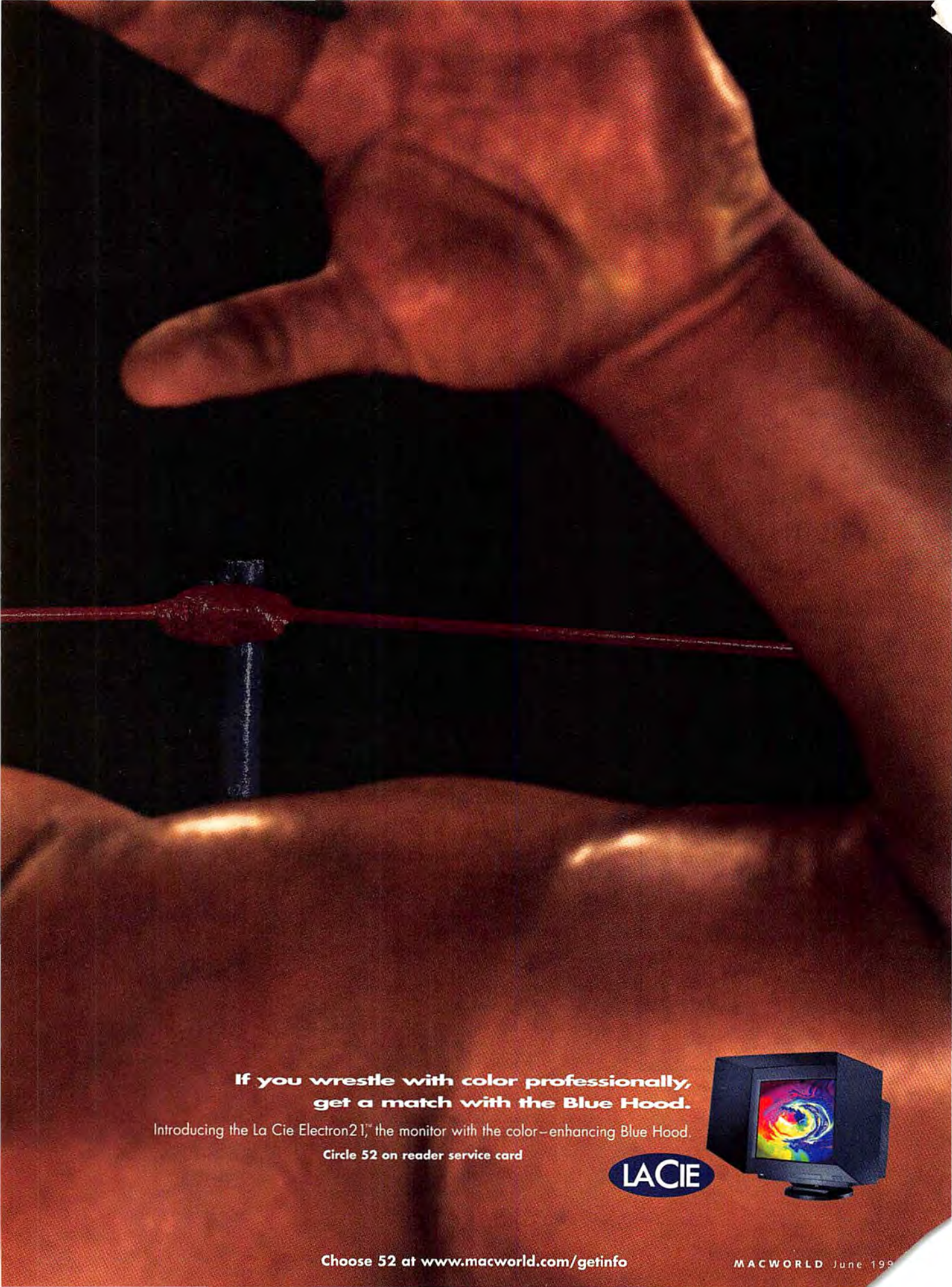
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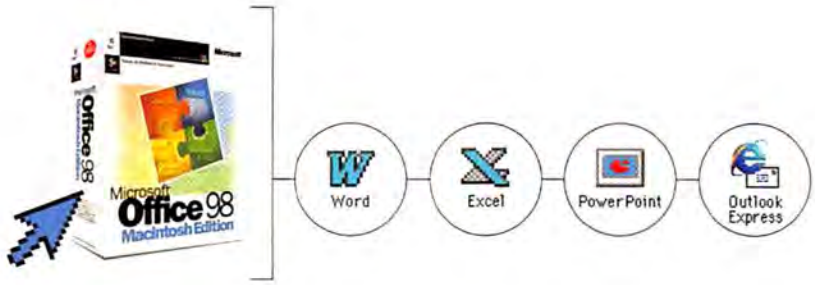

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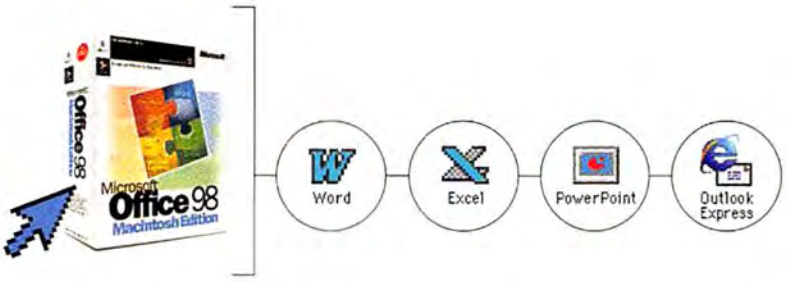

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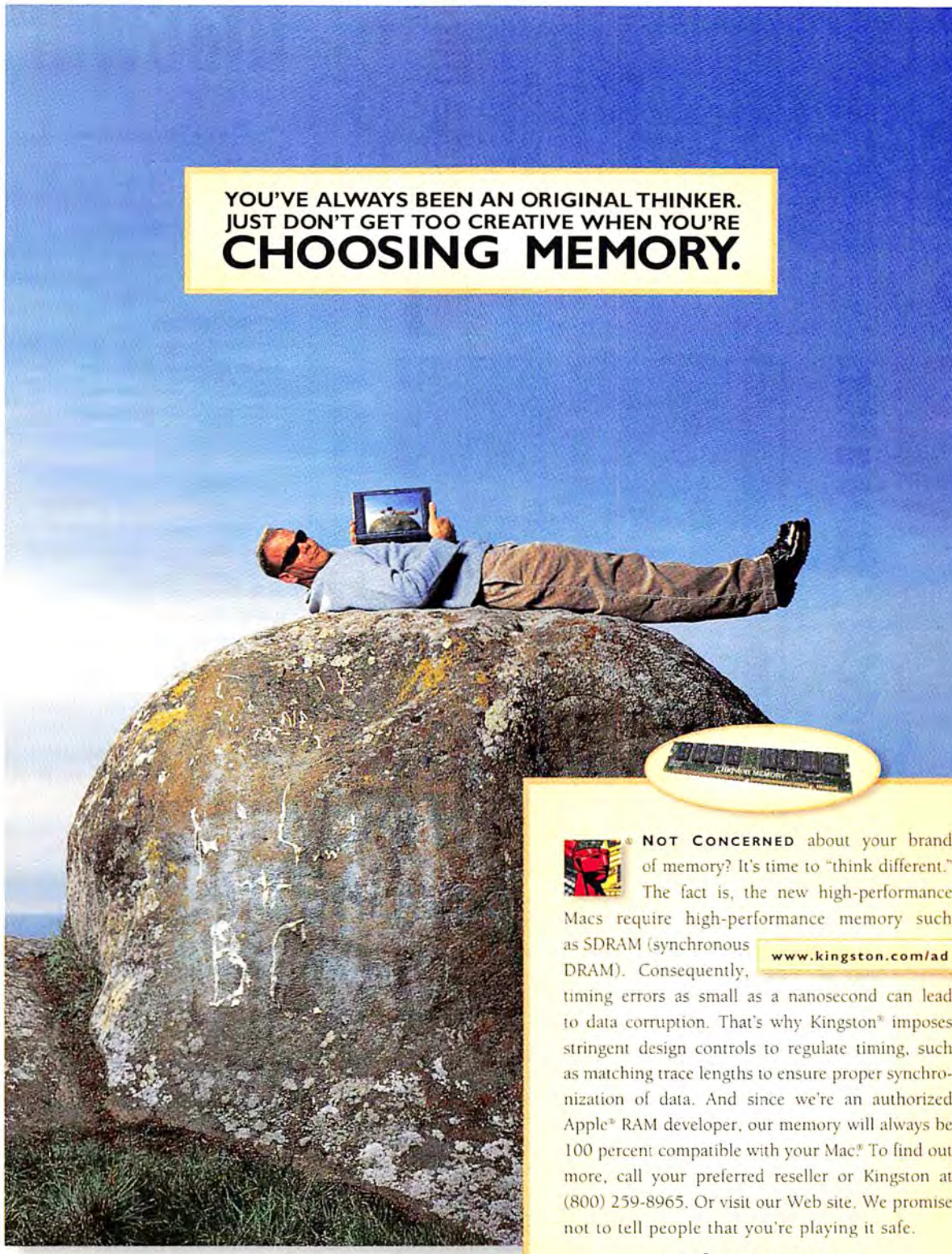

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*Macworld Lab; *Macworld Magazine*, April 1998, p. 73.

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BPA

From the creators of LightWave 3D

Image created with Inspire 3D

Unleash Your Creative Power With Inspire 3D

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Letters

On Microsoft's Repentance

THERE HAS BEEN A LOT OF EXCITEment about the new Microsoft Office 98, but I don't know how many people are aware of the "small print" ("Microsoft Repents," March 1998). The system requirements for Office 98 are a 120MHz or better PowerPC CPU. A 120MHz PowerPC chip for a word processor? I think that is ridiculous.

The life cycle of a computer in a design firm is such that the newer machines are for graphics use and the older ones are left for administrative work. Now it seems that the better machines will be needed for a word processor and the slower ones will be left for Adobe Photoshop.

CESAR BUENROSTRO-MORENO
Mexico City, Mexico

I ENJOYED YOUR ARTICLE ON OFFICE 98, but I must point out a mistake about Outlook Express. Author David Pogue stated that Outlook Express does not let users create folders. This is not true; I currently have five folders and multiple subfolders.

JOEL DONALDSON
Killeen, Texas

Sure enough, Microsoft added user folders in the release version. And while I'm making corrections: an editing slipup turned "most HTML e-mail is junk mail" into "most e-mail is junk mail." I'm really not a sociopath! —David Pogue

Quark UnImpress 4.0

BASED ON YOUR REVIEW OF QUARKXPress 4.0 and your recommendation that it was a "no-brainer upgrade for current users," I confidently plunked down

$400-plus and placed my order (*Reviews*, March 1998). I've been a happy XPress camper for nearly ten years and was looking forward to improvements to an already terrific product.

While I understand that your reviewers can't spend months working with a new version of a program, I think it would be wise to withhold your mouse ratings until some of us down here in the trenches have sent you on-the-job feedback. QuarkXPress 4.0 is riddled with bugs. Speed problems. Printing problems. Display problems. Font problems. The Quark Tech Forum is piled high with complaints from users who depend on XPress for their livelihood. And their complaints share a common theme: Why was this product released with so many glitches?

If your reviewer had put XPress 4.0 through even a few hours of normal use (printing separations, importing EPS files, running it on different systems) he would no doubt have discovered XPress 4.0's weaknesses. And then he would have done the responsible thing: written a review that alerted readers to the potential hazards of upgrading to what is, in reality, a beta version of QuarkXPress.

MIKE PRENTISS
Pittsburgh, Pennsylvania

AFTER INSTALLING QUARKXPRESS 4.0 with some difficulty, I discovered that my XTensions didn't work—including those that came as part of the 3.32 package. My subsequent conversation with tech support was almost laughable—I was told to get in touch with the XTensions developers to obtain updates.

There's no argument that QuarkXPress 3.3 is the de facto standard for desktop publishing. Version 4.0 is quite another matter; it can hardly be considered stable or reliable enough to use for production. My requirements for a viable piece of software are that it install easily and perform as it has been advertised to; XPress 4.0 sadly fails to meet those requirements.

CHUCK MCKINNEY
via Macworld Online

From various postings we've seen, it's clear that service bureaus and QuarkXPress 4.0 end users are having issues such as those you describe. We recommend that you go to www.quark.com to download the 4.02r1 updater, which should solve some problems. As for XTensions, each new QuarkXPress revision breaks XTensions for previous versions—but of the 50-odd pre-4.0 XTensions I tested on the Mac, the vast majority worked fine.—Galen Gruman

Higher-Ed Mac Flak

AS A LONGTIME YALE FACULTY member, I found David Pogue's assessment of the Apple situation at Yale

continues

JEFF NEUMANN

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CORRECTIONS

- *The price of Kensington's Orbit Trackball is $70, not $39 ("The Mac's Brightest Stars," March 1998).*
- *In "The Modem Showdown" (April 1998), the photo on page 89 was taken by Giampiero Benvenuti and the photo on page 90 was taken by Suzanne Roady.*

both accurate and prescient (*The Desktop Critic*, March 1998). I had a long discussion with Mr. Updegrove (director of information technology services [ITS]) last summer about his don't-buy-a-Mac letter to incoming freshmen. He stated his main motivation for writing it was fear that incoming students would buy Apple computers from ITS's store and then blame Yale if they had to buy another computer before graduating. The only reason I could see why they might have to buy another computer is if ITS itself made it impossible for undergraduates to access the Yale network from a Mac.

My initial reaction to ITS's pronouncement was horror. Then I realized we have not gotten much support from ITS anyway, so its withdrawal of support means little to my mostly Mac lab. We have even gotten opposition at times, and were forced to set up our own network and maintain our own Web site. Anyone facing a similar scenario should keep in mind that you're lucky to have a Mac, as they are easier to set up and maintain yourself—and Mac troubleshooting courses can teach you to manage on your own.

JOHN FLORY, PH.D.
Department of Genetics, Yale University
New Haven, Connecticut

DAVID POGUE'S STATEMENT THAT Brown University is phasing out Macintoshes is not correct. The information Brown provided to students entering in fall 1997 neither recommended PCs nor discouraged Macs. The university continues to support both Macs and PCs.

We have seen a shift toward PC ownership among incoming students. Each year we distribute packets of information to incoming students who want to connect their computers to the campus network. In September 1997, approximately 75 percent of the packets distributed were for computers running the Windows OS and 25 percent were for those running the Mac OS—leading us to estimate that 75 percent of first-year students who own computers have PCs and 25 percent have Macintoshes. Market forces—not university dictates—will determine Apple's presence on campuses.

MARY MCCLURE
Director of Academic & User Services, Computer Information Services, Brown University
Providence, Rhode Island

OS Update Uncertainty

IN YOUR ARTICLE ON MAC OS 8.1 and HFS+ ("Mac OS Update Frees Your Hard Drive," *News*, March 1998), you state that people with Mac clones who want to upgrade their hard drives to HFS+ need two external hard drives (one to back up data and one to use as a start-up disk when installing OS 8.1) unless they purchase Alsoft's PlusMaker. Why can't we simply use a single high-capacity hard drive to install 8.1 and back up data, and also use that disk as a start-up disk from which to convert the original hard disk? Alternatively, why not install OS 8.1 on a Zip cartridge and boot from that?

TOM NUGENT
Cambridge, Massachusetts

Either scenario would work, although Zip cartridges have the limitation of relatively small capacity. But before you try either method, don't forget to back up your old System Folder in case something goes wrong.—Henry Bortman

IN YOUR ARTICLE ABOUT UPDATing to Mac OS 8.1, you left out an important warning to your readers. Before updating, they must check with the developers of utilities they use. For example, neither Symantec's Norton Utilities nor Alsoft's DiskExpress Pro are HFS+-compatible. Symantec and Alsoft may take months to update their programs, and both say not to use their programs on a drive formatted with HFS+. Evidently, these developers had to wait until Apple released a final version of HFS+ before updating these applications. There may be other

continues

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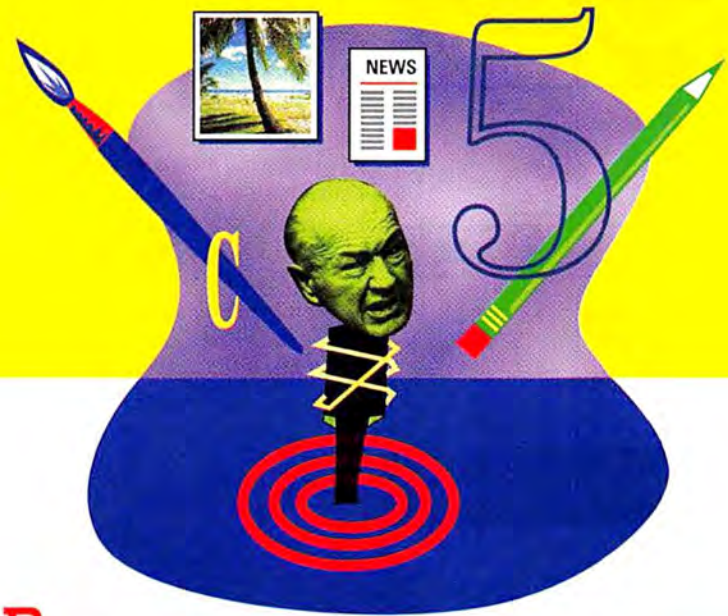

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programs with the same problem. Please, no matter how enthused you are about major operating-system updates, fully warn your readers of possible problems such as these.

JAMIE LOEB
Montgomery, Alabama

As of early March, neither Norton Utilities for the Macintosh nor Alsoft's DiskExpress Pro supported HFS+, although both companies promise support for the new format in the near future.—Ed.

Jeers for the G3

GALEN GRUMAN'S REVIEW OF PowerPC 750 systems really hit the mark (March 1998). When a Power Computing PowerBase 180 owner can purchase a 250MHz G3 upgrade card from Power Logix that will enable this low-end Mac system to blow away the first Mac G3's, that says a lot about Apple's present state of innovation—that is, the lack thereof.

JOHN PROTOPAPAS
Huntington Station, New York

Portable Pleasure

ONE FEATURE YOU OVERLOOKED in your review of portable projectors was dual voltage capabilities ("Prime-Time Projectors," March 1998). Making presentations overseas, as well as in the United States, led me to choose the CTX Opto EZ Pro 580 over your Editors' Choice Sharp XG-NV1U (and pocket the $1,500 difference). I just got back from Europe, and the EZ Pro 580's no-switch voltage sensing, along with its retractable lens, light weight, and cable carrying case made this unit a welcome companion.

STEPHEN CONNORS
Cambridge, Massachusetts

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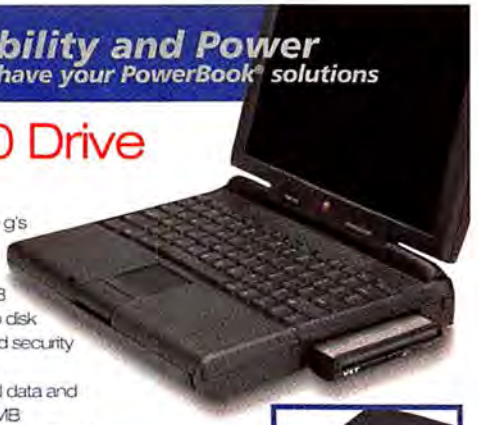

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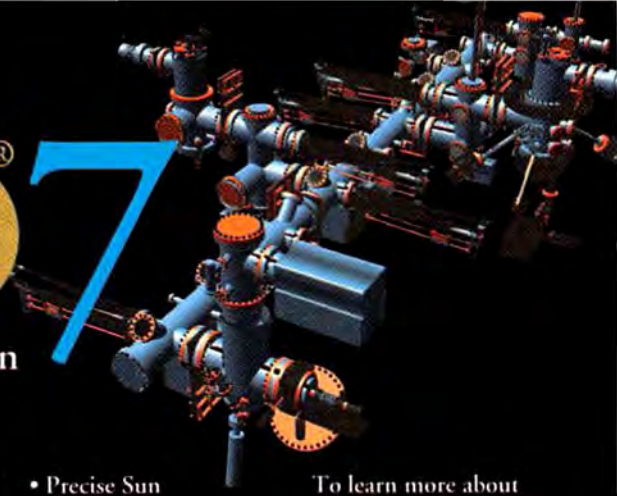

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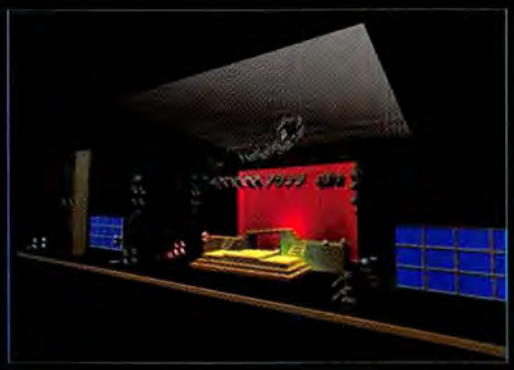

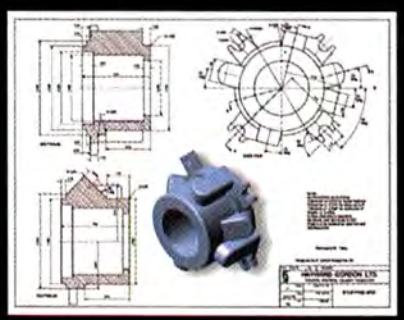

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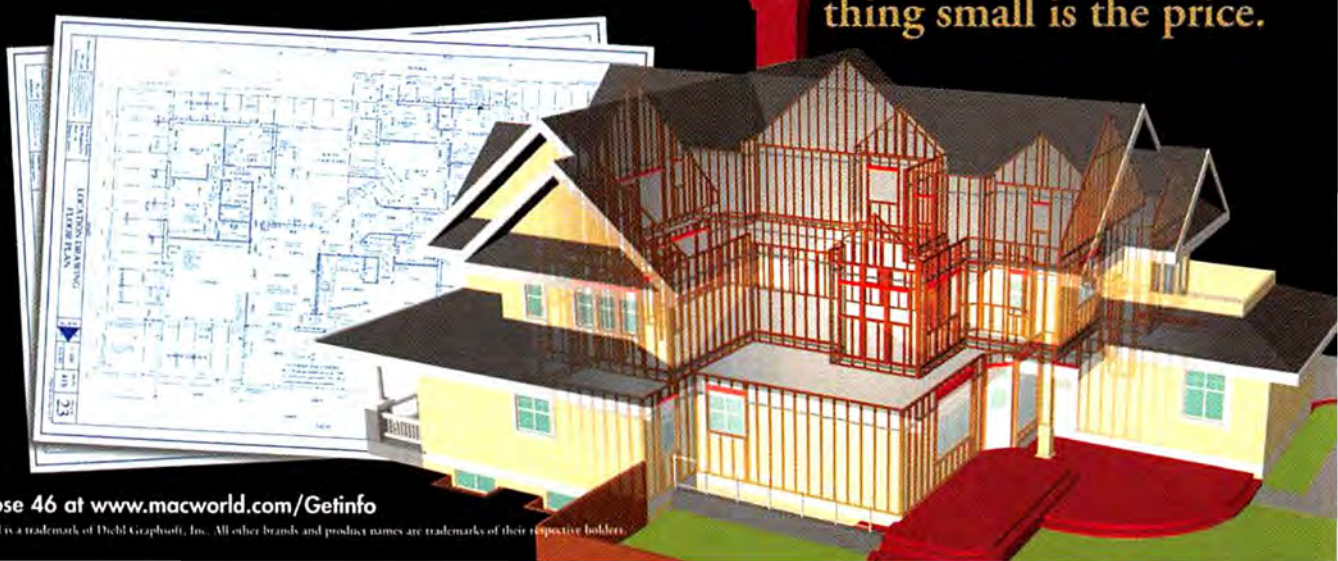

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The Vision Thing

by Andrew Gore

The Undiscovered Country

WALL STREET'S CONSUMER-LEVEL LUST COULD DRIVE THE MAC INTO NEW MARKETS

EUPHORIA IS NOT A WORD often associated with Apple these days. A constant stream of petty dramas combined with uncertainty about the Mac's future have conspired to seriously erode confidence in Apple and its products. To be a Mac user is usually to be dismissed as a fanatic, as if with a single word from our charismatic cult leader in Cupertino it'll be Jonestown cocktails all around.

So why is it that the acolytes of the Bottom Line are suddenly giddy about Apple and its fortunes? As of early April, Apple was the best-performing technology stock on Wall Street.

If you ask stock analysts about this sudden reversal of fortune, they'll give you a list of practical-sounding explanations: Apple stock is undervalued; Apple's new distribution strategies are enhancing margins; the company seems to be on the road to sustained profitability; the new G3 Power Macs are selling well.

But ply that same analyst with a few drinks, and you'll likely hear a different explanation: consumer Macs.

An All-Consuming Obsession

Despite every effort by what is arguably the greatest convergence of technological and marketing expertise in human history—the computer industry—there are still *a lot* of people in the world who can afford computers and don't have them.

Not even the breakthrough sub-$1,000 PC systems introduced late last year were able to penetrate this wall. The fact is, there are millions of potential computer users out there for whom even the siren song of the Internet is not strong enough to balance out having to sit down and learn Windows.

That's why the rumors that Apple will introduce an under-$1,000 G3 Mac sometime this year have pushed the company's stock up. After all, everyone knows that what Apple does best is make computers that are easy to use. Combine that with the tremendous brand recognition of that rainbow-colored logo and you've got a product that must be able to break the entry-level logjam.

There's only one problem with this theory: not even the Mac is easy enough to use for technophobes to buy into the digital revolution.

Now don't get me wrong—I think an under-$1,000 Mac is a great idea and could be a big success. There are a lot of Mac aficionados out there who haven't felt comfortable spending several thousand dollars for a Mac but will have a much easier time spending $1,000 for one. An inexpensive, cool-looking G3 Mac could be just the incentive to get those users to join the PowerPC generation.

JOHN RITTER

From Creator to Consumer

The real trick to reaching the least technically literate isn't to box up the same old computer and ship it with a three-digit price tag. It's to create a product that delivers the advantages of a computer without actually *resembling* one. And right on schedule, here's another juicy rumor for Wall Street: Apple is working on a "set-top media player," often referred to by the code name Columbus. I have no knowledge about whether Apple is working on such a device. But if it is, that makes a lot of sense.

Imagine a box that is a DVD player, capable of playing the ever-growing selection of movies available in that format. Add to that the ability to surf the Web. And top it off with the ability to send and receive e-mail (with an optional keyboard) and to play interactive games and educational CD-ROMs. If this little box could do all that—especially if it didn't cost much more than a regular DVD player—you could really have something.

Of course, Apple would be insane to try to execute such a strategy on its own. But if it could work in partnership with a major consumer-electronics company (and we aren't talking Bandai here), it could potentially be a huge winner.

Why? Because hidden under all the cosmetics and marketing spin promoting that box as an "enhanced DVD player" there would beat the heart of a Mac. And the Mac is still the premier platform for creating the very content that this box's owner wants to consume: Web sites, movies, and interactive CD-ROMs.

For the first time, content developers would be able to draw a straight line from their favorite platform for creating material to the preferred platform for playing back the fruits of their labor.

I just hope that amid all this consumer euphoria Apple doesn't forget its core audience: the people who create the content that would appear on that little box. They're the ones who will give Apple the edge it needs to break through to people who don't yet own a computer. **m**

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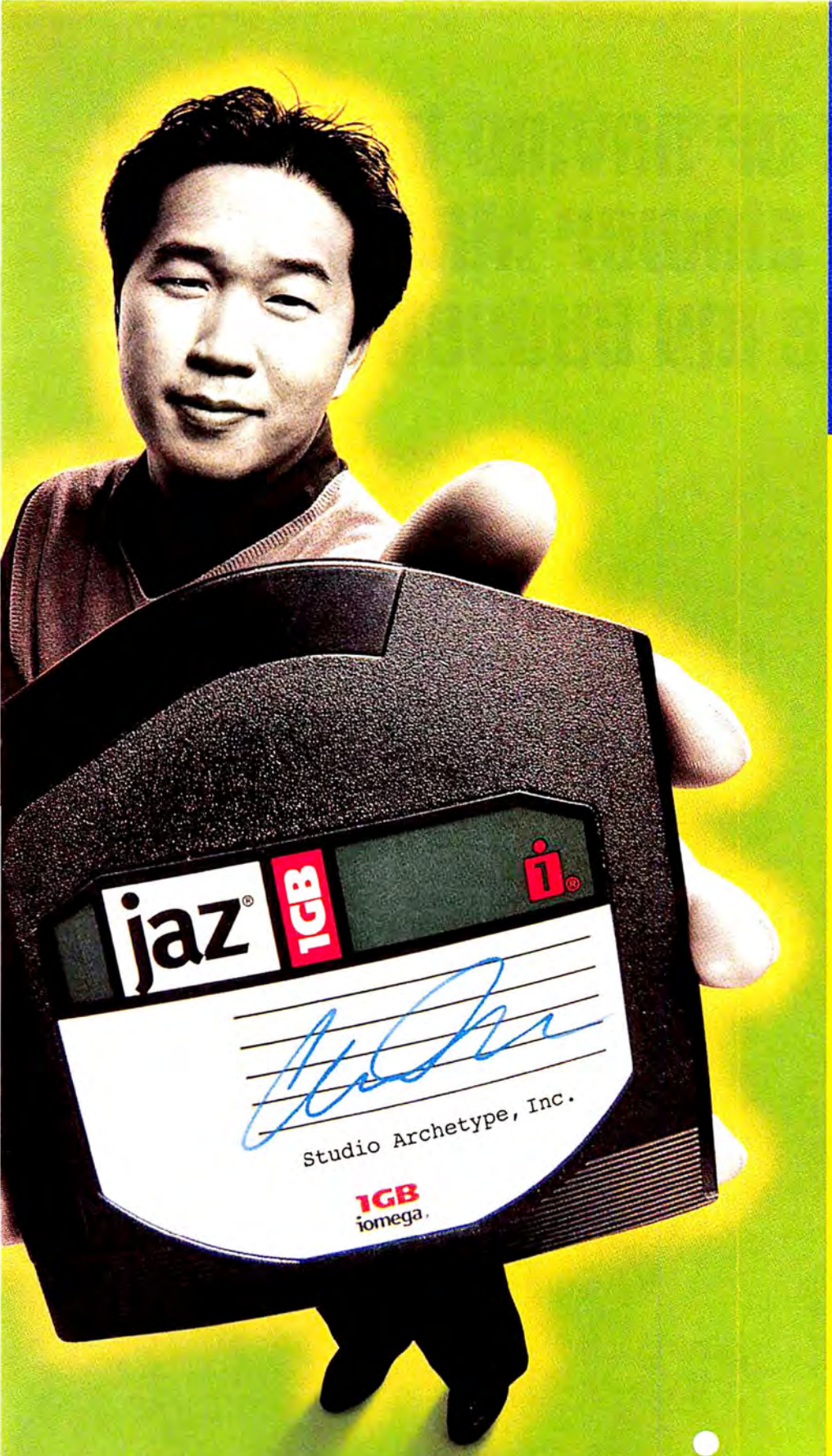

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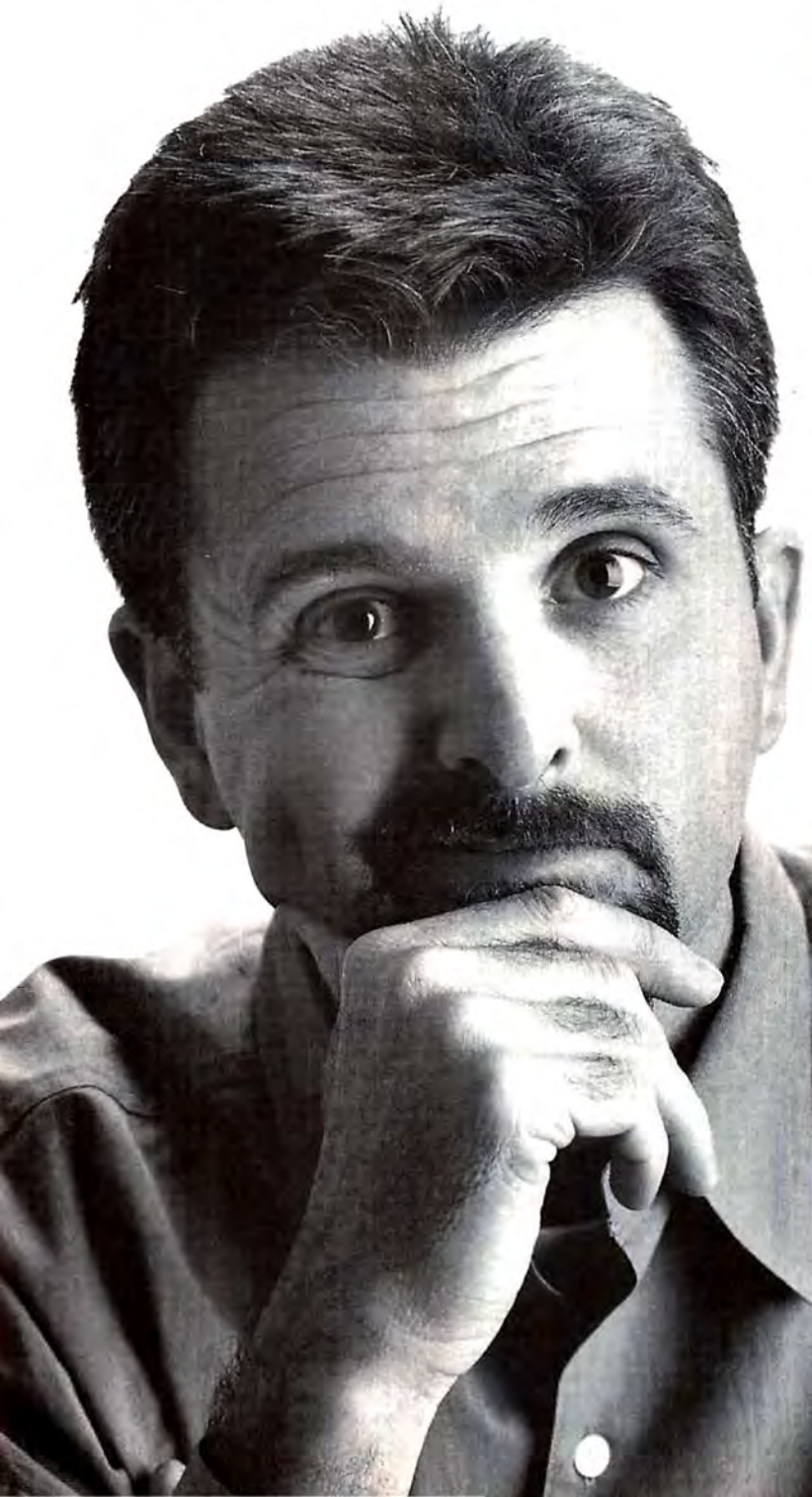
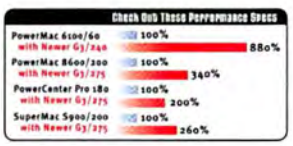


Sometimes Newer Is Smarter Than New.

In a perfect world, we all would buy a new, top-of-the-line Mac right now. Of course, there's that little thing called money, the stuff most of us don't have coming out of our ears. That's why you need a Newer Technology MAXpowr G3 processor upgrade card. They're easy to install and save you thousands of dollars compared to buying a whole new system.



Newer Technology makes processor upgrade cards for almost every Power Mac and are adding more machines to the list with faster processor speeds as you read this. With a MAXpowr G3 card, you'll have a faster processor with a much faster cache. In fact, the MAXpowr G3 card can make your old Mac one of the fastest desktop computers available even compared to Apple's new screaming G3 machines. Thanks to Newer Technology, your older, slower Power Mac has new life which makes waiting for a brand new machine a lot less painful.

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News

systems

Jobs Wows Publishers with New Hardware

COLORSYNC, NEW G3 CPUS HIGHLIGHT SEYBOLD NY KEYNOTE

by Stephen Beale

With Apple interim CEO Steve Jobs set to address attendees at the Seybold New York electronic publishing conference in March, many Apple-watchers expected big news, such as the announcement of a permanent CEO. His keynote turned out to be much less dramatic, but he still managed to impress a large audience of publishing professionals—one of the last bastions of Macintosh loyalty—with demonstrations of fast new hardware, an LCD monitor, and an updated version of Apple's ColorSync color-management software. He also announced that Apple will make ColorSync available for Microsoft Windows.

Toasting Intel In keeping with Apple's latest advertising campaign, which touts the G3 CPU's performance against that of Intel's Pentium II, Jobs unveiled the 300MHz Power Macintosh G3 (see "The Build-to-Order Dilemma," May 1998) and promptly set it against a 333MHz Pentium II–based Windows NT workstation from Compaq. The Power Mac appeared to be more than twice as fast as the Compaq workstation when performing a series of Adobe Photoshop operations. Then Jobs previewed a 400MHz G3 CPU that uses copper-wiring technology developed by IBM; it was about three times as fast as the 333MHz Pentium II.

The first Macs to include the new CPUs should appear by early 1999, Jobs said, adding that even faster hardware is on the way.

Flat Mac Jobs used the keynote to unveil Apple's first nonportable LCD monitor, the 15.1-inch Apple Studio Display. The monitor supports resolutions of up to 1,024 by 768 pixels and offers all the advantages of LCDs: a small footprint, low power consumption, no flicker, and minimal magnetic emissions. It is scheduled to ship in May, for $1,999. This would have been considered aggressive pricing a few months ago, but given recently plummeting prices for LCD monitors, Apple's display should be in the middle of the pack.

New ColorSync Jobs also announced the availability of

continues

BRYAN WIGGINS

ColorSync 2.5, an updated version of Apple's color-management technology, and said that Apple plans to make ColorSync available for Windows by the beginning of 1999.

Joining Jobs on stage, Adobe Systems' CEO John Warnock said that Adobe will support ColorSync in future Mac and Windows versions of Adobe Acrobat, Photoshop, Illustrator, and PageMaker; the Mac versions of Illustrator and PageMaker already support ColorSync.

Apple has long resisted making its core software technologies available for Windows, fearing that such moves will negate the Mac's remaining advantages over the Wintel platform. But Linotype, which developed the color-matching software that underlies ColorSync, has licensed the same technology to Microsoft for inclusion in Windows. Apple thus gains little by continuing to restrict ColorSync to the Mac. With a Windows version of ColorSync, Apple makes it more likely that developers will support the color-management software in their cross-platform products.

However, the move is fraught with irony. In his keynote, Jobs pointed out that color management belongs not in applications but in the OS. But Microsoft—now supposedly on a friendlier basis with Apple—has its own color-management plans for Windows. Like a Trojan horse, ColorSync will likely infiltrate Windows through applications such as Photoshop and PageMaker; a Windows user installing a new Adobe graphics package will get ColorSync as part of the bargain.

Meanwhile, Macintosh users can download ColorSync 2.5 free from Apple's Web site (http://colorsync.apple.com). New features

continues on page 28

publishing

Prepress Vendors Flock to Acrobat

NEW PRINT SOFTWARE HANDLES PDF FILES

by Stephen Beale

Prepress-software developers are heeding the call of the Acrobat as Adobe Systems' Portable Document Format (PDF) gains favor among publishing professionals as an alternative to PostScript (see "Get Prepress-Ready PDFs from QuarkXPress," elsewhere in this issue). A year after Adobe introduced Acrobat 3.0—the first version of the portable-document technology suitable for commercial print production—vendors are rushing to market with PDF-savvy graphics software.

At the recent Seybold New York electronic-publishing conference, a long list of developers, including Extensis (503/274-2020, www.extensis.com), Intense Software (604/244-3501, www.intensesoftware.com), and Lantana Research (510/744-0282, www.lantanarips.com), introduced software with some form of PDF support.

Acrobat in Flight Extensis has added PDF output capabilities to the latest versions of Preflight Pro and Preflight Designer, which are designed to inspect documents for conditions likely to cause trouble on high-end prepress or printing equipment.

Originally limited to checking QuarkXPress files, the programs now support Adobe PageMaker, Illustrator, and Photoshop; Macromedia FreeHand; and Multi-Ad Creator as well. Once they've inspected a document, Preflight Pro 2.0 and Preflight Designer 2.0 can use links to Adobe Acrobat Distiller (part of Adobe Acrobat 3.0) to create print-ready PDF files.

Preflight Pro 2.0, priced at $400, is aimed largely at service bureaus and their high-volume customers, while the $130 Preflight Designer 2.0 is targeted at graphic designers. Both are scheduled to ship in June.

Enfocus (303/393-7282, www.enfocus.com) introduced its own PDF-based preflighting software, EnFocus CheckUp. The $195 package works as plug-in for Acrobat Exchange or Acrobat Reader. In addition to inspecting PDF files destined for print, it can also ensure that files are optimized for online posting.

EnFocus PitStop is a $295 Acrobat Exchange plug-in that lets you edit text and graphics in PDF files. You can create new graphic objects; cut and paste from other documents; or modify the color, shape, position, and rotation of existing objects.

Intense Software announced PDF Embedder, a $350 plug-in for Adobe Acrobat Exchange (also part of Acrobat 3.0) that lets you embed the graphics, fonts, and page layouts used to create a PDF file within the file itself. If your service bureau has trouble printing the PDF file, it can use the vendor's

ARNOLD TIOSFIO

New Printers Boost Photo Quality

EPSON AMERICA (310/782-0770, WWW.EPSON.COM), which set the printer market on its ear in 1997 with a series of popular Stylus Pro ink-jet printers, is at it again, with two new photo printers and two additions to the Stylus Color 800 line. The $300 Stylus Photo 700 offers features comparable to those of the $500 Stylus Photo, which it replaces. Like its predecessor, it uses a six-color printing process, but it also boosts the original 720-by-720-dpi resolution to 1,440 by 720 dpi. Maximum size on banner paper is 8.5 by 44 inches. The $500 Stylus Photo EX features a wider, 11.7-inch imaging area.

The Stylus Color 850, priced at $400, features faster print speeds, smaller dots, and better-looking photos than the Stylus Color 800. The $550 Stylus Color 850N adds a built-in Ethernet print server.—MACWORLD STAFF

free UnEmbed plug-in to extract the components in their native formats and fix the problem.

Lantana's CrackerJack Pilot is a $995 batch-processing program for CrackerJack, an Acrobat Exchange plug-in that lets you control color separations, screening, and other prepress settings in a PDF file. CrackerJack Pilot lets you create a variety of hot folders in which PDF files are automatically processed by CrackerJack. Lantana, which plans to ship the add-on in the second quarter, will also offer a $1,395 bundle that includes CrackerJack.

Acrobat Imposes Several vendors, including DK&A Prepress (619/488-8118, www.dka.com), Electronics for Imaging (EFI; 650/286-8600, www.efi.com), and Quite Software (www.quite.com), demonstrated PDF-based software for creating electronic impositions (forms in which pages are arranged for printing).

Quite's $325 Quite Imposing and $629 Quite Imposing Plus are Acrobat Exchange plug-ins that let you arrange pages from one or more PDF files into relatively simple plate layouts. The Plus version adds step and repeat, bleed definition, page extraction, and other functions to the basic package.

EFI's new DocBuilder Pro software, to be sold with its Fiery print servers, uses the PDF format to assemble pages for output on digital copiers.

In December, DK&A announced a PDF import option for InPosition 2.1, a $3,000 stand-alone imposition program that also imports QuarkXPress, PageMaker, EPS, TIFF, PICT, and PostScript files.

graphics

Mac Software Abounds at Seybold Show

MAC-ONLY PLUG-INS AMONG HIGHLIGHTS

by Macworld Staff

Apple's market share may be hovering below 5 percent, but graphics-software developers still see gold among Mac users. At the recent Seybold New York electronic-publishing conference, a host of graphics vendors introduced new software for the Macintosh—some of it available only for the Mac.

New Fractals Many of the new Mac-only products are Adobe Photoshop plug-ins. Altamira Group (818/556-6099, www.altamira-group.com) announced an enhanced $300 version of Genuine Fractals, a Photoshop plug-in that compresses medium-resolution images—those scanned at 15MB to 25MB—into 3MB-to-5MB Fractal Image Format files that can then be decompressed to sizes much larger than the original.

Genuine Fractals Pro supports CMYK and other color spaces along with the original program's RGB. It's also faster and adds a lossless-compression option. The company will continue to offer the original Genuine Fractals package for $160.

Silvertone is a $350 Photoshop plug-in from Intense Software (604/244-3501, www.intensesoftware.com) that lets you create color separations with metallic inks. It joins the company's PowerTone, a $250 Photoshop plug-in for generating duotones.

Monaco Systems (978/749-9944, www.monacosys.com) introduced a Mac-only color-management tool, MonacoProof, that lets you create industry-standard device profiles and Photoshop color-lookup tables for digital cameras, scanners, and monitors. The $1,195 package also includes MonacoPreview, a Photoshop plug-in for proofing images on-screen.

Corel Tries Again Although there were plenty of Mac-only products at Seybold, most graphics-software vendors have committed to a cross-platform strategy.

Among them, Corel (613/728-0826, www.corel.com) previewed CorelDraw 8, a new version of its graphics-software suite. CorelDraw 6, the first release of the software for the Mac, drew less-than-stellar reviews from graphics professionals. The new version includes such features as object transparency; a customizable interface; and support for drag and drop, AppleScript, and Photoshop plug-ins. Corel has also replaced Artisan, a weak image-editing program included in CorelDraw 6, with a new Mac version of Photo-Paint, which offers features more on a par with those in Adobe Photoshop.

Liberated Software Linotype CPS (516/434-2793, www.linocolor.com) announced that it will offer VisuaLab, its scanning software, as a stand-alone $495 package called VisuaLab Elite 5.0. The software, which automatically optimizes scanned images, currently supports Umax flatbed scanners, but Linotype says that it is developing drivers for other scanners as well. Linotype will also offer a version of the software, VisuaLab DCam 5.1, for digital cameras.

Newtek (210/370-8000, www.newtek.com), developer of LightWave 3D, for professional 3-D animators, has rolled many of that program's modeling and rendering features into Inspire, a $495 3-D package aimed at graphic designers and multimedia producers.

multimedia

New Software Heats Up Web Animation

VENDORS SQUARE OFF WITH NEW PROGRAMS

by Stephen Beale

Given the wide use of animation on the Web, it may be surprising that a shareware program—GIF-Builder—remains the most popular Web animation program for many designers. Sensing an opportunity, three graphics-software titans—Adobe Systems (408/536-6000, www.adobe.com), Extensis (503/274-2020, www.extensis.com), and Macromedia (415/252-2000, www.macromedia.com)—have introduced packages that make it easier to create GIF animations for the Web.

BRYAN WIGGINS

Adobe's ImageReady and Macromedia's FireWorks, each priced at $300, are designed to provide complete environments for creating still and animated GIF images.

Both programs let you remove colors while using previews to show the impact on image quality. Adobe's software, scheduled to ship in the second quarter, borrows many features from Photoshop. For example, it uses layers to store animated objects; you can move an object and then invoke a "tweening" function to create intermediate frames.

Macromedia's software includes vector- and bitmapped-graphics tools along with a text window that offers kerning, scaling, and leading controls. FireWorks is scheduled to ship this summer; a public beta is currently available on Macromedia's Web site.

Extensis's $100 PhotoAnimator lets you create timeline animations that can be exported as GIF files or Photoshop layers. You can also import Photoshop layers for conversion into animations. The software should be available by the time you read this; Extensis is offering it for $70 until June 30.

Open Vectors Along with FireWorks, Macromedia has also announced Flash 3, a new version of its vector-animation software that supports object transparency, sound synchronization, and shape morphing between frames. The upgrade also lets you embed the Shockwave Flash Player inside Flash animations destined for CD-ROMs or diskettes; double-clicking on the Flash animation launches the player. The software, scheduled to ship in May, will sell for $300 by itself or for $500 as part of the Design in Motion suite, which also includes FreeHand 8.

Macromedia has long been seeking to establish Flash as a standard for vector animation on the Web. Now facing competition from Apple's QuickTime 3.0, which includes a new vector-animation track, Macromedia has decided to make the Flash file specification available to other software developers. At present, only Macromedia Director and Macromedia Flash can produce Flash animations; now other vendors will be able to incorporate Flash export capabilities into their products. Likely candidates include Lari Software's (919/968-0701, www.larisoftware.com) Electrifier Pro and PaceWorks' (650/578-6765, www.paceworks.com) ObjectDancer, which each support the QuickTime 3.0 vector track.

Nikon Cameras Challenge Olympus

WHEN YOU'RE KING OF THE HILL, EVERYone's trying to take you down. As Olympus (516/844-5000, www.olympus.com) struggles to meet demand for its $1,300, 1,280-by-960-pixel–resolution D-600L digital camera—*Macworld*'s hardware product of the year (see "The Mac's Brightest Stars," March 1998)—Nikon (516/547-4200, www.nikon.com) has introduced the CoolPix 900, which offers the same megapixel resolution and 3× zoom capability, for an estimated street price of $900. Scheduled to ship in May, the camera stores images in JPEG format on CompactFlash cards; you can choose from three levels of compression.

Nikon has also introduced the CoolPix 600, a $600 digital camera that offers a maximum 1,024-by-768-pixel resolution. The price includes a docking station with video-out and serial ports plus a battery recharger.

Olympus isn't sitting still. Its new D-340L camera offers 1,280-by-960-pixel resolution, but no optical-zoom capability, for $800. Similar in design to the D-320L, it stores images on a 4MB SmartMedia solid-state floppy-disk card included in the package. Olympus also has reduced the prices of its other digital cameras: the D-220L, from $500 to $400; the D-320L, from $700 to $600; and the D-500L, from $900 to $800.

—MACWORLD STAFF

"JOBS WOWS PUBLISHERS WITH NEW HARDWARE"

continued from page 26

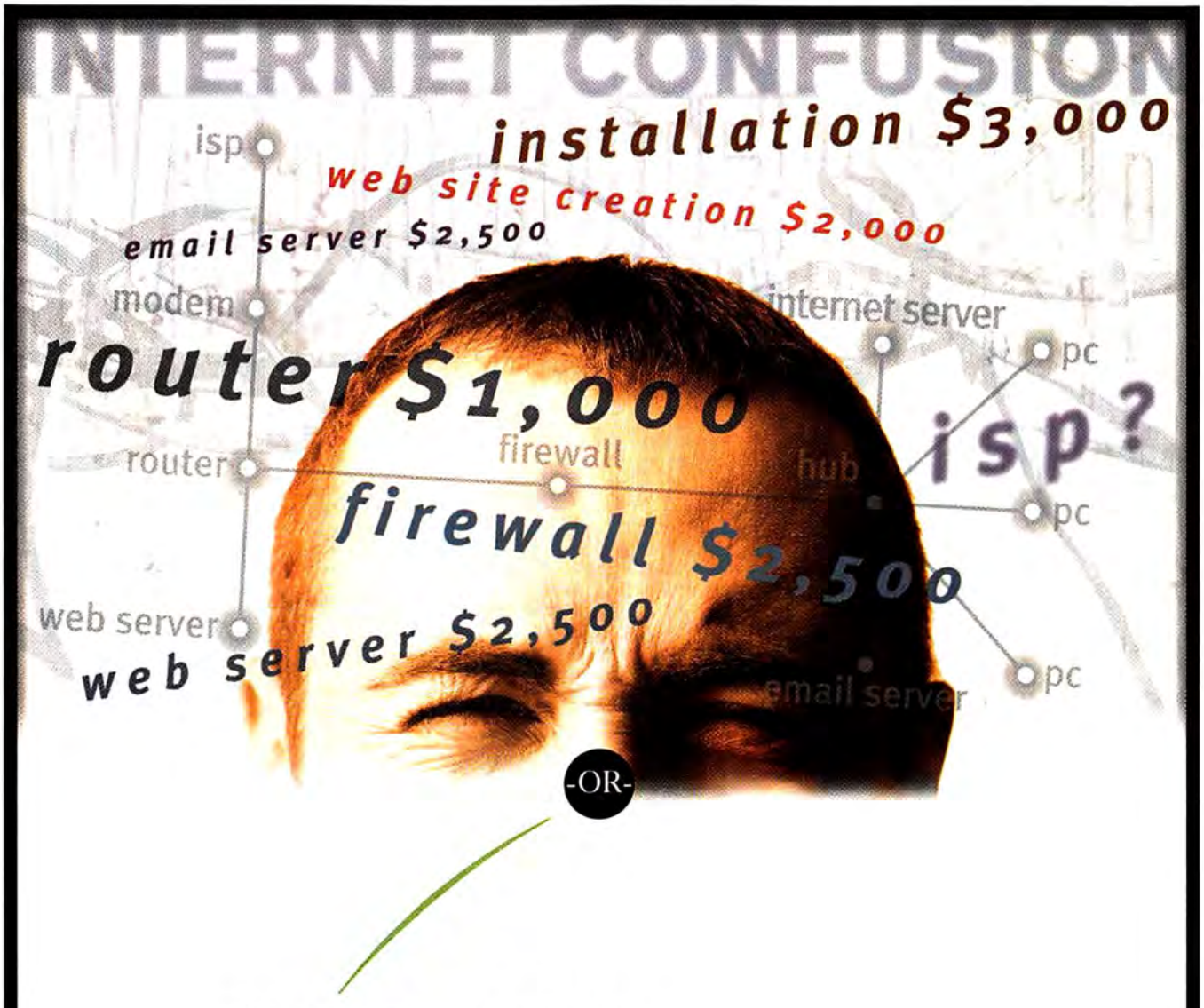
include AppleScript support, monitor-calibration software, and a plug-in architecture that will let you access other vendors' calibration software through the Mac OS Monitors & Sound control panel. Apple also provides ColorSync Photoshop plug-ins and sample AppleScript scripts for automating common color-management tasks.

Adobe's Warnock had an announcement of his own, informing the Seybold audience that the next version of Illustrator would support AppleScript. An Adobe representative demonstrated an Illustrator plug-in written in AppleScript that generates updated city labels and temperatures on a weather map.

Uptick Jobs's keynote came at a heady time for Apple. As of mid-March, most Wall Street analysts were predicting that Apple would show a profit for its second fiscal quarter—achieving its first back-to-back profitable quarters in years. The *Wall Street Journal*, which in past months has taken a dim view of Apple's prospects, described it in March as the best-performing computer stock of the year. However, Apple still lacks a permanent CEO and much of its improved financial performance is due to cost cutting rather than rising Mac sales. In late March, Apple board member Edgar Woolard told the Dow Jones news service that the board would like to see Jobs continue as CEO, with or without *interim* in his job title.

Jobs promised that Apple would have a product for the consumer market by this fall. Apple is reportedly developing an under-$1,000 Mac system, code-named Artemis, that includes a G3 CPU.

ARNOLD TSOSEJO



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Reviews

FreeHand 8

TOP DRAWING PROGRAM HEAPS ON THE FEATURES, STILL NEEDS FACELIFT

THE DECADE-LONG STRUGGLE between Macromedia FreeHand and Adobe Illustrator for PostScript drawing dominance has turned into something of a trouncing in recent years. If this were a boxing match, we would see FreeHand throwing punch after furious punch as Illustrator dodged, cringed, and ducked.

And just when you thought the fight couldn't get any bloodier, FreeHand 8 strides in with a new arsenal of features—translucent fills, lens options, freehand reshaping tools, effects filters, customizable shortcuts, support for exporting vector-based Web animations, and more.

But if this is such an obvious mismatch, why haven't the judges called off the fight? Why does Illustrator remain the more popular program on the Mac, and why is it picking up steam under Windows? Although Illustrator has fewer moves than FreeHand, it executes them with greater style. After the recent streamlining of Illustrator in version 7 (see *Reviews*, August 1997), FreeHand's interface feels bloated and chaotic. While FreeHand 8 has made strides in usability and ease of use, it still plays host to a collection of inconsistent palettes, oddball tools, and redundant commands.

Make no mistake: FreeHand 8 is faster, more flexible, and more powerful than Illustrator. And now that Macromedia has redesigned the packaging (eliminating Pat, the androgynous, pen-wielding mascot, in the process), many artists are likely to take the product more seriously. Even so, Illustrator remains a contender, if for no other reason than that its relatively few capabilities—which just so happen to be the ones artists use on a daily basis—are easier to find.

Going Where PostScript Doesn't Go

Unlike Illustrator, which saves documents as pure PostScript files, FreeHand saves in a native, non-PostScript format. As a result, Illustrator is limited to functions the PostScript page-description language supports; in contrast, FreeHand can pretty much do as it pleases.

A case in point is FreeHand 8's Lens. Introduced four years ago by CorelDraw 5 for Windows, a Lens effect uses one object to modify the objects behind it. For example, you might fill an object with a translucent color that mixes with the colors of the objects behind it. This is child's play in a pixel editor such as Adobe Photoshop, but because PostScript can't rasterize translucent vectors, it's a challenge for drawing programs. FreeHand's solution is to render objects in the background when saving and printing EPS files.

Translucency is only one of several Lens effects in FreeHand. You can also

HANK OSUNA

REAL PRODUCTS REAL RATINGS
Reviews you can trust: Macworld rates only final shipping products, not prototypes. What we review is what you can actually buy.
OUTSTANDING: ♦♦♦♦♦ VERY GOOD: ♦♦♦♦ GOOD: ♦♦♦ FLAWED: ♦♦ UNACCEPTABLE: ♦

magnify a collection of objects, invert them, and apply a monochromatic color scheme. You can even change the focal point so that the source of the effect is somewhere other than directly behind the lens (see "One Drawing Controls Them All"). The result is a series of dynamic effects that leaves Illustrator's color-mixing–path operations in the dust. Compared to CorelDraw's Lens effects, however, FreeHand's still need some work: you can't apply a Lens effect to editable text, you can't multiply or screen objects that contain color, and FreeHand has an annoying habit of restoring the focal point to its default setting when you switch from one Lens effect to another.

Painterly Editing Options

FreeHand 8 offers several new functions designed to flatten the learning curve for new users and expand the range of editing options for more-experienced folks. Borrowing again from CorelDraw, FreeHand lets you double-click on one or more selected objects to enter the transformation mode. In this mode, you can drag a corner handle to scale or you can drag outside the selection to rotate, as in Photoshop. It's incredibly intuitive, and I prefer it to using FreeHand's crusty old scale and rotate tools.

FreeHand 8 ships with several new effects Xtras lifted from the world of painting software. The Graphic Hose, inspired by MetaCreations' Painter, deposits a series of objects as you drag across the page; the Emboss command adds beveled edges; the Shadow tool adds a hard or soft drop shadow; and the Mirror tool reflects a selected object multiple times to create a Spyrograph effect. Not all these Xtras lend themselves readily to an object-oriented environment—for example, the Graphic Hose is sensitive to neither pressure nor direction, as it is in Painter—but they add a little spice to the sometimes humdrum world of vector drawing.

One Drawing Controls Them All Using FreeHand 8's Lens inspector, I assigned each of these circles a special fill effect, all linked to the fellow in the middle. If I so much as reshape his eyebrow, FreeHand will automatically change the other objects to follow suit.

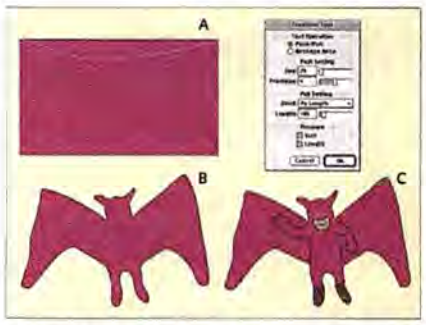
My favorite new editing option is the flawed but promising Freeform tool. The bad news is that the tool tries to be too many things at once; an overabundance of preference settings and bewildering performance in certain modes are likely to turn off many users. But if you ignore the options and just experiment, you'll discover a pressure-sensitive modeling tool that lets you shape paths by rubbing it against them. It's hardly a precision tool, but it's great for achieving a hand-drawn look (see "Working Shapes like Clay").

The Big Interface

FreeHand has never presented the most tightly structured, logical interface on the block. But in the last version or two, the program has lurched dangerously toward the on-screen equivalent of mob rule by permitting new features to take precedence over structural organization. FreeHand 8 boasts a main toolbox, two palettes to house all the Xtras, three predefined button bars, five multipanel inspectors, and a mishmash of random-size palettes. Some commands are found in two or three menus; others are buried two or three panels deep.

If you don't like FreeHand's default interface, make up one of your own. You can assign your own keyboard shortcuts or choose from a list of predefined settings designed to mimic the keyboard equivalents in QuarkXPress and Adobe PageMaker, Illustrator, and Photoshop. Your new shortcuts are then listed in the menus next to the appropriate commands. A special keyboard trick allows you to drag tools out of one tool bar and drop them onto another without wading through a dialog box.

I have two problems with this customizability. First, FreeHand doesn't take it far enough: Xtras are off-limits, so you can't move favorites such as the eyedropper and spiral tool to more-convenient locations, and you can't add or delete menu commands, as you can in Microsoft Word. Second, it feels like a copout—is FreeHand really giving us a new feature, or is it saddling us with the responsibility for managing a lumbering interface? I'd say it's a little of both.



Working Shapes like Clay Starting with a rectangle (A), I used the new Freeform tool to push and pull the shape until I arrived at a lumpy bat outline (B), adding most of the finishing touches (C) with the pen tool.

Macworld's Buying Advice

If you're a FreeHand loyalist, the program's slightly enlarged smorgasbord of palettes and button bars isn't likely to bug you. In fact, I'd go so far as to predict you'll love FreeHand 8. Like versions 5 and 7 before it, this ambitious upgrade offers user-requested enhancements. In addition to offering those I've already mentioned, it lets you rasterize objects in place, view artwork in a pared-down but faster preview mode, fill open paths, save custom views, and export artwork in EPS format without revisiting a dialog box. And FreeHand is available as part of the Design in Motion Suite, which also includes Flash 2 (for creating Web graphics and animation) and Insta.html 2 (for exporting FreeHand files as HTML).

But if you haven't switched to FreeHand, the enhancements in version 8 may not be sufficient to lure you away from Illustrator. As Macromedia surely knows by now, loading a superfast program with lots of meaty features is no guarantee that artists will welcome you with open arms. FreeHand launches several times faster than the slow-loading Illustrator, and most of its operations are faster as well, but this speed is mitigated by a clumsy interface that too often impedes progress. FreeHand is the best drawing program on either platform, but at times I'd still rather be using Illustrator.—DEKE McCLELLAND

RATING: ♦♦♦♦ **PROS:** Dynamic Lens effects let you mix and magnify objects; easy to transform objects; straightforward Freeform reshaping tool; customizable shortcuts and button bars. **CONS:** Confusing, overcrowded interface. **COMPANY:** Macromedia (415/252-2000, www.macromedia.com). **COMPANY'S ESTIMATED PRICE:** $399; Design in Motion Suite, $499.

Microsoft Office 98

IT'S BIG, IT'S PRICEY, BUT IT'S REALLY GOOD SOFTWARE

EVERY NOW AND THEN, HISTORY takes a seemingly impossible turn. A polio vaccine is developed. The Berlin Wall falls. And now this: a humbled Microsoft bends over backward to embrace the Macintosh way. Although it has essentially the same vast feature list as its Windows counterpart, Microsoft's Office 98 productivity suite—consisting of Word, Excel, and PowerPoint—adds genuine Macintosh elegance. MacinTalk speech, Drag and Drop editing, and QuickTime are richly implemented; Word has a WYSIWYG Font menu; and the manuals are written and illustrated as though the Macintosh were the only computer on earth.

The Macintosh Way

When it comes to installing Office 98, Microsoft has done something for the Macintosh that it doesn't do too often: innovate. You can install Office simply by dragging a folder from the CD-ROM to your hard disk (see "Microsoft Repents: Office 98 Makes Up for Past Sins," March 1998). You don't even have to restart. In fact, Office 98 programs still launch—after a pause to load the necessary shared libraries—even with all extensions off.

Quick launching is one of Office 98's most attractive features. On a G3 Power Mac, for example, Word is ready to accept input a mere three seconds after you double-click on its icon. The psychological effect of this immediacy is enormous, making these huge programs feel as nimble as ClarisWorks.

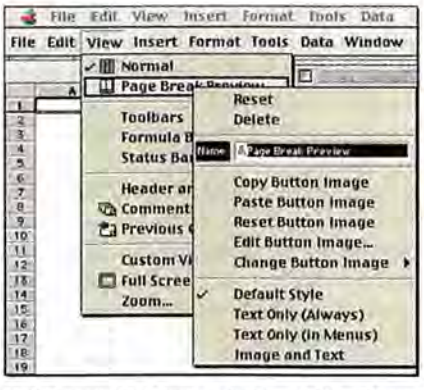
Internet features abound in Office 98. The primary programs let you save documents as Web pages or attach a document to a message in your favorite e-mail program. Word can even *read* Web pages, either off your hard disk or directly from the Web. And all three programs let you create blue, underlined links that open live Web pages or files on your hard drive.

The three manuals offer task-oriented overviews of each program; if you need more information, you summon the searchable online help system from a menu or by clicking on the Assistant, an animated, entertaining character in a tiny QuickTime window that occasionally offers pointers while you work.

However you get to the help program, it offers step-by-step instructions for whatever task you're interested in. Unfortunately, this approach breaks down when the instructions involve menu commands: since the help program becomes the active application, those menu commands are no longer available.

Word 6 R.I.P.

Word 98 represents the most successful overhaul in the Office suite: it's smooth, stable, and full of pleasant surprises.



Ordering on the Menus To edit an Office 98 program's menus, you summon a *duplicate*, editable menu bar (shown here beneath the real one). Your changes become part of the actual menus.

Examples: Word 98 proposes the first line of the document as the title when you save for the first time. If you poke the cursor near the top of the window, as though you're seeking a way to change the margin, the ruler slides smoothly into view. (You see a similar animation when new text pushes paragraphs downward—they slide, rather than jerking as they do in the Windows version.) And if you try to open a corrupted document, the Assistant offers to salvage what text it can.

Many of the glitziest features, such as the table-drawing pencil, the type-twisting Word Art, and the goofy but entertaining AutoSummarize feature, make terrific demos but are of little importance in daily work. Fortunately, most of Microsoft's considerable effort has been expended on little things that *do* matter. You'll become attached, for example, to the control-key–activated contextual menu that offers synonyms for any word you click on. Style sheets can now update themselves when you change a single occurrence. And the Style menu itself is WYSIWYG, showing the names of the styles with the correct size, font, and color.

As you type, subtle colored underlines flag spelling and grammar errors; control-click on a flagged word to view a pop-up menu of correction suggestions. If you prefer the usual after-the-fact method of spell checking, you'll be equally pleased: the Spelling dialog box shows the error in context and in its original type style. You can correct the error by typing directly into this display or by double-clicking on a word in the suggestion list.

Microsoft has done an excellent job of packing vast power into a comprehensible, modern interface. But if you don't like Microsoft's interface, you can always design your own (see "Ordering on the Menus"). Fifteen minutes of reading the online help will teach you to add, delete, rearrange, and rename menus, menu commands, and tool bars. (A re-creation of Word 5.1's menu bar is a click away for those still using that beloved, seven-year-old version.)

Smarter Excel

Since Excel already owns 99 percent of the Macintosh spreadsheet market, you wouldn't think the company had much incentive to improve the program. Yet Excel, too, shows evidence of much programmer soul-searching.

Serious number crunchers will appreciate Excel 98's ability to apply certain colors or type formats globally to cells that meet a certain condition—negative numbers can turn red, for example. The long list of other high-end features includes data validation, new chart types, and persistent formatting in pivot tables. Especially impressive is Microsoft's implementation of shared spreadsheets: changes made by different people appear in different colors, and the person who made the change is identified in a pop-up balloon when you point to a changed number.

Excel's own numbers have improved, too. Each cell can hold up to 32,767 characters, each spreadsheet can have 65,535 rows, and each Excel document consists of multiple tabbed spreadsheets.

Again, it's the little things that will please the most people. The multiple-level Undo command alone is worth the

price of upgrading. Just as Word quietly corrects common spelling errors as you type, so Excel watches for typical formula-entry mistakes. In Print Preview, you can manually adjust the dotted lines that represent page breaks. And small animations—such as the visible sliding of existing columns when you insert a new one—give Excel a solid, polished feel.

Presenting PowerPoint

Microsoft's slide-show program, PowerPoint, is nowhere near as complex as Word and Excel, nor are the improvements as dramatic. The scattershot list of new features generally falls into the Office 98 Grand Overhaul categories of Internet, help, interface, and collaboration. As in Word and Excel, for example, coworkers can add comments—here, in the form of yellow "sticky notes"—to your file. Multiple Undo is a welcome enhancement, as is the ability to save a presentation as a Web site (although the result is, by default, one gigantic, full-screen graphic per Web page).

PowerPoint's slide-making apparatus has been beefed up, too. You get more canned templates, animations, stretchable shapes and arrows, and "action buttons" (for jumping to another slide, a Web page, or any file on your hard disk).

Two of the new common-sense features are so good that you'll never want to be without them again. First, when you prepare your presentation in the outline view, a thumbnail of the actual finished slide hovers nearby; no more flipping back and forth between views to see if all your bullet points will fit. Second, you can create slide-show subsets of a master show within the same document—a great way to repurpose material.

Office Extras

The Office 98 CD-ROM also includes two programs that are available free from Microsoft's Web site: Outlook Express (see "Tame Your E-Mail," in this issue) and Internet Explorer 4.0 (see *Reviews*, May 1998). The advantages of getting Outlook Express as part of Office are that you can use Word's spelling checker in OE and Outlook's address book for Word mail merges. The downside is that OE can't connect to America Online or stuff enclosures automatically. Explorer is also a mixed bag; Microsoft's latest Web browser is rich with features but dog-slow, and its new "active channels" aren't optimized for the Mac.

The rest of the CD-ROM's many extras are much more successful. Among them are programs called Remove Office 98 and Remove Old Office Versions; a batch processor for converting clumps of Office documents from one format to another; templates, clip art, and fonts; all recent Mac OS updaters; and much more.

Big Numbers, Small Bugs

If software design were all that mattered, Congress would pass a law forcing everyone to install Office 98. Unfortunately, the administrative aspects of Office 98 aren't nearly as appealing. For example, the hardware requirements show little respect for elderly Macintosh models. Office 98 requires a PowerPC machine, preferably 120MHz or faster, running System 7.5 or later. Excel, Word, and PowerPoint want 6MB, 9MB, and 10MB of RAM, respectively; add 4MB apiece to those numbers if you don't use Connectix RAM Doubler or virtual memory.

Month	Profit per Unit	Units	Overhead (Monthly)	Profit (Monthly)
Jan	$ 0.23	22,000.00	526	$ 4,534.00
Feb	$ 0.40	24,000.00	661	=Profit per Unit*Units-Overhead (Monthly)
Mar	$ 0.45	26,521.00	821	$ 11,113.45
Apr	$ 0.65	45,612.00	756	$ 28,891.80
May	$ 0.23	23,564.00	954	$ 4,465.72
Jun	$ 0.72	21,564.00	555	$ 14,971.08
Jul	$ 0.77	28,954.00	855	$ 21,439.58
Aug	$ 0.81	32,111.00	755	$ 25,254.91
Sep	$ 0.92	23,546.00	865	$ 20,797.32
Oct	$ 0.99	32,333.00	954	$ 31,055.67
Nov	$ 1.00	35,621.00	953	$ 34,668.00
Dec	$ 1.01	35,499.00	833	$ 35,020.99

The Secret Formula Understanding formulas is vastly easier in Excel 98 than in its predecessors. First, you can build a formula by typing labels instead of cell numbers. Second, when you double-click on a formula cell, color coding helps you match up formula components with the cells they refer to.

The package isn't cheap, either: $499 for the set, or $399 per stand-alone application. (Add $100 for the Gold Edition, which includes FrontPage, for Web authoring; the Encarta multimedia encyclopedia; and the Bookshelf reference tool.) Office 97 for Windows costs the same but adds a database program, a richly featured calendar/address book, and a program called Microsoft Binder that lets you roll multiple Office documents into one file for easy distribution.

Macworld's Buying Advice

Office 98 is a winner, but it's not perfect. On some machines, Word 98 conflicts with RAM Doubler 2.0.2; the 2.0.3 updater solves the problem. A similar updater will fix clashes with Adobe Type Reunion. You can't create a hyperlink to a file whose name begins with a number. If you drag a program out of its original folder, you're politely informed at the next launch that it won't run until you move it back. And you could fill a book with quibbles about individual features—in fact, somebody did: *Office 97 Annoyances* (O'Reilly, 1997) makes great reading.

Moreover, plenty of Mac users are actually upset with the *successful* aspects of Office 98. The shoddiness of the previous Office versions opened a temporary window for such competitors as ClarisWorks, WordPerfect, and Nisus Writer; now, with Office 98 sure to be a smash hit, we're even less likely to see competition in the Mac productivity-software market.

On the other hand, buying Microsoft has its advantages. For example, technical support is free (although not toll-free). You can be confident that any significant bugs will be fixed in a free update. You can bet that Word 98 import filters will soon crop up for use with QuarkXPress and Adobe PageMaker. And you know your documents can be freely exchanged with your Windows-using coworkers without conversion or translation.

If you're using Office 4.2, upgrade immediately. If you're using older versions, upgrade if you can handle the equipment requirements. Whatever you thought of Microsoft's past Mac-software experiments, Office 98 is a powerful, intelligent, friendly package. This software suite demonstrates that for the first time in its history, Microsoft truly understands what "Macintosh elegance" means.—DAVID POGUE

Microsoft Office 98

OFFICE 98 ★★★★

EXCEL 98 ★★★★

POWERPOINT 98 ★★★½

WORD 98 ★★★★

PROS: Dramatically improved design; dozens of smart, user-oriented features; fast launch times; genuinely useful Internet integration. **CONS:** Demanding equipment requirements; fewer goodies than in Windows version. **COMPANY:** Microsoft (800/426-9400, www.microsoft.com/macoffice). **LIST PRICE:** $499 (upgrade, $299); Gold Edition, $599 (upgrade, $399).

Windows 95 Emulators

FEATURES GROW, PERFORMANCE STILL LAGS

ALTHOUGH THE NEWEST VERsions of Insignia Solutions' SoftWindows 95 and Connectix's Virtual PC have gotten speedier and do an impressive job of emulating a Pentium-based PC, both products still fail to deliver the performance of even a low-end Pentium-based PC.

On the surface, SoftWindows 95 hasn't changed dramatically, other than a redesigned setup window that greatly simplifies the task of configuring the program's preferences. But under the hood, SoftWindows 95 5.0 offers a much more sophisticated emulation engine, including support for SoundBlaster Pro, MMX, and Mac joysticks. New drag-and-drop support lets you copy text and pictures (not files) from Windows by dragging to the Mac desktop.

Copy Across Platform Virtual PC lets you drag a Mac folder to the PC environment.

Virtual PC 2.0 benefits from a bigger overhaul. The program's emulation engine has been tweaked with the game-oriented user in mind, providing improved DirectX support, better video emulation, and support for 3Dfx Voodoo Graphics accelerator cards. Virtual PC 2.0 is also noticeably faster than the previous version—Connectix says it's 25 to 40 percent speedier; I clocked a 15 to 18 percent boost. Other improvements include bidirectional copy and paste, long-file-name support, and cross-platform drag-and-drop file sharing.

In Macworld Lab tests, SoftWindows 95 consistently performed faster than Virtual PC. But although it's the fastest emulator, SoftWindows 95 is still three times as slow—on average—as a has-been 90MHz Pentium PC. These speeds are acceptable for occasional, nonintensive PC use, but serious users will be disappointed.

SoftWindows 95 may offer faster emulation, but Virtual PC wins in terms of ease of use, setup, and configuration. To copy a folder from your Mac to Virtual PC's virtual hard drive, for example, you merely drag the file from the Finder into the Windows environment. Conversely, you can drag a Windows file to any Mac folder to open the file with a Mac application, all but eliminating the need to set up cross-platform shared folders. But if you want to share folders, you simply drag them from the Finder and drop them onto the Shared Folder button in Virtual PC.

In contrast, SoftWindows 95's scheme for sharing drives and files is far less elegant. The program doesn't offer the ability to drag files to and from Windows; you have to cross the divide via shared folders. You can share a folder by dragging, but this works only for a single folder mapped to the E: drive. You have to set up subsequent shared folders one by one using the Setup command, and if you want to share more than three other folders, you have to use Windows 95's Map Network Drive command to manually assign the folders to PC-drive letters.

Virtual PC also provides more-flexible configuration options. SoftWindows, for example, maps the PC's right mouse button to your Mac's enter key, while Virtual PC lets you choose the modifier key.

Macworld's Buying Advice

If you can live with performance that's three times as slow as a two-year-old Pentium PC, both of these programs deliver solid Windows 95 support for a great price. SoftWindows is marginally faster, but Virtual PC is less expensive and easier to set up and use, making it the better choice for putting Windows on your Macintosh.—JOSEPH SCHORR

SoftWindows 95 5.0

RATING: ♦♦♦ **PROS:** Improved speed; faster than Virtual PC; drag-and-drop text and graphics copying. **CONS:** Much slower than an old Pentium; cumbersome folder sharing; can't drag files between platforms. **COMPANY:** Insignia Solutions (408/327-6500, www.insignia.com). **COMPANY'S ESTIMATED PRICE:** $199.

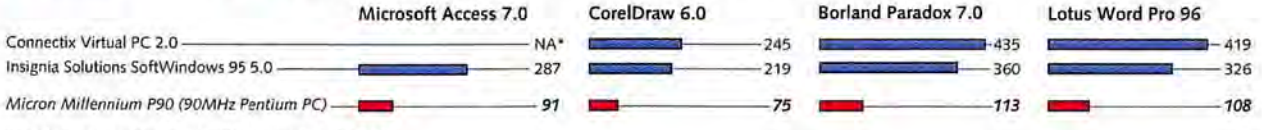
Virtual PC 2.0

RATING: ♦♦♦½ **PROS:** Improved speed; drag and drop between platforms; intuitive folder sharing. **CONS:** Much slower than an old Pentium; slower than SoftWindows 95. **COMPANY:** Connectix (650/571-5100, www.connectix.com). **COMPANY'S ESTIMATED PRICE:** $149.

Macworld LAB TEST

Emulators: Still Dramatically Slower Than an Old PC

Best result in test. Shorter bars are better. Times are in seconds.



*Product was unable to successfully complete this test.

Behind Our Tests Our Windows productivity suite utilizes select tests from Ziff-Davis's WinStone 97 benchmark (www.winstone.com). Emulators were tested on a Power Mac 7300/200 equipped with 64MB of RAM, with 32MB of RAM allocated to Windows 95; the PC was equipped with 32MB of RAM.—**Macworld Lab testing supervised by Susan Silvius**

DayStar Millennium G3/307

HIGHLY EXPANDABLE SYSTEM IS FAST, INEXPENSIVE

YOU MIGHT ALMOST BELIEVE that the Mac-clone industry is still going strong: a licensee has introduced a system that outpaces anything Apple has to offer. MacWorks' DayStar Millennium G3/307 claims PowerPC 750 processor speeds of 307MHz, but Macworld Lab tests show that it actually runs faster—at 322MHz—thanks to a 1MB backside cache. (An upcoming Millennium model runs at least at 360MHz.) No other system comes close; not Apple's new 300MHz Power Macintosh G3 tower, not even prototype CHRP systems that never saw production.

PHOTOGRAPH AND SCREEN IMAGE BY KEVIN CANDLAND

But the Millennium G3/307 offers more than raw speed. Using the same case design as the well-regarded DayStar Genesis MP, the Millennium is the ideal system for 3-D modelers and digital-video producers. (Note that only the Millennium's 604e version supports multiple CPUs.) It offers easily accessible bays for seven hard drives, and two external bays for removable-media drives (one houses a CD-ROM drive).

The system also sports six PCI slots, which high-end users will easily fill. (Apple's G3 Macs offer just three.) In the Millennium model we tested, three slots held an ATI Nexus GA video card, a 100BaseT Ethernet card, and an Ultra Wide SCSI-3 card. (The motherboard comes with 10BaseT Ethernet, an external SCSI-1 port, and an internal SCSI-2 connector as standard equipment.) Our test system—which had two 9GB hard drives, an Iomega Jaz drive, and 128MB of RAM—costs $6,049. The base model—which comes with a 4GB hard drive, 64MB of RAM, and a 4MB ATI XClaim VR video card—costs $3,060. A keyboard is extra in both systems.

Add digital-video, sound, and MPEG-2 cards, and you have a multimedia monster. And don't worry about RAM expansion—there are 12 DIMM slots, compared with 3 in Apple's G3 Mac. All this expansion explains why the case is 50 pounds and twice the size of an Apple tower.

Macworld Lab was unable to get an initial unit to work reliably. MacWorks chalked up the problem to a conflict with the installed iXMicro TwinTurbo card; we had no problems with the Nexus GA card sent to replace it.

Although the Millennium G3's technology is sound—a combo of DayStar's proven motherboard and case and PowerLogix's fast new G3 CPU card—the company is an unknown. DayStar Digital went bankrupt last year, and MacWorks bought the rights to its name and products. Also, Apple almost certainly won't renew any clone makers' Mac OS licenses after July, so long-term support for the Millennium remains in question.

Also be wary of MacWorks' pricing. All prices listed on the company's Web site reflect a 2 percent cash discount, but *Macworld* recommends that you never pay cash for a mail-order product. MacWorks also offers a limited return policy: you can return only defective products.

Macworld's Buying Advice

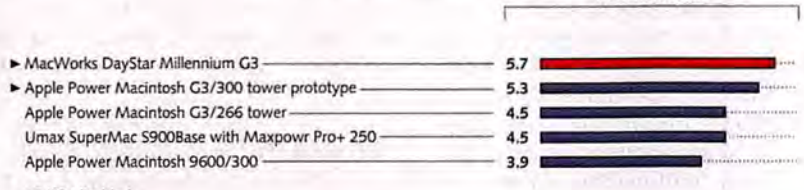
The DayStar Millennium G3/307 is a fantastic system for demanding content creators. If you can handle the uncertainty of buying from a company that might not be around to support you in the future, then this system is a worthwhile investment.—GALEN GRUMAN

RATING: ♦♦♦♦ **PROS:** Fastest Mac OS system available; huge expansion capacity. **CONS:** Long-term support uncertain. **COMPANY:** MacWorks (913/599-6227, www.macworks.com). **DIRECT PRICE:** Base model, $3,060; as tested, $6,049.

Macworld LAB TEST

DayStar G3 System Is New Speed Champ

Best overall performance. Longer bars and higher numbers are better. ► New system. Bold indicates the best result in a subsystem test. SpeedMark scores are relative to that of a Power Mac 7100/80, which is assigned a score of 1.0. MacBench 4.0 scores are relative to that of a Power Mac 6100/60, which is assigned a score of 100.



MACBENCH

Processor	Disk	Graphics
1,169	**653***	698
1,054	329	**855**
895	362	566
907	332	547
744	351	486

**RAID disabled.*

Behind Our Tests SpeedMark runs 54 real-world tasks in 15 programs and the Finder; MacBench 4.0 (available at www.macbench.com) measures performance of the processor (CPU/cache), disk, and graphics subsystems in isolation from other components. Test systems were equipped with 32MB of RAM and configured with a 512K disk cache. Displays were set to 16-bit color in 832-by-624-pixel resolution.—**Macworld Lab testing supervised by Gil Loyola**

MYOB Accounting Plus 7.5

CAPABLE PACKAGE, BUT FEW IMPROVEMENTS

WITH THE RECENT DEMISE OF competing products such as Peachtree Accounting and Big Business, BestWare's MYOB Accounting takes over as the sole moderately priced, full-featured double-entry accounting program for the Mac. Happily, MYOB Accounting Plus 7.5 readily satisfies most business accounting requirements, offering standard accounting functions and payroll, inventory, and job-tracking features. The changes introduced in version 7.5, however, are minor.

The Learning Curve

MYOB's Easy Setup Wizard helps you create your chart of accounts, letting you build from scratch or modify those of 100 sample businesses. The program walks you through setting preferences (such as setting an auto-save interval and specifying whether to allow edits of completed transactions or to require reversing transactions), tweaking the chart of accounts, and providing starting balances. From there, you move through specifying credit terms, creating customer and vendor lists, setting up payroll, and selecting linked accounts for purchases and sales.

Step by Step MYOB's Easy Setup Wizard helps you quickly customize the program to suit your needs.

Although MYOB offers true double-entry accounting, you're shielded from making balancing transactions. MYOB handles this process transparently using the aforementioned *linked accounts*, where you specify the accounts affected by particular transactions. (Customer receipts, for example, can be automatically credited to a particular checking account.)

If you're familiar with other accounting programs, you should have little trouble adapting to MYOB's workflow. The program offers extensive help facilities, including sample reports, procedure guides, and step-by-step cue cards for less common procedures. Although MYOB's graphic interface is unusual, most experienced users will catch on quickly. The procedure-oriented manual explains the precise steps necessary to accomplish standard accounting activities, such as reversing particular types of transactions.

Nonaccountants, on the other hand, may not fare so well. Although a multimedia presentation explains accounting principles and shows how two sample businesses use the program, MYOB offers no tutorial, and its manual leaves basic questions unanswered.

For example, a nonaccountant like myself might logically assume that purchases would be tracked in MYOB's Purchases section. To complete each payment transaction in this manner, though, you'd have to switch to the Bill Payments area to complete an additional form. A call to BestWare set me straight: to record all purchases on a single screen, you must use MYOB's Write Checks area, a less-than-intuitive notion for financial novices. To avoid this type of confusion, you'll want to seek the advice of a professional for help with anything you don't understand—*before* you enter dozens of records. BestWare offers 30 days of free technical support, as well as referrals to certified consultants to help you tackle truly complex setups.

Simplified Data Entry

MYOB makes life easier in a number of small yet significant ways. When you tab out of an account field without entering data, for example, a pop-up list of accounts appears. Vendor and customer fields can be filled simply by typing the first few unique letters of the company name.

MYOB's card file lets you store addresses, phone numbers, credit terms, sales-tracking information, and current balances for all customers, vendors, employees, and personal contacts. Although it's not a substitute for a dedicated PIM, you can use the card file to maintain a contact log, record time spent on billable activities, and set recontact dates, among other tasks.

You can customize MYOB's built-in reports by placing logos and other graphics; adding static text elements; resizing fields; and changing the font, size, and color of your text. You can easily define report criteria by specifying filters, contact-group identifiers, and date ranges. Reports can be saved, printed (individually or in batches), viewed on screen, and—new to this version—saved as HTML tables for viewing on the World Wide Web or a company intranet.

MYOB lets you import and export tab- or comma-delimited files containing accounting, inventory, and contact data, but the Macintosh product lacks the OfficeLink automation features found in the Windows version of MYOB. You can also import data from QuickBooks (on which Intuit has ceased development for the Mac version), but the conversion process has limitations you should be aware of before switching to MYOB. (Details and the conversion utility are both available at www.bestware.com/updates.htm.)

Few New Features

The most notable change in the MYOB 7.5 upgrade is the program's enhanced AppleScript support, which enables MYOB to exchange data with other applications. Unfortunately, no sample AppleScripts are provided (BestWare says that samples will be available on its Web site over time). Other changes include the ability to generate statements that cover a particular date range, improvements to the bank-reconciliation process, and the ability to search by customer invoice number or vendor purchase order.

Macworld's Buying Advice

Although accounting novices may need some hand-holding, MYOB Accounting Plus 7.5 is a great value and an excellent program for new users. The $69 upgrade, however, is compelling only if you can take advantage of the new HTML or AppleScript capabilities.—STEVEN SCHWARTZ

RATING: ♦♦♦♦ **PROS:** Easy setup; excellent help facilities; extensive report selection. **CONS:** Substandard tutorial; no sample AppleScripts. **COMPANY:** BestWare (973/586-2200, www.bestware.com). **COMPANY'S ESTIMATED PRICE:** $149.

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MacDrive 98 2.0

DISK MOUNTER ADDS NT SUPPORT

CLEARLY, WINDOWS NT IS FAST becoming part of cross-platform environments, and makers of cross-platform utilities are rushing to add NT 4 capabilities to their products. Media4 Productions' MacDrive 98 is the latest utility to jump on the NT bandwagon. The Mac-disk–mounting utility's newest version runs on both Windows 95 and NT 4 and will supposedly work smoothly with the forthcoming Windows 98 release.

MacDrive 98 2.01 offers all the strengths of its predecessor, MacDrive 95 1.3 (see "Mac Life Preservers," April 1998), in addition to providing support for both Windows 95 and NT 4. Among the new version's best features: support for SCSI hard drives as well as practically any removable-media drives that both Windows and the Mac OS recognize. MacDrive integrates well into the Windows interface, displaying Mac-disk–formatting and –copying capabilities in Windows' contextual menus. And MacDrive lets you access files from the Open and Save dialog boxes of all programs, as well as from the Windows Explorer (the equivalent of the Mac's Finder).

Easy Additions MacDrive 98 adds new file and creator information to its extension map by extracting the appropriate data from Mac files.

But MacDrive 98 does more than its predecessor. My favorite new feature lets you tell MacDrive 98 to read the Mac file and creator type from a specific document when adding a new file type to the program's extension map. The extension map tells MacDrive 98 which Windows file extension to associate with each Mac file and creator type, and vice versa. These file and creator types are not easily found, which is why the program's ability to extract them is so helpful.

And, when you use Mac media, MacDrive lets you create and decode MacBinary files, which are perfect for network transfer and remote uploading since they typically take less space than more-commonly-used Web-based formats such as BinHex. MacDrive 98 can also decode BinHex files from Mac media, giving you the option (as with MacBinary) to store the decoded file in Mac file format (retaining the resource fork) rather than in PC format (with the resource fork removed).

Also new is the ability to decide which volumes in a dual-formatted Mac/PC CD-ROM are loaded; MacDrive's main competitor, DataViz's MacOpener 3.0, also offers this feature.

When copying Mac files, NT users can allow MacDrive 98 to retain the file's Mac resource fork, as long as the files are being copied to a Mac-formatted disk or to a Mac volume on an NTFS-formatted hard disk created with NT's Services for Macintosh. Such native Mac volumes are commonly used on NT servers.

MacDrive 98 does an excellent job of mounting Mac volumes. In fact, it is so aggressive in its efforts that it confusingly mounted the remnants of my PC hard disk's original Mac partition, causing Norton Utilities to choke on the phantom data. It turns out that my DOS disk-format utility left some of the disk's space unused, and—since the drive had originally been a Mac's drive—portions of a Mac partition remained that no other Mac-disk mounter detected. Media4 provided a downloadable fix that allowed MacDrive 98 to ignore my disk's long-lost Mac data.

Macworld's Buying Advice

MacDrive 98 offers the best set of features of all Mac-disk–mounting utilities, and seamless integration into Windows makes the program extremely easy to use. If you use Windows 3.1, you'll prefer MacOpener 3.0 as your Mac-disk mounter. But for everyone else, MacDrive 98 is the utility of choice.—GALEN GRUMAN

RATING: ★★★★½ **PROS:** Mounts Mac media under Windows 95, 98, and NT 4; encodes and decodes MacBinary files; makes it easy to add new file types by importing Mac file and creator types. **CONS:** None significant. **COMPANY:** Media4 Productions (515/225-7409, www.media4.com). **COMPANY'S ESTIMATED PRICE:** $65.

Cinema 4D XL

FASTEST 3-D RENDERER FOR THE MAC

ELECTRICIMAGE HAS LONG BEEN *the* high-end (and most expensive) 3-D animation package for the Mac, sporting one of the fastest renderers around. The latest challenger to ElectricImage's throne, Maxon Computer's Cinema 4D XL 1.0 (distributed by 3D Gear), has all the ingredients of a great 3-D program. It can render images faster than ElectricImage; it packs a full arsenal of pro-quality tools for modeling (still missing from ElectricImage) and animation; and it lets you model, animate, and render in a single interface.

One of the main attractions of Cinema 4D XL is an object-oriented hierarchy that goes beyond the usual parent/child system. XL offers an Object Manager window that lets you transfer or duplicate properties (such as texture, size, color, and shadow casting) from object to object, an efficient way to update large amounts of object information in a complex scene.

But XL's centerpiece is a lightning-fast renderer that can ray-trace high-polygon-count scenes faster than any other software (including ElectricImage's Phong renderer). For example, a scene that would slow down other renderers—one with a highly detailed model and numerous light sources, transparencies, and soft shadows—posed no problem for XL, which zipped right through it to produce stunning ray-traced images and animations. The program is so fast, in fact, that ray tracing is a perfectly viable preview option.

Particular Particles In Cinema 4D XL, particles from a particle emitter can be individual lights that cast shadows. This scene has more than 40 light sources, all quickly rendered with XL's ray tracer.

Cinema 4D XL includes impressive tools for NURBS, spline, and Boolean modeling, along with vertex-level editing.

And its particle system is simply awesome; for example, each particle in a particle effect can be a light source or even an animated object—to create, say, a school of fish—resulting in some wild special effects (see "Particular Particles").

Equally impressive is XL's strong support for inverse kinematics: once an object hierarchy is established, the IK engine locks objects together and allows natural movement when a link in the IK chain moves. XL's "bones" tools let you lay down a skeleton structure under an object surface and warp that object based on the skeleton's movement.

The CD-ROM includes both Mac and Windows NT versions, something production studios will love. Another production-oriented advantage is that XL can import files in a wide variety of formats: Kinetix's 3D Studio Max, Newtek's LightWave 3D, Adobe Illustrator Wavefront, and DXF. Amazingly, imported scenery files retain most of the necessary elements, such as cameras, lights, and textures. Cinema 4D XL also supports an open plug-in architecture, which will allow third parties to develop more-in-depth modeling tools.

XL's interface, unfortunately, is a work in progress. Most of the windows could use some graphical and iconic touch-ups; the timeline could be more tightly designed, perhaps to resemble Adobe After Effects'; and the flat, gray interface would benefit from some color. In addition, the documentation lacks tutorials and examples—a real shortcoming in a program that has a learning curve typical of high-end 3-D software.

Macworld's Buying Advice

With a blazingly fast renderer and a robust mix of modeling and animation tools, Cinema 4D XL has the potential to become the leading 3-D software for the Macintosh. Although it's not priced for casual users, the program is well on its way to becoming a must-have tool for professional 3-D–production artists.

—DAVID BIEDNY AND TRAVIS ESTRELLA

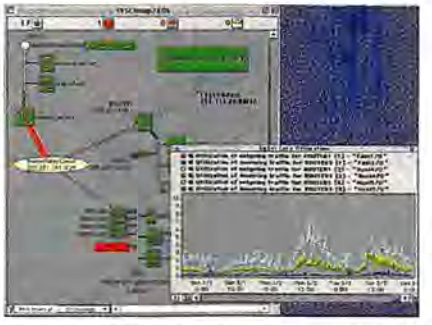
RATING: ♦♦♦♦ **PROS:** Fast rendering; light sourcing and object animation with particles; intuitive object hierarchy; IK support; variety of import formats. **CONS:** Unpolished interface; weak manual. **COMPANY:** 3D Gear (805/484-5804, www.cinema4d.com). **LIST PRICE:** $1,995.

InterMapper 2.0

INEXPENSIVE NETWORK MONITOR ECLIPSES THE COMPETITION

A WORLD-CLASS NETWORK-management tool even in its initial release (see *Reviews*, January 1997), InterMapper, from Dartmouth College, offers a basic feature set that matches products costing ten times as much. Version 2.0 puts InterMapper well ahead of the competition, adding new features such as built-in Web serving, flexible traffic graphs, server monitoring, and escalated notifications.

InterMapper combines a network-discovery and -mapping tool, network monitoring, historical logging, traffic graphing, and real-time traffic display into a single application. With a powerful interface, InterMapper is simplicity itself to use: you launch it, and it discovers devices on your network, automatically locating and diagramming both AppleTalk and TCP/IP devices. Once InterMapper has drawn your network, you can use the built-in diagram editor to rearrange nodes and links, add descriptive text, and change the icons for various devices. InterMapper's monitoring function probes devices and collects traffic statistics periodically, displaying component status using color codes and traffic loads using "marching ants" to depict various data rates.



Visualizing Traffic InterMapper's strip charts let you display network traffic, measured at multiple locations in your network, as a multicolor line graph.

When the status changes, you can trigger specific actions—e-mail messages, alpha pages (with optional paging software), Apple events, or application launches—and use a schedule to control when various actions can occur. InterMapper is remotely controllable via a secure Telnet log-in, letting you check your network status even when you're away from the office.

The original InterMapper depicted Ethernet hubs and switches as a single device with one network connection; version 2.0 shows every Ethernet port on a hub or switch. That lets you display individual hub and port connections and monitor traffic flowing on those connections. A built-in Web server gives any browser access to InterMapper's status reports and network diagrams, letting you observe network status from anywhere on your network. With IP-address security, access is limited to authorized users.

InterMapper's new strip charts graph traffic statistics for up to six devices each; you can plot traffic flow in packets or bytes per second, error counts, or bandwidth use. The graphs are flexible, letting you expand or compress the timeline and *y*-axis to zoom from a high-level view of several days to specific samples.

Notifications now support a time delay before firing, so you can escalate notifications for sustained problem conditions. For example, you might e-mail a local technician if a device is down for five minutes but page the network administrator if it's still down after an hour. And you can now customize probes for particular Internet services (such as HTTP) to ensure, for example, that your Web server is still delivering pages to users.

The package includes a first-rate user's guide and tutorial in PDF format; Dartmouth delivers regular updates online and gives registered owners access to beta releases. InterMapper still lacks one feature that managers of large networks would find useful, however—SNMP trap handling. The developers say that that capability, originally expected in this release, is still in the future.

Macworld's Buying Advice

No network monitor approached InterMapper's original combination of features, ease of use, and low cost. With an array of new capabilities—and no increase in price—InterMapper is a better deal than ever.—MEL BECKMAN

RATING: ♦♦♦♦½ **PROS:** Automatic network discovery and mapping; server monitoring; statistical graphs; built-in Web server. **CONS:** Still no SNMP trap support. **COMPANY:** Dartmouth College (603/646-2643, www.dartmouth.edu/netsoftware/intermapper/). **LIST PRICE:** $795.

Eudora Pro 4.0

POWERFUL BUT CLUNKY E-MAIL CLIENT

WITH SO MUCH BUSINESS COMmunication relying on e-mail, having the right e-mail client can make a big difference in productivity. Simple mail programs, like the one built into Netscape Communicator, are fine if you don't get much mail. Qualcomm's Eudora Pro 4.0 offers serious e-mail handling that can manage a virtual onslaught with aplomb, though it still has a ways to go in the ease-of-use department.

Version 4.0 adds some welcome new features. For example, it doesn't mind if you have multiple e-mail addresses—you can check for mail at all your addresses in one step—and you can send and receive e-mail in the background. You can also apply simple HTML text formatting to your messages, although recipients who aren't running an HTML-compatible mail program will see nasty-looking HTML code.

Eudora Pro supports LDAP, an increasingly popular protocol for online white pages, and ACAP, a new protocol that lets system administrators configure Eudora automatically from a server. Missing from this version is support for IMAP, a newer standard for retrieving e-mail.

Easy Access, Flashy Text Eudora Pro's new tabbed windows make it easy to switch between mailboxes, signatures, and other frequently used areas. Note the HTML-styled text in the open message.

You can now create filters that route messages to a particular mailbox, but Eudora's filter capability takes a backseat to Claris Emailer's. For example, let's say that you want messages from people you know to show up at the top of your in-box, highlighted in red. In Emailer, it takes one step to set up this filter; Eudora Pro requires a separate filter for each person. Emailer's address book is also superior, easily handling a recipient's multiple e-mail addresses. While you can put multiple e-mail addresses for one recipient in Eudora's address book, all those addresses appear when you create a message.

Qualcomm has rearranged Eudora's interface to make it easier to use, and you can combine several previously separate windows into one tabbed window. It's also easier to manage signatures and e-mail stationery. But initial setup could be easier, and the Settings dialog box is still a nightmare of bewildering preferences.

Macworld's Buying Advice Eudora Pro has improved to the point that it's roughly equivalent to the current version of Claris Emailer, although Emailer has the edge in ease of use. If you're familiar with earlier versions of Eudora, you'll have no problem getting up to speed with version 4.0; unfortunately, there's no discounted upgrade price. If you're not already on the Eudora bandwagon, download the demo versions of both Eudora Pro and Claris Emailer and see which one you prefer.—TOM NEGRINO

RATING: ♦♦♦½ **PROS:** Improved interface; good support for checking multiple e-mail accounts; supports several new Internet protocols. **CONS:** Setup needs better help facilities; mail filters lack flexibility; poor handling of multiple addresses for one recipient. **COMPANY:** Qualcomm (619/658-1291, www.eudora.com). **COMPANY'S ESTIMATED PRICE:** $39.

Storage Wizard 2.0

ORGANIZES YOUR HARD DRIVE

THERE ARE FEW SURE THINGS in life: death, taxes, Mac OS updates, and diminishing hard-disk space. FWB Software's Storage Wizard 2.0 extends the useful life of hard disks by compressing files, migrating lesser-used documents to alternate media, and creating intelligent archives that can be accessed in seconds. Even if you're not pressed for disk space, Storage Wizard's mirroring facility provides automatic backups and creates free space that can be used for virtual memory.

A renamed upgrade from FWB's award-winning HSM Toolkit, this enhanced version sports a friendlier interface, allows monitoring of more than one disk volume, and can be configured using a new Rule Wizard. You can, for example, specify that whenever your hard disk becomes 90 percent full, all files that haven't been accessed in six months should be compressed in place; transferred to a holding folder; or moved to storage, such as a networked hard disk, a removable-media drive, or virtually any other storage device except tape drives. Files can be relocated to an easily searched archive, with or without an alias left behind in their original folder. Files and applications that will never be used again can be directed to the Trash.

Ruling the Roost Storage Wizard can set up rules automatically, or you can enter default preferences.

Other parameters let you specify how crowded a hard disk should get, whether to move files that haven't been backed up, and which files should be automatically archived. You can choose which folders Storage Wizard should manage, and mark the ones it should ignore. The program can automatically mirror modified files on a second storage device and flag changed or moved files with Finder labels and colors.

In informal tests, Storage Wizard found many megabytes of wasted space on a 6GB hard disk with 3GB of free space. Using a few simple rules, the utility ferreted out candidates for deletion or removal to offline storage and then constantly monitored the disk in the background.

As with its predecessor, Storage Wizard's extension tracks when an application or data file is used, and it can be taught to ignore accesses by Symantec Norton Disk Doctor, Aladdin StuffIt Expander, or any other program. A database determines which files have been idle long enough for action and which previously migrated files should be promoted to active status on your hard disk. You can also select and migrate files manually when you finish a project.

Macworld's Buying Advice Storage Wizard 2.0 offers more-flexible archiving and security than conventional backup programs, and it continues to liberate disk space with its rule-based evaluation of which files you really do need on your drive. Once you've put Storage Wizard to work, it keeps monitoring your disks in the background to keep them clean, lean, and uncluttered. —DAVID D. BUSCH

RATING: ♦♦♦♦½ **PROS:** Smooth background operation; seamless file tracking and compression. **CONS:** No tape-drive support. **COMPANY:** FWB Software (650/482-4800, www.fwb.com). **LIST PRICE:** $79.

PageStream 3.3

FLAWED PAGE-LAYOUT PROGRAM

THE LATEST IN A SERIES OF page-layout packages to take on market leaders QuarkXPress and Adobe PageMaker, SoftLogik's PageStream was originally developed for the Commodore Amiga. SoftLogik boldly proclaims PageStream 3.3 to be the best desktop publishing program on any platform; indeed, in a feature-by-feature comparison, it does appear to hold its own with its better-known competitors. But a long feature list does not necessarily make for a useful product, and PageStream has some glaring weaknesses—most notably a flawed undo function and an inability to import Microsoft Word files directly—that most publishing pros will find unacceptable.

PageStream's approach to page layout borrows from that of both QuarkXPress and PageMaker. PageStream uses text boxes in a manner reminiscent of QuarkXPress, and it includes such XPress niceties as Bézier drawing tools and character style sheets. But it also puts each page or spread on a PageMaker-style pasteboard and mimics PageMaker's approach to placing graphics: instead of drawing a picture box and then importing the image, you just select the file and click where you want it to go.

The Sincerest Form of Flattery PageStream's interface borrows heavily from that of its competitors.

PageStream offers impressive typographic functions, including kerning and ligature controls and the ability to track type in increments as small as 0.01 percent. Drawing features are also strong: you can create unusual shapes for use as image masks or text boxes and convert text to paths. All objects can be grouped, rotated, resized, and assigned stroke-and-fill characteristics.

These features could make for a powerful desktop publishing contender, but SoftLogik has overlooked some fundamental needs of Mac-based publishing professionals. Betraying its origins, the software can import files in the Amiga text format but not in Word, Claris MacWrite, or any other Mac-specific format other than Corel WordPerfect. SoftLogik says it's working on a Word import filter.

PageStream's user interface is downright sloppy. For example, if you have two linked text blocks and make one smaller, the text doesn't automatically flow; it disappears until you enlarge the second box. And while the program theoretically allows multiple undos, many operations can't be undone at all. This makes the Undo command somewhat unpredictable: if you add text, draw a circle, and then choose Undo, the text is removed and the circle remains.

Macworld's Buying Advice Despite the version number, this is the first full PageStream release for the Macintosh, and it feels like a work in progress. If SoftLogik fixes the program's many flaws, it may offer a viable alternative to PageMaker—and perhaps even QuarkXPress. In its current incarnation, however, PageStream falls far short of the competition.—STEPHEN BEALE

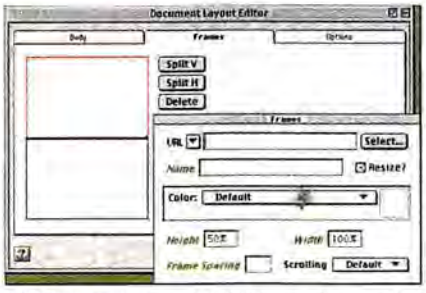
RATING: 1½ **PROS:** Strong typographic and drawing tools. **CONS:** Poor word-processor support; flawed Undo command; sloppy user interface. **COMPANY:** SoftLogik (314/305-7878, www.softlogik.com). **LIST PRICE:** $595 (introductory price of $199 available indefinitely).

World Wide Web Weaver 3.0

USER-FRIENDLY HTML EDITOR HAS SOME ROUGH EDGES

FOR A DEVELOPER, UPDATING software is like rock climbing: if you don't test a new handhold before you commit your weight to it, you may be in for a long fall. In some ways, Miracle Software succeeds with World Wide Web Weaver 3.0, combining the power and flexibility of text-based Web-page editors with the ease of use of WYSIWYG editors. Unfortunately, some of Web Weaver's new features tend to crumble beneath your fingertips.

Web Weaver is built for Web-page creators who already have a thorough grasp of HTML and Web concepts. For example, the default start-up document is a blank page with preformatted **<html>**, **<head>**, and **<body>** tags. Underneath the gruff exterior, though, lies some pretty helpful software. Web Weaver can automatically create just about any type of tag—just pull down the Tags menu or click on a button in the tool bar, and fill in the resulting dialog box. Web Weaver keeps your document easy to read by highlighting tags in a variety of colors and formatting your text when you apply style tags. If you're coding HTML by hand, you can ask Web Weaver to sweep your document, checking your syntax and colorizing your tags.



Click but Don't Drag Web Weaver's frame editor helps you visualize the browser window, but resizing the frames by dragging the edges will make a horrible mess.

Web Weaver sports semi-WYSIWYG editors for frames, tables, and image maps, among other complex tags, but it's a toss-up as to whether they're a help or a hindrance. For instance, Web Weaver's image-map tag editor consists of two cross-linked modal dialog boxes packed with cool but wobbly tools that leave you wondering if the software is working properly: text that should appear automatically sometimes doesn't, and clicking on an image map to make it active occasionally won't. And the WYSIWYG table editor, while well conceived, is marred by clunky performance and screen-redraw problems. Possibly the worst offender, though, is the frames editor, whose centerpiece is a graphic representation of what the browser screen will look like after you subdivide it (see "Click but Don't Drag"). The interface invites you to resize the frames by dragging their borders. But monkeying with the frames graphic will freeze up the tag editor, and you'll have to cancel out and try again.

Macworld's Buying Advice Web Weaver's shortcomings are a shame, because the software is both inviting and educational. Miracle Software says it's working on version 3.0.1, which should fix a nasty drag-and-drop bug and otherwise polish up the package. My advice is to wait for the update—and make sure your safety harness is firmly attached.—CAMERON CROTTY

RATING: 2½ **PROS:** Text-based editor intuitive, easy to use. **CONS:** Advanced tools aren't reliable. **COMPANY:** Miracle Software (315/265-0930, www.miracleinc.com). **LIST PRICE:** $89.

LightningDraw/Web

VECTOR-BASED WEB GRAPHICS

WHEN APPLE KILLED OFF QuickDraw GX, it looked like curtains for an amazing GX-based illustration program called LightningDraw, from Lari Software. But since Apple rolled QuickDraw GX's power into QuickTime 3.0, Lari is suddenly in the catbird seat: its LightningDraw/Web 1.1.1 is the only tool to support QuickTime's new vector-graphics features, letting you create complex illustrations and save them as tiny QuickTime files.

As its name implies, LightningDraw/Web is targeted at Web developers. Lari wants you to replace the GIF images on your Web page with vector-based images, which are generally much smaller than even compressed bitmaps. But despite using QuickTime for saving files, LightningDraw/Web doesn't create animations; QuickTime is merely the container for the resulting single-frame illustrations. Since competing vector-based tools, such as Macromedia's Flash 2.0 (see *Reviews*, September 1997), offer animation and user-interaction effects, this is a major failing. Other drawbacks: the QuickTime vector track doesn't support bitmapped objects; you can't link different parts of a drawing to different URLs; only linear gradients are supported; and you can't print your images.

See-through Hues LightningDraw/Web's powerful transparency options let you quickly create effects that would be difficult in other illustration programs.

But as far as drawing goes, the user interface is nearly perfect, offering a smart combination of well-designed palettes and logical menus. The Reshaper tool lets you grab and move any point on a line, curving the rest of the line to follow; the Cut tool lets you carve out interior portions of a polygon. You can make objects transparent, affecting the color of objects underneath. Text handling is superb, especially with GX-savvy fonts. The InConcert feature is particularly dazzling, allowing you to add or subtract shapes to create complex polygons. And LightningDraw/Web imports GIFs, PICTs, and Illustrator files, although it drops text during import.

To create a vector graphic for use on the Web, you select the Export as QuickTime option and specify settings for compression and display quality. (In your HTML file, you add an **<embed>** tag where you want the image to appear.) LightningDraw/Web can also export images as GIF89a, JPEG, and GX PICT files.

Macworld's Buying Advice LightningDraw/Web is a powerful program that offers unique support for QuickTime 3.0's vector-graphics track. But despite QuickTime's possibilities, Web designers probably won't rush to abandon GIFs. Either way, the program's viewing audience will be minimal until QuickTime 3.0 is generally available. And until LightningDraw/Web supports vector animations, it'll be no match for Flash.—ROB TERRELL

RATING: ♦♦♦ **PROS:** Only product to support QuickTime vector graphics; excellent user interface and illustration tools. **CONS:** Can't produce animations; can't link different parts of an illustration to different URLs; QuickTime 3.0 not yet widely adopted. **COMPANY:** Lari Software (919/968-0701, www.larisoftware.com). **LIST PRICE:** $99.

DenebaCAD 1.5

ARCHITECTURAL CAD PROGRAM EXCELS

DENEBACAD HAS GROWN UP FAST. When we looked at version 1.0.2, we gave it high marks for its impressive rendering features but noted that it had the unfinished feel of a beta version (*Reviews*, March 1998). Version 1.5, released a mere three months later, not only sets a speed record for improvement; it's also easier to use and produces stunning, photorealistic architectural renderings at speeds that will simply dazzle clients viewing a walk-through.

In a world where AutoDesk's AutoCAD is the standard, the most important additions to DenebaCAD 1.5 are new drawing features, scalable arrows and text, and upgraded dimensioning tools; they let the program import and export AutoCAD DXF and DWG files with no translation glitches in objects or descriptive text. DenebaCAD's file exchange with AutoCAD is now better than that of programs costing thousands more.

DenebaCAD 1.0 supported multiple open windows with different views of the same project, but the new version's performance improvements make it practical to

Welcome Want to see how this room looks from the sofas in the corner? DenebaCAD 1.5 can redraw the scene almost instantaneously.

demo—on a laptop and in real time—a 2-D plan in one window, a 3-D wire-frame plan in another, a 3-D solid view in a third, and an amazing video-like view in the fourth. The latter offers fast ray tracing to display lighting shifts, great handling of reflection and transparency, and the most realistic assortment of surface textures you'll find for less than $1,000.

Most of the problems in the first release—uneven library content, repetitive error messages, sluggish performance on some operations, and the general Canvas-with-CAD-tacked-on feeling—have all been fixed, and in record time for a program this complex. The included libraries still offer much more support for designing homes and offices than for designing machine parts; Deneba is obviously pushing the product to excel in one area rather than delivering a lumbering behemoth that does everything.

With no support for macros or scripting, DenebaCAD still lacks BASIC-level programmability. Again, that may be a drawback for mechanical engineers, but for architects—DenebaCAD's target audience—it's only a minor concern. If you're designing components for plastic injection molding, try Diehl Graphsoft's MiniCAD; if you're designing an office-building atrium, on the other hand, get DenebaCAD.

Macworld's Buying Advice With DenebaCAD 1.5, Deneba has not only repaired the glitches in the previous release but also added worthwhile new features users have requested—all without raising the price. This version moves DenebaCAD to the front rank of architectural-CAD programs for the Mac.—CHARLES SEITER

RATING: ♦♦♦♦ **PROS:** Full-featured rendering at top speed; well-designed interoperability of 2-D– and 3-D–CAD functions. **CONS:** Modest engineering libraries; lacks programmability. **COMPANY:** Deneba Software (305/596-5644, www.deneba.com). **LIST PRICE:** $799.95.

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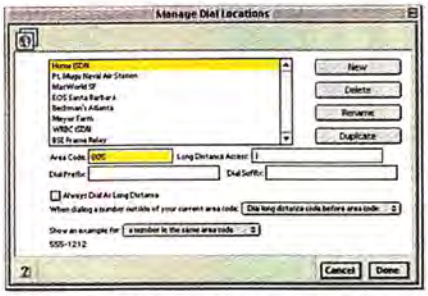
GearBox 1.5

INTERNET UTILITY SIMPLIFIES CONNECTION SETUP

MACINTOSH TCP/IP CAN BE A formidable beast to configure because of the sheer volume of settings you must contend with. If your Mac is mobile or you use more than one Internet service provider, constantly switching TCP/IP settings and application preferences can be a colossal inconvenience. Rockstar Studios' GearBox 1.5 brings simplicity back to your life by letting you automatically swap in all the right settings for your current location with a single click.

Setting up GearBox is simple, and the program's Easy Setup wizard walks you through configuring your initial Internet connection. If you already have TCP/IP configured on your Mac, GearBox collects all your current settings—including application preferences for Netscape Navigator and Communicator, Microsoft Internet Explorer, Qualcomm's Eudora, Newswatcher, NCSA Telnet, and IRCle Internet Relay Chat. GearBox also sets the Internet Config control-panel values, which are used by many other Internet applications; you simply confirm the settings as being accurate. Whether you dial up to the Internet via modem, ISDN, or Ethernet, GearBox validates the settings to verify that they make sense, and performs a test to confirm that your Internet connection works. Once you're online, GearBox's status display shows connection time, average and maximum throughput, and Internet congestion based on packet latency.



Location, Location, Location GearBox 1.5 stores separate Internet configuration sets for every location you frequent, changing control-panel settings and application preferences with a single click.

GearBox's Workspace feature can maintain separate Web-browser bookmarks, e-mail address books, and e-mail mailboxes for each configuration set—perfect for managing Internet settings on a computer shared by two or more people. All users simply click on their own configuration set to reconfigure the machine for their unique Internet identity.

GearBox has a few minor rough edges. The Easy Setup wizard imports only your current TCP/IP settings; if you have other TCP/IP or PPP configurations saved as sets, you have to re-create them manually within GearBox. And GearBox doesn't store geographic or time-zone information, so when you switch locations, you have to manually update your Map control panel and clock to reflect your new position and time zone.

Macworld's Buying Advice If your Mac is mobile, has multiple Internet connections, or is used by several people, GearBox 1.5 is useful for alleviating lengthy reconfiguration efforts and transforming them into one-click operations.--MEL BECKMAN

RATING: ♦♦♦♦ **PROS:** Elegant setup wizard for first-time users; automatically switches among different mailboxes, phone books, and bookmark sets; useful monitoring and diagnostic aids. **CONS:** Doesn't import all existing TCP/IP configuration sets; doesn't reset time zone. **COMPANY:** Rockstar Studios (415/242-1984, www.rockstar.com). **LIST PRICE:** $49.95; downloaded from the Web, $39.95.

Take the Fast Track to HFS Plus

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PlusMaker quickly converts the disks of your choice to HFS Plus so you can immediately enjoy the maximum space saving benefits of the new disk format. "I used PlusMaker on all three of my disks, and it worked flawlessly. Best of all, none of the disks took longer than 15 minutes to process. Compare that to the time it would take you to back up, reformat and restore each of your hard disks and I'm sure you'll agree, PlusMaker is way cool." Bob LeVitus "Dr. Mac", Houston Chronicle, 2/14/98

Alsoft PlusMaker

	PlusMaker	Manual Conversion
Effortlessly makes current Mac disks into HFS Plus disks without erasing and restoring from backups	YES	NO
Existing aliases and backup storage sets continue to work	YES	NO
Maximizes space savings with smallest possible allocation block size	YES	NO
Optimizes directory performance	YES	NO

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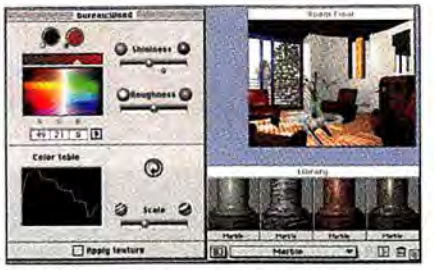
Artlantis Render 3.0

FAST RENDERING FOR SELECT CAD USERS

CAD USERS OFTEN WANT TO SEE different texture options for decor—such as various types of wall pattern or floor tile—updated instantaneously, but they have to wait through rerendering. Abvent USA's Artlantis Render 3.0.1 speeds up the rendering process significantly with its faster ray-tracing engine and also adds features such as camera-walk-through animation and an excellent new interface for creating multinode QuickTime VR files. But despite the program's impressive rendering speed and snazzy new features, Artlantis Render's problems importing and working with certain file types may be a significant drawback for many CAD users.

Artlantis Render is designed to be a rendering environment for Graphisoft's ArchiCAD, Diehl Graphsoft's MiniCAD, and Abvent's Zoom (referred to hereafter as the Big Three). Artlantis lets you easily experiment with, and quickly render, combinations of surface textures in scenes imported from full-featured 3-D and CAD programs. The straightforward interface for creating and placing textures lets you edit basic textures such as woods, stones, and marbles (additional textures are available on four $75 CD-ROMs of 100 textures each) and drag and drop them right into a scene. Texture edits update almost instantly in a shaded preview window of the scene.



Instant Gratification Artlantis Render 3.0.1 lets you modify basic textures, drag and drop them onto your scene, and see them update instantly.

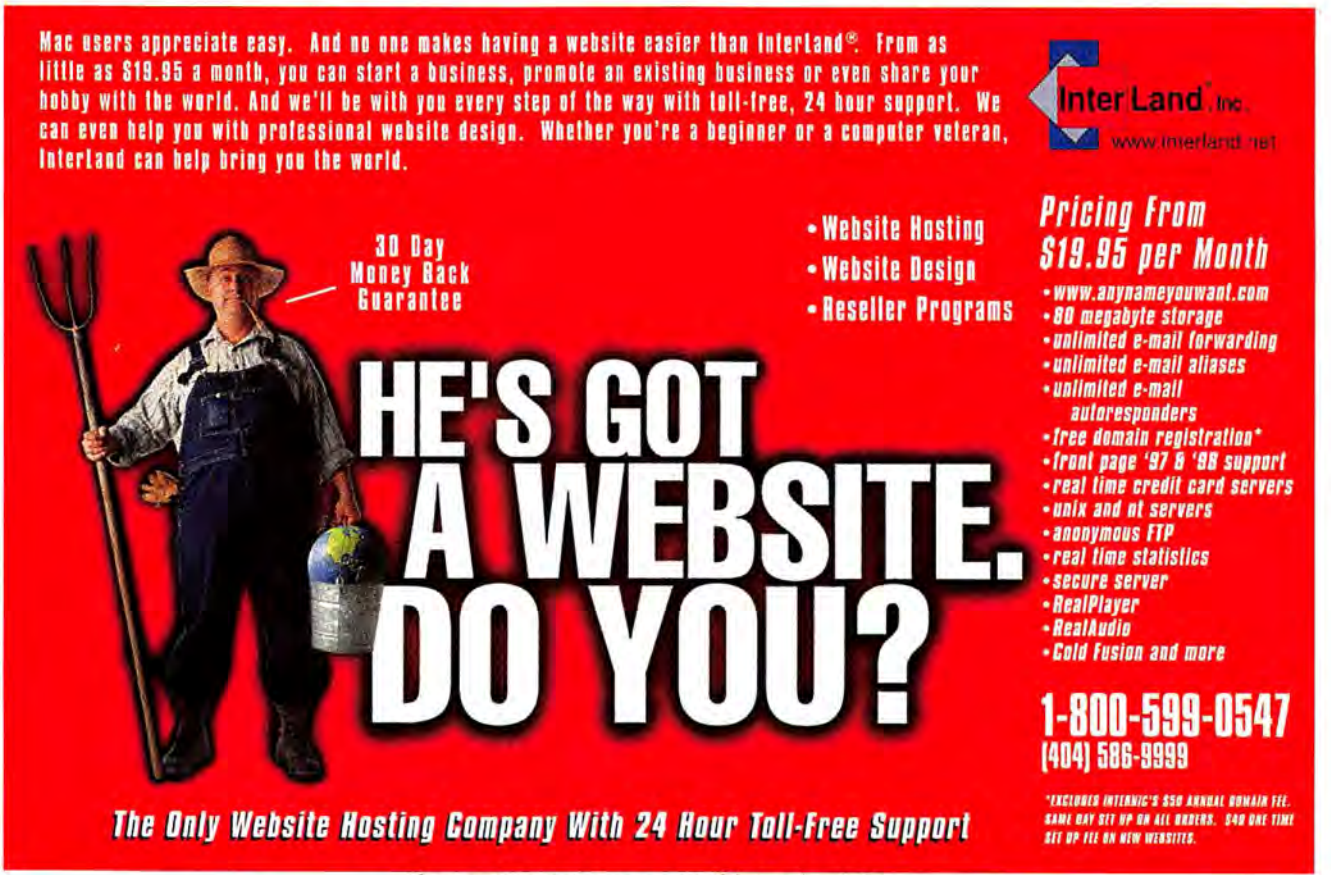
Artlantis also lets you render camera-fly-by animations of your scenes—but you can't animate objects or lights within a scene. And you can easily create multinode QuickTime VR scenes by adding a camera for each node, defining hot spots, and linking the cameras.

If you use CAD or 3-D–modeling software other than the Big Three, be warned; Artlantis isn't as skilled at importing DXF files—a basic CAD file format—from other 3-D and CAD programs. The documentation offers no help in defining what DXF parameters Artlantis prefers.

Artlantis can import 3DMF files, Pixar Renderman geometry files (though not their shaders), Autodesk 3D Studio files (but not those of 3D Studio Max), ElectricImage files, and VRML 1.0 files. But the biggest problem with data from programs other than the Big Three is that you can't make any edits to a scene—even move an object—once it's imported into Artlantis. Only the Big Three offer true integration between their modeling abilities and the rendering prowess of Artlantis.

Macworld's Buying Advice If you use ArchiCAD, MiniCAD, or Zoom, Artlantis Render 3.0.1's ability to make instant rendered changes—and create quick camera animations and QuickTime VR scenes—makes the program a solid buy. But if you use other 3-D–modeling or CAD programs, spend your money elsewhere.—DAVID BIEDNY AND TRAVIS ESTRELLA

RATING: ★★★½ **PROS:** Simple interface; fast ray-traced rendering; good QuickTime VR tools. **CONS:** You can't edit files imported from many CAD packages; problematic DXF import. **COMPANY:** Abvent USA (415/921-6251, www.abvent.com). **LIST PRICE:** $595.



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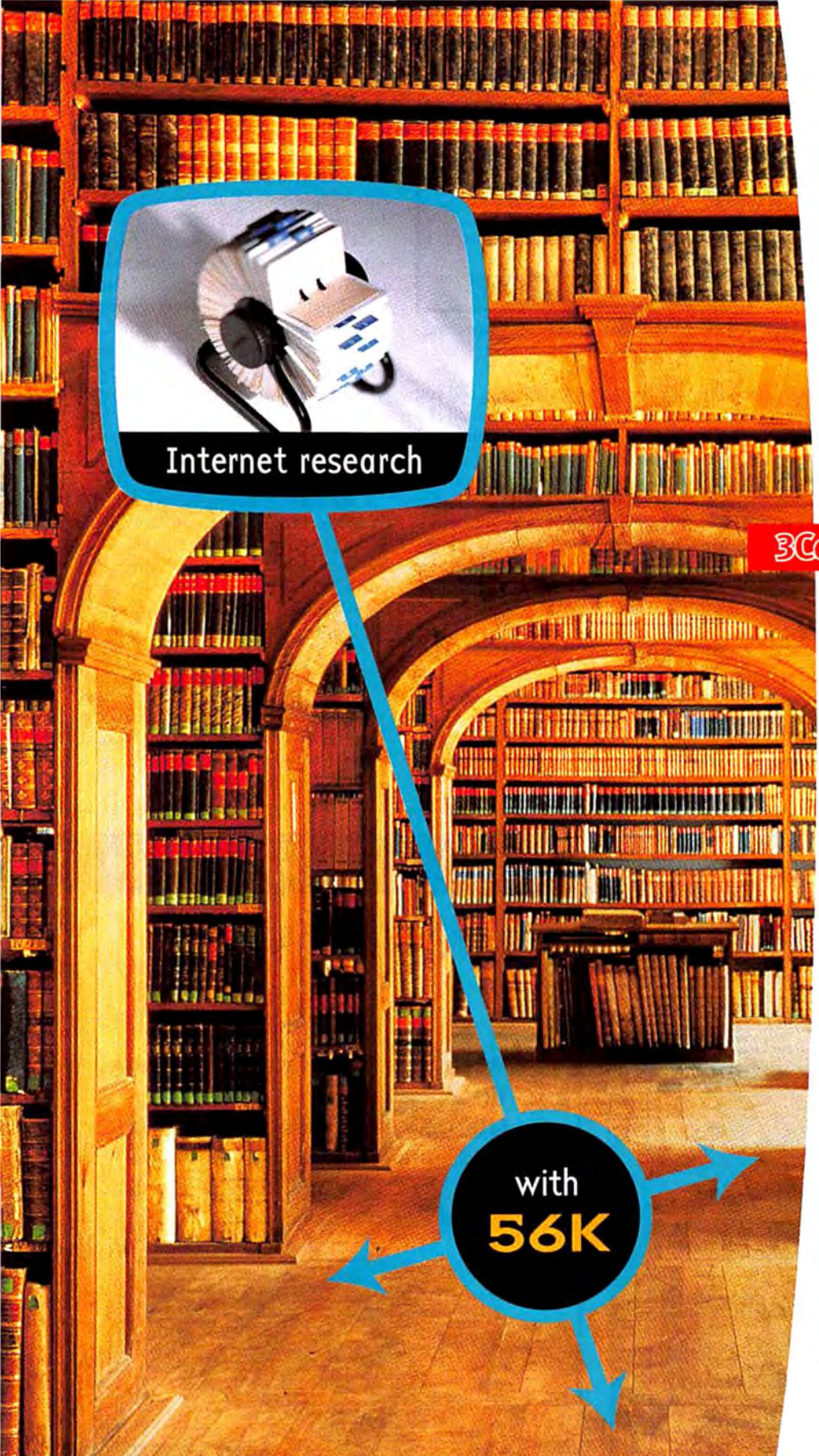

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SpeedShare

BUGGY FILE-TRANSFER UTILITY

FOR THOSE WHO CRAVE SIMplicity and elegance, Qdea's new SpeedShare promises to make Internet file transfer a truly Mac-like experience. This inexpensive utility allows drag-and-drop transfer with transparent compression and encryption and helps manage hosts with dial-up Internet connections. Unfortunately, version 1.02 feels more like an early beta than a finished product, laden with glitches that affect both appearance and functionality.

After a simple installation, you configure your Mac as a client, a server, or both (a client-only version is available for $29.95). Simple dialog boxes let you quickly configure a server's name, Internet connection, security, and start-up behavior; client configuration is similarly straightforward. I installed SpeedShare's client and server applications on a Umax SuperMac S900/233 and two Power Macintosh 6100's, and within five minutes, I had all three configured.

Once the Mac's configured, the server application runs in the foreground or background and displays file information in a log window. The client application gives you an outline view of your local hard disk, and you can expand and collapse folders as in the Finder. To move files between the client and a server, you select a connection; when the graphical view of the server's contents appears, you simply drag and drop between SpeedShare windows or to and from a Finder window to have SpeedShare transfer the selected files. Overall, SpeedShare's interface is both more attractive and a bit more intuitive than a standard FTP client's.

A Moving Experience SpeedShare enables drag-and-drop file transfer across the Internet.

SpeedShare offers access control based on user name, along with on-the-fly compression and encryption. Users who have only part-time Internet connections will appreciate Rendezvous, Qdea's Internet-based directory service (a SpeedShare license includes a one-year subscription to Rendezvous). When you launch SpeedShare Server and establish an Internet connection, SpeedShare registers itself with Qdea's Rendezvous server. Clients looking for your server don't need to know its exact IP address; instead, they query the Rendezvous server, which directs them to it.

Unfortunately, display artifacts mar the initially attractive GUI. I also encountered a rash of errors during a variety of transfers, including file copying that never ended and a server that stopped responding. I was unable to copy files, using compression, to a system running OS 8.1 and HFS+. And compressed-file transfers took three to four times as long when the server application was running in the background, rendering compression worthless. Qdea was unable to resolve these problems.

Macworld's Buying Advice If SpeedShare worked as advertised, it would be a useful product; as it is, it's more likely to be frustrating. An alternative is Netopia's Timbuktu Pro 4.0; it costs $99 for two users and offers remote control in addition to file transfer.—J.W. DAVIS

RATING: ❚❚ **PROS:** Easy installation; good concept. **CONS:** File-transfer and interface bugs. **COMPANY:** Qdea (612/779-0955, www.qdea.com). **LIST PRICE:** $49.95.

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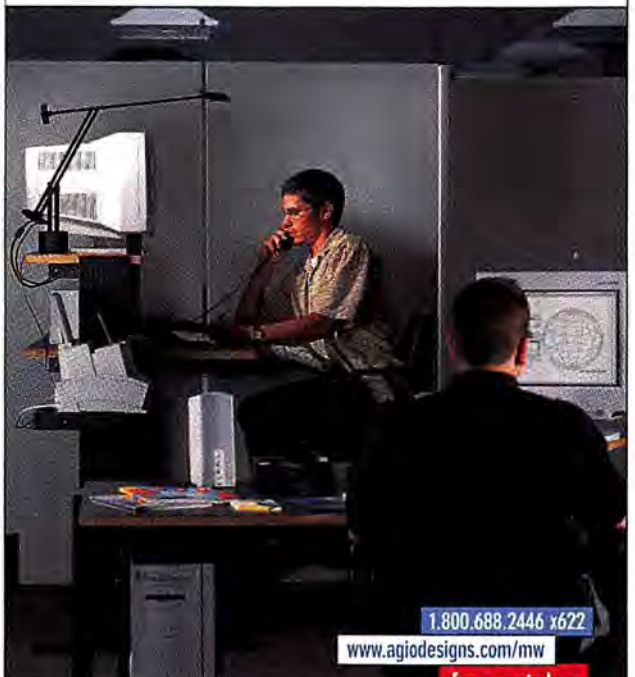

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Pax Imperia: Eminent Domain

IMPOSING MONIKER HIDES A FRUSTRATING EMPIRE-BUILDING GAME

SET IN OUTER SPACE IN THE far future, Pax Imperia: Eminent Domain ambitiously attempts to move a slow-moving turn-based genre into the real-time world. Your simple goal: raise your species to be the dominant power by exterminating all competitors. Behind this promising premise lurks a game that will leave players feeling as empty as the void of space.

As Pax Imperia begins, players select one of eight different stock species (including humans, insectoids, and other familiar futurist archetypes) or create one of their own. The game's designers made a noble attempt to give each species distinct physical traits and predilections toward war, science, espionage, or civics. Alas, these differences fall flat in game play, where control of territory is all that matters.

The game's graphics are similarly lackluster, offering a mere handful of planetary surfaces. And despite the existence of eight species, all colonies build the same buildings. Spaceship fleets allow players to differentiate themselves during combat, but it's hardly enough to give a unique feel to each species. Ships themselves resemble 2-D cardboard cutouts and move with similar grace.

The Eternal City No matter which race—even subterranean ones—builds it, every city in Pax Imperia looks exactly alike.

Pax Imperia's novelty lies in real-time play, but this innovation proves to be a strong limiting factor. For example, instead of selecting buildings to be constructed, you set (or modify, with great inconvenience) priorities for the types of buildings important to your goals. As a result, players spend a lot of time watching a progress bar, waiting for action.

But tedious game play isn't the worst news: numerous bugs lurk in Pax Imperia's code. Even with a patch downloaded from the company's Web site, you'll want to save frequently to ensure that you don't lose that time-consuming space-station project.

The game's poorly written manual assumes you're using Windows, so despite a simple main interface, the learning curve is steep. Would-be tacticians will weep as their ships head dumbly to their doom.

Many a mediocre game gains new life in network play, but Pax Imperia does not. There's no way to save a network game, no way to alter the speed, and—once you've figured out how to get a game going—no stopping it, unless you crash.

Macworld's Buying Advice Ill-conceived and poorly implemented, Pax Imperia: Eminent Domain gives the impression of nothing more than an unfinished product. Players new to strategy games may be forever soured on a rewarding genre. Experienced gamers, though, will be bored and disgusted.—DANIEL MADAR

RATING: ½ **PROS:** Simple interface. **CONS:** Flat game play; long periods of waiting; bugginess; substandard documentation; nearly impossible network play. **COMPANY:** THQ (818/225-5167, www.paximperia.com). **PRICE:** $49.95.

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Viewing Angle	H: ±70°, V: +60, -50°	H: ±70°, V: +70, -50°
LCD Type	TFT Active Matrix	TFT Active Matrix

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DESKTOP INVADERS

THE STYLISH NEW POWERBOOK G3'S THREATEN THE RELEVANCE OF DESKBOUND MACS

Macworld LAB TEST

BY HENRY BORTMAN

IMAGINE YOURSELF WALKING into work one morning and noticing that some of the Macs in your office are missing. At first you think, *Maybe they've been stolen.* Then an even more dreadful possibility occurs to you: *Maybe the IS department snatched them away in the dark of night, and they're going to be replaced by Windows machines!* But then your coworkers start arriving. They pull out sleek black notebook computers from their briefcases, set the machines up on their desks, and press the start keys. You hear the familiar Macintosh start-up bongs; see the familiar Mac OS logos; and realize that while you weren't paying attention, your compatriots' desktop Macs have been replaced . . . with PowerBooks.

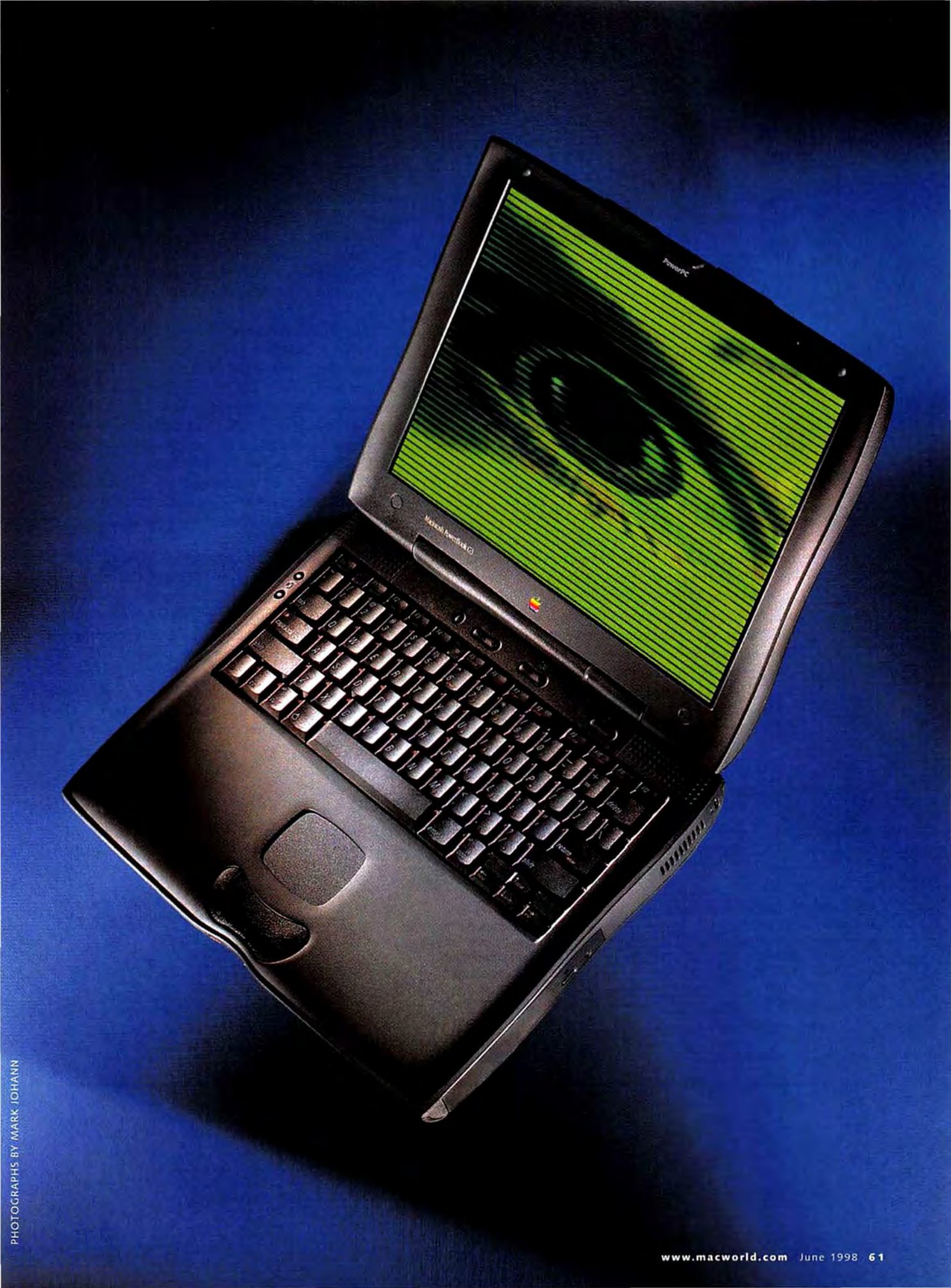
Science fiction, you say. *PowerBooks will never replace desktops,* right?

Perhaps that seemed true once. OK, perhaps that's *always* seemed true. But it's not true anymore. Apple's new PowerBook G3 line has closed the gap. For all but the most demanding computing tasks, these stylish new notebooks are worth serious consideration as alternatives to their desktop counterparts. The new PowerBooks combine speed, accessibility, a no-compromise set of features, and surprisingly low prices. Which pretty much covers what you'd want from any machine—even a desktop computer.

Better yet, Apple's inclusion of the new PowerBook G3 systems in its online build-to-order program means customers soon will have a vastly expanded set of configuration options for Mac portables. Whether you're a cash-challenged consumer or a money-is-no-object executive, you'll be able to customize a mobile Mac that has the features you need, at a price that won't break the bank.

WELCOME TO AREA 51

This is probably the best-looking PowerBook line Apple's ever shipped. After a string of portable-computer designs that were perhaps best described as utilitarian, Apple has at last returned to the strong industrial-design values that made the early generations of Mac portables so distinctive: the plastics are dark gray—practically black—and use a variety of textures and surface reflectivity to give the new design an almost otherworldly look. Curves are in evidence everywhere. In short, it's a pleasure to behold, although perhaps a little more *X-Files* than executive-suite. About the only questionable design choice is the huge white Apple logo



PHOTOGRAPHS BY MARK JOHANN

inlaid on the top cover. Apple refers to this as a "crystal" logo; other, more savory adjectives could also be applied.

You'll also notice that the new design's physical dimensions are dramatically different from those of previous PowerBooks. The PowerBook G3 is huge: nearly an inch deeper (from front to back) and almost an inch and a quarter wider than the 3400. This may cause problems if you travel in coach. On the plus side, it's only 2 inches thick when closed, so it's easy to grasp with one hand and tuck under your arm. The weight is the same as the 3400's: 7.7 pounds with battery and CD-ROM drive installed.

But enough on appearance. If you're thinking of buying a PowerBook G3, you're probably more interested in getting your work done. You want to know what's inside. And what it's going to cost you.

THE TRUTH IS IN THERE

Although based on a single logic board and industrial design, the new PowerBook G3 replaces the entire current line of PowerBooks, with the notable exception of the 2400 subnotebook. The 1400, the 3400, and the original PowerBook G3 will all fade into memory. (In case you're confused about the relationship between the *original* PowerBook G3 and this model, there is none; they're completely different beasts. Apple's moniker-meisters just wanted to see if you were paying attention.)

Starting at $2,299 for a low-end configuration, you can trade off features to get that new G3 PowerBook to fit almost any budget or pack it with options until it busts your bottom line. It's your call. Here's a look at the options.

PROCESSOR You can choose a 233MHz, 250MHz, or 292MHz G3 processor, which comes on a daughtercard. Apple's not saying officially that it's upgradable (the company wants to avoid unnecessary entanglements with the FTC), but it is.

The 233MHz processor will have a system bus clocked at 66MHz and will lack an L2 cache, so performance is somewhat compromised (see the benchmark, "PowerBook Performance Catching Up"). The 250MHz and 292MHz processors have system-bus speeds of 83MHz, meaning that PowerBooks using these CPUs have the fastest system buses available on any Mac. Both the latter processors come with a 1MB backside cache, with a 2:1 cache-to-bus-speed ratio.

RAM You'll be able to install a maximum of 192MHz of high-speed SDRAM in the PowerBook's two SO DIMM RAM slots, which reside on the processor daughtercard. You can order a system with 16MB, 32MB, 64MB, 128MB, or 192MB preinstalled. If you order 64MB or less, Apple will fill only the bottom RAM slot, leaving the top slot—the more easily accessible one—free for future upgrades. SO DIMM is a PC-industry–standard RAM card design, so when the time comes to upgrade, finding RAM that fits shouldn't be a problem.

DISPLAY Apple is offering some giant-size new options here. You have a choice of three displays. The 12.1-inch passive-matrix option comes with 2MB of VRAM (not upgradable) and has a resolution of 800 by

Macworld LAB TEST

PowerBook Performance Catching Up

Best overall performance. Longer bars and higher numbers are better. ► New system. Bold indicates the best result in a subsystem test. SpeedMark scores are relative to that of a Power Macintosh 7100/80, which is assigned a score of 1.0. MacBench 4.0 scores are relative to that of a Power Macintosh 6100/60, which is assigned a score of 100.

MACBENCH		
Processor	Disk	Graphics
1,031	295	**663**
881	242	618
747	**314**	380
445	226	396
337	226	232
154	153	129
1,054	329	**855**
744	**351**	486

Behind Our Tests *Macworld*'s SpeedMark test suite runs 54 real-world tasks in 15 programs and the Finder to determine overall performance of a Mac. MacBench 4.0 uses special test programs tuned to measure and isolate the performance of the processor, disk, and graphics subsystems. (Download your own free copy of MacBench 4.0 from www.macbench.com.) The tested systems had 32MB of RAM, Mac OS 8.0 (Mac OS 8.1 for PowerPC 750–based systems), and a 512K disk cache. All displays were set to 16-bit color. The 292MHz and 250MHz PowerBook prototypes have fixed 1,024-by-768-pixel displays, while all other systems were tested with either 800-by-600-pixel or 832-by-624-pixel displays. This difference in display type means that the SpeedMark scores were lowered slightly on the 292MHz and 250MHz PowerBooks, because scrolling tests take longer on a higher-resolution display.—**Macworld Lab testing supervised by Gil Loyola**

UNEARTHLY CONNECTIONS

ALL THE NEW POWERBOOK G3 models come with a full complement of standard Macintosh ports, plus some surprise extras such as an S-Video–out port, for connecting to camcorders or televisions. And for those occasions when you're leaning over the front of the PowerBook with a cable in hand, trying to tell your serial port from your ADB port, the port labels are duplicated on the inside of the back cover.

The PowerBook G3 also marks the arrival of full-speed, IrDA-standard–compliant infrared networking on PowerBooks. Finally, PowerBook infrared will deliver usable—some might even say snappy—4MBps connections for quick and easy point-to-point networking.

- A Stereo sound in
- B Stereo sound out
- C AC power
- D ADB
- E Serial (LocalTalk)
- F 10BaseT Ethernet
- G SCSI (HDI-30 connector)
- H S-Video out (comes on 13.3- and 14.1-inch configurations)
- I VGA video out
- J IrDA (4MBps infrared)

600 pixels (SVGA). Like previous PowerBook displays, it can support up to thousands of colors internally or millions on an external monitor.

Although the passive-matrix screen will no doubt appeal to the severely budget-constrained, many PowerBook buyers will probably want to break open their piggy banks to pop for the big, vibrant 13.3- and 14.1-inch active-matrix displays. The two larger screens come with 4MB of VRAM and have resolutions of 1,024 by 768 pixels (XGA). They support—take note, this is a first—millions of colors on external as well as internal displays. All the new G3 portables come with a built-in VGA connector, for hooking up an external monitor; systems containing 13.3- or 14.1-inch displays also come with an S-Video–out port, which can be used for output to a television, camcorder, or VCR. The built-in graphics controller is based on the ATI 3D RAGE LT chip, which provides both 2-D and 3-D acceleration.

STORAGE A 20× CD-ROM drive is standard equipment—unless you want to fork over a few hundred bucks extra for a DVD-ROM drive instead. On the hard-disk front, you can select a 2GB, 4GB, or 8GB EIDE drive. Curiously, a floppy-disk drive is optional, but you'd be ill-advised to leave it out. And as for a removable Zip drive, Apple won't offer one, although it's a good bet VST Technologies (978/635-8200, www.vsttech.com) will.

BATTERIES All PowerBook G3 notebooks come with one lithium-ion battery, which Apple claims is good for up to 3.5 hours of normal use, although our preliminary tests indicate that this may be a bit optimistic. Just in case, you might want to pick up a second power pack. The new mobile Macs have two removable-storage bays, one on each side of the unit. The left bay can hold a battery or any 3.5-inch device. The right bay can also hold a battery or any 3.5- or 5.25-inch device. So for those long flights, you can stash the storage devices in your luggage and pop in a pair of batteries to double your running time.

COMMUNICATIONS All PowerBook G3 machines have—finally!—built-in 10BaseT Ethernet. A 56-Kbps modem is optional and fits in a special internal slot. You can add other high-speed network adapters by using the PC Card slots, which are finally CardBus-compliant. (CardBus is a faster version of the PC Card standard.)

WHAT'S MISSING There are a couple of items Apple won't offer as options but should have. First is the ability to include an external mouse, keyboard, and monitor in a PowerBook G3 configuration. Sure, you can order them separately, but Apple should have made these add-ons part of the standard list of options.

Second is bundled software. This was one advantage Mac clone makers offered—and that PC vendors still do. In particular, it's nuts not to let customers order a system with Virtual PC preinstalled. Apple's excuse: it didn't know if customers would want DOS, Windows 95, or NT. But isn't letting buyers decide for themselves the whole point of a build-to-order program?

INSIDE THE POWERBOOK G3

A 12.1-, 13.3-, or 14.1-inch display. Passive-matrix display (12.1 inches) provides 800-by-600-pixel resolution at up to 16 bits per pixel. Active-matrix displays (13.3 or 14.1 inches) provide 1,024-by-768-pixel resolution at up to 24 bits per pixel.

B Stereo speakers. Note that the subwoofer hump made infamous by the 3400 is gone.

C Speaker mute button. Nice touch.

D PC Card bay. Supports two Type II cards or one Type III card; CardBus-compliant, so you can add a second graphics-display adapter, a digital-video–capture card, or an ISDN adapter.

E Software-controlled PC Card eject buttons.

F Optional preinstalled 56-Kbps modem card.

G Modem port (on the side, not visible).

H Hot-swappable 3.5-inch expansion bay. Supports battery or floppy drive, 3.5-inch hard drive, or Zip drive. Comes with 49-whr lithium-ion battery, shown here.

I Hot-swappable 5.25-inch expansion bay. Supports battery, 3.5-inch devices, CD-ROM drive, DVD-ROM drive, or PCI expansion adapter. Comes with 20× CD-ROM (shown here) or DVD-ROM drive.

J PowerPC G3 processor, running at 233MHz, 250MHz, or 292MHz.

K 2GB, 4GB, or 8GB EIDE hard drive.

L Secondary SO DIMM RAM-expansion slot. Primary RAM-expansion slot, which contains

preinstalled SDRAM card, is on the underside of the processor daughtercard.

M Upgradable processor daughtercard.

N Power on/shutdown key. Note that it's up off the keyboard instead of perilously close to the delete key. Perhaps someone's listening after all.

O Brightness control.

P Eject levers for expansion-bay devices.

Q Volume control.

ALIEN AUTOPSY

WITH BUILT-IN ETHERNET ON ALL MODELS AND AN OPTIONAL 292MHz processor, built-in modem, up to 192MB of RAM, and an 8GB hard drive, the configuration options for the new PowerBook G3 notebooks are so flexible that you may never need to get inside one. But you can't always predict what your computing needs will be one or two years down the line, or what new upgrade options might be available. And you can't always afford the system you wish you could buy today.

So the day may come when you want to upgrade your processor, add more RAM, or increase your hard-drive capacity. Apple has traditionally been reluctant to make upgrading a PowerBook (with the notable exception of the 1400) an easy task. So you'll be happy to learn that the insides of the new G3 portables are more accessible than those of any other PowerBooks the company has ever built.

REACHING INSIDE

Getting at a G3's guts, a three-step process, is a snap. (1) A slight tug on the flip-out levers on the front of the unit ejects whatever devices you have in the expansion bays. (2) Reaching inside the expansion bays and sliding back a pair of spring-loaded tabs releases the keyboard, which you can then lift out. (3) Removing two Phillips-head screws releases the heat sink, which easily lifts out—it even has a convenient handle.

Once the heat sink is out of the way, you have access to the processor daughtercard and to the hard drive. The daughtercard is removable and upgradable—at least in theory: Apple's not promising any future upgrades, but third parties will likely provide some as faster processors become available. The daughtercard contains two RAM slots, one of which can be accessed without removal of the card itself. The hard drive is held in place by a single flat-head screw. Even the built-in modem-card slot is accessible, although Apple hadn't decided as of press time if it will offer the 56-Kbps modem separately.

INVADERS

ALIEN INFLUENCES

Beyond the basics, Apple has thrown in some elegant touches that make these notebooks a pleasure to use.

KEYBOARD For the first time, PowerBooks have full 105-key capability. No, the keyboard isn't really that big. But a new "function" key (labeled "fn") in the lower left corner of the keyboard lets you access an alternative set of functions for many of the keys (see the sidebar "More than Meets the Eye").

EASY ACCESS The PowerBook G3 offers the easiest internal access of any PowerBook ever shipped (see the sidebar "Alien Autopsy"). Around back, Apple has duplicated the port labels on the inside of the protective cover, so when you're leaning over the PowerBook from the front, you can see what's what. Plus, Apple promises that this time the port cover *really* won't snap off.

ERGONOMICS The new keyboard has a very soft touch, and it's quiet. But the placement of the touchpad and "mouse" button leave a bit to be desired. It's a huge stretch to get to them from the keyboard. Another nagging detail: you may not like the feel of the handrest; there's a slight lip around its edge that can be a bit annoying as your palms slide over it.

FASTER THAN LIGHT

Let's just put it right out there: Apple's new portables are screamers. To compare the new PowerBooks with previous Mac notebooks and with desktop Macs, Macworld Lab ran both SpeedMark 1.0, an application-based test that measures overall system performance, and MacBench 4.0, a subsystem-level test that isolates the performance of the processor, disk, and graphics subsystems. What we found was little short of amazing.

At the high end, the new G3 PowerBook outfitted with a 292MHz processor was 26 percent faster on the SpeedMark test than the old top-of-the-line 250MHz G3 PowerBook. Even the new 250MHz PowerBook G3 showed an improvement over its predecessor: an 11 percent SpeedMark gain.

Even more astonishing, though, were the gains in the midrange and at the low end of the PowerBook line. The new 250MHz PowerBook G3 was *over twice as fast* on our SpeedMark test as the previous midrange model, the PowerBook 3400c/240. The low end saw a still more impressive gain: the new PowerBook G3 with a 233MHz processor was *over two and a half times as fast* on the SpeedMark test as Apple's previous low-end PowerBook,

MORE THAN MEETS THE EYE

THE NEW POWERBOOK G3 NOTEbooks offer—finally!—the full functionality of a 105-key extended keyboard, complete with an inverted-T set of arrow keys.

The new fn, or function, key (lower left, outlined in yellow) gives users access to special functions for many of the G3 keyboard's keys.

The F5 and F7 through F11 keys (outlined in red) double as num lock, insert, forward delete, scroll lock, print screen, and pause, respectively.

The keys outlined in orange, in conjunction with the fn key, can be used as a numeric keypad.

And the directional-arrow keys (outlined in blue) also provide the page up, page down, home, and end functions.

Your Fears Unleashed.

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Forever...

WHEN NOTEBOOKS COLLIDE:
POWERBOOKS VERSUS PC PORTABLES

APPLE'S WEB SITE FOR BUILD-TO-ORDER POWERBOOK G3's, store.apple.com, will present several standard configurations you can customize to suit your needs—and your budget. Macworld has created three custom configurations that fit the requirements of a broad range of users. For comparison, we've priced similarly configured Pentium-based Solo notebooks from Gateway 2000.

Our least-expensive PC setup is similar to Apple's $2,299 baseline G3 configuration. In its zeal to approach the $2,000 mark, however, Apple chose not to endow its bottom-line setup with a floppy-disk drive, a move we consider ill advised. So our low-end configuration includes one.

Our second G3 configuration is outfitted for users who shuttle work between office and home or who are often on the road visiting clients. It is a no-compromise, fully equipped model whose speed and power rival those of many desktop systems.

On the high end, we've configured a PowerBook G3 for graphics professionals who need a top-performing system but who don't like to be tied down to the studio. Accordingly, we've added an external mouse, a keyboard, and a 17-inch monitor. This configuration will also work well for CEOs who want to make an impression both in the executive suite and in the first-class cabin.

	PowerBook G3 (entry-level configuration)	Gateway Solo 2300 SE
Processor	233MHz G3	266MHz Pentium with MMX
RAM	16MB	16MB
Display	12.1-inch SVGA passive-matrix with 2MB VRAM	12.1-inch SVGA passive-matrix with 2MB VRAM
Hard drive	2GB EIDE	2GB Ultra ATA
Ethernet	10BaseT built in	10BaseT added via PC Card
Operating system	Mac OS 8.1	Windows 95
Other	includes built-in SCSI port, 16-bit stereo sound in/out, built-in stereo speakers	includes built-in USB port
Total cost	$2,379 (includes $80 for floppy-disk drive)*	$2,399

	PowerBook G3 (midrange configuration)	Gateway Solo 2300 XL
Processor	250MHz G3 with 1MB backside cache	266MHz Pentium with MMX
RAM	32MB	32MB
Display	13.3-inch XGA active-matrix with 4MB VRAM	13.3-inch XGA active-matrix with 2MB VRAM
Hard drive	4GB EIDE	4GB Ultra ATA
Ethernet	10BaseT built in	10BaseT added via PC Card
Modem	56-Kbps internal modem	56-Kbps modem added via PC Card
Operating system	Mac OS 8.1	Windows 95
Other	includes built-in SCSI port, 16-bit stereo sound in/out, built-in stereo speakers	includes built-in USB port, external speakers, MS Office SBE
Total cost	$3,899*	$3,379

	PowerBook G3 (high-end configuration)	Gateway Solo 9100 XL
Processor	292MHz G3 with 1MB backside cache	266MHz Pentium II
RAM	64MB	64MB
Display	14.1-inch XGA active-matrix with 4MB VRAM	14.1-inch XGA active-matrix with 4MB VRAM
Hard drive	8GB EIDE	8GB Ultra ATA
Ethernet	10BaseT built in	on combo PC Card
Modem	56-Kbps internal modem	on combo PC Card
External 17-inch monitor	Apple Multiple Scan 720 Display ($649**)	Vivitron 700
Keyboard and mouse	Apple extended keyboard and mouse ($148**)	Microsoft Natural keyboard, PS/2 mouse
Operating system	Mac OS 8.1	Windows NT Workstation 4.0
Other	includes built-in SCSI port, 16-bit stereo sound in/out, built-in stereo speakers	includes built-in USB port, external speakers, MS Office SBE, MS Bookshelf
Total cost	$6,396*	$5,648

*All system configurations include a 1.44MB floppy-disk drive and a 20x CD-ROM drive. * Based on preliminary Apple pricing. ** Prices from Apple Store.*

(actual gameplay screen)

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the 1400c/166. All in all, it's probably the most remarkable speed boost in the history of the PowerBook line.

Obviously, with speed gains such as these, PowerBooks have come a long way toward catching up with desktop Macs. But not all the way. On the SpeedMark test, the 292MHz PowerBook G3 we tested was 17 percent slower than Apple's new 300MHz Power Macintosh G3 desktop system, the 250MHz G3 PowerBook was 14 percent slower than a 266MHz Power Mac G3, and the new 233MHz G3 portable was 28 percent slower than the 233MHz G3 desktop.

These discrepancies appear to be a result of the weaker disk and graphics performance typical of portable systems. Also bear in mind that the preproduction units we tested hadn't yet been optimized for performance. Apple may be able to get the new PowerBook G3 systems running even closer to desktop speeds by the time they ship.

WHAT PRICE POWER(BOOK)?

Eventually it comes down to the bottom line: What's it gonna cost you? That, of course, depends on how you decide you want your PowerBook set up. More than a thousand different configurations will be available on Apple's build-to-order Web site. Prices will start at $2,299 and max out at well over $6,000.

The PowerBook G3 is deeper and wider than previous models, but is only 2 inches thick when closed.

We've chosen three configurations to present in the sidebar "When Notebooks Collide: PowerBooks versus PC Portables." For comparison with PCs—after all, they're what everyone compares PowerBooks with—we priced similarly configured Gateway Solo PCs. What we found varied, depending on where on the price spectrum we were looking.

At the low end, we were able to find budget PC notebooks from companies such as Micron for as little as $1,399. Apple has nothing to compare with these bargain-basement machines. But of course, the PCs you can buy at these prices are yesterday's systems.

In the $2,000 range, a PowerBook G3 and a Gateway Solo 2300 SE configured similarly cost almost exactly the same. A little higher up the ladder, in the $3,500-to-$4,000 range, a Gateway Solo 2300 XL could be had for around $500 less than a similarly configured PowerBook G3. And at the high end, we found that you can save upwards of $700 by buying a fully tricked-out PC notebook rather than a PowerBook G3.

But—and this is a big but—these comparisons consider configuration and price only, not bang for the buck. Although Macworld Lab has not yet tested the G3 PowerBooks against PC notebooks, in prior cross-platform shootouts, G3 systems have generally outperformed Pentium-based systems by a significant margin.

THE INVASION BEGINS

If you're in the market for a new desktop Mac, you might want to take a step back before you make your next purchase. As we've shown, the new PowerBook G3 portables are a damned good argument for choosing the mobile alternative. Still, there are some things you'll want to consider before you make the switch.

- Notebooks are notoriously bad ergonomically. If the keyboard's at the right height for your hands, the screen's too low. If the screen's at the right height for viewing, the keyboard's too high. If you're going to use a PowerBook as your main computer, you'll want at least an external keyboard and mouse.
- PowerBooks can't be docked. Although some PC vendors have done impressive work in this regard, Apple's never really handled the docking problem very well in its all-in-one designs.
- If you're doing color-critical work, you'll want an external monitor. You can't accurately color-correct an image on a notebook display whose hues shift noticeably every time you move your head. And even if color isn't that important to you, you still might want an external monitor: although the 13.3- and 14.1-inch displays' 1,024-by-768-pixel resolution is positively huge for a portable, the dots that make up images on these screens are correspondingly smaller, making images harder to read. And, if you need something with even greater resolution, an external monitor is really your only choice.

THE LAST WORD

With its new PowerBook G3 line, Apple has a definite winner. One might argue that these are the most exciting systems Apple has brought to market in years.

So if you walk into work tomorrow and notice that some Macs are missing, don't assume it's an alien or, worse, a Wintel invasion. Instead, start plotting how to convince your boss you should be next in line for a PowerBook G3 conversion. m

HENRY BORTMAN, one of the leading authorities on Macintosh computers and operating systems, is a *Macworld* contributing editor.

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Supercharge Your Browser

NINE TECHNIQUES THAT UNLEASH THE POWER OF NAVIGATOR AND INTERNET EXPLORER

DRIP. DRIP. DRIP. That's the sound of the World Wide Web trickling into your Mac. Even if you've got a relatively fast connection, waiting for the Web can feel less like zooming through the Information Age than like enduring Chinese water torture.

You can't unjam the Internet, but you *can* make sure you don't lose another second on your end. We've assembled nine great remedies for using the two most popular browsers—Microsoft Internet Explorer and Netscape Navigator—to tame the World Wide Wait. From setting up your browser the way you like it to downloading frequently read pages automatically, we show you the best ways to turn yourself and your browser into a lean, mean surfing machine.

BY CAMERON CROTTY

Built for Comfort

When you move into a new office, the first thing you do is put up pictures and arrange your file drawers the way you like them. When you buy a new computer, you fiddle with the desktop pattern and arrange your hard disk. Why should your Web browser be any different? The first principle of Better Browsing is: customize.

Sweat the Small Stuff

You'd be amazed at how many Web veterans never configure their browsers and then waste lots of time dealing with the consequences. Take a minute or so to set up your browser to suit the way you surf, and you'll expend less energy getting where you want to go.

If you're really not interested in the latest news from Microsoft or Netscape, for instance, why should that be the first thing you see when you go online? Instead, choose as your home page a site you visit frequently. Actually, you don't need to load a page on start-up at all; con-

sider launching your browser with a blank page, particularly if you have a slow connection to the Web. If you like the idea of having a start-up page but don't want to wait for it to download from the Net, consider building a simple page of links and keeping it on your hard disk, where your browser can access it quickly.

Both Navigator and Explorer keep their home-page settings under Preferences in the Edit menu. If you're using Navigator, the Navigator screen in Preferences is where you enter a home-page URL, choose to start with a blank page, or specify a local file. If you're using Explorer, you'll find these settings under Web Browser: Home/Search in Preferences.

2 Keep Your Browser in Its Place

Microsoft's Internet Explorer/Outlook Express software combo and Netscape's Communicator let you do everything from browsing to downloading files to reading newsgroups. Both suites rely on Internet Config, a shared set of Internet preferences, to let you use your own Internet utilities—a process called *remapping*. For example, you could use Fetch or NetFinder for FTP file downloads rather than the FTP utility built into each suite.

Internet Explorer 4.0 shields you from the guts of Internet Config by letting you choose your desired applications from within Explorer—just pop open Preferences and click on Protocol Helpers (under Network). Netscape fans aren't as lucky; a bug in the current version (4.04.1) of Communicator prevents remapping from working, although the stand-alone version of Navigator works fine.

Because Netscape doesn't provide a remapping interface in either Navigator or Communicator, you have to make any changes in Internet Config. Launch the application (it's in the Communicator folder), and click on the Helpers button; from the dialog box that appears, choose a protocol and click on the Change button to select a different application.

3 Beef Up Your Bookmarks

A disorganized bookmark list that scrolls right off the bottom of your screen is a huge time waster. After all, what's the point of bookmarking a site if ferreting it out from the rest of your bookmarks takes just as long as finding it on the Web? Happily, both Internet Explorer and Navigator offer some cool features for taming your bookmarks.

Explorer calls its bookmarks menu Favorites, but the *truly* favored links live in the Favorites Bar, just above the main browser window. You can customize the Favorites Bar by dragging links directly onto the bar or into the Toolbar Favorites folder in the Favorites menu. Or drag a folder from the Favorites menu to the Favorites Bar—now one click opens a windowful of links.

Netscape Navigator's approach to bookmarks is still on the clumsy side, but two tricks help bring some method to the madness. First, you can designate a folder in the Bookmarks file to catch new links

CHRIS CHING

as you add them. Second, tell Navigator to display in the Bookmarks menu the contents of any folder from the Bookmarks file. The default setting—the root folder—displays all the folders and their contents in a hierarchical menu; choosing a folder farther down in the hierarchy gives you finer control over which sites appear in the menu. For instance, if you create a folder that contains only your most frequently accessed links, and then designate that folder as the Bookmarks Menu folder (open the Bookmarks window, select the folder, and choose Set as Bookmarks Menu Folder from the View menu), only the links in that folder will show up in your Bookmarks menu.

Stripped for Speed

Waiting for your browser to chew through data you don't want gets you nowhere fast, and these days Web pages are packed with huge graphics, audio files, and video clips. Our next set of tips will help you get just the data you need, as efficiently as possible.

4 Manage Your Media

Trying to fit all those graphic and audio fireworks through a tiny modem is like trying to stuff an elephant through a soda straw. The biggest instant speed boost you can give your browser is to turn it all off. In Navigator, open Preferences, click on Advanced, and uncheck the Automatically Load Images box. In Explorer, open Preferences and, from the Web Content screen, uncheck the boxes in the upper half of the Page Content box.

If you're worried about what you're missing or if you visit a site that depends heavily on graphics for navigation, you can load the graphics either globally (in Navigator, click on the Images button; in Explorer, choose Load Images from the View menu) or individually, by clicking on the graphic's placeholder icon.

5 Hold the Java

Although Java applets aren't as common (yet) as bloated graphics, they're just as big a time waster. Whenever you hit a page with a Java applet, you can expect up to a minute of downtime while your browser starts up Java and plays the applet—likely a scrolling-text marquee. In Explorer, you can disable Java by unchecking the Enable Java box in Preferences' Java screen; in Navigator, uncheck the Enable Java box in Preferences' Advanced screen. (Don't turn off JavaScript, which adds little or no overhead to your browsing experience.)

6 Cache In

Whenever you download a Web page, your browser saves a copy of it in a special folder, called a *cache*, on your hard disk. The next time you visit that page, your browser tries to save time by loading it from the cache.

In these days of gigabyte hard drives, increasing your cache size and giving your browser more space to squirrel away pages is a cheap way to streamline your browsing sessions. Both Explorer and Navigator keep their cache settings in the Preferences dialog box. If you can afford the disk space, try doubling your cache size and see if your browsing speeds up.

Does Your Browser Need Help?

ALTHOUGH MICROSOFT AND NETSCAPE HAVE DONE A GOOD JOB OF making their Internet-connection suites one-stop shops, there's an ocean of software you can add to your browser in the form of third-party helper applications and plug-ins. Our advice? Keep it simple.

Plug-ins, in particular, come at a price: they place a greater burden on an already thin data stream. The code built into both Internet Explorer and Navigator can handle most of the common files you're likely to encounter while you surf. Additionally, both include Apple's QuickTime plug-in, which can play nearly any multimedia file you're likely to run across. The only plug-ins we consider essential to well-rounded browsing are Progressive Networks' Real Audio (free; 206/447-0567, www.realaudio.com), for streaming audio, and Macromedia's Shockwave (free; 415/252-2000, www.macromedia.com), for animation.

While plug-ins display data as part of the browsing experience, helper applications launch separately when the browser encounters a file it can't handle by itself. As with plug-ins, though, Netscape and Microsoft have each expanded the applications suite that accompanies their browser to the point that it's almost possible to get by without any other software. We recommend accessorizing your Internet suite with just two extras: Aladdin Systems' StuffIt Deluxe ($129.95; 408/761-6200, www.aladdinsys.com) and Adobe's Acrobat Reader (free; 408/536-6000, www.adobe.com).

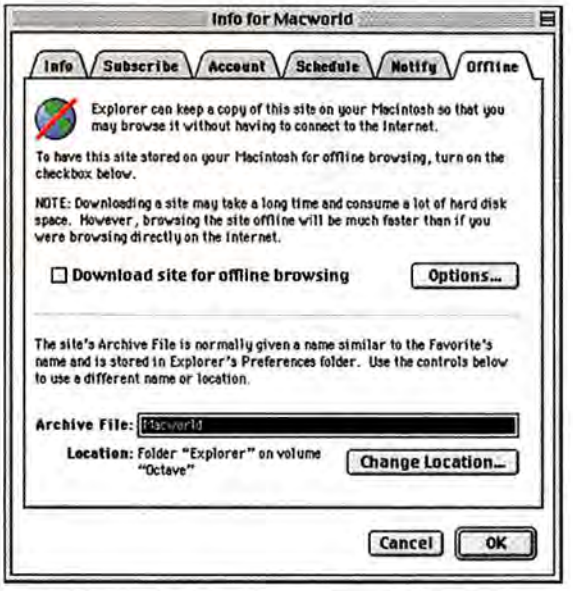
Both Microsoft and Netscape bundle StuffIt Expander with their suites, but that software's engine isn't PowerPC-native, and decompression speed suffers noticeably as a result. And StuffIt Expander can't compress or encode files for Internet transmission, still a necessity these days. StuffIt Deluxe, on the other hand, can compress and encode files in multiple formats, is PowerPC-native, and includes many other useful utilities for organizing and archiving your files (see *Reviews*, May 1998). If its price tag seems a bit steep, at least consider upgrading to Aladdin's DropStuff with Expander Enhancer—it offers compression capabilities, greater choice of file type (particularly the ubiquitous .zip file format), and a PowerPC-native engine.

We make our second recommendation—Adobe's Acrobat Reader—somewhat reluctantly, given the widespread aversion to Adobe's PDF (Portable Document Format). Acrobat Reader is technically a plug-in, but we classify it as a helper application because you can launch it separately. It's not particularly fast; it's something of a memory hog; and quite frankly, we'd rather just see the information in nice, clean HTML.

Nevertheless, due to the ease of creating PDF documents and the control it offers over formatting, PDF has become the format of choice for people who want to post large quantities of data, such as documentation. If you're a frequent surfer, you're almost guaranteed to run across a PDF document you absolutely need to read. With that in mind, we recommend that you download and install Acrobat Reader so that you'll have it available when you need it.

Using helper applications or plug-ins is a matter of personal choice. Simply consider how much overhead—in both data and time—you're adding before you install every option you can find.

The Lean Menu, Please To trim down an endless bookmarks list in Navigator, select a folder containing the choicest sites; only those sites will appear when you pull down the Bookmarks menu.



Sites While U Wait Subscribing to a page is the first step toward having Internet Explorer automatically deliver pages to your desktop.

If you're using Netscape Navigator and looking for a real turbocharge, create a RAM disk (open your Memory control panel and turn RAM Disk on) and put your cache folder on it by changing the folder's location in Preferences' Advanced screen under Cache. If you want more speed but don't have the extra memory for a RAM disk, consider Surf Express from Connectix (see *Reviews*, May 1998); it replaces your browser's caching mechanism with a much more efficient one.

7 Let Your Browser Do the Walking

Save yourself connection charges and open up your phone line for incoming calls: surf offline! Both Internet Explorer 4.0 and Navigator 4.0 support offline browsing, in that they check the cache first for a requested page, connecting only if it's necessary to download the page.

Internet Explorer 4.0 takes offline browsing a step further with Subscriptions. If you "subscribe" to a page on your Favorites list, Explorer not only notifies you when that page has been updated but also automatically downloads the page in the background so you can look at it later.

To subscribe to a page, open the Favorites window, select the desired page, and choose Get Info from the File menu. To have Explorer automatically download the page, click on the Offline tab and fill in the details. If you want Explorer to download multiple pages or even an entire site, just click on the Options button in the Offline tab and check the Download Links box to choose how much of the site you want to collect.

In Navigator, you can choose the What's New? command from the View menu (with the Bookmarks window open) to see if pages have been updated, but you'll have to download them manually. You can also use a utility like Dataviz's Web Buddy ($39.95; 203/268-0030, www.dataviz.com) or Blue Squirrel's WebWhacker ($49.95; 801/523-1063, www.webwhacker.com) to download Web pages automatically.

No Wasted Motion

No matter how well tuned your browsing software is, you'll still spin your wheels if you don't know how to surf efficiently. If you know where to look, you can minimize browser downtime and increase your chances of finding exactly what you're looking for.

8 Divide and Conquer

If you open only a single browser window during a surfing session, you're working with one hand tied behind your back. Whenever you click on a link, consider opening it up in a new window by holding down the mouse button for a second or two and selecting from the contextual menu that pops up (in Explorer, you can simply ⌘-click on the link). You can then go back to reading the previous page while you wait for the new page to finish downloading.

This technique is particularly handy when you're using a search engine. (Explorer performs this two-window feat for you if you use the Search tab on the Explorer Bar.) While a link is opening in another window, you can scan your search list for other likely candidates. That way, if your first choice turns out to be a dog, you don't have to reload the search results to try again.

9 Search Carefully

You might get lucky when using one of the big search engines; then again, you might not. Do a little intelligent research before you blindly cast forth a query. A newsgroup FAQ (you'll find a list of FAQs at www.cis.ohio-state.edu/hypertext/faq/usenet/top.html) will usually point you to prime information sites, if not answer your question outright.

It also helps to learn about Boolean logic, the lingo of search engines. The good news is, if you've ever ordered a hamburger with cheese AND onions but NOT pickles OR lettuce, you already speak all the Boolean you're likely to need. (For more information on Boolean operators, see "Better, Faster Web Searching," *NetSmart*, December 1996; http://macworld.zdnet.com/pages_collection/december.96/Column.2893.html.) For a more thorough tutorial on searching, see www.askscott.com/tindex.html.

The Last Word

Even though modem speeds will continue to grow, so will the Web—and it already contains more data than you could see in five lifetimes. Now is as good a time as any to learn how to get what you need quickly. Making the most out of your Web connection takes some forethought, but a little time spent preparing to go online will help you squeeze the *useful* information from the Web—without putting yourself through the wringer. **m**

CAMERON CROTTY (everyman@wenet.net) has written about computers and telecommunications since 300-baud modems were state-of-the-art.

EXPERT ADVICE TO MAKE YOU MASTER OF YOUR MAILBOX

Tame Your E-Mail

FORGET THE WEB. That may be where the Internet gets its sex appeal, but the Net's heart and soul is e-mail. More than fax, phone, or postal mail, e-mail has become *the* preferred method of communication—whether you're making important business decisions or just staying in touch with far-flung family members.

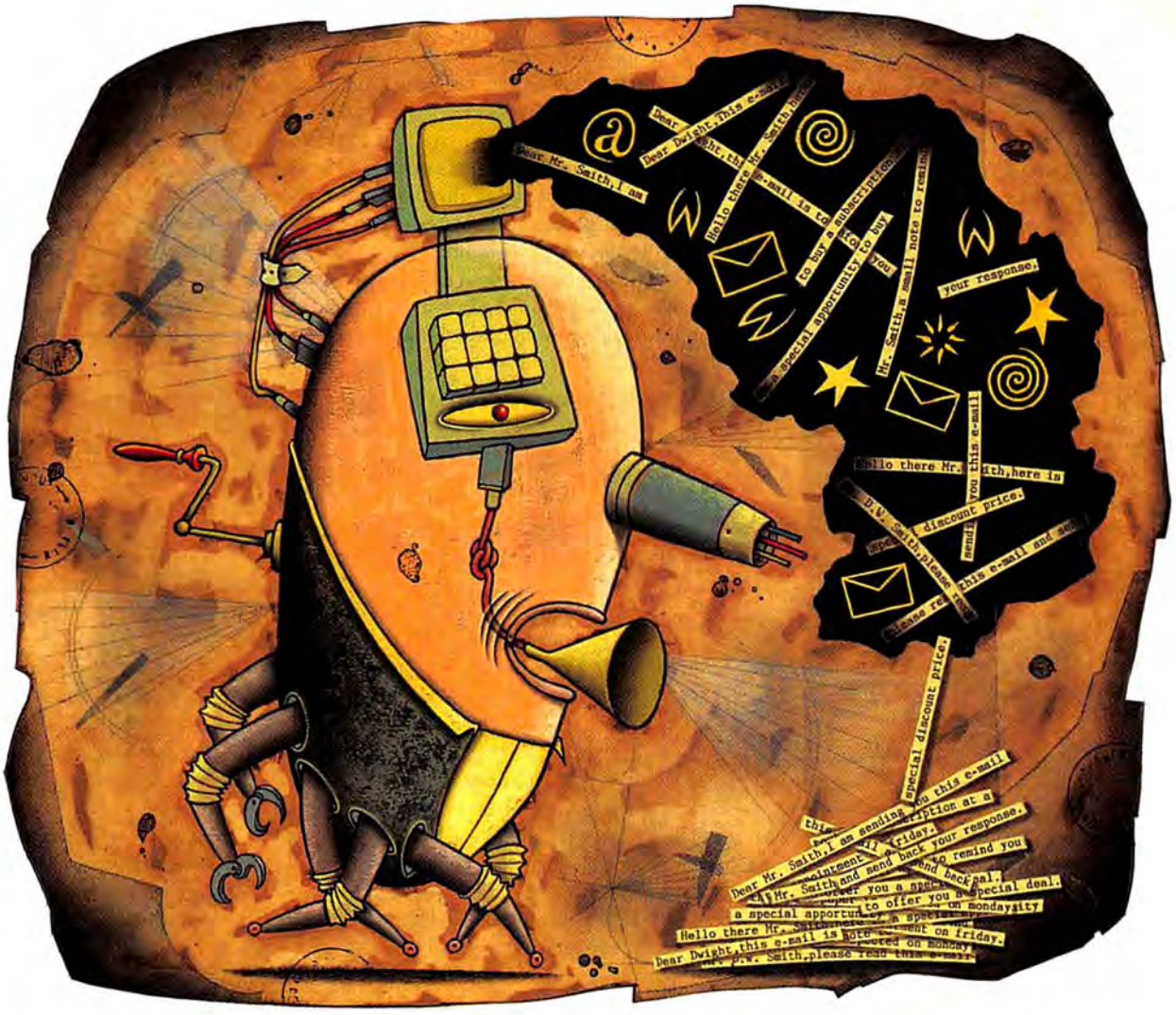
But for every minute you save by using e-mail, you can easily waste several more just dealing with the deluge of messages you receive. If your e-mail program's in-box contains thousands of messages, you know what we mean.

BY ADAM C. ENGST

It doesn't have to be this way. If you follow the tips and strategies we've assembled, you can make your e-mail work for you, instead of spending all your time trying to keep one step ahead of the flood.

Here we primarily focus on popular Internet e-mail programs such as Qualcomm's (www.eudora.com) free Eudora Light 3.1.3 and $39 Eudora Pro 4.0, Apple's (www.apple.com) $49 Emailer 2.0v3, Netscape's (www.netscape.com) free Messenger 4.04.1, Microsoft's (www.microsoft.com) free Outlook Express 4.0, and CE Software's (www.cesoft.com) $70 QuickMail Pro 1.5.2. (For *Macworld*'s capsule reviews of all these products, see the sidebar "Masterful Mailers.")

But even if you're using a proprietary LAN mail program or a commercial online service, you should be able to use these strategies to help you master your in-box.



ILLUSTRATIONS BY POL TURGEON

Make E-mail History

In the days before e-mail, your desk was probably littered with scraps of paper holding directions to friends' houses, minutes from a meeting that took place the day you were sick, and more. Now many of these communications take place in e-mail—a medium much better suited for storage and retrieval.

Be a Pack Rat Keep all your old e-mail at your fingertips by saving almost *everything* you receive. Even if there's only a small chance that you might want to read a message again, save it so you can find it later.

Any good e-mail program will search hundreds or even thousands of messages almost instantaneously. Some also offer methods of quickly selecting groups of messages without making you resort to a Find feature. For example, in a mailbox in Eudora Pro, you can option-click on the sender of a message to select all messages in that mailbox sent by that person. In Outlook Express, entering text in the Display Subjects Containing box limits the messages shown to the ones having that text in the subject field.

I fly into La Guardia Airport in New York City about once each year. Instead of calling and asking for the complicated directions to my grandparents' house each time, I just print the e-mail message my uncle sent me four years ago.

Make Mailboxes Just keeping thousands of old messages in your in-mailbox (or -folder, depending on which program you use) isn't enough. You should be more organized than that. After all, do you keep all the files on your hard disk out on your desktop?

Whenever you receive several important messages on the same topic, create a mailbox specifically for them. I organize my mailboxes to suit how I'm likely to *remember* specific messages. As a result, my most important mailboxes hold mail from specific people, usually my closest colleagues, and I have a more general mailbox that holds personal mail from close friends and family, whatever the topic.

I also create mailboxes devoted to specific projects, so I can quickly and easily refer just to messages relevant to those projects. In such situations, I nest mailboxes inside each other. Of all the mail programs we looked at for this article, only QuickMail Pro doesn't support hierarchical mailboxes.

Similarly, I keep a mailbox for every mailing list to which I subscribe. As a final catchall, you'll probably want to create mailboxes for hard-to-categorize messages.

Taking Work Home If you check the same mail account from both work and

home, you must designate one location as the "master" location and do all your filing at that location, or you risk having an incomplete record of your e-mail.

For example, if you want your computer at work to be the master location, set the preferences of the mail program you use at home to leave mail on the server. (Every program we looked at offers this option.) Set the work mail program to delete messages from the server. This way, your master program will always have the most complete set of e-mail.

Record Conversations While it's easy to be concerned about cleaning up mail that comes in, most people never consider what happens to mail they send out.

Think about it: your outgoing messages record everything you say in e-mail and are an invaluable resource when miscommunications occur or when someone claims you said something you didn't. All the e-mail programs we looked at can save outgoing messages automatically. Make sure yours is set to do so.

Long-term Storage Sooner or later you'll have too many messages in a mailbox. But above all else, resist the temptation to delete messages when you need to recover disk space. You never know when

Masterful Mailers

IN THE PREHISTORIC DAYS OF E-MAIL, PEOPLE RARELY GOT TO CHOOSE which mail program to use: if your company used a QuickMail server, you used QuickMail; if your company used a Lotus Notes server, you were stuck with Notes. But as the world embraces Internet standards for e-mail, choices abound. We looked at six popular Internet e-mail programs and rated them based on strength of features and ease of use (see the table, "Speedy Delivery: Six Internet E-mail Programs Compared"). We also factored in support for new Internet standards such as IMAP (a new format for retrieving e-mail that's popular in large organizations), LDAP (a directory-services protocol for looking up e-mail addresses), and HTML mail (which enables styled text and graphics within e-mail messages).

Emailer 2.0v3 Emailer, formerly of Claris and now sold by Apple, offers some unique features: it is able not only to check Internet e-mail but also to send and receive mail via CompuServe and America Online. Emailer offers excellent filtering capabilities, supports hierarchical mailboxes, and provides a convenient window that lists the results of your searches.

However, Emailer doesn't let you send or receive styled text with HTML mail. And Emailer stores all messages in a single database file that can become corrupted, endangering all your saved mail.

Eudora Light 3.1.3 Qualcomm's freeware Eudora Light may be the most popular Macintosh Internet e-mail program of all time. Although its power and flexibility pale in comparison with those of Eudora Pro, Eudora Light offers a basic set of features, including hierarchical mailboxes, and decent filters. These features all come in a package with the least-demanding system requirements of any of the programs listed here, making Eudora Light ideal for older Macs with little RAM.

Eudora Pro 4.0 Where Eudora Light leaves off, Eudora Pro 4.0 picks up with a vengeance. Eudora Pro adds a more modern-looking interface with dockable windows, additional productivity-enhancing shortcuts such as a Group Subjects option that groups related messages even when the mailbox is sorted by date or sender, the ability to create filters quickly based on the current message (see the screen shot "Instant Filters"), many additional filter actions, and multiple nickname files.

Eudora Pro 4.0 offers LDAP and HTML-mail support (support for IMAP is promised for version 4.1). Eudora Pro's primary failing is its Find feature, which, though speedy, has a confusing interface and doesn't group found messages into a results window. (For more on Eudora Pro 4.0, see *Reviews*, in this issue.)

Netscape Messenger 4.04.1 The Messenger module of Netscape's free Communicator package is a solid e-mail client that lets you view your mail via either a one-pane approach or a series of individual windows. It offers adequate filter features and hierarchical mailboxes, though Messenger is very slow when filing messages and its filters aren't as powerful as those in most other programs. Messenger offers extremely strong support for emerging Internet standards such as IMAP, LDAP, and HTML mail.

Because Messenger is integrated with Netscape Communicator, you can easily switch from

Speedy Delivery: Six Internet E-mail Programs Compared

Company	Product	Mouse Rating	List Price	Phone	Search Results	Filter Support	Hierarchical Mailboxes	HTML Mail
Apple Computer	Emailer 2.0v3	★★★½	$49	408/996-1010	●	strong	●	○
CE Software	QuickMail Pro 1.5.2	★★½	$70	515/221-1801	●	weak	○	○
Microsoft	EDITORS' CHOICE Outlook Express 4.0	★★★½	free	425/882-8080	●	strong	●	●
Netscape Communications	Netscape Messenger 4.04.1	not rated*	free	650/254-1900	●	weak	●	●
Qualcomm	Eudora Light 3.1.3	★★★	free	619/658-1291	○	weak	●	○
	EDITORS' CHOICE Eudora Pro 4.0	★★★½	$39	619/658-1291	○	strong	●	●

● = yes; ○ = no. *Available only as part of Netscape Communicator.

you might need those messages; for instance, they could be instrumental in legal proceedings.

Instead of deleting your old e-mail, move messages to dated mailboxes with descriptive names such as "Monica L. 1996–1997." If you're hurting for disk space, store messages on a floppy or Zip disk. If you've built up a whole lot of mail, you can even burn it to a CD.

Since I send more than 1,000 messages each month, I archive my sent mail every month, and once a year I archive messages in other mailboxes. The day Kenneth Starr comes to me asking about my role in Whitewater, I'll be ready.

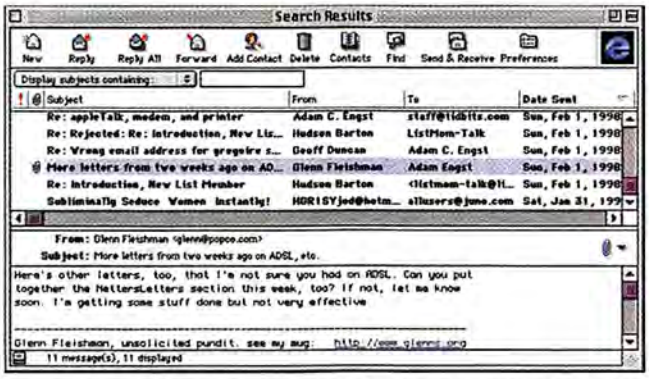
Trash Carefully There's nothing worse than that sinking feeling you get when you realize that not only did you move an important message to the trash but you've also set your e-mail program to purge your trash mailbox automatically. At that point, it's too late.

So whatever you do, don't set your e-mail program to empty the trash when you quit. Disk space is cheap, and you may save 15 minutes of searching for an e-mail address by retrieving it from a deleted message in your trash mailbox. Once each month or so, I sort my trash mailbox by

reading e-mail to browsing Usenet newsgroups and the Web. But you pay for this integration: Communicator takes up a lot of disk space and has large RAM requirements, and its interface can be confusing.

Outlook Express 4.0 Despite the version number, Outlook Express is essentially a new product that comes with Microsoft's free Internet Explorer 4.0 Web browser. Like Netscape Messenger, Outlook Express offers newsgroup reading as well as support for IMAP, LDAP, and HTML mail. Among Outlook Express's best features are its background spelling checker that underlines misspelled words (but only if you've got Microsoft Office 98 installed) and its capability to apply a temporary filter to a mailbox by letting you enter text in the Display Subjects Containing box.

Outlook Express sports powerful filters and an elegant Find interface, complete with a Search Results window listing all found messages (see the screen shot "Lost and Found"). But since it's a brand-new program, it's not without bugs and quirks.



Lost and Found Outlook Express 4.0 can display all the messages that meet your search criteria in its mailbox-style Search Results window.

QuickMail Pro 1.5.2 Once a proprietary e-mail client, QuickMail moved to support Internet standards with QuickMail Pro, which offers several unique features: if you option-click on a message summary, you get a quick preview of the message; the program lets you send messages on special graphical forms that can contain images, check boxes, and user-defined fields; and it offers a scrolling mail ticker that displays the senders and subjects of incoming messages.

But many of QuickMail Pro's bread-and-butter features are lacking. The program has cramped message windows, limited filtering features, and no hierarchical mailboxes. QuickMail Pro relies heavily on dialog boxes, making it difficult to move within the program without lots of mousing and clicking.

On top of all that, QuickMail Pro is the most expensive of any e-mail program reviewed here. As a result, we can't recommend it unless you're a die-hard fan of the original QuickMail who wants the same interface in an Internet e-mail program.

Instant Filters In Eudora Pro 4.0 you can quickly create a filter based on the content of an already received message.

Macworld's Buying Advice

Which e-mail program is right for you depends on how much money you're willing to spend. The best value in an e-mail program is Microsoft's free Outlook Express 4.0, especially if you use Microsoft Office 98 and prefer Internet Explorer to Netscape Navigator. Though it's new and has some growing to do, Outlook Express offers a feature set comparable to those of commercial packages.

But for those who take their e-mail seriously and want the absolute best, Eudora Pro 4.0 is the answer. It's the most mature of the programs and has the most complete feature set.

EDITORS' CHOICE

♦♦♦½ **Eudora Pro 4.0** Features galore adorn this newly polished old warhorse, including simplified filter creation and support for HTML mail and LDAP. **Company:** Qualcomm (619/658-1291, www.eudora.com). **List price:** $39.

♦♦♦½ **Outlook Express 4.0** This new program sports an impressive collection of features, including a powerful search capability plus support for IMAP, LDAP, and HTML mail. It can import messages and contacts from other mail programs. **Company:** Microsoft (425/882-8080, www.microsoft.com). **List price:** Free.

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date and delete the older half of the messages to save the space and speed up my e-mail program. For those who don't like to take out the trash at all, Emailer can be set to automatically delete trashed messages after a set number of days.

Running Mail through Filters

One of the reasons why so many people don't file important messages consistently is because they don't realize how much of the work their e-mail programs can do for them by way of filtering. Most of the mail I receive is automatically moved into an appropriate mailbox by my e-mail program, thanks to filters I've created.

What's a Filter? Most e-mail programs let you perform a variety of actions on e-mail messages based on the messages' contents. Since the most common use for these actions is to move messages to different mailboxes, the actions are usually called *filters*, although some e-mail programs call them "rules" or "mail actions." Some e-mail programs' filters can analyze only common header lines such as To, From, Date, and Priority, whereas others can analyze the messages themselves or even the gobbledygook headers most humans try to ignore.

Most filters merely transfer messages to a mailbox or mark them in some way—which can be useful in itself—but the filters can also be much more powerful. Some e-mail programs' filters let you open messages, display mailboxes with new messages, play sounds, display alert dialogs, print messages, add addresses to your address book, reply with a canned message, forward or redirect messages to someone else, or even execute an AppleScript, all based on the contents of a given message.

Of the programs we looked at, Eudora Pro, Emailer, and Outlook Express feature the most filter criteria, methods of matching, and actions that filters can perform. Netscape Messenger and QuickMail Pro can't effectively filter spam (see the sidebar "Stamp Out Spam!"), because they don't allow you to search for text in any of a message's header lines.

Filter Tricks Earlier I suggested that you transfer messages you receive from mailing lists from your in-box into their own mailboxes. The good news is that you don't have to waste time doing this by hand if you set up a filter to do it for you.

If you use Eudora Pro 4.0, the process is made even simpler by Eudora's Make Filter feature, which analyzes a selected message and provides a point-and-click interface for creating a few common filter types.

All messages from a specific mailing list will have some characteristic in common that will let your filter catch the messages and move them to their own mailbox. Look at several messages from a mailing list you're on, and see what they have in common. Look particularly at the header of the messages—those lines at the top that include To, From, Cc, Date, and Priority. One of them, usually To or From, will be the same in every message.

Once you've found the common element, create a mailbox to hold the messages and set your filter's action to transfer all messages containing that element to that new mailbox. The next time you check your mail, your e-mail program will look for that pattern in every incoming message. If it finds a matching message, it will transfer that message to the mailbox you created so you don't have to read the message until you're ready. No more wading through Word-of-the-Day postings when you need to read the e-mail that's necessary to finish your real work.

Combating Spam

Junk e-mail, also known as spam, is one of the banes of today's Internet. It's just like the junk postal mail you receive, although usually spam is sleazier. The main problem with spam is that its volume threatens to drown out the important messages you receive.

Can That Spam You're probably asking, "But why can't I just filter all the spam to the Trash?" Unfortunately, spammers go to great efforts to disguise their messages and to remove information that would make the spam easy to filter. But never fear: you can employ counter-spam measures. Most spammers use the same programs for sending spam, and those programs leave telltale clues you can use to identify and eradicate bothersome messages. (For a list of ways to detect and filter spam, see the sidebar "Stamp Out Spam!")

It's all too easy to catch a legitimate piece of mail in a spam filter, so I don't recommend filtering spam directly to the Trash unless you plan to check the Trash periodically. Instead, filter potential spam to another mailbox (perhaps named Junk), and every so often, scan the mailbox for legitimate messages before deleting everything.

Run Silent, Run Deep The easiest way to rid yourself of spam is simply to avoid the places that spammers frequent. First, avoid posting to Usenet newsgroups, since spammers regularly analyze posted messages and add the posters' addresses to their lists. If you must post, set your e-mail address to something fake, like adamNOSPAMengst@tidbits.com, and include a line in your message such as "To send me e-mail, remove NOSPAM from my e-mail address."

Second, avoid putting your e-mail address on your Web page—spammers send out automated programs, called robots, to scan Web pages for e-mail addresses. You can foil this dastardly technique by spelling out your address ("E-mail me at adamengst at tidbits .com"); a geekier technique involves the use of a simple JavaScript that stops address-gathering robots but still allows people to click on a link to send you mail. (See http://db.netbits.net/getbits.acgi?nbart=04661 for details on the JavaScript technique.)

Finally, never reply to a spam message asking to be removed. Most of the time, your reply will bounce back to you, since spammers aren't interested in receiving mail, just sending it. Worse, if your message doesn't bounce, you've just identified yourself as having a valid e-mail address that's prime for more spam in the future.

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Stamp Out Spam!

I'VE RECEIVED COUNTLESS AMOUNTS OF SPAM IN THE LAST YEAR. IN the interest of science, I've saved all of it—and I've analyzed it to identify the best ways of separating spam from real e-mail. Here are eight great methods for identifying spam.

1 Set up a filter that looks for messages that don't contain your e-mail address in either the To or the CC lines. Most spam fits this description—but so can legitimate messages, since anyone can send you a message by putting your address in the BCC (blind carbon copy) line. As a result, you shouldn't automatically delete these messages—just mark them as potential spam. (Be sure that this filter is used only after you've already filtered out messages from your Internet mailing lists, since that mail would also be picked up by this filter.)

This filter catches about half of all the spam messages I receive. Users of Emailer can improve this filter even more by checking to see if messages were sent by a person in your address book—those that aren't are even more likely to be spam.

2 Look for the string "-0600 (EST)" in the header. That string indicates how many hours off from Greenwich mean time the sender's time zone is. The catch is that eastern standard time *never* equals –0600—that incorrect time stamp is a bug in one specific spam-sending program.

3 Look for a header line that contains "Comments: Authenticated sender is" but does not contain the line "X-Mailer: Pegasus." The Pegasus Mail e-mail program uses both lines; spam uses only the first.

4 Look for the header line "X-PMFLAGS." Although Pegasus Mail supposedly uses this too, I've only ever seen it in spam.

5 Look for an "X-Ad" header line. Although most spam tries to disguise itself, some spam messages include this header.

6 Look for either *you* or *friend* in the To line, unless your e-mail address contains those words. Make sure not to delete messages that contain such words without checking, since there's nothing stopping someone from using these words legitimately.

7 Look in the body of the message for the string "Extractor Pro Bulk E-Mail" or "This message is being brought to you by EMAIL BLASTER 2.5," since those bulk-e-mail programs advertise themselves in every piece of spam they send.

8 Finally, look in the Subject line of messages for text that's likely to appear only in spam. For instance, you might mark messages whose subject lines include multiple exclamation points; multiple dollar signs; the words *money, sex,* or *adult;* and so on. Be careful of filtering such messages without checking, because those words can easily appear in the subject lines of legitimate messages.

Dealing with E-mail Attachments

Ever receive an e-mail attachment you couldn't open? Most of us have. Files must be formatted in a specific way to survive being transferred via e-mail. Unfortunately, there are several encoding formats, and not all e-mail programs understand how to create or read all of them.The trick to sending attachments successfully is to know what e-mail program and operating system your recipient uses.

Foolproof Encoding If your recipient uses a recently released e-mail program on either a Mac or a PC, default settings for attachment formats should usually work. If they don't, look for settings called MIME or AppleDouble. Many people don't update their e-mail programs regularly, though, so if you're having trouble sending to someone who might be using an older e-mail program on the Mac, try BinHex. For PC users, try UUencode. (For an in-depth guide to making file attachments work, see "The Heartbreak of MIME Attachments," *Secrets*, in this issue.)

Compression Issues When sending lots of files or large files, it's generally a good idea to compress them before sending, to reduce transfer time. The standard way to do this on the Mac is with Aladdin Systems' (408/761-6200, www.aladdinsys.com) $130 StuffIt Deluxe or $30 shareware DropStuff. Maybe people already have Aladdin's free StuffIt Expander on their Macs and won't have any trouble decompressing the file. If you want to be extra sure they'll get the file, however, you can use StuffIt to create a self-extracting archive, which can expand without any help.

It's when you're sending from a Mac to a Windows PC that you might get into trouble. You'll need to either use standard compression format for PCs—the Zip format—or avoid compression entirely. Luckily for you, there's a Mac utility—Tom Brown's $15 ZipIt (www.awa.com/softlock/zipit/)—that can create Zip files for you to share with your Windows-using friends.

ZipIt will also expand the Zip files you receive from PC users. Those with either StuffIt Deluxe or DropStuff can also use StuffIt Expander to expand Zip files. (For more cross-platform file-transfer tips, see "Save Your Mac!" April 1998.)

In Search of Attachments Attachments must live somewhere on your disk, but the default location the e-mail program picks may not be ideal. Create a folder called Downloads and set it as the destination for all your e-mail attachments and for everything you download via the Web or FTP. That way, when you want to find something you've received from the outside world, you need look only in a single place.

Also, if you're using Mac OS 8.0 or 8.1, consider making that folder into a tabbed window and docking it at the bottom of your screen for fast access. I sort my Downloads folder by date so that the most recent items rise to the top of the window.

The Last Word

No matter which e-mail program you use, you can take advantage of these strategies for handling your e-mail more efficiently and effectively. Set up mailboxes to organize all the different types of e-mail messages you receive, and then create filters to transfer those messages to the right places. These simple techniques, combined with some anti-spam filters, will keep your in-box uncluttered and help you deal more quickly with the important messages you receive. And, of course, the less time you spend on e-mail, the more time you have for the real world. **m**

ADAM C. ENGST is the publisher of the online newsletter Tidbits and the author of *Eudora for Windows & Macintosh: Visual QuickStart Guide* (Peachpit Press, 1997).

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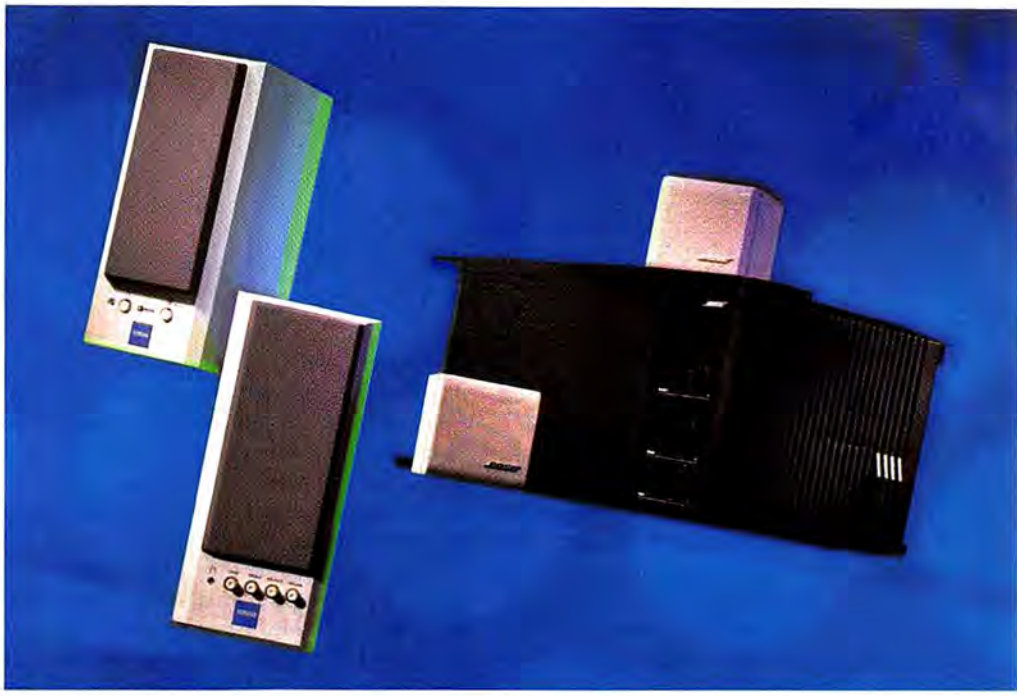

KEVIN CANDLAND

YOUR MACINTOSH CAN MAKE BEAUTIFUL MUSIC, BUT you wouldn't know it from the wimpy speakers built into most Mac models. The killer CD that booms from your stereo produces a tinny echo when played on your CD-ROM drive, and your favorite computer-game soundtracks sound muffled and distant. But there's an easy way to turn your Mac into a true entertainment center and get full sonic impact from music and multimedia: just add a decent set of multimedia speakers.

A few years ago, you had to spend at least $300 to get computer speakers with sound quality that rivaled that of a home stereo system. Inexpensive speakers were fine for boosting the volume of computer games but sounded like cheap boom boxes when reproducing music. But thanks to a new generation of speakers from companies such as Yamaha and Altec Lansing, you can enjoy great Mac-based stereo sound for music and games without breaking the bank.

Macworld looked at 14 multimedia speaker systems with prices ranging from $70 to $600. We hooked up each speaker system to a Performa 6400 and evaluated audio quality, using music CDs, computer games, and Mac sounds such as system alerts. For the CDs, we chose music that exposes common speaker weaknesses such as boomy bass, muted trebles, and harsh midtones. Our selections ran the gamut from symphonies and solo piano to jazz and hard rock.

We found that at the lower end of the price scale, you're still likely to encounter speakers that make your favorite music sound as if it's coming from the bottom of a barrel. But we did discover several systems in the $150-to-$200 range that will please most audiophiles and multimedia fans.

Pumping Up the Volume

Company	Product	Mouse Rating	List Price	Phone Number	Warranty (in years)	Pieces	Wattage
Altec Lansing	PowerCube ACS45	3	$100	717/296-4434	1	3	32 (20 + 6 + 6)
	EDITORS' CHOICE PowerCube ACS48	4½	$150	717/296-4434	1	3	80 (40 + 20 + 20)
Bose	Acoustimass	4½	$600	508/879-7330	1	3	not available
	EDITORS' CHOICE MediaMate	4½	$200	508/879-7330	1	2	not available
Jazz	Jazz 3D	2½	$225	818/336-2689	2	3	46 (18 + 14 + 14)
	Jazz J-590	2½	$90	818/336-2689	2	2	28 (14 + 14)
	Jazz J-902 subwoofer	3	$80	818/336-2689	2	1	18
Labtec	LCS-1030	3½	$70	360/896-2000	1	2	10 (5 + 5)
	LCS-2408 subwoofer	2½	$70	360/896-2000	1	1	14
	LCS-2612	3	$160	360/896-2000	1	3	20 (12 + 4 + 4)
MidiLand	S2/MidiLand 4100	3	$400	909/592-1168	3	4	100 (50 + 25 + 25)
Roland	MA9	3½	$150	360/332-4211	1	2	16 (8 + 8)
Yamaha	System 45	4½	$200	714/522-9011	1	3	45 (25 + 10 + 10)
	YST-M100	4	$180	714/522-9011	1	2	40 (20 + 20)

A Different Beast

So what makes a speaker a *multimedia* speaker? First, it needs a built-in amplifier to boost the weak audio signal from your Mac. It also needs shielding in the enclosure to prevent magnetic emissions from interfering with your computer display. And unlike their home-stereo-system counterparts, which you generally want to place in the far corners of a room, multimedia speakers are designed for up-close listening.

A Few Easy Pieces In a typical two-piece multimedia-speaker system, one speaker—generally the right one—functions as a control center, with a built-in amplifier, power supply, and volume control as well as built-in cable connections. You plug the control speaker into your Mac's headphone jack and then plug the second speaker into the first with a single cable—no extra equipment such as an AV card or adapter is needed. Most speaker systems also include a second audio-input jack, which is useful if you want to connect an audio-CD player or radio and is essential if you have an external CD-ROM drive with separate audio output.

Hearing the Low Notes In addition to two main speakers, often called *satellites*, some systems include a third component called a *subwoofer*, which enhances the bass response. *Subwoofer* is a bit of a misnomer, since it implies that the speaker produces sounds at a lower frequency than a woofer (below 20Hz), but the subwoofers sold with multimedia speakers (and with many stereo systems) are really just woofers housed in their own enclosures. Bose more correctly refers to its subwoofers as *bass modules*.

But don't assume that a three-piece system will produce better sound than a two-piece system; in our roundup, we discovered that some two-piece systems outperformed three-piece systems in sound quality.

Sounding Out the Best

When *Macworld* last did a roundup of multimedia speakers ("Multimedia Speakers," March 1996), the three-piece Acoustimass system from Bose (www.bose.com) earned the highest rating, despite its hefty $700 list price. Two years later, the Acoustimass—now pared down to $600—still offers the best sound quality of the speakers we tested.

The Acoustimass satellites measure only 3 inches tall by 4.5 inches deep, but the system delivers an unbelievably rich and realistic sound. Our only complaint is that the volume, bass, and treble controls are located on the bass module, making them hard to reach if you put the unit on the floor. But if you care about sound quality above all else, you'll probably be able to overlook this inconvenience.

The Acoustimass may be an audiophile's dream, but $600 is quite a hefty price, considering that your Mac is probably not your primary CD player. Four other systems we listened to offer audio quality approaching that of the Acoustimass, but they do so for less than $200.

The best bargain of the bunch is the $150 three-piece PowerCube ACS48, from Altec Lansing (www.altecmm.com). Its massive subwoofer and 6-inch-tall satellite speakers deliver audio quality you'd expect from a decent home stereo.

The volume and power controls are conveniently located on top of the right satellite speaker. The downside is that these are electronic controls: you push an up arrow to raise the volume and a down arrow to lower it. We prefer dial controls, but that's a minor quibble, given the sound quality and value of the ACS48.

Don't confuse the ACS48 with Altec Lansing's three-piece PowerCube ACS45; the model numbers are similar, but the systems' audio quality is worlds apart. Designed primarily for use with computer games, the $100 ACS45 offers much weaker bass and a generally harsher sound than the PowerCube ACS48.

Yamaha's $200 System 45 (www.yamaha.com) combines the 10-inch-tall YST-M15 satellite speakers with the YST-MSW10 subwoofer (the satellite set and subwoofer are also available separate-

Comments
Harsh midtones and treble, weak bass; compact design for three-piece system.
Excellent music reproduction for the price; subwoofer consumes a lot of floor space.
Best-sounding but most expensive speaker system in roundup; controls inconveniently located on bass module.
Best-sounding two-speaker system in roundup; excellent bass for a two-piece system.
Mediocre music reproduction, especially for the price; 3-D sound adds distortion.
Mediocre sound for the price; muffled treble.
Stand-alone subwoofer for use with other vendors' satellite speakers; powerful but boomy bass.
Marketed as inexpensive audiophile system, but weak bass and muffled treble.
Stand-alone subwoofer for use with other vendors' satellite speakers; weak bass compared to that of Jazz J-902.
Mediocre music reproduction, with weak bass and muffled treble; 3-D–sound option distorts music, but not as much as that of other products; includes mounting bracket for satellites.
Powerful 100-watt amp; controls conveniently located on separate control module; sounds harsh at higher volumes; 3-D sound adds distortion.
Bulky; speakers offer decent sound reproduction, but a little harsh in the midtones; separate microphone input.
Excellent music reproduction; compact subwoofer puts out clean but powerful bass.
Bulky speakers with good sound quality for a two-piece system.

ly for $100 each). The compact subwoofer puts out a clean but powerful bass, and the system overall delivers excellent audio quality. The satellites, a bit bulkier than those of the Acoustimass and ACS48, include dial controls for volume and tone, as well as a second audio input.

We were also impressed by a pair of two-piece systems: Bose's $200 MediaMate and Yamaha's $180 YST-M100. Both offer surprisingly powerful bass and excellent overall sound quality, but we were especially impressed by the MediaMate. Pop in a CD and close your eyes, and you won't believe such rich sound is coming from such small speakers. Roland's $150 two-piece MA9 (www.edirol.com) offered reasonable sound quality but had harsh midtones.

Power for a Price

For sheer volume, nothing beats MidiLand's massive $400 S2/MidiLand 4100 (www.midiland.com), a four-piece system with black aluminum-encased satellites and a gargantuan 30-pound subwoofer—about the size and shape of a CPU tower—that has a built-in 100-watt amplifier. The fourth piece is a control module linked to the subwoofer by a 10-foot cable.

Although it delivers the most wattage of any system we tested, the 4100 proves that bigger and more powerful is not necessarily better. Midtones and trebles sound harsh, especially at higher volumes. We also question why anyone other than a heavy-metal fanatic would want such powerful speakers so close to their computer. This system might find a home in computer-presentation facilities, but don't even *think* about taking it on the road.

3-D Follies

The 4100 is one of several speaker systems in our roundup that offers a 3-D–sound option, where audio-processing tricks make it seem as if the sound is playing all around you. But the effect is like being inside a reverb chamber and can be quite annoying; fortunately, it's easy to turn on and off.

The $160 LCS-2612, from Labtec (www.labtec.com), offers the cleanest 3-D sound of the systems we tested, but the distortion was still apparent. And with the 3-D option turned off, music sounded like it was coming from the bottom of a barrel. We were even less impressed with the $225 Jazz 3D, from Jazz (www.jazzspeakers.com). Without the 3-D option, music sounds muffled. With 3-D turned on, it sounds shrill.

Both are three-piece systems: Labtec's subwoofer includes all system controls and is designed to sit next to your computer; the satellites hang from each side of a bracket you place on top of the monitor. The Jazz system's controls are on the right satellite speaker. Both of these systems' subwoofers deliver weak bass compared to those in the Yamaha and Altec Lansing systems.

Labtec and Jazz also offer stand-alone subwoofers that can be used to enhance the bass response in other vendors' speakers. Jazz's $80 J-902 subwoofer adds a lot of oomph to the bass but sounds a tad boomy. Labtec's $70 LCS-2408 subwoofer sounds positively wimpy by comparison.

Macworld's Buying Advice

If you want truly superior audio quality and are willing to pay a lot for it, your choice is clearly the Acoustimass system from Bose. No other speakers come close to matching the richness of their sound. But to get the best audio quality for the money, we recommend Altec Lansing's $150 PowerCube ACS48 or Yamaha's $200 System 45; the latter offers more-convenient controls and slightly cleaner bass but comes with a higher price. Among the two-piece systems, we found that Yamaha's $180 YST-M100 and Bose's $200 MediaMate deliver the best sound quality; we lean toward the latter, because of its richer reproduction of bass tones. **m**

Senior editor STEPHEN BEALE is a longtime audiophile and *Macworld*'s news editor.

EDITORS' CHOICE

Two-Piece Systems

Bose MediaMate This compact speaker set has rich sound quality and surprisingly powerful bass for a two-piece system. **Company:** Bose (508/879-7330, www.bose.com). **List price:** $200.

Three-Piece Systems

Altec Lansing PowerCube ACS48 Although its large subwoofer takes up a lot of space, this speaker system has excellent sound quality—like that you'd expect from a decent home stereo—for a good price. **Company:** Altec Lansing (717/296-4434, www.altecmm.com). **List price:** $150.

REAL PRODUCTS REAL RATINGS

Reviews you can trust *Macworld* rates only final shipping products, not prototypes. What we review is what you can actually buy.

www.macworldexpo.com or call 800-645-EXPO

Spotlight on

Macworld EXPO

the Creative World

MACWORLD Expo — the Creative World

Jacob K. Javits Convention Center

New York City - July 6-10, 1998

Kickoff Reception and Sneak Peek Fair
(open to conference attendees only)
July 6, 1998

Pre-conference Workshops and Keynote Event
July 7, 1998

Macworld/Pro Conference:
July 8-10, 1998

MACWORLD Users Conference:
July 8-10, 1998

MACWORLD Expo Exhibits:
July 8-10, 1998

Sponsored by:
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MacWEEK

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IDG WORLD EXPO

Managed by:
IDG Expo Management Company

With the right tools and the right team, you can create what you can dream. Collaborate in ways never before possible. Communicate with anyone, anywhere, anytime. The doors are wide-open, new high-tech tools emerge at astonishing speed–and everything is possible.

Come to MACWORLD Expo – the Creative World and join the community of creative pioneers using the technology to push the edge of innovation… turn creative concepts into real-world products… run companies more profitably… be better teachers... open children to the wonders of the world and help them succeed in school and in life… make better use of leisure time… and have more fun at home and at work.

You're invited to the premier event for:

- Creative, communications, & publishing professionals
- Educators
- Mac users
- Web developers
- Multimedia content authors
- New media professionals
- Advertising executives
- Gaming & Digital Entertainment consumers
- Video Production Professionals
- Animators, 3D, and Virtual Reality Designers
- Everyone who is in the business of creating, managing, & distributing creative content.

Creativity

From digital video, interactive applications, new software and new applications of existing software... to Windows/NT and Mac interoperability... convergence of technologies... and more... MACWORLD Expo–the Creative World spotlights what's new. You can try it all and see what works for you.

See it all in a new place– NEW YORK CITY!

MACWORLD Expo makes its debut in the Big Apple, the international hub for creative professionals, this summer. It's the showcase for the collaborative, creative efforts in publishing, broadcasting, recording, new media and entertainment. The Jacob K. Javits Convention Center offers plenty of room to spread out, and will accommodate all conference sessions and exhibits under one roof.

Spend your days at power-packed conference sessions and exhibits, then step out in style for evenings on the town. Come to the world's most exciting city to...

- Hear about the latest technology and techniques that can boost your productivity and super-charge your creativity
- Rub shoulders with industry experts, and glimpse the future with world-renowned visionaries
- Test new state-of-the-art tools at special interest areas, and make the best buying decisions
- Learn new ways to maximize your installed investment
- Meet new prospects and partners, and make deals on the spot
- Interact with your peers to advance your career or grow your business
- Do business with VARs, distributors and developers looking for new products and new talent

Discover new tools that let you make your unique creative signature

Hundreds of exhibitors come together in one place to offer you the chance to test drive their new tools. Come to **MACWORLD Expo–the Creative World** to try out the latest in

- Illustration and art tools
- Graphics applications
- Educational applications
- Animation
- Workflow automation & management
- Printing
- Web site management
- CD-ROMs & DVDs
- Digital photography
- Java
- VRML & 3D
- Networking & communication tools
- Gaming and Entertainment
- Scanning
- Page construction (for print; Web)
- Content management
- Object databases

... and much more!

For a full exhibitor list, up-to the minute information, or to register, call 800.645.EXPO or visit: www.macworldexpo.com!

Register by June 8 and save up to $100!

Register early to ensure your spot at the coolest place on the creative planet. You can save on registration fees by signing up promptly:

Save $100
Package 1: Super Pass–All Macworld/Pro Conference, MACWORLD Users Conference and Pre-Conference Workshop

Package 2: Macworld/Pro Conference and Pre-Conference Workshop

Package 3: Macworld/Pro Conference

Save $50
Package 4: MACWORLD Users Conference and Pre-Conference Workshop

Save $24
Package 5: MACWORLD Users Conference

Save $50
Package 6: Pre-conference Workshops

Save $16
Package 7: MACWORLD Expo Exhibits only

(all packages include admission to the exhibit floor)

Please refer to the Registration page for package details.

To take advantage of these savings, complete and return the registration form– NOW.

Introducing...

MACWORLD Kickoff Reception and Sneak Peek Fair

Monday, July 6, 1998
5 p.m.- 9p.m.

(open only to conference and pre-conference workshop attendees)

To get your **MACWORLD Expo** week off to a great start, we've arranged some special events exclusively for Macworld/Pro and MACWORLD User Conference attendees. The festivities begin with a pre-registration welcome reception and exhibit sneak preview. This is a great opportunity to pick up your badge early, meet other attendees and get a sneak peek at some of the hottest products that will be on display at the show. This special private showing will allow you to discover the latest solutions for content creation and asset management, Internet and networking tools, and utilities to get the most from your Mac. But it's open only to conference attendees– register for the conference program now.

Macworld EXPO in the Creative World

Register for the conference program and not only save money, receive exclusive benefits!

News-making keynote presentations shape the industry–make sure you're there!

Tuesday, July 7, 9:00am - 11:30 am
The spotlight is on the superstars in the MACWORLD Expo–the Creative World keynote sessions. What keynoters say often hits the media immediately (from NBC News to *USA Today*, to cable and online, they're all there), so this is your chance to be there as the news is made. Be among the first to hear about technological advances... the hottest and coolest new products... the Internet... creativity... and more. All keynote sessions take place on **Tuesday, July 7** at the **Jacob K. Javits Center**. They're open to all conference and pre-conference workshop attendees only and are available on a first-come, first-served basis.

Visit the special interest areas–where you can try new products, learn new skills, exchange ideas... and more

Digital Media Studio featuring QuickTime™

The Digital Media Studio featuring QuickTime™ brings the explosive growth and opportunities of digital media to the heart of MACWORLD Expo – the Creative World. By bringing together QuickTime developers and solutions providers with the latest hardware, software and networking technologies, the Digital Media Studio will be a must-see component for creative and corporate communication professionals involved in the synchronized creation, editing, management and delivery of video, audio, graphics, text, virtual reality and 3D content. Sponsored by Apple Computer, the Digital Media Studio is sure to be one of the show's top attractions.

Content@Home: The Delivery of Gaming, Entertainment and Mass-Market Media to the Home

Content@Home will be the premier showcase for digital entertainment and consumer applications in the world's entertainment and media center – New York City. The convergence of computing, communications and consumer markets have created a tremendous opportunity for content creators, designers, developers, retailers, producers and broadcasters to deliver their properties to the home market. Supported by Apple Computer, Content@Home at MACWORLD Expo - the Creative World will deliver hands on demonstrations, solutions, and real-life business models for consumer applications, appliances and entertainment content.

Special Attractions

Education District

The newly expanded education district will showcase software, Internet tools, curriculum building solutions and multimedia for schools, training and home learning. Sponsored by Apple Computer, the Education District highlights the educational marketplace's support for the Mac platform, in the playground of the largest school system in the world - New York City. Bursting with new applications, hardware, and real-world solutions from leading developers and solutions providers, the Education District will bring you new ways to enhance classroom learning, stimulate young minds, and assist teachers and administrators in all aspects of today's educational environments.

Extensions Workshop for Creative Content

Sponsored by The World-Wide Power Company and XChange NA
Visit this showcase to find over a thousand extensions for the most popular desktop-publishing, multimedia and pre-press applications. Mac users of all skill levels will see live demonstrations and can take advantage of show specials on the most popular extensions designed to ease your production tasks and put your work on the cutting edge of creativity.

Apple Developer Central

Come see the latest applications, custom solutions, multimedia, scientific and engineering solutions for the Macintosh... and get a glimpse of what the future holds. Annually, the Apple Developer Central is one of the very best resource centers where software developers can find the tools and solutions they need to grow their companies and reduce development time and costs.

Added Bonus!

FREE gifts with your registration!
Get a free copy of *MACWORLD Expo – the Creative World's Streetside Guide to New York City: A Mac Users Manual to Think Different About the Big AppleOS.* The guide includes hundreds of dollars of exclusive savings to area restaurants, museums, destination, technical, creative and support services throughout the New York area.

AND

You get a **FREE three–month** basic trial membership in NYMUG, including monthly meetings, software classes and an award-winning monthly magazine, the *Mac Street Journal.*

www.macworldexpo.com

Pre-Conference Workshops/Conference Program

Macworld EXPO the Creative World

Pre-Conference Workshops

July 7, 1998

Make the most of your time. This is a unique opportunity to spend an entire day getting in-depth training before the conferences begin. Full session descriptions for these sessions are posted at ***www.macworldexpo.com.***

(A) Practical Introduction to Mac Networking
(B) Designing Web Pages with Dynamic HTML
(C) PhotoShop for Webmasters
(D) Creation of High Quality Photographic Web Content
(E) Web Essentials for Non-Webmasters: How Web Marketing Works
(F) Essentials of Web Publishing
(G) Managing your Digital Assets with Cinebase
(H) The Digital Storytelling Workshop
(I) Putting Internet Commerce to Work
(J) Optimizing AppleShare IP in the Integrated Network Environment
(K) Macintosh Network Administration with the Apple Network Administrators Toolkit
(L) Introduction to Content Asset Management
(M) Windows NT for Mac Managers

Macworld/Pro–The Technical Conference for Macintosh Professionals

July 8-10, 1998

Now you can get in-depth, advanced technical training at MACWORLD Expo, with Macworld/Pro. Improve your skills, meet other Mac professionals solving similar problems and stay on top of your profession. The new Macworld/Pro Conference is designed for:

- Webmasters, Content Creators, Web Entrepreneurs, Web Developers
- Network Managers, Network Administrators
- Support Professionals
- Developers
- Mac Platform Managers from Business, Government and Education
- IS/IT/MIS Managers
- Small Business Owners
- Educators

A faculty of world-class instructors and lecturers are ready to help you take your Mac computing efforts to the next level. You'll emerge from this conference with enhanced skills and a wealth of new information. Here's a preview of what you can expect...

Track 1: Creating Digital Content

Use the latest Mac OS technology to produce stunning digital content. Leading experts reveal new ways to bring creative concepts to life.

Topics include:

- Optimizing Your System for Creating Digital Content
- Professional Digital Photography
- What the &*(% is Interactivity, Anyway?
- Digital Storytelling
- Clear Audio on the Web

Track 2: Content Asset Management

How to manage your media assets effectively–and shorten turnaround time, reuse vital assets and leverage content for multiple media and distribution channels.

Topics include:

- Setting up Workflows for Publishing
- Content Management: the Integration Challenge
- Knowledge Management vs. Content Asset Management
- Media Convergence and Content Management

Track 3: Macintosh Networking and Communications

Go inside the protocols and services for tactics to manage Mac LANS, WANs, Internet/intranets and remote access.

Topics include:

- Tracking Network Problems
- Common Internet Attacks: What They Look Like and What to Do
- Networking in a Rhapsody World
- Tuning Open Transport
- Open Transport Update: Macs on TCP/IP

Track 4: CyberWorld

Learn more about how to connect and configure Macs for the Internet, deploy Internet applications... and get perspective on the evolution of cybersociety.

Topics include:

- Building a Mac-centric Intranet
- ECommerce and Mac OS Technology
- Internet 2000

Track 5: Managing the Mac Platform

The Macintosh continues to be a platform in transition, making it even more critical to approach Mac systems management methodically. These sessions will help you do that.

Topics include:

- How to Manage Hardware Assets
- Track and Enforce Software Licenses
- Planning a Rhapsody Migration
- A Macintosh Reality Check
- Innovations in eMail

For more information or to register, visit www.macworldexpo.com or call 800.645.EXPO

MACWORLD Users Conference/Travel Made Easy

MACWORLD Users Conference
July 8–10, 1998

Here's your chance to learn everything you ever wanted to know about using your Macintosh at work, at school, at home and on the road.

Take your Mac to the Max
Put your Macintosh into full throttle and squeeze every bit of performance out of it–whether it's an old model or the newest "screamer." ***Topics include:***

- The "Soup Up Your Mac" SuperSession
- Mysteries of the System Folder–Revealed!
- Ten Fabulous PowerBook Speedups

Create! Tips and Techniques for Using the World's Most Dynamic Tool to . . . Create!
Acquire new skills for media/multimedia authoring, digital content creation, digital manipulation, presentation, preparation and delivery. ***Topics include:***

- Get Started with Digital Photography
- Become a Macintosh Musician
- Preflighting: Perfection Before Output

Crash Courses
Get the scoop on the latest technology and get up to speed with the hottest tools. Crash courses bring you up to speed fast.
Topics include:

- DVD Insights
- How the Internet Works
- How to Buy Your Next Mac

...and more

Tech Tips
Extend your mastery of a variety of Mac tools. These sessions unlock the secrets and turn you into a power user. Topics include:

- Put Office '98 to Work
- How to Put Filemaker Databases on the Internet
- Digital Wizardry with Photoshop
- Hot Quark Xpress Tips and Tricks

...and more

Inside Apple Technologies
Gain in-depth understanding of advanced and innovative system technologies, learn why they're special, and how you can use them to create really cool computing solutions.
Topics include:

- Introduction to QuickTimeTM 3.0
- How to Use QuickTimeTM to Author Rich Media
- How to Get What You See With ColorSync
- Secrets of an AppleScript Wizard

The Consumer Mac
Get the most out of the Mac in your house.
Topics include:

- Digital Family Memories: Home Photo Album Design
- Personal Banking on the Internet
- Parental Controls: Secure Your Home Internet Connection for Your Kids

For more detailed info, visit the web at **www.macworldexpo.com** or call **800.645.EXPO**.

Small Office/Home Office
How your Mac can help you launch and operate a small company, home-based business or to telecommute. Topics include:

- How to be a Mac Office–Even if your Clients are on Windows
- Telecommuting Essentials

...and more

For Educators Only
Innovative ways the Mac can enhance both teaching and learning. Topics include:

- Network Computing: Is Zero Administration for Real?
- How to Make your Network Macs Work All the Time
- Video Conferencing, Virtual Reality, the Web, and More: How Two School Districts Use the Mac

...and more

Macworld Magazine Presents . . .
Columnists and featured guest speakers talk about the hottest topics hitting the pages of the industry's premier publication.
Topics include:

- Macworld Magazine's Best of Show
- Best of Macworld's MacSecrets

...and more

Goodies
These light-hearted sessions will amuse you and show you things that are cool just for cool's sake! ***Topics include:***

- Scripting Your Stereo
- Better Living Through Home Electronics–Great Gadgets for Everyone
- Saving Your Mac from Obsolescence–or 101 Things to Do with a Dead Mac

...and more

Travel to MACWORLD Expo-the Creative World Made Easy and Convenient!

Exclusive discounted midweek fares are available on United Airlines and US Airways into all New York airports from your home city. A MACWORLD Expo travel professional can assist you with access to these fares or you may contact the airlines directly utilizing the MACWORLD Expo discount numbers below. Additionally your travel professional may utilize theses discount numbers for you and receive the same low fares. Please note that NO SATURDAY stay is required to take advantage of these low fares.

United Airlines
800.521.4041
Discount number
519ZW

US Airways
800.334.8644
Discount number
18180598

Hotel Accommodation:
Early booking is strongly advised to ensure best hotel selection. Reservations are processed on a first-come, first-served basis, based on availability. After June 1, 1998 convention rates may not apply.

MACWORLD Expo has designated the New York Hilton as headquarter host. Please call CHM for other hotel listings.

Rates shown are per night, per room and do not include applicable room tax, currently 13.25%, plus $2.00 New York occupancy tax.

A deposit of one- or two night's room rate plus applicable tax is required at the time of booking to hold a reservation (see hotel listing). Deposits are non-refundable on May 15, 1998. Payment may be made by company check or credit card. Do not send check deposit until you receive confirmation of hotel assignment.

Hotel Changes and Cancellations:
All changes or cancellations must be made through CHM . Reservation cancellation after May 15 will result in forfeiture of applicable deposit.

Special Accommodations:
If you require special accommodations, please contact a CHM customer service agent.

Responsibility and Liability:
Convention Housing Management (CHM) and IDG Expo Management Company, travel program sponsor, and/or their agents act only in the capacity of agents for customer in all matters pertaining to hotel accommodations and transportation whether railroad, motor car, airplane, or any other means, and as such are not responsible for any damage, expense or change in schedule or condition from any loss, injury or damage to any person or property from any cause whatsoever. Baggage handling throughout the program is entirely at the owner's risk. The customer agrees that IDG Expo Management Company/ CMH shall not be held responsible in the event of any errors or omissions in any promotional material.

For further travel information, please contact:

Convention Housing Management
1700 The Alamida, 2nd Floor
San Jose, CA 95126
phone: 800.799.9914 or
outside the USA 408.918.9200
fax: 408.918.9250
email: macworld@chmrooms.com

Convention HOUSING Management

MACWORLD Expo - the Creative World Advance Registration Form

Jacob K. Javits Center ■ New York City

- Kickoff Reception and Sneak Peek Fair: July 6
- Pre-Conference Workshop and Keynotes: July 7
- MACWORLD/Pro Conference and MACWORLD Users Conference: July 8-10
- Exhibits: July 8-10

1. REGISTRATION SELECTION AND FEES (SELECT ONE)

DEADLINE FOR SAVINGS IS JUNE 8!

All Conference and Keynote Sessions are on a first-come, first-served basis with the exception of the Pre-Conference Workshop. Please choose your package and fill out the form completely. Incomplete forms will be returned. Please use one form per person; make photocopies for additional people.

	Advanced Registration* (on or before 6/8)	Regular Registration* (6/9-7/1 via phone, Web, or on-site)
☐ **Package 1 - Super Pass (July 6-10)**	$1095*	$1195*
Includes: • Pre-Conference Workshop • Lunch (Tuesday only) • ALL Keynotes • Macworld/Pro Conference Sessions • MACWORLD Users Conference Sessions • Exhibits		
w **(Write in your Workshop selection code - see list on opposite page. Forms without workshop selection indicated will be returned.)**		
☐ **Package 2 - Macworld/Pro and Pre-Conference Workshop (July 6-10)**	$995*	$1095*
Includes: • Pre-Conference Workshop • Lunch (Tuesday only) • ALL Keynotes • Macworld/Pro Conference Sessions • Exhibits		
w **(Write in your Workshop selection code - see list on opposite page. Forms without workshop selection indicated will be returned.)**		
☐ **Package 3 - Macworld/Pro Conference ONLY (July 6-10)**	$795*	$895*
Includes: • Macworld/Pro Conference Sessions • Lunch (Tuesday only) • ALL Keynotes • Exhibits		
☐ **Package 4 - MACWORLD User Conference and Pre-Conference Workshop (July 6-10)**	$495*	$545*
Includes: • Pre-Conference Workshop • MACWORLD Users Conference Sessions • Lunch (Tuesday only) • ALL Keynotes • Exhibits		
w **(Write in your Workshop selection code - see list on opposite page. Forms without workshop selection indicated will be returned.)**		
☐ **Package 5 - MACWORLD User Conference (July 6-10)**	$175*	$199*
Includes: • MACWORLD Users Conference Sessions • ALL Keynotes • Exhibits		
☐ **Package 6 - Pre-Conference Workshop (July 6-10)**	$395*	$445*
Includes: • Pre-Conference Workshop • Lunch (Tuesday only) • ALL Keynotes • Exhibits		
w **(Write in your Workshop selection code - see list on opposite page. Forms without workshop selection indicated will be returned.)**		
☐ **Package 7 - Exhibits ONLY (July 8-10)**	$29*	$45*
Includes: • Admission to the Exhibits ONLY		

Conditions and Policies:
Payment must accompany form for registration to be complete. Purchase orders not accepted. Fax and mail registrations received after June 8 will be returned unprocessed. This form cannot be used for on-site registration. All registration fees are non-refundable and credentials are non-transferable. A $20 fee will be charged for all returned checks.

★ Prices include 8.25% New York Sales Tax on the applicable portion of package price.

Deadline!

The deadline for all fax and mail registrations is June 8. All fax and mail registrations after this date will be returned. You may still register at regular prices via Web or phone from June 9 through July 1. If you register between June 9 and July 1, you MUST pick up your badge at the On-Site Badge Pick-Up Counter.

- ALL international (including Canada) attendees must pick up badges at the On-Site Badge Pick-Up Counter

ON-SITE REGISTRATION HOURS:
Monday, July 6: 2PM - 6PM
Tuesday - Thursday, July 7-9: 8AM - 6PM
Friday, July 10: 8AM - 4PM

2. CUSTOMER INFORMATION

First Name MI Last Name

Title

Company

Street Address

P.O. Box (if applicable)

City State/Province Zip Code/Postal Code

Country Telephone Extension

Fax Internet/Email Address

3. ATTENDEE PROFILE

MUST BE FILLED OUT TO PROCESS YOUR BADGE

WHAT IS YOUR INDUSTRY? (Check One Only)
☐ 1 Accounting/Finance
☐ 2 Aerospace
☐ 3 Architecture/Construction/Process Industries
☐ 4 Art/Design/Creative Services
☐ 5 Arts & Entertainment
☐ 6 Computer Reseller/VAR/VAD/Service
☐ 7 Consulting
☐ 8 Education
☐ 9 Engineering/R&D
☐ 10 Government/Military
☐ 11 Health/Medical Services
☐ 12 Legal Services
☐ 13 Manufacturing (Computer Industry)
☐ 14 Manufacturing (Non-Computer Industry)
☐ 15 Marketing/Sales/PR/Communications
☐ 16 Printing/Publishing
☐ 17 Transportation
☐ 18 Utilities
☐ 19 Other_____

WHAT IS YOUR JOB FUNCTION? (Check One Only)
☐ 20 Art Director/Graphics
☐ 21 Consultant
☐ 22 Controller/Treasurer/Accounting/CFO
☐ 23 Corporate Executive
☐ 24 DP/IS Management/CIO
☐ 25 Editorial/Writing
☐ 26 Educator
☐ 27 Engineering/Scientific/R&D
☐ 28 Human Resources
☐ 29 Management/Department Head
☐ 30 Marketing/Sales
☐ 31 Network Management
☐ 32 Professional (Lawyer, Doctor, etc.)
☐ 33 Programming/Analysis
☐ 34 Purchasing
☐ 35 Software Developer
☐ 36 Training
☐ 37 Other_____

WHAT IS THE SIZE OF YOUR ORGANIZATION?
☐ 38 Under 50 ☐ 41 500-999
☐ 39 50-99 ☐ 42 1000 & Over
☐ 40 100-499

WHAT IS YOUR INDUSTRY? (Check One Only)
☐ 43 Macintosh Power Book Series
☐ 44 Macintosh Performa Series
☐ 45 Macintosh Quadra Series
☐ 46 Macintosh Workgroup Series
☐ 47 PowerMac
☐ 48 Mac clone
☐ 49 IBM PC or compatible desktop
☐ 50 IBM Laptop/Notebook
☐ 51 Other_____

ARE THE COMPUTERS AT YOUR ORGANIZATION NETWORKED?
☐ 52 Yes ☐ 53 No

PRIORITY CODE

MWAB

4. PAYMENT METHOD (YOU'LL BE CHARGED FOR ALL REGISTRATIONS RECEIVED INCLUDING DUPLICATES)

Deadline!

Payment must accompany form for registration to be complete. DON'T PAY TWICE FOR THIS EVENT!
You will be charged for all registrations received, and not refunded for duplicate registrations.
Please use one method of registration only.

☐ Check enclosed (make payable to MACWORLD Expo). Enclose check and form in an envelope.
☐ Mastercard ☐ Visa ☐ American Express Amount $ _____

Account Number Expiration Date

First Name MI

Last Name Cardholder Signature

REGISTER NOW!

Use ONE of the following methods to register with this form:

Call: 800.645.EXPO or 781.551.9800 outside of the U.S. ($5 Service fee does apply.) THROUGH JULY 1, ONLY.

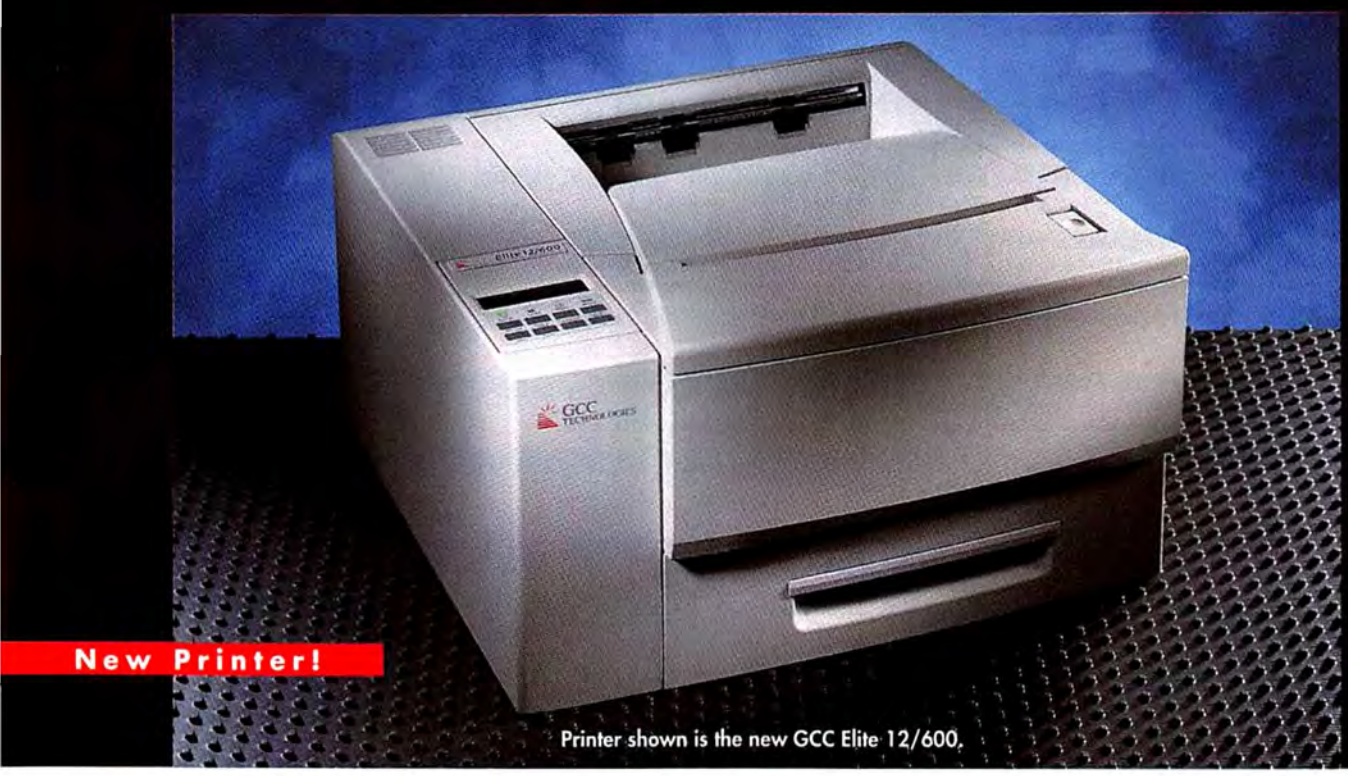
www.macworldexpo.com THROUGH JULY 1, ONLY.

Mail to: MACWORLD Expo - the Creative World P.O. Box 9103, Norwood, MA 02062-9103. THROUGH JUNE 8, ONLY.

Fax to: 781.440.0359. Faxed registration forms must include credit card information. THROUGH JUNE 8, ONLY.

(TTY) Service is available for hearing impaired. Dial 781.440.0366.

PRINTERS THAT BLOW YOUR DIRECT



New Printer!

Printer shown is the new GCC Elite 12/600.

Elite 12/600

New

- 600 x 600 dpi resolution
- 12 pages per minute
- 1 year Platinum Exchange Warranty
- Maximum print area: 8.5" x 14"
- Letter, legal, A4, envelope
- 250 sheet Universal Tray
- PostScript® Level 2 compatible, PCL 5
- 80 PostScript fonts, 15 PCL fonts
- 8 MB RAM expandable to 64 MB
- EtherTalk, TCP/IP
- Ethernet® (10 Base T)
- Bi-directional Parallel, LocalTalk®, RS422

2nd Paper Feeder* (Includes 500 sheet Universal Tray)	Add $399
Extra 8 MB memory	Add $49

Platinum Exchange Warranty Program:

Additional year	Add $99
Two additional years	Add $150
Three additional years	Add $213

$999

Business Lease: $35 Month/36 month lease

Elite 1212

- 1200 x 1200 dpi resolution
- 12 pages per minute
- 1 year Platinum Exchange Warranty
- Maximum print area: 8.5" x 14"
- Letter, legal, A4, envelope
- 250 sheet Universal Tray
- PostScript® Level 2 compatible, PCL 5
- 80 PostScript fonts, 15 PCL fonts
- 16 MB RAM expandable to 64 MB
- EtherTalk, TCP/IP
- Ethernet® (10 Base T, 10 Base2), NetWare®
- Bi-directional Parallel, LocalTalk®, RS422

2nd Paper Feeder* (Includes 500 sheet Universal Tray)	Add $399
Extra 8 MB memory	Add $49

Platinum Exchange Warranty Program:

Additional year	Add $139
Two additional years	Add $210
Three additional years	Add $298

$1399

Business Lease: $49 Month/36 month lease

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- 250 sheet Universal Tray
- PostScript® Level 2 compatible, PCL 5
- 80 PostScript fonts, 15 PCL fonts
- 8 MB RAM expandable to 64 MB
- EtherTalk, TCP/IP
- Ethernet® (10 Base T, 10 Base2)
- Parallel, LocalTalk®, RS422

2nd Paper Feeder* (Includes 250 sheet Universal Tray)	Add $319
2nd Paper Feeder* (Includes 500 sheet Letter Tray)	Add $419
Extra 8 MB memory	Add $49

Platinum Exchange Warranty Program:

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Two additional years	Add $270
Three additional years	Add $383

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*The Elite 1212, Elite 12/600, Elite XL 1208, Elite XL 1208 PlateMaker, and Elite XL 608 LC support one additional paper feeder. The Elite XL 20/600 and Elite XL 20/800 support two additional paper feeders.

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- PostScript® Level 2 compatible, PCL 5
- 285 PostScript fonts, 15 PCL fonts
- 16 MB RAM expandable to 64 MB
- EtherTalk, TCP/IP
- Ethernet® (10 Base T, AAUI), Netware®
- Bi-directional Parallel, LocalTalk®, RS422

2nd or 3rd Paper Feeder* (Includes 500 sheet Universal Tray)	Add $299
Extra 8 MB memory	Add $49

Platinum Exchange Warranty Program:

Additional year	Add $219
Two additional years	Add $330
Three additional years	Add $468

$2199

Business Lease: $76 Month/36 month lease

Elite XL 20/800

New

- 800 x 800 dpi resolution
- 20 pages per minute
- 1 year Platinum Exchange Warranty
- Maximum print area: 13" x 20"
- Ledger, letter, legal, A3, A4, envelope
- 500 sheet Universal Tray
- PostScript® Level 2 compatible, PCL 5
- 285 PostScript fonts, 15 PCL fonts
- 24 MB RAM expandable to 64 MB
- EtherTalk, TCP/IP
- Ethernet® (10 Base T, AAUI), Netware®
- Bi-directional Parallel, LocalTalk®, RS422

2nd or 3rd Paper Feeder* (Includes 500 sheet Universal Tray)	Add $299
Extra 8 MB memory	Add $49

Platinum Exchange Warranty Program:

Additional year	Add $259
Two additional years	Add $390
Three additional years	Add $554

$2599

Business Lease: $90 Month/36 month lease

Elite XL 1208

- 1200 x 1200 dpi resolution
- 8 pages per minute
- 1 year Platinum Exchange Warranty
- Maximum print area: 11.69" x 20"
- Ledger, letter, legal, A3, A4, envelope
- 250 sheet Universal Tray
- PostScript® Level 2 compatible, PCL 5
- 285 PostScript fonts, 15 PCL fonts
- 24 MB RAM expandable to 64 MB
- EtherTalk, TCP/IP
- Ethernet® (10 Base T, 10 Base2), NetWare®
- Parallel, LocalTalk®, RS422

2nd Paper Feeder* (Includes 250 sheet Universal Tray)	Add $319
2nd Paper Feeder* (Includes 500 sheet Letter Tray)	Add $419
Extra 8 MB memory	Add $49

Platinum Exchange Warranty Program:

Additional year	Add $329
Two additional years	Add $493
Three additional years	Add $700

$3299

Business Lease: $114 Month/36 month lease

Elite XL 1208 PlateMaker

- 1200 x 1200 dpi resolution
- 8 pages per minute
- 1 year Platinum Exchange Warranty
- Maximum print area: 11.69" x 20"
- Polyester plates, ledger, letter, legal, A3, A4
- 250 sheet Universal Tray
- PostScript® Level 2 compatible, PCL 5
- 285 PostScript fonts, 15 PCL fonts
- 32 MB RAM expandable to 64 MB
- EtherTalk, TCP/IP
- Ethernet® (10 Base T, 10 Base2), NetWare®
- Parallel, LocalTalk®, RS422

2nd Paper Feeder* (Includes 250 sheet Universal Tray)	Add $319
2nd Paper Feeder* (Includes 500 sheet Letter Tray)	Add $419
Extra 8 MB memory	Add $49

Platinum Exchange Warranty Program:

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Business Lease: $207 Month/36 month lease

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	VisionMaster Pro 501 (19.5" VIS)	0.28mm/AG	96khz	1600 x 1200@75hz	$1,139
	VisionMaster 502 (19.5" VIS)	0.27mm/dp	110khz	1800 x 1440@74hz	$1,199
	VisionMaster 501 (19.5" VIS)	0.27mm/dp	96khz	1600 x 1200@75hz	$1,139
19"	VisionMaster 450 (18.0" VIS)	0.26mm/dp	102khz	1600 x 1200@80hz	$799
17"	VisionMaster Pro 17 (15.9" VIS)	0.25mm/AG	92khz	1600 x 1200@74hz	$579
	VisionMaster 17ES (15.7" VIS)	0.26mm/dp	86khz	1600 x 1200@69hz	$569
	VisionMaster 17 (15.7" VIS)	0.26mm/dp	86khz	1600 x 1200@69hz	$488
15"	VisionMaster 350 (13.7" VIS)	0.28mm/dp	69khz	1280 x 1024@60hz	$248

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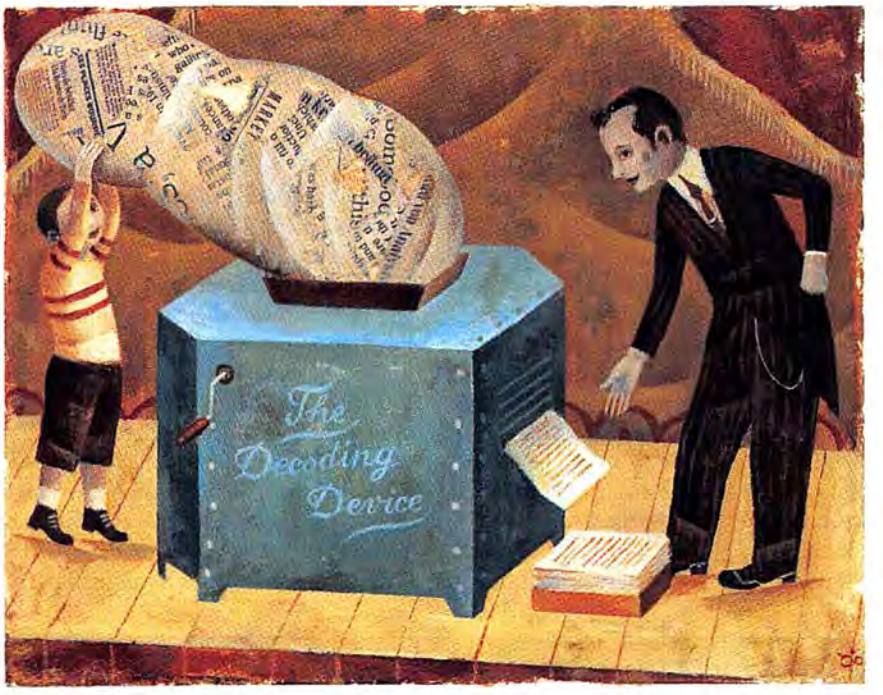
Secrets

The Heartbreak of MIME Attachments

BINHEX, BASE64, UUENCODE, AND OTHER E-MAIL MYSTERIES EXPLAINED

by Joseph Schorr



GERARD DUBOIS

Something has gone terribly wrong. Your project is due at noon, and the client just sent you an e-mail attachment containing last-minute revisions. But your Mac can't open the file. Double-clicking on it just brings up an error message. Thinking the file must be corrupted, you frantically phone the client and have him send it again. But the new file still won't open. Desperate, you pry open the manuscript with your word processor, but all you see is page after page of meaningless garbage characters. What's wrong with the file? Probably nothing. You've simply become another victim of MIME.

What Happened?

Let me explain: That string of seemingly meaningless text isn't garbage—it's *code*. To ensure the attachment's safe passage over the Internet, your client's e-mail program encoded the file using an encryption scheme called MIME (Multipurpose Internet Mail Extensions). MIME turned the file into a string of text characters. Unfortunately, your e-mail program failed to decode the MIME file back into its original format. The good news: you can decode it yourself.

Actually, three types of encoding are routinely used to send attached files via e-mail: MIME, UUencode, and BinHex. All three can potentially leave you with file attachments that look unintelligible. Read on for an explanation of these mysterious codes, why they exist, and how you can crack them open and make your files look the way they are supposed to.

Why It Happened

Most e-mail systems are designed to handle plain-old ASCII characters. These text-based systems use 7 bits of data to specify each character. But many files—such as graphics, databases, and movies—contain a lot more than just plain text. The data packed into such files is stored in a binary format that uses not 7 but 8 bits to define each morsel of information.

So how do you transmit 8-bit data through a 7-bit system? That's where encoding comes in. Encoding schemes use an encryption system that represents each hunk of 8-bit binary data as a string of plain-old ASCII text—text that can travel intact across any file server, through any mail gateway, and into any e-mail program, regardless of platform.

continues

When an encoded file arrives at its destination, it's up to your e-mail program to detect the encoding system used and convert the file back into its original binary form—and that's what usually happens, behind the scenes, without your even knowing about it.

However, sometimes the particular encoding system used by the sender isn't supported by the recipient's mail program—there are several different (and incompatible) versions of UUencoding, for example—and the result is that files arrive in their encoded state.

On Mac systems, the most popular encoding scheme is BinHex. UUencoding is an older scheme with Unix origins (the *UU* stands for *U*nix-to-*U*nix). The most popular—and most current—system is MIME, which is also called Base64.

How to Fix It

Fixing a file that arrives in its encoded state is usually a simple drag-and-drop affair. You can assemble a pretty comprehensive decoding kit without spending much money. Use the freeware StuffIt Expander, by Aladdin Systems, to open BinHex files (usually tagged with a .hqx suffix at the end of the file name) and to decompress .sit files. Add the $30 shareware DropStuff with Expander Enhancer to Aladdin's StuffIt Expander, and your decoding/decompressing options multiply: you can handle UUencoded files (usually tagged with a .uu suffix), as well as a number of compression formats, including .zip, .z, .gz, and .ARC files.

If you're willing to assemble an arsenal of smaller, specialized tools, you can spend even less—in fact, nothing—to decode attachments. Open UUencoded, BinHex, and Base64 files with Laurent Hagimont's free utility, uucd. Crack open MIME files with Brian Clark's YA Base64 or John Myers's Mpack—both freeware. Finally, you can use A. P. Maika's freeware UnZip 5.32 to tackle zipped files from PC users. These indispensable utilities are available from Mac Downloads at Macworld Online.

With most of them, you simply drag the files onto the icon of the appropriate utility to launch the decoding process. For tips on using these utilities, see "Breaking the Code."

How do you determine which utility to use? Usually, a file's name provides a clue. UUencoded files may end with .uu; Base64 files may end with .MIME. Often, though, the suffix is missing; in that case, you have to do some detective work. One easy way to figure out the encoding method used is to open the file in question with a word processor—remember, encoded files are just strings of plain text, and each type of encoding has telltale characteristics (check out "Clues to Decoding").

It may take several rounds of decoding, decompressing, and deciphering to tame the attachments that show up in your in-box, but with a few of the right tools and a little perseverance, you'll never feel victimized by MIME again. **m**

JOSEPH SCHORR is a program manager at Extensis and a coauthor of the forthcoming *Macworld Mac Secrets*, fifth edition (IDG Books Worldwide).

Breaking the Code

E-MAIL ATTACHMENTS AND DOWNLOADED FILES THAT ARRIVE ENCODED AND unreadable can usually be decoded and turned back into usable files. Keep these tips in mind when using decoding tools.

If at First You Don't Succeed . . . If your decoding efforts fail, don't be too quick to conclude that a file is corrupted; you may be using the wrong decoding tool. There is more than one kind of UUencoding, for example, and a number of MIME variations. If one UUdecoder doesn't work, try another. You may have to run a file through several *different* utilities that all claim to do the same thing to find one that offers the particular flavor of decoding you require.

Don't Autodelete Some decoding utilities offer the option of automatically deleting an encoded file after the decoding process—convenient but dangerous. If something goes wrong, you may have to try decoding the file again. Keep original encoded files around until you have a clean, saved copy of the decoded file; then drag the originals to the Trash.

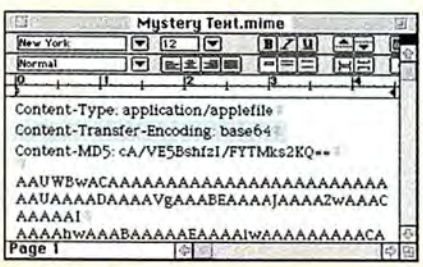
Be a Code Detective If an attempt to decode a file doesn't work, open the file with your word processor and read the header at the beginning of the code; it will reveal the type of encoding that the sender used.

It's Not Over Till It's Over Some files are compressed *and* encoded. You may decode a UUencoded file, for example, only to find that it then has to be decompressed using UnZip.

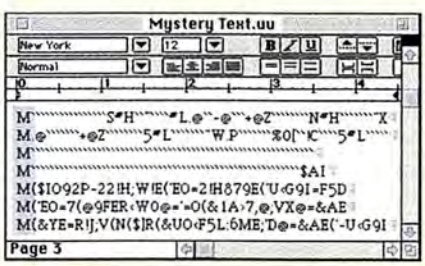
Don't Count on Double-Clickability If a file still won't open after you've successfully decoded it, try opening it from within the application that created it, using the Open command. UUencoded files, in particular, tend to lose their type and creator codes in transit and arrive as documents with generic icons. These files won't open with a double-click because the Mac doesn't know what program to use to open them. Opening the files from within the appropriate application solves the problem. (If you don't know what type of file you've got, you'll just have to guess. Keep trying different types of programs till you get one that works.)

Clues to Decoding

ENCODED FILES MAY LOOK LIKE RANDOM GARBAGE, BUT THEY contain plenty of clues that reveal how to handle them. The header in the first document reveals that it is a Base64 MIME file. You can tell that the second document is UUencoded because every line starts with the letter *M*. BinHex files, like the third document, always contain a line at the top that says the file must be converted with BinHex.



Base64 MIME



UUencode

BinHex

Quick Tips

Tips, Tricks, and Shortcuts

by Lon Poole

One of Mac OS 8.0 and 8.1's little secrets is that their pop-up windows can imitate the Launcher control panel—and even have advantages over the Launcher. You can resize pop-up windows individually and set view options differently for each one, and they disappear when not in use. To make them act like the Launcher, simply choose As Buttons from the View menu for each pop-up window, and set the Keep Arranged option of the View Options command to By Name.

The drawback of using pop-ups like this is that when a window covers your pop-up tabs, you lose one-step access to the pop-up windows. But to make your pop-up windows more accessible, Art Gorski of Houston, Texas, suggests you put their folders (or aliases of the folders) in the Apple Menu Items folder in your System Folder. Then you can access a pop-up window and its contents quickly from the Apple menu even if the pop-up tab is buried under a stack of windows. What's more, the Apple menu updates automatically when you change the contents of a pop-up window listed there.

Conversely, Jed Singer of Claremont, California, keeps the Recent Applications folder open as a pop-up window. He drags files onto the Recent Applications tab, and the window obligingly pops up to reveal recent applications, and he's in business.

Overcoming Download Interruption

Q. I want to download a large file from the Internet, and for some freaking reason I cannot maintain a connection for the duration of the download. Is there any freeware or shareware that would let me go back to the site and resume downloading where I left off, rather than having to start over from the beginning?

CAMERON M. BOBBETT
Charleston, South Carolina

A. If you're downloading from an FTP server (the URL begins with ftp://, not http://), try the Fetch file-transfer program from Dartmouth College (www.dartmouth.edu/pages/softdev/fetch.html). The Resume Download command in Fetch's Remote menu can sometimes resume an interrupted download (use Fetch Help for details on this command's limitations). Fetch is $25 shareware (free for educational and nonprofit organizations), but check with your Internet service provider, as some ISPs license it for free distribution to their Mac customers.

JEFFREY PELO

Curing QuickTime Web Silence

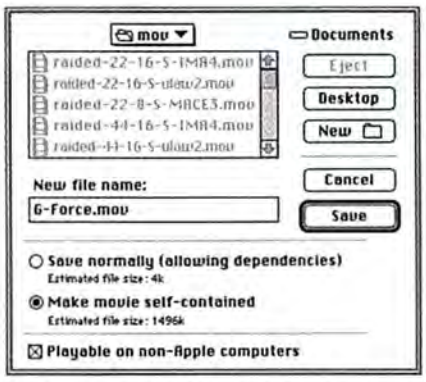
Q. I put a couple of great songs recorded by my friend Guido Heistek on a Web page as sound-only QuickTime movies, using Claris Home Page 2.0 to insert the movies and turn on the Autoplay attribute for each movie. The songs played beautifully when I previewed the page from my hard drive with Netscape Navigator 3.0, but after I uploaded the page and movie files to my server, the movies became silent. Navigator displayed the message "plug-in loading" at the bottom of the browser window, counted up the K as each movie file loaded, and then the big finale . . . silence. What did I do wrong?

ANDREW FUNDERBURG
Fukuoka, Japan

A. A sound-only QuickTime movie may not play from a Web site for several reasons. For one, many browsers and servers require that a Web-site developer *flatten* QuickTime movies (combine their resources and data for cross-platform compatibility) before inserting them on Web pages. You can flatten movies with the Save As command in Movie Player version 2.0 and later (included with recent versions of QuickTime and the Mac OS), as shown in "Flat Movies."

In addition, several parameters of the HTML code that embeds a movie in a Web page can affect whether the movie plays. The movie must have a height and width of at least 2 pixels or it can cause problems for browsers. If you're tempted to hide a sound-only movie by making it tiny, turn off the movie controller instead. (Don't forget to set hidden movies to play automatically or no one will ever hear them.) For example, in Claris Home Page you would set the Controller option to No and select the

continues



Flat Movies You need to flatten QuickTime movies to guarantee that they will work with most Web browsers on both Macs and PCs. Open the movie with Movie Player version 2.0 or later, choose Save As from the File menu, and set the dialog box options as shown here. Be sure to name the flattened movie with the suffix .mov so browser applications will know it's a movie file.

Autoplay option in the movie's Object Editor window. In Adobe PageMill 2.0, type **controller** and **false** followed by **autoplay** and **true** in the blank spaces in the Inspector palette's Object panel.

You can also hide a movie in Adobe PageMill and Claris Home Page by adding the parameter **hidden=false**. Don't use **hidden=true** or simply **hidden**, because these alternatives hide the movie and prevent it from playing automatically. For example, in Claris Home Page, you would type **hidden=false** into the Extra HTML box and select the Autoplay attribute in the movie's Object Editor window. In PageMill, you would type **hidden** and **false** followed by **autoplay** and **true** in the blank spaces provided in the Inspector palette's Object panel.

Apple's QuickTime Web site has a complete list of all the HTML movie parameters at www.apple.com/quicktime/dev/qtdevweb.html.

Making ClarisWorks 5.0 Speak

Q "The Mac Speaks Out" revealed how to make ClarisWorks 4.0 talk (*Secrets*, August 1997). I didn't own the program then, but I recently purchased ClarisWorks Office. To my dismay, I found that the Shortcuts submenu mentioned in *Secrets* is gone in ClarisWorks 5.0 and there is nary a button with lips to be found. Has ClarisWorks gone mute?

LEIGH L. PANG
Eastsound, Washington

A In ClarisWorks 5.0, the Speak Text button looks like a tiny Mac Classic with a cartoon balloon. To add this button, choose Edit Button Bars from the pop-up menu in the button bar. In the dialog box, choose a button bar in which to nest the Speak Text button. In the next dialog box, choose Word Processing from the pop-up menu, select the Speak Text button, and click Add.

Speed Up Mac OS 8 Folders

TIP If a folder opens slowly in Mac OS 8, even after you have turned off the two Folder Protection options in the General Controls control panel (as suggested in February 1998's *Quick Tips*), the folder may simply contain too many items. Marc D. Grobman of Thornton, Pennsylvania, reports that whenever he opened a folder containing files for each of his 2,000 patients, "to say that Mac OS 8 was glacial is a crude understatement." Adjusting the disk cache and initializing the hard disk didn't provide any improvement. Finally, he created new folders and organized the files alphabetically, moving all the patients whose last name begins with *A* to an *A* folder, and so on. Now his folders open with the utmost speed. ■

LON POOLE answers readers' questions and selects reader-submitted tips for this monthly column. His latest book is *Macworld Mac OS 8 Bible* (IDG Books Worldwide, 1997).

Shareware mentioned in *Quick Tips* is available from Macworld Online (www.macworld.com).

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A Better Path to Photoshop Masks

IF YOU WANT AN EFFICIENT, FLEXIBLE WAY TO CREATE COMPLEX MASKS IN Adobe Photoshop, Jonathan S. Gilbert of Austin, Texas, recommends that you try paths. Gilbert works with Photoshop eight hours a day and believes paths are the best way to create complex masks because they're more accurate and easier to edit.

Creating paths is like making a connect-the-dots drawing: you place corner-point or curve-point "dots" by clicking or dragging with the pen tool. You can add as many dots as you need to correctly outline fine details. For example, imagine the daunting task of masking an image of bicyclists with fine details such as spokes, cables, and hair. The spokes' edges blend with the background road, making it impossible to select individual spokes with the High Pass filter or the magic-wand tool. Instead, outline the spaces between spokes by drawing and editing paths with the pen tool (see "Easy Masking").

Easy Masking Mask fine details such as bicycle wheel spokes by connecting hand-drawn paths.

After you've drawn the paths, you can convert them all to a mask by dragging the path thumbnail in the Paths palette to the Make Selection icon, or by activating the path and clicking the icon. You can also build up a mask by converting paths piecemeal; adding and subtracting paths makes it easy to mask the bicycles' spokes and wheels. You add a path to, subtract it from, or intersect it with the mask by selecting the path's points and pressing shift-option while clicking the Make Selection icon (⌘-click to select one point on a path, or ⌘-option-click to select all points).

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Mc 6215	17 inch (15.9)	.28 mm	1152 x 870 @75 HZ

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Acrobat Distiller Smooths the PDF Process

by Stephen Beale

Acrobat, Adobe Systems' portable-document technology, was developed to put publications online. With Acrobat 3.0 ($295; 408/536-6000, www.adobe.com), Adobe reworked the Portable Document Format (PDF) to be suitable for prepress purposes too. The Acrobat files that perform on screen can now walk a tightrope to your service bureau.

The PDF Advantage

Most prepress production systems are based on PostScript, a page-description language that uses English-like commands to generate type, vector graphics, and bitmapped images. PDF uses the same underlying software as PostScript but has a more efficient structure that treats each page as a self-contained object instead of as a series of sequentially processed commands. PDF now offers several advantages over PostScript as a file format for printing:

- PDF files are typically more compact than their PostScript counterparts and less prone to output errors.
- You can soft-proof a PDF file by opening it in Adobe's free Acrobat Reader.
- You can make minor text edits to a PDF file with Acrobat Exchange, which is part of the Acrobat 3.0 package.

Once you've converted a PostScript file to PDF, you can print the file with Acrobat Reader or Acrobat Exchange. At this point, the file gets converted back to PostScript, but it's generally a cleaner PostScript file—smaller and easier to print—than what you began with. (PostScript 3 printers, which are beginning to appear now, can process PDF files directly.)

PDF Pitfalls

Here's the rub: the Acrobat technology and PDF come from Adobe, but the most-popular professional page-layout software comes from archrival Quark. You can produce PDFs from QuarkXPress 3.X and 4.0, but it's tricky. And Quark's manual doesn't help. Quark is developing a PDF export filter for XPress, but for now, you're on your own.

There are three options for producing PDF files from XPress, but only one—Acrobat Distiller (part of Acrobat 3.0)—creates PDFs suitable for production printing. The others—Adobe's PDFWriter (a QuickDraw driver included in Acrobat 3.0) and Apple's LaserWriter 8.5 drivers—are designed to produce PDFs for online posting or electronic exchange. Another PDFWriter drawback is that it won't print EPS files.

Do the PDF Two-Step

Getting PDFs from XPress is a two-step process: use the Mac's PostScript printer driver to convert the file to a PostScript print file, then use Distiller to convert the PostScript file to PDF. The tricky part is figuring out which settings to use.

Distiller's defaults prepare files for online viewing. For print jobs, you want to produce a generic PDF file that works with a multitude of output devices (see "Distilling the Two-Part PDF Process").

Before preparing a PDF file, you should discuss your project with the technicians at your service bureau. They can suggest ways to optimize your file for their workflow, software, and prepress equipment. After all, you don't want Acrobat to tumble into the net as it walks the prepress tightrope.

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Distilling the Two-Part PDF Process

DISTILLER'S DEFAULT SETTINGS CAN HAVE DISASTROUS RESULTS FOR MOST PRINT JOBS. The settings described below will give you a generic PDF file that should work for most color prepress jobs. To get the best results, check with your service bureau for more specific settings.

Part 1: Create a PostScript Print File

1 In the Chooser, select the PSPrinter driver. You should use Adobe's PSPrinter 8.3.1, which you can download from Adobe's Web site. (To see which PSPrinter-driver version you have, open the Extensions folder inside your System Folder, click on PSPrinter, and press ⌘-I.) Apple's LaserWriter driver also produces PostScript print files, but it's more complicated and requires being connected to a PostScript printer.

Select Virtual Printer in the Printer Type pop-up. Then click on Setup, and choose Acrobat Distiller as your PPD. If you're running QuarkXPress 3.32, you must remove the Balloon Help file from the QuarkXPress folder. PSPrinter 8.3.1 conflicts with balloon help and will crash your system when you try to print.

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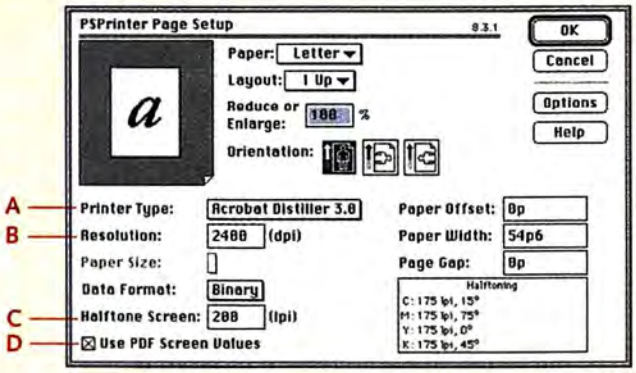
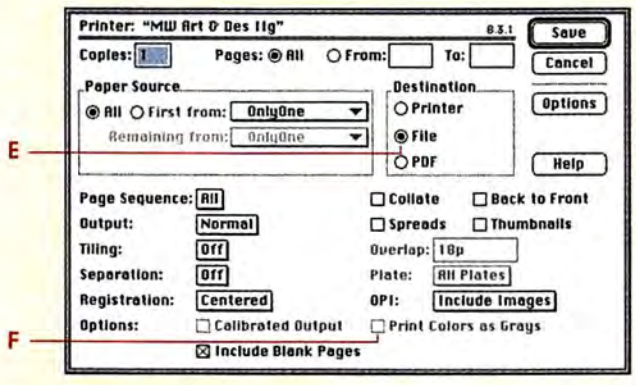
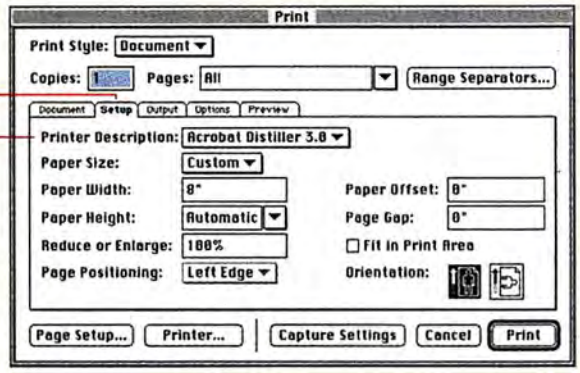
2 Now you're ready to define print settings. The process is a bit different in versions 3.X and 4.0.

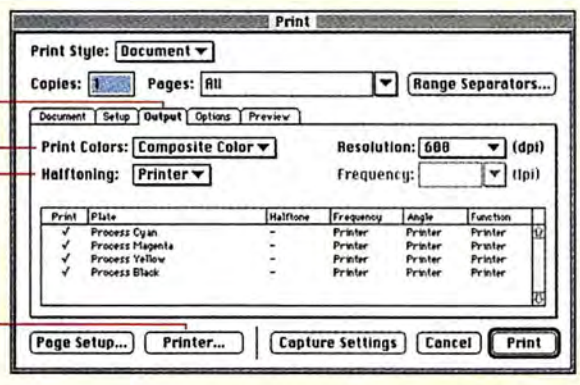
QuarkXPress 3.3 Open the Page Setup dialog box, and make sure Acrobat Distiller is selected in the Printer Type pop-up (A). Set Resolution to 2,400 dpi or higher (B); set Halftone Screen to 200 lpi or higher (C). Select Use PDF Screen Values (D). (In QuarkXPress 3.X, *PDF* refers to *printer description files*, not the Portable Document Format.) Open the Print dialog box, and choose File as the destination (E). Make sure Print Colors as Grays is deselected (F) or else your colors won't print. Then click on Save.





QuarkXPress 4.0 Open the Print dialog box. Click on the Setup tab (A), and make sure the Distiller PPD is selected for Printer Description (B). Click on the Output tab (C). Print Colors should be set to Composite Color (D), and Halftoning should be set to Printer (E). Click on the Printer button (F) at the bottom of the screen. This brings up the Virtual Printer dialog box (not shown). Choose File as the destination, and click on Save.





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3 In both versions of XPress, clicking on Save brings up a dialog box for saving the PostScript file to disk. Name the file; choose PostScript Job as the format and PostScript Level 2 Only for compatibility. In the Font Embedding pop-up, you should generally select All to ensure that all fonts in the document are embedded in the file. The All but Standard 13 and All but Standard 35 options will also work and produce a smaller PostScript file. But if your document includes one of the standard 13 or 35 fonts and those fonts are not available at your service bureau (an admittedly unlikely occurrence), these options will cause a font-substitution error. Choosing Binary as the data format makes for smaller files.

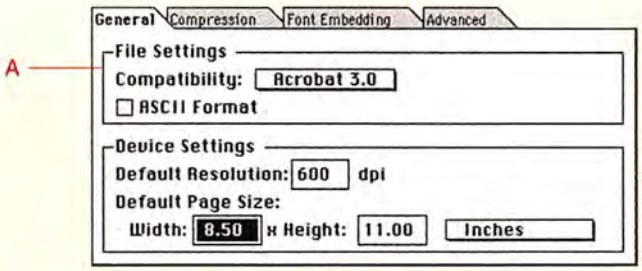
Part 2: Create a PDF File from Distiller

1 From the Finder, open the Acrobat 3.0 folder and locate the Xtras folder. Inside you'll find a folder called High_end. Open that folder, and drag the Prologue.ps and Epilogue.ps files into the folder in which the Distiller application resides. (Note: Acrobat retains job settings. After you follow these instructions once, you can go directly to step 3 to create subsequent print PDFs.)

2 Open Distiller, go to the Distiller menu, and select Job Options. A dialog box with four tabs appears. Each tab of the dialog box contains several settings. Knowing which boxes to check is essential to getting a PDF that's suitable for production printing.

General

A. Select Acrobat 3.0 compatibility. Acrobat 2.1 lacks the prepress features of version 3.0.



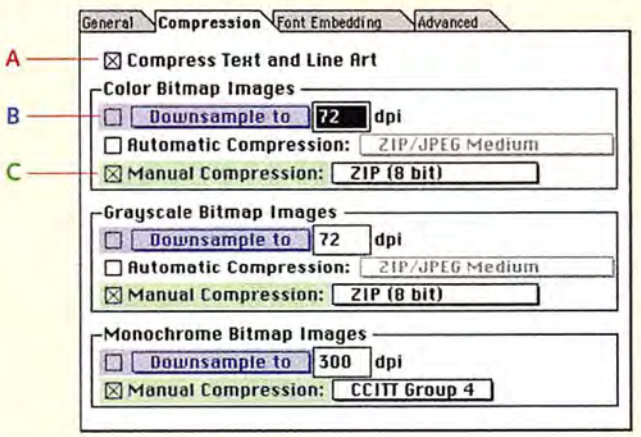
Compression

A. Select Compress Text and Line Art.

B. Deselect all downsampling and JPEG compression options, unless you want the images in your document to be converted to JPEG (generally not a good idea for prepress production).

C. Select Zip Manual Compression of color and gray-scale images.

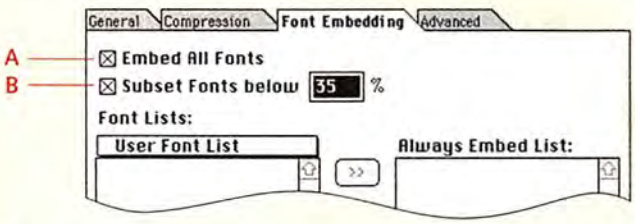
These compression settings reduce the file size without affecting image quality.



Font Embedding

A. Select the Embed All Fonts option to store all fonts used in the document within the PDF file.

B. Select the Subset Fonts Below option to save file space by limiting the number of whole fonts Distiller embeds. Under the default, if less than 35 percent of the characters are in Bembo, for example, Distiller embeds just the subset of Bembo characters actually used. If more than 35 percent of the characters are in Bembo, Distiller embeds the entire font. Note: Subsetting fonts may limit your service bureau's ability to edit your file.



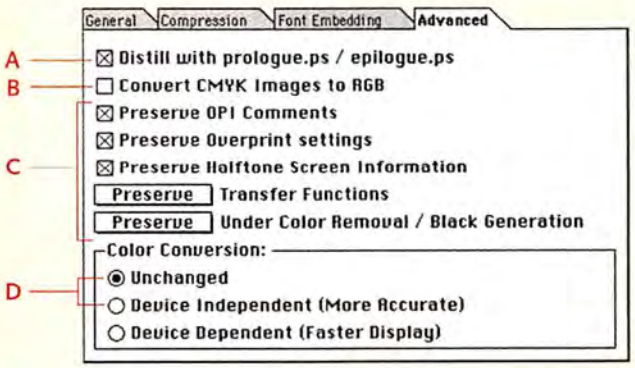
Advanced

A. Select the Distill with prologue.ps/epilogue.ps option to force Distiller to include both files in the PDF file. (If the PDF doesn't include those files, Distiller may sometimes convert spot colors in QuarkXPress files to their process-color equivalents.)

B. Deselect the Convert CMYK Images to RGB option.

C. Select Preserve OPI Comments, Preserve Overprint settings, Preserve Halftone Screen Information, Preserve Transfer Functions, and Preserve Under Color Removal/Black Generation. These settings let you retain the prepress options you selected in the original QuarkXPress document.

D. Set Color Conversion to Unchanged or Device Independent. Either option will preserve standard color spaces specified in your QuarkXPress document.



3 Now you're ready to convert the PostScript file to PDF. From Distiller's File menu, open the PostScript print file you just created. You will then be prompted to enter a file name for the PDF file; the default appends a .pdf extension to the original file name. Click on Save, and Distiller goes to work.

4 After Distiller saves the file, you should open it in Acrobat Viewer to make sure it was processed correctly. m

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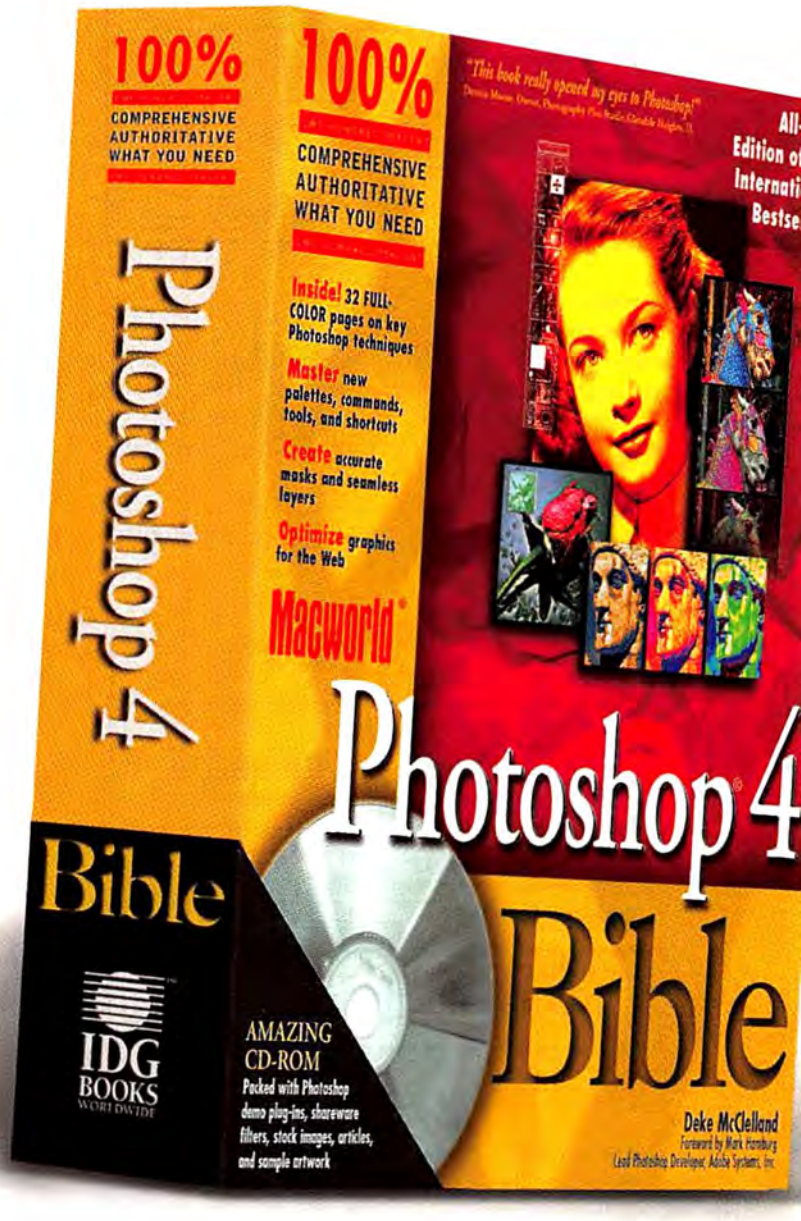

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The Power of ColorSync Color Matching

Tap Into the Part of Your System Software That's Made for Matching Colors

by Bruce Fraser

So what is this ColorSync thing anyway? If you've done some studying, you may know that it has to do with matching colors between different devices—scanners, monitors, and printers. In fact, it's Apple's system-level color-management scheme. Unfortunately, making it work isn't as easy as it might seem. The old joke "It's supposed to be automatic, but really you have to press this button" applies to using ColorSync, although with ColorSync you have to press a bunch of buttons in the right order at the right time. This article looks at some possible ways to use ColorSync, and points out pitfalls to be aware of.

ColorSync Basics

It's a thorny problem to keep colors consistent across the various devices we work with because computers know nothing about color—they just juggle 1s and 0s. The numbers we think of as representing colors actually represent the varying amounts of *colorants*—red, green, and blue light; or cyan, magenta, yellow, and black dyes or pigments—that monitors and printers use to produce color. RGB and CMYK values are just recipes for color, and different cooks can make a dish turn out differently even when they use the same recipe.

Monitor phosphors and scanner filters vary from vendor to vendor. CMYK inks and dyes vary, too, and the paper on which we print them has a huge influence on the color. RGB and CMYK colors are ambiguous—they produce different colors on different devices.

ColorSync helps provide consistent color by changing the RGB and CMYK values we send to different devices. To do this, we have to tell it which device the color came from and which device it's going to, by choosing ColorSync *profiles*. These are files that describe the color behavior of a scanner, monitor, or printer. You'll find examples in the System Folder in a folder called ColorSync Profiles (in versions prior to 2.5 it's further nested inside the Preferences folder).

One of the first steps in making colors match using ColorSync is to choose a source profile for the device that has the color you want to match and a target profile for the device you want to match it on. For instance, if you want to match the color from a scanned image to the image on your monitor, you'd choose your scanner as the source and your monitor as the target. (For advice on when it's worthwhile to create custom profiles, see "Canned versus Custom Profiles" at www.macworld.com/more/.)

In practice, how you set profiles varies from application to application. Here I look at how to use ColorSync with Adobe Photoshop 3 or later and QuarkXPress 4.0. (For some other programs, you can set up color matching by using ColorSync and the LaserWriter printer driver. For instructions on this process, see the sidebar "What Apple Doesn't Tell You about LaserWriter.")

ColorSync and QuarkXPress

QuarkXPress 4.0 offers limited ColorSync support. It applies ColorSync only to placed TIFFs and to XPress-created colors, it ignores embedded profiles, and it doesn't let you choose a rendering intent (see the sidebar "Dealing with Out-of-Gamut Colors"). Nevertheless, there are some useful things you can do in XPress 4.0 with ColorSync.

Basic Configuration XPress 4.0's Color Management Preferences lets you set profiles for your monitor, your composite printer, and your final separations. It also lets you set default source profiles for RGB, CMYK, and Hexachrome for both images and XPress-created colors.

CMYK Workflow In a CMYK workflow, you place CMYK images just as you would without color management, but you can use ColorSync to provide both soft proofs on screen and hard-copy proofs from a color printer. Set the same profile as the default CMYK source profile and the Separations Printer profile. That way, ColorSync doesn't touch your final separations, but it provides accurate color on screen and to your color printer.

RGB Workflow In an RGB workflow, you place RGB TIFFs, which

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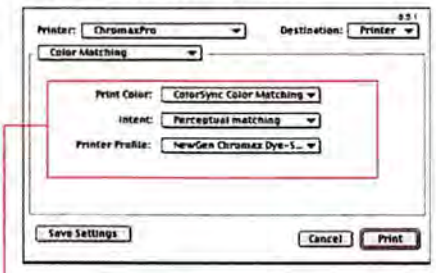
USING COLORSYNC WITH THE LASERWRITER driver is a fairly simple process. However, there are some large (and largely undocumented) limitations: this kind of color matching works with only RGB PICT images, and only with applications that don't create their own PostScript. So, it's OK for printing from general office applications (such as Microsoft Word, Excel, and PowerPoint), but it doesn't work with most graphics applications (such as Adobe Photoshop, Macromedia FreeHand, and QuarkXPress). For those applications, you have to implement ColorSync in the application itself.

If you *are* working with programs that don't create their own PostScript, here's how to set up ColorSync with LaserWriter 8.5.1 to match printed PostScript output to a monitor: Your first setup task is to choose the correct monitor profile (the source profile) in the ColorSync control panel. Once you do that, choose the profile for the printer you're printing to—choose print from your application, and then choose Color Matching from the pop-up menu in the LaserWriter dialog box that appears. In the Color Matching panel, choose ColorSync Color Matching from the Print Color pop-up menu. Finally, choose the profile for the printer you're printing to from the Printer Profile pop-up menu.

LaserWriter Dialog Box



When you choose ColorSync Color Matching from the Print Color pop-up, you gain access to menus for rendering intent and printer profile.

ColorSync converts at print time to final CMYK. Set your scanner profile as the RGB source profile if you're placing raw RGB scans. Set your monitor profile as the RGB source profile if you're placing images you've corrected on the monitor.

The advantages of an RGB workflow are that RGB files are smaller than their CMYK equivalents, so processes go a little more quickly, and your documents can be easily repurposed—to target a different kind of output, you only have to change the Separations Printer profile. The disadvantage is that you don't see your separations until you actually produce final output, so test before implementing an RGB workflow on a live job.

Printing Composite Proofs In an RGB workflow, make sure that you check Composite Simulates Separation in the Profiles panel of the Print dialog box. Otherwise, ColorSync will render your RGB files faithfully on your composite printer, which may do a considerably better job than the press. In a CMYK workflow, the composite printer simulates the Separations Printer automatically because you're feeding it CMYK separations tagged for the Separations Printer.

If you're serious about implementing ColorSync in QuarkXPress, you may want to invest in Praxisoft's CompassPro XT extension ($399; 703/450-8001, www.praxisoft.com), which greatly extends the support for ColorSync. It not only manages TIFFs and XPress-generated elements, but also manages placed EPS files, both vector and bitmap.

ColorSync and Photoshop

Photoshop has limited ColorSync support, but you can greatly extend ColorSync's functionality in Photoshop 4.0.1 by downloading a free set of ColorSync plug-ins (ColorSync Import, ColorSync Export, and ColorSync Filter) from Apple's ColorSync Web site, www.colorsync.com. Although Photoshop picks up the monitor profile from the ColorSync System Profile, you need the plug-ins to actually change the color. Here are suggestions on how to use the first two plug-ins, which will probably be the most useful of the three plug-ins.

The ColorSync Import Plug-In This plug-in lets you open images and perform a color transformation on the fly. To use it, choose Import TIFF With ColorSync Profile from Photoshop's File menu. Then choose a file to open, and the ColorSync Import plug-in appears. It has three panels, labeled Open, Match, and Proof. Here I concentrate on the Match panel (see "Calibrated Scanning in Photoshop").

You can choose a source and output profile, and select a quality setting and matching style for the transformation. For images, for Quality select Best, and for Matching Style select Perceptual unless you have specific reasons to do otherwise (see the sidebar "Dealing with Out-of-Gamut Colors").

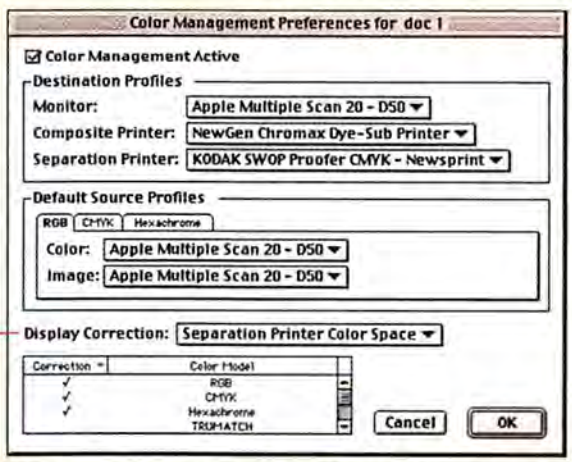
The ColorSync Export Plug-In This plug-in lets you export TIFF images with an embedded ColorSync profile, and perform color transformations between two or more devices.

Caution: It's easy to accidentally delete a file when using this plug-in. When you're prompted to save the exported TIFF from this plug-in, the default file name in the Save dialog box is that of your original RGB image. If you click on Save without renaming the file, your original RGB image will be overwritten.

Embedding Profiles Embedding a profile turns an uncalibrated RGB or CMYK image into a calibrated one. That's because the profile contains an unambiguous definition of the colors that the RGB or CMYK values produce.

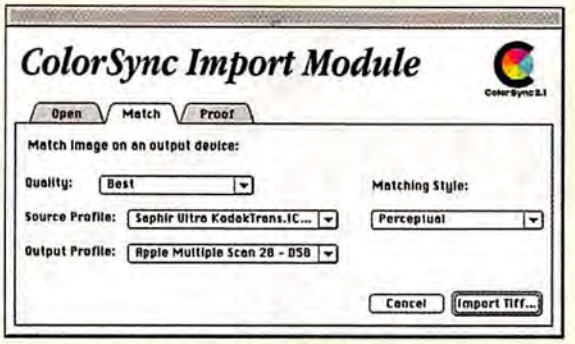
In order to embed a profile, choose Export: TIFF With Color-

Soft-Proof Colors in QuarkXPress



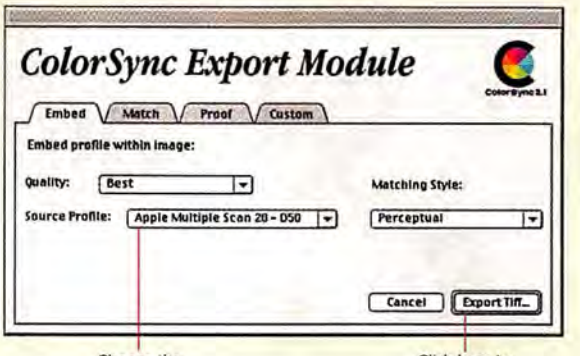
This pop-up menu controls how XPress displays color. For soft-proofing, use the settings shown here.

Calibrated Scanning in Photoshop



For images scanned on a calibrated scanner, set the scanner profile as the source profile and your monitor's profile as the output profile to match the colors of the original on your display.

Embedding Profiles in Your Image



Sync Profile from Photoshop's File menu; the ColorSync Export Module screen appears. Then use a setup like the one in "Embedding Profiles in Your Image."

For RGB images, a good rule of thumb is to embed either your scanner profile (for an unedited scan) or your monitor profile (for an image you've edited on screen). For CMYK images, embed the CMYK profile you use to create the CMYK file.

Creating Color Separations To export a CMYK TIFF from an RGB image, bring up the ColorSync Export Module screen (as in "Embedding Profiles in Your Image"). Then use a setup like the one in "Convert RGB to CMYK for Print."

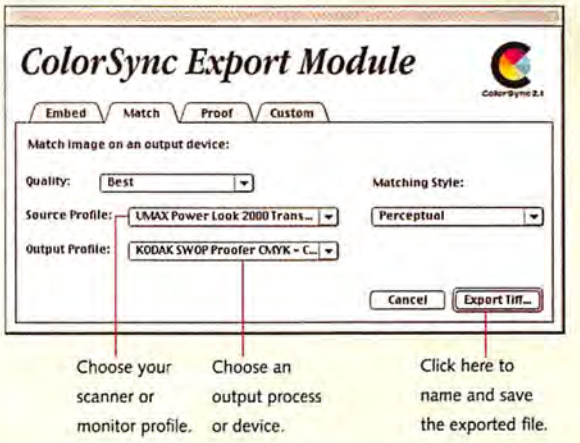
Proofing Separations To proof color separations on a desktop color printer, you need to specify three profiles: one for the source, one for the final output, and one for the desktop printer. Bring up the ColorSync Export screen and click on the Proof tab. Under Source Profile, choose your scanner or monitor profile, and set the corresponding Matching Style to Perceptual. Under Output Profile choose the final output device, and set the corresponding Matching Style to Relative Colorimetric. Under Proofer Profile, choose the desktop printer profile. Set Quality to Best. Click on Export Tiff, and then name and save the exported file.

Note that this file is color-matched to simulate your final output on the desktop printer—it's good for printing to your desktop printer only.

Viewing ColorSync-Generated Separations in Photoshop To view ColorSync-created CMYK files accurately in Photoshop, build a Photoshop Separation Table from the profile used to create the color separations. Choose Color Settings: Separation Tables from Photoshop's File menu. The Separation Tables dialog box appears. Click on Build Tables Using Apple ColorSync. The CMS Settings dialog box appears. Under Profile, choose the output profile you used to create the CMYK file, set the Render Intent to Relative Colorimetric, and then click on Build.

Photoshop builds a separation table from the ColorSync profile. You can use separation tables created this way to perform RGB-to-CMYK conversions in Photoshop, but the results are often quite different from the ColorSync conversions. I recommend that you use these tables only to view CMYK files, not to create them. **m**

Convert RGB to CMYK for Print



Dealing with Out-of-Gamut Colors

ALL DEVICES AREN'T EQUAL WHEN IT COMES to the range of colors—the color *gamut*—they can reproduce. ColorSync gives you four different options, called rendering intents or matching styles, for handling out-of-gamut colors.

Perceptual rendering intent is the best choice for printing RGB images to CMY or CMYK printers. It compresses the source gamut into the target gamut while maintaining the image's overall appearance, although it may change all the colors in the process.

Absolute colorimetric rendering intent matches the colors common to both devices exactly, and clips the out-of-gamut colors to the nearest printable equivalent. It's best for flat tints and solid colors.

Relative colorimetric rendering intent is like absolute, except that it scales the source white to the output (usually paper) white. It's good for proofing CMYK images on a desktop color printer, which typically has a larger gamut than the printing press you're making it simulate.

Saturation rendering intent maps fully saturated source colors to fully saturated target colors. It's useful only for charts and graphs where you just want bright colors.

BRUCE FRASER is coauthor of *Real World Photoshop* (Peachpit Press, 1997). You can reach him at bruce@pixelboyz.com.

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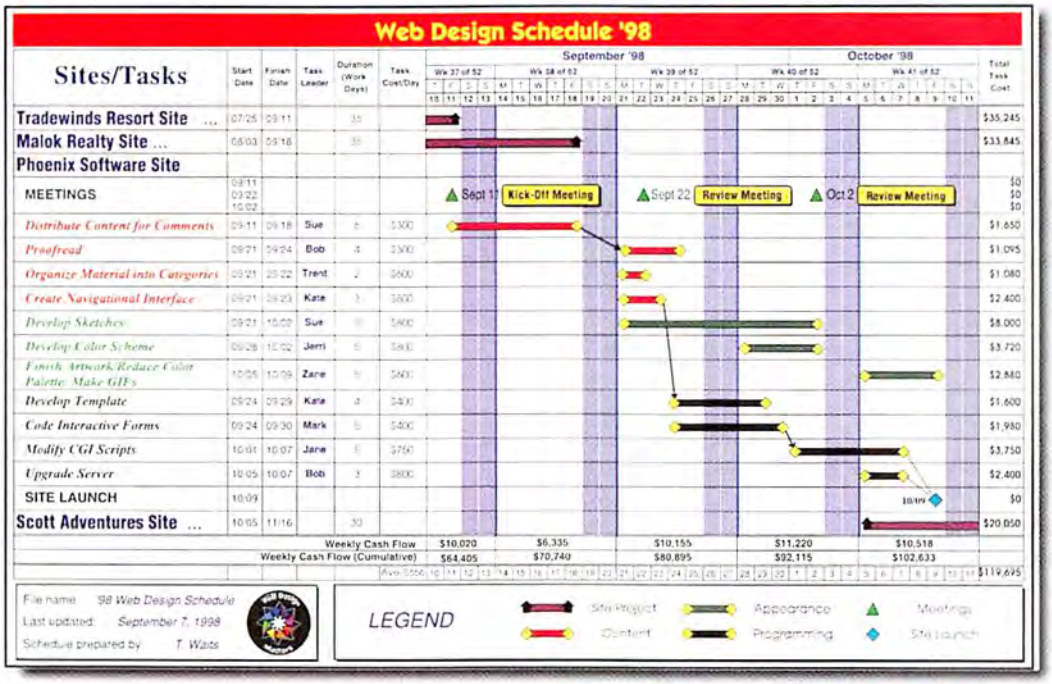

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Make FileMaker Work the Web

Putting a Searchable Database Online

by Jason Snell

When it comes to being Web-savvy, FileMaker 4.0 is an impressive database program. Using its custom Web publishing features, you can turn the data you've got languishing in a FileMaker database into a professional-quality Web site—all from within FileMaker—without investing thousands of dollars in high-end database servers.

There's just one catch. The good folks at FileMaker, Inc., have essentially kept these features a secret: they're not explained in FileMaker's printed manual and are explained only in a couple of reference files on the FileMaker CD-ROM.

There is one other way to learn to use the hidden power of FileMaker as a Web publisher: follow the steps in this article. As long as you know your way around FileMaker and understand HTML, you can apply these techniques to your own FileMaker projects.

In my example, I create a Web interface for a FileMaker database containing the contents of a fictitious toy company's product catalog. I want to let users search for items in the catalog (Step 1), see the list of items their searches turn up (Step 2), and then see detailed information about individual items (Step 3). If you'd like to use the actual files from this example project as a basis for your own projects, you can get them from www.macworld.com/more/.

Another good resource to turn to for more help on creating Web sites in FileMaker is Blue World Communications' Lasso—the software on which FileMaker 4.0's custom Web publishing features are based. Although Lasso's tags are a little different from FileMaker's, they're so closely related that Lasso's documentation (available free online in PDF format at www.blueworld.com) is the best reference on the subject. ■

JASON SNELL is a *Macworld* features editor.

Step 1: A Search Query

Since you'll want people to be able to search and sort the contents of databases you put on the Web, creating a search form is the best place to start. In my toy company–database example, the search form lets users send information to FileMaker that will tell the program what to search for and how to display it.

You can create a search form entirely in HTML or in a graphical Web-page editor. The only tricky part is giving your form elements the right names so that FileMaker knows what they represent. Here's how to do it—"Search Form (Close-up)" shows the form elements in context.

Action The first part of any form you create should be the action variable. The information in your action variable tells your database what URL to send data to when a user performs a search. Set the action of any form that queries FileMaker 4.0 to the name of the FileMaker 4.0 server, followed by */FMPro*—for example, http://filemaker.outerspacetoy.com/FMPro.

Method In addition to an action variable, each form needs a method variable. This should be set to either *get* or *post*. While you're debugging your forms, be sure to use *get*. If you do so, all the form data used in a search form is appended to the action's URL—in my example, it shows up in the Search Results Form (Browser) shown in Step 2—after you perform a search. This is useful for testing purposes,

continues

Search Form (HTML)

Search Form (Browser)

```
<FORM ACTION="/FMPro" METHOD="get">

<INPUT TYPE="hidden" NAME="-db" VALUE="Toys">
<INPUT TYPE="hidden" NAME="-lay" VALUE="detail">
<INPUT TYPE="hidden" NAME="-format" VALUE="/catalog/results.html">
<INPUT TYPE="hidden" NAME="-op" VALUE="contains">
<INPUT TYPE="hidden" NAME="-LOP" VALUE="or">
<INPUT TYPE="hidden" NAME="-sortfield" VALUE="product">
<INPUT TYPE="hidden" NAME="-sortorder" VALUE="ascending">
Search by name: <INPUT TYPE="text" NAME="product" VALUE="" SIZE=30>
```

Search Form (Close-up)

Hidden Fields

Form Field	Sample Value	What It Is
-db	My Database	name of your database
-lay	Big Layout	layout with all fields you'll use
-format	/catalog/result.html	file name of HTML results template
-noresults	/catalog/error.html	file a user sees if a search fails
-sortfield	product name	name of field for sorting
-sortorder	descending	whether to sort in ascending or descending order
-lop	or	logical operator for searching on more than one field; can be an *and* or an *or* search
field to search	*search value*	what you're searching for
-find	*none*	last tag on your form; tells FileMaker a user is doing a search

Control what your visitors see by using hidden fields for your Web-search form. This table contains the hidden fields I used for my sample database; they should be useful for your own databases. For details on using them, see the main text in Step 1.

because all you have to do to find out what your form is sending (and what it isn't) is look in the URL window. On the other hand, it's usually best to set the method variable of your finished forms to *post*, since that hides the clutter of form data from your users.

Hidden Fields Within your search form, you need several hidden fields—fields that aren't visible on a Web page but that the browser still passes to the Web server when a user submits a form (in this case, when the user performs a search). Users enter some of the data needed to perform a search via visible fields, but hidden fields let you hard-code unchanging data elements, such as the name of the database being searched.

For a list of hidden fields and what they do, see "Hidden Fields." In addition, here are some important tips to keep in mind when you're setting up specific kinds of hidden fields.

The **-lay** field must specify a layout containing all the fields your database will search on or return to the user. For debugging purposes, you can simply create a layout containing every field in your database—but be sure to create a slimmed-down version of that layout before it goes live. The more fields in a layout, the slower a Web application runs.

Set the **-format** field to the file name of the template you want to use to display the results of a search. You also need to indicate the location in the Web folder (which is in the same folder as the FileMaker application) that contains the template. In my example, I set **-format** to /catalog/results.html—in other words, a template file named results.html, located in a folder named catalog in the Web folder, which is in the FileMaker folder.

The last hidden field in your form should always be the action you want FileMaker to perform, such as doing a search, showing all FileMaker records, or even (in an advanced application) adding or deleting records. In most cases, the action will be **-find**—although if you wanted to display every record in your database, you would instead use **-findall**.

User-Entered Values The rest of the search form contains information users enter themselves, such as the name of the product they're searching for. You can have your users enter data via text fields, pop-up menus, or radio buttons. If you prefer, you can limit a user's options by placing some of the search values in hidden fields.

In my example, I'm allowing users to search three fields: product name, price, and category. In the search form in Bare Bones Software's BBEdit, I created a text-entry field set to the name product. This creates a box in my browser search form in which users can enter the name of the product they want to search for. I've also created two pop-up menus (shown in the "Search Form" figures) that allow a search based on a product's price or category.

I hard-coded the rest of the items into the search form as hidden text: **-sortfield** defines what FileMaker field to sort the results by, and **-sortorder** defines whether that sort will be ascending or descending.

Step 2: The Results Page

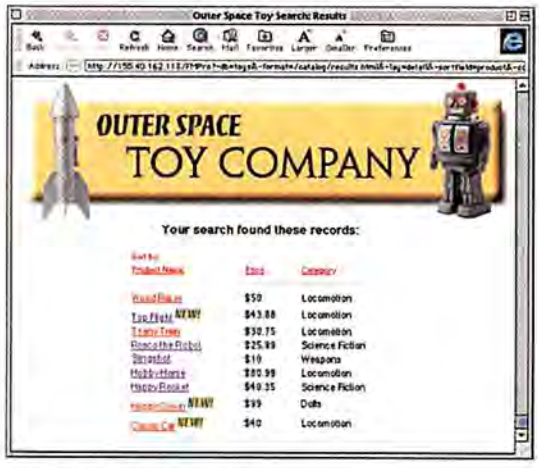
Now it's time to create the page users will receive when searches are complete. Although this is an HTML page and can be designed in any Web authoring tool, you need more than just a knowledge of HTML to create it—you also need some new vocabulary.

FileMaker's Own HTML To make Web browsers speak a language FileMaker can understand, you need to use tags from FDML (FileMaker Dynamic Mark-up Language). These FileMaker-specific tags act as placeholders for information from your FileMaker database. This information gets inserted right into an HTML file that's sent from your server to someone browsing your Web site. By using FDML to create templates, you can quickly create preformatted Web pages for every record in your database.

It's easy to tell FDML tags from their HTML cousins: whereas HTML tags are surrounded by angle brackets, as in **<b>**, FDML tags are surrounded by square brackets and are preceded by *FMP*, as in **[FMP-file]**—see the figure "Search Results Form (HTML)."

To add FDML tags to your HTML documents, use a text editor (or the FDML-savvy Claris Home Page 3.0).

continues



Search Results Form (Browser)

We Take Product Testing Seriously.

Start with HTML I want the search-results page to show users every record FileMaker found during their search. The first step in creating this page is to make a normal HTML page with a header, a footer, and a table containing a generic version of the data. I temporarily inserted text such as "the product name" into my HTML document; later I'll replace this with FDML tags.

Add FDML for Repeating Records The first FDML tag I employed was one that makes each found product appear in its own row. I created the table using normal HTML—as seen in "Search Results Form (HTML)"—and then placed the **[FMP-record]** tag around the middle row, the one containing product information. Now FileMaker will add one row to the table for every record it finds.

Search Results Form (HTML)

Search Results Form (Close-up)

Replace Text with Data The next step is to replace the generic text in the record row with data from the database. To do this, I replaced generic text, such as "the product name," with an FDML tag pointing to a field in my database, such as the product field **[FMP-field: product]**. Likewise, to have the contents of the price field inserted during a search, I simply put **[FMP-field: price]** in the cell that's supposed to list the product's price.

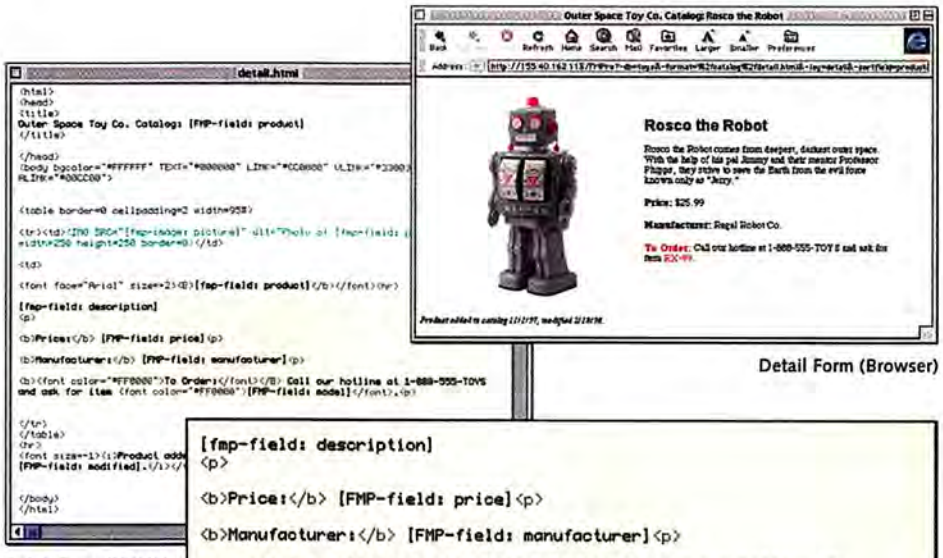
Use Logic A more difficult concept is the addition of logical statements to template files. Again, you can do this by using an FDML tag—**[FMP-if]**—which tells FileMaker to insert certain data based on the contents of a field. I used this tag to get a "New!" graphic to appear on some but not all items, as shown in the figure "Search Results Form (Browser)." In my example, the statement **[FMP-if: field: new .eq. new]<IMG SRC="/catalog/new.gif">[/FMP-if]** tells FileMaker that if the field named new contains the word *new*, then the program should insert a GIF image that says "New!"

Make a Link I want to let my users click on any toy's name on the search-results page and receive a detailed view of information about that toy. That means I have to make a hyperlink to the FileMaker record for that specific toy—but exactly what URL am I supposed to hyperlink to? FDML makes linking easy by automatically creating database-related hyperlinks via the **[FMP-linkrecid]** tag. The code for the hyperlink in my example reads **<a href="[FMP-linkrecid: layout=detail,format=/catalog/detail.html]">**—generating a link that tells FileMaker to continue using the fields in the detail layout (one of the layouts in my FileMaker database), but to use the file catalog/detail.html as the template for the next page (a template I create in Step 3).

Step 3: The Detail Page

The last page on my site is detail.html, a page that shows a bunch of information—such as product description, price, and manufacturer—from a particular record in FileMaker. Users go to this page by clicking on one of the product names on the Search Results Form. The detail page is essentially a template for displaying any record from my database.

Since this page (see "Detail Form") displays only one record at a time, it doesn't need the **[FMP-record]** tag. Instead, I designed the page in a standard HTML-editing program and then brought it into a text editor to replace all the placeholder text with the live contents of my database via the **[FMP-field]** tag.



Detail Form (Browser)

Detail Form (HTML)

Detail Form (Close-up)

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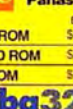

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PowerMac 6500 300/64MB/4GB/24xCD/Zip	$1299	$42	
PowerMac G3 233/32MB/4GB/24xCD Desktop	$1459	$48	
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4550MB	7200rpm	512K	VK34550S	5yr	$345	$395
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6448MB	5400rpm	512K	FB36400S	3yr	$353	$403
8455MB	5400rpm	512K	FB38400S	3yr	$449	$499
9100MB	7200rpm	512K	XP39100S	5yr	$709	$759
9100MB	7200rpm	1024K	XP309100S	5yr	$799	$849
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4550MB	7200rpm	512K	XP34550W	5yr	$445	$535
4550MB	7200rpm	512K	VK304550PSW	5yr	$439	$529
9100MB	7200rpm	512K	XP39100W	5yr	$749	$839
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4550MB	7200rpm	512K	ST34572N	5yr	$469	$519
4550MB	10,000rpm	512K	ST34501N	5yr	$579	$629
9100MB	7200rpm	512K	ST19171N	5yr	$739	$789
9100MB	10,000rpm	512K	ST19101N	5yr	$929	$979
23200MB	5400rpm	512K	ST423451N	5yr	$1649	$1739
ULTRA 2 SCSI						
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4550MB	10,000rpm	1024K	ST34502LW	5yr	$775	$925
9100MB	10,000rpm	1024K	ST39102LW	5yr	$1099	$1249
9190MB	10,000rpm	1024K	ST39173LW	5yr	$859	$1009
18200MB	7200rpm	1024K	ST118273LW	5yr	$1599	$1749
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4550MB	10,000rpm	512K	ST34501W	5yr	$599	$689
9100MB	7200rpm	1024K	ST19171W	5yr	$749	$839
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Tech Note: Ultra 2 SCSI
Features up to 80MB/s transfer when used with an Ultra 2 SCSI controller (remains 40MB/s w/non Ultra 2 controller or when non Ultra 2 devices are in chain). Extends cabling distance greatly over other SCSI devices. Note - Our External Ultra 2 SCSI drives do not include terminator.

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NEC	CDR1810XM24X	85ms	128K	$99	$159
Pioneer	DRM6324XM24X	90ms	6 Disk Changer	n/a	$419
Teac	CD532SXM32X	85ms	512K	$115	$175
Toshiba	XM6201BXM32X	85ms	128K	$115	$175
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HP 4mm	2-4GB	42MB/min	C1536XM	$689
Seagate TR4	4GB	30MB/min	STT28000XM	$409
Seagate TR4	4-8GB	60MB/min	STT28000CXM	$539
Sony 4mm	4-8GB	44MB/min	SDT5000XM	$679
Sony 4mm	4-8GB	90MB/min	SDT7000XM	$679
Seagate 4mm	4-8GB	60MB/min	STD28000XM	$829
HP 4mm	4-8GB	60MB/min	C1599XM	$819
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Exabyte 8mm	7-14GB	120MB/min	ELIANTXM	$1449
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4.5GB	Viking	QM34550VKS	8ms	7200	$329	$379
4.5GB	Atlas II	QM34550ALS	8ms	7200	$499	$549
6.4GB	Stratus SE	QM36480SES	10ms	5400	$379	$429
8.4GB	Stratus SE	QM38420SES	10ms	5400	$489	$539
9.1GB	Atlas II	QM39100ALS	8ms	7200	$699	$749
UltraWide SCSI-3						
4.5GB	Viking	QM34550VKSW	8ms	7200	$399	$479
4.5GB	Atlas II	QM34550ALSW	8ms	7200	$519	$599
9.1GB	Atlas II	QM39100ALSW	8ms	7200	$779	$859
IDE Drives						
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3.2GB	Stratus SE	QM33240SEA	10ms	5400	$189	----
4.3GB	Stratus SE	QM34320SEA	10ms	5400	$219	----
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4.5GB	Cheetah	ST34501N	8ms	10000	$649	$699
9.1GB	Barracuda 9	ST19171N	8ms	7200	$779	$829
9.1GB	Cheetah	ST19101N	8ms	10000	$1029	$1079
UltraWide SCSI-3						
4.5GB	Barracuda 4XL	ST24572W	8.5ms	7200	$579	$659
4.5GB	Cheetah	ST34501W	8ms	10000	$699	$779
9.1GB	Barracuda 9	ST19171W	8ms	7200	$829	$909
9.1GB	Cheetah	ST19101W	8ms	10000	$1029	$1109
Fast SCSI-2						
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Fast&Wide SCSI-2						
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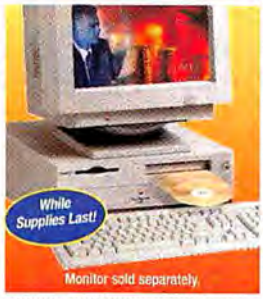

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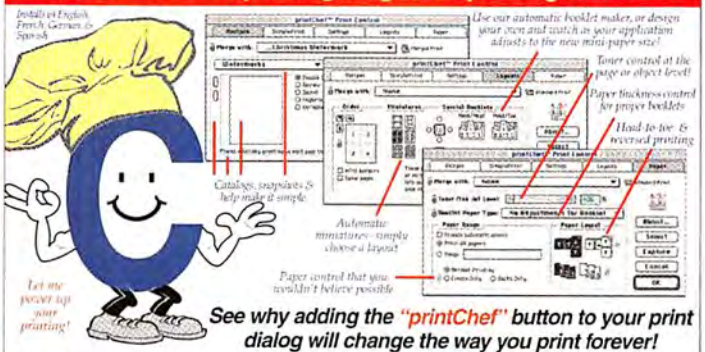

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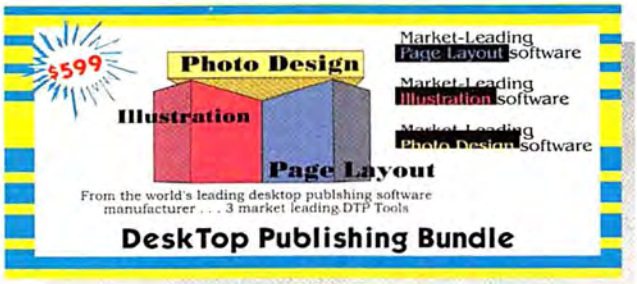

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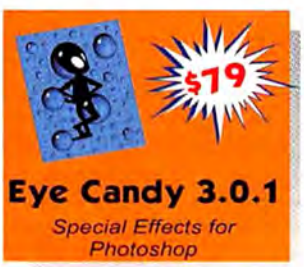

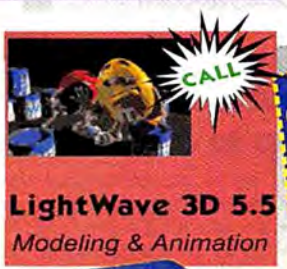

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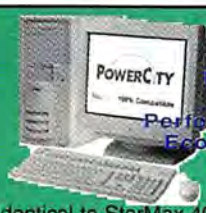

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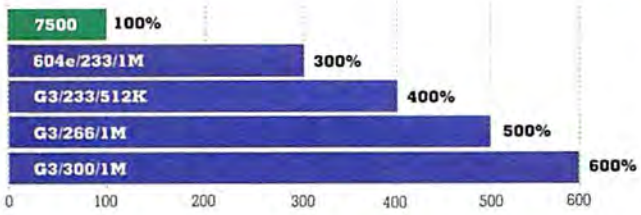

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Macworld

by David Pogue

David Does Windows

THE PROBLEM WITH WINDOWS: IT'S NOT ENOUGH LIKE A MAC

I WAS RECENTLY INTRODUCED to a user group as "a man who'd defend the Mac until his dying breath—David Pogue!" I smiled as I went onstage, but I was quietly horrified. Was that what I'd become—a kneejerk Mac defender? At parties, did other people see the word *fanatic* tattooed across my forehead? *Was I a Mac bigot?*

Most of the world uses Windows. Not passionately, but they manage. I'd owned a Compaq for years, but it had never been my main machine. Maybe I'd been too insulated. Maybe it was time to give Windows a real chance.

All I needed to make my Compaq ready for prime time was a Zip drive, a modem, and a much bigger hard drive. I called a consultant. His advice: toss the Compaq. Buying a whole new PC would be cheaper than all the upgrades.

This wasn't exactly what I wanted to hear. But I perked up when he said I could get a new Micron Pentium II with 32 megs of RAM; a 24× CD-ROM; a 56K modem; a *built-in* Zip drive; a 15-inch monitor; Microsoft Office; free shipping; and 24-hour, toll-free help forever. For $1,500. Suddenly I understood the appeal of Windows machines.

Setting up a Wintel box, I discovered, is just as easy as setting up a Mac—except everything's slightly clunkier. You can't plug the mouse into the keyboard. There's no built-in speaker. You can't turn the computer on and off from the keyboard, and you can't plug the monitor's power cord into an outlet on the CPU. But I couldn't get mad; I was still giddy about the price.

Things got hairier when I pushed the little CD-ROM–eject button. Machinery wheezed, but no tray came out. The free–tech-support guy talked me through 30 minutes of paper-clip straightening, system reboots, and DOS mucking. But the shy little tray still wouldn't slide out.

Eventually, we figured out that there *was* no tray. You're supposed to stick the CD *directly* into the slot, as with car CD players. Micron had switched CD-ROM suppliers—without notifying the manual writer, the tech-support staff, or me.

I was beginning to appreciate Apple's quality advantage: it can design both the hardware and the software. With a Wintel machine, you get components from one company, assembled by another, running system software by a third. When trouble strikes, nobody is accountable.

On the other hand, everything people say about Windows machines is true: they feel fast, they're dirt cheap, and there's

tons of software. I actually liked the tool bar that lists every window; and the two-button mouse; and the feeling, for once, that I was running with the herd.

But after a few days, I began to ache for the Mac. Windows 95 gets more ornery the more you use it. You can't boot normally from a CD-ROM in times of troubleshooting. Despite the potential for long file names in Windows 95, most files are still named things like 5631_dig.dat and Wpxerror.log. And every little glitch requires reinstalling drivers for things Mac fans never even think about, such as the mouse, keyboard, and monitor.

Worse, when you insert a floppy, CD, or Zip, no icon appears on the desktop to tell you if the thing's working right. And to eject a disk, you have to push a button on the computer—I wince every time, not knowing whether the computer is ready to eject that disk.

After two weeks, it finally hit me: I'm *not* a Mac bigot. In fact, I have no particular attachment to the Mac at all; if something superior comes along, I'm there.

No, what I am is an *elegance* bigot. If I'm going to sit in front of a piece of equipment for hours a day, I want to feel the intelligence that went into my operating system. I want to sense that an English major lost sleep over the wording of the dialog boxes. I shouldn't have to teach my computer what kinds of files it has by adding .txt and .psd to their names. I don't want a default system font that looks like somebody drew it on the bus on his way to work. And I want my OS components to be represented by icons that I can move or throw away—not lines of code that I must edit when troubleshooting.

Elegance, I'm afraid, was not a high priority in Windows 95. And Windows 98 doesn't address the fundamental flaws of Windows (or PC equipment standards, which Microsoft defines).

Apple has been showing improved vital signs in recent months. But if the worst should come to pass and we must all someday switch to Wintel boxes, I have but one plea to Microsoft: when you write Windows 2001, get the elegance bug. Please—copy the Mac. **m**

DAVID POGUE (www.pogueman.com) is the author of *The Great Macintosh Easter Egg Hunt* (Berkley, 1998).

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